



OPTASITE TOWERS LLC

TECHNICAL REPORT

PROPOSED MANCHESTER
TOWER FACILITY

MANCHESTER, CONNECTICUT

Optasite Towers LLC
One Research Drive
Suite 200C
Westborough, MA 01581

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Introduction

Optasite Towers LLC (“Optasite”) hereby submits this Technical Report to the City of Manchester pursuant to Section 16-50I of the Connecticut General Statutes. Optasite proposes to install a wireless telecommunications facility (the “Facility”) on an approximately 23.4 acre parcel owned by Alan C. Rossetto. The Facility is being proposed to allow Omnipoint Communications, Inc. (“T-Mobile”) as well as other federally licensed wireless carriers to provide enhanced service in this area of the City. The purpose of this Technical Report is to provide the City of Manchester with information concerning the need for the proposed Facility (Section 1), the site selection process (Section 2), the Facility design and any environmental effects associated with the proposed Facility (Section 3).

SECTION 1

Site Justification

This Section provides information regarding the identification of the specific need for the proposed Facility.

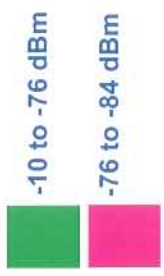
The Manchester site is necessary to increase wireless service availability in the eastern section of Manchester and particularly along and surrounding Route 6 and Route 44.

Included herein are propagation plots prepared by T-Mobile that depict (1) coverage from existing and approved surrounding sites; (2) predicted coverage from the proposed site with antennas mounted at 107' above grade level ("AGL"); and (3) coverage from the proposed site with existing and approved sites.

Together, these propagation plots clearly demonstrate the need for a site in the area and the effectiveness of the proposed site in meeting the need for enhanced service in Manchester.

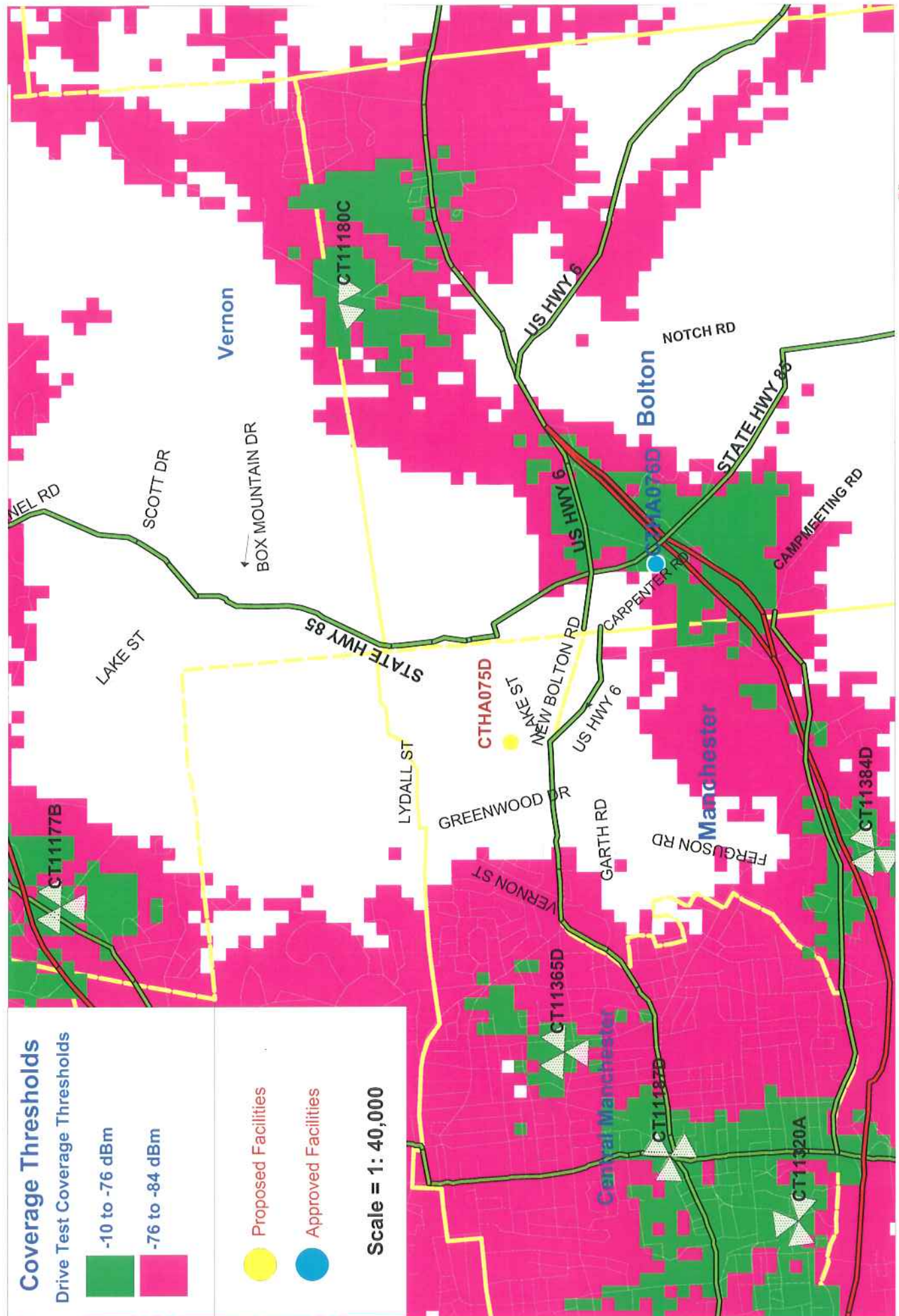
Coverage Thresholds

Drive Test Coverage Thresholds



- Proposed Facilities
- Approved Facilities

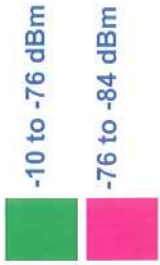
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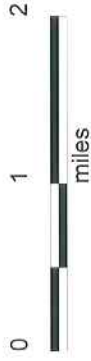
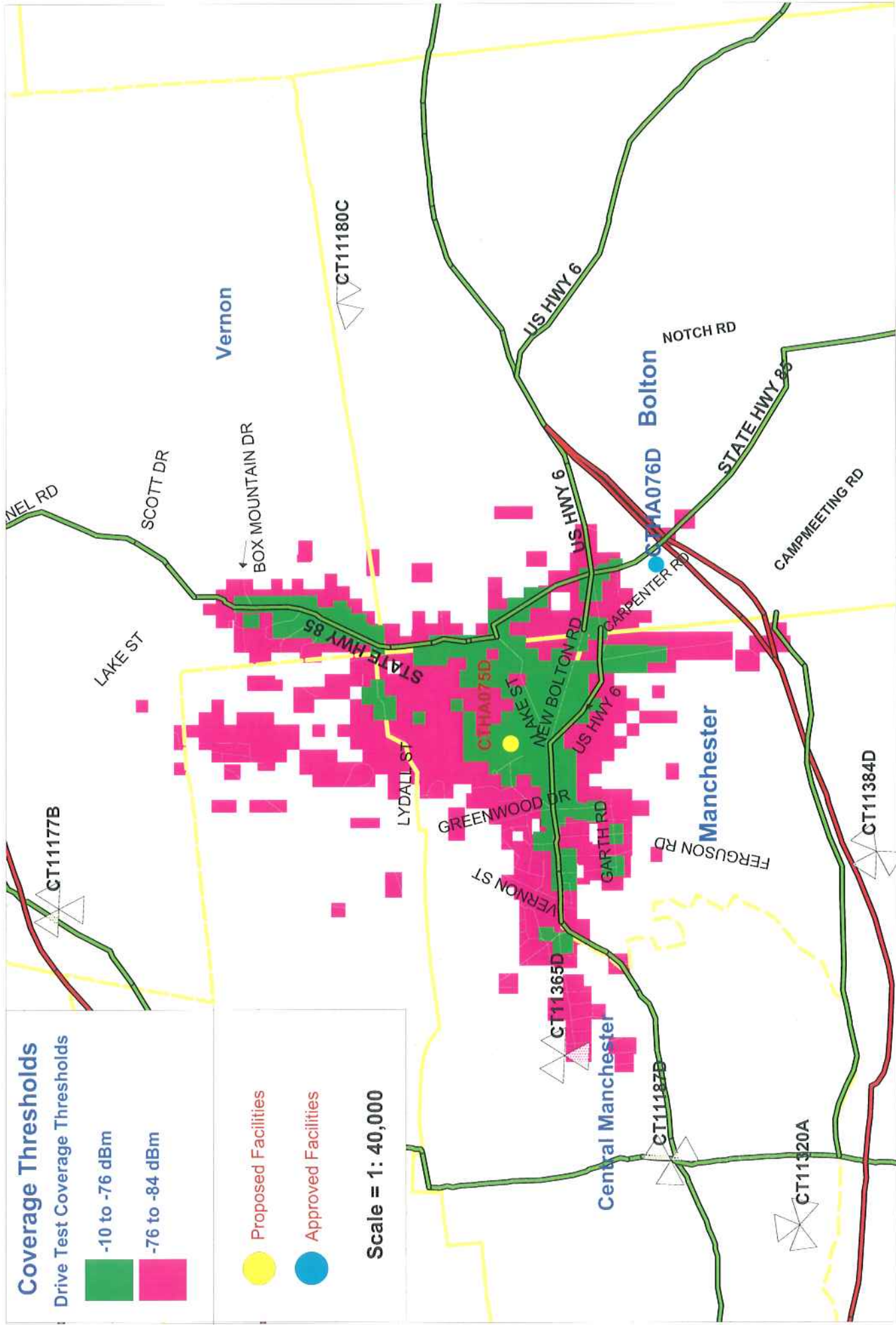
Existing T-Mobile On Air Coverage

Coverage Thresholds

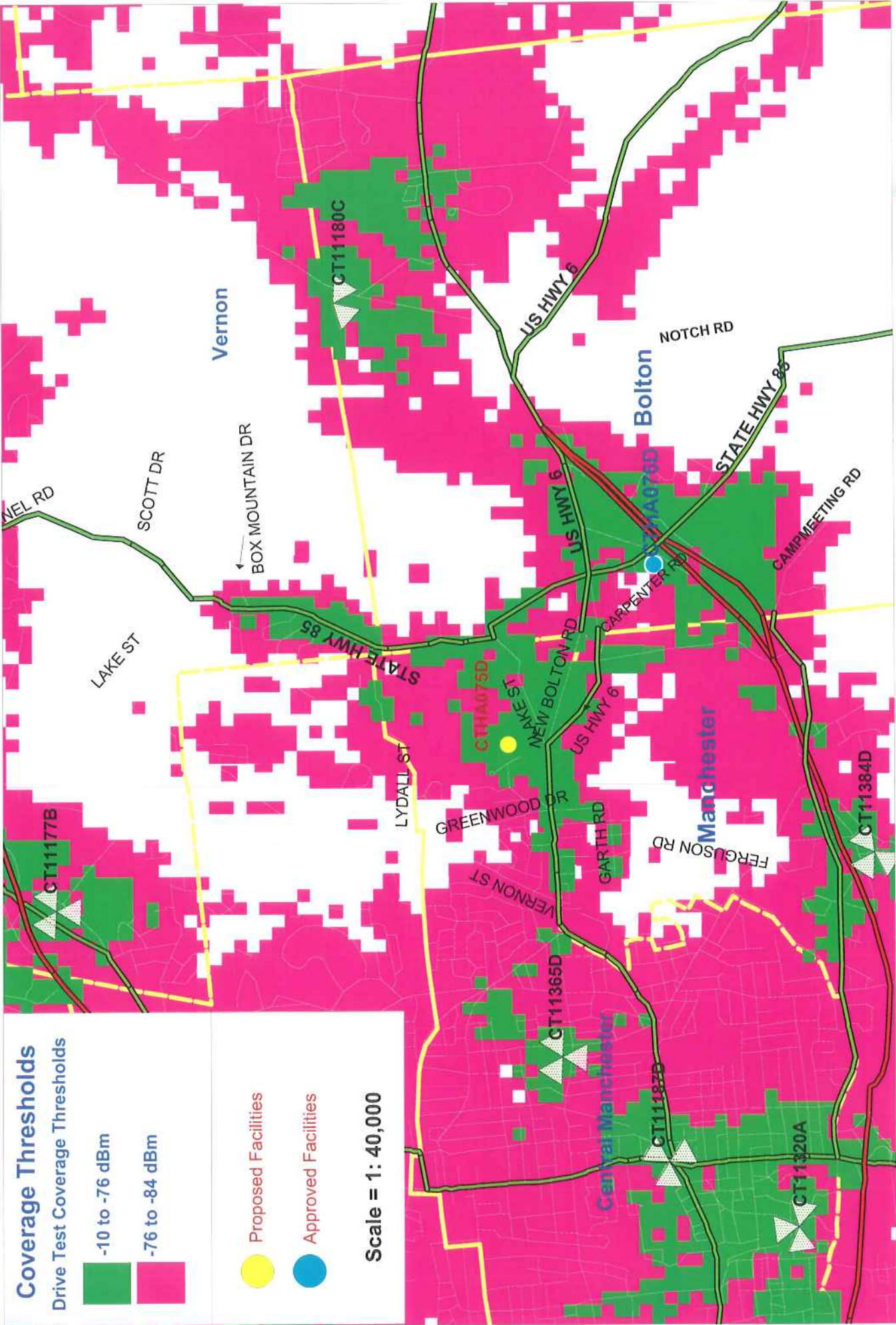
Drive Test Coverage Thresholds



Scale = 1: 40,000



T-Mobile Proposed CTHA075D @ 107'



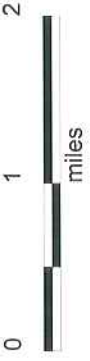
Coverage Thresholds

Drive Test Coverage Thresholds

- 10 to -76 dBm
- 76 to -84 dBm

- Proposed Facilities
- Approved Facilities

Scale = 1: 40,000



Existing T-Mobile On Air Coverage With CTHA075D @ 107'

SECTION 2

Site Search Process and Selection

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

As a tower developer, Optasite bases its decision to seek out a site in an area on its knowledge and understanding of existing weaknesses in the systems of the several wireless carriers operating in the area and/or consultation with individual carriers. A target area is chosen central to the area in which the coverage and/or capacity needs have been identified. The area targeted is the geographical location where the installation of a site would, based on general radio frequency engineering and system design standards, be likely to address the identified problem. Optasite’s goal is to locate sites that will provide for orderly integration into the existing wireless systems of multiple carriers. In this case, T-Mobile had previously initiated a search for a site in this area and identified the proposed location. Subsequently, T-Mobile agreed to pursue development of a site through Optasite.

Optasite is sensitive to State and local desires to minimize the construction of new towers, and does not initiate searches in areas with known acceptable structures. In the area of Manchester that is the subject of this site search, there are no existing towers, transmission line structures or other suitable structures with the exception of a nearby water tower that the Town of Manchester has indicated would not be acceptable for co-location. Any existing towers are too far from the target area to provide coverage specifically to the target area. This includes a tower located at 12 Carpenter Road in Bolton that was recently approved by the Connecticut Siting Council. As discussed at length during those proceedings (Docket 323), T-Mobile will locate equipment on the 12 Carpenter Road, Bolton Facility and, in addition, will still require an additional site in this area of Manchester to provide adequate coverage to the Route 6/Route 44 area.

In general, Optasite first studies the area to determine whether industrial or commercial areas or areas which have appropriate environmental and land use characteristics are present. Potential locations are studied by radio frequency engineers to determine whether the locations will meet the technical requirements for a site in the area. The list of potential locations is further refined based on the willingness of property owners to make their property available. Analysis of potential environmental effects and benefits may further narrow the alternatives. In each site search, the weight afforded to relevant factors may vary depending on the nature of the area and the availability of potential sites.

There are no large areas of commercial or industrial use in or next to the target area. The surrounding area is generally residential. In addition, there are several churches in the surrounding area.

Optasite investigated numerous properties in the area of the Rossetto Property at 93 Lake Street. Optasite investigated several parcels of land owned by the Town of Manchester. These included parcels located at 1052 Middle Turnpike East, 550 Lydall Street, 199 New Bolton Road and 226 Lake Street. All four of these properties are used in connection with the Lydall Street Reservoir, have land use restrictions in place and therefore cannot be utilized for a tower. Optasite also investigated property located at 784 Middle Turnpike East owned by Rieg Realty LLC. This property is located directly next to a subdivision and provides little to no natural screening. Property investigated at 990 Middle Turnpike East is part of this subdivision and, again, is in close proximity to residences and would provide little natural screening. Finally, Optasite investigated property located at 175 New Bolton Road owned by Capstone Builders, Inc. The developer who owns that property is seeking to develop that property and therefore was not interested in developing a tower on that property.

Further, on or about January 18, 2007, Optasite submitted an application for the construction of a proposed Facility at 1027 Middle Turnpike East in Manchester. That application is Docket 328, pending with the Connecticut Siting Council. Based upon concerns raised by Manchester residents and elected officials with the siting of the 1027 Middle Turnpike East Facility, Optasite continued to search for a site in this area of Manchester. As a result of that search, Optasite has entered into a lease for the Rossetto property at 93 Lake Street in Manchester.

The Rossetto Property is far superior to the other properties available in the area, including the 1027 Middle Turnpike East property. The Rossetto Property is 23.4 acres in size, significantly larger than other tracts in the area. The Rossetto Property is larger undeveloped and contains mature vegetation and therefore will significantly reduce any potential visual impact of the proposed Facility. Finally, due to the ground elevation and topography, the proposed Facility will be 20 feet lower than required at the 1027 Middle Turnpike East location in order to for T-Mobile to provide adequate coverage to the Route 6/Route 44 area, thereby significantly reducing the visual and environmental impact to this area of Manchester. This Site will replace the 1027 Middle Turnpike East site for the pending docket, Docket 328.

SECTION 3

PROPOSED SITE

**93 Lake Street
Manchester, Connecticut**

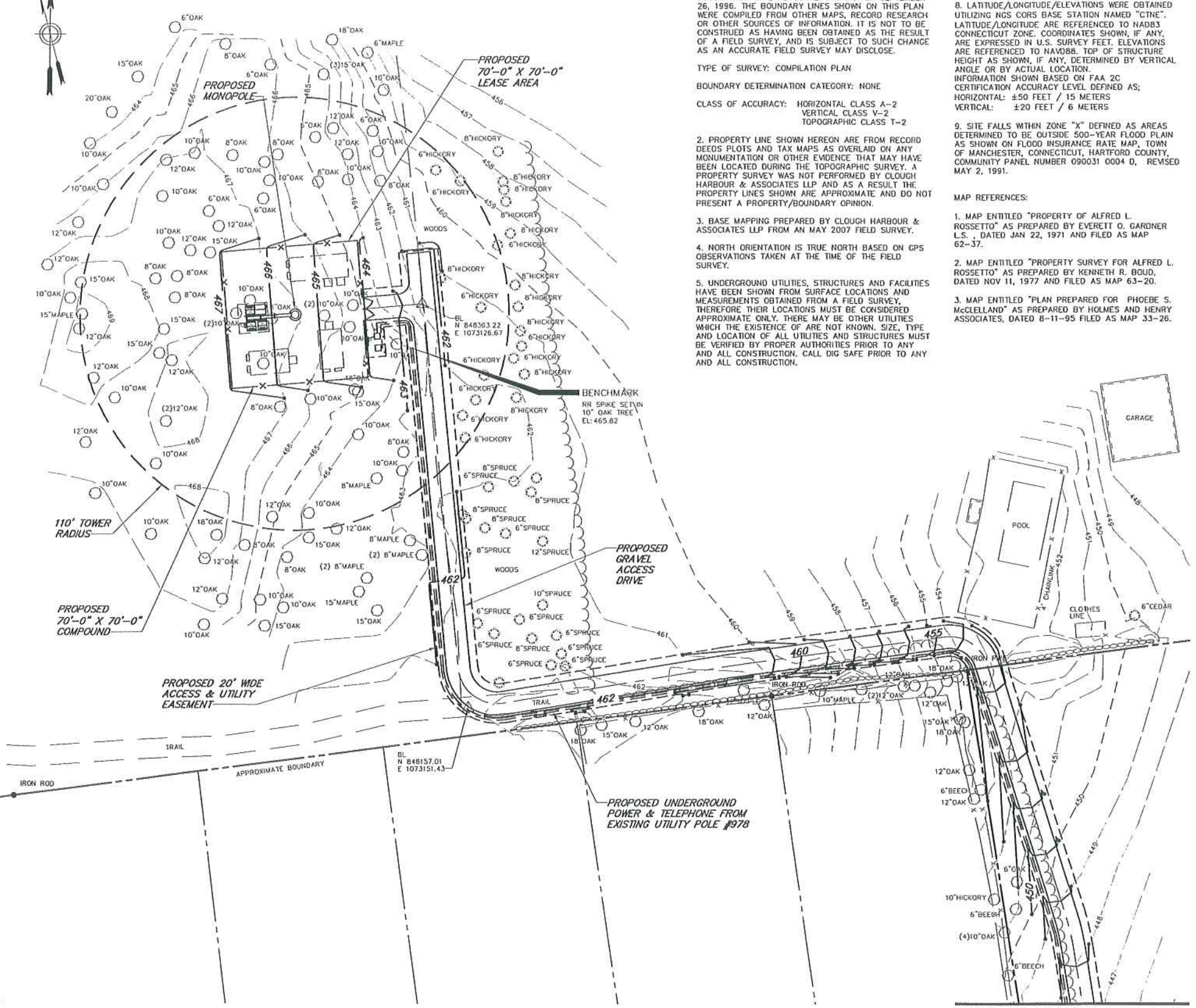
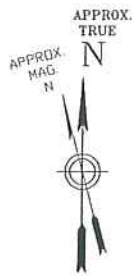
Land of
Alan C. Rossetto

Assessor's Map 135, Block 3330, Lot 93A

23.4 Acres

GENERAL FACILITY DESCRIPTION

The proposed Manchester site is a 70' x 70' leased area located in the west central portion of an approximately 23.4 acre parcel at 93 Lake Street in Manchester ("Site"). The Site would consist of a 110-foot self-supporting stealth tower and a 70' x 70' site compound designed to accommodate the related equipment either in single-story equipment buildings or on concrete pads. The tower would accommodate four sets of antennas. Initially, antennas and related equipment for T-Mobile's use would be installed. The tower and equipment buildings would be enclosed by an 8-foot high security fence and gate. Vehicle access to the Site would extend from Lake Street along a new, gravel driveway. Of note, the access will cross a second parcel, also owned by Alan Rossetto that immediately abuts Lake Street. Underground utility connections would extend from existing service on Lake Street.



1 SITE ACCESS MAP - NORTH SECTION
 SCALE: 1" = 30' FULL SIZE
 1" = 60' 11 X 17
 0 30 60
 SCALE IN FEET

SURVEY NOTES:

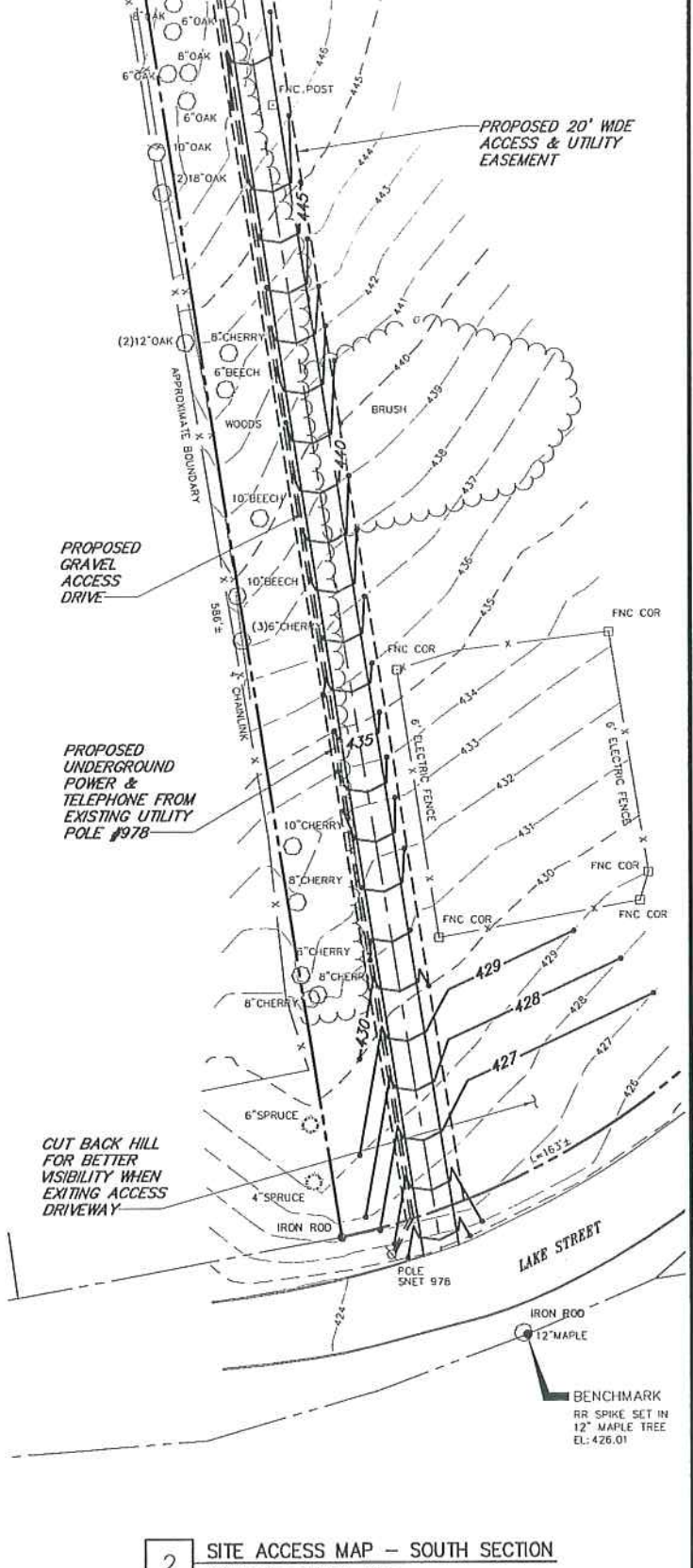
- THIS SURVEY HAS BEEN PREPARED PURSUANT TO THE REGULATIONS OF CONNECTICUT STATE AGENCIES SECTIONS 20-300b-1 THROUGH 20-300b-20 AND THE "STANDARDS FOR SURVEYS AND MAPS IN THE STATE OF CONNECTICUT" AS ADOPTED BY THE CONNECTICUT ASSOCIATION OF LAND SURVEYORS INC. ON SEPTEMBER 26, 1998. THE BOUNDARY LINES SHOWN ON THIS PLAN WERE COMPILED FROM OTHER MAPS, RECORD RESEARCH OR OTHER SOURCES OF INFORMATION. IT IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD SURVEY, AND IS SUBJECT TO SUCH CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE.
- PROPERTY LINE SHOWN HEREON ARE FROM RECORD DEEDS PLOTS AND TAX MAPS AS OVERLAIN ON ANY MONUMENTATION OR OTHER EVIDENCE THAT MAY HAVE BEEN LOCATED DURING THE TOPOGRAPHIC SURVEY. A PROPERTY SURVEY WAS NOT PERFORMED BY CLOUGH HARBOUR & ASSOCIATES LLP AND AS A RESULT THE PROPERTY LINES SHOWN ARE APPROXIMATE AND DO NOT PRESENT A PROPERTY/BOUNDARY OPINION.
- BASE MAPPING PREPARED BY CLOUGH HARBOUR & ASSOCIATES LLP FROM AN MAY 2007 FIELD SURVEY.
- NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY.
- UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES HAVE BEEN SHOWN FROM SURFACE LOCATIONS AND MEASUREMENTS OBTAINED FROM A FIELD SURVEY. THEREFORE THEIR LOCATIONS MUST BE CONSIDERED APPROXIMATE ONLY. THERE MAY BE OTHER UTILITIES WHICH THE EXISTENCE OF ARE NOT KNOWN. SIZE, TYPE AND LOCATION OF ALL UTILITIES AND STRUCTURES MUST BE VERIFIED BY PROPER AUTHORITIES PRIOR TO ANY AND ALL CONSTRUCTION. CALL DIG SAFE PRIOR TO ANY AND ALL CONSTRUCTION.
- SUBJECT TO ANY STATEMENT OF FACTS THAT AN UP-TO-DATE ABSTRACT OF TITLE WOULD DISCLOSE.
- SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.
- LATITUDE/LONGITUDE/ELEVATIONS WERE OBTAINED UTILIZING NGS CORRS BASE STATION NAMED "CTNE". LATITUDE/LONGITUDE ARE REFERENCED TO NAD83 CONNECTICUT ZONE. COORDINATES SHOWN, IF ANY, ARE EXPRESSED IN U.S. SURVEY FEET. ELEVATIONS ARE REFERENCED TO NAVD88. TOP OF STRUCTURE HEIGHT AS SHOWN, IF ANY, DETERMINED BY VERTICAL ANGLE OR BY ACTUAL LOCATION. INFORMATION SHOWN BASED ON FAA 2C CERTIFICATION ACCURACY LEVEL DEFINED AS: HORIZONTAL: ±50 FEET / 15 METERS VERTICAL: ±20 FEET / 6 METERS
- SITE FALLS WITHIN ZONE "X" DEFINED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP, TOWN OF MANCHESTER, CONNECTICUT, HARTFORD COUNTY, COMMUNITY PANEL NUMBER 090031 0004 D, REVISED MAY 2, 1991.

TYPE OF SURVEY: COMPILATION PLAN
 BOUNDARY DETERMINATION CATEGORY: NONE
 CLASS OF ACCURACY: HORIZONTAL CLASS A-2
 VERTICAL CLASS V-2
 TOPOGRAPHIC CLASS T-2

MAP REFERENCES:

- MAP ENTITLED "PROPERTY OF ALFRED L. ROSSETTO" AS PREPARED BY EVERETT O. GARDNER L.S., DATED JAN 22, 1971 AND FILED AS MAP 62-37.
- MAP ENTITLED "PROPERTY SURVEY FOR ALFRED L. ROSSETTO" AS PREPARED BY KENNETH R. BOUD, DATED NOV 11, 1977 AND FILED AS MAP 63-20.
- MAP ENTITLED "PLAN PREPARED FOR PHOEBE S. McCLELLAND" AS PREPARED BY HOLMES AND HENRY ASSOCIATES, DATED 8-11-95 FILED AS MAP 33-26.

MATCH LINE-SEE PLAN 1 THIS SHEET



2 SITE ACCESS MAP - SOUTH SECTION
 SCALE: 1" = 30' FULL SIZE
 1" = 60' 11 X 17
 0 30 60
 SCALE IN FEET

Optasite
 OPTASITE TOWERS LLC
 1 RESEARCH DRIVE, SUITE 200C
 WESTBOROUGH, MA 01581

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 CLOUGH HARBOUR & ASSOCIATES LLP
 2139 Silas Deane Highway, Suite 212 • Rocky Hill, CT 06067-2336
 Main: (860) 257-4557 • www.cloughharbour.com
 CHA PROJECT NO:
 15363 - 1025 - 1601

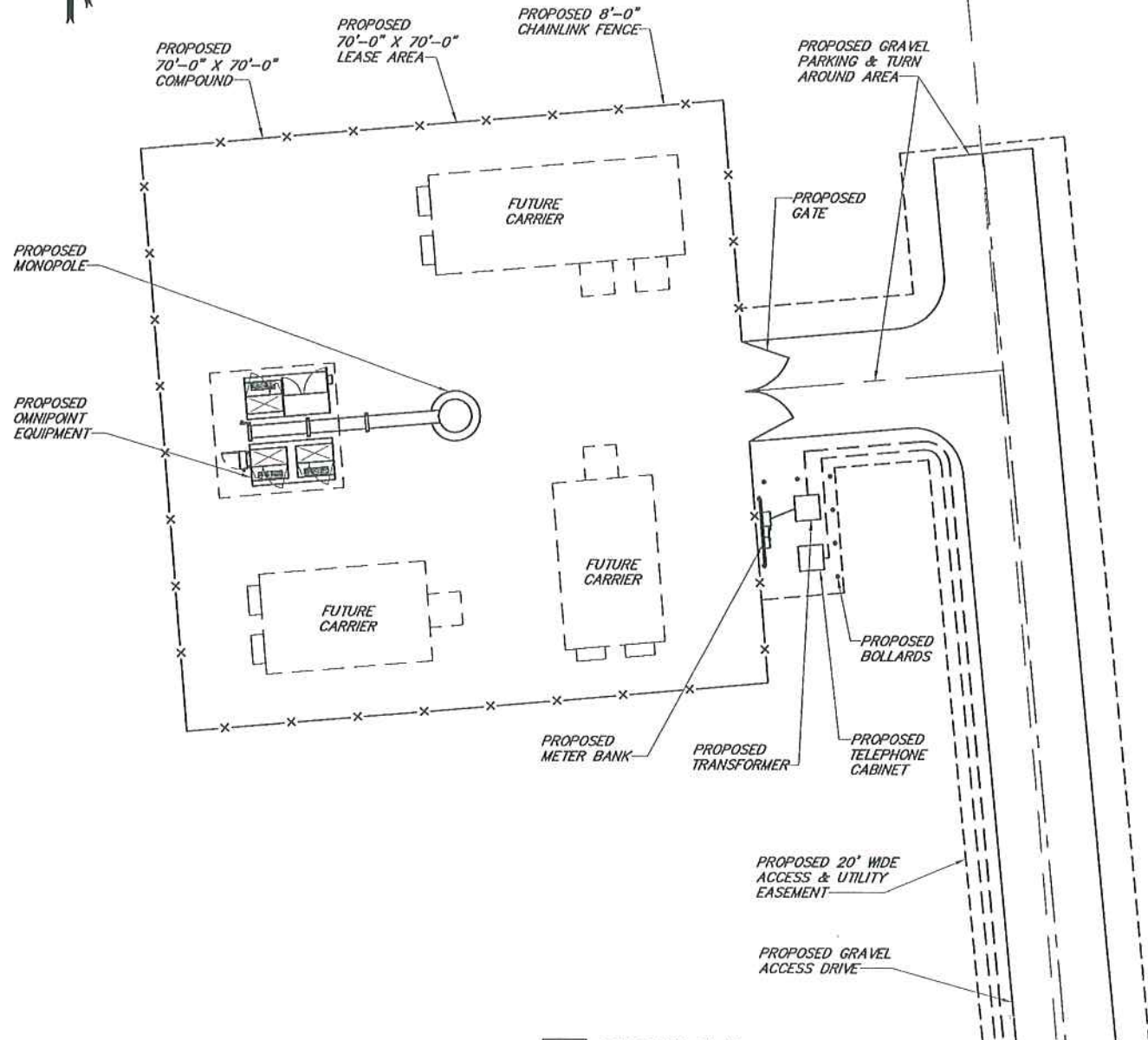
NO.	DATE	SUBMITTAL
0	06/15/07	ISSUED FOR REVIEW
	BY: PAL	CHK: PAL APP'D: JPS
1	06/25/07	CHANGED TOWER HEIGHT
	BY: PAL	CHK: PAL APP'D: JPS

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

SITE ID:
 CT-999-0074
 SITE NAME:
 MANCHESTER
 SITE ADDRESS:
 93 LAKE STREET
 MANCHESTER, CT
 06042
 HARTFORD COUNTY

SHEET TITLE
 SITE ACCESS MAP

SHEET NUMBER
 A02



1 COMPOUND PLAN
 SCALE: 1" = 20'
 0 10 20
 SCALE IN FEET

BASEMAP NOTES:
 1. BASEMAP INFORMATION OBTAINED FROM A SURVEY PERFORMED BY CLOUGH HARBOUR & ASSOCIATES LLP IN MAY 2007.

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CHA PROJ. NO. - 15363-1025

OPTASITE TOWERS LLC
 1 RESEARCH DRIVE, SUITE 200C
 WESTBOROUGH, MA 01581

SITE ID:
 CT-999-0074
 SITE NAME:
 MANCHESTER
 SITE ADDRESS:
 93 LAKE STREET
 MANCHESTER, CT 06042
 HARTFORD COUNTY

SHEET TITLE: COMPOUND PLAN
DATE: 06/15/07
REVISION: 0

SITE EVALUATION REPORT

I. LOCATION

- A. COORDINATES: Lat. 41°-47'-20.7" Long. 72°-28'-55.5"
- B. GROUND ELEVATION: 466' AMSL
- C. USGS MAP: MANCHESTER, ROCKVILLE, CT
- D. SITE ADDRESS: 93 Lake Street, Manchester, CT
- E. ZONING WITHIN ¼ MILE OF SITE: Residential and Commercial

II. DESCRIPTION

- A. SITE SIZE: 70' x 70'
LESSOR'S PARCEL: 23.4+ acres
- B. TOWER TYPE/HEIGHT: Monopole/110' AGL
- C. SITE TOPOGRAPHY AND SURFACE: The site location is relatively flat. The proposed site is located in the west-central portion of the parcel.
- D. SURROUNDING TERRAIN, VEGETATION, WETLANDS, OR WATER: The lessor's parcel is developed with a single family residence and the remaining acreage is undeveloped. There is no wetlands on the Property.
- E. LAND USE WITHIN ¼ MILE OF SITE: Mixed residential and commercial uses.

III. FACILITIES

- A. POWER COMPANY: Connecticut Light and Power
- B. POWER PROXIMITY TO SITE: Power is available from a distribution line that runs along New Bolton Road to a point on the property near the proposed site
- C. TELEPHONE COMPANY: AT&T
- D. PHONE SERVICE PROXIMITY: Same as power.

- E. VEHICLE ACCESS TO SITE: Vehicular access to the Site would utilize a new gravel access drive to the Site from Lake Street a distance of approximately 1,133 feet.
- F. OBSTRUCTION: None
- G. CLEARING AND FILL REQUIRED: Minimal clearing and grading would be required for development of the access drive and the site compound. Approximately ten (10) trees 6" in diameter or greater would be removed for construction of the proposed access drive and Site. Detailed plans would be provided to the Connecticut Siting Council in a Development and Management Plan after Council approval of the proposed Facility.

IV. LEGAL

- A. PURCHASE [] LEASE [X]
- B. OWNER: Alan C. Rossetto
- C. ADDRESS: 93 Lake Street, Manchester, Connecticut 06042; 36 Winter Street, Lancaster, New Hampshire 03584
- D. DEED ON FILE AT: City of Manchester
Vol. 739, page 048

FACILITIES AND EQUIPMENT SPECIFICATION
(NEW TOWER & EQUIPMENT)

I. TOWER SPECIFICATIONS:

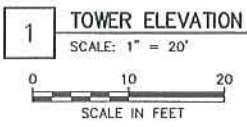
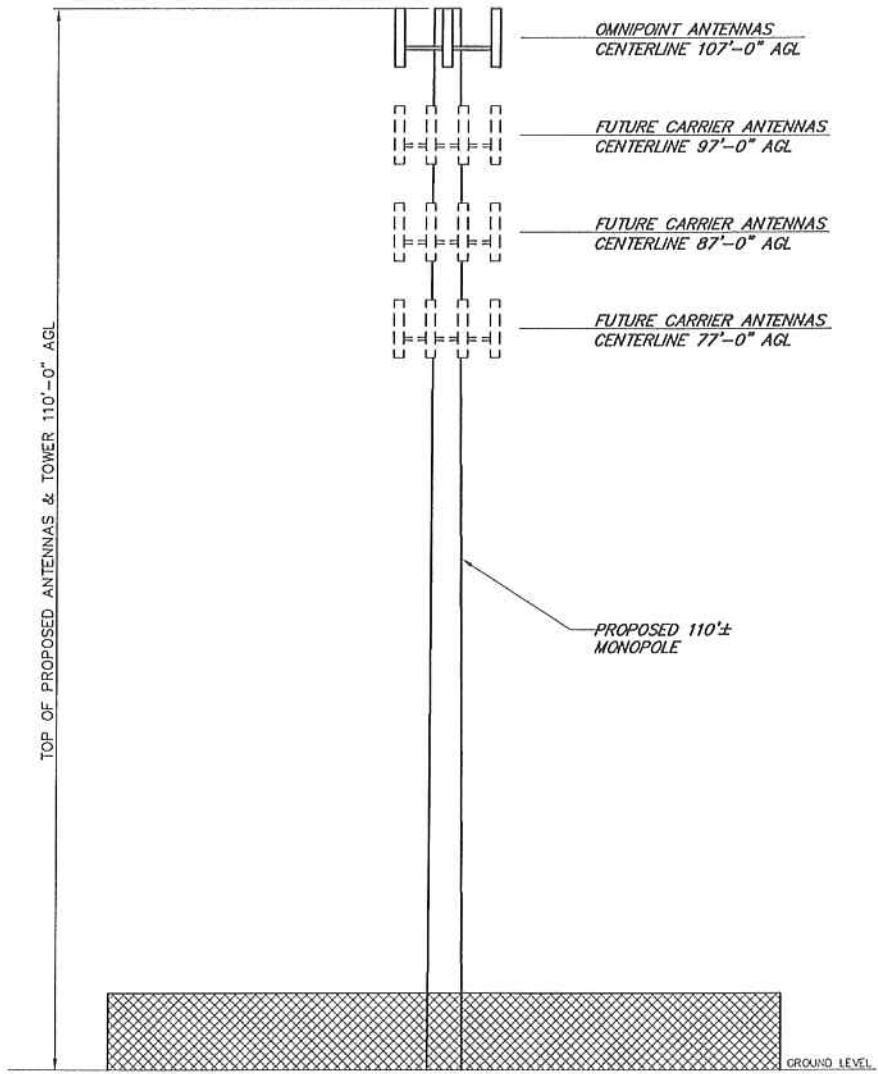
- A. MANUFACTURER: TBD
- B. TYPE: Monopole
- C. HEIGHT: 110'
- D. DIMENSIONS: Approx. 4 ½' diameter at base
 Approx. 1 ½' diameter at top

II. TOWER LOADING:

- A. T-Mobile
 1. MODEL: up to 9 panel antennas, model TBD
 2. DIMENSIONS: Approximately 6' in length
 3. POSITION ON TOWER: Antenna centerline of 107' AGL on stealth-mounted
 4. TRANSMISSION LINES: up to 18 internal to the monopole
- B. Future Carriers - TBD

III. ENGINEERING ANALYSIS AND CERTIFICATION:

In accordance with the 2005 Connecticut State Building Code and the Electronic Industries Association Standard EIA/TIA-222-F "Structural Standards for Steel Antenna Towers and Antenna Support Structures" for Manchester (Hartford County), the tower would be designed to withstand pressures equivalent to a 105 MPH wind. The foundation design would be based on soil conditions at the site.



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CHA PROJ. NO. - 15363-1025

Optasite
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1 RESEARCH DRIVE, SUITE 200C
WESTBOROUGH, MA 01581

SITE ID:
CT-999-0074
SITE NAME:
MANCHESTER
SITE ADDRESS:
93 LAKE STREET
MANCHESTER, CT 06042
HARTFORD COUNTY

SHEET TITLE:
TOWER ELEVATION

DATE:
06/25/07

REVISION:
1

ENVIRONMENTAL ASSESSMENT STATEMENT

I. PHYSICAL IMPACT

A. WATER FLOW AND QUALITY

No water flow and/or water quality changes are anticipated as a result of the construction or operation of the cell site. A small wetland area is located near the proposed site. The equipment used will discharge no pollutants to wetland and watercourse areas or to area groundwater. Best management practices will be used during construction to control storm water and erosion.

B. AIR QUALITY

Under ordinary operating conditions, the equipment that would be used at this proposed cell site would emit no air pollutants of any kind. For limited periods during power outages, T-Mobile may bring to the site and utilize a back-up generator.

C. LAND

Minimal clearing and grading would be required for development of the access drive and the site compound. Approximately 10 trees 6" in diameter or greater will be removed for the proposed construction. The remaining land of the lessor would remain unchanged by the construction and operation of the cell site.

D. NOISE

The equipment to be in operation at the proposed site after construction would emit no noise other than the installed heating, air conditioning and ventilation systems. A generator would be employed during power outages and would run for a brief period once a week. Some noise is anticipated during cell site construction, which is expected to take approximately four to six weeks.

E. POWER DENSITY

The worst-case calculation of power density for operation of T-Mobile's operations at the facility would be approximately 4.5668 % of the applicable FCC/ANSI standards.

F. VISIBILITY

The potential visibility of the proposed monopole was assessed within an approximate two-mile radius using a computer-based, predictive viewshed model (attached). As shown, scattered areas of visibility would be experienced, primarily in the area within a ½ mile radius of the site and, more particularly, to the north/northwest of the site. Of those areas, most would experience only seasonal or partial visibility of the proposed facility. In total, as shown, the proposed Facility will be partially visible year-round from approximately 40 acres.

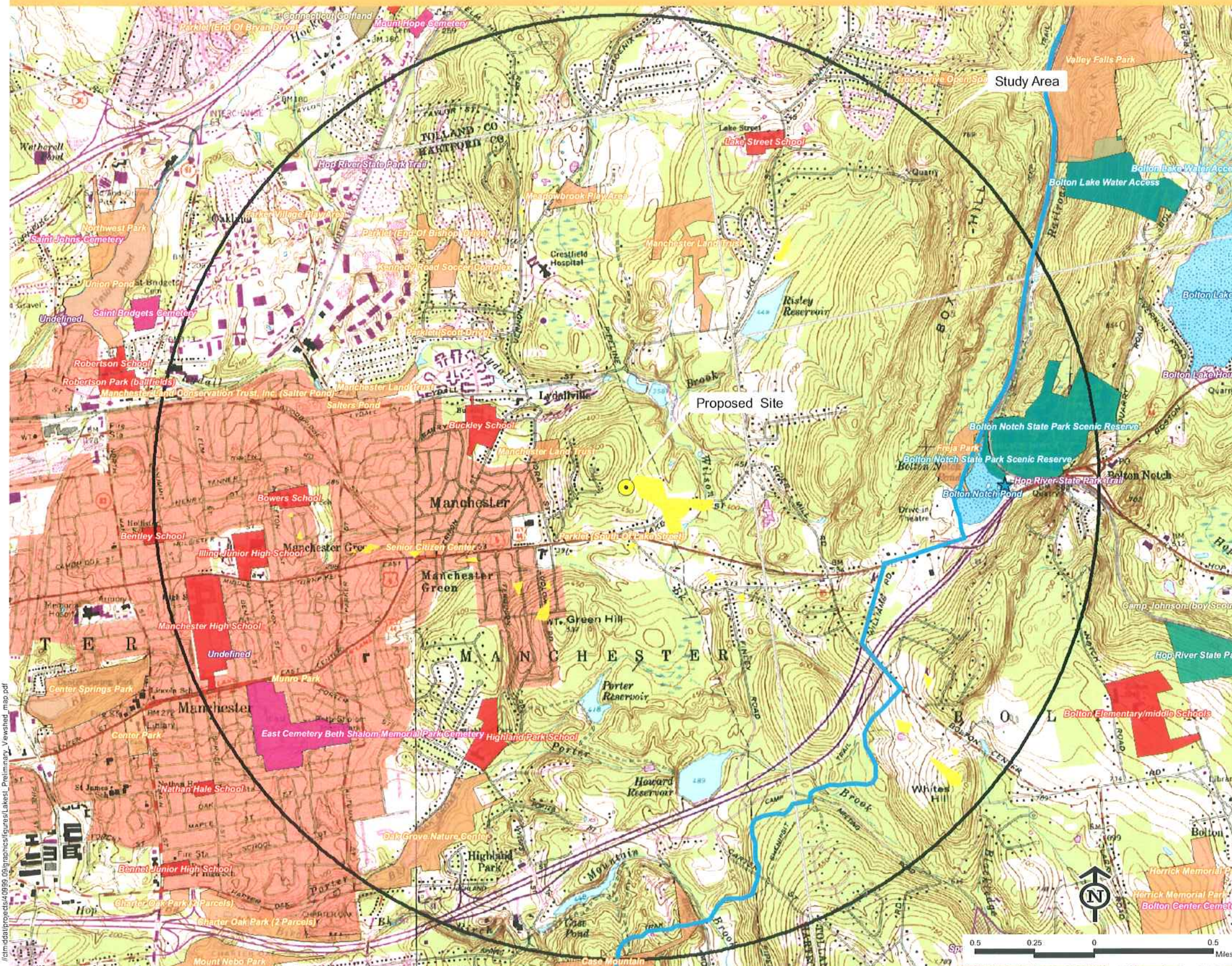
II. SCENIC, NATURAL, HISTORIC & RECREATIONAL VALUES

The parcel on which the site is located appears to exhibit no scenic, natural or recreational characteristics that would be affected by the proposed site. Review under the National Environmental Policy Act, including the Connecticut Department of Environmental Protection Natural Diversity Data Base and the State Historic Preservation Officer, is pending.

Preliminary Viewshed Map

Topography and Forest Cover as Constraints

Town of
Manchester
Connecticut



Proposed Optasite Facility 93 Lake Street Manchester, Connecticut

NOTE:

- Viewshed analysis conducted using ESRI's Spatial Analyst.
- Proposed Facility height is 110 feet.
- Existing tree canopy height estimated at 65 feet.

DATA SOURCES:

- National Elevation Dataset (NED) with a resolution of one arc-second (approximately 30 meters) produced by the USGS, 1925 - 1999
- Forest areas derived from 2005 digital orthophotos with 2-meter pixel resolution; digitized by VHB, 2007
- Base map comprised of Manchester and Rockville USGS Quadrangle Maps
- Protected properties data layer provided CTDEP; May, 2007
- Scenic Roads layer derived from available State and Local listings.

Map Compiled June, 2007

Legend

- Proposed Monopole Location (Includes select areas of visibility approximately 500 feet around facility)
- Anticipated Year-Round Visibility (Approximately 40 Acres)
- Protected Properties (Municipal)
 - Cemetery
 - Preservation
 - Conservation
 - Existing Preserved Open Space
 - Recreation
 - General Recreation
 - School
 - Uncategorized
- Protected Properties (CT DEP)
 - State Forest
 - State Park
 - DEP Owned Waterbody
 - State Park Scenic Reserve
 - Historic Preserve
 - Natural Area Preserve
 - Fish Hatchery
 - Flood Control
 - Other
 - State Park Trail
 - Water Access
 - Wildlife Area
 - Wildlife Sanctuary
- DEP Boat Launches
- Scenic Road (State and Local)
- Shenipsit Trail (CT Blue Blaze)
- Town Line
- Protected Properties (Federal)

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