

Application for Special Permit for Monopole Telecommunications Tower

65 and 73 Eastern Avenue
Essex, Massachusetts

Introduction

Applicant

- TowerNorth Development LLC

Co-Locating Tower Tenant

- Verizon Wireless

Appearing in Support of Application

- Daniel D. Klasnick, Duval & Klasnick, LLC
- Elizabeth Rutkowski, TowerNorth Development
- Scott Adams, Advanced Engineering Group
- Keith Vellante, RF Engineer

Background

- The property at 65 Eastern Avenue consists of an area of approximately 3.04 acres and 73 Eastern Avenue consists of approximate 22.3 acres
- The 65 Eastern Avenue property is developed with the South Village Center shopping center and the front portion of 73 Eastern Avenue property includes commercial storage buildings
- The property owners leased a 75' x 75' area of ground space with access and utility rights for the installation of the telecommunications tower at 73 Eastern Avenue
- The proposed monopole tower will be located to the rear of the undeveloped portion of the 73 Eastern Avenue property
- Received Negative Determination from Conservation Commission and granted Dimensional Variances from the Board of Appeals.

Satisfaction of Bylaw Standards for Towers

- §6-3.4.2 the installation of a Free Standing Monopole Tower is an allowed use upon grant of a special permit by the Planning Board
- The special permit application is for a freestanding monopole tower that will not exceed 150-feet in height and does not require lighting by the FAA
- The telecommunications tower will be setback more than 150-feet from the boundary of all wetlands.
- The facility is within a wooded area and substantially separated from residences
- Lighting will be limited to a service light necessary for maintenance
- TowerNorth and Verizon Wireless will remove the tower and accessory equipment within 90-days of abandonment or discontinuance of use

Satisfaction of Special Permit Standards

- By providing improved wireless service, the proposed Telecommunications Tower Facility will be in harmony with the general purpose and intent of the Zoning Bylaw to promote the health, safety and welfare of the inhabitants
- The large commercially developed property is an appropriate location for the Telecommunications Tower Facility Use
- With the vegetative buffer and substantial setbacks, the proposed Telecommunications Tower Facility will not adversely affect the neighborhood
- With use of existing access for limited vehicle visits, setbacks and fencing, there will not be a nuisance or serious hazard to vehicles or pedestrians from the Telecommunications Tower Facility
- Existing utility connections and access allows for adequate and appropriate facilities to be provided for the Telecommunications Tower Facility

Telecommunications Act of 1996

- Five major limitations on municipalities with respect to decisions regarding wireless telecommunications facilities
 - A municipality may not “unreasonably discriminate against providers of functionally equivalent services”
 - Any decision by a municipality “shall not prohibit or have the effect of prohibiting the provision of personal wireless service”
 - A municipality may not consider the environmental effects of radio frequency emission if the emissions comply with FCC Standards
 - Municipalities must act on a request “within a reasonable period of time after the request is duly filed”
 - All decisions must “be in writing and supported by substantial evidence in a written record”

Alternative Site Assessment Analysis

- The goal of the search area is to define the permissible location for placement of a facility that will provide adequate service in the subject area, and also work properly as part of the overall network.
- Verizon Wireless performed an extensive search for existing structures in order to find an appropriate site for a wireless facility. There were no existing structures in the area that were suitable for attachment of wireless equipment to close Verizon Wireless' significant gap in coverage and capacity.
- TowerNorth reviewed numerous properties within the designated search area. Almost all other lots in the area are used for residential purposes that are too small, too crowded, lacked vegetative screening and were therefore ruled out as feasible alternatives.
- TowerNorth did analyze potentially viable options listed in its application and supplemental filing. After a careful investigation of those sites, it was determined that the identified sites would not be feasible alternatives.

Tower Facility Proposal

- 150-foot monopole tower facility
- Designed to accommodate at least 4 wireless service providers
- 2,647 square foot stone treated ground space area surrounded by a 6 foot high barbed wire fence with 12' locked entrance gate screened by existing vegetation
- Access from Eastern Avenue over existing driveway/parking area to gravel driveway with parking turnaround area
- Electric and telco underground from existing service
- Monopole Tower will not require FAA lighting and is designed with a breakpoint to limit the fall radius to approximately 48'-9"

Verizon Wireless Installation

- 6 panel antennas and remote radio heads at 146 - foot centerline
- Equipment Cabinets located on concrete pad within the fenced area
- Propane Powered backup generator on concrete pad with 500 gallon tank on separate concrete pad
- Installation is essential to address Verizon Wireless' coverage and capacity network requirements in this area of Essex, Massachusetts



73 Eastern Ave

133

Goodwin Ct

Essex Reach Rd

Eastern Ave

Grave St

SITE

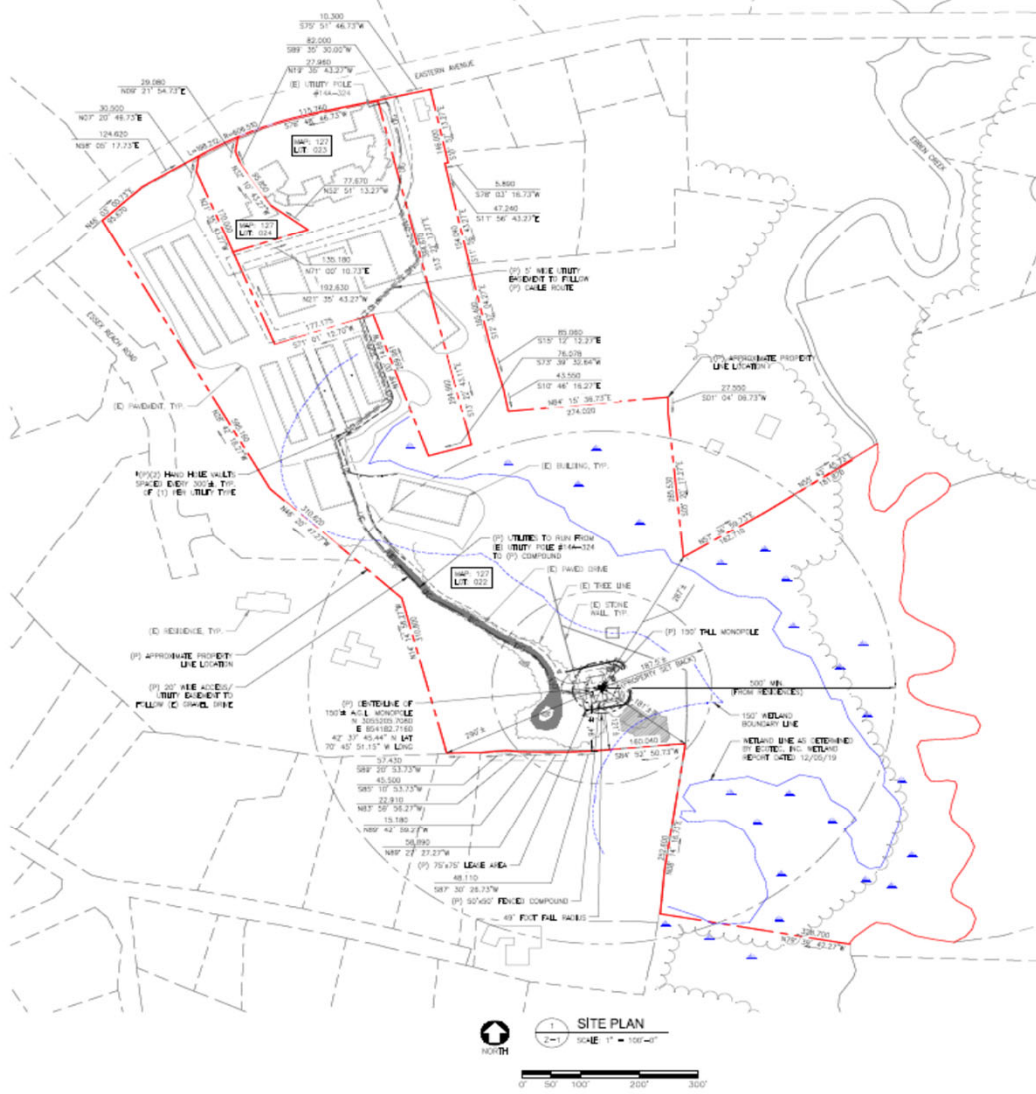


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Google Earth

Imagery Date: 10/17/2020 42°37'50.06" N 70°45'51.94" W elev 9 ft eye alt 2261 ft

1985



NOTE
 1. LENGTH OF PROPOSED ACCESS DRIVE FROM EASTERN AVENUE TO PROPOSED COMPOUND: 1655 ±
 2. LENGTH OF PROPOSED UTILITY RUN FROM EXISTING UTILITY POLE ON EASTERN ROAD TO PROPOSED COMPOUND: 1655 ±

ZONING SUMMARY TABLE

REQUIREMENT	REQUIRED	PROVIDED
FRONT YARD SETBACK*	N/A	12004 FT
REAR YARD SETBACK*	N/A	2804 FT
SIDE YARD SETBACK*	N/A	120 FT
MIN. LOT AREA (SQ. FEET)	N/A	87,388 SQ. FT.
FRONTAGE	N/A	3004 FT

* SETBACKS MEASURED FROM FACE OF TRUNK TO THE NEAREST PROPERTY LINE

W.C.F. SUMMARY TABLE

REQUIREMENT	REQUIRED	PROVIDED	NOTIFY
HEIGHT OF TOWER	50 FT MAX.	150 FT	0 FT
TO PROPERTY LINE	187.5 FT	1216 FT	88.5 FT
TO NEAREST RESIDENCE	100 FT	3784 FT	1216 FT
TO NEAREST WADLAND	100 FT	1884 FT	58 FT
SEPAR. FROM THE PUBLIC USE	50 FT	94 FT	58 FT

BY ZONING REGULATIONS, THE LOCATION OF THE PROPOSED TOWER IS GREATER THAN 200 FEET (200' MAX) FROM ANY RESIDENTIAL ZONED PARCELS, EXCEPT FOR C-1, R-1, R-2, R-3, R-4, R-5, R-6, R-7, R-8, R-9, R-10, R-11, R-12, R-13, R-14, R-15, R-16, R-17, R-18, R-19, R-20, R-21, R-22, R-23, R-24, R-25, R-26, R-27, R-28, R-29, R-30, R-31, R-32, R-33, R-34, R-35, R-36, R-37, R-38, R-39, R-40, R-41, R-42, R-43, R-44, R-45, R-46, R-47, R-48, R-49, R-50, R-51, R-52, R-53, R-54, R-55, R-56, R-57, R-58, R-59, R-60, R-61, R-62, R-63, R-64, R-65, R-66, R-67, R-68, R-69, R-70, R-71, R-72, R-73, R-74, R-75, R-76, R-77, R-78, R-79, R-80, R-81, R-82, R-83, R-84, R-85, R-86, R-87, R-88, R-89, R-90, R-91, R-92, R-93, R-94, R-95, R-96, R-97, R-98, R-99, R-100.

GENERAL NOTES:

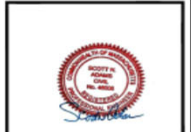
- THE TYPE, DIMENSIONS, MOUNTING HARDWARE AND POSITION OF ALL PROJECT OWNERS EQUIPMENT SHALL BE SHOWN IN ALL TRADE DRAWINGS. THESE DRAWINGS ARE NOT INTENDED FOR CONSTRUCTION. ACTUAL MATERIALS, DETAILS AND FINAL LOCATIONS MAY VARY FROM WHAT IS SHOWN.
- THE PROJECT OWNERS PDS FACILITY IS AN UNMANNED REMOTE AND REMOTE EQUIPMENT INSTALLATION. IT IS ONLY ACCESSIBLE BY TRUCKS. REQUIREMENTS FOR REMOTE SOURCE MAINTENANCE AND TROUBLESHOOTING DOES NOT REQUIRE ANY NOTES OR DRAWING REVISIONS. THE FACILITY IS NOT DESIGNED BY TELEWORKS REGARDING PUBLIC ACCESS PER ADA REQUIREMENTS.
- THE PROJECT OWNERS HAVE TRANSMISSION TOWER (TTS) CABINET AS A VERTICAL REINFORCED STEEL CABINET CONTAINING NETWORKS, AIRLINES, RACKS AND OTHER INTEGRATED ELECTRONIC CONTROL EQUIPMENT. BATTERY BACKUP FOR BATTERY CHARGING POWER IS CONTROLLED WITH A DC-DC BATTERY CHARGING SYSTEM. THE BATTERY CHARGING SYSTEM SHALL BE MANUFACTURED TO MEET ENVIRONMENTAL QUALITY AND RESISTANCE TO CORROSION OF THE ENVIRONMENTAL AIR TRANSPORT ASSOCIATION (ATA) BATTERY CHARGING SYSTEM IS COMPUTER-CONTROLLED AND THE EQUIPMENT CABINET IS REMOTELY MONITORED BY PROJECT OWNERS NETWORK OPERATIONS CONTROL CENTER 24-HOURS A DAY, 7 DAYS A WEEK FOR FAILURE AND ALARMS.
- THE DESIGN OF THE SYSTEM MOUNTING HARDWARE AND STRUCTURAL REQUIREMENTS OF BATTERY BUILDING FLOOR FLOOR (IF NECESSARY) TO SUPPORT THE TTS CABINET SHALL MEET THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) DESIGN SPECIFICATIONS FOR STRUCTURAL STEEL AND SUPPORTING STRUCTURES AND STATE BUILDING CODE REQUIREMENTS. DETAILED CONSTRUCTION DRAWINGS AND STRUCTURAL CALCULATIONS SHALL BE PROVIDED BY A REGISTERED PROFESSIONAL ENGINEER AND SUBMITTED WITH A BUILDING PERMIT APPLICATION FOR REVIEW AND APPROVAL BY THE LOCAL BUILDING CODE DEPARTMENT OFFICE.
- ONCE THE FACILITY BECOMES FULLY OPERATIONAL, NORMAL AND ROUTINE MAINTENANCE BY PROJECT OWNERS TECHNICIANS SHALL BE PERFORMED ON A MONTHLY BASIS. THE RATE OF THE ESTIMATED MAINTENANCE RATE SHALL BE 2.0 HOURS PER MONTH. THE MAINTENANCE RATE PER HOUR SHALL BE 60.0 HOURS PER MONTH.
- PER FCC MAINTENANCE SCHEDULES (MTC) SERVICE IS REQUIRED TO MEET FCC REQUIREMENTS FOR REMOTE COMMUNICATIONS SYSTEMS. PROJECT OWNERS MAINTENANCE SCHEDULES REQUIREMENT OF EQUIPMENT AND ANTENNAE (REAR) LOCATED ON THE TOWER ATTACHED TO OR LOCATED IN CLOSE PROXIMITY TO THE TTS CABINET, REQUIRES THE TOWER TO HAVE REMOTE MAINTENANCE TO THE EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIREMENTS.
- APPLICANT: TOWNSEND DEVELOPMENT LLC
 22 RYAN DRIVE, SUITE 1
 RAYNHAM, MA 01929
- OWNER (BOTH PARCELS): COLLEEN JOHN E & JOSEPH P. TR
 22 RYAN DRIVE, SUITE 1
 RAYNHAM, MA 01929
- ZONING DISTRICT: COMMERCIAL-BUSINESS
- JURISDICTION: TOWN OF ESSEX
 MAP: 127 LOT: 022
 MAP: 127 LOT: 023
- TAX ID:
- ALL MEASUREMENTS ARE SHOWN IN FEET & UNLESS OTHERWISE NOTED.
- PLAT PLAN MEASUREMENTS ARE APPROPRIATE AND BASED ON SCALED ASSESSORS MAPS AND OTHER AVAILABLE INFORMATION.
- ALL SETBACKS SHOWN FROM PROPOSED ANTENNAE TO THE EDGE OF THE LOT ARE APPROPRIATE AND SHOULD BE USED FOR REFERENCE ONLY.

LEGEND

- PROPERTY LINE
- EXISTING PROPERTY LINE
- EXIST. AS-BUILT LOT
- PROF. SURVEYED BOUNDARY AND
- EXIST. ZONING BOUNDARY
- EXISTING DISTRICT BOUNDARY
- EXIST. PDS FACILITY
- PROF. PDS FACILITY
- EXIST. 150' WADLAND BOUNDARY
- PROF. 150' WADLAND BOUNDARY
- EXIST. 40' FOOT FILL FACILITY
- PROF. 40' FOOT FILL FACILITY
- EXIST. 40' FOOT FILL FACILITY
- PROF. 40' FOOT FILL FACILITY

NOTE:

- THE UTILITY CONDUIT ROUTES SUBJECT TO LANDLORD APPROVAL.
- PLAT PLAN BASED ON TAX ASSESSORS MAPS FROM THE TOWN OF ESSEX. MASSIVE TOWN, PARCEL DATA AND RECORDS PLANS FROM A RECENT AND UNDATED SURVEY WAS NOT CONDUCTED BY ADVANCED ENGINEERING GROUP, P.C.
- WADLAND BOUNDARY LINE PROVIDED BY ESSEX: INC ON 12/05/19.
- 40' FOOT FILL (ONE SAVED BY TOWN) PALL LOT# PROVIDED BY SARGE PROPERTIES DATE: FEBRUARY 23, 2021.



AEI PROJECT # 2019-0027

DRAWN BY: AAR
 CHECKED BY: SNA

SUBMITTALS

REV	DATE	DESCRIPTION
1	02/16/20	ISSUED FOR PERMITS
2	02/16/20	ISSUED FOR CONSTRUCTION
3	02/16/21	ISSUED
4	02/22/21	ISSUED
5	02/22/21	ISSUED
6	02/22/21	ISSUED

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MA-044 ESSEX
 65 & 73 EASTERN AVENUE
 ESSEX, MA 01929

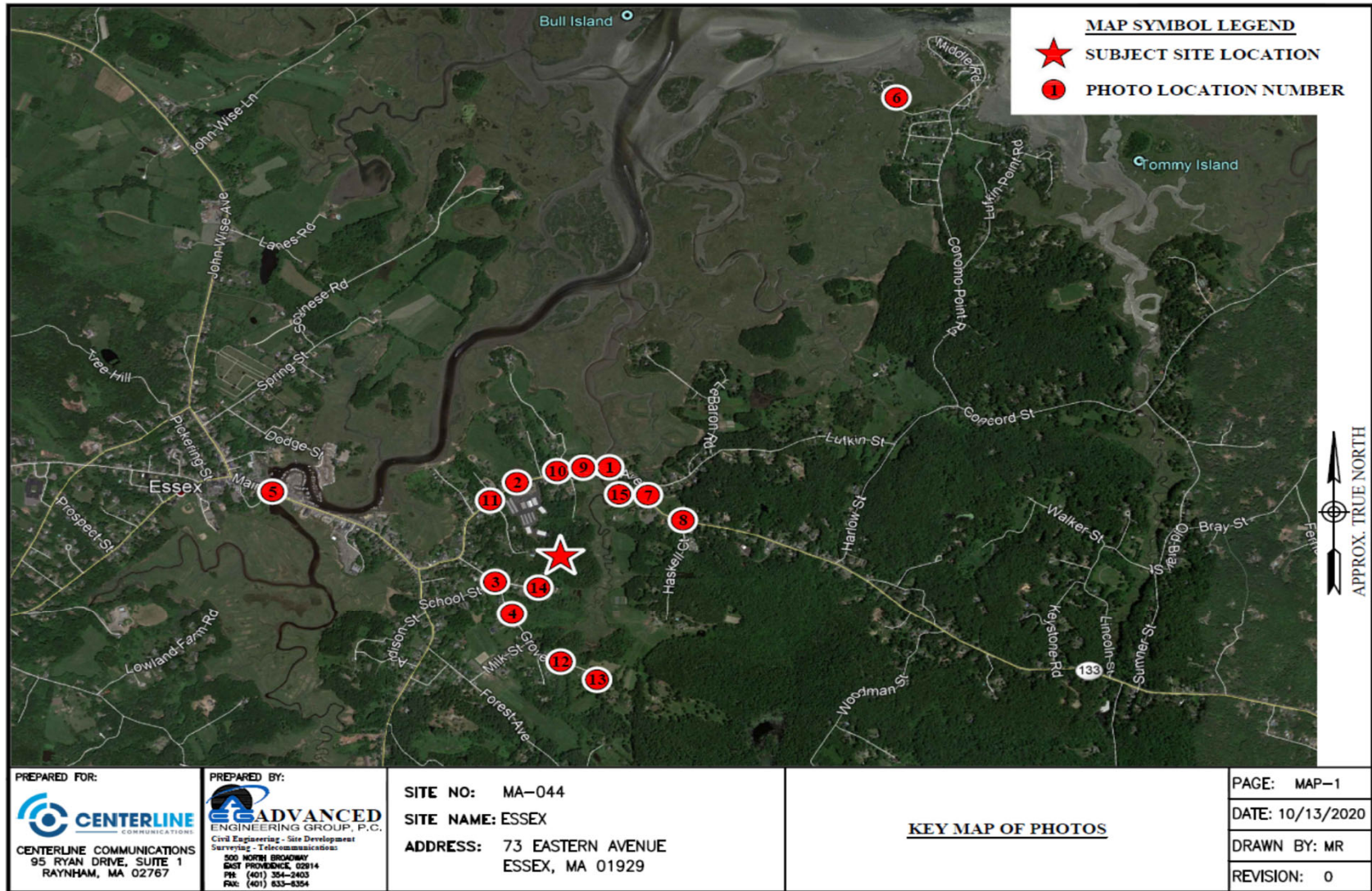
SHEET TITLE
 SITE PLAN

SHEET NUMBER
 Z-1

BALLOON TEST

With notice to the Town, a balloon test was conducted on August 28, 2020 from 10:00 AM to 2:00 PM

- A balloon test is used as a visual reference with a 3 ft. diameter helium filled balloon flown at the top elevation of the tower
- An area surrounding the site was defined as the study area for the viewshed analysis
- A Drive-by visual reconnaissance of the study area is conducted to assess where the balloon is and is not visible
- 15 different photo locations were selected to illustrate tower visibility
 - Visibility or Partial Visibility only from 7 of those locations



PREPARED FOR:

CENTERLINE COMMUNICATIONS
 95 RYAN DRIVE, SUITE 1
 RAYNHAM, MA 02767

PREPARED BY:

ADVANCED ENGINEERING GROUP, P.C.
 Civil Engineering - Site Development
 Surveying - Telecommunications
 500 NORTH BROADWAY
 EAST PROVIDENCE, 02914
 PH: (401) 354-2403
 FAX: (401) 833-8354

SITE NO: MA-044
SITE NAME: ESSEX
ADDRESS: 73 EASTERN AVENUE
 ESSEX, MA 01929

KEY MAP OF PHOTOS

PAGE: MAP-1
DATE: 10/13/2020
DRAWN BY: MR
REVISION: 0



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RAYNHAM, MA 02767

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Surveying - Telecommunications
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PH: (401) 354-2423
FAX: (401) 833-8284

SITE NO: MA-044
SITE NAME: ESSEX
ADDRESS: 73 EASTERN AVENUE
ESSEX, MA 01929

VIEW #1
EXISTING VIEW FROM THE
NORTHEAST, ON EASTERN AVENUE

PAGE: V-1E

DATE: 10/13/2020

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REVISION: 0

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COMMUNICATIONS
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SITE NO: MA-044
SITE NAME: ESSEX
ADDRESS: 73 EASTERN AVENUE
ESSEX, MA 01929

VIEW #1
PROPOSED VIEW FROM THE
NORTHEAST, ON EASTERN AVENUE

PAGE: V-1P

DATE: 10/13/2020

DRAWN BY: MR

REVISION: 0



BALLOON @ 150'
A.G.L.



PROPOSED 150'
MONOPOLE

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BALLOON @ 150'
A.G.L.



PROPOSED 150'
MONOPOLE

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CENTERLINE
COMMUNICATIONS
CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

PREPARED BY:

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SUITE 2000
ROSELAND, NJ 07068
PH: (908) 354-2403
FAX: (908) 652-8334

SITE NO: MA-044

SITE NAME: ESSEX

ADDRESS: 73 EASTERN AVENUE
ESSEX, MA 01929

VIEW #3
EXISTING VIEW FROM THE WEST, NEAR
THE INTERSECTION OF GROVE STREET
AND COGSWELL COURT

PAGE: V-3E

DATE: 10/13/2020

DRAWN BY: MR

REVISION: 0

PREPARED FOR:

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CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

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300 NORTH BROADWAY
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PH: (908) 354-2403
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VIEW #3
PROPOSED VIEW FROM THE WEST, NEAR
THE INTERSECTION OF GROVE STREET
AND COGSWELL COURT

PAGE: V-3P

DATE: 10/13/2020

DRAWN BY: MR



REVISION: 0



BALLOON @ 150'
A.G.L.



PROPOSED 150'
MONOPOLE

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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
				REVISION: 0

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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
				REVISION: 0



BALLOON @ 150'
A.G.L.





PROPOSED 150'
MONOPOLE

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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
		REVISION: 0		

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		SITE NAME: ESSEX		DATE: 10/13/2020
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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
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BALLOON @ 150'
A.G.L.



PROPOSED 150'
MONOPOLE

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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
		REVISION: 0		



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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
		REVISION: 0		



BALLOON WAS NOT VISIBLE FROM THIS LOCATION



BALLOON WAS NOT VISIBLE FROM THIS LOCATION

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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
		REVISION: 0		



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		SITE NAME: ESSEX		DATE: 10/13/2020
		ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929		DRAWN BY: MR
		REVISION: 0		



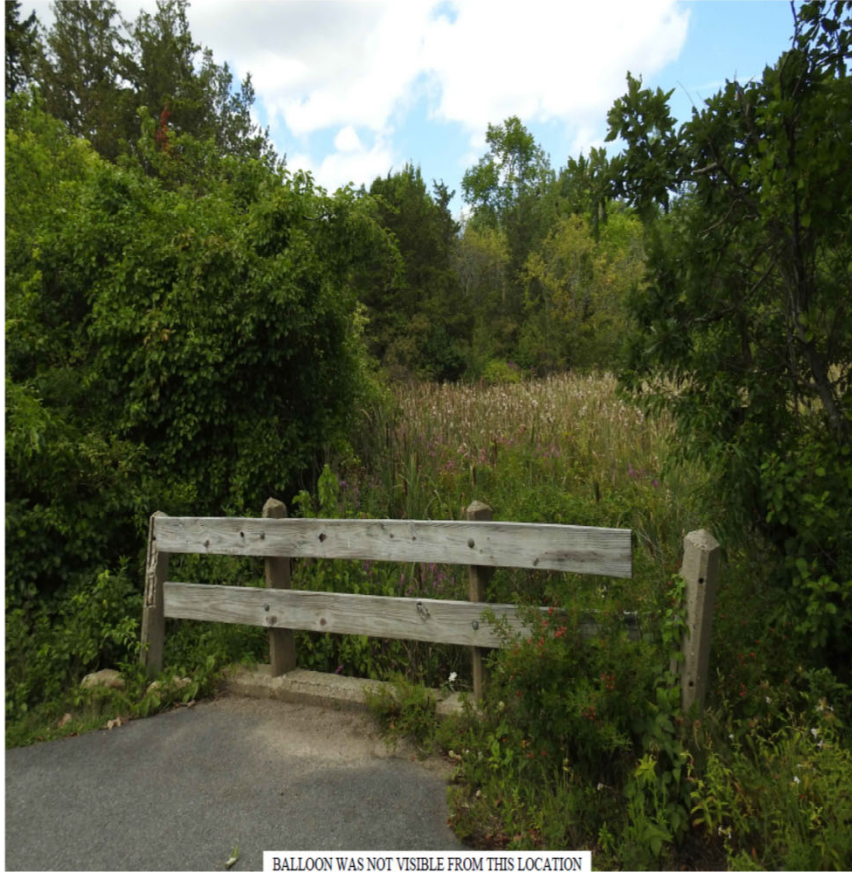
BALLOON WAS NOT VISIBLE FROM THIS LOCATION



BALLOON WAS NOT VISIBLE FROM THIS LOCATION

PREPARED FOR:  CENTERLINE COMMUNICATIONS 95 RYAN DRIVE, SUITE 1 RAYNHAM, MA 02767	PREPARED BY:  ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications 300 NORTH BUCKINGHAM SUITE 1000, PRINCETON, NJ 08540 PH: (609) 354-2483 FX: (609) 633-4334	SITE NO: MA-044 SITE NAME: ESSEX ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929	VIEW #10 EXISTING VIEW FROM THE NORTH, ON EASTERN AVENUE	PAGE: V-10E DATE: 10/13/2020 DRAWN BY: MR REVISION: 0
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PREPARED FOR:  CENTERLINE COMMUNICATIONS 95 RYAN DRIVE, SUITE 1 RAYNHAM, MA 02767	PREPARED BY:  ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Development Surveying - Telecommunications 300 NORTH BUCKINGHAM SUITE 1000, PRINCETON, NJ 08540 PH: (609) 354-2483 FX: (609) 633-4334	SITE NO: MA-044 SITE NAME: ESSEX ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929	VIEW #11 EXISTING VIEW FROM THE NORTHWEST, ON EASTERN AVENUE AT THE PRIVATE DRIVEWAY ENTRANCE TO "ESSEX REACH"	PAGE: V-11E DATE: 10/13/2020 DRAWN BY: MR REVISION: 0
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BALLOON WAS NOT VISIBLE FROM THIS LOCATION



BALLOON WAS NOT VISIBLE FROM THIS LOCATION

PREPARED FOR:



CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

PREPARED BY:



ADVANCED ENGINEERING GROUP, P.C.
Civil Engineering - Site Development
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PH: (401) 354-3423
FAX: (401) 833-0324

SITE NO: MA-044

SITE NAME: ESSEX

ADDRESS: 73 EASTERN AVENUE
ESSEX, MA 01929

VIEW #12
EXISTING VIEW FROM THE SOUTH,
ON GROVE STREET AT THE
EBBEN CREEK CROSSING

PAGE: V-12E

DATE: 10/13/2020

DRAWN BY: MR

REVISION: 0

PREPARED FOR:



CENTERLINE COMMUNICATIONS
95 RYAN DRIVE, SUITE 1
RAYNHAM, MA 02767

PREPARED BY:



ADVANCED ENGINEERING GROUP, P.C.
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SUITE 1000
PROVIDENCE, RI 02914
PH: (401) 354-3423
FAX: (401) 833-0324

SITE NO: MA-044

SITE NAME: ESSEX

ADDRESS: 73 EASTERN AVENUE
ESSEX, MA 01929

VIEW #13
EXISTING VIEW FROM THE SOUTHEAST,
ON GROVE STREET AT THE END OF
PUBLIC RIGHT OF WAY

PAGE: V-13E

DATE: 10/13/2020

DRAWN BY: MR



REVISION: 0



BALLOON WAS NOT VISIBLE FROM THIS LOCATION



BALLOON WAS NOT VISIBLE FROM THIS LOCATION

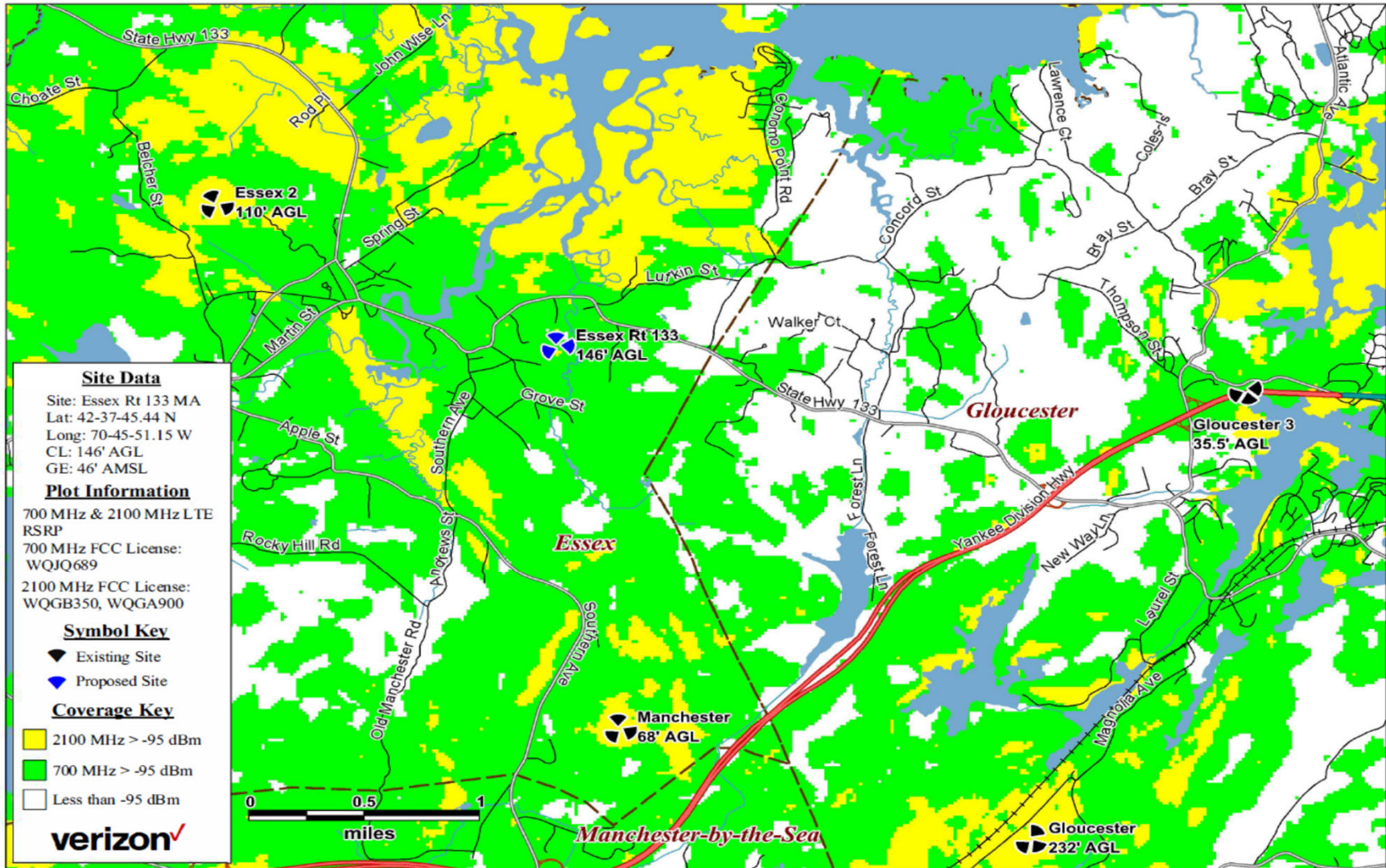
PREPARED FOR:  CENTERLINE COMMUNICATIONS 95 RYAN DRIVE, SUITE 1 RAYNHAM, MA 02767	PREPARED BY:  ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Developer Surveying - Telecommunications 300 NORTH BROADWAY SUITE PROVIDENCE, 02914 PH: (401) 384-3423 FAX: (401) 833-8284	SITE NO: MA-044 SITE NAME: ESSEX ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929	VIEW #14 EXISTING VIEW FROM THE SOUTHWEST, ON COGSWELL COURT	PAGE: V-14E DATE: 10/13/2020 DRAWN BY: MR REVISION: 0
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PREPARED FOR:  CENTERLINE COMMUNICATIONS 95 RYAN DRIVE, SUITE 1 RAYNHAM, MA 02767	PREPARED BY:  ADVANCED ENGINEERING GROUP, P.C. Civil Engineering - Site Developer Surveying - Telecommunications 300 NORTH BROADWAY SUITE PROVIDENCE, 02914 PH: (401) 384-3423 FAX: (401) 833-8284	SITE NO: MA-044 SITE NAME: ESSEX ADDRESS: 73 EASTERN AVENUE ESSEX, MA 01929	VIEW #14 EXISTING VIEW FROM THE NORTHEAST, AT THE END OF GOODWIN COURT	PAGE: V-15E DATE: 10/13/2020 DRAWN BY: MR REVISION: 0
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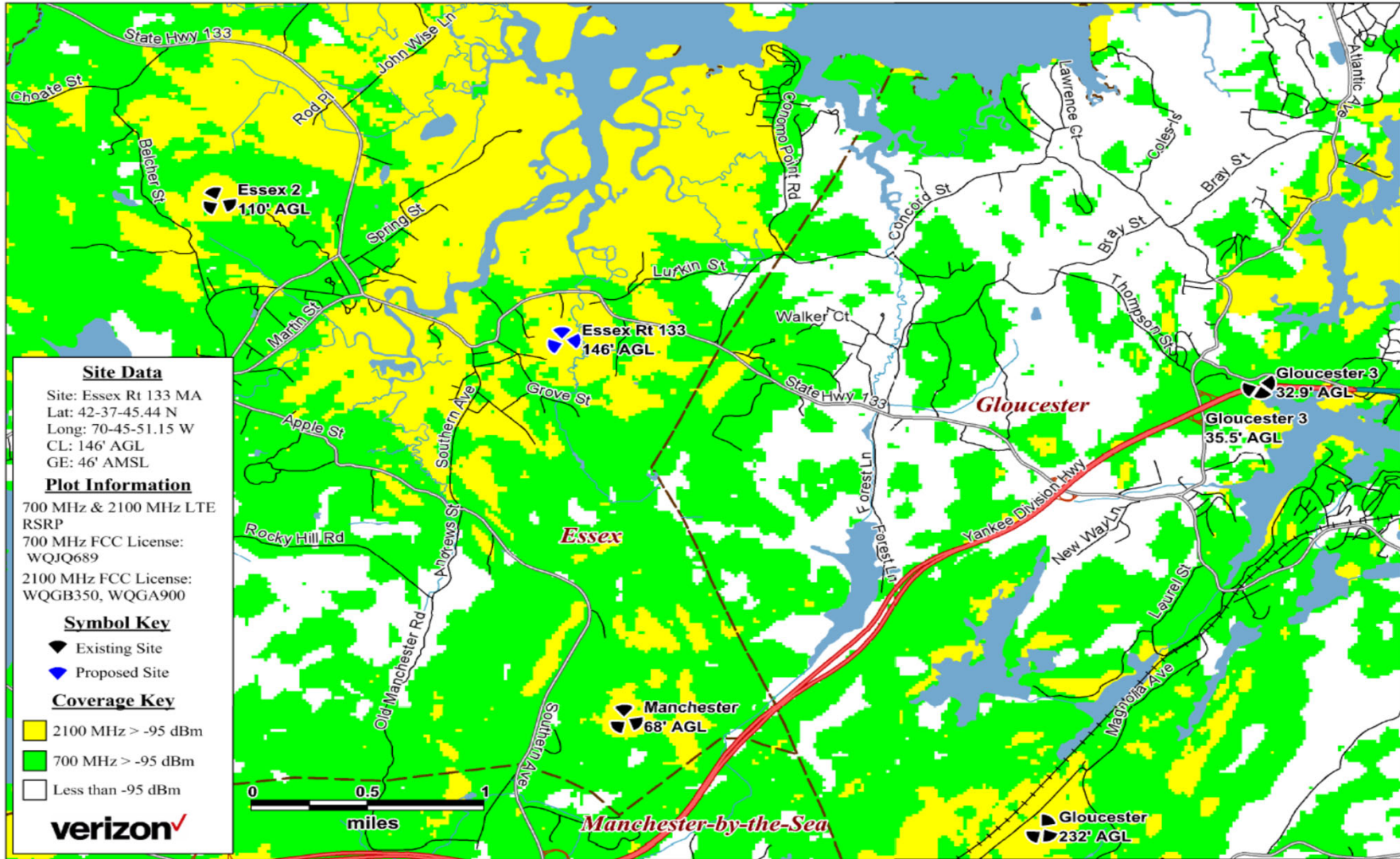
Verizon Wireless RF REPORT

- Verizon Wireless determined that area and town roads including Route 133(Main/Eastern/Essex Avenue), Downtown Essex and the surrounding area do not have reliable wireless service
- Verizon Wireless evaluated the area and determined that the significant coverage gap and network capacity requirements would be addressed by locating its equipment at the 146-foot height on the proposed tower
- Based upon radio frequency studies, reports and computer models, Verizon Wireless would be able to achieve the coverage objective by filling significant gaps in coverage and increased capacity through the installation of the Facility at 73 Eastern Avenue
- To maintain effective, reliable and uninterrupted service, there must be continuance series of site located within close proximity to address network requirements
- Coverage Analysis and Propagation Plots illustrates significant gaps

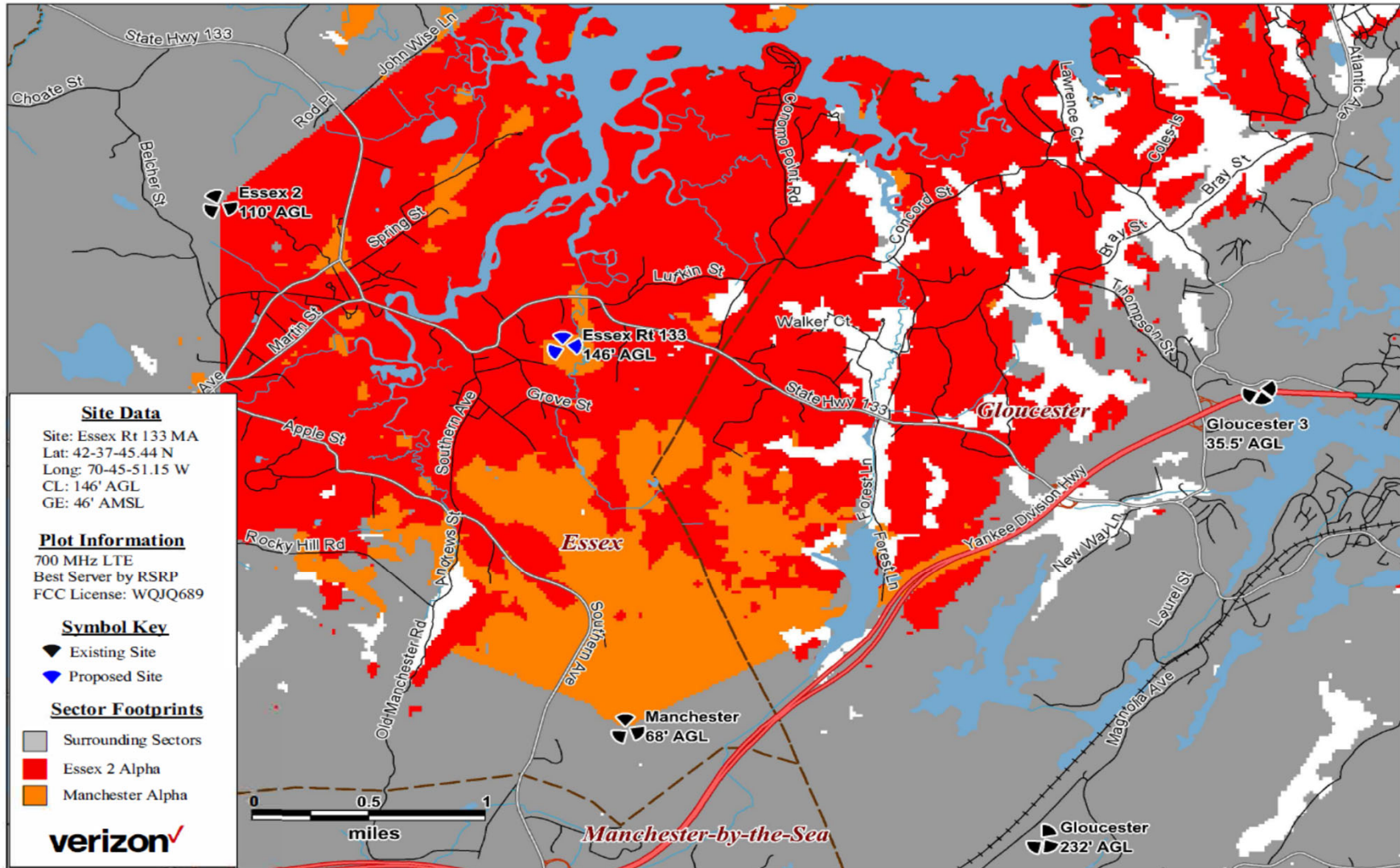
Attachment A:
Essex Rt 133 - Existing/Approved 700 & 2100 MHz LTE Coverage



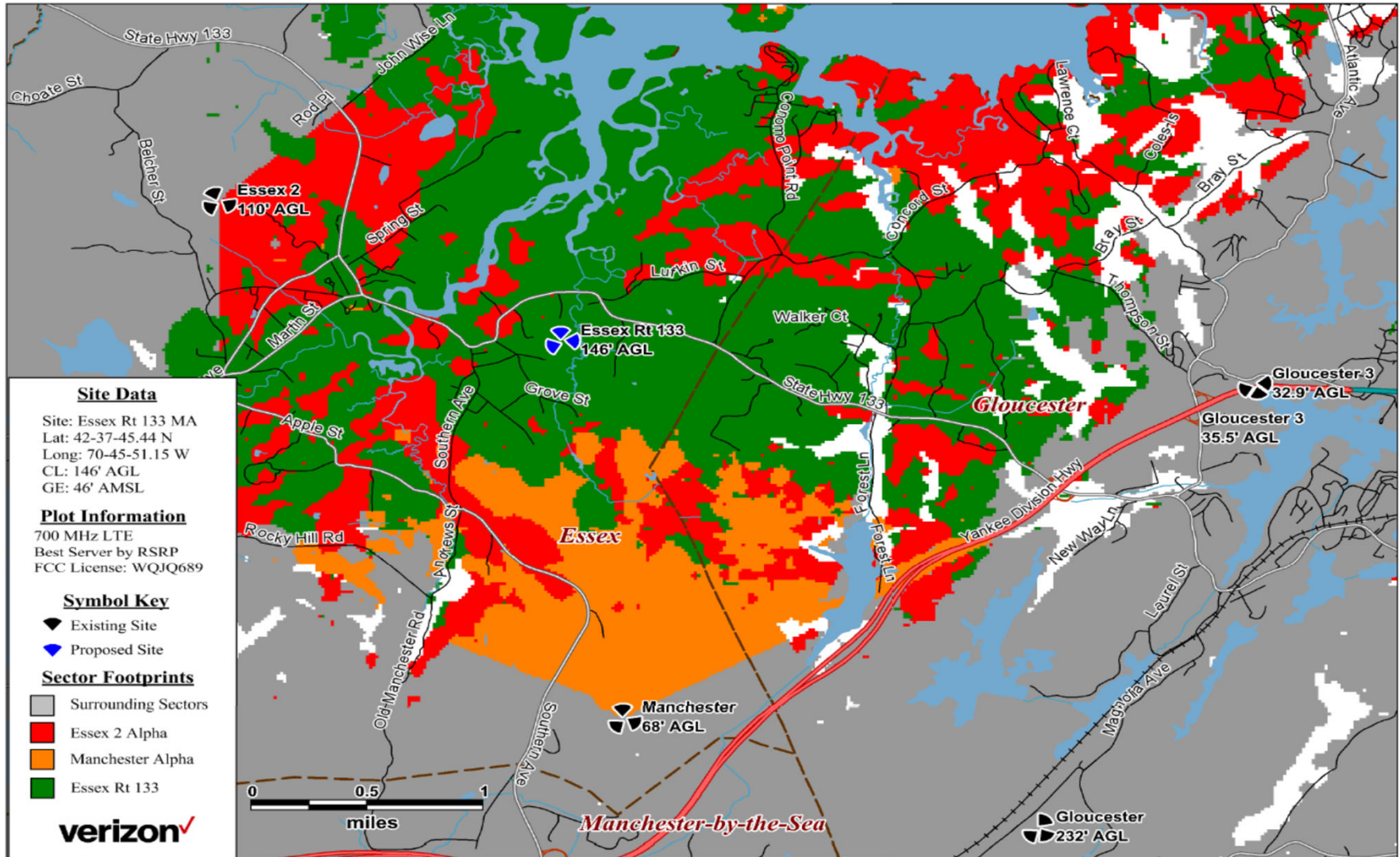
**Attachment B:
Essex Rt 133 - 700 & 2100 MHz LTE Coverage with Proposed Site**



**Attachment C:
Essex Rt 133 - Existing/Approved 700 MHz LTE Sector Footprints**



**Attachment D:
Essex Rt 133 - 700 MHz LTE Sector Footprints with Proposed Site**



Compliance with Regulatory Guidelines for Radio Frequency Exposure

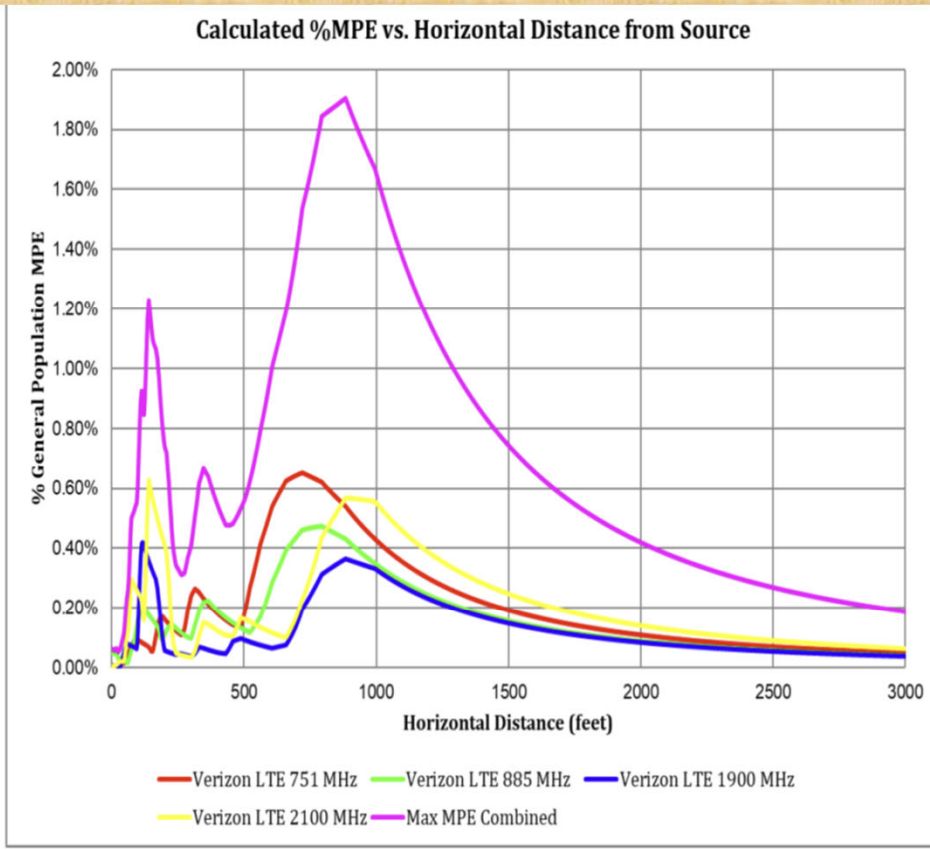


Figure 1: Graph of Percent of MPE vs. Distance

Carrier	Number of Trans.	Power out of Base Station Per Transmitter (Watts)	Antenna Height (Feet)	Distance to the Base of Antennas (Feet)	Power Density (mW/cm ²)	Limit (mW/cm ²)	%MPE
Verizon LTE 1900 MHz	1	160.0	146.0	884	0.003648	1.000	0.36%
Verizon LTE 2100 MHz	1	240.0	146.0	884	0.005679	1.000	0.57%
Verizon LTE 751 MHz	1	160.0	146.0	884	0.002705	0.501	0.54%
Verizon LTE 885 MHz	1	160.0	146.0	884	0.002545	0.590	0.43%
Total							1.90%

Table 2: Maximum Percent of Exposure Values^{3 4 5}

Real Estate Market Study

- Market Study to investigate potential property value impact from wireless towers
- Study prepared following visit to area, review of project materials and research of properties with visibility of a communications tower
- National survey of appraisers
- Based upon actual data, the proposed tower will have no measurable impact on surrounding property values

Responsible Siting

- Proposed Telecommunications Tower sited on large commercially used property to better blend with the area
- Facility will address a significant gap in both coverage and capacity on Verizon Wireless' network and enhance wireless service for its customers
- Facility will accommodate equipment of at least 3 more wireless service providers
- Responsible Siting – Good for the community, good for the customers, good for the industry - A Win-Win-Win!