# FCC Rule 1.1307 NEPA Investigation

# Norwich
# 39 Maennercher Avenue
# Taftville, Connecticut

*Prepared for:*
Optasite Towers, LLC
One Research Drive Suite 201
Westborough, MA, 01581

February 21, 2008

KLEINFELDER
99 Lamberton Road, Suite 201 Windsor, CT 06095 (860) 683-4200 (860) 683-4206 fax www.kleinfelder.com

KLEINFELDER
EXPECT MORE®

**FCC NEPA CHECKLIST**
(47 CFR Subpart1, Chapter 1 Sections 1.1301-1.1319)

| | |
|---|---|
| **Client: Optasite Towers,LLC** | **Site Name: Optasite Norwich** |
| **Location: 39 Maennercher Avenue, Taftville CT** | **KA Project No: 88654** |

| Category | NEPA Special Interest Item | Potential Effect | |
|---|---|---|---|
| | | Yes | No |
| 1 | **Wilderness Areas**<br>Is the antenna structure located in an officially designated wilderness area? | | X |
| 2 | **Wildlife Preserves**<br>Is the antenna structure located in an officially designated wildlife preserve? | | X |
| 3a | **Threatened and Endangered Species**<br>Will the antenna structure likely affect threatened or endangered species or designated critical habitats? | | X |
| 3b | **Threatened and Endangered Species**<br>Will the antenna structure jeopardize the continued existence of any proposed endangered or threatened species? | | X |
| 3c | **Threatened and Endangered Species**<br>Will the antenna structure result in the destruction or adverse modification of proposed critical habitats? | | X |
| 4 | **Historic Places**<br>Will the antenna structure affect districts, sites, building, structures or objects significant in American history, architecture, archeology, engineering, or culture that are listed, or potentially eligible for listing in the National Register of Historic Places (NRHP)? | | X |
| 5 | **Indian Religious Sites**<br>Will the antenna structure affect Indian religious site(s)? | | X |
| 6 | **Floodplains**<br>Will the antenna structure be located in a flood plain? | | X |
| 7 | **Surface Features**<br>Will construction of the antenna structure involve significant change in surface features (e.g. wetlands, deforestation, or water diversion)? | | X |
| 8 | **High Intensity White Lights**<br>Is the antenna structure located in a residential neighborhood and required to be equipped with high intensity white lights? | | X |
| 9 | a.) Will the antenna structure equal or exceed total power (of all channels) of 2000 Watts EPR (3280 Watts EIRP) and have antenna located less than 10 meters above ground level?<br>***Responsibility of Client** | | NA |
| | b.) Will the roof-top antenna project equal or exceed total power (of all channels of 2000 Watts ERP (3280 Watts EIRP)?<br>***Responsibility of Client** | | NA |

| | |
|---|---|
| Preparer's Signature: Jeff Shamas 2008.02.21 08:42:11 -05'00' | Date: February 21, 2008 |
| Printed Name and Title: Jeffrey Shamas, Program Manager | |

# TABLE OF CONTENTS

# I. Introduction

The National Environmental Policy Act (NEPA) was enacted to provide federal agencies with uniform national guidance for the protection of the human environment. Under NEPA guidelines, federal agencies are required to review the potential impacts of major federal actions on natural, cultural, and socioeconomic resources.

The Federal Communications Commission (FCC), as a federal agency, requires licensees to review their proposed actions to ensure NEPA compliance. The FCC's rules for implementing NEPA are detailed in Title 47 of the Code of Federal Regulations, Part 1, Subpart I, rule sections 1.1301 to 1.1319. Section 1.1307 lists eight actions with potentially environmentally sensitive effects that, if significant, would require the preparation of an Environmental Assessment. These potential actions include:

- Actions that occur within an officially designated wilderness area.
- Actions that occur in an officially designated wildlife preserve.
- Actions that (i) May affect listed threatened or endangered species or designated critical habitats; or (ii) are likely to jeopardize the continued existence of any proposed endangered or threatened species or likely resulting the destruction or adverse modification of proposed critical habitats, as determined by the Secretary of the Interior pursuant to the Endangered Species Act of 1973.
- Actions that may affect districts, sites, buildings, structures or objects that are significant in American history, architecture, archeology, engineering or culture and that are listed or are eligible for listing in the National Register of Historic Places.
- Actions that may affect Indian religious sites.
- Actions that occur in a floodplain.
- Actions that will involve significant change in surface features, such as through wetland fill, deforestation, or water diversion.
- Antenna towers and/or supporting structures that are to be equipped with high intensity white lights and that are to be located in residential neighborhoods, as defined by the applicable zoning law.

If these effects are found to be insignificant, the project may be considered in compliance with NEPA and requires no further investigation.

# II. Environmental Investigation

On behalf of Optasite Towers, LLC, Kleinfelder East, Inc. performed a NEPA investigation to determine whether the proposed Manchester telecommunications tower facility may potentially have environmentally sensitive effects through any of the eight defined actions.

The Manchester project site is situated at 39 Maennercher Avenue in Taftville, New London County, Connecticut and is approximately 200 feet north of the nearest residence. In conjunction with the 140-foot proposed monopole telecommunication tower and equipment shelter, a 20-foot wide and approximately 350-foot long access and utility easement extending from Beauregard Street will be constructed and will contain a gravel access road and parking area to allow for ease of access

to the location for site work and maintenance activities. In addition, a 9-foot high chain link fence is proposed to enclose the 65 by 65- foot compound within the 70 by 70-foot lease area.

No wetlands or floodplains were observed during the site visit conducted on October 10, 2007. The site is a steeply sloping hilltop containing thin soils consistent with the Hollis-Chatfield-Rock outcrop complex, typified by somewhat excessively drained soils with a shallow depth to bedrock.

## A. Wilderness Areas

Based on a review of National Atlas and USGS topographic maps, the proposed project area is not located in an officially designated wilderness area. These maps include lands owned by the Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Department of Agriculture Forest Service, and National Park Service. Please refer to Appendix C for supporting documentation.

## B. Wildlife Preserves

Based on a review of National Atlas and USGS topographic maps the proposed project area is not located in an officially designated wildlife preserve. These maps include lands owned by the Bureau of Land Management, U.S. Fish and Wildlife Service, U.S. Department of Agriculture Forest Service, and National Park Service. Please refer to Appendix C for supporting documentation.

## C. Threatened and Endangered Species

A review of the Connecticut Natural Diversity Database map for the Town of Norwich showed that there are no state or federally listed species or significant natural communities located in or in the immediate vicinity of the proposed project area.

A request for a threatened and endangered species review was submitted to the United States Fish and Wildlife Service (USFWS) on October 15, 2007. According to a letter received from the USFWS on November 16, 2007, the bald eagle (*Haliaeetus leucocephalus*), piping plover (*Charadrius melodus*), and chaffseed (*Scwalbea Americana*) are known to occur in New London County, Connecticut. However, the proposed project does not occur in habitats known to support these species. Based upon this data, the proposed project will not impact listed or proposed threatened or endangered species or their critical habitats. Please refer to Appendix D for documentation.

## D. Historic Places

To determine the potential impacts of the proposed project on historic, architectural, or archaeological resources, a report was submitted to the Connecticut State Historic Preservation Office (CTSHPO) on February 6, 2008. The CTSHPO responded on February 8, 2008 that although the tower may be partially and/or seasonably visible from the Taftville National Register Historic District, "the proposed undertaking will constitute no adverse effect upon historic, architectural and archaeological resources associated with this National Register historic district." In this letter, the CTSHPO also requested 2 copies of the final reconnaissance report. These copies were forwarded to CTSHPO on February 12, 2008. Please refer to Appendix E for supporting documentation.

## E. Indian Religious Sites

Tribal Consultation was initiated through the FCC's electronic Tower Construction Notification System (TCNS) on October 5, 2007 to determine the potential impacts of the proposed project on Indian religious sites. This consultation was assigned Notification ID No. 31952. The

Mashantucket Pequot Tribe and Narragansett Indian Tribe were identified as having a geographic preference that includes the proposed project site. The two tribes were also notified in writing on October 15, 2007 with a request to respond by November 5, 2007.

The Mashantucket Pequot Tribe responded through TCNS on October 11, 2007 to request details about the project. Upon receipt of the requested attachments, the Tribe stated through TCNS on October 22, 2007 that the Tribe had no knowledge of religious or culturally significant properties that would be affected by the proposed project, but recommended a Phase I Archeological Reconnaissance Survey and requested copies of any work performed on the project. The Phase I Cultural Resources Reconnaissance Survey, prepared by Heritage Consultants, LLC, was forwarded to the Tribe on January 4, 2008. The Tribe responded on January 8, 2008 to concur with the finding of 'no impact.'

The Narragansett Indian Tribe responded through TCNS on October 25, 2007 to formally initiate consultation and review of the proposed project. The requested materials were distributed to the Tribe on October 31, 2007. The tribe responded through e-mail on January 4, 2008 to communicate the need for a site walk. The Phase I Cultural Resources Reconnaissance Survey and site walk fee were forwarded to the tribe on February 1, 2008 and February 5, 2008, respectively. To date, no further response has been received.

After consultation with the two Tribes, it is concluded that the proposed project will have no significant impact on any Indian religious sites. Please refer to Appendix F for copies of all correspondence.

### F. Floodplains

In order to determine the potential impacts of the proposed project on floodplains, the Federal Insurance Rate Map (Map Panel 0901020005F) was reviewed. According to the Federal Emergency Management Agency, the proposed project area not located within the 100-year floodplain. Please refer to Appendix G for supporting documentation.

### G. Surface Features

According to the National wetlands Inventory, USGS maps, Connecticut State Wetland GIS, and site observations, no wetlands or watercourses are present within the proposed site location or adjacent area. Therefore, we do not expect the proposed facility will adversely impact wetlands or surface water features. Please refer to Appendix H for supporting documentation.

### H. High Intensity Lighting

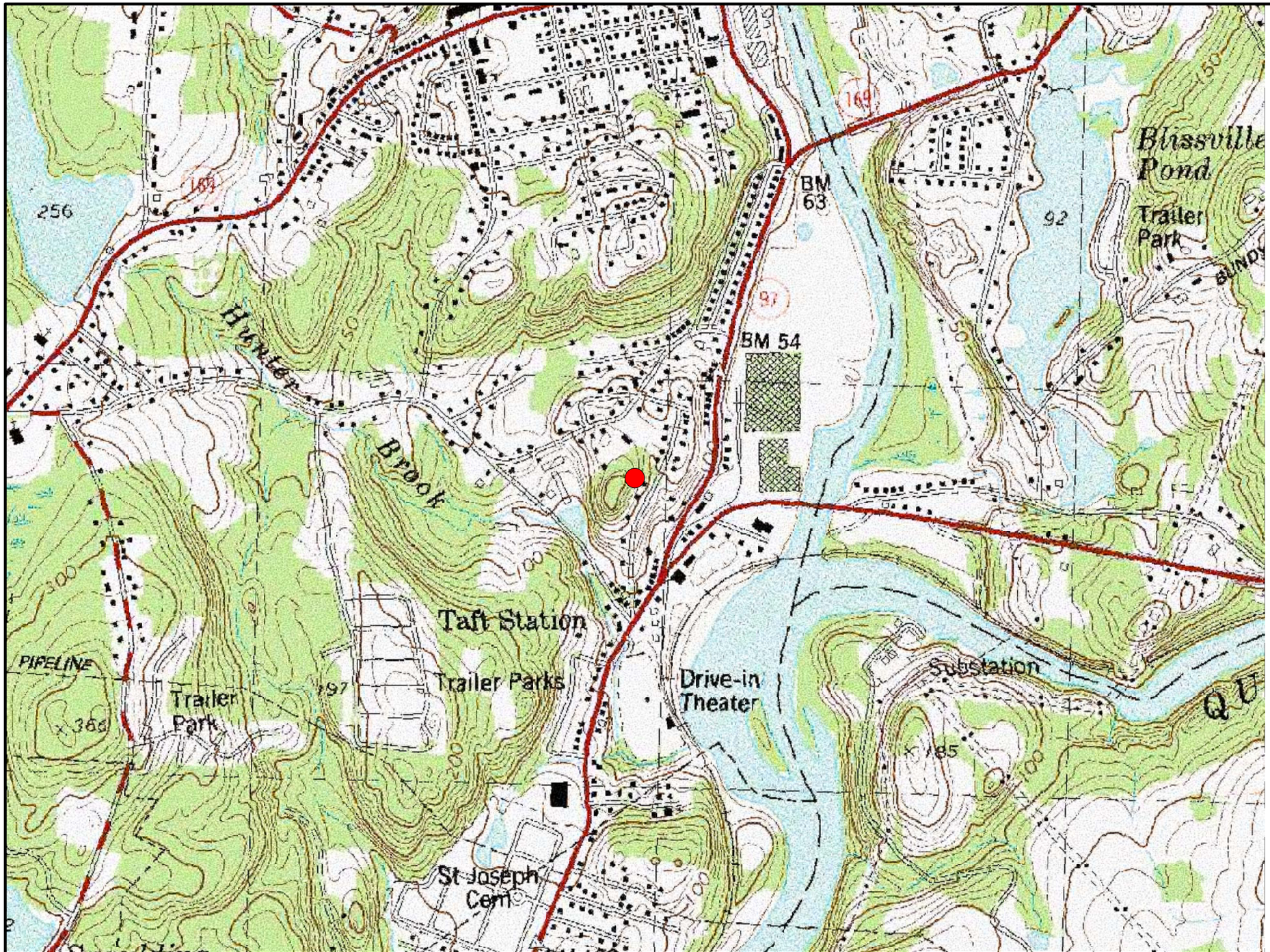
High intensity lighting is not planned for this project and will therefore not have a significant impact on residential neighborhoods.

## III. Conclusions

Based on the above review, it is the professional opinion of Kleinfelder East, Inc. that the proposed facility will not have a significant environmental impact on any of the previously mentioned resources and will therefore not require further actions to comply with the requirements of the National Environmental Policy Act.

# Appendix A

# Project Location Maps




0 250 500 1,000 1,500 2,000 2,500

SCALE IN FEET

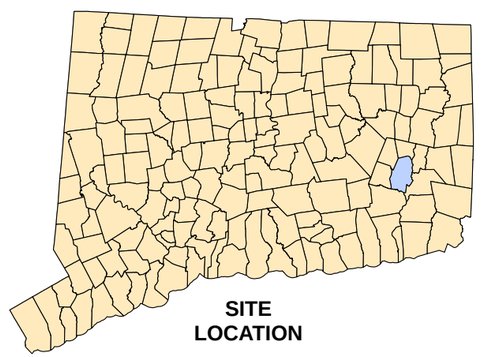
0 75 150 300 450 600 750

SCALE IN METERS

**LEGEND**

SITE LOCATION

**CONNECTICUT**



**SITE LOCATION**

SOURCE:
1. USGS 7.5' TOPOGRAPHIC MAP, NORWICH CONNECTICUT QUADRANGLE MAP (1983)

| | | | |
|---|---|---|---|
| DRAWN BY: CTH | | SITE LOCATION MAP | |
| REVISED BY: | | | |
| CHECKED BY: AH | | OPTASITE<br>39 MAENNERCHER AVENUE<br>NORWICH, CONNECTICUT | |
| DATE: 02-19-08 | APPROVED BY: _____ | PROJ NO.: 88654 | FILE NAME: FIGURE 1 |

KLEINFELDER
99 LAMBERTON ROAD, SUITE 201
WINDSOR, CONNECTICUT
PH. 860-683-4200 FAX 860-683-4206
www.kleinfelder.com

FIGURE: 2

0 250 500 1,000 1,500 2,000 2,500

SCALE IN FEET

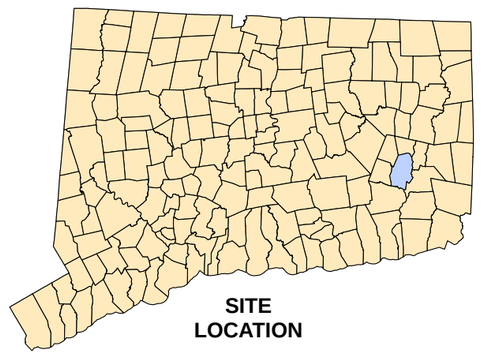
0 75 150 300 450 600 750

SCALE IN METERS

**LEGEND**

SITE LOCATION

**CONNECTICUT**



**SITE LOCATION**

SOURCE:
1. CT DEP GIS AERIAL PHOTO DATA SET (1990)

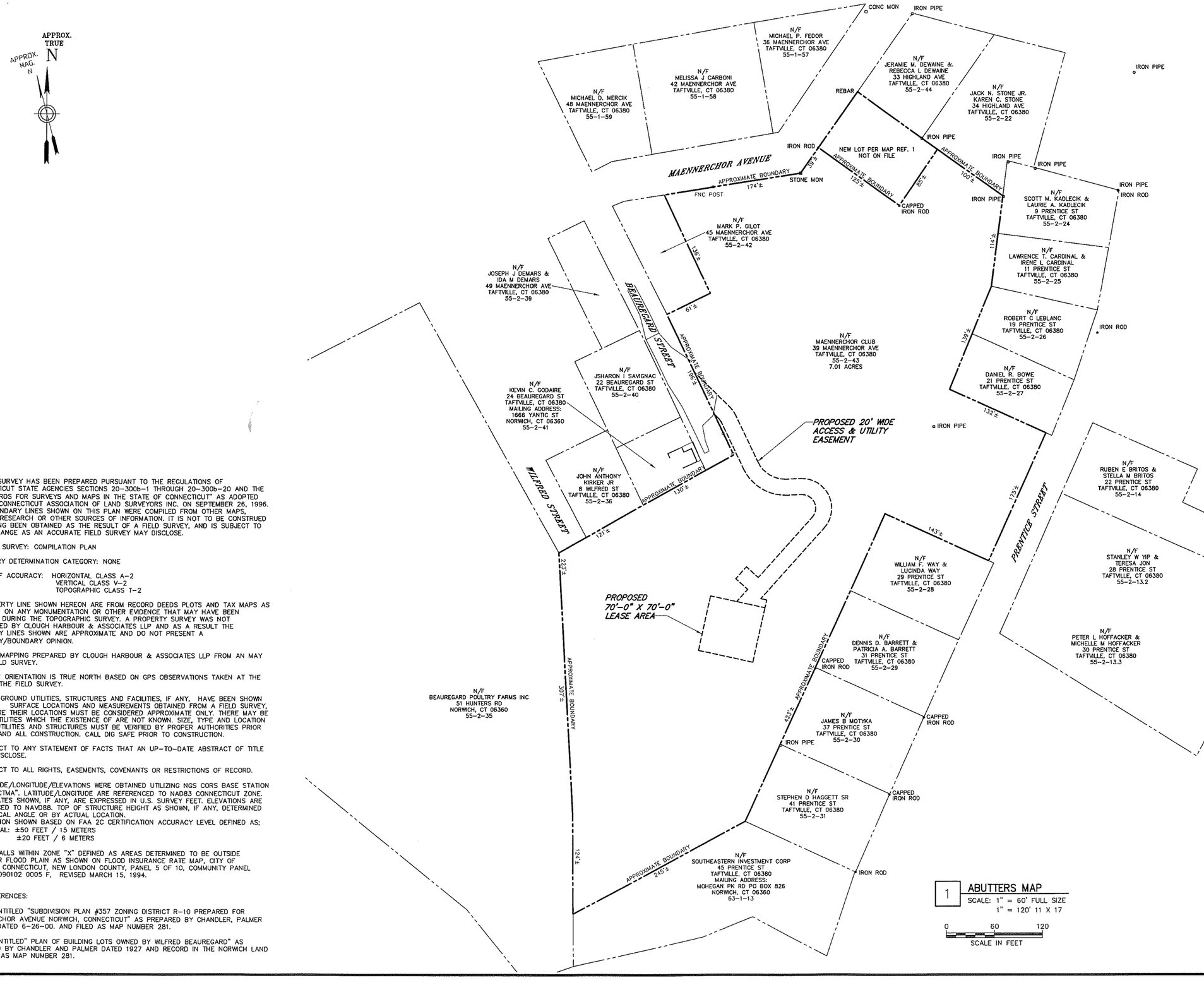
| | |
|---|---|
| DRAWN BY: CTH | SITE LOCATION MAP |
| REVISED BY: | OPTASITE<br>39 MAENNERCHER AVENUE<br>NORWICH, CONNECTICUT |
| CHECKED BY: AH | |
| DATE: 02-19-08 / APPROVED BY: | PROJ NO.: 88654 / FILE NAME: FIGURE 1 |

KLEINFELDER
99 LAMBERTON ROAD, SUITE 201
WINDSOR, CONNECTICUT
PH. 860-683-4200 FAX 860-683-4206
www.kleinfelder.com

FIGURE: 2

# Appendix B

# Site Plans




1 ABUTTERS MAP
SCALE: 1" = 60' FULL SIZE
1" = 120' 11 X 17

NOTES:

1. 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, 1996. 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.

TYPE OF SURVEY: COMPILATION PLAN

BOUNDARY DETERMINATION CATEGORY: NONE

CLASS OF ACCURACY: HORIZONTAL CLASS A-2
VERTICAL CLASS V-2
TOPOGRAPHIC CLASS T-2

2. PROPERTY LINE SHOWN HEREON ARE FROM RECORD DEEDS PLOTS AND TAX MAPS AS OVERLAID 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.

3. BASE MAPPING PREPARED BY CLOUGH HARBOUR & ASSOCIATES LLP FROM AN MAY 2007 FIELD SURVEY.

4. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY.

5. UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES, IF ANY, 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 CONSTRUCTION.

6. SUBJECT TO ANY STATEMENT OF FACTS THAT AN UP-TO-DATE ABSTRACT OF TITLE WOULD DISCLOSE.

7. SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.

8. LATITUDE/LONGITUDE/ELEVATIONS WERE OBTAINED UTILIZING NGS CORS BASE STATION NAMED "CTMA". 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

9. SITE FALLS WITHIN ZONE "X" DEFINED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP, CITY OF NORWICH, CONNECTICUT, NEW LONDON COUNTY, PANEL 5 OF 10, COMMUNITY PANEL NUMBER 090102 0005 F, REVISED MARCH 15, 1994.

MAP REFERENCES:

1. MAP ENTITLED "SUBDIVISION PLAN #357 ZONING DISTRICT R-10 PREPARED FOR MAENNERCHOR AVENUE NORWICH, CONNECTICUT" AS PREPARED BY CHANDLER, PALMER & KING, DATED 6-26-00. AND FILED AS MAP NUMBER 281.

2. MAP ENTITLED" PLAN OF BUILDING LOTS OWNED BY WILFRED BEAUREGARD" AS PREPARED BY CHANDLER AND PALMER DATED 1927 AND RECORD IN THE NORWICH LAND RECORDS AS MAP NUMBER 281.

File: L:\15363\SURVEY\101 NORWICH\ZDV\NORWICH-1 ABUTTERS MAP.DWG Saved: 5/16/2007 2:31:48 PM PLotted: 5/16/2007 2:31:52 PM User: Luskens, Paul

Optasite

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



CHA

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 - 1021 - 1601

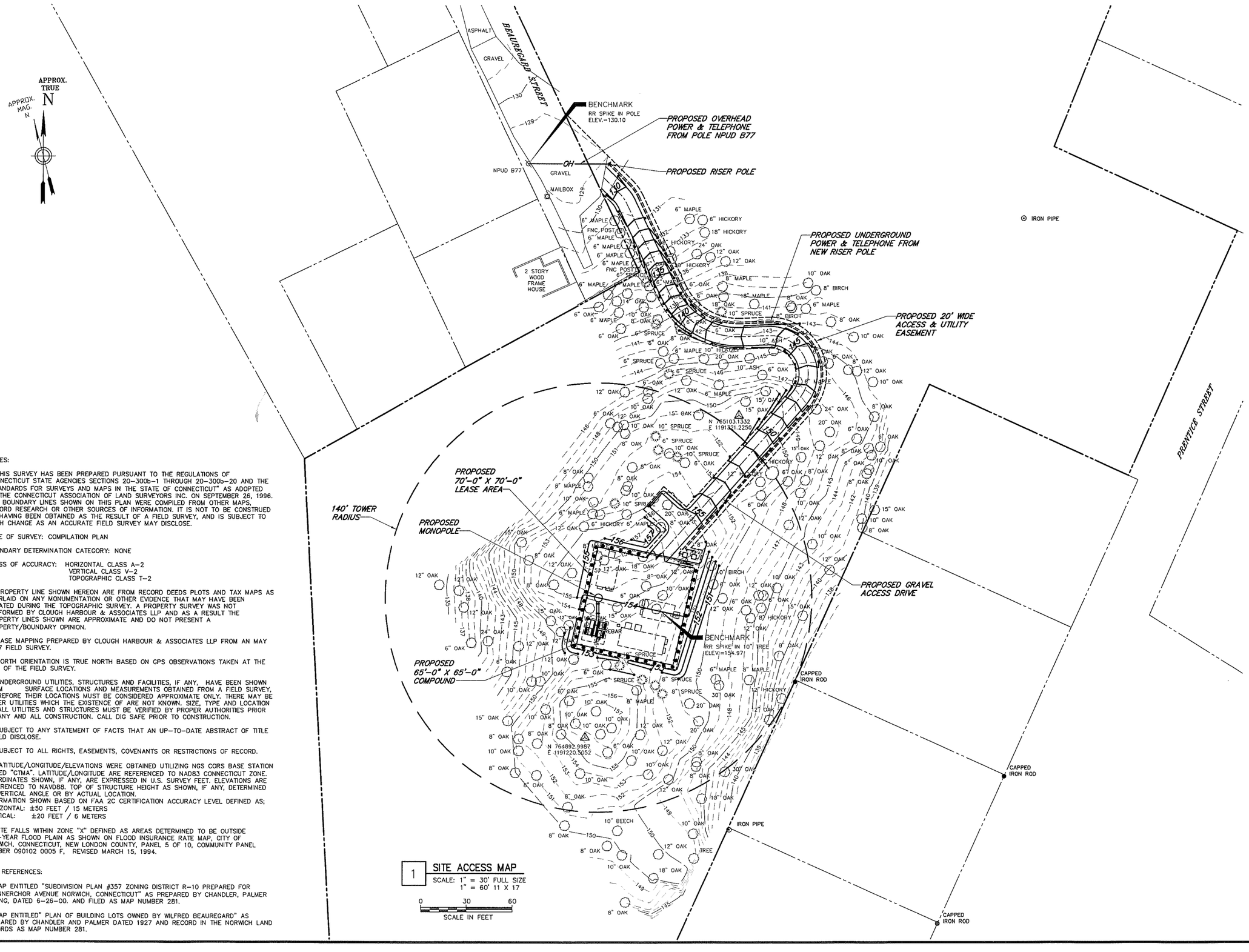
| NO. | SUBMITTAL | | |
|---|---|---|---|
| 0 | 05/14/07 | ISSUED FOR REVIEW | |
| | BY: PAL | CHK: PAL | APP'D: JPS |



SITE ID:
CT-999-0093
SITE NAME:
NORWICH
SITE ADDRESS:
39 MAENNERCHOR AVE
TAFTVILLE, CT
06380
NEW LONDON COUNTY

SHEET TITLE
ABUTTERS MAP

SHEET NUMBER
A01




1 SITE ACCESS MAP
SCALE: 1" = 30' FULL SIZE
1" = 60' 11 X 17

NOTES:

1. 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, 1996. 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.

TYPE OF SURVEY: COMPILATION PLAN

BOUNDARY DETERMINATION CATEGORY: NONE

CLASS OF ACCURACY: HORIZONTAL CLASS A-2
VERTICAL CLASS V-2
TOPOGRAPHIC CLASS T-2

2. PROPERTY LINE SHOWN HEREON ARE FROM RECORD DEEDS PLOTS AND TAX MAPS AS OVERLAID 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.

3. BASE MAPPING PREPARED BY CLOUGH HARBOUR & ASSOCIATES LLP FROM AN MAY 2007 FIELD SURVEY.

4. NORTH ORIENTATION IS TRUE NORTH BASED ON GPS OBSERVATIONS TAKEN AT THE TIME OF THE FIELD SURVEY.

5. UNDERGROUND UTILITIES, STRUCTURES AND FACILITIES, IF ANY, 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 CONSTRUCTION.

6. SUBJECT TO ANY STATEMENT OF FACTS THAT AN UP-TO-DATE ABSTRACT OF TITLE WOULD DISCLOSE.

7. SUBJECT TO ALL RIGHTS, EASEMENTS, COVENANTS OR RESTRICTIONS OF RECORD.

8. LATITUDE/LONGITUDE/ELEVATIONS WERE OBTAINED UTILIZING NGS CORS BASE STATION NAMED "CTMA". 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

9. SITE FALLS WITHIN ZONE "X" DEFINED AS AREAS DETERMINED TO BE OUTSIDE 500-YEAR FLOOD PLAIN AS SHOWN ON FLOOD INSURANCE RATE MAP, CITY OF NORWICH, CONNECTICUT, NEW LONDON COUNTY, PANEL 5 OF 10, COMMUNITY PANEL NUMBER 090102 0005 F, REVISED MARCH 15, 1994.

MAP REFERENCES:

1. MAP ENTITLED "SUBDIVISION PLAN #357 ZONING DISTRICT R-10 PREPARED FOR MAENNERCHOR AVENUE NORWICH, CONNECTICUT" AS PREPARED BY CHANDLER, PALMER & KING, DATED 6-26-00. AND FILED AS MAP NUMBER 281.

2. MAP ENTITLED" PLAN OF BUILDING LOTS OWNED BY WILFRED BEAUREGARD" AS PREPARED BY CHANDLER AND PALMER DATED 1927 AND RECORD IN THE NORWICH LAND RECORDS AS MAP NUMBER 281.



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



CHA
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 - 1021 - 1601

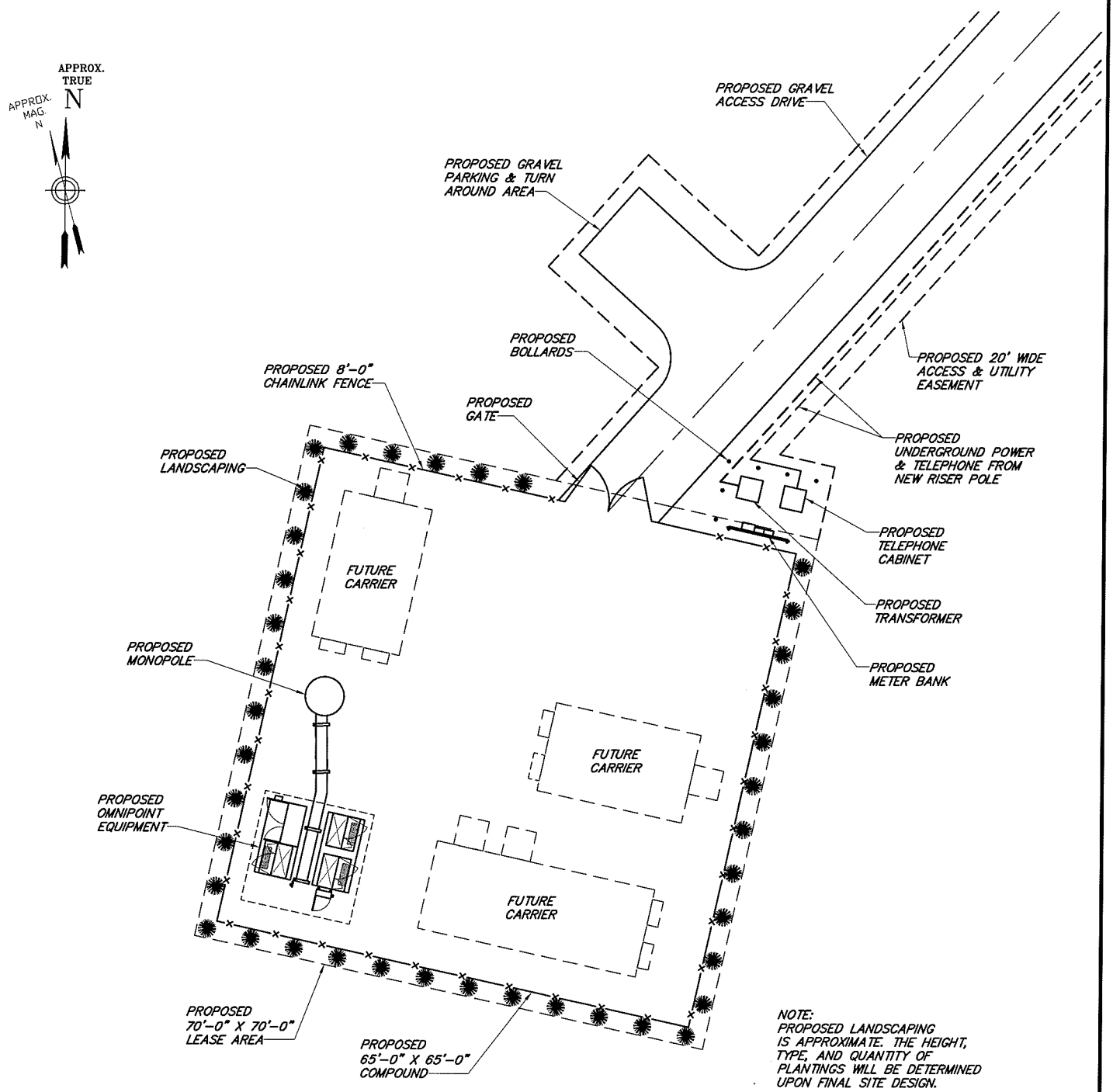
| NO. | SUBMITTAL | | |
|---|---|---|---|
| 0 | 05/14/07 | ISSUED FOR REVIEW | |
| | BY: PAL | CHK: PAL | APP'D: JPS |



SITE ID:
CT-999-0093
SITE NAME:
NORWICH
SITE ADDRESS:
39 MAENNERCHOR AVE
TAFTVILLE, CT
06380
NEW LONDON 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.



CLOUGH HARBOUR & ASSOCIATES LLP
2139 Silas Deane Highway, Suite 212 · Rocky Hill, CT 06067-2336
Main: (860) 257-4557 · www.cloughharbour.com

CHA PROJ. NO. – 15363–1021

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

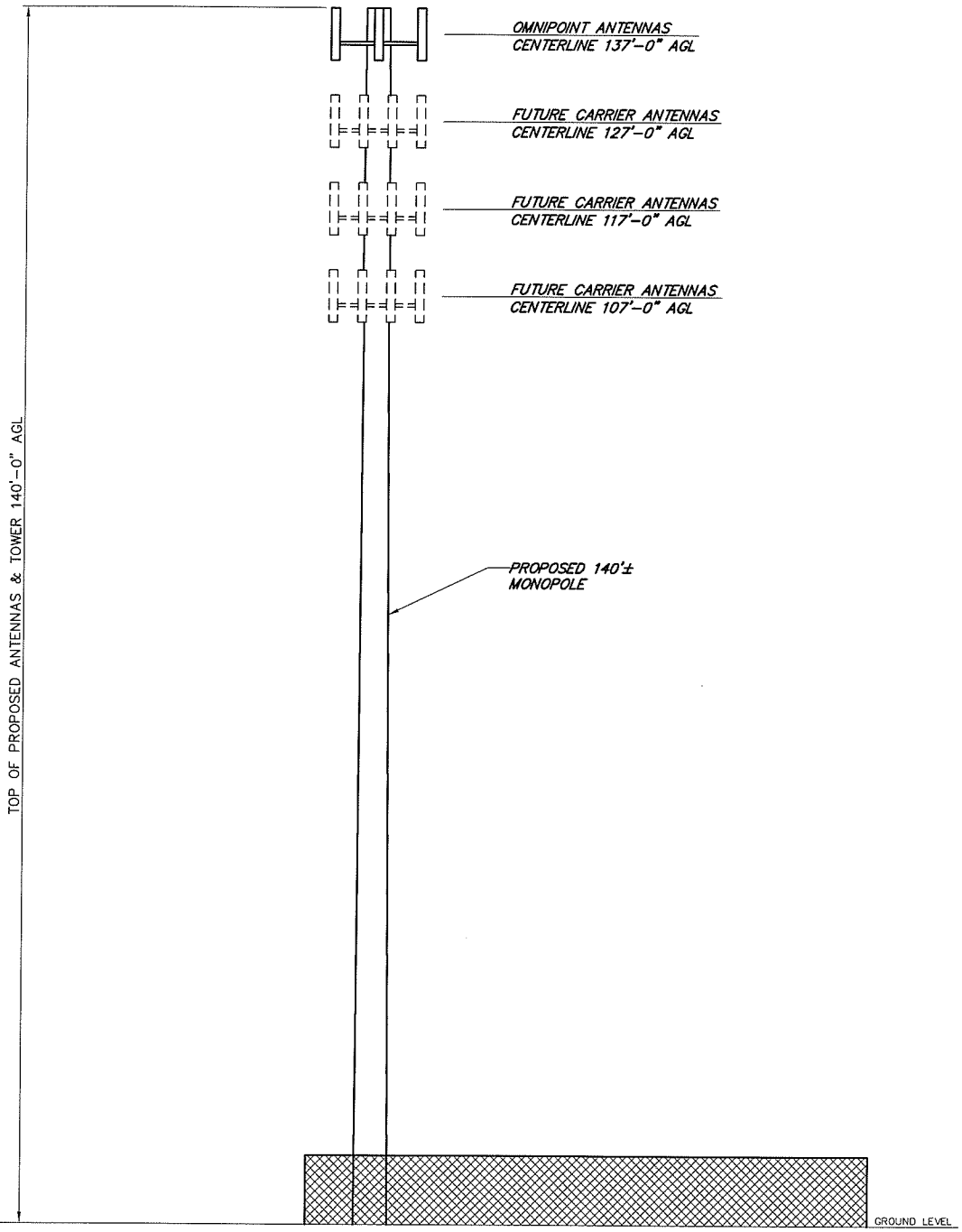
SITE ID:
CT-999-0093
SITE NAME:
NORWICH
SITE ADDRESS:
39 MAENNERCHOR AVE
TAFTVILLE, CT 06380
NEW LONDON COUNTY

SHEET TITLE:
COMPOUND PLAN

DATE:
05/14/07

REVISION:
0

File: I:\15363\SITES\1021 NORWICH\ZD\NORWICH-3 COMPOUND PLAN.DWG Saved: 5/16/2007 2:53:21 PM Plotted: 5/16/2007 2:53:25 PM User: Lusitani, Paul




1 TOWER ELEVATION
SCALE: 1" = 20'

0 10 20
SCALE IN FEET



CLOUGH HARBOUR & ASSOCIATES LLP
2139 Silas Deane Highway, Suite 212 · Rocky Hill, CT 06067-2336
Main: (860) 257-4557 · www.cloughharbour.com

CHA PROJ. NO. – 15363-1021

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

SITE ID:
CT-999-0093
SITE NAME:
NORWICH
SITE ADDRESS:
39 MAENNERCHOR AVE
TAFTVILLE, CT 06380
NEW LONDON COUNTY

SHEET TITLE:
TOWER ELEVATION

DATE:
05/14/07

REVISION:
0

File: I:\15363\SITES\1021 NORWICH\ZD\NORWICH-4 TOWER ELEVATION.DWG Saved: 5/16/2007 2:02:58 PM Plotted: 5/16/2007 2:53:44 PM User: Lusitani, Paul

# Appendix C

# Wilderness Area and Wildlife Preserve Supporting Materials

nationalatlas.gov™
Where We Are

# CONNECTICUT

## FEDERAL LANDS AND INDIAN RESERVATIONS

- Bureau of Indian Affairs
- Department of Defense (includes Army Corps of Engineers lakes)
- Fish and Wildlife Service / Wilderness
- Bureau of Prisons

Some small sites are not shown, especially in urban areas.

MILES
0 5 10 15 20

Albers equal area projection

MASSACHUSETTS

NEW YORK

RI

NEW YORK

Colebrook River Lake

Barkhamsted Reservoir

Torrington

Hartford

Mansfield Hollow Lake

New Britain

Connecticut River

Site Location

Lake Candlewood

Waterbury

Norwich

Mashantucket Pequot Indian Reservation

Danbury Federal Correctional Institution

Danbury

New London Submarine Base

New London

New Haven

Bridgeport

Stewart B. McKinney National Wildlife Refuge

Norwalk

Stamford

Long Island Sound

U.S. Department of the Interior
U.S. Geological Survey

The National Atlas of the United States of America®

pagefed_ct6.pdf INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA-2003

# Appendix D

# Threatened and Endangered Species Supporting Materials

KLEINFELDER
EXPECT MORE®

October 16, 2007

Mr. Anthony Tur
United States Fish and Wildlife Service
70 Commercial Street, Suite 300
Concord, NH 03301-5087

**RE: Threatened and Endangered Species Review**
**Optasite Towers, LLC – Norwich Site**
**39 Maennerchor Avenue**
**Taftville, New London County, Connecticut**
**KA Project No. 88654**

Dear Mr. Tur:

On behalf of Optasite Towers, LLC (Optasite), Kleinfelder is performing a National Environmental Policy Act (NEPA) site assessment for the Optasite Norwich Site located on Maennerchor Avenue in Taftville, New London County, Connecticut. A USGS location map taken from the Fitchville Quadrangle, Connecticut is attached. The purpose of the review is to determine whether site construction activity will impact environmental resources. As a regulated utility licensed by the Federal Communications Commission (FCC), Optasite is required to consider the effects of proposed actions as identified in the FCC regulations implementing NEPA (47 CFR 1.1307).

Optasite is proposing to construct a 65- by 65-foot fenced compound, within a 70-foot by 70-foot lease area, containing a 140-foot tall monopole telecommunications tower and associated equipment. The proposed site will be situated within a lease area that currently consists of undeveloped woodland. The compound will also include a proposed 12-foot wide by approximately 365-foot long gravel access drive extending from Beauregard Street to provide access to the site.

Land use at the site currently consists of an undeveloped wooded area, with a canopy consisting primarily of white oak (*Quercus alba*) ranging in size from 20 to 30 feet tall and having 8 to 12 diameters at breast height. Land use within the vicinity of the site consists primarily of local roads and residences.

Kleinfelder is requesting information regarding potential threatened or endangered species or designated critical habitats at the site. Please contact me concerning the results of your search via mail, fax, or telephone. Thank you for your assistance in this matter.

Sincerely,

**Kleinfelder East, Inc.**

Ashley G. Hawes 2007.10.16 14:01:59 -04'00'

Ashley G. Hawes
Project Scientist

Enclosures

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

November 16, 2007

Ashley Hawes
Kleinfelder East, Inc.
99 Lamberton Road, Suite 201
Windsor, CT 06095

Dear Ms. Hawes:

We are in receipt of your recent letter requesting our endangered species review with regard to your proposed telecommunications projects in Glastonbury (2 sites), Manchester, and Taftville, Connecticut; and Wilbraham, Massachusetts.

Earlier this year, we distributed a letter (enclosed) which we hope will streamline the consultation process.

Please review our letter. We're confident that it will adequately respond to your request. If you have any questions, please contact me at 603-223-2541.

Sincerely yours,

Anthony P. Tur
Endangered Species Specialist
New England Field Office

Enclosure

# United States Department of the Interior

FISH AND WILDLIFE SERVICE
New England Field Office
70 Commercial Street, Suite 300
Concord, New Hampshire 03301-5087

March 6, 2007

To Whom It May Concern:

The U.S. Fish and Wildlife Service's (Service) New England Field Office has determined that individual project review for certain types of activities associated with communication towers **is not required.** These comments are submitted in accordance with provisions of the Endangered Species Act (ESA) of 1973 (87 Stat. 884, as amended; 16 U.S.C. 1531 *et seq.*).

Due to the rapid expansion of the telecommunication industry, we are receiving a growing number of requests for review of **existing** and **new** telecommunication facilities in relation to the presence of federally-listed or proposed, threatened or endangered species, critical habitat, wilderness areas and/or wildlife preserves. We have evaluated our review process for proposed communications towers and believe that individual correspondence with this office is not required for the following types of actions relative to **existing** facilities:

1. the re-licensing of existing telecommunication facilities;
2. audits of existing facilities associated with acquisition;
3. routine maintenance of existing tower sites, such as painting, antenna or panel replacement, upgrading of existing equipment, etc.;
4. co-location of new antenna facilities on/in existing structures;
5. repair or replacement of existing towers and/or equipment, provided such activities do not significantly increase the existing tower mass and height, or require the addition of guy wires.

In order to curtail the need to contact this office in the future for individual environmental review for **existing** communication towers or antenna facilities, please note that we are not aware of any federally-listed, threatened or endangered species that are being adversely affected by any existing communication tower or antenna facility in the following states: Vermont, New Hampshire, Rhode Island, Connecticut and Massachusetts. Furthermore, we are not aware of any **existing** telecommunication towers in federally-designated critical habitats, wilderness areas or wildlife preserves. Therefore, no further consultation with this office relative to the impact of the above referenced activities on federally-listed species is required.

Future Coordination with this Office Relative to **New** Telecommunication Facilities

We have determined that proposed projects are not likely to adversely affect any federally-listed or proposed species when the following steps are taken to evaluate new telecommunication facilities:

1. If the facility will be installed within or on an existing structure, such as in a church steeple or on the roof of an existing building, no further coordination with this office is necessary. Similarly, new antennas or towers in urban and other developed areas, in which no natural vegetation will be affected, do not require further review.

2. If the above criteria cannot be met, your review of the attached lists of threatened and endangered species locations within Vermont, New Hampshire, Rhode Island, Connecticut and Massachusetts may confirm that no federally-listed endangered or threatened species are known to occur in the town or county where the project is proposed.

3. If a listed species is present in the town or county where the project is proposed, further review of our enclosed lists of threatened and endangered species may allow you to conclude that suitable habitat for the species will not be affected. Based on past experiences, we anticipate that there will be few, if any, projects that are likely to impact piping plovers, roseate terns, bog turtles, Jesup's milkvetch or other such species that are found on coastal beaches, riverine habitats or in wetlands because communication towers typically are not located in these habitats.

For projects that meet the above criteria, there is no need to contact this office for further project review. A copy of this letter should be retained in your file as the Service's determination that no listed species are present, or that listed species in the general area will not be affected. Due to the high workload associated with responding to many individual requests for threatened and endangered species information, we will no longer be providing response letters for activities that meet the above criteria. This correspondence and the enclosed species lists remain valid until January 1, 2008.

Thank you for your cooperation, and please contact me at 603-223-2541 for further assistance.

Sincerely yours,

Anthony P. Tur
Endangered Species Specialist
New England Field Office

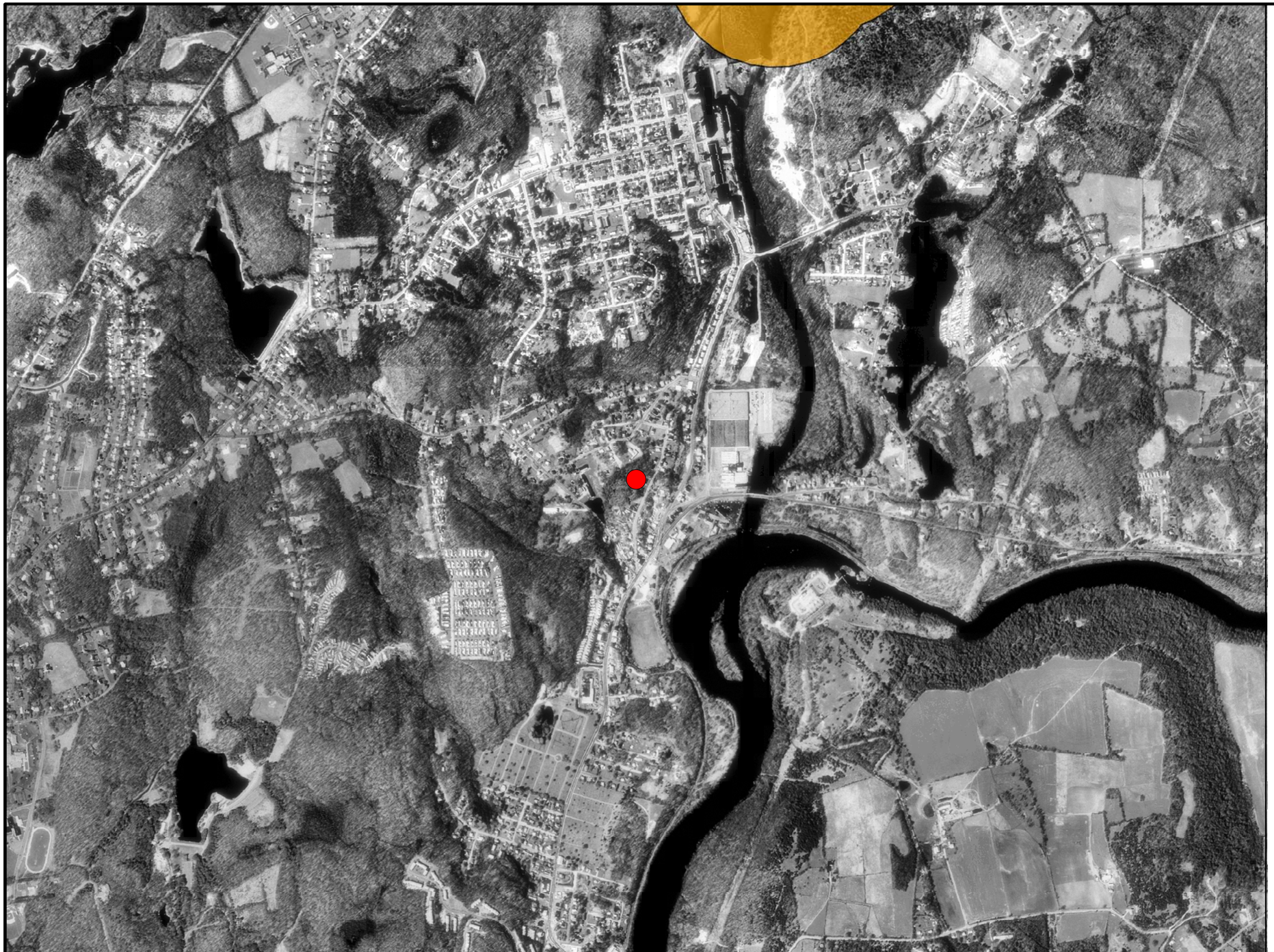
Enclosures

# FEDERALLY LISTED ENDANGERED AND THREATENED SPECIES IN CONNECTICUT

| Common Name | Species | Status | County/General Distribution |
|---|---|---|---|
| Sturgeon, shortnose[1] | *Acipenser brevirostrum* | E | Atlantic coastal waters and Connecticut River |
| Bat, Indiana | *Myotis sodalis* | E | New Haven/hibernaculum |
| Eagle, bald | *Haliaeetus leucocephalus* | T | **Nesting**: Hartford, Litchfield<br>**Wintering**: entire state, major rivers |
| Plover, piping | *Charadrius melodus* | T | **Nesting**: Fairfield, Middlesex, New Haven, New London (coastal beaches)<br>**Migratory:** Atlantic Coast |
| Tern, Roseate | *Sterna dougallii dougallii* | E | **Nesting**: New Haven (coastal island)<br>**Migratory:** Atlantic Coast |
| Turtle, bog | *Clemmys muhlenbergii* | T | Fairfield, Litchfield |
| Wedge mussel, dwarf | *Alasmidonta heterodon* | E | Hartford |
| Beetle, Puritan tiger | *Cicindela puritana* | T | Hartford, Middlesex (Connecticut River floodplain) |
| Beetle, Northeastern beach | *Cicindela dorsalis dorsalis* | T | Coastal beaches/Extirpated |
| Small whorled pogonia | *Isotria medeoloides* | T | Litchfield, New Haven |
| Sandplain gerardia | *Agalinus acuta* | E | Hartford |
| Chaffseed | *Scwalbea Americana* | E | New London/Historic |

[1] Principal responsibility for this species is vested with the National Marine Fisheries Service.

Updated 2/22/07



0 500 1,000 2,000 3,000 4,000

SCALE IN FEET

0 150 300 600 900 1,200

SCALE IN METERS

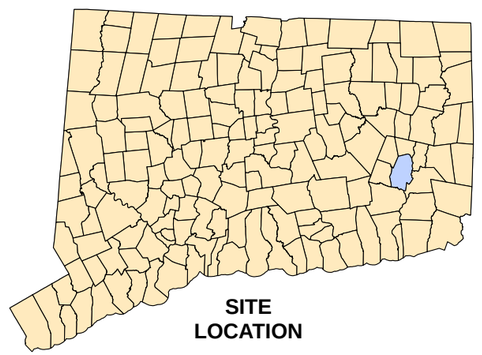
**LEGEND**

SITE LOCATION

NATURAL DIVERSITY DATABASE AREA

N

**CONNECTICUT**



**SITE LOCATION**

SOURCE:
1. CT DEP GIS AERIAL PHOTO DATA SET (1990)

2. NATURAL DIVERSITY DATABASE LAYER (DECEMBER 2007)

| | |
|---|---|
| DRAWN BY: CTH | NATURAL DIVERSITY DATABASE MAP |
| REVISED BY: | OPTASITE<br>39 MAENNERCHER AVENUE<br>NORWICH, CONNECTICUT |
| CHECKED BY: AH | |
| DATE: 02-19-08 / APPROVED BY: | PROJ NO.: 88654 / FILE NAME: FIGURE 1 |

KLEINFELDER

99 LAMBERTON ROAD, SUITE 201
WINDSOR, CONNECTICUT
PH. 860-683-4200 FAX 860-683-4206
www.kleinfelder.com

FIGURE:

1

# Appendix E

# Historic Places Supporting Materials

Connecticut Commission on Culture & Tourism

Historic Preservation
and Museum Division

One Constitution Plaza
Second Floor
Hartford, Connecticut
06103

860.256.2800
860.256.2763 (f)

February 8, 2008

Ms. Ashley G. Hawes
Kleinfelder
99 Lamberton Road
Windsor, CT 06095

Subject: Telecommunications Facilities
39 Maennercher Avenue
Taftville (Norwich), CT
Optasite Towrs LLC Project No. 88654

Dear Ms. Hawes:

The State Historic Preservation Office has reviewed the archaeological reconnaissance survey prepared by Heritage Consultants LLC concerning the above-named project. In the opinion of the State Historic Preservation Office, the archival and archaeological methodologies employed by Heritage Consultants LLC are consistent with our *Environmental Review Primer for Connecticut's Archaeological Resources.*

The State Historic Preservation Office concurs with Heritage Consultants LLC that no further archaeological investigations appear warranted with respect to the proposed undertaking. This comment is conditional upon Kleinfelder and/or Heritage Consultants LLC's submission of a final reconnaissance report (two copies) to our professional staff for technical analysis.

The State Historic Preservation Office notes that the proposed telecommunications tower is located in immediate proximity to the Taftville Historic District, which is listed on the National Register of Historic Places. This office believes that the proposed facilities may be partially and/or seasonably visible from the Taftville National Register Historic District. However, this office believes that the proposed undertaking will constitute no adverse effect upon historic, architectural and archaeological resources associated with this National Register historic district.

This office recommends that Heritage Consultants LLC consult with the Office of State Archaeology at the University of Connecticut (Storrs) concerning the professional transferal of all field notes, photographs, and artifactual materials generated by the archaeological investigations.

The State Historic Preservation Office appreciates the cooperation of all interested parties concerning the professional management of Connecticut's archaeological resources.

This comment updates and supersedes all previous correspondence regarding the proposed project.

For further information please contact Dr. David A. Poirier, Staff Archaeologist.

Sincerely,

Karen Senich
State Historic Preservation Officer

cc: Dr. Nicholas Bellantoni/OSA
Ms. Catherine Labadia/HC
Dr. Jeffrey Bendremer/MT
Ms. Kathleen Knowles/MPTN

# Appendix F

# Indian Religious and Archeological Supporting Materials

# Tower Construction Notification



## Tower Construction Notification
## New Notification

Notifications Home

Your Notification has been successfully submitted to the FCC. The date for this Notification is 10/05/2007. Your Notification ID number is **31952**. Please make a note of this Notification ID — print out this page for your records. A confirmation of this submitted notification will also be emailed to the email address specified in your notification.

This system is intended to facilitate consultation under Section 106 of the National Historic Preservation Act by providing early notification of proposed construction to Tribes and State Historic Preservation officers. This system is not to be used in place of Section 106 consultation, and use of this notification system in itself does not satisfy parties' obligations with respect to historic preservation review under the Commission's rules.

**Please note: the submission of this notification is NOT to be considered a submission for Antenna Structure Registration.**
Tower Structures that require antenna structure registration based on FCC Rules 47 C.F.R. Part 17 must complete FCC Form 854 after FAA clearance is obtained.



Federal Communications Commission
445 12th Street SW
Washington, DC 20554
More FCC Contact Information...

Phone: 1-877-480-3201
TTY: 1-717-338-2824
Fax: 1-866-418-0232
Submit Help Request

**From:** <towernotifyinfo@fcc.gov>
**To:** <ahawes@kleinfelder.com>
**Date:** 10/5/2007 6:00 PM
**Subject:** Proposed Tower Structure Info - Email ID #1668750

Dear Ashley G Hawes,

Thank you for submitting a notification regarding your proposed structure via the Tower Construction Notification Application. Note that the FCC has assigned a unique Notification ID number for this proposed structure.
You will need to reference this Notification ID number when you update your project's Status with us.
Below are the details you provided for the tower you have proposed to construct:

Notification Received: 10/05/2007

Notification ID: 31952
Tower Owner Individual or Entity Name: Kleinfelder East, Inc on behalf of Optasite Towers, LLC
Consultant Name: Ashley G Hawes
Street Address: Kleinfelder
99 Lamberton Road Suite 201
City: Windsor
State: CONNECTICUT
Zip Code: 06095
Phone: 860-683-4200
Email: ahawes@kleinfelder.com

Structure Type: POLE - Any type of Pole
Latitude: 41 deg 47 min 20.7 sec N
Longitude: 72 deg 28 min 55.5 sec W
Location Description: 39 Maennerchor Ave
City: Taftville
State: CONNECTICUT
County: HARTFORD
Ground Elevation: 142 meters
Support Structure: 42.7 meters above ground level
Overall Structure: 42.7 meters above ground level
Overall Height AMSL: 184.7 meters above mean sea level

**From:** <towernotifyinfo@fcc.gov>
**To:** <ahawes@kleinfelder.com>
**CC:** <kim.pristello@fcc.gov>, <diane.dupert@fcc.gov>
**Date:** 10/12/2007 3:01 AM
**Subject:** NOTICE OF ORGANIZATION(S) WHICH WERE SENT PROPOSED TOWER CONSTRUCTION NOTIFICATION INFORMATION - Email ID #1670122

Dear Sir or Madam:

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this electronic mail message is to inform you that the following authorized persons were sent the information you provided through TCNS, which relates to your proposed antenna structure. The information was forwarded by the FCC to authorized TCNS users by electronic mail and/or regular mail (letter).

Persons who have received the information that you provided include leaders or their designees of federally-recognized American Indian Tribes, including Alaska Native Villages (collectively "Tribes"), Native Hawaiian Organizations (NHOs), and State Historic Preservation Officers (SHPOs). For your convenience in identifying the referenced Tribes and in making further contacts, the City and State of the Seat of Government for each Tribe and NHO, as well as the designated contact person, is included in the listing below. We note that Tribes may have Section 106 cultural interests in ancestral homelands or other locations that are far removed from their current Seat of Government. Pursuant to the Commission's rules as set forth in the Nationwide Programmatic Agreement for Review of Effects on Historic Properties for Certain Undertakings Approved by the Federal Communications Commission (NPA), all Tribes and NHOs listed below must be afforded a reasonable opportunity to respond to this notification, consistent with the procedures set forth below, unless the proposed construction falls within an exclusion designated by the Tribe or NHO. (NPA, Section IV.F.4).

The information you provided was forwarded to the following Tribes and NHOs who have set their geographic preferences on TCNS. If the information you provided relates to a proposed antenna structure in the State of Alaska, the following list also includes Tribes located in the State of Alaska that have not specified their geographic preferences. For these Tribes and NHOs, if the Tribe or NHO does not respond within a reasonable time, you should make a reasonable effort at follow-up contact, unless the Tribe or NHO has agreed to different procedures (NPA, Section IV.F.5). In the event such a Tribe or NHO does not respond to a follow-up inquiry, or if a substantive or procedural disagreement arises between you and a Tribe or NHO, you must seek guidance from the Commission (NPA, Section IV.G). These procedures are further set forth in the FCC's Declaratory Ruling released on October 6, 2005 (FCC 05-176).

1. THPO Kathleen Knowles - Mashantucket Pequot Tribe - Mashantucket, CT - electronic mail
Exclusions: For every tower construction this Tribe requires a site location map, site plans for every project that will result in ground disturbance, and a detailed description of the proposed site. If the proposed tower construction is on an already existing building, the Tribe would like to be informed of that as well.

2. Cell Tower Coordinator Sequahna Mars - Narragansett Indian Tribe - Wyoming, RI - electronic mail and regular mail

The information you provided was also forwarded to the additional Tribes and NHOs listed below. These

Tribes and NHOs have NOT set their geographic preferences on TCNS, and therefore they are currently receiving tower notifications for the entire United States. For these Tribes and NHOs, you are required to use reasonable and good faith efforts to determine if the Tribe or NHO may attach religious and cultural significance to historic properties that may be affected by its proposed undertaking. Such efforts may include, but are not limited to, seeking information from the relevant SHPO or THPO, Indian Tribes, state agencies, the U.S. Bureau of Indian Affairs, or, where applicable, any federal agency with land holdings within the state (NPA, Section IV.B). If after such reasonable and good faith efforts, you determine that a Tribe or NHO may attach religious and cultural significance to historic properties in the area and the Tribe or NHO does not respond to TCNS notification within a reasonable time, you should make a reasonable effort to follow up, and must seek guidance from the Commission in the event of continued non-response or in the event of a procedural or substantive disagreement. If you determine that the Tribe or NHO is unlikely to attach religious and cultural significance to historic properties within the area, you do not need to take further action unless the Tribe or NHO indicates an interest in the proposed construction or other evidence of potential interest comes to your attention.

None

The information you provided was also forwarded to the following SHPOs in the State in which you propose to construct and neighboring States. The information was provided to these SHPOs as a courtesy for their information and planning. You need make no effort at this time to follow up with any SHPO that does not respond to this notification. Prior to construction, you must provide the SHPO of the State in which you propose to construct (or the Tribal Historic Preservation Officer, if the project will be located on certain Tribal lands), with a Submission Packet pursuant to Section VII.A of the NPA.

3. SHPO John W Shannahan - Connecticut Historical Commission - Hartford, CT - electronic mail

4. SHPO Cara Metz - Massachusetts Historical Commission - Boston, MA - electronic mail

5. Deputy SHPO Brona Simon - Massachusetts Historical Commission - Boston, MA - electronic mail

6. Director Ruth L Pierpont - Bureau of Field Services, NY State Parks &* Hist. Pres. - Waterford, NY - electronic mail

7. SHPO Frederick C Williamson - Rhode Island Historic Preservation & Heritage Comm - Providence, RI - regular mail

8. Deputy SHPO Edward F Sanderson - Rhode Island Historic Preservation & Heritage Comm - Providence, RI - electronic mail

"Exclusions" above set forth language provided by the Tribe, NHO, or SHPO. These exclusions may indicate types of tower notifications that the Tribe, NHO, or SHPO does not wish to review. TCNS automatically forwards all notifications to all Tribes, NHOs, and SHPOs that have an expressed interest in the geographic area of a proposal, as well as Tribes and NHOs that have not limited their geographic areas of interest. However, if a proposal falls within a designated exclusion, you need not expect any response and need not pursue any additional process with that Tribe, NHO, or SHPO. Exclusions may also set forth policies or procedures of a particular Tribe, NHO, or SHPO (for example, types of

information that a Tribe routinely requests, or a policy that no response within 30 days indicates no interest in participating in pre-construction review).

If you are proposing to construct a facility in the State of Alaska, you should contact Commission staff for guidance regarding your obligations in the event that Tribes do not respond to this notification within a reasonable time.

Please be advised that the FCC cannot guarantee that the contact(s) listed above opened and reviewed an electronic or regular mail notification. The following information relating to the proposed tower was forwarded to the person(s) listed above:

Notification Received: 10/05/2007
Notification ID: 31952
Tower Owner Individual or Entity Name: Kleinfelder East, Inc on behalf of Optasite Towers, LLC
Consultant Name: Ashley G Hawes
Street Address: Kleinfelder
99 Lamberton Road Suite 201
City: Windsor
State: CONNECTICUT
Zip Code: 06095
Phone: 860-683-4200
Email: ahawes@kleinfelder.com

Structure Type: POLE - Any type of Pole
Latitude: 41 deg 47 min 20.7 sec N
Longitude: 72 deg 28 min 55.5 sec W
Location Description: 39 Maennerchor Ave
City: Taftville
State: CONNECTICUT
County: HARTFORD
Ground Elevation: 142.0 meters
Support Structure: 42.7 meters above ground level
Overall Structure: 42.7 meters above ground level
Overall Height AMSL: 184.7 meters above mean sea level

If you have any questions or comments regarding this notice, please contact the FCC using the electronic mail form located on the FCC's website at:

http://wireless.fcc.gov/outreach/notification/contact-fcc.html.

You may also call the FCC Support Center at (877) 480-3201 (TTY 717-338-2824). Hours are from 8 a.m. to 7:00 p.m. Eastern Time, Monday through Friday (except Federal holidays). To provide quality service and ensure security, all telephone calls are recorded.

Thank you,
Federal Communications Commission

**From:** <towernotifyinfo@fcc.gov>
**To:** <ahawes@kleinfelder.com>
**CC:** <towernotifyinfo@fcc.gov>, <KKnowles@mptn-nsn.gov>
**Date:** 10/11/2007 12:26 PM
**Subject:** Reply to Proposed Tower Structure (Notification ID #31952) - Email ID #1673367

Dear Ashley G Hawes,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from THPO Kathleen Knowles of the Mashantucket Pequot Tribe in reference to Notification ID #31952:

Dear Ms Hawes,
Regarding Notification ID # 31952, please send requested attachments, and will this project result in ground disturbance ?
Kathleen Knowles,
Tribal Historic Preservation Officer
Mashantucket Pequot Tribe

For your convenience, the information you submitted for this notification is detailed below.

Notification Received: 10/05/2007
Notification ID: 31952
Tower Owner Individual or Entity Name: Kleinfelder East, Inc on behalf of Optasite Towers, LLC
Consultant Name: Ashley G Ashley
Street Address: Kleinfelder
99 Lamberton Road Suite 201
City: Windsor
State: CONNECTICUT
Zip Code: 06095
Phone: 860-683-4200
Email: ahawes@kleinfelder.com

Structure Type: POLE - Any type of Pole
Latitude: 41 deg 47 min 20.7 sec N
Longitude: 72 deg 28 min 55.5 sec W
Location Description: 39 Maennerchor Ave
City: Taftville
State: CONNECTICUT
County: HARTFORD
Ground Elevation: 142.0 meters
Support Structure: 42.7 meters above ground level
Overall Structure: 42.7 meters above ground level
Overall Height AMSL: 184.7 meters above mean sea level

KLEINFELDER
EXPECT MORE®

October 15, 2007

Kathleen Knowles, Tribal Historic Preservation Officer
Mashantucket Pequot Tribe
Mashantucket Pequot Museum and Research Center
110 Pequot Trail
Mashantucket, CT 06338-3180

**RE: Invitation to Comment Under Section 106: Proposed Monopole Communications Tower**
**Optasite Towers, LLC – Norwich Site**
**39 Maennerchor Avenue**
**Taftville, New London County, Connecticut**
**KA Project No. 88654**

Dear Ms. Knowles:

On behalf of Optasite Towers, LLC (Optasite), Kleinfelder is performing a National Environmental Policy Act (NEPA) site assessment for the Optasite Norwich Site located on Maennerchor Avenue in Taftville, New London County, Connecticut. Kleinfelder is submitting this correspondence as a follow-up to the Tower Construction Notification System (TCNS) filing No. 31952 submitted to you on October 5, 2007 requesting whether you have any interest in consulting on this project.

Optasite is proposing to construct a 65- by 65-foot fenced compound, within a 70-foot by 70-foot lease area, containing a 150-foot tall monopole telecommunications tower and associated equipment. The proposed site will be situated within a lease area that currently consists of undeveloped woodland. The compound will also include a proposed 12-foot wide by approximately 365-foot long gravel access drive extending from an existing driveway off Beauregard Street to provide access to the site. The requested attachments are included for your reference.

Please respond by November 5, 2007 with an opinion of interest or no interest.

Thank you for your attention in this matter. If you have any questions I can be reached at (860)683-4200, ext. 140.

Very truly yours,
**Kleinfelder East, Inc.**

Ashley G. Hawes 2007.10.15 15:01:11 -04'00'

Ashley G. Hawes
Project Scientist

**From:** <towernotifyinfo@fcc.gov>
**To:** <ahawes@kleinfelder.com>
**CC:** <towernotifyinfo@fcc.gov>, <KKnowles@mptn-nsn.gov>
**Date:** 10/22/2007 3:14 PM
**Subject:** Reply to Proposed Tower Structure (Notification ID #31952) - Email ID #1680198

Dear Ashley G Hawes,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from THPO Kathleen Knowles of the Mashantucket Pequot Tribe in reference to Notification ID #31952:

Dear Ms Hawes,
Regarding Notification ID # 31952, after reviewing the information provided, we have no knowledge of properties of religious and cultural importance to the Mashantucket Pequot Tribe. However, we recommend a Phase I Archaeological Reconnaissance Survey be conducted to identify previously unknown properties of cultural and religious importance. We would appreciate a copy of any work performed on this project.
Kathleen Knowles,
Tribal Historic Preservation Officer
Mashantucket Pequot Tribe

For your convenience, the information you submitted for this notification is detailed below.

Notification Received: 10/05/2007
Notification ID: 31952
Tower Owner Individual or Entity Name: Kleinfelder East, Inc on behalf of Optasite Towers, LLC
Consultant Name: Ashley G Ashley
Street Address: Kleinfelder
99 Lamberton Road Suite 201
City: Windsor
State: CONNECTICUT
Zip Code: 06095
Phone: 860-683-4200
Email: ahawes@kleinfelder.com

Structure Type: POLE - Any type of Pole
Latitude: 41 deg 47 min 20.7 sec N
Longitude: 72 deg 28 min 55.5 sec W
Location Description: 39 Maennerchor Ave
City: Taftville
State: CONNECTICUT
County: HARTFORD
Ground Elevation: 142.0 meters
Support Structure: 42.7 meters above ground level
Overall Structure: 42.7 meters above ground level
Overall Height AMSL: 184.7 meters above mean sea level

KLEINFELDER
EXPECT MORE®

January 4, 2008

Kathleen Knowles, Tribal Historic Preservation Officer
Mashantucket Pequot Tribe
Mashantucket Pequot Museum and Research Center
110 Pequot Trail
Mashantucket, CT 06338-3180

**RE: Phase I Cultural Resources Reconnaissance Survey**
**Optasite Towers, LLC – Norwich Site**
**39 Maennercher Avenue**
**Norwich, New London County, Connecticut**
**KA Project No. 88654**

Dear Ms. Knowles:

As you are aware, Kleinfelder East, Inc. is performing a National Environmental Policy Act (NEPA) site assessment on behalf of Optasite Towers, LLC (Optasite) for the Optasite Norwich Site located on Maennercher Avenue in Norwich, New London County, Connecticut. Kleinfelder is submitting this Phase I Cultural Resources Reconnaissance Survey as requested in your email dated October 29, 2007, in response to the Tower Construction Notification System (TCNS) filing No. 31952 submitted to you on October 5, 2007 requesting whether you have any interest in consulting on this project.

As a brief review, Optasite is proposing to construct a 65- by 65-foot fenced compound, within a 70-foot by 70-foot lease area, containing a 150-foot tall monopole telecommunications tower and associated equipment. The proposed site will be situated within a lease area that currently consists of undeveloped woodland. The compound will also include a proposed 12-foot wide by approximately 365-foot long gravel access drive extending from an existing driveway off Beauregard Street to provide access to the site. The Phase I Cultural Resources Reconnaissance Survey, performed by Heritage Consultants, LLC, concludes that **"no cultural material was identified during survey and no impacts to cultural resources are anticipated."**

If you have any questions I can be reached at (860)683-4200, ext. 140.

Very truly yours,
**Kleinfelder East, Inc.**

Ashley Hawes
2008.01.03
16:29:51 -05'00'

Ashley G. Hawes
Project Scientist

MASHANTUCKET PEQUOT MUSEUM & RESEARCH CENTER

1-8-08

Ms. Ashley Hawes,
Project Scientist
Kleinfelder
99 Lamberton Rd., Suite 201
Windsor, CT 06095

Re: PHASE I CULTURAL RESOURCES RECONNAISSANCE SURVEY
OPTASITE TOWERS, LLC – NORWICH SITE
39 MAENNERCHER AVENUE
NORWICH, NEW LONDON COUNTY, CONNECTICUT
KA PROJECT NO. 88654
TCNS NOTIFICATION ID # 31952

Dear Ms Hawes,

I have reviewed the Phase I Cultural Resources Reconnaissance Survey entitled "PHASE I CULTURAL RESOURCES RECONNAISSANCE SURVEY OF PROPOSED CELLULAR COMMUNICATIONS FACILITY CT-999-0093, NORWICH, CONNECTICUT," submitted by Heritage Consultants, LLC.
The research design and testing strategy meets acceptable professional standards, and I agree with the recommendations and conclusions.
Please keep me informed of any further developments with respect to this project.

Sincerely,

Kathleen Knowles

Kathleen Knowles,
Tribal Historic Preservation Officer
Mashantucket Pequot Tribe

MASHANTUCKET PEQUOT MUSEUM
& RESEARCH CENTER

110 Pequot Trail, PO Box 3180
Mashantucket, CT 06338
Phone: 860 396 6800
Fax: 860 396 6850
www.pequotmuseum.org

**From:** <towernotifyinfo@fcc.gov>
**To:** <ahawes@kleinfelder.com>
**CC:** <towernotifyinfo@fcc.gov>, <sequahna@yahoo.com>
**Date:** 10/25/2007 6:13 PM
**Subject:** Reply to Proposed Tower Structure (Notification ID #31952) - Email ID #1684932

Dear Ashley G Hawes,

Thank you for using the Federal Communications Commission's (FCC) Tower Construction Notification System (TCNS). The purpose of this email is to inform you that an authorized user of the TCNS has replied to a proposed tower construction notification that you had submitted through the TCNS.

The following message has been sent to you from Cell Tower Coordinator Sequahna Mars of the Narragansett Indian Tribe in reference to Notification ID #31952:

On behalf of the Narragansett Indian Tribe, the Narragansett Indian Tribal Historic Preservation Office is hereby formally initiating consultation and review of cell tower site designated by TCNS # 31952, located in Taftville, CT. Follow-up on behalf of the cell tower carrier should be initiated by contacting Sequahna Mars, at sequahna@yahoo.com, or Doug Harris, at 401-742-4035, or dh@nithpo.com. Thank you.

For your convenience, the information you submitted for this notification is detailed below.

Notification Received: 10/05/2007
Notification ID: 31952
Tower Owner Individual or Entity Name: Kleinfelder East, Inc on behalf of Optasite Towers, LLC
Consultant Name: Ashley G Ashley
Street Address: Kleinfelder
99 Lamberton Road Suite 201
City: Windsor
State: CONNECTICUT
Zip Code: 06095
Phone: 860-683-4200
Email: ahawes@kleinfelder.com

Structure Type: POLE - Any type of Pole
Latitude: 41 deg 47 min 20.7 sec N
Longitude: 72 deg 28 min 55.5 sec W
Location Description: 39 Maennerchor Ave
City: Taftville
State: CONNECTICUT
County: HARTFORD
Ground Elevation: 142.0 meters
Support Structure: 42.7 meters above ground level
Overall Structure: 42.7 meters above ground level
Overall Height AMSL: 184.7 meters above mean sea level

KLEINFELDER
EXPECT MORE®

October 15, 2007

Sequahna Mars
Cell Tower Coordinator
Narragansett Indian Tribe
P.O. Box 268
Charlestown, Rhode Island 02813

**RE: Invitation to Comment Under Section 106: Proposed Monopole Communications Tower**
**Optasite Towers, LLC – Norwich Site**
**39 Maennerchor Avenue**
**Taftville, New London County, Connecticut**
**KA Project No. 88654**

Dear Sequahna Mars:

On behalf of Optasite Towers, LLC (Optasite), Kleinfelder is performing a National Environmental Policy Act (NEPA) site assessment for the Optasite Norwich Site located on Maennerchor Avenue in Taftville, New London County, Connecticut. Kleinfelder is submitting this correspondence as a follow-up to the Tower Construction Notification System (TCNS) filing No. 31952 submitted to you on October 5, 2007 requesting whether you have any interest in consulting on this project.

Optasite is proposing to construct a 65- by 65-foot fenced compound, within a 70-foot by 70-foot lease area, containing a 150-foot tall monopole telecommunications tower and associated equipment. The proposed site will be situated within a lease area that currently consists of undeveloped woodland. The compound will also include a proposed 12-foot wide by approximately 365-foot long gravel access drive extending from an existing driveway off Beauregard Street to provide access to the site. A USGS topographical map is attached for your reference.

Please respond by November 5, 2007 with an opinion of interest or no interest.

Thank you for your attention in this matter. If you have any questions I can be reached at (860)683-4200, ext. 140.

Very truly yours,
**Kleinfelder East, Inc.**

Ashley G. Hawes 2007.10.15 15:01:28 -04'00'

Ashley G. Hawes
Project Scientist

KLEINFELDER
EXPECT MORE®

October 31, 2007

Sequahna Mars
Cell Tower Coordinator
Narragansett Indian Tribe
228 Carolina Nooseneck Road
Wyoming, Rhode Island 02898

**RE: Invitation to Comment Under Section 106: Proposed Monopole Communications Tower**
**Optasite Towers, LLC – Norwich Site**
**39 Maennerchor Avenue**
**Taftville, New London County, Connecticut**
**KA Project No. 88654**

Dear Sequahna Mars:

As you are aware, Kleinfelder East, Inc. (Kleinfelder) is performing a National Environmental Policy Act (NEPA) assessment on behalf of Optasite Towers, LLC (Optasite) for the Norwich Site located on Maennerchor Avenue in Taftville, New London County, Connecticut. Kleinfelder is submitting this correspondence as a follow-up to the Tower Construction Notification System (TCNS) filing No. 31952 submitted to the Narragansett Indian Tribe on October 5, 2007 requesting whether there is interest in consulting on this project. A follow-up letter and USGS topographic map were sent October 16, 2007. Per our telephone discussion on October 29, 2007, I am forwarding you the materials you requested for review.

As a brief review, Optasite is proposing to construct a 65- by 65-foot fenced compound, within a 70-foot by 70-foot lease area, containing a 150-foot tall monopole telecommunications tower and associated equipment. The proposed site will be situated within a lease area that currently consists of undeveloped woodland. The compound will also include a proposed 12-foot wide by approximately 365-foot long gravel access drive extending from an existing driveway off Beauregard Street to provide access to the site. A USGS topographical map, site plans, and photo-documentation are attached for your reference.

Thank you for your timely attention in this matter. If you have any questions I can be reached at (860)683-4200, ext. 140.

Very truly yours,
**Kleinfelder East, Inc.**

Ashley G. Hawes
Ashley Hawes
2007.10.30 16:35:46
-04'00'

Ashley G. Hawes
Project Scientist

**Ashley Hawes - site visits**

**From:** sequahna mars <sequahna@yahoo.com>
**To:** <AHawes@kleinfelder.com>
**Date:** 1/4/2008 11:28 AM
**Subject:** site visits

Good Evening Ashley,

Happy New Year! I do apologize for the delay, I've been absolutely swamped trying to schedule site visits and do the office work, I'm down a field assistant and I'm really feeling the crunch.

I've had time to review the five projects that you sent to me (TCNS #'s 31753, 31955, 31952, 31954, and 31953) Due to the location of the sites, they will require a site walkover. As stated in the original email regarding fees, the site walk-over fees per site will be required. I will handle the site walk-overs personally, so as to issue a final determination as expeditiously as possible. Typically, we receive the site walk over fee either before the scheduled site walk over, or a representative of the respective company will meet and issue payment on site. Please let me know how you wish to proceed. I am prepared to make the site visits as early as this weekend.

Please note that the five sites mentioned above have been given priority over all other projects at this time.

If you have any further questions please feel free to email me, or call me directly, at 401-419-2959. Thank you for your time!

~Sequahna~

KLEINFELDER
EXPECT MORE®

February 1, 2008

Sequahna Mars
Cell Tower Coordinator
Narragansett Indian Tribe
228 Carolina Nooseneck Road
Wyoming, Rhode Island 02898

**RE: Invitation to Comment Under Section 106: Proposed Monopole Communications Tower**
**Optasite Towers, LLC – Norwich Site**
**39 Maennercher Avenue**
**Norwich, New London County, Connecticut**
**KA Project No. 88654**

Dear Ms. Mars:

As you are aware, Kleinfelder East, Inc. (Kleinfelder) is performing a National Environmental Policy Act (NEPA) assessment on behalf of Optasite Towers, LLC (Optasite) for the Norwich site located on Maennercher Avenue in Norwich, New London County, Connecticut. Kleinfelder is submitting this correspondence as a follow-up to the Tower Construction Notification System (TCNS) filing No. 31952 submitted to the Narragansett Indian Tribe on October 5, 2007 requesting whether there is interest in consulting on this project. A follow-up letter and USGS topographic map were sent October 16, 2007. On October 31, 2007, another follow-up letter, USGS topographical map, site plans, photographic documentation, and a $500.00 review fee were delivered.

Kleinfelder is submitting this Phase I Cultural Resources Reconnaissance Survey performed by Heritage Consultants, LLC in December, 2007. The $500.00 site walk fee is to be delivered under a separate transmittal.

As a brief review, Optasite is proposing to construct a 65- by 65-foot fenced compound, within a 70-foot by 70-foot lease area, containing a 140-foot tall monopole telecommunications tower and associated equipment. The proposed site will be situated within a lease area that currently consists of undeveloped woodland. The compound will also include a proposed 12-foot wide by approximately 365-foot long gravel access drive extending from an existing driveway off Beauregard Street to provide access to the site.

Thank you for your timely attention in this matter. If you have any questions I can be reached at (860)683-4200, ext. 140.

Very truly yours,
**Kleinfelder East, Inc.**

Ashley Hawes
2008.02.01
09:14:07 -05'00'

Ashley G. Hawes
Project Scientist

HERITAGE
CONSULTANTS, LLC

*INTEGRATED HISTORIC PRESERVATION PLANNING*

November 12, 2007

Ashley Hawes
Kleinfelder, Inc.
99 Lamberton Road
Windsor, CT 06095

**RE: Preliminary Archeological Assessment of Proposed Telecommunications Tower 999-0093 Located in Norwich, Connecticut**

Ms. Hawes:

Heritage Consultants, LLC, is pleased to have this opportunity to provide Kleinfelder, Inc., with the following preliminary archeological assessment of proposed telecommunications tower 999-0093 located at 39 Maennerchor Avenue in the Taftville section of Norwich, Connecticut (Figure 1). The current project entailed completion of an existing conditions cultural resources summary based on the examination of GIS data obtained from the Connecticut State Historic Preservation Office, as well as historic maps, aerial photographs, and topographic quadrangles maintained by Heritage Consultants, LLC. This investigation did not consider the effects of the proposed construction upon built resources, and it is based upon project location information provided to Heritage Consultants, LLC by Kleinfelder, Inc. The objectives of this study were: 1) to gather and present data regarding previously identified cultural resources situated within the vicinity of the Areas of Potential Effect; 2) to investigate the proposed project parcel in terms of its natural and historical characteristics; and 3) to evaluate the need for completing additional cultural resources investigations.

Environmental characteristics frequently are used to predict the location of archeological sites. Typically distance to water, slope, and soil types are included as part of these predictive models. A review of environmental characteristics identified in the vicinity of the proposed tower suggests that this location may once have been favorable to past human settlement and landuse. In particular, the proposed tower location is situated on a hilltop at the confluences of the Shetucket and Quinnebaug Rivers (Figures 1 and 2). A review of previously recorded cultural resources on file with the Connecticut Historic Preservation Office, however, demonstrates that no previously recorded archaeological sites or historic properties have been identified within 0.8 km (0.5 mi) of the project area (Figure 3).

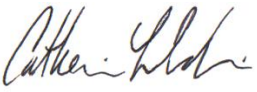
In addition, as Figures 4 through 7 depict, the Area of Potential Effect is located along a major transportation network connecting the historic communities of Greenville and Taftville in the mid nineteenth to mid twentieth century. During that era, the project area, however, was only sparsely settled and likely used for pastoral purposes or as a woodlot. The series of aerial photographs presented in Figures 8 through 13, support this interpretation. In fact, the sequence of aerial photographs spanning from 1934 to 1995, suggest that few changes have occurred in the project region and, more specifically, the Area of Potential effect itself appears to remain undisturbed and located within a forested area. Based on the available aerial imagery, it appears that the area encompassing the proposed cell tower location,

877 Main Street • Newington, Connecticut
Phone (860) 667-3001 • Fax (860) 667-3008
Email: info@heritage-consultants.com

has been only minimally impacted by historic and modern occupation and landuse. This, coupled with the natural characteristics of the local landscape, indicate that additional archaeological investigations should be conducted to determine whether intact cultural deposits exist within the Area of Potential Effect associated with proposed cellular communications located in Norwich, Connecticut. As a result, it is the professional opinion of Heritage Consultants, LLC that a Phase I Cultural Resources Reconnaissance Survey with the proposed telecommunications tower location should be undertaken.

If you have any questions regarding this Technical Memorandum, or if we may be of additional assistance with this or any other projects you may have, please do not hesitate to call us at 860-667-3001 or email us info@heritage-consultants.com. We are at your service.

Sincerely,



Catherine M. Labadia, M.A.
President & Principal Investigator

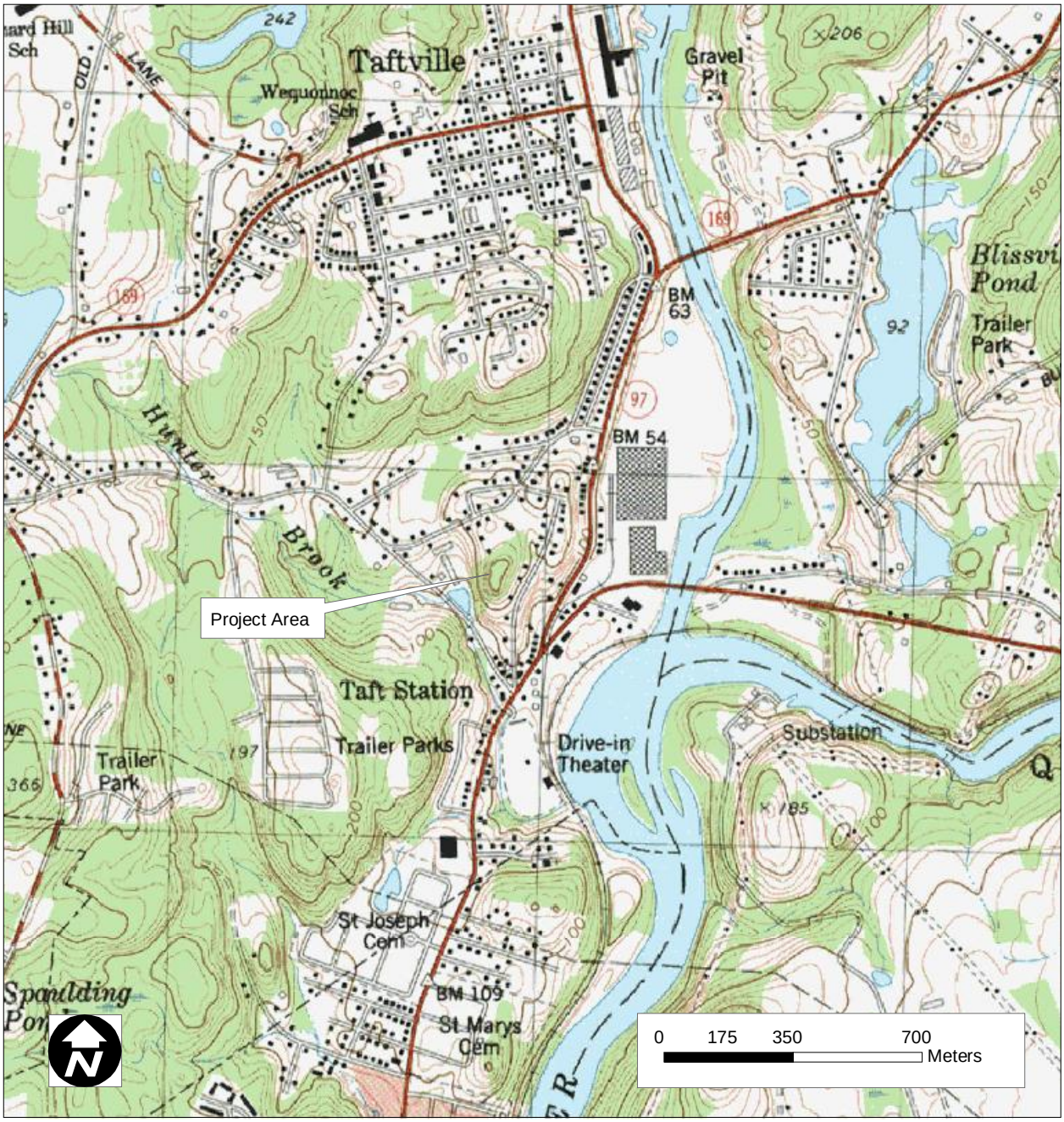



Figure 1. Excerpt from a recent USGS 7.5' series topographic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

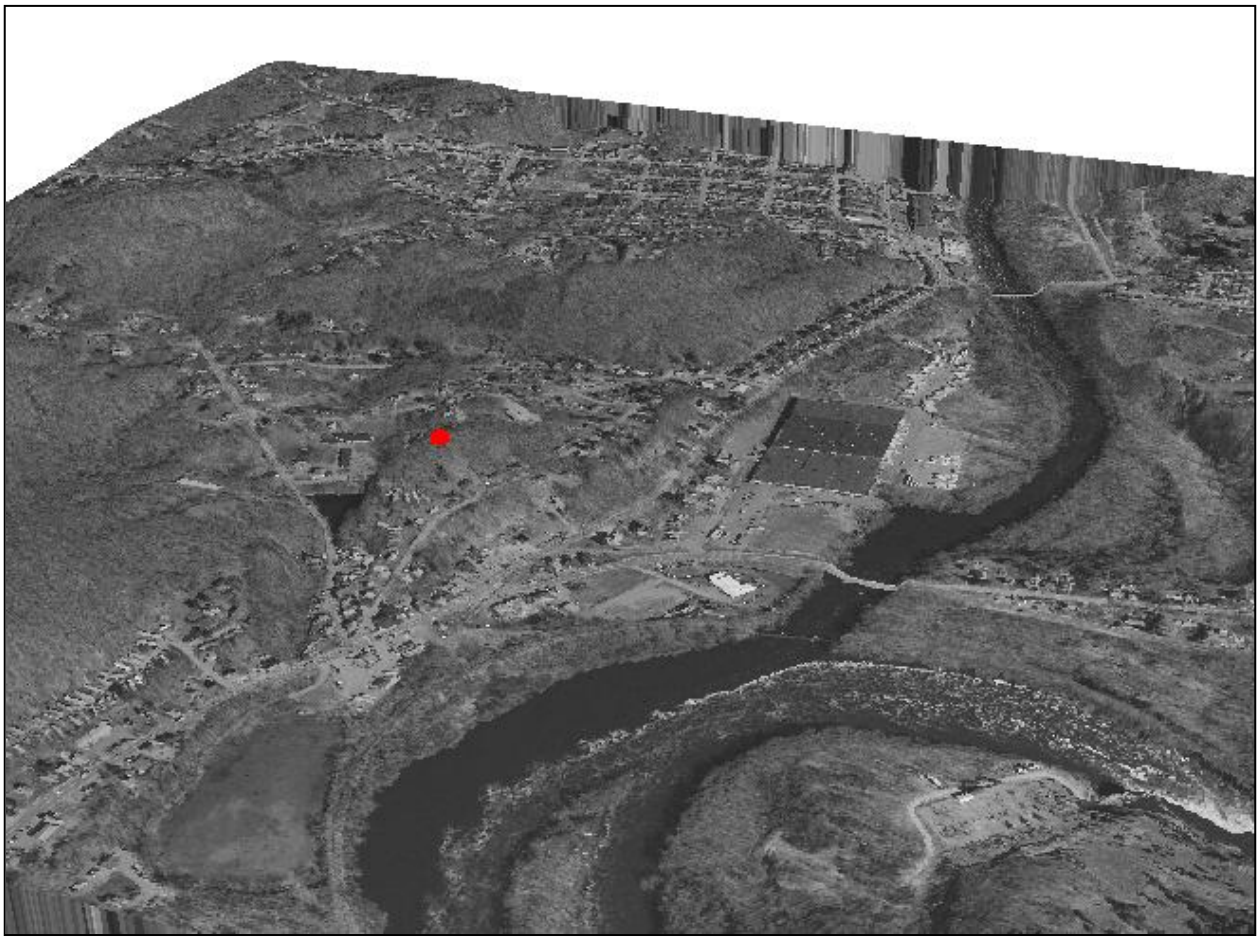


Figure 2. Excerpt from a recent aerial photograph and topography depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

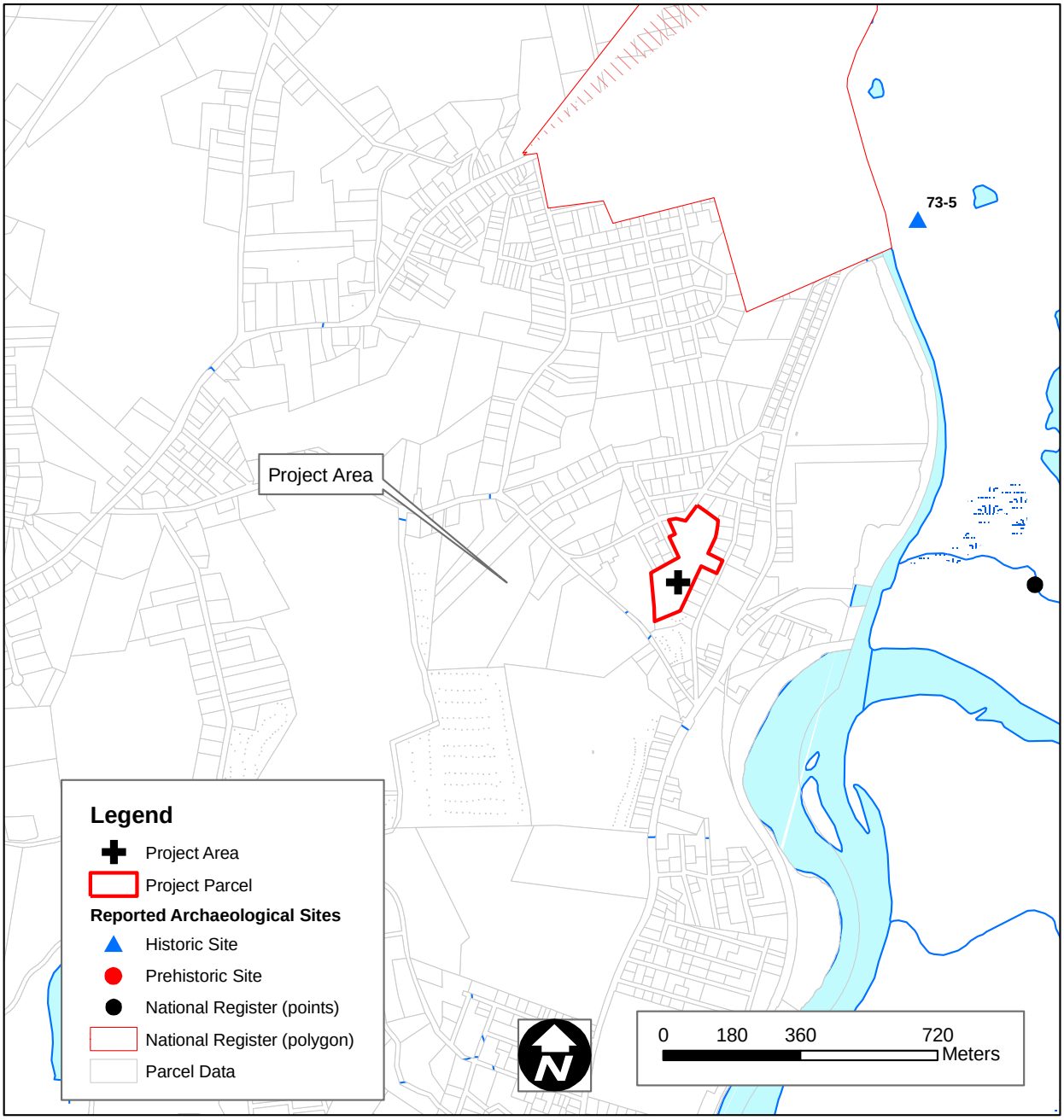



Figure 3. Map of previously identified cultural resources and National Register of Historic Places properties situated in the vicinity of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

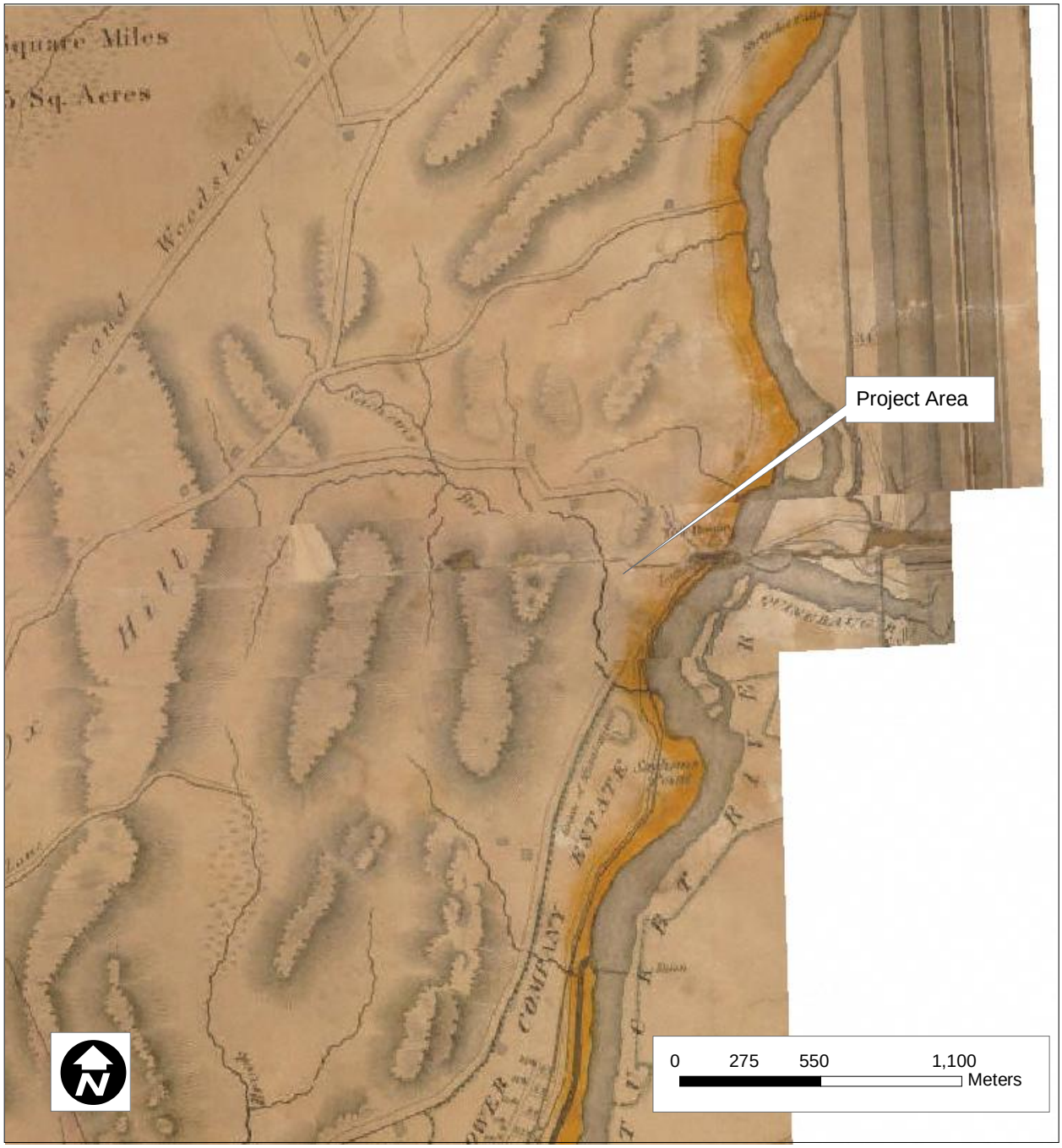



Figure 4. Excerpt from an 1833 historic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

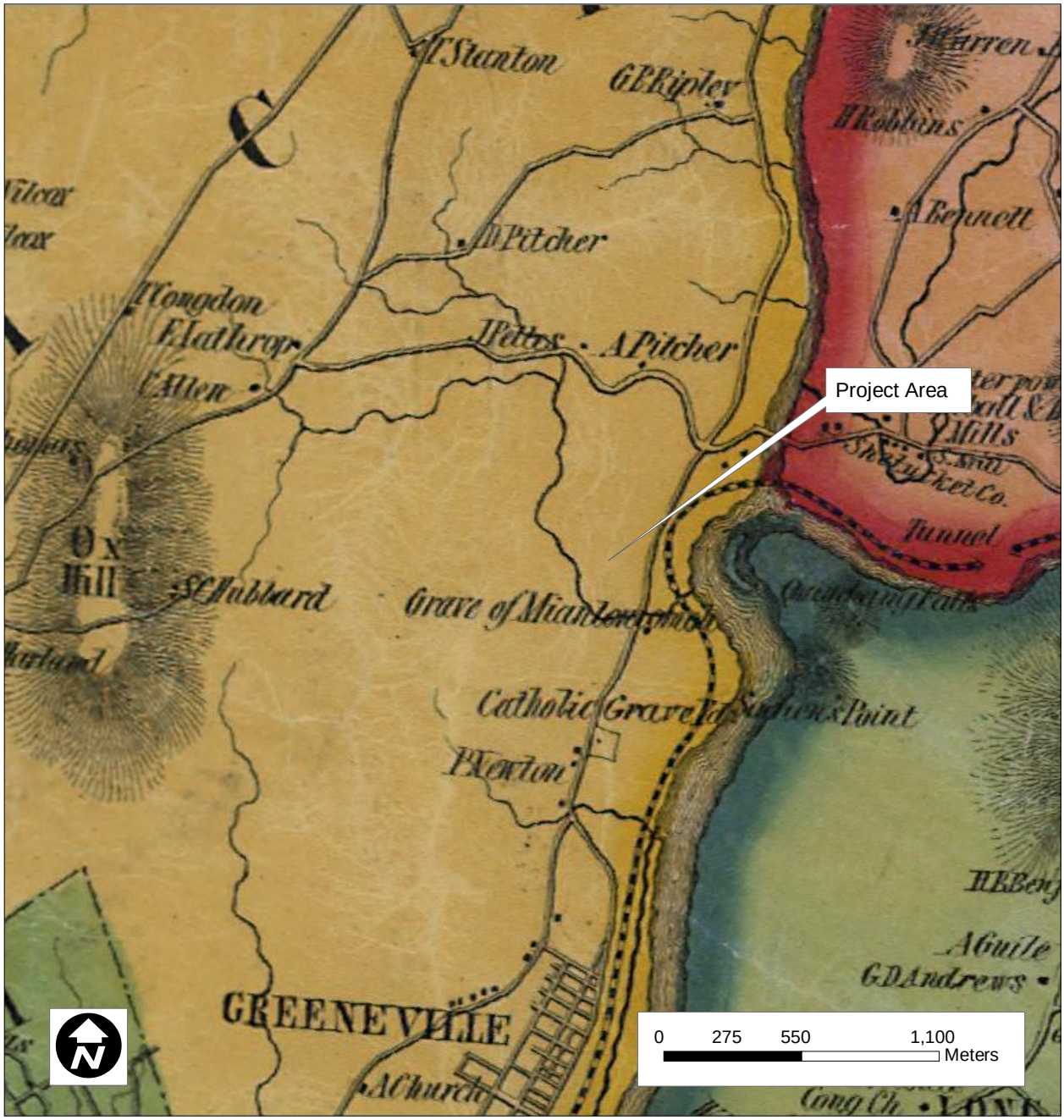



Figure 5. Excerpt from an 1854 historic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

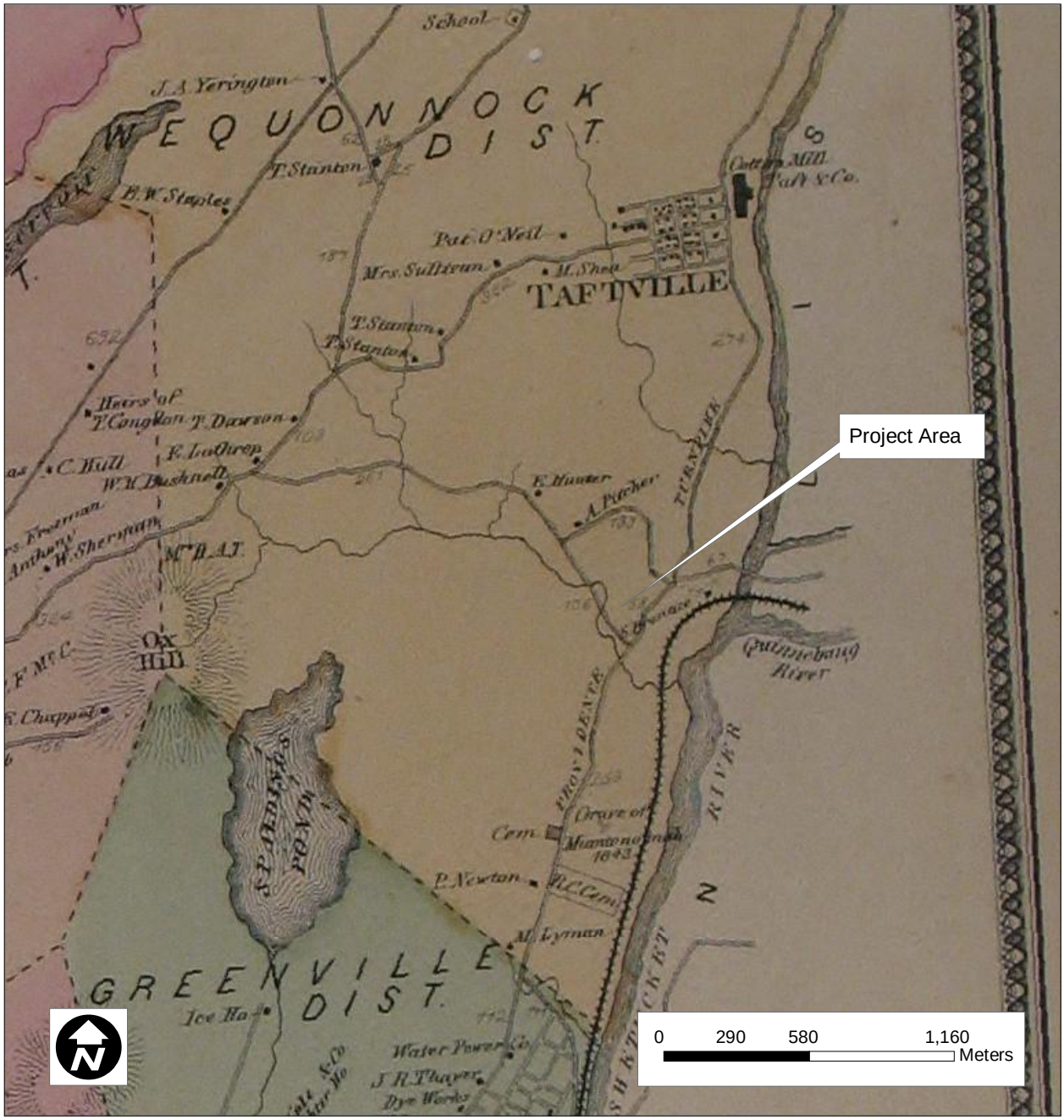



Figure 6. Excerpt from an 1868 historic postal service map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

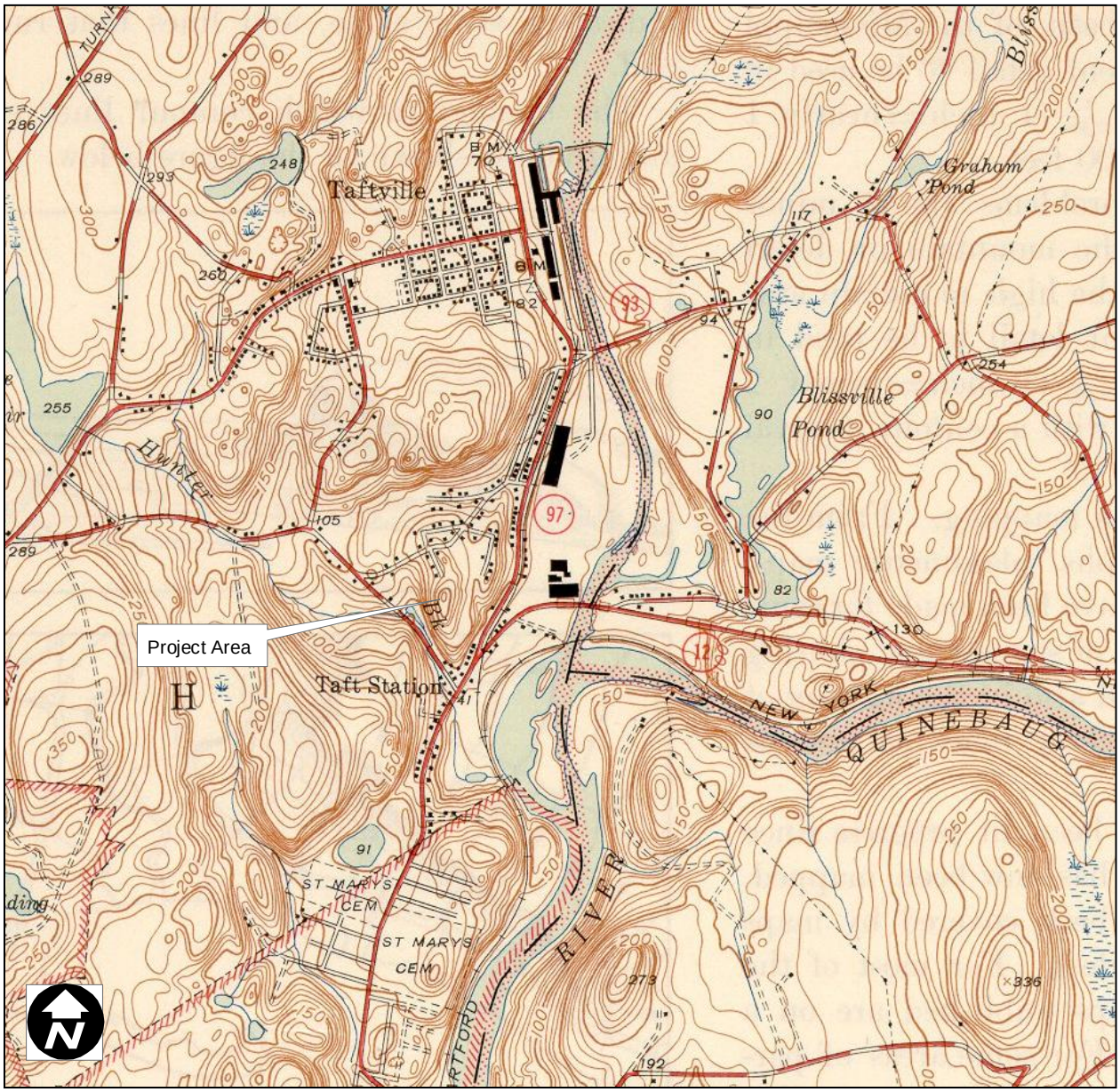



Figure 7. Excerpt from the 1946 USGS 7.5' series topographic quadrangle depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

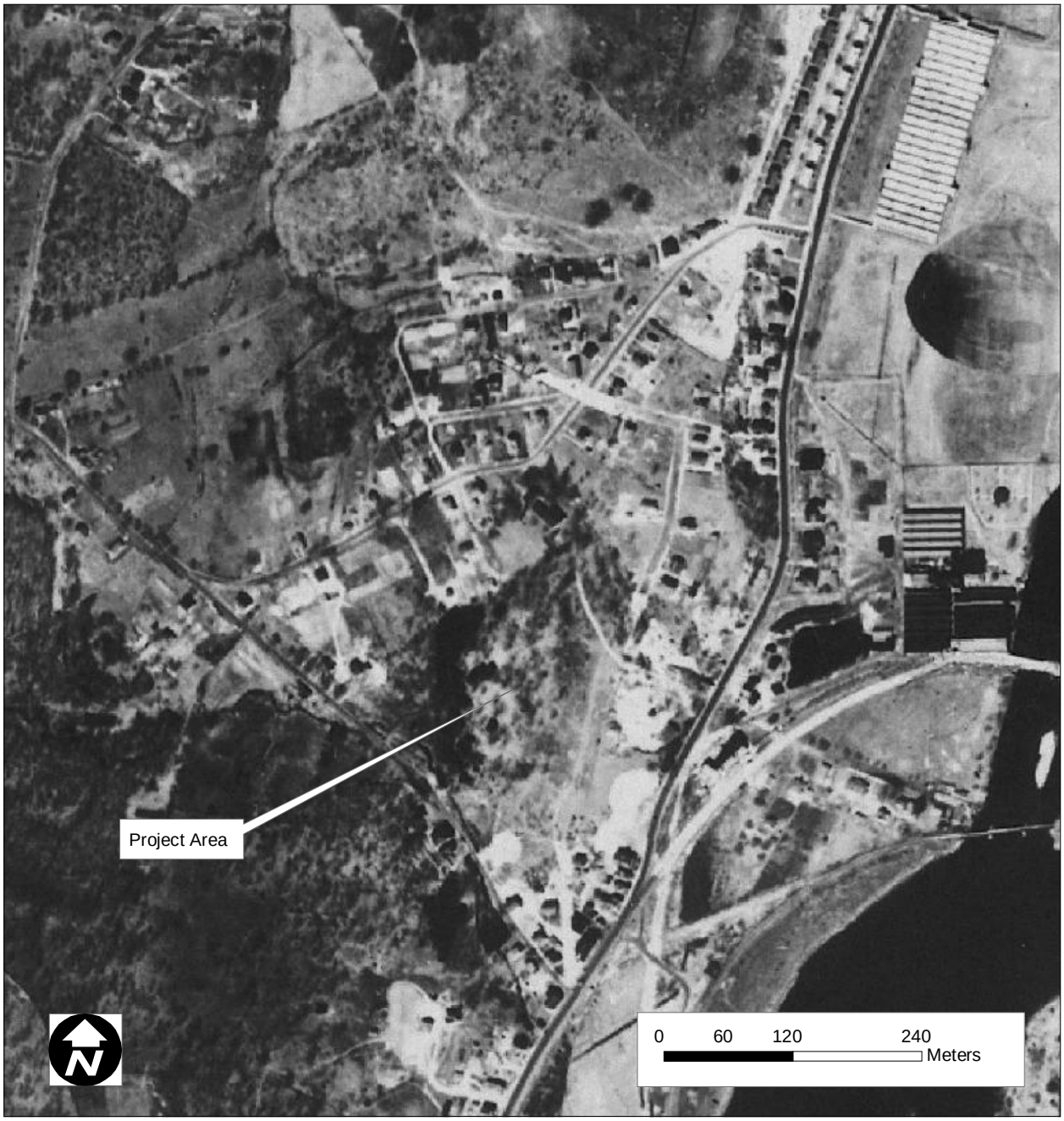



Figure 8. Excerpt from a 1934 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 9. Excerpt from a 1951 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 10. Excerpt from a 1970 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 11. Excerpt from a 1974 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 12. Excerpt from a 1986 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 13. Excerpt from a 1995 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

**FINAL REPORT** **JANUARY 2007**

# PHASE I CULTURAL RESOURCES RECONNAISSANCE SURVEY OF PROPOSED CELLULAR COMMUNICATIONS FACILITY CT-999-0093, NORWICH, CONNECTICUT

PREPARED FOR:

KLEINFELDER, INC.
99 LAMBERTON ROAD
WINDSOR, CT 06095

HERITAGE CONSULTANTS, LLC
877 MAIN STREET
NEWINGTON, CONNECTICUT 06111

# TABLE OF CONTENTS

# LIST OF FIGURES

## 1.0 Introduction

This report summarizes the results of a Phase I cultural resources reconnaissance survey of proposed cellular communications facility CT-999-0093 to be constructed within a wooded parcel of land, currently situated at 39 Maennerchor Avenue in Taftville, Connecticut. Heritage Consultants, LLC, completed the field investigation portion of this project, performed on behalf of Kleinfelder, Inc., on December 5, 2007. All work was conducted in accordance with the National Historic Preservation Act of 1966, as amended; the National Environmental Policy Act of 1969, as amended; and the *Environmental Review Primer for Connecticut's Archaeological Resources* (Poirier 1987). The remainder of this document presents a description of the Areas of Potential Effect, information used as project context, the methods by which the current Phase I cultural resources reconnaissance survey was completed, results of the investigation, and management recommendations for the project.

## 2.0 Project Description

As mentioned above, the proposed cellular communications facility will be located in Taftville, Connecticut (Figure 1). The Areas of Potential Effect, which consist of a single access road measuring approximately 106 m (350 ft) in length, a buried utility cable, and a single lease area measuring approximately 21 x 21 m (70 x 70 ft) in size, are situated at approximate elevations ranging from 39 to 47 m (130 to 155 ft) NGVD; they are bounded to the north by mixed woodlands, an existing residential lot, and Maennerchor Road, to the east by mixed forests and residential housing, and to the west and south by mixed forests (Figure 2). The Area of Potential Effect associated with the proposed lease area will contain a proposed 42 m (140 ft) tall monopole type cellular communications tower, a gang meter bank, a battery cabinet, an equipment shelter, and a transformer. These project items will be enclosed and protected by a proposed chain link fence and protective bollards. At the time of survey, the proposed lease area was characterized by a mixture of trees and brush, and apparent bedrock outcroppings (see Figures 3 through 6).

## 3.0 Background Research

The current Phase I cultural resources reconnaissance survey was completed using a three-step approach. The first step consisted of historic research and records review that focused on the portion of Norwich encompassing the Areas of Potential Effect. This was followed by a review of all previously recorded archeological sites and/or National Register of Historic Places properties situated within the vicinity of the project area in an effort to determine the archeological context of the region. Finally, this approach entailed the completion of fieldwork associated with the current Phase I cultural resources reconnaissance survey.

Background research included analysis of readily available historic maps and aerial imagery encompassing the proposed project area; an examination of the pertinent 1983 USGS 7.5' series topographic quadrangle; and a review of all archeological and National Register of Historic Places property data maintained by the Connecticut State Historic Preservation Office and digital records archived by Heritage Consultants, LLC. The intent of this review was to identify all previously recorded cultural resources situated within and/or immediately adjacent to the Areas of Potential Effect. This information was used to develop the archeological context for assessing cultural resources that may be identified during survey.

## 4.0 Project Context: Previous Investigations, Natural & Prehistoric Settings, and Historic Overview

The following sections provide an overview of the region's natural and prehistoric settings, historic backdrop, and previous cultural resources investigations completed within the vicinity of the Area of Potential Effect. These brief discussions are included in an effort to provide contextual information relative to the location of the Area of Potential Effect, its natural characteristics, and its prehistoric and

historic use and occupation. It concludes with an overview of the previous cultural resources investigations that have taken place in the area and a discussion of their results.

## 4.1 Natural Setting

The Areas of Potential Effect are located within the Southeast Hills ecoregion of Connecticut, which consists of a near coastal upland region located within close proximity to the Long Island Sound. This region is characterized by low, rolling to locally rugged hills of moderate elevation, and broad areas of upland, rugged topography. The bedrock of the region is primarily metamorphic in origin, with north trending belts of Paleozoic gneisses and schists present. Soils in this ecoregion have developed on top of glacial till in upland locales, and on top of stratified deposits of sand, gravel, and silt in the local valleys. The closest large river to the project area is the Thames River, which is a tidal in the vicinity of the Areas of Potential Effect. The other large body of water located in the vicinity of the Areas of Potential Effect is Poquetanuck Cove, which is an offshoot of the Thames River and which is known to have been used prehistorically by Native Americans as a settlement area and for the extraction of seasonally abundant resources (e.g., various fish, reptile, bird, and shellfish species). Finally, local fauna include brown trout, shad, alewives, American eel, cunner, winter flounder, striped bass, rabbit, squirrel, raccoon, fox, opossum, deer, various snakes and turtles, and a wide variety of terrestrial and aquatic bird species. This brief overview indicates that the flora and fauna of the proposed project region is not only diverse in nature, but also could have been put to a multitude of uses by both prehistoric and historic inhabitants of the region. The vegetation provided not only sustenance, but raw materials for commodities, tools, and fires as well.

## 4.2 Prehistory of Connecticut

The earliest inhabitants of Connecticut, referred to as Paleo-Indians, probably arrived in the area after ca. 14,000 B.P. (Gramly and Funk 1990; Snow 1980). While there have been numerous finds of Paleo-Indian projectile points throughout Connecticut, only two sites, the Templeton Site (6-LF-21) and the Hidden Creek Site (72-163), have been studied in detail (Jones 1997; Moeller 1980). The Templeton Site (6-LF-21) is located in Washington, Connecticut on a terrace overlooking the Shepaug River. Carbon samples recovered during excavation of the site area produced a radiocarbon date of 10,190$\pm$300 B.P., for the occupation. In addition to a single large and two small fluted points, the Templeton Site produced gravers, drills, core fragments, scrapers, and channel flakes, indicating that the full range of lithic reduction took place within the site area (Moeller 1980). Moreover, use of both exotic and local raw materials was documented in the recovered lithic assemblage, suggesting that not only did the site's occupants spend some time in the area, but they also had access to distant lithic sources.

The only other Paleo-Indian site studied in detail is the Hidden Creek Site (72-163) (Jones 1997). Paleo-Indian artifacts recovered from this site include bifaces, side scrapers, a fluted preform, gravers, and end scrapers. While no direct date for the Paleo-Indian assemblage yet has been obtained, Jones (1997:76) argues that based on typological considerations the artifacts likely date from ca., 10,000 to 9,500 years ago. Further, based on the types and number of tools present, Jones (1997:77) has hypothesized that the Hidden Creek Site represents a short-term occupation. Excavation of both sites suggest that the Paleo-Indian settlement pattern consisted of a high degree of mobility, with groups moving regionally in search of seasonal food resources, as well as for high quality lithic materials.

The Archaic Period began by ca., 10,000 B.P. (Ritchie and Funk 1973; Snow 1980). Later, Griffin (1967) and Snow (1980) divided the Archaic Period into three subperiods: the Early Archaic (10,000 to 8,000 B.P.), Middle Archaic (8,000 to 6,000 B.P.), and Late Archaic (6,000 to 3,400 B.P.). To date, very few Early Archaic sites have been identified in southern New England. Like Paleo-Indian sites, Early Archaic sites tend to be very small and produce few artifacts, most of which are not diagnostic. Sites of this age are identified based on the recovery of a series of ill-defined bifurcate-based projectile points. These

projectile points are identified by their characteristic bifurcated base, and they generally are made from high quality lithics, though some quartz and quartzite specimens have been recovered. Current archeological evidence suggests that Early Archaic groups became more focused on locally available and smaller game species. Occupations of this time period are represented by camps that were moved periodically to take advantage of seasonal resources (McBride 1984).

By the onset of the Middle Archaic Period, increased numbers and types of sites are noted in the region (McBride 1984). The most well known Middle Archaic site in New England is the Neville Site (Dincauze 1976). Analysis of the Neville Site indicated that the Middle Archaic occupation dated from between ca., 7,700 and 6,000 years ago. These sites are associated with the recovery of Neville, Stark, and Merrimac projectile points. McBride (1984) noted that Middle Archaic sites in the lower Connecticut River Valley tend to be represented by moderate density artifact scatters representing a "diversity of site types, with both large-scale occupations and small special purpose present" (McBride 1984:96). Thus, based on the available archeological evidence, the Middle Archaic Period is characterized by continued increases in diversification of resources exploited, as well as by sophisticated changes in the settlement pattern to include different site types, including both base camps and task-specific sites (McBride 1984:96).

The Late Archaic Period in southern New England is divided into two major cultural traditions: the Laurentian and Narrow-Stemmed Traditions (Funk 1976 McBride 1984; Ritchie 1969a and b). Laurentian artifacts include ground stone axes, adzes, gouges, ulus (semi-lunar knives), pestles, atlatl weights and scrapers. The diagnostic projectile point forms of this time period include the Brewerton Eared-Notched, Brewerton Eared and Brewerton Side-Notched varieties (McBride 1984; Ritchie 1969a). Current archeological evidence suggests that Laurentian populations consisted of groups of mobile hunter-gatherers. While a few large Laurentian Tradition occupations have been identified and studied, they generally encompass less than 500 $m^2$ in area. These base camps reflect frequent movements by small groups of people in search of seasonally abundant resources. The overall settlement pattern of the Laurentian Tradition was dispersed in nature, with base camps located in a wide range of microenvironments, including riverine as well as upland zones (McBride 1984:252).

The latter portion of the Late Archaic is represented the Narrow-Stemmed Tradition. It is recognized by the presence of quartz and quartzite narrow stemmed projectile points, triangular quartz Squibnocket projectile points, and a bipolar lithic reduction strategy (McBride 1984). In general, the Narrow-Stemmed Tradition corresponds to when Late Archaic populations in southern New England began to "settle into" well-defined territories. Further, Narrow-Stemmed Tradition settlement patterns are marked by an increase in the types of sites utilized. That is, the Narrow-Stemmed Tradition witnessed the introduction of large base camps supported by small task-specific sites and temporary camps. The increased number of Narrow Stemmed Traditions temporary and task specific sites indicates frequent movements out of and back into base camps for the purpose of resource procurement; however, the base camps were relocated seasonally to position groups near frequently used, but dispersed, resources (McBride 1984:262).

The Terminal Archaic, which lasted from ca., 3,700 to 2,700 B.P., is represented by the Susquehanna Tradition (McBride 1984; Ritchie 1969b). The Susquehanna Tradition is based on the classification of several Broadspear projectile point types and associated artifacts. Temporally diagnostic projectile points of this tradition include the Snook Kill, Susquehanna Broad, Mansion Inn, and Orient Fishtail types (Lavin 1984; McBride 1984; Pfeiffer 1984). In addition, the material culture of the Terminal Archaic includes soapstone vessels, chipped and ground stone adzes, atlatl weights, drills, net sinkers, plummets and gorgets (Lavin 1984; McBride 1984; Ritchie 1969a and 1969b; Snow 1980). Susquehanna Tradition settlement patterns are centered around large base camps located in on terrace edges overlooking floodplains. Acting as support facilities for the large Terminal Archaic base camps were numerous task specific sites and temporary camps. Such sites were used as extraction points for the procurement of resources not found in the immediate vicinity of the base camps, and they generally were located adjacent

to upland streams and wetlands (McBride 1984:282). Finally, there also are a large number of Terminal Archaic cremation cemeteries with burials that have produced broadspear points and radiocarbon dates between 3,700 and 2,700 B.P. (Pfeiffer 1990). Among the grave goods are ritually "killed" (intentionally broken) steatite vessels, as well as ground stone and flaked stone tools (Snow 1980:240); however, this represents an important continuation of traditions from the Late Archaic and it should not be regarded as a cultural trait unique to the Susquehanna Tradition (Snow 1980:244).

Traditionally, the advent of the Woodland Period in southern New England has been associated with the introduction of pottery (Ritchie 1969a; McBride 1984). Like the Archaic Period, the Woodland Period has been commonly divided into three subperiods: Early, Middle, and Late Woodland. The Early Woodland period of the northeastern United States dates from ca., 2,700 to 2,000 B.P. In his study of the lower Connecticut River Valley, McBride (1984) described Early Woodland sites as "characterized by a quartz cobble lithic industry, narrow-stemmed points, an occasional Meadowood projectile point, thick, cord-marked ceramics, and perhaps human cremations" (McBride and Soulsby 1989:50). Early Woodland sites tend to be located in a variety of different ecozones; however, the largest settlements associated with this period were focused on floodplain, terrace, and lacustrine environments (McBride 1984:300), suggesting "population aggregations along major rivers, interior lakes, and wetlands" (McBride and Soulsby 1989:50). In sum, archeological evidence indicates that Early Woodland populations consisted a mobile hunter/gatherers that moved seasonally throughout a diversity of environmental zones in search of available plant and animal resources.

The Middle Woodland Period of southern New England prehistory is marked by an increase in the number of ceramic types and forms utilized (Lizee 1994a), as well as an increase in the amount of exotic lithic raw material used in stone tool manufacture (McBride 1984). In Connecticut, the Middle Woodland Period is represented archeologically by the use of narrow stemmed and Jack's Reef projectile points; increased amounts of exotic raw materials in recovered lithic assemblages, including chert, argillite, jasper, and hornfels; and conoidal ceramic vessels decorated with dentate stamping. Ceramic types indicative of the Middle Woodland period include Linear Dentate, Rocker Dentate, Windsor Cord Marked, Windsor Brushed, Windsor Plain, and Hollister Stamped (Lizee 1994a: 200). In terms of settlement patterns, the Middle Woodland period is characterized by the occupation of village sites by large co-residential groups. These sites were the principal place of occupation, and they were positioned in close proximity to major river valleys, tidal marshes, estuaries, and the nearby coastline, all of which would have supplied an abundance of plant and animal resources (McBride 1984:309). In addition to villages, numerous temporary and task-specific sites were utilized in the surrounding upland areas, as well as in closer ecozones such as wetlands, estuaries, and floodplains.

The Late Woodland period in southern New England dates from ca., 1,200 to 350 B.P., and it is characterized by the earliest evidence for the use of maize in the lower Connecticut River Valley (Bendremer 1993; Bendremer and Dewar 1993; Bendremer et al. 1991; George 1997; McBride 1984); an increase in the frequency of exchange of non-local lithics (Feder 1984; George and Tryon 1996; McBride 1984; Lavin 1984); increased variability in ceramic form, function, surface treatment, and decoration (Lavin 1980, 1986, 1987; Lizee 1994a, 1994b); and a continuation of a trend towards larger, more permanent settlements in riverine, estuarine, and coastal ecozones (Dincauze 1973, 1974; McBride 1984; Snow 1980). Late Woodland lithic assemblages typically contain up to 60 to 70 percent exotic lithics. Finished stone tools include Levanna and Madison projectile points; drills; side-, end-, and thumbnail scrapers; mortars and pestles; nutting stones; netsinkers; and celts, adzes, axes, and digging tools (McBride 1984; Snow 1980). In addition, ceramic assemblages recovered from Late Woodland sites include Windsor Fabric Impressed, Windsor Brushed, Windsor Cord Marked, Windsor Plain, Clearview Stamped, Sebonac Stamped, Selden Island, Hollister Plain, Hollister Stamped, and Shantok Cove Incised types (Lavin 1980; Lizee 1994a; Pope 1953; Rouse 1947; Salwen and Ottesen 1972; Smith 1947).

Finally, McBride (1984:323-329) characterized Late Woodland settlement patterns as more nucleated than the preceding Middle Woodland ones, with fewer, larger sites situated in estuarine and riverine ecozones. Both river confluences and coastal zones were favored areas for the establishment of large village sites that contain numerous hearths, storage pits, refuse pits, ceramic production areas, house floors, and human and dog burials (Lavin 1988b; McBride 1984). McBride (1984:326) has argued that these sites certainly reflect multi-season use, and were perhaps occupied on a year-round basis (see also Bellantoni 1987). In addition to large village sites, McBride (1984:326) identified numerous temporary and task-specific sites in the uplands of the lower Connecticut River Valley and along the coastline. These sites likely were employed for the collection of resources such as plant, animal, and lithic raw materials. These sites tend to be very small, lack internal organizational structure, and usually contain a limited artifact assemblage and few cultural features, suggesting that they were occupied from only a few hours to perhaps overnight. Temporary camps, on the other hand reflect a longer stay than task-specific camps, perhaps on the order of a few days to a week, and they contain a more diverse artifact assemblage indicative of more on-site activities, as well as more features (McBride 1984:328-329). In sum, settlement patterns of the Late Woodland period are characterized by "1) aggregation in coastal/riverine areas; 2) increasing sedentism, and; 3) use of upland areas by small task groups of individuals organized for specific tasks" (McBride 1984:326).

In sum, the prehistory of Connecticut spans from ca., 12,000 to 350 B.P., and it is characterized by numerous changes in tool types, subsistence pattern, and land use strategies. For the majority of the prehistoric era, local Native American groups practiced a subsistence pattern based on a mixed economy of hunting and gathering wild plant and animal resources. It is not until the Late Woodland period that incontrovertible evidence for the use of maize horticulture as an important subsistence pursuit is available. Further, settlement patterns throughout the prehistoric era shifted from seasonal occupations of small co-residential groups to large aggregations of people in riverine, estuarine, and coastal ecozones. In terms of the region containing the proposed project parcel, a variety of prehistoric site types may be expected. These range from seasonal camps utilized by Archaic populations to temporary and task-specific sites of the Woodland era.

## 4.3 History of the Proposed Project Region

The project area is located a short distance west of the confluence of the Shetucket and Quinebaug rivers in the town of Norwich, in New London County. The Shetucket also forms the eastern boundary of Norwich, and the Quinebaug divides the town of Lisbon from the town of Preston. Founded in 1659 and incorporated in 1662, Norwich is also the location of the city Norwich, incorporated in 1784 and located southwest of the project area. Until the twentieth century, however, the vicinity of the project area remained a rural and relatively undeveloped section of the town. By the 1930s, the town's population growth and the proximity of an important road led to residential and commercial development around the project area. The location of the project area itself, however, remained a wooded knoll surrounded by roads and residential and commercial structures.

### *4.31 Native American History*

The colonists purchased the future town's land, an area estimated to be nine miles square, from the Mohegan sachem Uncas in 1659 (Crofut 1937). This was part of the territory that had previously been controlled by the Pequot tribe, from which Uncas and his followers had seceded in the early 1630s. When the English United Colonies (Massachusetts Bay, Plymouth, and Connecticut) attacked the Pequots in 1637, the Mohegans, together with some of the more easterly Narragansett tribe, assisted them. Although the Tripartate Treaty of 1638 stated that the Pequots' captured territory would belong to the English, Uncas successfully put forward a claim to much of it by right of inheritance. The included much of the present New London County as well as some more northerly territory. The Mohegans' central place of habitation was in what is now Montville (Guilette 1979). According to testimony given by Indians in 1663 with regard to Uncas' claims, the Pequots had conquered this territory from five unnamed sachems

with whom Uncas had once been affiliated. Uncas then claimed it in 1643, based on his father's marriage into "the royal Pequot family," by which the father had received rights to the nearby territory known as "Mohegan," and then extended eastward when the five sachems were displaced (Caulkins 1866: 29).

After the Pequot War, and Uncas's success in laying claim to the territory, the Narragansetts quarreled with him. Ultimately the argument led to war, and the death by execution (or murder) of the Narragansett sachem Miantonomoh in 1643. According to the journal of Massachusetts Bay's Governor Winthrop, the execution and burial took place in the East Hartford and East Windsor area, east of the Connecticut River. Local tradition, however, holds that it occurred in the future Norwich, on the west bank of the Shetucket River, in an area known as Sachem's Plain or Sachem's Point, along with Sachem's Brook and Sachem's Spring. Although by the early nineteenth century the large mound of stones that gave rise to this story had been demolished by a farmer, in 1841 a monument was erected near the site (Caulkins 1866). Historic maps of the town place this grave south and east of the project area (Figure 7, Lester 1833; Figure 8, Walling 1854; and Figure 9, Beers 1868). War at various levels continued between the Mohegan and Narragansett tribes until about 1660. During King Philip's War in 1675-1676, the Mohegans assisted the colonists in their destruction of the rebellion, including the rival Narragansett tribe (Guilette 1979).

The controversies between the Mohegans, the Colony of Connecticut, and Captain John Mason and his heirs went on until the Revolution, with the Mohegans losing and regaining land, though overall losing more and more. A 1705 settlement of the case resulted in the Crown granting the Mohegans three large tracts of land, but the colony did not honor it (Guilette 1979). A map of the lands in controversy, dating to perhaps the 1760s, shows a tract labeled "Moheagan Fields" on the west bank of the Thames River, opposite the future City of Norwich; according to the map key, this was one of the parcels granted the tribe in 1705 (Plan 176; Figure 10). For many decades, a few Indians continued to reside in Norwich; in 1774, there were still sixty-one (De Forest 1852). After 1659, however, their control over the Norwich land was gone.

*4.32 Seventeenth and Eighteenth Centuries*

The initial colonial settlement of Norwich was along the northeast side of the Yantic River, upstream of where it flowed into the head of the Thames River. The first house lots were taken up by about thirty-five proprietor families in 1659, mainly from the coastal settlement of Saybrook, and including Major John Mason and the Reverend James Fitch. Initial divisions of the rest of the land were made in 1661, 1663, and 1668 (Caulkins 1866). The original "nine miles square" of Norwich included the present towns of Franklin, Bozrah, and Lisbon (separated 1786), Sprague (separated 1861), and the western sides of Preston (established 1687) and Griswold (established 1815) (Barry 1985). This original settlement is now known as Norwichtown (Hughes and Allen 1976). The village that became the city of Norwich, incorporated in 1784, appeared as the village of Chelsea in about the 1730s, as its location at the head of the Thames River and between the Yantic and Shetucket rivers was more convenient for commerce. The first road between Norwich and New London, though it remained little more than a track for a hundred years, was laid out in 1670 (Crofut 1937). Much traffic would have taken the river, however, rather than a land route. The importance of Norwich as a commercial center is, however, illustrated by the early establishment of turnpikes to and through the town.

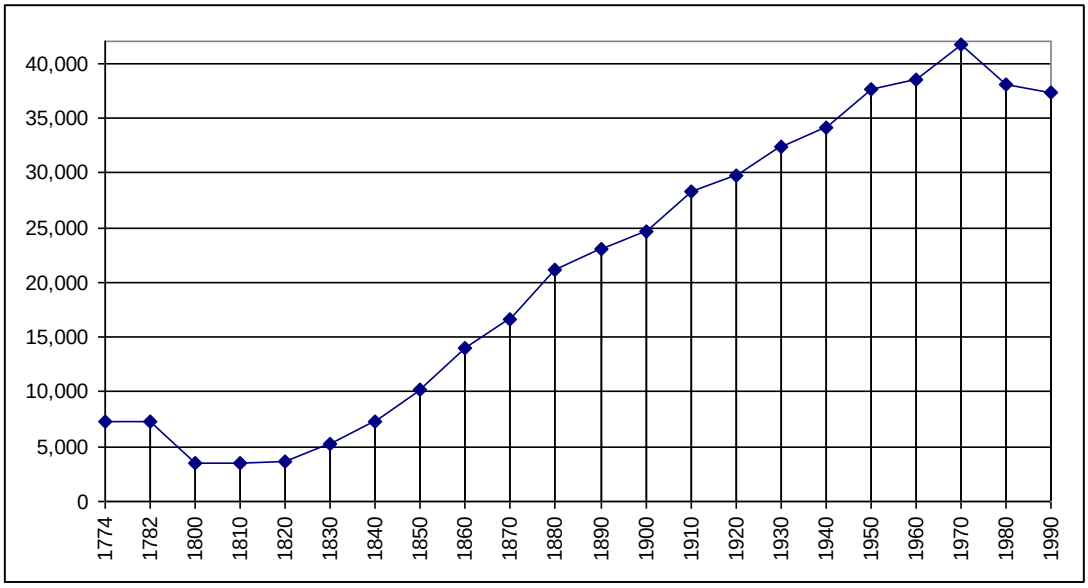
These roads, generally built and maintained by private corporations, were intended to improve the state's transportation routes without additional cost to the government. The road to New London was improved first by a voluntary association between 1789 and 1791, and in 1792 the first tollgate in New England was established on the road, with public commissioners appointed to manage it; the road survived until a competing railroad opened in 1849, and the tollgate was abolished in 1852. A second road established in the eighteenth century was the New London and Windham County Turnpike, improved by a corporation chartered in 1795,which lasted until at least 1849. Beginning at Norwich city, it followed the west bank of the Shetucket River, crossed it just above its meeting with the Quinebaug (the tollgate being erected at the

bridge), then followed the Quinebaug River to the Rhode Island Line (Wood 1919). This is the road that passed east of the project area. The location of the toll gate and the name "Lathrop's Bridge" are visible in an 1833 map (Figure 7, Lester 1833). A bridge was first built in this place in about 1717, providing easier travel between Norwich and what was known as the Newent Society – originally known as "the Crotch," referring to its location between the two rivers. In 1669, some 300 acres at this place had been granted to the sachem Oweneco, apparently as a favor; during King Philip's War, it was largely abandoned, and eventually came into the hands of Captain James Fitch, Jr., who sold it in 1694 and 1695 to some proposed settlers from Ipswich, Massachusetts. They did settle there, and by 1718 there were sixteen families. Because of confusion over the status of the Indian purchases and sales, and the continuing presence of some Indians there, the town finally gave a confirmatory deed to the land's owners in 1725; a final quit-claim from the Indian heirs of it was acquired in 1745. In the meantime, a separate ecclesiastical society was established there, in 1723. In 1786, this Newent Society became part of the town of Lisbon (Caulkins 1866).

By the 1760s, Norwich merchants based in Chelsea (the future city) traded with the West Indies, Britain, and major American ports. In addition, manufacturing of various kinds began early in Norwich. A paper factory was started in 1766, publishing the *Connecticut Gazette*, and the same businessman later opened a stocking factory; a foundry was development at Yantic around the time of the Revolutionary Wary. In addition, a stagecoach line opened between Norwich and Providence. This may have followed the road that would become the turnpike passing by the project area. In 1782 Norwich received a post office. Fulling mills were built in 1770 and 1772, and around the same time there were businesses making pot ash and pearl ash, pottery, chocolate, and nails; a clock and watchmaker opened in 1773, as was a comb-making business, and others. The cause of the Revolution received great support from Norwich residents, and in May 1774 had four companies of militia. Many Norwich men served in the war, and the town's remaining residents suffered considerable hardship. George Washington passed through the town on his way to Cambridge in 1775, as did many other prominent military and political men connected with the war. The row-galley *Shark* was built at Norwich by Capt. Jonathan Lester in 1776; a number of captains and sailors from Norwich also served in the colonies' small navy. The eventual traitor, Benedict Arnold, was born in Norwich (Caulkins 1866). The incorporation of the City of Norwich in 1784, the year after the end of the Revolutionary War, reflected both its commercial prominence and the new freedom of the Connecticut government.

### *4.33 Nineteenth and Twentieth Centuries*

Immediately after the Revolutionary War, Norwich ships' trade with Europe and the Wets Indies recommenced, as did its shipbuilding, although difficult relations with Britain and France had reduced its volume (Caulkins 1866). Nonetheless, other activities eventually helped the town and city grow in population for many years. As the chart below shows, Norwich's population trends from 1774 to 1990. In the first two census years, the town's population was steady at about 7,300; it fell to about 3,400 after Franklin, Lisbon, and Bozrah became separate towns in 1786, and held close to that number until after 1820, probably because of the economic difficulties of the new nation's early decades (MAGIC 1996). In the mid-1830s, "the town" (now Norwichtown) held a Congregational church and some 200 houses, along with the court house that had recently been relocated to Norwich city. Elsewhere in the town and city were two more Congregational churches, two Methodist, an Episcopal, a Baptist, and a Universalist congregation. Another village, Yantic, to the west, had a woolen factory, but the iron works had gone out of business. The city itself contained four banks, the new court house, and the town hall, along with a boys' high school and a female academy. Greenville, a mile east of the city and a short distance down the Shetucket River from the project area, was a village of forty or fifty houses, with up to five large factories, including a large paper mill. A large dam had recently been built across the Shetucket River at Greenville. The town's manufacturing at the time focused on paper, cotton, and woolens. Of the population of 5,179 in 1830, 3,144 were living in the city (Barber 1837).




The population chart shows the progress of Norwich over the nineteenth and twentieth centuries: a constant rise, so that by 1900 the population was nearly 25,000 – the seventh largest municipality (city and town) in the state. Although its population continued to rise until 1970, however, the rate of increase was much less than in other towns. The 1970 population of 41,739 made it only the twenty-first largest town in the state (MAGIC 1996). Despite its initial advantages, Norwich was not able to compete with major centers such as Hartford, Bridgeport, and New Haven, among others. Little of this, on the other hand, affected the project area. Despite its location near the bridge across the Shetucket and the turnpike, the project area did not see very much development during the historic period. The map of 1833 shows roads running north and east of the project area, with the toll house beside the bridge and one house on the same side of the northerly road as the project area (Figure 7, Lester 1833). The Norwich & Worcester Railroad opened in 1840, working with the Norwich Line of steamboats to transfer passengers traveling between New York and Boston. The company had been chartered in 1832, but engineering challenges and financial difficulties caused by the Panic of 1837 kept it from completion until 1840. The road offered stops at Norwich, Greenville, and Taftville, and remained in operation until perhaps the early 1930s (Turner and Jacobus 1989). The road passed east of the project area, as can be seen in the 1854 map of the county (Figure 8; Walling 1854). The tunnel noted on the east side of the Shetucket River was one of the first railroad tunnels in the country (Turner and Jacobus 1989). This map again shows roads east and north of the project area, with the nearest labeled structures belonging to A. Pitcher and J. Pettes, and located on the north side of the northerly road. East of the project area, across the river in Lisbon, there were several businesses: Shetucket Co., Kimball & Harvey's Mills, Water Power Co. and a saw mill. The railroad, and the tunnel, were also shown (Figure 8, Walling 1854). At that time, the nearest named place was Greeneville to the south; Shetucket Falls to the north had no development marked on this map, and much further north there was the village of Eagleville in Lisbon.

Interestingly, according to the 1868 map of Norwich, the road passing east of the project area was the Providence Turnpike, and it continued northward instead of turning east and crossing the river. A new road, southwest of the project area, had appeared. There was still no concentration of population here, however; the nearest structure was labeled "A. Pitcher" and was on the far side of the northerly road. The Norwich & Worcester railroad was still present (Figure 9; Beers 1868). By 1870, Norwich's population had passed 16,000, but the full extent of this map suggests these residents were still mainly clustered in industrial villages, including new ones called Taftville and Occum, north of the project area on the

Shetucket River (MAGIC 1996, Beers 1868). The population continued to rise, however, and in 1932 the town's business included "dyeing and finishing, manufacture of pistols and other firearms, cutlery, plating, cotton and woolen goods, velvet, silk, paper, steam boilers, box board, silk ribbons, patent pulleys, electric supplies, leather and belting, machinery of great variety, and agriculture out of the city" (Connecticut 1932, 294). The 1934 aerial photograph showed almost the same arrangement of streets around the project area as appears on modern maps, with many houses along the roads while the project area parcel remained undeveloped. In the general vicinity, beyond the roads, there also were still large areas of agricultural fields and forest. The road bridge and railroad bridge across the Shetucket River to the east were also visible (Figure 11). A 1951 aerial photograph shows little change, except for some more road improvements and perhaps a few more small houses. The patch of forest where the project area is located was very clear in this photograph (Figure 12). The 1970 aerial photograph showed more residential, commercial, and industrial development all around the vicinity of the project area, including some more construction within the ring of roads surrounding the project area. There was also a dramatic reduction in the amount of agricultural activity (Figure 13).

After 1970, the population of Norwich began to decline, losing over 4,300 people by 1990 and becoming only the twenty-fifth largest place in Connecticut (MAGIC 1996). Industry in the region had been faltering since the decline of the textile industry began in the 1930s. Meanwhile, suburbanization had drawn many people out of the cities to live, causing much of the development that could be seen around the project area. Shifts in freight transportation routes meant that the northeastern Connecticut cities of Norwich and Willimantic were no longer important transportation hubs (Spencer 1993). On the other hand, the changes were not dramatic enough to be visible near the project area, and it was probably the central city that was most affected. A 1974 aerial photograph suggests that business development continued in the vicinity (Figure 14). Between 1974 and 1986, there was little or no visible change in the immediate vicinity of the project area, and likewise between 1986 and 1995 (Figure 15 and Figure 16). The development of this section of Norwich was substantially completed by the middle of the twentieth century, leaving an open space where the project area is located.

The town and city's fortunes began to change around the turn of the twenty-first century. Population estimates for 2006 indicate that after falling to 36,117 in 2000, the population crept back up over 37,000, and was expected to grow slightly through 2011. As in other towns, however, the economic structure had changed drastically from both the agricultural economy of the seventeenth and eighteenth centuries and the industrial-based economy of the later nineteenth and early twentieth century. By 2005, only 0.4% of the workers in town were employed in agriculture, and 6.0% in manufacturing. Another 4.9% were in construction and mining, but all the rest were in trade (19%), services (53.1%), and other tertiary-sector activity. Half the town's housing stock had been built before 1950. But Norwich was still, as of 2000, an urban center rather than a bedroom community. The largest single bloc of commuters stayed in the town; between one and two thousand residents worked in Montville, Ledyard, and Groton, while around one thousand commuted into Norwich from Griswold and Montville (CERC 2007).

### *4.34 Conclusions*

There is no documentary evidence that the project area has been impacted by human activity during the historic period, except perhaps by farming or logging. Residential, commercial, and industrial development took place around it as Norwich's population grew during the twentieth century, but before that it appears there was only farming taking place in the area.

## 4.4 Previous Investigations

As mentioned above, the current effort also involved an examination of State Historic Preservation Office records as they pertain to previously completed cultural resources surveys and previously identified archeological sites, historic standing structures, and National Register Properties situated within 0.8 km (0.5 mi) of the Areas of Potential Effect. In addition, the electronic site files maintained by Heritage

Consultants, LLC also were examined during the course of this investigation. A review of these data, however, demonstrates that no previously completed cultural resources surveys, previously recorded archaeological sites or historic properties have been identified within 0.8 km (0.5 mi) of the project area (Figure 17).

## 5.0 Field Methods

Following the completion of all background research, the Areas of Potential Effect were subjected to a Phase I cultural resources reconnaissance survey utilizing pedestrian survey, subsurface testing, mapping, and photo-documentation. The sampling strategy was designed to provide thorough coverage of all portions of the Areas of Potential Effect, including the proposed lease area, access road, buried utility easement, and associated facilities. The pedestrian survey portion of this investigation included visual reconnaissance of all areas located within and immediately adjacent to the Areas of Potential Effect, as well as photo-documentation of the proposed project items and their immediate surroundings.

The subsurface testing portion of this investigation involved the excavation of shovel tests in those portions of the Areas of Potential Effect not disturbed substantially by previous impacts. During survey, each shovel test measured 50 cm (19.7 in) in diameter and each was excavated to a depth of 50 cmbs (19.7 inbs) or until sterile subsoil, glacial till, or immovable objects (e.g., boulders or bedrock) were encountered. Each shovel test was excavated in 10 cm (3.9 in) arbitrary levels within natural strata, and the fill from each level was screened separately. All shovel test fill was screened through 0.635 cm (0.25 in) hardware cloth. Soil characteristics were recorded in the field using Munsell Soil Color Charts and standard soils nomenclature. Finally, each shovel test was backfilled immediately upon completion of the archeological recordation process.

## 6.0 Curation

Following the completion and acceptance of this Final Report of Investigations, all project drawings, maps, photographs, and field notes will be curated with Dr. Nicholas Bellantoni, Office of Connecticut State Archaeology, Box U-4214, University of Connecticut, Storrs, Connecticut 06269.

## 7.0 Results of the Investigation

During survey, 9 of 13 (69 percent) planned shovel tests were excavated successfully throughout the previously undisturbed portions of the Areas of Potential Effect. The four planned, but unexcavated shovel tests fell within areas characterized by bedrock outcrops (n=2) and previous disturbances (n=2) (Figure 2). A typical shovel test excavated within the confines of the proposed project items contained two strata in profile and it extended to a depth of 50 cmbs (19.7 inbs). Stratum I, which extended from 0 to 25 cmbs (0 to 9.8 inbs), consisted of a deposit of dark brown (10YR 3/3) sandy loam. Stratum II reached from 25 to 50 cmbs (9.8 to 19.7 inbs), and was characterized as a layer of dark yellowish brown (10YR 4/6) loamy sand mixed with gravel. During survey, no evidence of any cultural features was identified within the excavated shovel tests, and no cultural material, either prehistoric or historic in origin, was recovered. Furthermore, since no cultural material was identified during survey and no impacts to cultural resources are anticipated, no additional fieldwork is recommended.

# REFERENCES CITED


Barber, J. W.
1836 Connecticut Historical Collections. 2nd ed. Facs. ed., Storrs, Connecticut, Hanover, N.H., Bibliopola Press, 1999; Distributed by the University Press of New England.

Barry, Ann P.
1985 *Connecticut Towns and Their Establishment,* Hartford, CT: Connecticut State Library, Archives, History, and Genealogy Unit.

Beers, F.W.
1874 County Atlas of Litchfield, Connecticut. NY: F. W. Beers & Co.

Bell, J. W., C. E. Smith, eds.
1976 *Historic Ledyard. Volume I: Gales Ferry Village*. Ledyard, Connecticut: Ledyard Historic District Commission.

Bellantoni, N.
1987 *Faunal Resource Availability and Prehistoric Cultural Selection on Block Island, Rhode Island*. Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

Bendremer, J.
1993 *Late Woodland Settlement and Subsistence in Eastern Connecticut*. Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

Bendremer, J. and R. Dewar
1993 The Advent of Maize Horticulture in New England. In *Corn and Culture in the Prehistoric New World.* Ed. by S. Johannessen and C. Hastorf. Westview Press, Boulder.

Bendremer, J., E. Kellogg and T. Largy
1991 A Grass-Lined Storage Pit and Early Maize Horticulture in Central Connecticut. *North American Archaeologist* 12(4):325-349.

Caulkins, Frances Manwaring
1866 *History of Norwich, Connecticut: From Its Possession by the Indians, to the Year 1866*. [N.p.]: by the Author.

Campisi, Jack
1990 The Emergence of the Mashantucket Pequot Tribe, 1637-1975. Chapter 8 in Laurence M. Hauptman and James D. Wherry, eds., *The Pequots in Southern New England: The Fall and Rise of an American Indian Nation*. Norman, Oklahoma: University of Oklahoma Press.

CERC
2007 "Norwich, Connecticut, CERC Town Profile 2007." Online resource, < http://products.cerc.com/pdf/tp/norwich.pdf >. Accessed 01/02/2008.

Connecticut, State of.
1932 *Stage Register and Manual*. Hartford, CT: The State.

Crofut, F. S. M.
1937 Guide to the History and the Historic Sites of Connecticut. New Haven, Connecticut, Yale University Press.

Curren, M.L., and D.F. Dincauze
1977 Paleo-Indians and Paleo-Lakes: New Data from the Connecticut Drainage. In *Amerinds and their Paleoenvironments in Northeastern North America.* Annals of the New York Academy of Sciences 288:333-348.

De Forest, J. W.
1852 History of the Indians of Connecticut from the Earliest Known Period to 1850. Hartford, CT, Wm. Jas. Hamersley.

Dincauze, Dena F.
1974 An Introduction to Archaeology in the Greater Boston Area. *Archaeology of Eastern North America* 2(1):39-67.

1976 *The Neville Site: 8000 Years at Amoskeag*. Peabody Museum Monograph No. 4. Cambridge, Massachusetts.

Funk, R.E.
1976 Recent Contributions to Hudson Valley Prehistory. New York State Museum Memoir 22. Albany.

George, D.
1997 A Long Row to Hoe: The Cultivation of Archaeobotany in Southern New England. *Archaeology of Eastern North America* 25:175 - 190.

George, D. and C. Tryon
1996 *Lithic and Raw Material Procurement and Use at the Late Woodland Period Cooper Site, Lyme, Connecticut.* Paper presented at the joint meeting of the Archaeological Society of Connecticut and the Massachusetts Archaeological Society, Storrs Connecticut

Gramly, R. Michael, and Robert E. Funk
1990 What is Known and Not Known About the Human Occupation of the Northeastern United States Until 10,000 B. P. *Archaeology of Eastern North America* 18: 5-32.

Griffin, J.B.
1967 Eastern North America Archaeology: A Summary. *Science* 156(3772):175-191.

Guilette, Mary E.
1979 *American Indians in Connecticut: Past to Present.* [Hartford, CT]: State of Connecticut, Department of Environmental Protection, Connecticut Indian Affairs Council.

Hughes, A. S. and M. S. Allen
1976 *Connecticut Place Names*. Hartford, Connecticut: The Connecticut Historical Society.

Jones, B.
1997 The Late Paleo-Indian Hidden Creek Site in Southeastern Connecticut. *Archaeology of Eastern North America* 25:45-80.

Lavin, L.
1980 Analysis of Ceramic Vessels from the Ben Hollister Site, Glastonbury, Connecticut. *Bulletin of the Archaeological Society of Connecticut* 43:3-46.

1984 Connecticut Prehistory: A Synthesis of Current Archaeological Investigations. *Archaeological Society of Connecticut Bulletin* 47:5-40.

1986 Pottery Classification and Cultural Models in Southern New England Prehistory. North American Archaeologist 7(1):1-12.

1987 The Windsor Ceramic Tradition in Southern New England. *North American Archaeologist* 8(1):23-40.

1988a Coastal Adaptations in Southern New England and Southern New York. *Archaeology of Eastern North America*, Vol.16:101-120.

1988b The Morgan Site, Ricky Hill, Connecticut: A Late Woodland Farming Community in the Connecticut River Valley. *Bulletin of the Archaeological Society of Connecticut* 51:7-20.

Lizee, J.
1994a *Prehistoric Ceramic Sequences and Patterning in southern New England: The Windsor Tradition*. Unpublished Ph.D. dissertation, Department of Anthropology, University of Connecticut, Storrs.

1994b *Cross-Mending Northeastern Ceramic Typologies.* Paper presented at the 1994 Annual Meeting of the Northeastern Anthropological Association, Geneseo, New York.

McBride, K.
1984 *Prehistory of the Lower Connecticut River Valley.* Ph.D. Dissertation, Department of Anthropology, University of Connecticut, Storrs, Connecticut.

Moeller, R.
1980 *6-LF-21: A Paleo-Indian Site in Western Connecticut.* American Indian Archaeological Institute, Occasional Papers No. 2.

Pfeiffer, J.
1983 Bashan Lake:4500 Years of Prehistory. Archaeological Society of Connecticut Bulletin 46:45-53.

1984 The Late and Terminal Archaic Periods in Connecticut Prehistory. *Bulletin of the Archaeological Society of Connecticut* 47:73-88.

1986 Dill Farm Locus I: Early and Middle Archaic Components in Southern Connecticut. *Archaeological Society of Connecticut Bulletin* 49:19-36.

1990 The Late and Terminal Archaic Periods in Connecticut Prehistory: A Model of Continuity. In *Experiments and Observations on the Archaic of the Middle Atlantic Region.* R. Moeller, ed.

Poirier, David A.
1987 *Environmental Review Primer for Connecticut's Archaeological Resources.* Connecticut Historical Commission, State Historic Preservation Office, Hartford, Connecticut.

Pope, G.
1953 The Pottery Types of Connecticut. Bulletin of the Archaeological Society of New Haven 27:3-10.

Ritchie, W.A.
1969a *The Archaeology of New York State*. Garden City: Natural History Press.

1969b The Archaeology of Martha's Vineyard: A Framework for the Prehistory of Southern New England; A study in Coastal Ecology and Adaptation. Garden City: Natural History Press

Ritchie, W.A., and R.E. Funk
1973 *Aboriginal Settlement Patterns in the Northeast*. New York State Museum Memoir 20. The State Education Department, Albany.

Rouse, I.
1947 Ceramic Traditions and sequences in Connecticut. *Bulletin of the Archaeological Society of Connecticut* 21:10-25.

Salwen, B., and A. Ottesen
1972 Radiocarbon Dates for a Windsor Occupation at the Shantok Cove Site. *Man in the Northeast* 3:8-19.

Smith, C.
1947 An Outline of the Archaeology of Coastal New York. *Bulletin of the Archaeological Society of Connecticut* 21:2-9.

Snow, D.
1980 The Archaeology of New England. Academic Press, New York.

Svirsky, Alexander
2004 National Bridge Inventory. Online resource, accessed 12/07/2005. <http://shawsheen.com/nbi_result.php?StateCode=09&RouteNumber=12>

Turner, G. M., and M. W. Jacobus, et al.
1989 *Connecticut Railroads: An Illustrated History*. Hartford Connecticut, Connecticut Historical Society.

Walling, H. F.
1854 Map *of New London County, Connecticut*. Philadelphia: William E. Baker.

Wood, F. J.
1919 *The Turnpikes of New England*. Abr. ed. by Ronald Dale Karr. Pepperell, MA., Branch Line Press, 1997.

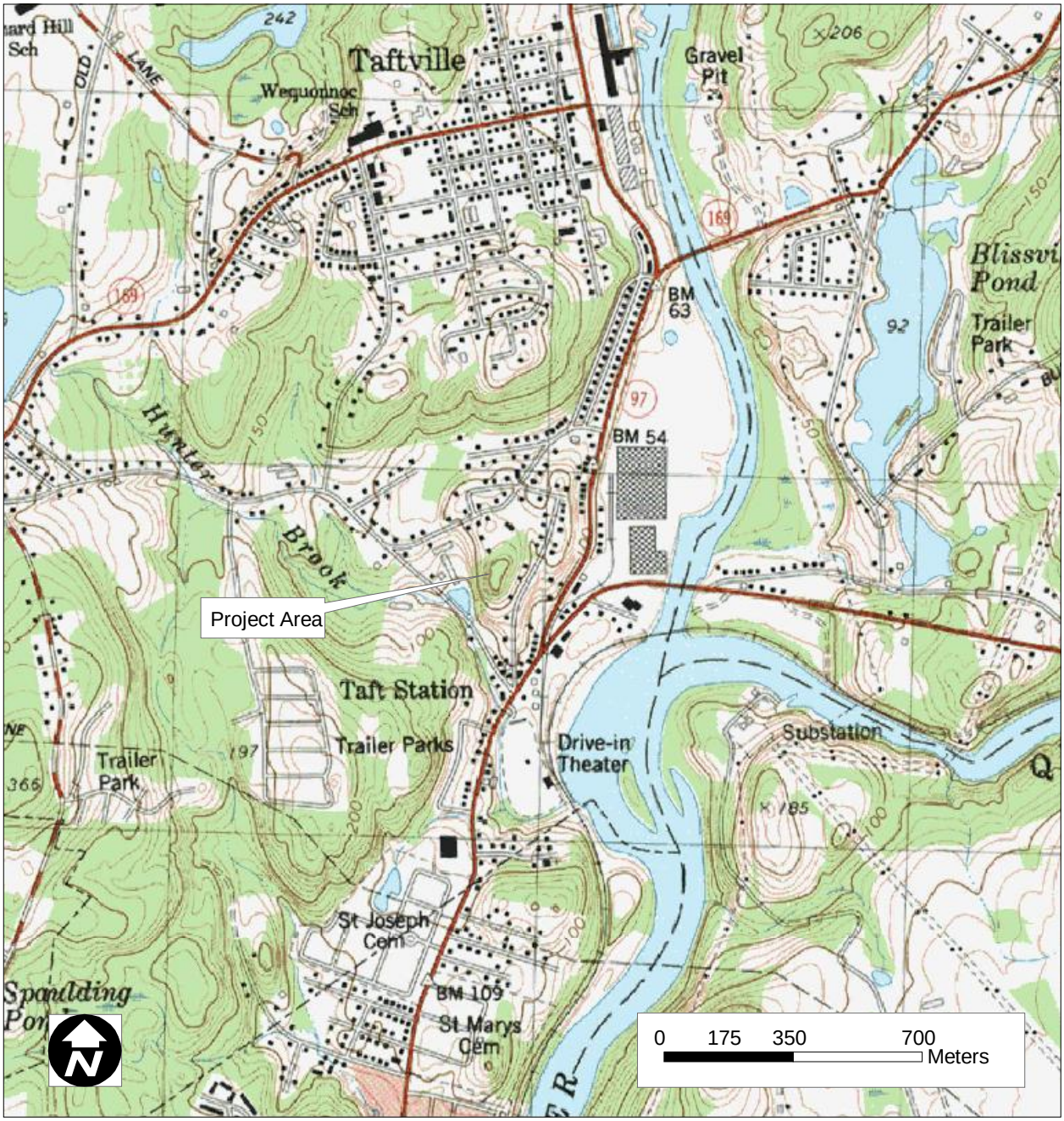



Figure 1. Excerpt from a recent USGS 7.5' series topographic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

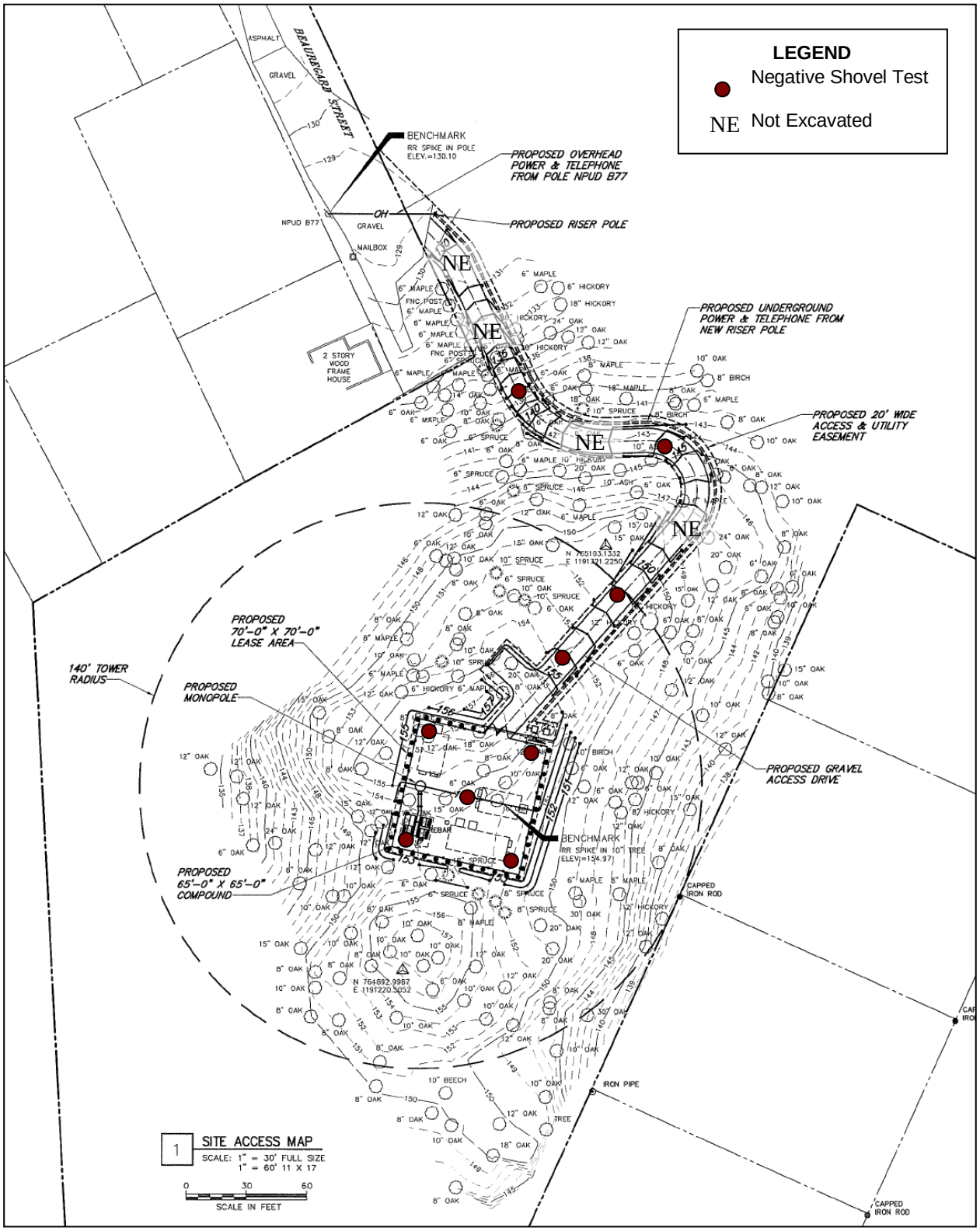



Figure 2. Plan view of the Areas of Potential Effect depicting locations of shovel tests.

Figure 3. Overview photo of the proposed tower location, facing southwest.

Figure 4. Overview photo of the proposed tower location, facing northwest.

Figure 5. Overview photo of the proposed access road, facing northeast. Note the apparent presence of bedrock.

Figure 6. Overview photo of the proposed access road, facing northwest (Maennerchor Avenue).

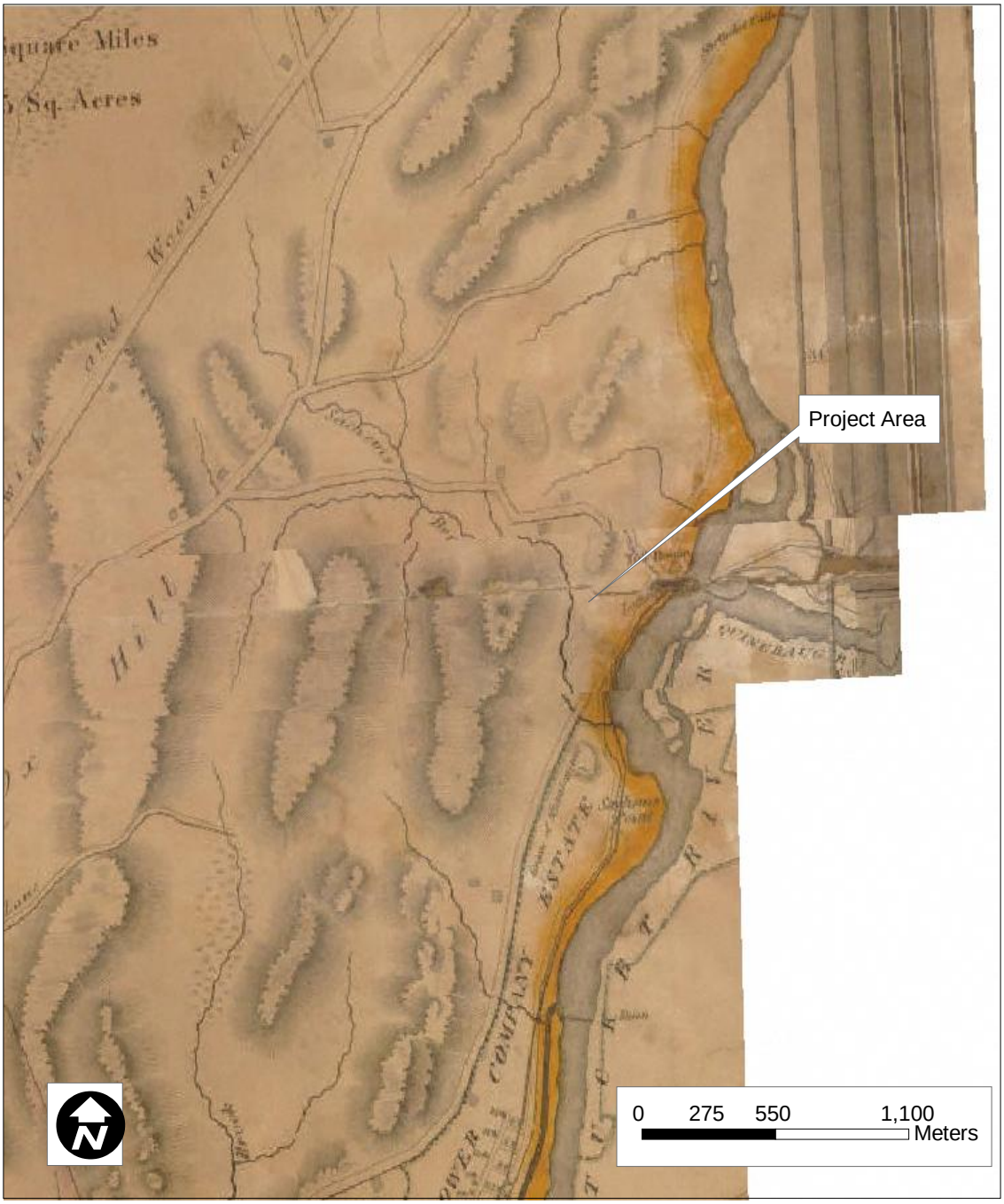



Figure 7. Excerpt from an 1833 historic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

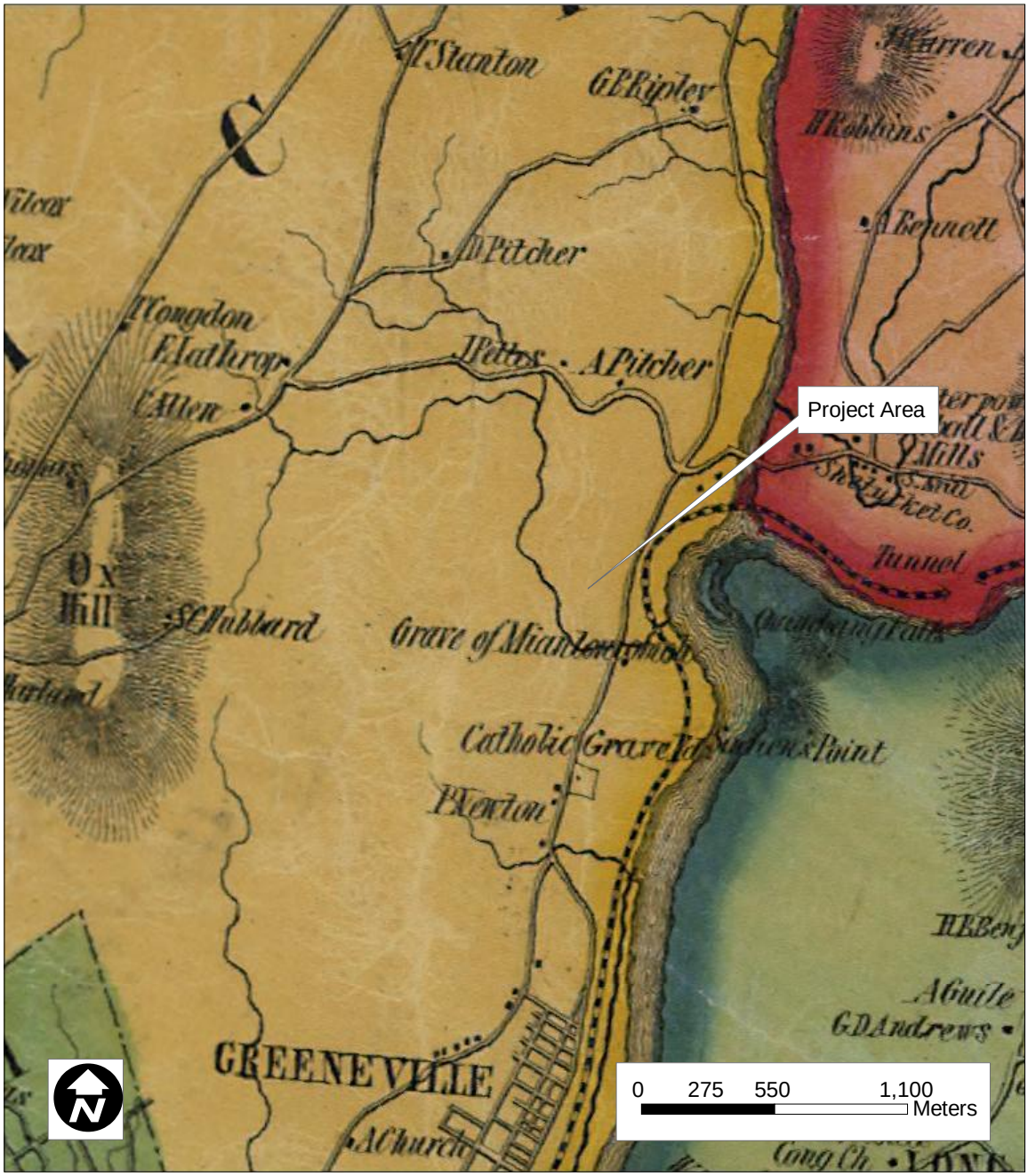



Figure 8. Excerpt from an 1854 historic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

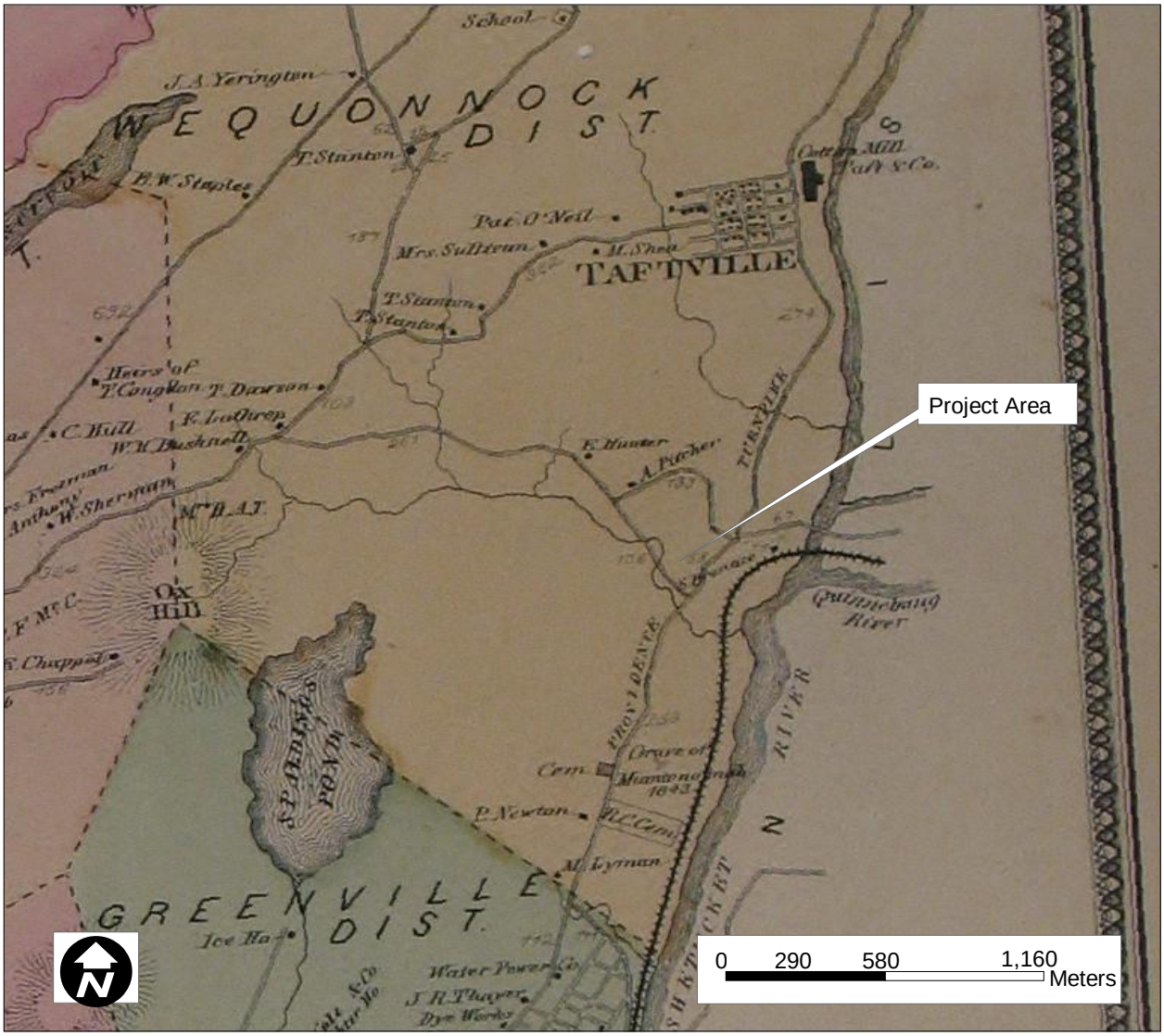



Figure 9. Excerpt from an 1868 historic postal service map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

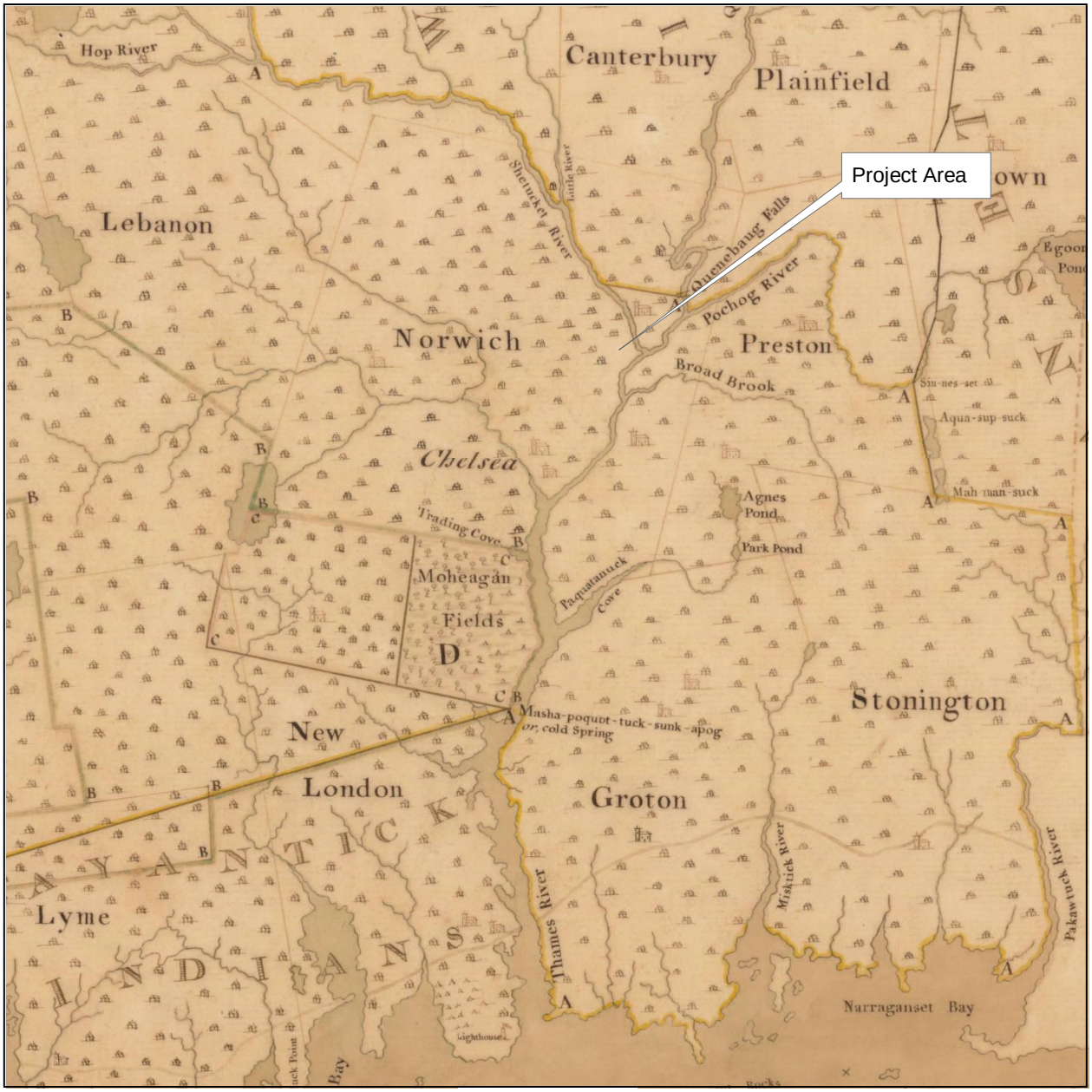



Figure 10. Excerpt from a late eighteenth century historic map depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

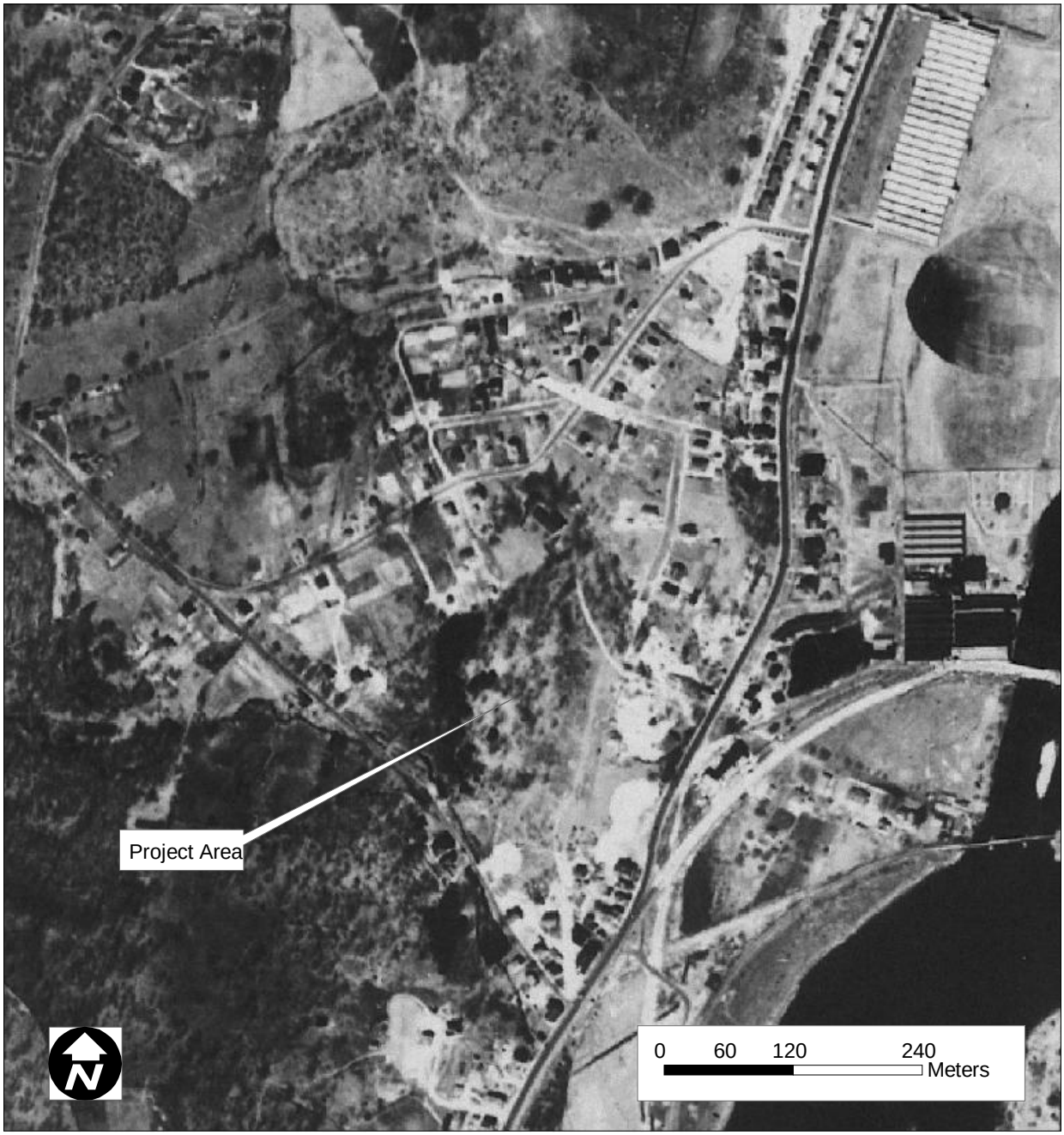



Figure 11. Excerpt from a 1934 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

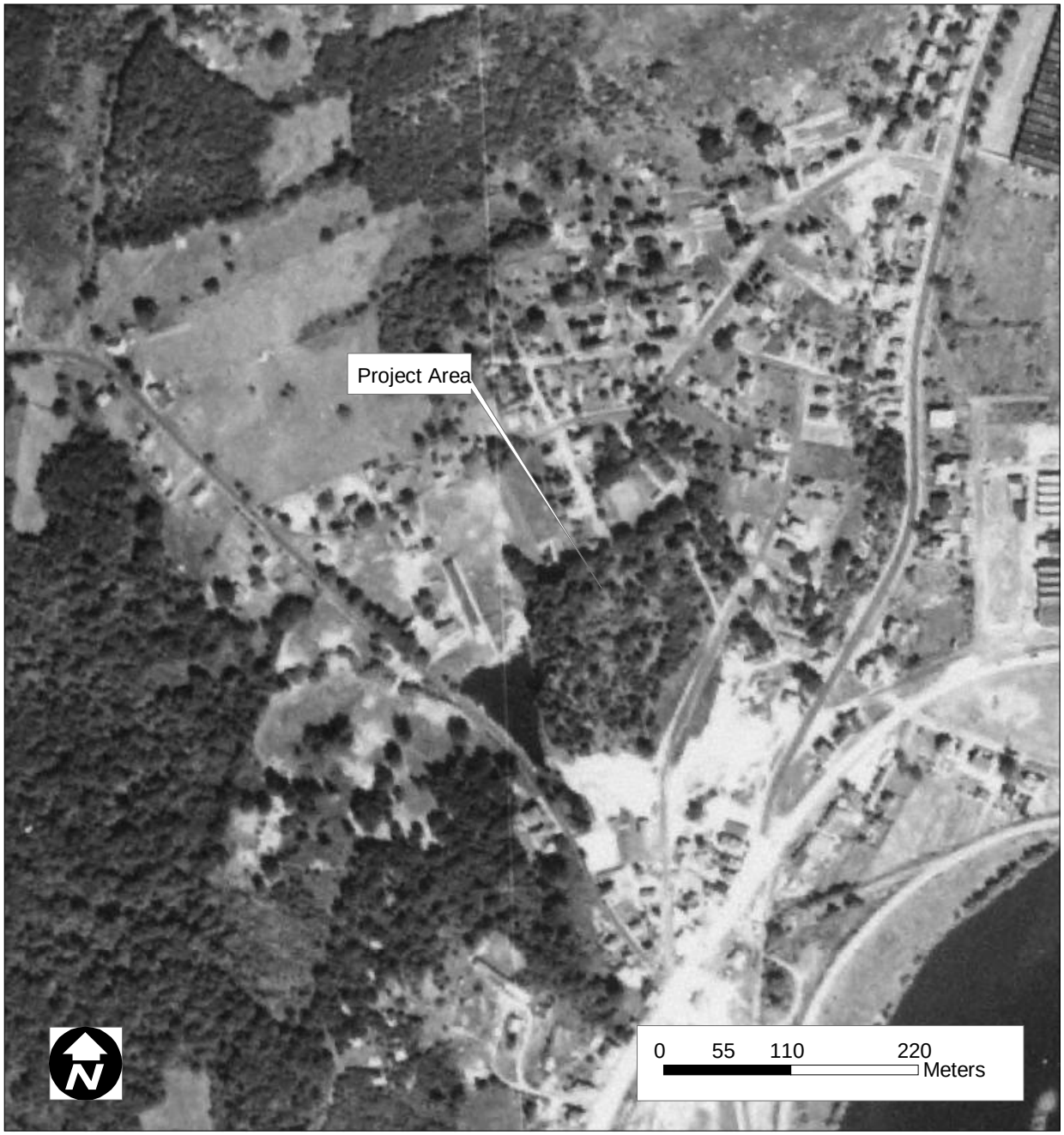



Figure 12. Excerpt from a 1951 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 13. Excerpt from a 1970 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 14. Excerpt from a 1974 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

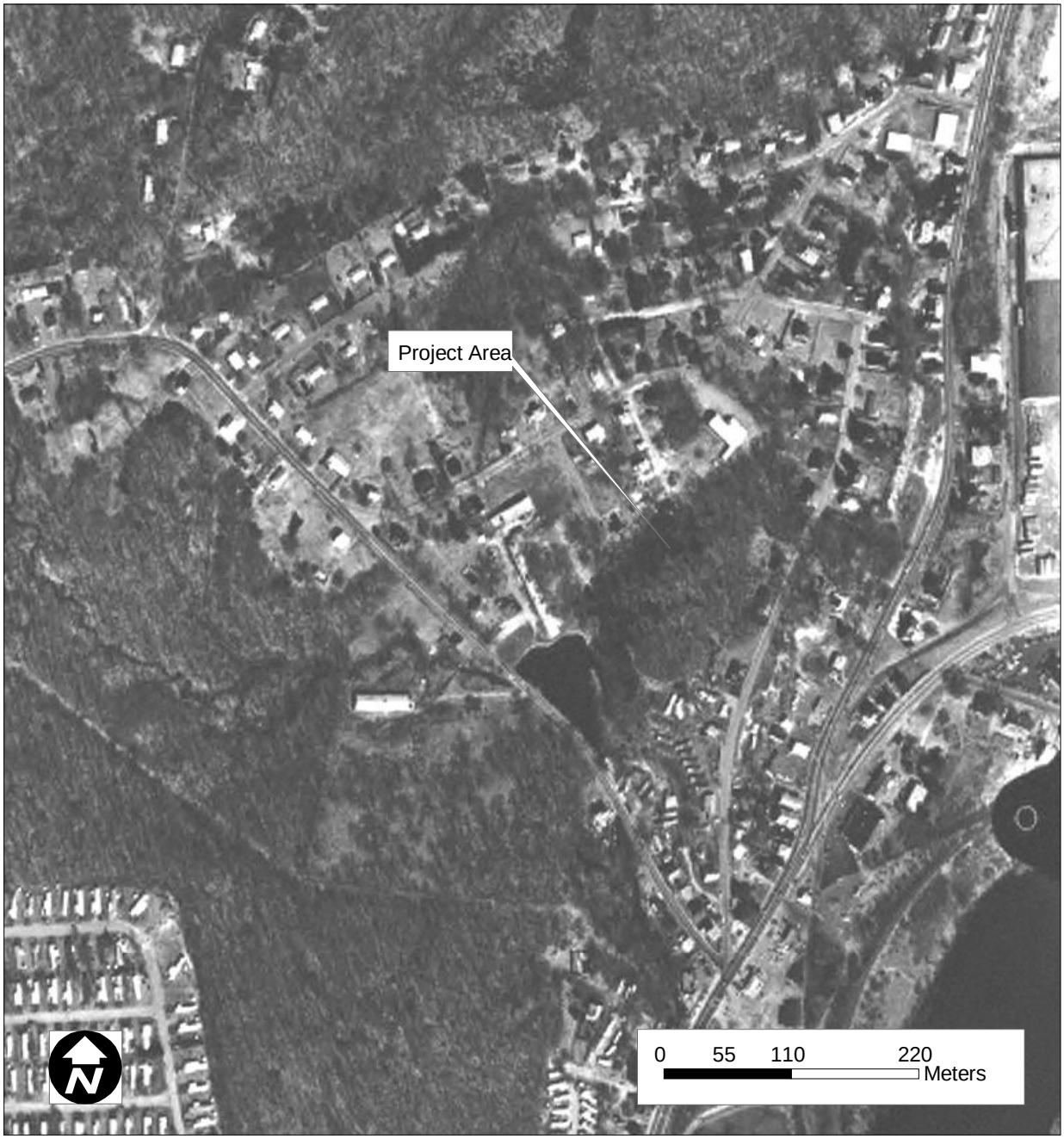



Figure 15. Excerpt from a 1986 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.


Figure 16. Excerpt from a 1995 aerial photograph depicting the approximate location of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

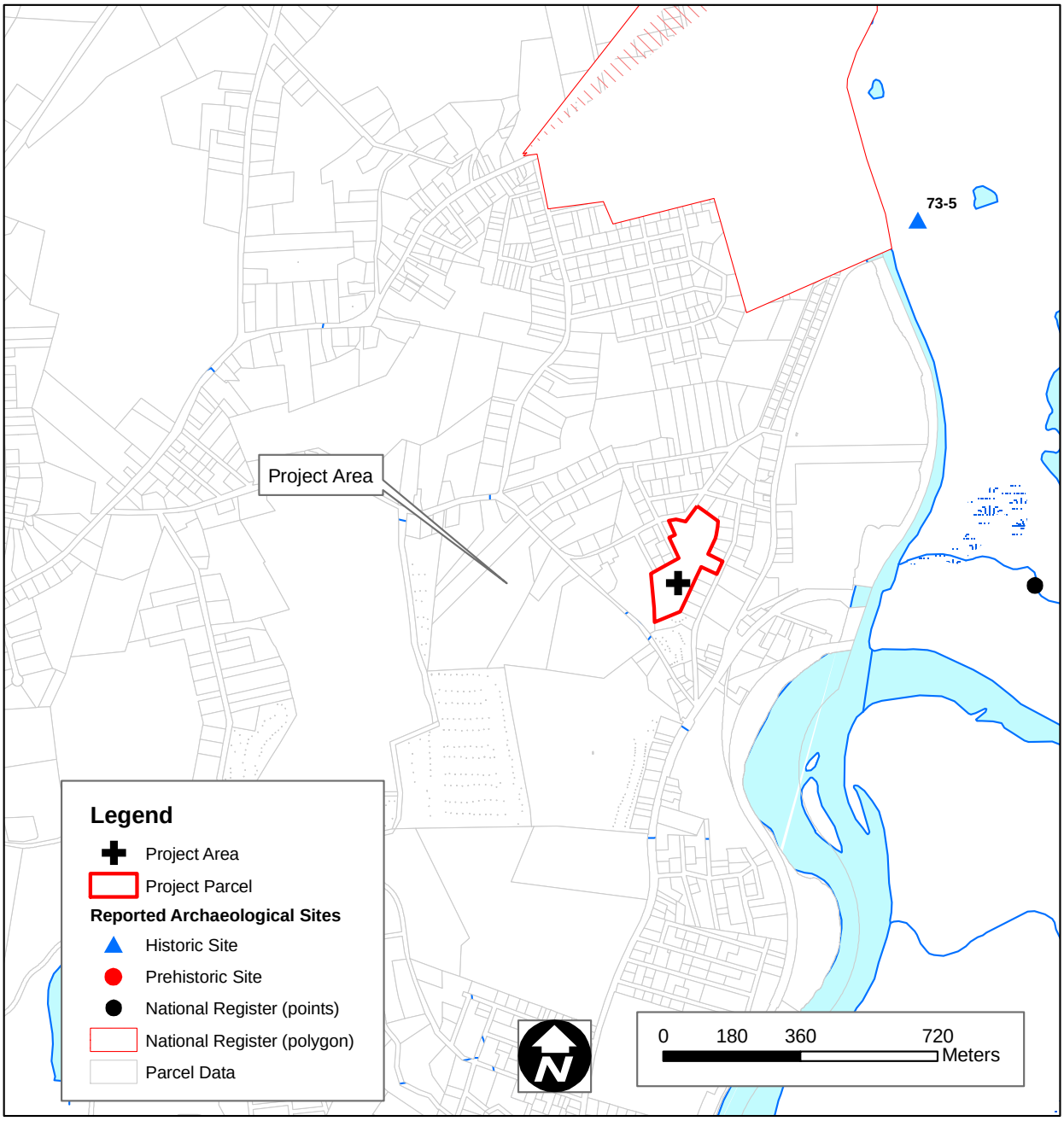
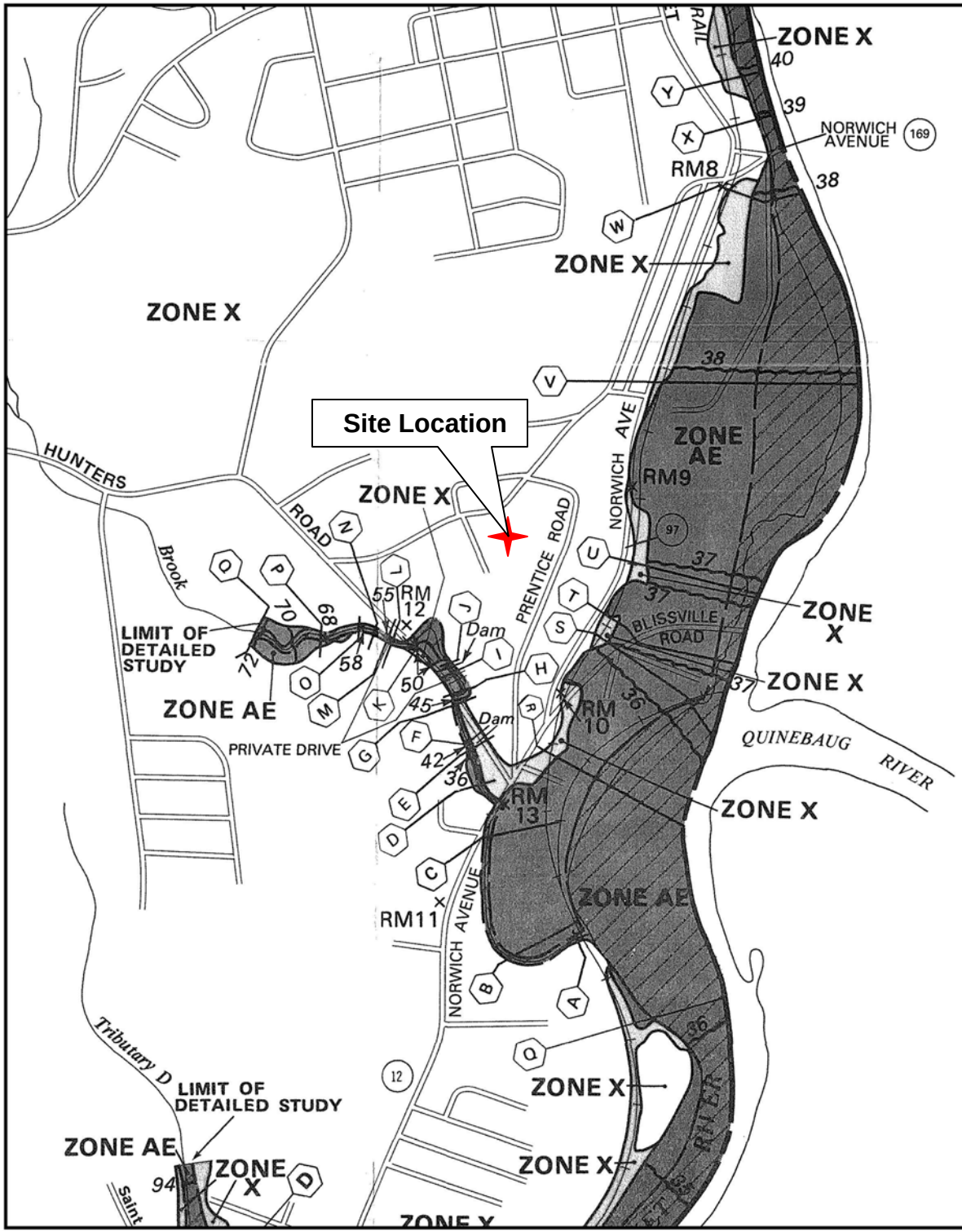



Figure 17. Map of previously identified cultural resources and National Register of Historic Places properties situated in the vicinity of proposed cellular communications 999-0093 tower in Norwich, Connecticut.

# Appendix H

# Wetlands Maps




APPROXIMATE SCALE

1000 0 1000 FEET

NATIONAL FLOOD INSURANCE PROGRAM

# FIRM

## FLOOD INSURANCE RATE MAP

CITY OF
NORWICH,
CONNECTICUT
NEW LONDON COUNTY

PANEL 5 OF 10
(SEE MAP INDEX FOR PANELS NOT PRINTED)

PANEL LOCATION

COMMUNITY-PANEL NUMBER
090102 0005 F

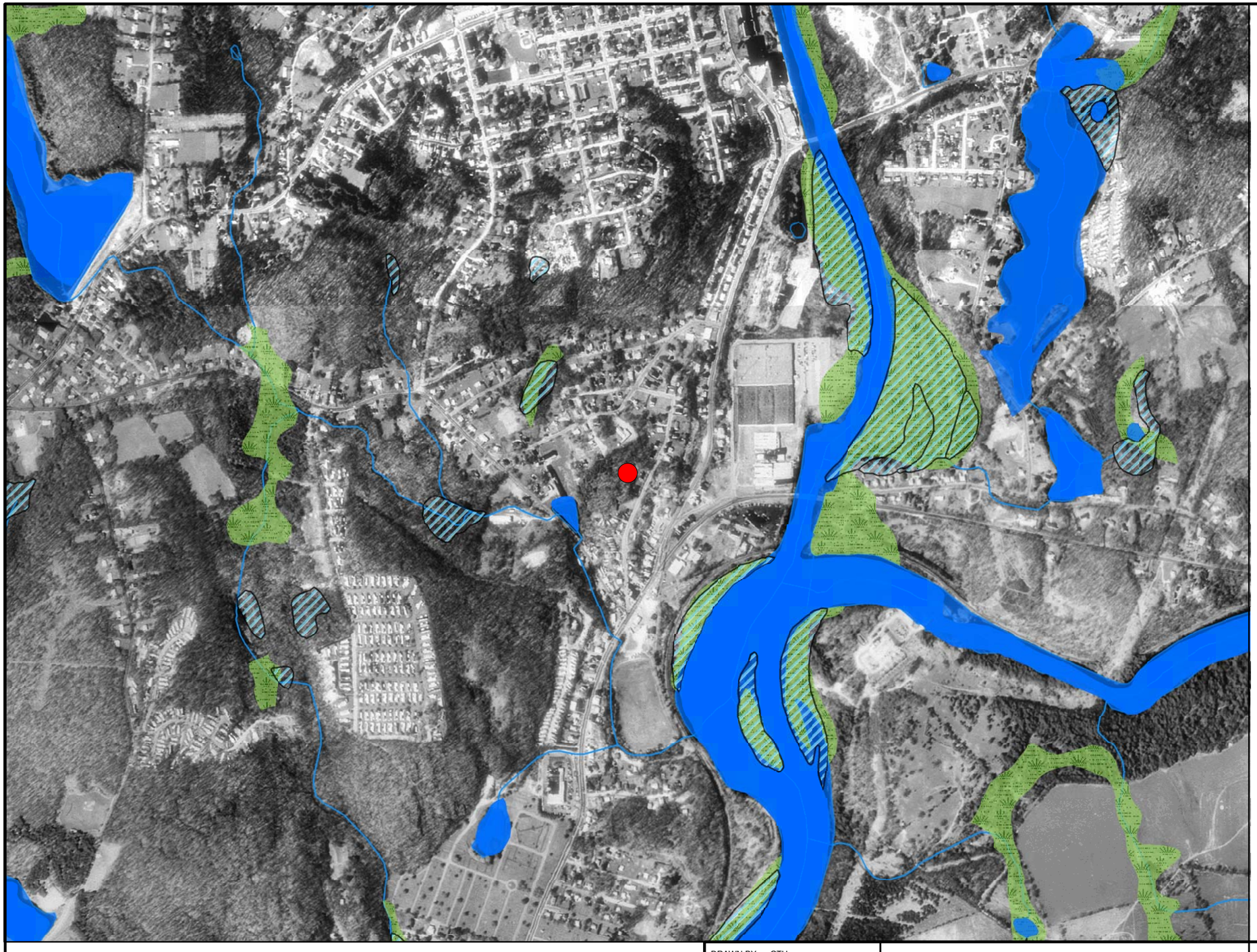
MAP REVISED:
MARCH 15, 1994

BEST AVAILABLE COPY AT THIS TIME

Federal Emergency Management Agency

# Appendix H

# Wetlands Maps



0 250 500 1,000 1,500 2,000 2,500
SCALE IN FEET

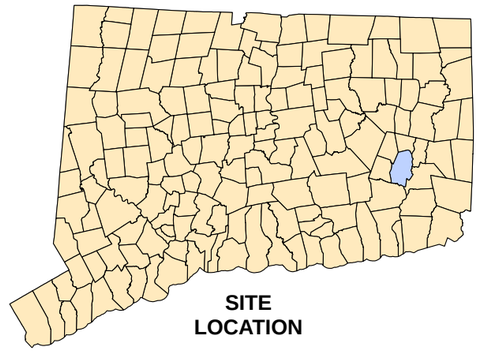
0 75 150 300 450 600 750
SCALE IN METERS

**LEGEND**

- SITE LOCATION
- FEDERAL WETLANDS
- STATE WETLAND SOILS
- WATERCOURSE

N

**CONNECTICUT**



**SITE LOCATION**

SOURCE:
1. CT DEP GIS AERIAL PHOTO DATA SET (1990)

2. FISH AND WILDLIFE NATIONAL WETLANDS INVENTORY GIS DATA SET (MARCH 1980)

3. CT DEP STATE WETLAND GIS DATA SET (JUNE 2000 - MARCH 2007)

| | |
|---|---|
| DRAWN BY: CTH | |
| REVISED BY: | |
| CHECKED BY: AH | |
| DATE: 02-19-08 | APPROVED BY: |

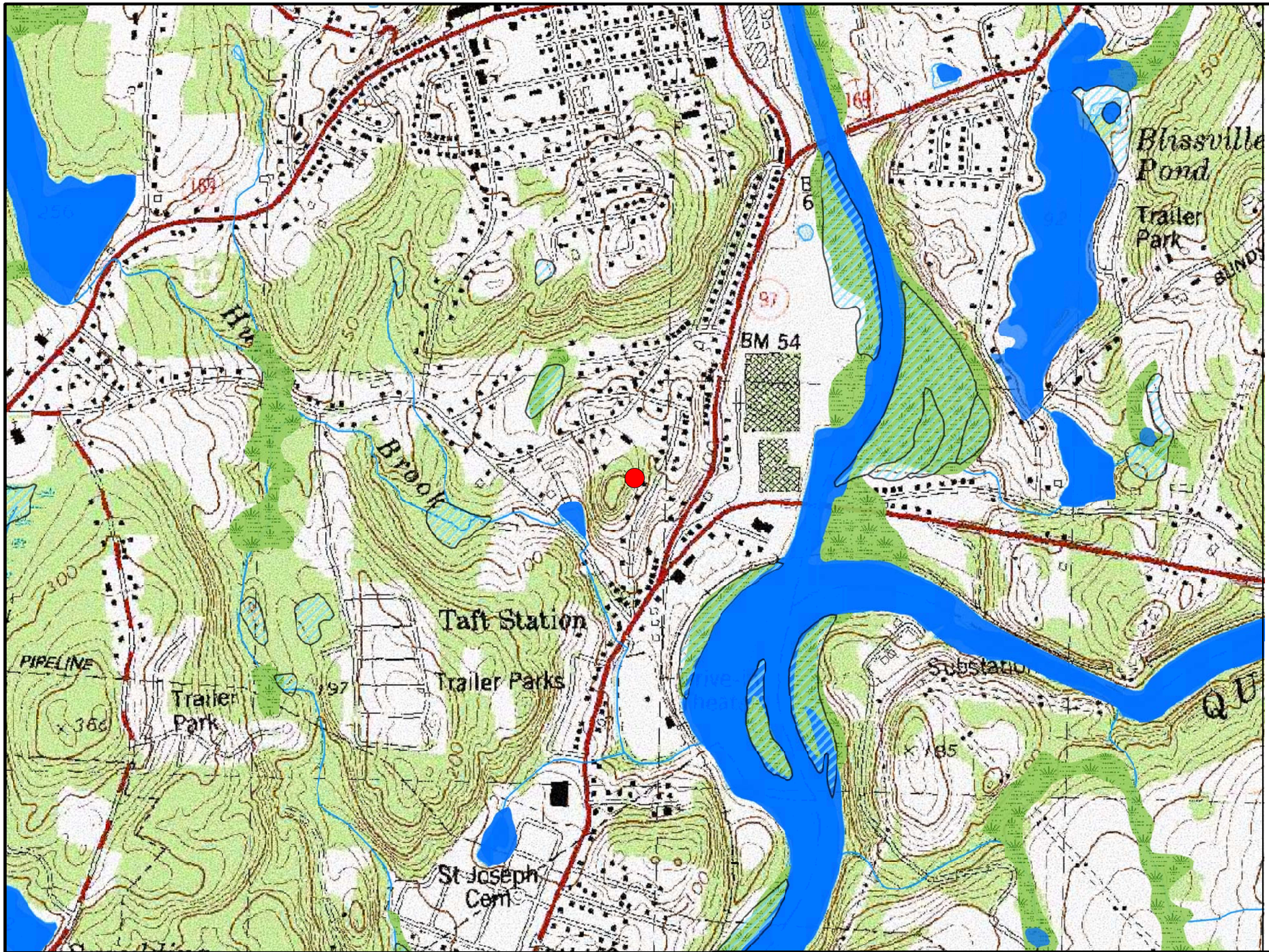
# WETLAND LOCATIONS MAP

OPTASITE
39 MAENNERCHER AVENUE
NORWICH, CONNECTICUT

PROJ NO.: 88654 | FILE NAME: FIGURE 1

KLEINFELDER
99 LAMBERTON ROAD, SUITE 201
WINDSOR, CONNECTICUT
PH. 860-683-4200 FAX 860-683-4206
www.kleinfelder.com

FIGURE: 1




0 250 500 1,000 1,500 2,000 2,500

SCALE IN FEET

0 75 150 300 450 600 750

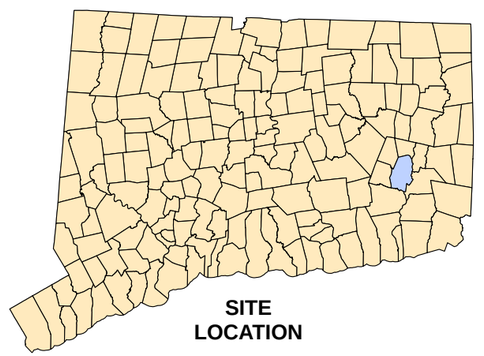
SCALE IN METERS

**LEGEND**

- SITE LOCATION
- FEDERAL WETLANDS
- STATE WETLAND SOILS
- WATERCOURSE

N

**CONNECTICUT**



**SITE LOCATION**

SOURCE:
1. USGS 7.5' TOPOGRAPHIC MAP, NORWICH CONNECTICUT QUADRANGLE MAP (1983)
2. FISH AND WILDLIFE NATIONAL WETLANDS INVENTORY GIS DATA SET (MARCH 1980)
3. CT DEP STATE WETLAND GIS DATA SET (JUNE 2000 - MARCH 2007)

| | |
|---|---|
| DRAWN BY: CTH | |
| REVISED BY: | |
| CHECKED BY: AH | |
| DATE: 02-19-08 | APPROVED BY: |

# WETLAND LOCATIONS MAP

OPTASITE
39 MAENNERCHER AVENUE
NORWICH, CONNECTICUT

PROJ NO.: 88654 | FILE NAME: FIGURE 1

KLEINFELDER
99 LAMBERTON ROAD, SUITE 201
WINDSOR, CONNECTICUT
PH. 860-683-4200 FAX 860-683-4206
www.kleinfelder.com

FIGURE: 1