



GLOBAL SIGNAL

TECHNICAL REPORT

PROPOSED RE-LOCATION OF  
EXISTING TOWER FACILITY

1919 POST ROAD  
GUILFORD, CONNECTICUT

Global Signal  
301 N. Cattlemen Road  
Sarasota, FL 34232

## I. INTRODUCTION

Global Signal (“Global Signal”) respectfully submits this Technical Report with attachments (“Report”) to the Town of Guilford (the “Town”), pursuant to Connecticut General Statutes (C.G.S.) §§ 16-50g *et seq.*, as amended. This submission pertains to an application to be filed with the Connecticut Siting Council (“Council”) for a Certificate of Environmental Compatibility and Public Need (“Application” or “Certificate”) that will allow Global Signal to re-locate, re-construct, operate and maintain a wireless telecommunications facility and associated equipment (the “Re-located Facility”) at 1919 Boston Post Road in Guilford, Connecticut (the “Property”). This application falls within the jurisdiction of the Council pursuant to C.G.S. §§ 16-50i (a)(6), 16-50k and 16-50x.

On May 22, 1997, the Guilford Planning and Zoning commission approved an application for a special permit for Sprint Spectrum, LP to construct a 130 foot monopole at the Location and a special permit was issued on June 4, 1997 (the “Existing Facility”). Subsequent to the construction of the Existing Facility, regulatory jurisdiction over the Existing Facility became the province of the Council.

On February 14, 2003, Sprint Sites USA filed a petition for a declaratory ruling, Petition No. 613, with the Council for a twenty foot extension of the existing monopole. The Council made a determination that the modifications to the Existing Facility would not result in an adverse environmental impact, and in fact the modifications were necessary to allow Nextel, T-Mobile and AT&T to provide adequate wireless coverage to this area. A copy of the approval is attached hereto as Exhibit A.

The Property is proposed to be the location of new development that will enhance and benefit the residents of Guilford. In order for the Property to be developed in a productive manner, the Existing Facility must be relocated to a different location on the Property. Global Signal has agreed to relocate the Existing Facility in order to accommodate this development. The proposal is simply to relocate the Existing Facility, and will not involve making any changes to the design or collocations. Unless the Council rules otherwise, the relocation distance requires that a Certificate issue.

The purpose of this Report therefore, is simply to provide the Town with a compendium of information that formally satisfies the statutory criteria of municipal

consultation, including documentation regarding the public need for the Facility, the site selection process and any environmental effects associated with the proposed re-location of the Existing Facility.

## **II. SUMMARY OF PROPOSAL**

### **A. Applicant**

Global Signal is a wireless infrastructure company that owns, operates and maintains telecommunications towers throughout the country, including the State of Connecticut. Its home office is located in Sarasota, Florida. Global Signal specializes in providing wireless infrastructure to licensed wireless carriers and data providers. It has successfully developed new wireless facilities throughout the Northeast and has specifically acquired existing towers from telecommunication providers in Connecticut. Global Signal's goal is to develop, operate and maintain quality communication facilities to be shared and used by numerous wireless providers that will benefit the community, as well as the service providers.

### **B. Proposed Facility**

The Property consists of two parcels: (1) on which the Existing Facility is located is owned by Roger Stone; and (2) the adjacent property where the Facility would be re-located is owned by C & K Real Estate, LLC. Developers Diversified Realty (the "Contract Purchaser") currently has a long term lease for the Roger Stone parcel and a contract to purchase the C & K Real Estate, LLC parcel. The parcel is 26.245 acres and is located on Map 79, Lot 35 of the Guilford Tax Assessor's Map. The Property is located in the SCW Service Center West Zoning District. The Existing Facility needs to be re-located because the Contract Purchaser is in the process of obtaining necessary approvals to construct a lifestyle retail development on the Property and the current location of the Existing Facility is within the footprint of a proposed building.

Global Signal proposes to dismantle the Existing Facility, which is located on the northwest portion of the Location and re-build the Re-located Facility on the northeast corner of the Property ("Site"). As demonstrated on the plans attached hereto as Exhibit B, it

proposes to re-construct the existing 150 foot tall steel monopole in an approximately 4,000 square foot compound area.<sup>1</sup>

The equipment compound will be enclosed by an 8-foot tall, garden fence. The Re-located Facility would be designed to accommodate all of the tenants on the Existing Facility. These include: T-Mobile, Nextel, Sprint, Verizon Wireless, AT&T and New Cingular.

Vehicular access will be provided via a paved driveway which will also be used by the proposed commercial development at the Property. Utility service will extend underground from the Boston Post Road to the Facility. No water or sanitary facilities are required and once built, the Facility will generate minimal traffic because each of the collocating entities will only need to visit the site about once a month to perform routine maintenance and inspection.

### **III. CONNECTICUT SITING COUNCIL JURISDICTION AND PROCEDURE**

As discussed below, the location and type of the Re-located Facility is within the exclusive jurisdiction of the Council pursuant to the Public Utility Environmental Standards Act, C.G.S. §§ 16-50g et seq. C.G.S. §§ 16-50i (a) (6), 16-50k, and 6-50x (a). The Council has jurisdiction over all facilities defined in C.G.S. § 16-50i (a). This jurisdiction includes “telecommunication towers . . . used in a cellular system, as defined by the Code of Federal Regulations Title 47, Part 22 . . . .” C.G.S. § 16-50i (a) (6).

All applicants for a Certificate of Environmental Compatibility and Public Need are required, at least 60 days prior to filing an application with the Council, to (1) make a good faith effort to consult with the municipality in which a Facility will be located regarding the selected sites, and (2) provide a technical report to Town officials. C.G.S. § 16-50l. The Town may choose to conduct public hearings and meetings as it deems necessary for it to advise the applicant of its recommendations concerning the proposed facility. Within 60 days of the initial consultation, the Town shall issue its recommendations. Within 15 days of filing an application with the Council, the applicant must provide the Council with (1) the technical report submitted to the Town and (2) a summary of the Town's comments and recommendations.

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<sup>1</sup> Due to the structural issues associated with tower removal and reconstruction the existing monopole will not be used. A new 150 ft monopole will be purchased and existing equipment will be re-used to the extent possible.

Global Signal plans to submit its application to the Council at the end of September, 2006. Upon receipt of an application, the Council will assign a docket number and set a hearing date. At that time, the Town may choose to become an intervenor or a party to the proceedings. Other procedures followed by the Council include serving the applicant and other participants with interrogatories, holding a pre-hearing conference, and conducting a public hearing. The public hearing on this application would be held at a location in Guilford. Once the public hearing is completed, the Council will issue findings of fact, an opinion, and a decision and order, which can include issuing a Certificate for the Facility or a variation thereto. Prior to construction, the Council will require Global Signal to submit a Development and Management Plan, which is a final site development plan showing the location of structures and details of site development such as grading and landscaping. Upon receiving Council approval, Global Signal will submit a building permit application to the Town building official.

The procedures described above are governed by the Connecticut General Statutes, the Regulations of Connecticut State Agencies, and the Connecticut Siting Council's Rules of Practice.

#### **IV. COMPLIANCE WITH MUNICIPAL CONSULTATION CRITERIA**

Global Signal is simply seeking to de-construct and re-locate the Existing Facility to a different location on the Property to accommodate the property owner and a proposed commercial development on the Property.

The statutory municipal consultation and notice requirements have been satisfied by the comprehensive submissions by Global Signal not only for the Re-located Facility but also the submissions that were before the Town's Planning and Zoning Commission when it originally approved the Existing Facility and submissions that were presented to the Town under Petition No. 613T.

##### **A. Consultation with Town Officials**

As discussed, this Property and the Existing Facility are well known to the Town. The Town's Planning and Zoning Commission originally approved the Facility in 1997. The Town was again notified of the expansion of the Facility from 130 feet to 150 feet. The Town's comments and recommendations were included in the previous owner's Petition

application. The Town is also well aware of the proposed commercial development on the Site and the need to re-locate the Existing Facility.

**B. Information Regarding Public Need**

In 1996, the United States Congress recognized a nationwide need for high quality wireless telecommunication services. Through the Federal Telecommunications Act of 1996, Congress sought to promote competition, reduce regulation to encourage technical innovation, and recognized the public need for quality nationwide wireless telecommunication services. Global Signal assists carriers in fulfilling their license requirements by providing them with a variety of services, including locating, leasing, zoning and constructing personal wireless facilities for the carriers' antennas and equipment. It also provides municipalities the opportunity and location to improve vital emergency services communication systems.

The re-location of the Existing Facility is necessary to maintain wireless service availability in this section of Guilford as well as along U.S. Route 1.

Included herein as Exhibits C and D are propagation plots prepared by T-Mobile and Nextel filed in support of petition 613T, showing coverage from existing and approved surrounding sites both with and without the Existing Facility. These propagation plots clearly demonstrate the need for a site in the area and the effectiveness of the proposed re-location of the Existing Facility to maintain effective coverage in this area of Guilford.

**C. Information Regarding Site Selection Process**

The Existing Facility was originally constructed on the Site in 1997 and expanded to 150 feet in 2003. The Site was originally approved by the Guilford Planning and Zoning Commission because it was located in a commercial zone and because it had minimal adverse impact on any scenic site. Due to a proposed commercial/retail development on the Site, the Existing Facility simply needs to be re-located on the Site.

**D. Information Regarding Environmental Effects of the Project**

The design of the Re-located Facility was developed to meet the public need for high quality communications service while minimizing any potential environmental impacts. To date, Global Signal has conducted a balloon float, submitted photos of those potential areas from which a tower might be visible as well as photos of similar telecommunications structures.

## **1. Visibility**

In order to further investigate potential visual impacts, Global Signal retained Vanasse Hangen Brustlin, Inc. (“VHB”) to prepare a Visual Resource Evaluation for the Facility. VHB conducted a balloon float and prepared photographs to simulate the visibility of the proposed Facility from several locations. The Visual Resource Evaluation and photographic documentation are included at Exhibit E. The Facility will be partially visible year-round from a total of only 51 acres, which is less than one percent of the entire study area with 16 of the 51 acres consisting of the Site itself. In addition, the Facility will be visible during leaf off conditions from an additional 45 acres. The Facility will be visible above the tree canopy from select areas along U.S. Route 1. Overall, the visual impact of the Facility will vary little from the visual impact of the Existing Facility.

The compound will have a de minimis visual impact as it will be screened by the proposed 8-foot garden fence. In addition, the compound will be located at the rear of the Site behind a commercial/retail building which will provide further screening to any potential visual impact of the compound.

## **2. Power Density**

In August, 1996, the FCC adopted a hybrid ANSI/NCRP Standard for exposure to Radio Frequency (RF) emissions from telecommunications facilities. The ANSI standard was adopted by Connecticut in C.G.S. §§ 22a-162 and 22a-162a “for the purpose of preventing possible harmful effects in human beings from exposure to electromagnetic fields in the frequency range of 300 kilohertz (KHz) to 100 gigahertz (GHz). . .”

The worst-case calculation of power density for operation of all of the proposed carriers’ operations at the facility would be approximately 31.58 % of the applicable FCC/ANSI standards. A copy of the RF analysis prepared in support of Petition 613T is attached hereto as Exhibit F.

## **3. Wetlands**

The wetlands on the Property consist of the Spinning Mill Brook and narrow bands of wooded swamp flanking the north and south sides of the brook. The wetlands on the Property

will not be effected by the re-location of the Existing Facility. See NEPA Compliance Report prepared by VHB attached hereto as Exhibit G. In addition, the lifestyle retail development will require approval from the Guilford inland wetland and watercourses agency providing further assurance that the wetlands resources on the Property will not be effected by the development on the Property.

#### **4. Other Potential Impacts**

The Property is located in a developed area of Guilford and exhibits no scenic, natural or recreational characteristics that would be affected by the proposed site. See NEPA Compliance Report prepared by VHB attached hereto as Exhibit G.

#### **V. CONCLUSION**

Based on the information and documentation contained in this Report, Global Signal submits that the re-location and construction of a telecommunications facility at 1919 Post Road, Guilford, Connecticut will not have a substantial adverse environmental effect. As this Re-located Facility provides collocation for five carriers, Global Signal's proposal fulfills the legislative mandate to eliminate the unnecessary proliferation of telecommunications towers in Connecticut.

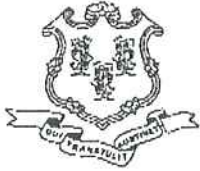
Specifically, Global Signal submits that it has demonstrated (1) the public need for the Facility to provide wireless telecommunication coverage; (2) that the Re-located Facility will not result in any adverse environmental impacts; (3) that the shared use of the Re-located Facility is feasible as proposed; and (4) that the Re-located Facility will not substantially affect the scenic, historic, recreational or ecological quality of the site. Finally, the Re-located Facility will help provide a level of service in Guilford that is commensurate with current public demand for telecommunications service, as well as to meet such demand for the foreseeable future.

Correspondence and/or communications regarding this report may be addressed to:

Julie Kohler, Esq.  
Carrie L. Larson, Esq.  
Cohen and Wolf, P.C.  
1115 Broad Street  
Bridgeport, CT 06604



A

**STATE OF CONNECTICUT****CONNECTICUT SITING COUNCIL**

Ten Franklin Square, New Britain, CT 06051

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

E-Mail: [siting.council@ct.gov](mailto:siting.council@ct.gov)[www.ct.gov/csc](http://www.ct.gov/csc)**CERTIFIED MAIL  
RETURN RECEIPT REQUESTED**

April 10, 2003

Scott T. Penner  
Hurwitz & Sagarin LLC  
147 North Broad Street  
P.O. Box 112  
Milford, CT 06460-0112

**RE: PETITION NO. 613T** - Sprint Sites USA petition for a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the proposed modifications to an existing telecommunications facility located at 1919 Boston Post Road, Guilford, Connecticut.

Dear Mr. Penner:

At a public meeting held on April 9, 2003, the Connecticut Siting Council (Council) considered and ruled that this proposal would not have a substantial adverse environmental effect, and pursuant to General Statutes § 16-50k would not require a Certificate of Environmental Compatibility and Public Need.

This decision is under the exclusive jurisdiction of the Council and is not applicable to any other modification or construction. All work is to be implemented as specified in the petition, dated February 14, 2003.

Enclosed for your information is a copy of the staff report on this project.

Very truly yours,

Pamela B. Katz  
Chairman

PBK/CML

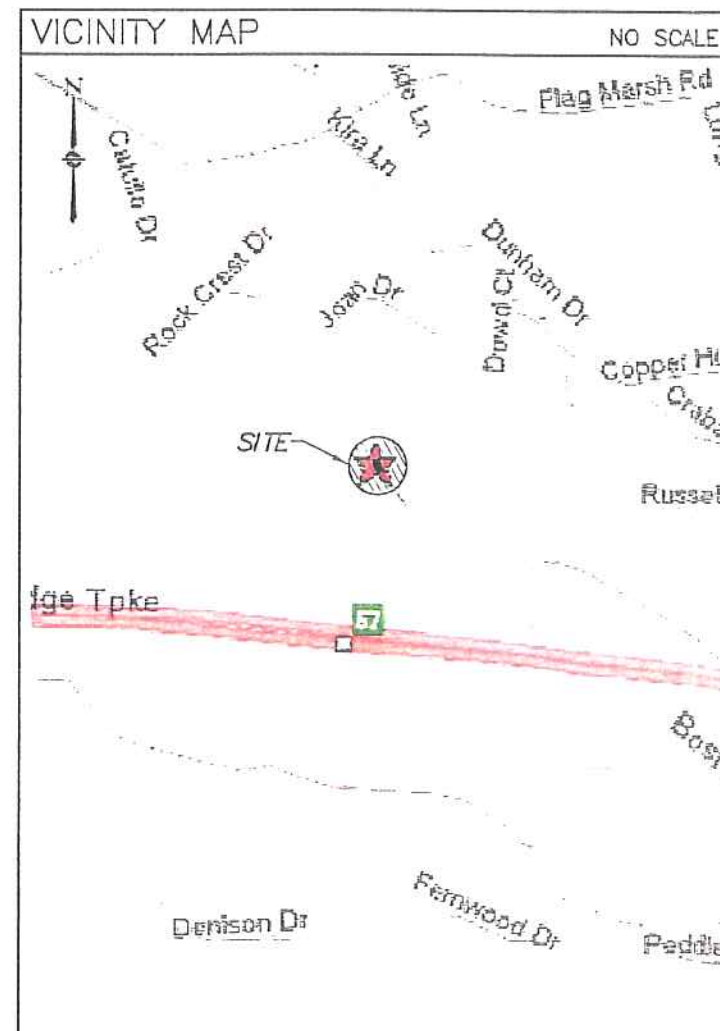
Enclosure: Staff Report dated April 9, 2003

c: Honorable Carl A. Balestracci, Jr., First Selectman, Town of Guilford  
M. William McAvoy, Jr., Zoning Enforcement Officer, Town of Guilford

B

# WIRELESS COMMUNICATIONS FACILITY GUILFORD

1919 BOSTON POST ROAD  
GUILFORD, CONNECTICUT



## PROJECT SUMMARY

SITE NAME: GUILFORD  
 SITE ADDRESS: 1919 BOSTON POST ROAD  
 GUILFORD, CONNECTICUT  
 JURISDICTION: CONNECTICUT SITING COUNCIL  
 GOVERNING CODE: CONNECTICUT STATE BUILDING  
 AND LIFE SAFETY CODE  
 MAP: 78  
 LOT: 35  
 ZONE: SCW  
 (SERVICE CENTER WEST ZONING DISTRICT)  
 OWNER: C & K REAL ESTATE, LLC  
 APPLICANT: GLOBAL SIGNAL  
 ARCHITECT: URS CORPORATION A.E.S.  
 500 ENTERPRISE DRIVE  
 ROCKY HILL, CT 06067  
 M/E/P ENGINEER: URS CORPORATION A.E.S.  
 500 ENTERPRISE DRIVE  
 ROCKY HILL, CT 06067  
 GEODETIC COORDINATES: LATITUDE 41° 17' 57.48"  
 LONGITUDE 72° 42' 15.16"  
 GROUND ELEVATION: ELEVATION 99.4'

## LEGEND

SYMBOL	DESCRIPTION
	SECTION OR DETAIL NUMBER SHEET WHERE DETAIL/SECTION OCCURS
	ELEVATION NUMBER SHEET WHERE ELEVATION OCCURS

## ABBREVIATIONS

MIN. MINIMUM  
 V.I.F. VERIFY IN FIELD  
 O.C. ON CENTER  
 PSF POUND/SQUARE FOOT  
 TYP. TYPICAL  
 FT. FEET  
 SQ.FT. SQUARE FEET  
 N/A NOT APPLICABLE

## SHEET INDEX

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET -- GENERAL NOTES AND LEGENDS
SC-1	EXISTING SITE PLAN
SC-2	SITE PLAN, COMPOUND PLAN AND ELEVATION

A&E FIRM  
**URS CORPORATION A/E/S**  
 500 ENTERPRISE DRIVE  
 ROCKY HILL, CONNECTICUT  
 1-(866)-529-8882

A&E SEAL

PROJECT NO: 35925451

JOB NO: GST-001

DRAWN BY: RRH

CHECKED BY:

### ISSUED FOR

0	05-25-05	REVISION
1	07-10-05	REVISION
2	07-11-05	REVISION

THE INFORMATION CONTAINED  
 IN THIS SET OF DOCUMENTS  
 IS PROPRIETARY BY NATURE.  
 ANY USE OR DISCLOSURE  
 OTHER THAN THAT WHICH  
 RELATES TO GLOBAL SIGNAL  
 IS STRICTLY PROHIBITED.

GUILFORD

1919 BOSTON POST ROAD  
 GUILFORD, CONNECTICUT

SCALE: AS NOTED

TITLE SHEET-  
 GENERAL NOTES  
 AND LEGENDS

T-1



1 EXISTING SITE PLAN  
 SC-1 SCALE: 1"=80'-0"



A&E FIRM  
**URS CORPORATION A&E**  
 500 ENTERPRISE DRIVE  
 ROCKY HILL, CONNECTICUT  
 1-(800)-529-8852

A&E SEAL

PROJECT NO: 36928481

JOB NO: GS1-001

DRAWN BY: WRB

CHECKED BY:

ISSUED FOR

0	05-25-06	REVISION
1	07-10-06	REVISION
2	07-11-06	REVISION

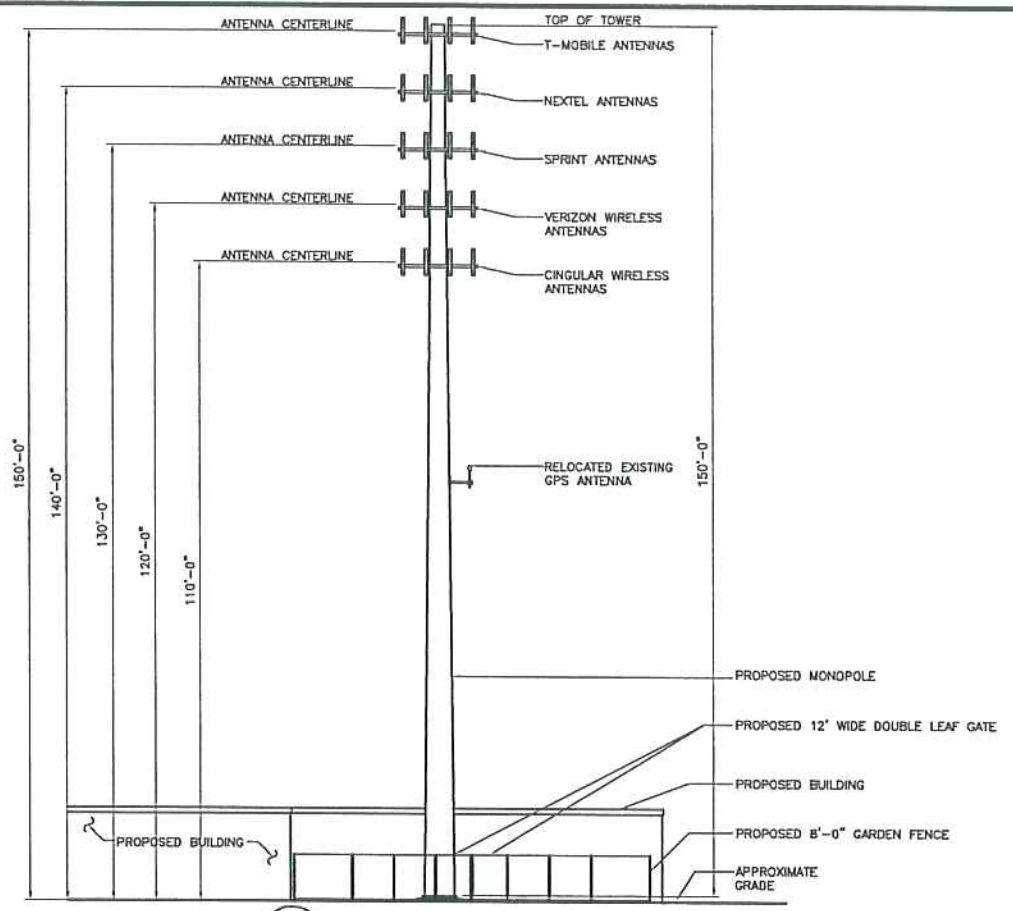
THE INFORMATION CONTAINED  
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GUILFORD  
 1919 BOSTON POST ROAD  
 GUILFORD, CONNECTICUT

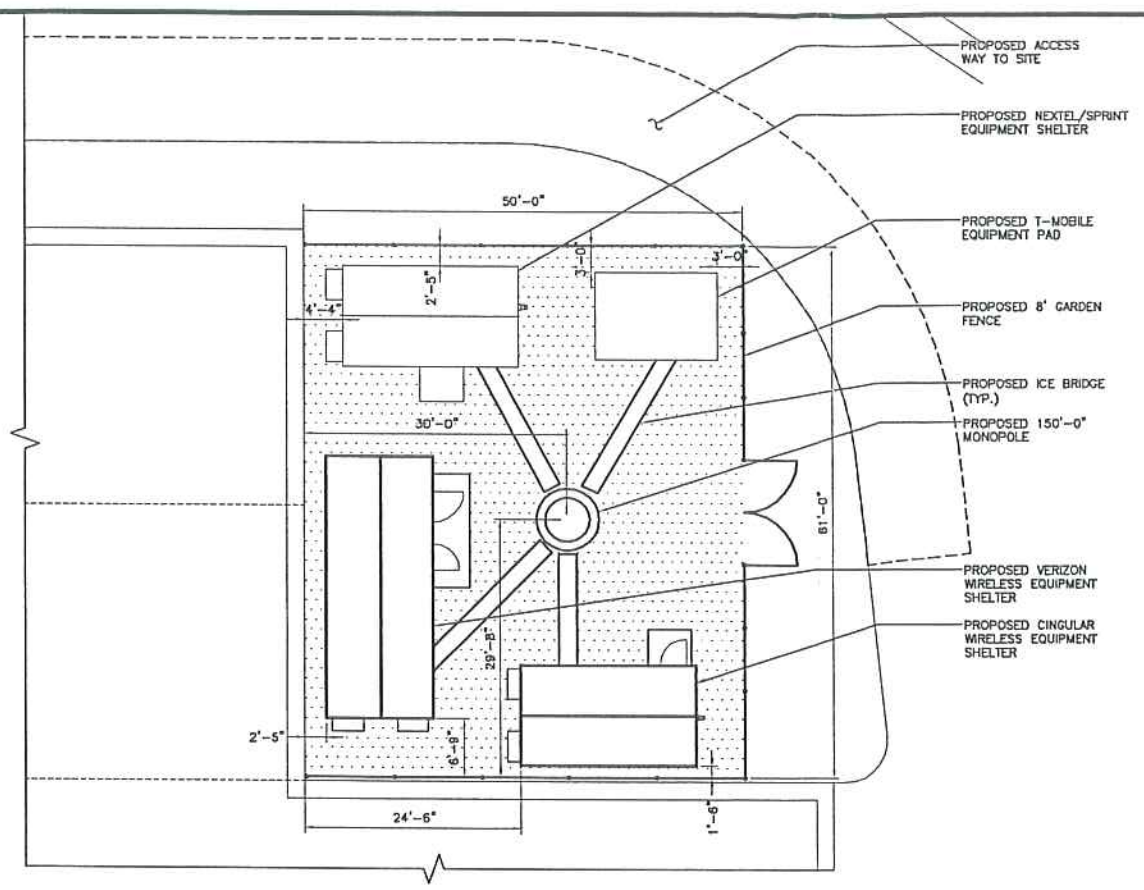
SCALE: AS NOTED

EXISTING  
 SITE PLAN

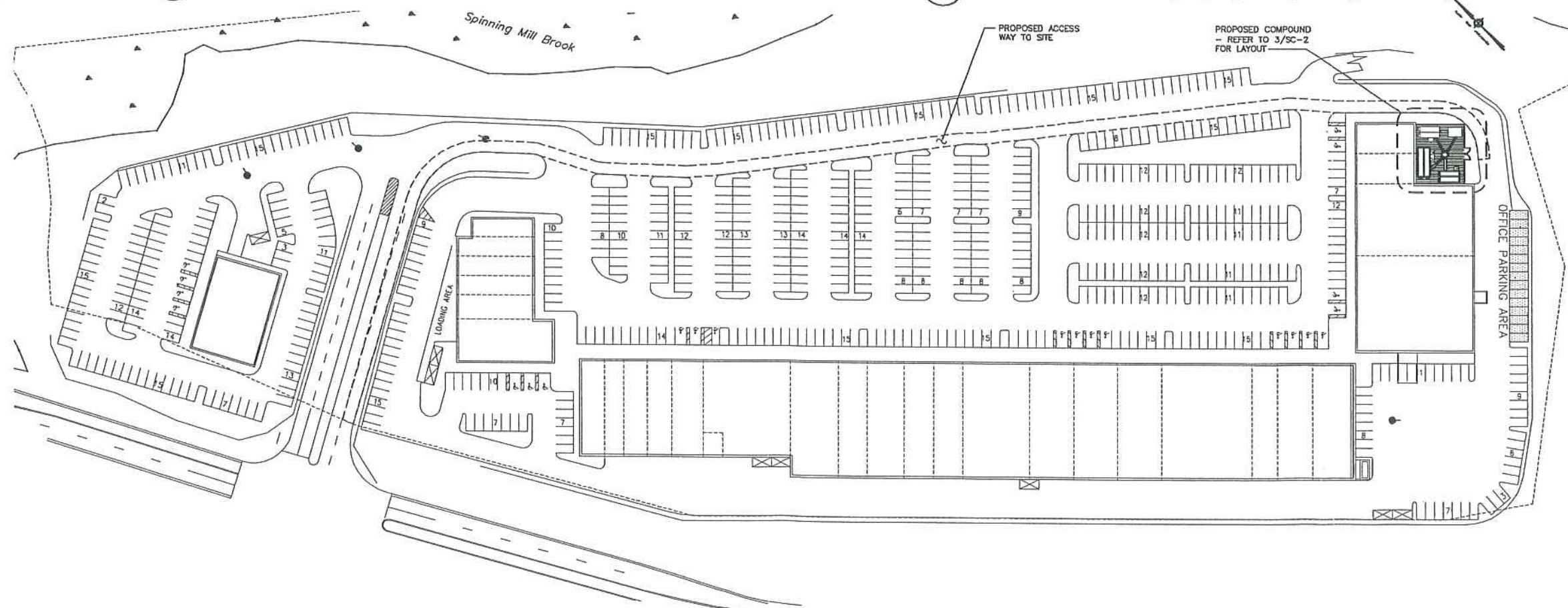
SC-1



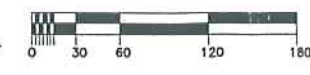
2 TOWER ELEVATION  
SC-2 SCALE: 1" = 15'-0"



3 COMPOUND PLAN  
SC-2 SCALE: 1" = 10'-0"



1 PROPOSED SITE PLAN  
SC-2 SCALE: 1" = 60'-0"



A/E FIRM

**URS CORPORATION A/E/S**  
500 ENTERPRISE DRIVE  
ROCKY HILL, CONNECTICUT  
1-(860)-529-8882

A/E SEAL

PROJECT NO: 36928481

JOB NO: GS1-001

DRAWN BY: RRH

CHECKED BY:

ISSUED FOR	
0	05-25-06 REVIEW
1	07-10-06 REVIEW
2	07-11-06 REVIEW

THE INFORMATION CONTAINED IN THIS SET OF DOCUMENTS IS PROPRIETARY BY NATURE. ANY USE OR DISCLOSURE OTHER THAN THAT WHICH RELATES TO GLOBAL SIGNAL IS STRICTLY PROHIBITED.

GUILFORD  
1919 BOSTON POST ROAD  
GUILFORD, CONNECTICUT

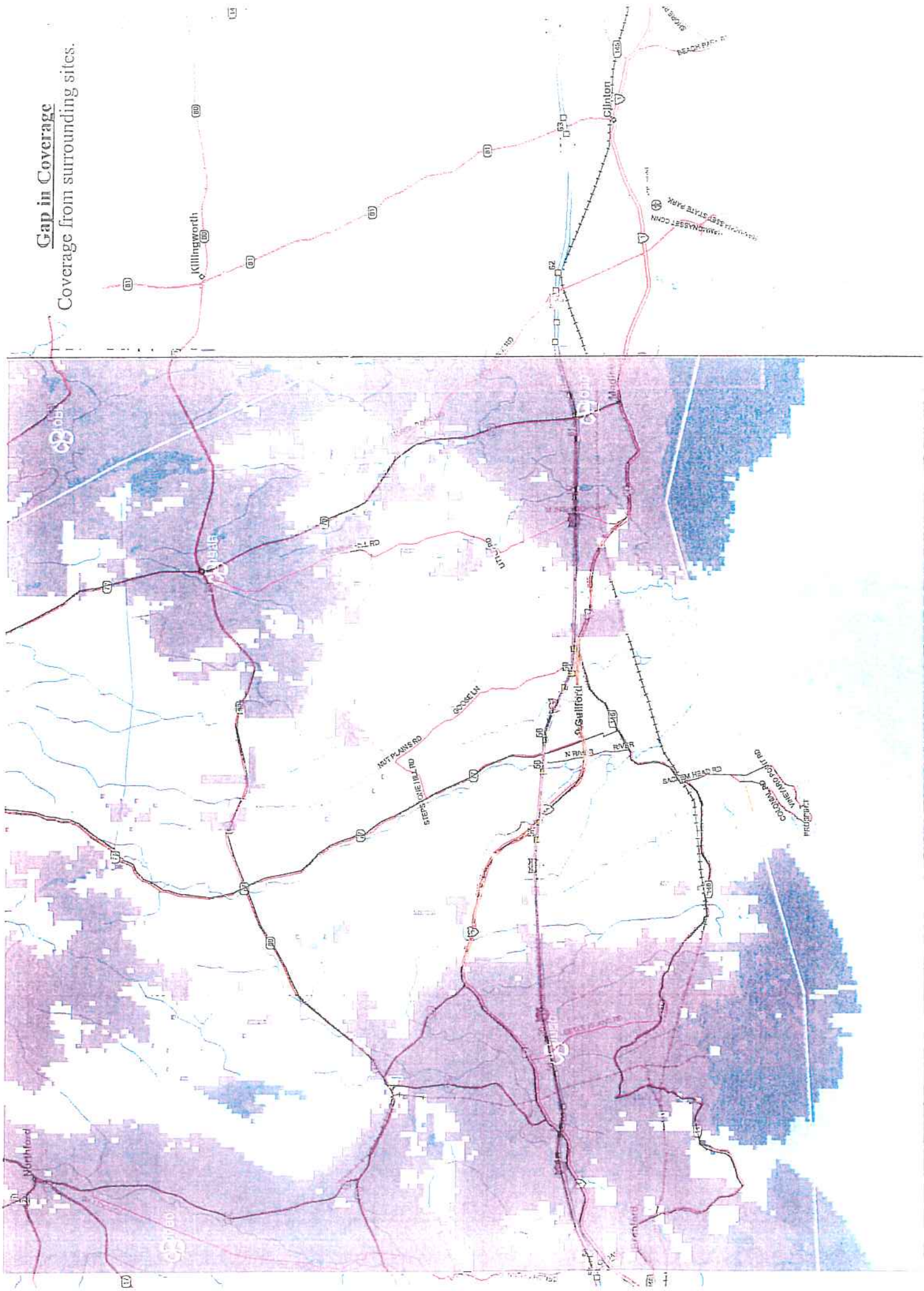
SCALE: AS NOTED

SITE PLAN,  
COMPOUND PLAN  
AND ELEVATION

SC-2

C

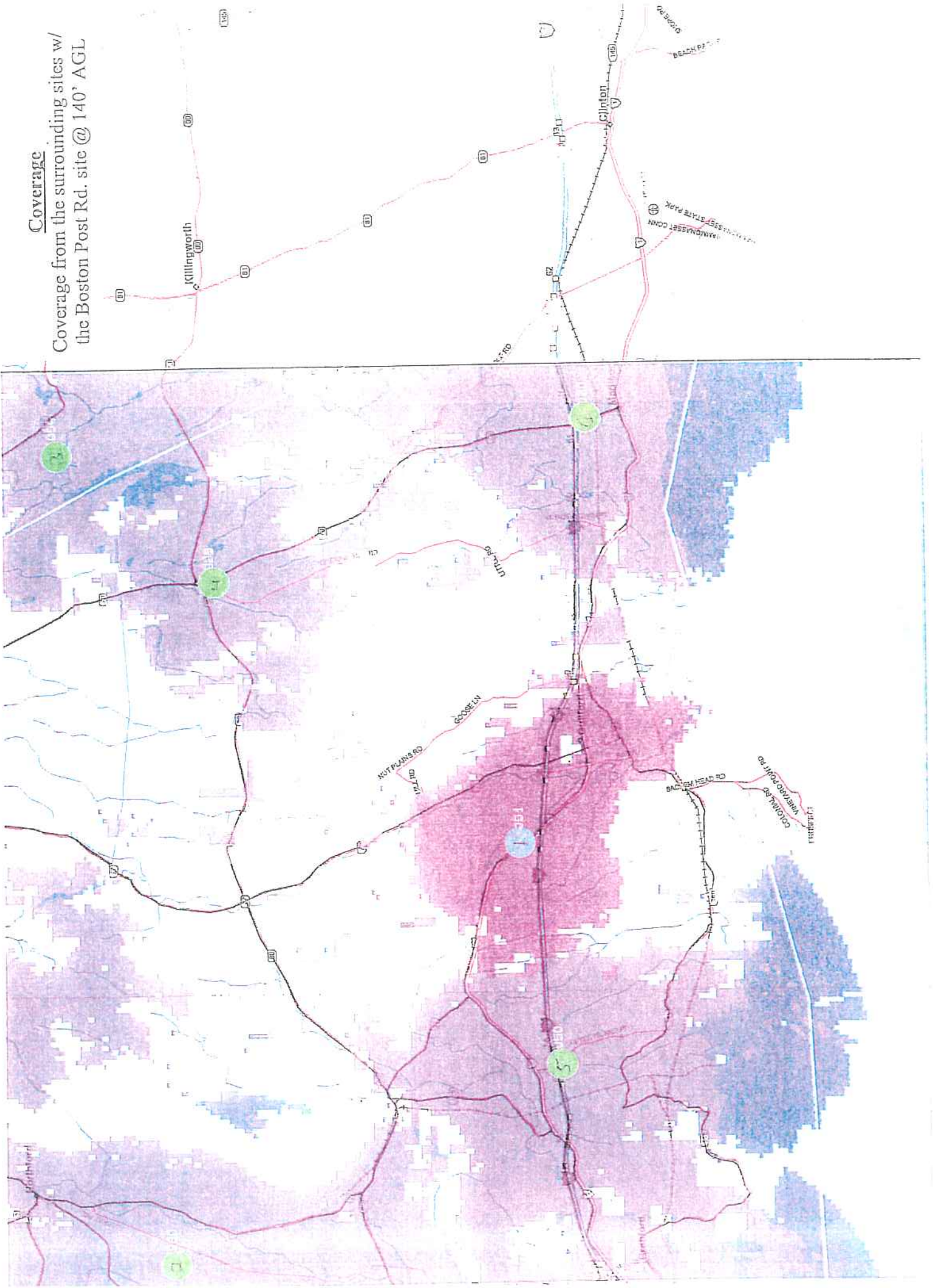
**Gap in Coverage**  
Coverage from surrounding sites.





Coverage

Coverage from the surrounding sites w/  
the Boston Post Rd. site @ 140' AGL



D

Coverage with CT11027D

**Odyssey**

Logica Mobile Networks

CT1 Dec 20 16:35:32 2002

1 : 60000

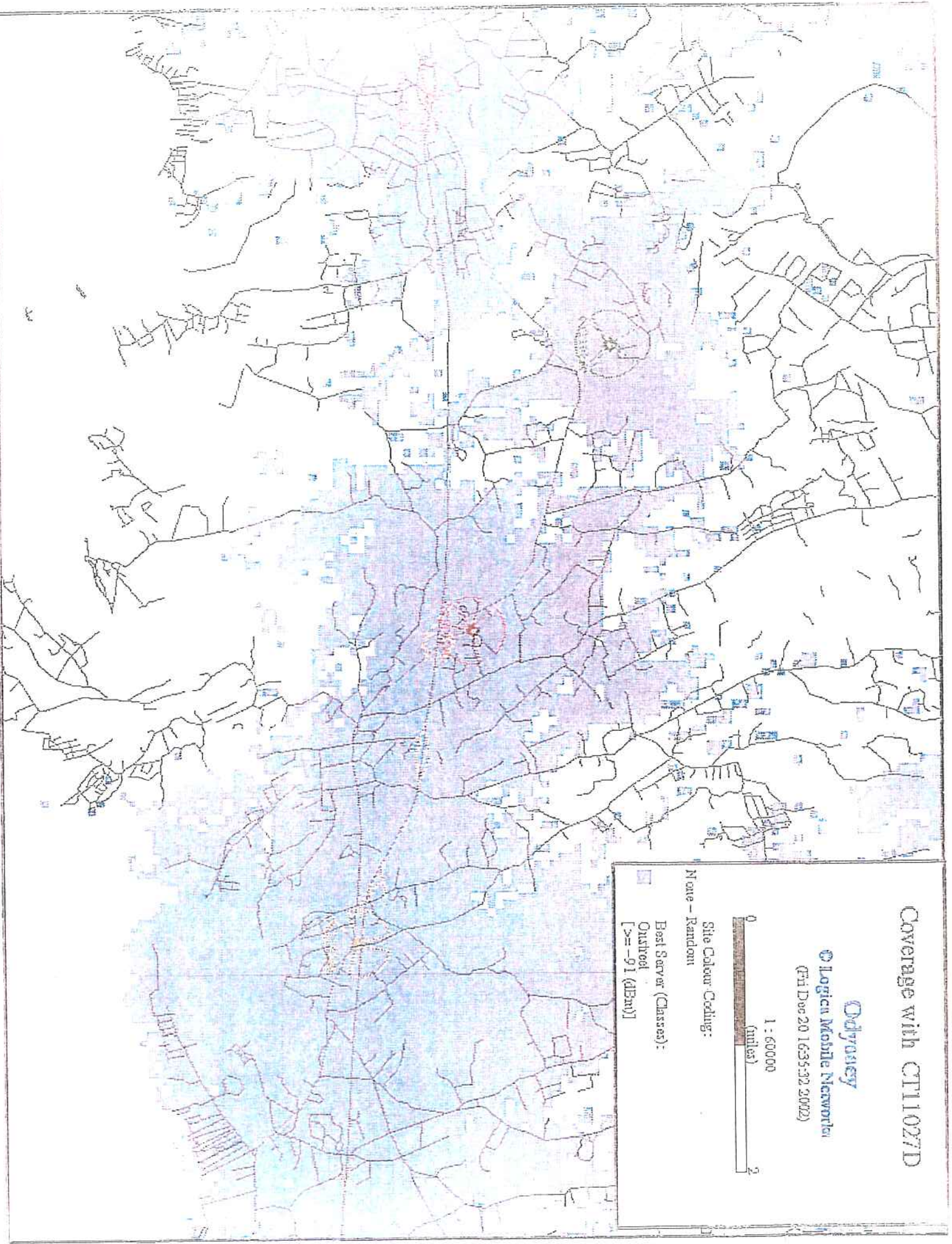


Site Colour Coding:

None - Random

Best Server (Class):

Outbeel  
[-> -91 (dBm)]



Coverage without CT11027D

Odyne

Logica Mobile Networks

Fri Dec 20 16:29:34 2002

1 : 600000



Site Colour Coding:

None - Random

Best Server (Classes):

Overhead

[>= -91 (dBm)]

C

*Proposed Wireless  
Telecommunications Tower  
Relocation*

1919 Boston Post Road  
(US Route 1)  
Guilford, Connecticut

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Prepared for Global Signal  
301 North Cattleman Road, Suite 300  
Sarasota, FL 34232

Prepared by **VHB**/Vanasse Hangen Brustlin, Inc.  
54 Tuttle Place  
Middletown, CT 06457

July 2006

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## Visual Resource Evaluation

Global Signal seeks to relocate an existing 150-foot tall monopole tower located on property at 1919 Boston Post Road in the Town of the Guilford, Connecticut ("host property"). The relocated monopole ("Facility") would be similar in height and design to the existing tower, but located approximately 700 feet to the northeast on the host property in order to accommodate future commercial development within this area. This Visual Resource Evaluation was conducted to approximate the visibility of the relocated Facility within a two-mile radius of the Site ("Study Area").

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### Project Introduction

The proposed Facility includes the construction of a 150-foot tall monopole and associated ground equipment to be located within a fenced enclosure at the base of the tower. The proposed Facility would replace an existing 150-foot tall monopole tower currently located on the host property. The proposed project area is located at approximately 100 feet Above Mean Sea Level (AMSL). Access to the proposed Facility will be achieved via a parking area to be constructed in conjunction with the future commercial development of the host property.

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### Site Description and Setting

The host property includes approximately 26.24 acres of land and is identified in the Town of Guilford land records as Map 79/Lot 35 (see Photolog Documentation map contained in Attachment A). In addition to the existing telecommunications facility, the host property is currently occupied by a small single story commercial building and associated parking area located along US Route 1 and a self-storage facility located adjacent to the existing monopole. The majority of the host property is currently open and undeveloped. A photograph of the proposed project area is included in Attachment B. Land use within the general vicinity of the proposed Facility is mainly comprised of various small-scale commercial establishments located along US Route 1, highway infrastructure associated with Interstate 95 and medium-density residential parcels.

The topography in the Study Area is generally characterized by gently rolling hills that range in elevation from approximately 10 feet above mean sea level (AMSL) to approximately 240 feet AMSL. The tree cover within the Study Area consists mainly of mixed deciduous hardwood species. The tree canopy occupies approximately 5,595 acres of the 8,042-acre study area (70%). During the in-field activities associated with this analysis, an infrared laser range finder was used to accurately determine the average tree canopy height throughout the Study Area. Numerous trees were selected for measurement and the average tree canopy established, in this case 65 feet. In total, the Study Area features approximately 65 acres of open water. In addition, the Study contains roughly 84 linear miles of roadways.

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## METHODOLOGY

To estimate the visibility associated with the proposed Facility, VHB incorporates a two-fold approach utilizing both a predictive computer model and in-field analysis. The predictive model is employed to assess potential visibility throughout the entire Study Area, including private property and/or otherwise inaccessible areas for field verification. A "balloon float" and Study Area drive-through reconnaissance are also conducted to obtain locational and height representations, back check the initial computer model results and provide documentation from publicly accessible areas. Results of both activities are analyzed and incorporated into the final viewshed map. A description of the methodologies used in the analysis is provided below.

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### Visibility Analysis

Using ESRI's ArcView® Spatial Analyst, a computer modeling tool, the areas from where the proposed Facility is expected to be visible are calculated. This is based on information entered into the computer model, including Facility height, its ground elevation, the surrounding topography, existing vegetation and any significant structures/objects that may act to obstruct potential views. Data incorporated in the model includes 7.5 minute digital elevation models (DEMs) and a digital forest layer for the project area. The DEMs were produced by the United States Geological Survey (USGS) in 1982 at a 30 meter resolution. The forest layer was derived through on-screen digitizing in ArcView® GIS from 2004 digital orthophotos with a 0.5 foot pixel resolution. For comparative purposes, VHB also calculated the areas of visibility for the existing site location.

Once the data are entered, a series of constraints are applied to the computer model to achieve an estimate of where the Facility will be visible. Initially, only topography was used as a visual constraint; the tree canopy is omitted to evaluate all areas of potential visibility without any vegetative screening. Although this is an overly conservative prediction, the initial omission of these layers provides a reference for comparison once the tree canopy is established and also assists in the evaluation of potential seasonal visibility of the proposed Facility. A conservative tree canopy height of 50 feet is then used to prepare a preliminary viewshed map for use during the Study Area reconnaissance. The average height of the tree canopy is determined in the field using a hand-held infra-red laser range finder. The average tree canopy height is incorporated into the final viewshed map; in this case, 65 feet was identified as the average tree canopy height. The forested areas within the Study Area were then overlaid on the DEM with a height of 65 feet added and the visibility calculated. The forested areas are then extracted from the areas of visibility, with the assumption that a person standing among the trees will not be able to view the Facility beyond a distance of approximately 500 feet. Depending on the density of the vegetation in these areas, it is assumed that some locations within this range will provide visibility of at least portions of the Facility based on where one is standing. This analysis was conducted in 30-foot



increments from 150 feet down to 30 feet for the proposed relocated site and the results consolidated into a single thematic layer in order to determine the approximate amount of the tower structure that would be visible from any given location.

Also included on the map is a data layer, obtained from the Connecticut State Department of Environmental Protection (CTDEP), which depicts various land and water resources such as state parks and forests, recreational facilities, dedicated open space and CTDEP boat launches among other categories. This layer is useful in identifying potential visual impacts to any sensitive receptors that may be located within the Study Area. As shown on the attached viewshed map, portions of the Cockaponset State Forest and several large parcels owned by the Guilford Land Conservation Trust, Inc. are contained within Study Area. Lastly, based on a review of available data published by the Connecticut Department of Transportation and discussions with town staff in Guilford, it was determined that Route 77 which traverses the eastern portion of the Study Area is a state-designated scenic roadway.

A preliminary viewshed map (using topography and a conservative tree canopy height of 50 feet) is generated for use during the in-field activity in order to confirm that no significant land use changes have occurred since the 2004 aerial photographs used in this analysis were produced and to verify the results of the model in comparison to the balloon float. Information obtained during the reconnaissance is then incorporated into the final visibility map.

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## Balloon Float and Study Area Reconnaissance

On June 14, 2006 Vanasse Hangen Brustlin Inc., (VHB) conducted a "balloon float" at the proposed Facility in order to evaluate the potential viewshed within the Study Area. The balloon float consisted of raising and maintaining an approximate three-foot diameter, helium-filled weather balloon at the proposed site location at a height of 150 feet. During the balloon float, weather conditions were mostly sunny. The temperature was approximately 75 degrees Fahrenheit with calm winds.

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## Photographic Documentation

Once the balloon was secured at a height of 150 feet, VHB staff conducted a drive-by reconnaissance along the roads located within the Study Area with an emphasis on nearby residential areas and other potential sensitive receptors in order to evaluate and refine the results of the preliminary viewshed map and to verify where the balloon was, and was not, visible above and/or through the tree canopy. The balloon was photographed from a number of different vantage points to document the actual view towards the proposed Facility. The locations and orientations of the photos are described below:

1. View from Boston Post Road (US Route 1) at Joan Drive, looking southeast.

2. View from Boston Post Road (US Route 1), looking northwest.
3. View from Boston Post Road (US Route 1) south of Interstate 95, looking northwest.
4. View from Boston Post Road (US Route 1) north of Interstate 95, looking northeast.
5. View from River Road at Guilford Land Trust Car Pull-Off area, looking northwest.

Photographs of the balloon from the view points listed above were taken with a Nikon Digital Camera COOLPIX 5700, which has a lens focal length equivalent to a 35 mm camera with a 38 to 115 mm zoom. "The lens that most closely approximates the view of the unaided human eye is known as the normal focal-length lens. For the 35 mm camera format, which gives a 24x36 mm image, the normal focal length is about 50 mm." The optical zoom lens for the Nikon COOLPIX was set at a range of 50 mm to 70 mm for the purposes of this Visual Resource Evaluation.

The locations of the photographic points are recorded in the field using a hand held GPS receiver and are subsequently plotted on the maps contained in the attachments to this document.

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## Photographic Simulation

Photographic Simulations were generated for the five locations identified above. The Photographic Simulations represent a scaled depiction of the proposed monopole from these locations. The height of the Facility is determined based on the location of the balloon in the photographs and a proportional monopole image is simulated into the photographs. The simulations are contained in Attachment A.



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## CONCLUSIONS

Based on this analysis, areas from where the relocated 150-foot monopole would be visible above the tree canopy comprise approximately 51 acres; less than one percent of the 8,042 acre Study Area. Of this total, approximately 16 acres of visibility occurs on the host property which is mostly open and undeveloped. In comparison, the existing 150-foot tall monopole is currently visible from roughly 54 acres within the Study Area. As depicted on the viewshed map, year-round visibility for both the existing site location and the proposed relocation is largely confined to the US Route 1 transportation corridor with the exception of several smaller areas of visibility located to the north/northwest of the host property. This is consistent with observations made in the field during the conduct of the balloon float as little

---

<sup>1</sup> Warren, Bruce. *Photography*, West Publishing Company, Eagan, MN, c. 1993, (page 70).

difference in visibility between the existing monopole and the relocated Facility was identified. Generally, the proposed Facility will be visible from those locations that currently feature views of the existing monopole. Given the physical separation between the two locations (approximately 700 feet) and their respective placement on the host property, views of the existing monopole will extend slightly further to the north of the host property while views of the proposed Facility will extend slightly further to the south. VHB estimates that approximately two residences within the Study Area will have year round views of the proposed monopole. These properties are located along US Route 1 adjacent to the proposed Facility within closer proximity to the existing site location. No views are anticipated from Route 77, a state-designated scenic roadway, or from within Cockaponset State Forest. The viewshed map also depicts several additional areas where seasonal (i.e. during "leaf off" conditions) views through the trees are anticipated. These areas comprise approximately 45 additional acres and are mainly located to the northeast and southwest of the host property. Based on observations made in the field during the the balloon float, VHB anticipates that approximately 10 residences will have limited seasonal views of the proposed Facility. These properties are located along Peddlers Road, Copper Hill Drive and Dowd Court within approximately ¼ mile of the proposed Facility.

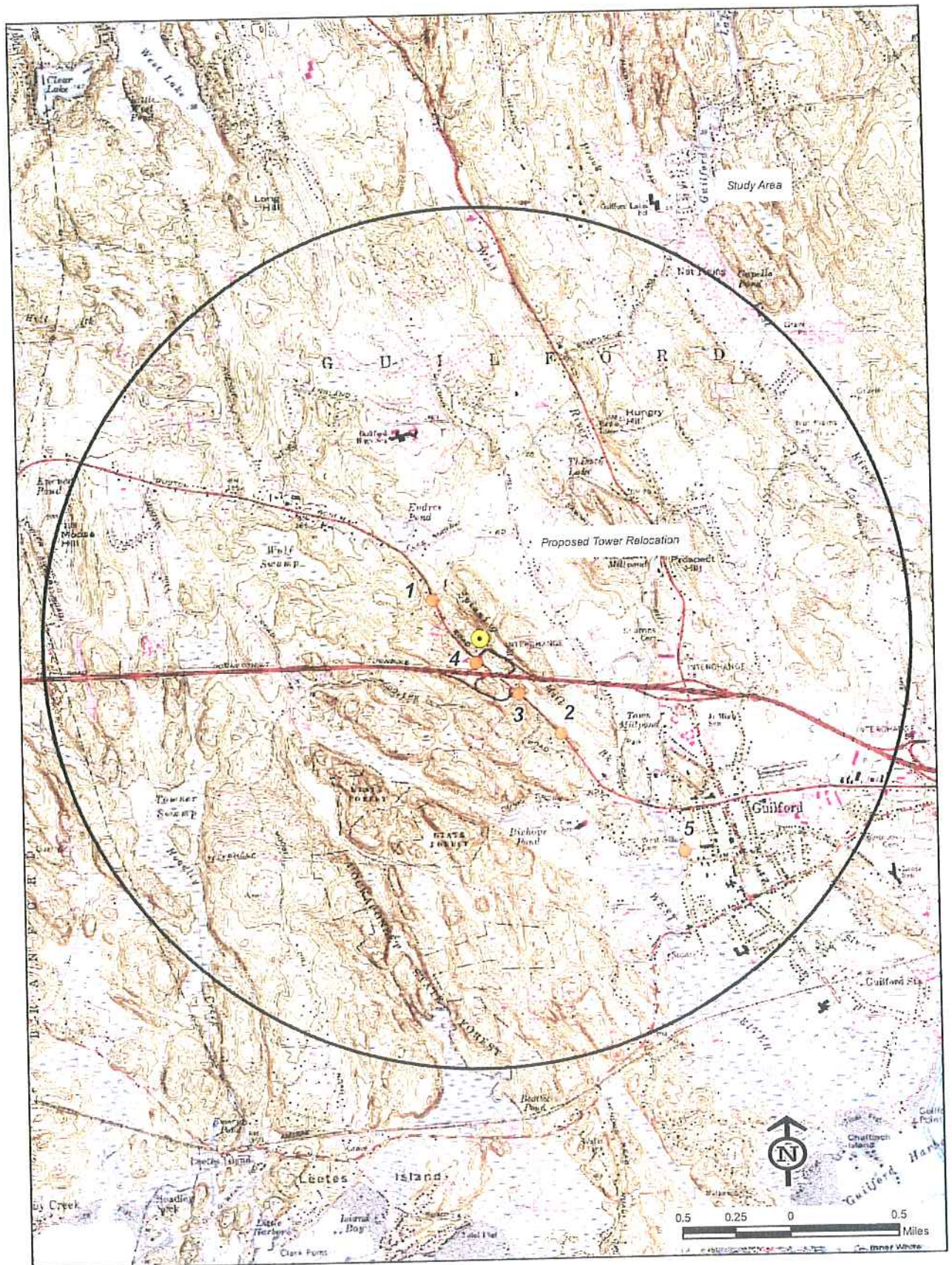
---

## Attachment A

# Photolog Documentation Map, Balloon Float Photographs and Photographic Simulations

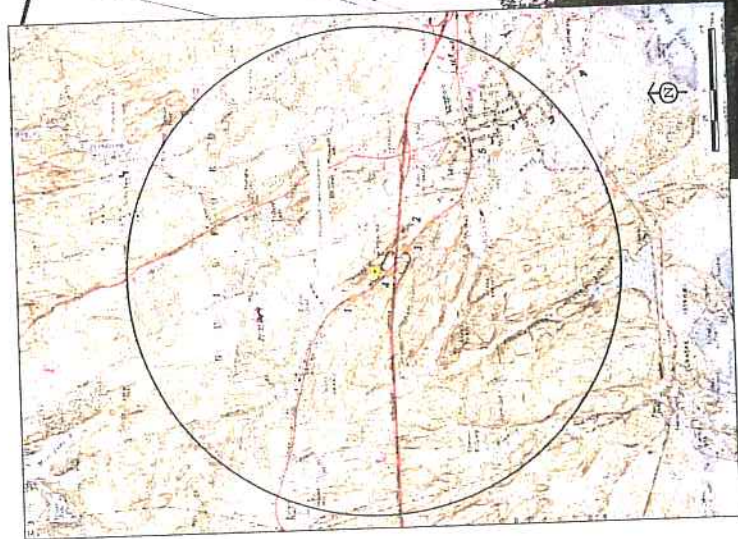
# Photolog Documentation

Town of  
Guilford  
Connecticut



ctmidat/proj41176/graphics/figures/41176\_photolog.mxd

# Photographic Documentation and Simulation *View 1*



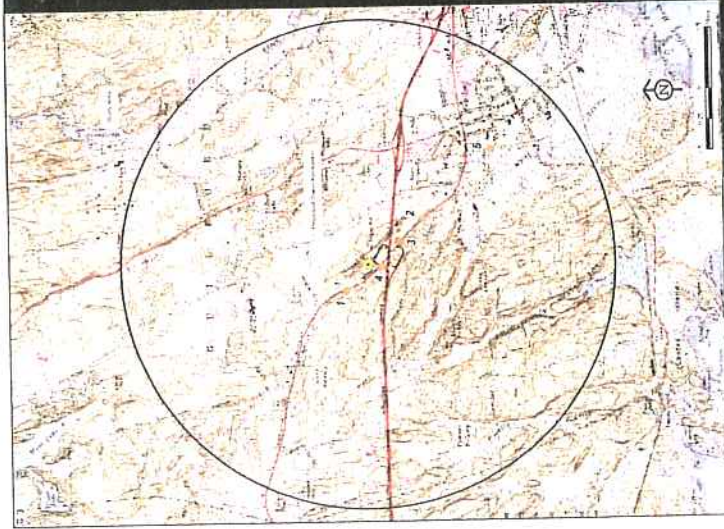
1919 Boston Post Road  
Guilford, CT

Replacement Monopole  
with 5 carriers



PHOTO TAKEN FROM BOSTON POST ROAD (US ROUTE 1) AT JOAN DRIVE, LOOKING SOUTHEAST (EXISTING TOWER IS ALSO IN PHOTO)  
DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.29 MILE +/-

# Photographic Documentation and Simulation *View 2*



1919 Boston Post Road  
Guilford, CT

Replacement Monopole  
with 5 carriers

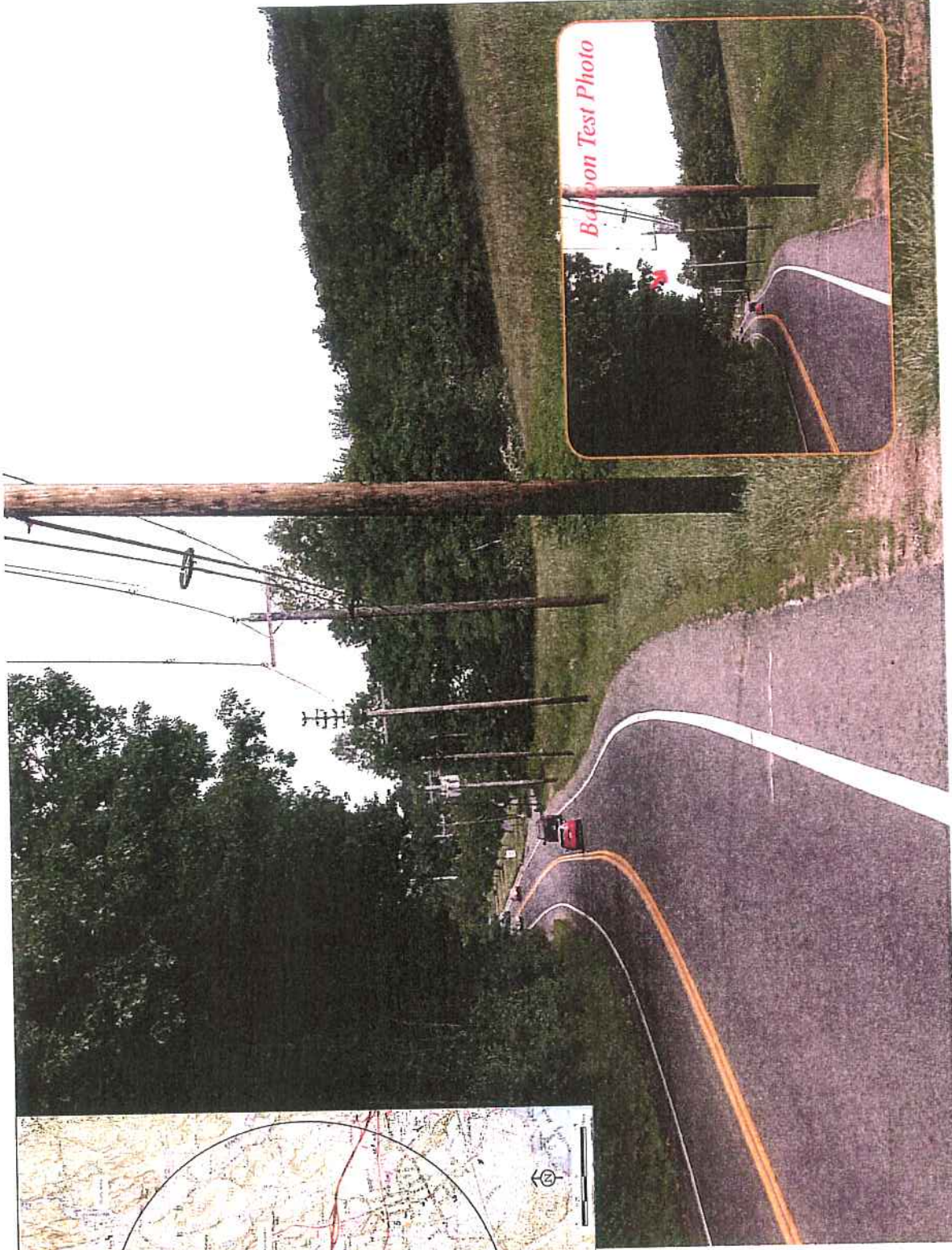
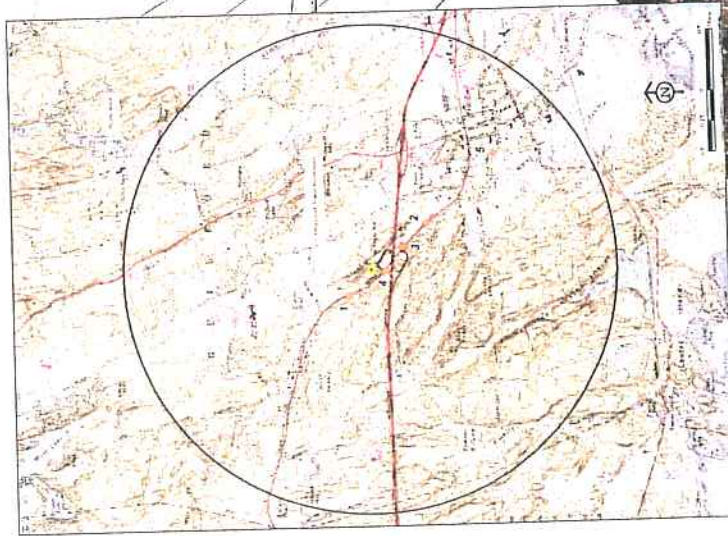


PHOTO TAKEN FROM BOSTON POST ROAD (ROUTE 1), LOOKING NORTHWEST  
DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.58 MILE +/-



# Photographic Documentation and Simulation *View 3*



1919 Boston Post Road  
Guilford, CT

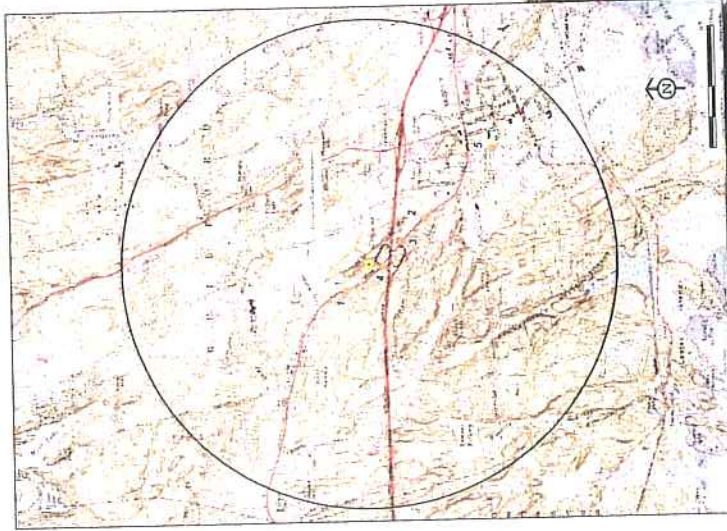
Replacement Monopole  
with 5 carriers



PHOTO TAKEN FROM BOSTON POST ROAD (US ROUTE 1) SOUTH OF INTERSTATE 95, LOOKING NORTHWEST  
DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.31 MILE +/-



# Photographic Documentation and Simulation *View 4*



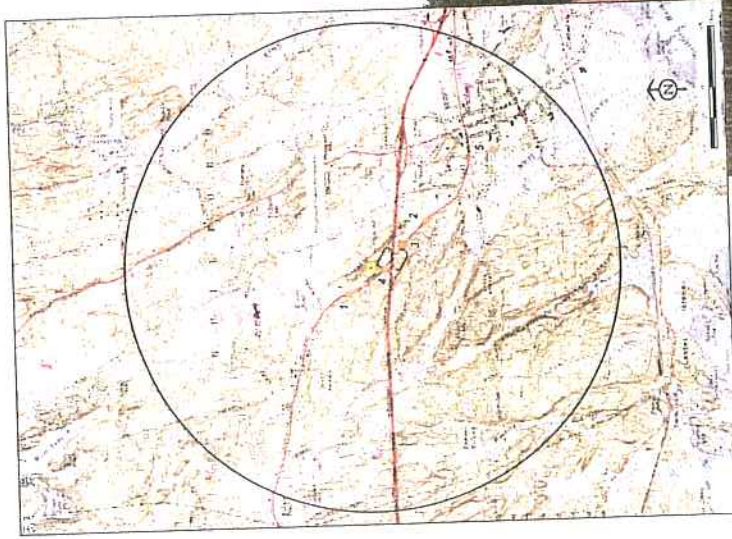
1919 Boston Post Road  
Guilford, CT

Replacement Monopole  
with 5 carriers



PHOTO TAKEN FROM BOSTON POST ROAD (US ROUTE 1) NORTH OF INTERSTATE 95, LOOKING NORTHEAST  
(EXISTING TOWER IS VISIBLE LOOKING FURTHER WEST)  
DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 0.11 MILE +/-

# Photographic Documentation and Simulation *View 5*



1919 Boston Post Road  
Guilford, CT

Replacement Monopole  
with 5 carriers



*Balloon Test Photo*

PHOTO TAKEN FROM RIVER ROAD AT GUILFORD LAND TRUST CAR PULL-OFF AREA, LOOKING NORTHWEST  
DISTANCE FROM THE PHOTOGRAPH LOCATION TO THE PROPOSED SITE IS 1.37 MILES +/-

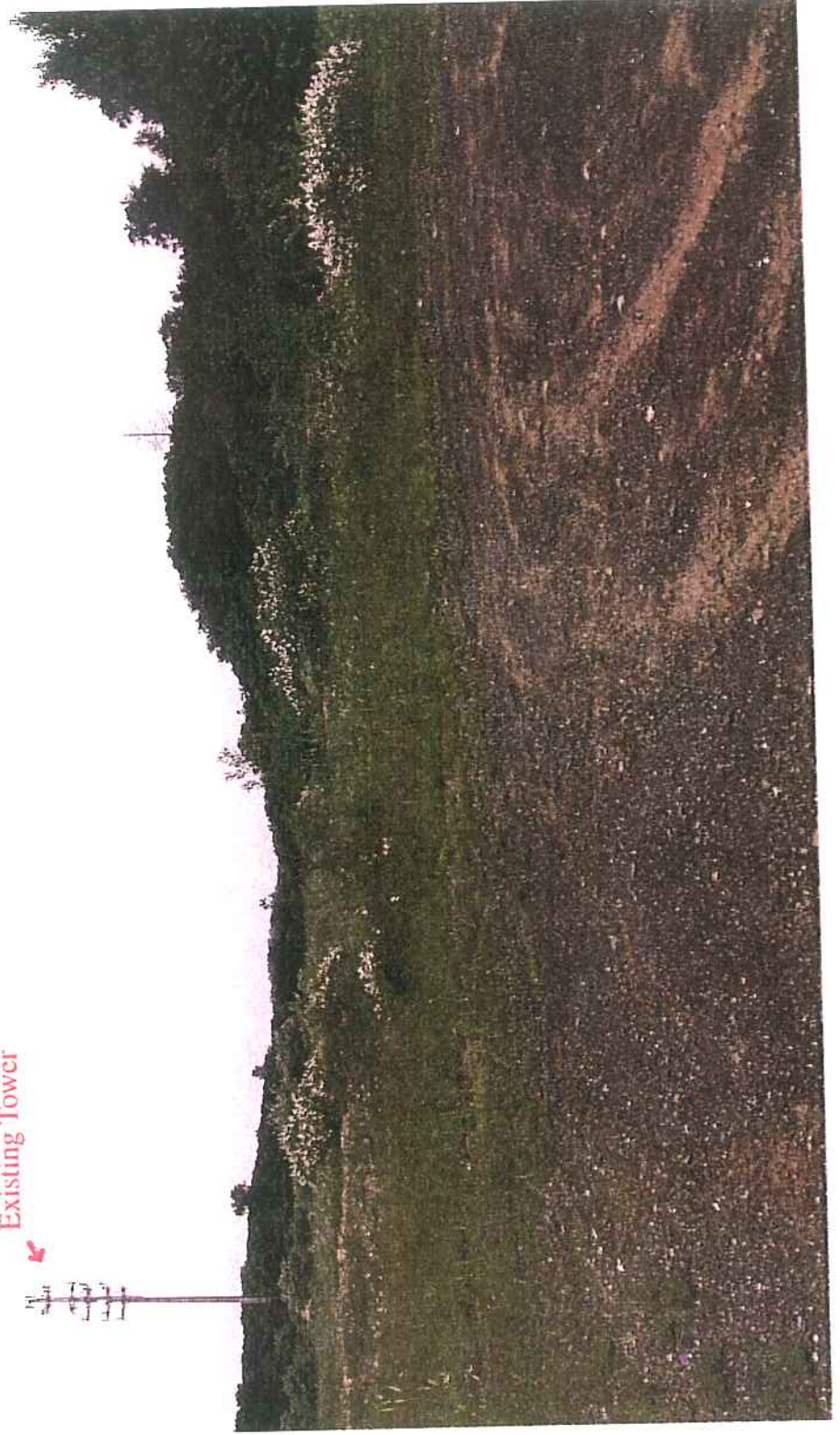
# Attachment B

## Photographic Documentation

### Proposed Project Area

# Photographic Documentation - Proposed Project Area

Existing Tower

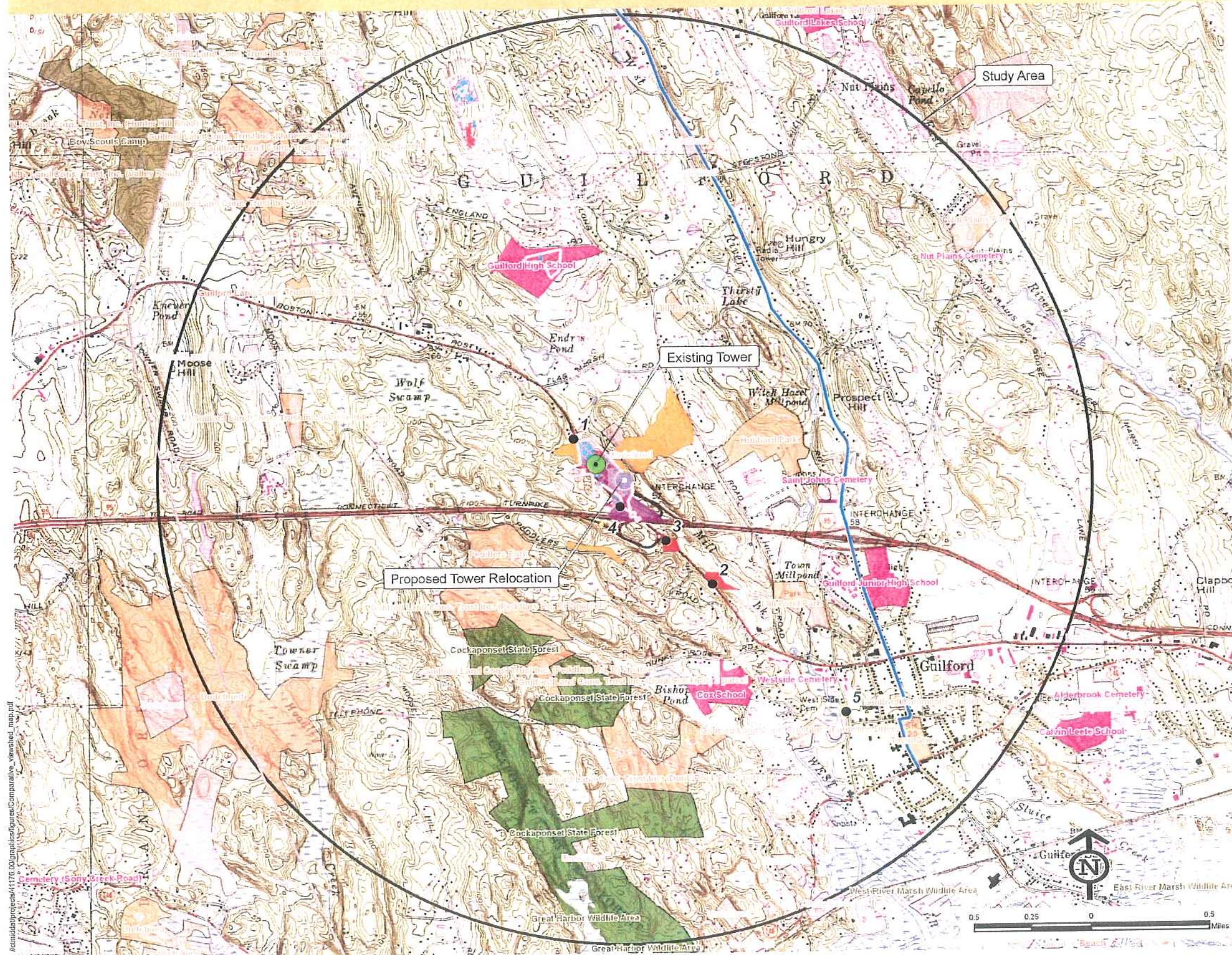


# Attachment C

## Viewshed Map

# Comparative Viewshed Map Existing Tower Location and Proposed Tower Relocation

Town of  
Guilford  
Connecticut



## Proposed Tower Relocation 1919 Boston Post Road Guilford, Connecticut

**NOTE:**  
 - Viewshed analysis conducted using ESRI's Spatial Analyst.  
 - Existing Facility and Proposed Facility height is 150 feet.  
 - Existing tree canopy height estimated at 65 feet.

**DATA SOURCES:**  
 - 7.5 minute digital elevation model (DEM) with 30 meter resolution produced by the USGS, 1982  
 - Forest areas derived from 2004 digital orthophotos with 0.5-foot pixel resolution; digitized by VHB, 2006  
 - Base map comprised of Branford and Guilford USGS Quadrangle Maps  
 - Protected properties data layer provided CTDEP, 2003  
 - Scenic Roads layer derived from available State and Local listings.

Map Compiled July, 2006

### Legend

- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li> Existing Tower Location (Includes area of visibility approximately 500 feet around facility)</li> <li> Proposed Tower Relocation (Includes area of visibility approximately 500 feet around facility)</li> <li> Balloon visible above the trees</li> <li> Anticipated Seasonal Visibility - Existing and Proposed Site Locations (Approximately 45 Acres)</li> <li> Existing Tower Year Round Visibility (Approximately 54 Acres)</li> </ul> | <ul style="list-style-type: none"> <li> Cemetery</li> <li> Preservation</li> <li> Conservation</li> <li> Existing Preserved Open Space</li> <li> Recreation</li> <li> General Recreation</li> <li> School</li> <li> Uncategorized</li> </ul>   |
| <p>Photos - June 14, 2006</p> <ul style="list-style-type: none"> <li> Tree Line View - 5 Acres</li> <li> Upper 25% - 10 Acres</li> <li> 50% - 10 Acres</li> <li> 75% - 16 Acres</li> <li> Entire Facility Visible - 10 Acres</li> </ul>  | <ul style="list-style-type: none"> <li> Protected Properties (Municipal)</li> <li> State Forest</li> <li> State Park</li> <li> DEP Owned Waterbody</li> <li> State Park Scenic Reserve</li> <li> Historic Preserve</li> <li> Natural Area Preserve</li> <li> Fish Hatchery</li> <li> Flood Control</li> <li> Other</li> <li> State Park Trail</li> <li> Water Access</li> <li> Wildlife Area</li> <li> Wildlife Sanctuary</li> </ul> |
| <p><b>Approx. % of Tower Relocation Visible (Year-Round)</b></p> <ul style="list-style-type: none"> <li> Tree Line View - 5 Acres</li> <li> Upper 25% - 10 Acres</li> <li> 50% - 10 Acres</li> <li> 75% - 16 Acres</li> <li> Entire Facility Visible - 10 Acres</li> </ul>   | <ul style="list-style-type: none"> <li> Protected Properties (CT DEP)</li> <li> State Forest</li> <li> State Park</li> <li> DEP Owned Waterbody</li> <li> State Park Scenic Reserve</li> <li> Historic Preserve</li> <li> Natural Area Preserve</li> <li> Fish Hatchery</li> <li> Flood Control</li> <li> Other</li> <li> State Park Trail</li> <li> Water Access</li> <li> Wildlife Area</li> <li> Wildlife Sanctuary</li> </ul>    |
| <p><b>Total Year-Round Visibility of Proposed Tower Relocation Approximately 51 Acres</b></p> <ul style="list-style-type: none"> <li> DEP Boat Launches</li> <li> Scenic Road (State and Local)</li> <li> Town Line</li> <li> Protected Properties (Federal)</li> </ul>  |  |

F

A handwritten capital letter 'F' is drawn in the center of the page. A small arrow is attached to the top horizontal bar of the 'F', pointing to the left.



***RF Emissions Experts***

***AN EDWARDS AND KELCEY SERVICE***

***Analysis and Report  
of RF Exposure Levels  
and Compliance with  
FCC Regulations***

***Guilford Site  
1919 Boston Post Road  
Guilford, CT  
CT03XC172***

***Prepared for  
Sprint Sites USA***

***January 29, 2003***

**EDWARDS AND KELCEY**  
299 Madison Avenue - PO Box 1936  
Morristown, NJ 07962-1936

Tel: 973-267-8830 Fax: 973-267-3555  
Email: [gburylo@ekmail.com](mailto:gburylo@ekmail.com)  
Internet: <http://www.ekcorp.com>

**PROPRIETARY – SPRINT SITES USA AND EDWARDS AND KELCEY**

This document has been prepared for Sprint Sites USA for its use in demonstrating RF compliance, as necessary, to federal, state and/or local authorities, and/or site landlords. Distribution beyond that described is prohibited without the express written consent of Edwards and Kelcey.





**FCC RF COMPLIANCE ANALYSIS FOR**  
**Sprint Sites USA**  
**Guilford, CT Monopole**

This site compliance report is organized as follows:

- Site Technical Data (supplied by client)
- Analysis Method and Assumptions
- The FCC RF Radiation Exposure Regulations
- Applicable Formulas
- Analysis Results
- Conclusion

**SITE TECHNICAL DATA** (For AT&T Wireless antenna type and mounting height change only. All other emission levels previously calculated and summarized.)

Facility type	150 ft. Monopole
Frequency band (transmit)	1900 MHz
Antenna types	Allgon 7250
Antenna major dimension (length)	5.1 ft
Maximum antenna gain	18.5 dBi
Antenna mounting height (above ground level)	102.6 ft.
Total number of antennas	6 (2 per sector)
Other transmitting facilities on monopole	Sprint PCS, Verizon, Nextel, Cingular and T-Mobile

**ANALYSIS METHOD AND ASSUMPTIONS**

Type of analysis	Maximum / ground at base
Area analyzed	0' to 500' from monopole
Classification of area	Uncontrolled (gen. pop.)
FCC Maximum Permissible Exposure (MPE) limit	See Report
Mathematical model	Point source, far field
Assumed ground reflection factor	100%
Assumed human height	6'0"
Vertical antenna discrimination	(not used in CT)

## **THE FCC RF RADIATION EXPOSURE REGULATIONS**

This RF exposure analysis is based on the current FCC guidelines for human exposure to RF fields, which represent the consensus of federal agencies responsible for RF safety matters. Those agencies include the National Council on Radiation Protection and Measurements (NCRP), the Occupational Health and Safety Administration (OSHA), the National Institute for Occupational Safety and Health (NIOSH), the American National Standards Institute (ANSI), the Environmental Protection Agency (EPA), and the Food and Drug Administration (FDA). In formulating its guidelines, the FCC also considered input from the public and technical community – notably the Institute of Electrical and Electronics Engineers (IEEE).

The FCC's RF exposure guidelines are incorporated in Section 1.1301 *et seq* of its Rules and Regulations. Those guidelines specify maximum permissible exposure (MPE) levels for both occupational and general population exposure on a continuous basis, as well as averaging times for each of those categories when and if exposure exceeds the specified continuous exposure limits. (The concept of averaging time will be ignored in this analysis, as the results show the potential exposure levels are far below those permitted even for continuous exposure.)

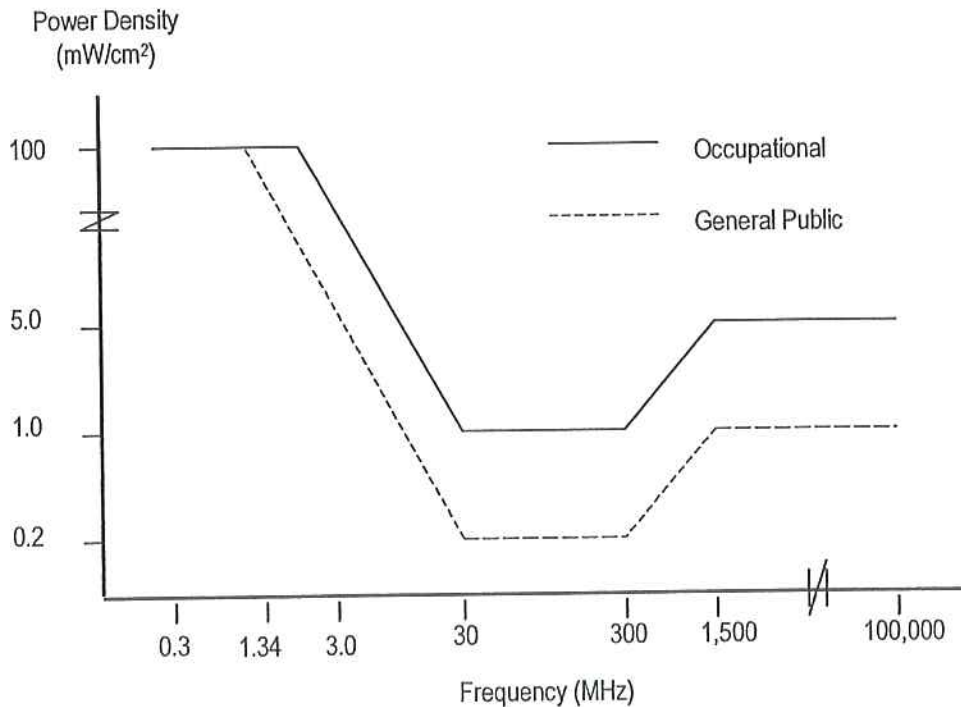
The specified continuous exposure MPE limits are based on known variation of human body susceptibility in different frequency ranges, and a Specific Absorption Rate (SAR) of 4 watts per kilogram, which is universally considered to accurately represent human capacity to dissipate incident RF energy (in the form of heat). The occupational MPE guidelines incorporate a safety factor of 10 or greater with respect to RF levels known to represent a health hazard, and an additional safety factor of five is applied to the MPE limits for general population exposure. Thus the general population MPE limit has a built-in safety factor of more than 50. Continuous exposure at levels equal to or below the applicable MPE limits is considered to result in no adverse health effects on humans.

The reason for *two* tiers of MPE limits is based on an understanding and assumption that members of the general public are unlikely to have had appropriate RF safety training and may not be aware of the exposures they receive; occupational exposure in controlled environments, on the other hand, is assumed to involve individuals who have had such training, are aware of the exposures, and know how to maintain a safe personal work environment.

The FCC's RF exposure limits are expressed in two equivalent forms, using alternative units of field strength (expressed in volts per meter, or V/m), and power density (expressed in milliwatts per square centimeter, or mW/cm<sup>2</sup>). The more popularly used reference unit is power density, as it is more easily understood. One milliwatt per square centimeter is approximately the energy impinging on an area roughly one-fourth the size of a dime from a light bulb emitting ten thousand times less than the energy of a common 100-watt bulb. The table below lists the FCC limits for both occupational and general population exposure to different radio frequencies.

Frequency Range (F) (MHz)	Occupational Exposure (mW/cm <sup>2</sup> )	General Public Exposure (mW/cm <sup>2</sup> )
0.3 - 1.34	100	100
1.34 - 3.0	100	180 / F <sup>2</sup>
3.0 - 30	900 / F <sup>2</sup>	180 / F <sup>2</sup>
30 - 300	1.0	0.2
300 - 1,500	F / 300	F / 1500
1,500 - 100,000	5.0	1.0

The figure below provides a graphical illustration of both the FCC's occupational and general population MPE limits.



FCC MPE limits – graphical representation

The FCC makes it clear that the MPE limits apply only in accessible areas. Fundamentally, in areas that are considered normally inaccessible, the exposure issue is moot.

## APPLICABLE FORMULAS

According to FCC Bulletin OET65, different mathematical models apply to different distances around an antenna. At the height of the antenna, the breakpoint is the “far-field distance”, calculated as the ratio of the square of the major dimension of the antenna divided by the signal wavelength. Beyond the far-field distance at the height of the antenna, as well as at ground-level underneath the antenna, a “far-field point source” model applies; within that distance, a “near-field” cylindrical model applies. The subsections below provide background on the two applicable models in the 1900 MHz band.

### Far-Field Point Source Model

$$(1) \quad S \text{ [mW/cm}^2\text{]} = (4 * \text{EIRP}_{\text{max}} * \text{VertAntDisc}(\phi)) / (4 * \pi * R^2_{\text{cm}})$$

$$(2) \quad \text{FCC MPE limit} = 1.000 \text{ mW/cm}^2$$

$$(3) \quad \text{MPE\%} = 100 * (S / 1.000)$$

where:

S	=	Calculated power density
4 (in numerator)	=	100% field ground reflection effect (has $[1 + 1]^2 = 4$ effect on power density)
EIRP <sub>max</sub>	=	Maximum effective isotropically radiated power (Note: EIRP is 64% higher than ERP, which is referenced to a half-wave dipole)
VertAntDisc( $\phi$ )	=	Numeric factor for antenna discrimination (EIRP reduction) in the vertical plane, applicable at downward angle $\phi$ to a 6' human standing on ground, calculated at distances from 0' to 500' away from the antenna <b>(not used in Connecticut sites – as requested by the Connecticut Siting Council)</b>
R	=	Straight-line distance from antenna to 6' human
MPE%	=	Calculated exposure level, as a percentage of the FCC MPE limit for continuous exposure of the general population

### Near-Field Cylindrical Model

(1)  $S \text{ [mW/cm}^2\text{]} = (P_i * ACF / (2 \pi R h))$

(2) FCC MPE limit = 1.000 mW/cm<sup>2</sup>

(3) MPE% = 100 \* (S / 1.000)

where:

S = Calculated power density

P<sub>i</sub> = Total power input to the antenna, in mW

ACF = Antenna correction factor (adjustment to near-field power density calculation to compensate for the antenna mounting height above ground level and resulting partial-body exposure; see Richard Tell article listed in the References)

R = Straight-line distance from antenna to 6' human

h = Subtended height of the antenna, in cm

MPE% = Calculated exposure level, as a percentage of the FCC MPE limit for continuous exposure of the general population

### ***ANALYSIS RESULTS – GROUND-LEVEL***

The table on the following page summarizes the ground level results of the calculations using the site data, method and models described above. The information on the vertical antenna discrimination has been taken from the antenna manufacturer's specification sheets. Please note that while the tabular distances are listed in feet, the calculations translate these units into centimeters, to match the FCC specification of MPE units. Also note that the G dist value represents the distance in feet from the monopole at ground level.

1900 MHz Antenna Array (Ground Level – AT&T Wireless)					
G dist	R dist	V angle	V disc	mW/cm <sup>2</sup>	GPMPE%
0	91.0	90.0	1.000	0.0485	4.850
20	93.2	77.6	1.000	0.0463	4.626
40	99.4	66.3	1.000	0.0406	4.064
60	109.0	56.6	1.000	0.0338	3.380
80	121.2	48.7	1.000	0.0274	2.735
100	135.2	42.3	1.000	0.0220	2.197
120	150.6	37.2	1.000	0.0177	1.771
140	167.0	33.0	1.000	0.0144	1.440
160	184.1	29.6	1.000	0.0119	1.185
180	201.7	26.8	1.000	0.0099	0.987
200	219.7	24.5	1.000	0.0083	0.832
220	238.1	22.5	1.000	0.0071	0.709
240	256.7	20.8	1.000	0.0061	0.610
260	275.5	19.3	1.000	0.0053	0.529
280	294.4	18.0	1.000	0.0046	0.463
300	313.5	16.9	1.000	0.0041	0.409
320	332.7	15.9	1.000	0.0036	0.363
340	352.0	15.0	1.000	0.0032	0.324
360	371.3	14.2	1.000	0.0029	0.291
380	390.7	13.5	1.000	0.0026	0.263
400	410.2	12.8	1.000	0.0024	0.239
420	429.7	12.2	1.000	0.0022	0.217
440	449.3	11.7	1.000	0.0020	0.199
460	468.9	11.2	1.000	0.0018	0.183
480	488.5	10.7	1.000	0.0017	0.168
500	508.2	10.3	1.000	0.0016	0.155

**Table 1.** 1900 MHz Ground level RF power density and percent-of-MPE calculations.

The **ground level** areas around the monopole were rated using the Far-Field Point Source Model described above. In these areas, the worst case calculations are 0.0485 mW/cm<sup>2</sup>, or 4.850% of the maximum recommended exposure for the general population.

## CONCLUSION

The calculations demonstrate that the maximum potential exposure to radio frequency emissions is well below the FCC recommended levels for safety. The total ground level around the monopole from all antennas is 36.43% of the maximum permissible exposure (MPE) level, and is safe for continuous exposure of the general population based on FCC requirements.

The results are summarized as follows:

Carrier	Height above ground (feet)	Power Density (mW/cm <sup>2</sup> )	FCC Maximum (mW/cm <sup>2</sup> )	MPE% of Standard
T-Mobile *	150.3	0.0405	1.000	4.05
Nextel **	140.3	0.0185	0.567	2.91
Sprint PCS +	130.3	0.0285	1.000	2.85
Verizon +	122.2	0.0474	0.583	8.13
Cingular ++	112.4	0.0651	0.587	11.10
Cingular ++	112.4	0.0254	1.000	2.54
AT&T Wireless	102.6	0.0485	1.000	4.85
<b>Total</b>	-	-	-	<b>36.43</b>

\* calculations submitted by T-Mobile RF Engineer

\*\* calculations submitted by Nextel RF Engineer

+ calculations submitted to Siting Council on 8/31/98 (no changes)

++ calculations submitted by Cingular RF Engineer

Therefore, the upgrades at this Sprint Sites USA facility should not create a significant risk of exposure to cumulative RF emissions to the general population. And, according to the calculations, the Sprint Sites USA wireless facility is in compliance with the FCC regulations concerning the control of potential RF exposure.

**CERTIFICATION**

This report was prepared by George Burylo, Director – Engineering Services. The undersigned certifies that the analysis provided herein is consistent with the applicable FCC Rules and Regulations and accepted industry practice.

  
\_\_\_\_\_  
George Burylo  
Director – Engineering Services  
Edwards and Kelcey, Inc.

January 29, 2003



## REFERENCES

47 CFR, FCC Rules and Regulations, Section 1.1301 *et seq.*

FCC Second Memorandum Opinion and Order and Notice of Proposed Rulemaking (FCC 97-303), *In the Matter of Procedures for Reviewing Requests for Relief From State and Local Regulations Pursuant to Section 332(c)(7)(B)(v) of the Communications Act of 1934 (WT Docket 97-192), Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation (ET Docket 93-62), and Petition for Rulemaking of the Cellular Telecommunications Industry Association Concerning Amendment of the Commission's Rules to Preempt State and Local Regulation of Commercial Mobile Radio Service Transmitting Facilities*, released August 25, 1997.

FCC First Memorandum Opinion and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released December 24, 1996.

FCC Report and Order, ET Docket 93-62, *In the Matter of Guidelines for Evaluating the Environmental Effects of Radiofrequency Radiation*, released August 1, 1996.

FCC Office of Engineering and Technology (OET) Bulletin 65, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields", Edition 97-01, August 1997.

FCC Office of Engineering and Technology (OET) Bulletin 56, "Questions and Answers About Biological Effects and Potential Hazards of Radiofrequency Electromagnetic Fields", Fourth Edition, August 1999.

Richard Tell, "CTIA's EME Design and Operation Considerations for Wireless Antenna Sites", November 15, 1996.

*Site Data*



## Tower Loading Form

### Site Reference Information:

Cascade #: CT03XC172  % of Structural Capacity  
 Site Address: 1919 Boston Post Rd., Guilford, CT. Lease Area 2500  
 Structure Height: 130 Compound Size: 50x50  
 Tower Manufacturer: Fred Nudd Structure Type: Monopole  
 Tower Contact #: 315.524.2531 File #: 00.8094.01  
 Original Design Load for Structure:  1 Carrier  2 Carrier  3 Carrier  4 Carrier  \_\_\_ Carrier

Prepared By: Russ Van Oudenaren

Date: 12-20-02

### Sprint Antenna Information:

ACL	# of Ant.	Frequency	Model #	Type	Orientation	Mounting Type	# of Cables	Cable Size
130' 4"	9	* 1990	DB980H90	Panel	30,150,270	Stand-off arm	9	1-5/8"
*	*	*		*		*	*	*
*	*	*		*		*	*	*

### Co-location Information:

Id Exis	Carrier	ACL	# of Ant.	Frequency	TX Output	Model #	Antenna Type	Orientation	Mounting Type	# of Cables	Cable Size	Cable Loc.
1	Pagenet		1	*	*	withdrawn	*		*	*	*	<input type="checkbox"/>
*	*		*	*	*		*		*	*	*	<input type="checkbox"/>
2	Nextel (Relocated)	140' 4"	12	* 860	16 Watts	DB844H90	Panel	0,130, 270	Platform	12	1-5/8"	Ins <input type="checkbox"/>
3	Verizon	122' 3"	12	* 896	8 Watts	ALLGON 7129	Panel	0,130, 270	Gate Mnt.	12	1-5/8"	Ins <input checked="" type="checkbox"/>
4	SNET	112' 5"	9	* 896	8 Watts	CSS DU04-8670	Panel	0,210, 320	Gate Mnt.	9	1-5/8"	Ins <input checked="" type="checkbox"/>
5	Voicestream	150' 4"	3	* 1900	12 Watts	RR90-1702 DP	Panel		Stand-off arm	6	1-5/8"	Ins <input type="checkbox"/>
6	ATT	102' 7"	6	* 1900	16 Watts	ALLGON 7250	Panel	0,120, 240	Gate Mnt.	12	1-1/4"	Ins <input type="checkbox"/>
*	*		*	*	*		*		*	*	*	<input type="checkbox"/>
4	SNET	112' 5"	6	*	*	ADC MHA's	*		*	*	*	<input type="checkbox"/>
*	*		*	*	*		*		*	*	*	<input type="checkbox"/>

### Contact Information:

Co Id	Contact Person	Phone Number	E-Mail Address
1			
2	Chuck Regulbuto	860-648-0895	chuckr@NorthstarSite.com
3	Wayne Lukachek	860-294-7424	wayne.lukachek@verizon.com
4	Steve Levine	860-513-7636	chuck.levine@cingular.com
5	Mark Finley	203-435-1111	Mark.Finley@voicestream.com
6	Michael Austin	203.630.9099	maustin@bechtel.com

G



Vanasse Hangen Brustlin, Inc.

July 10, 2006

Ref: 41176.00

Julie D. Kohler, Esq.  
Cohen and Wolf, PPC.  
1115 Broad Street  
Bridgeport, CT 06604

Re: NEPA Compliance Documentation  
Global Signal Proposed Wireless Telecommunications Facility Replacement  
1919 Boston Post Road  
Guilford, CT

Dear Ms Kohler,

Vanasse Hangen Brustlin, Inc. (VHB) has been retained by Cohen and Wolf, PPC. (Cohen and Wolf), on behalf of Global Signal, Inc. (Global Signal), to review environmental resource information outlined in 47 CFR Ch.1 § 1.1307 sections (a) and (b) for environmental consequences pursuant to the Federal Communications Commission ("FCC or Commission") requirements. Global Signal is proposing to install a new wireless telecommunications facility, consisting of a ±150-foot tall monopole, antenna, and associated ground equipment, within the eastern corner of commercial property located at 1919 Boston Post Road, Guilford, Connecticut. The proposed facility is located approximately ±500-feet east of an existing wireless telecommunications facility consisting of a ±150-foot tall monopole, antenna, and ground equipment. VHB understands that the subject property will be redeveloped with three new structures and associated parking areas. To accommodate proposed development plans, the existing facility will be removed from its current location and relocated to the eastern corner of the property. Specifically, VHB reviewed source information outlined below to determine if the proposed facility will be located in an environmentally sensitive area.

#### National Environmental Policy Act (NEPA) Requirements

As a licensing agency, the FCC complies with NEPA by requiring its licensees to review their proposed actions for environmental consequences. Rules implementing NEPA are found at Title 47 of the Code of Federal Regulations, Part 1, Subpart I, rule sections 1.1301 to 1.1319.

Section 1.1305 of these rules, state that the Commission "has found no common pattern which would enable it to specify" any particular Commission action as a "major action" under NEPA. Thus, section 1.1306 of the Rules "categorically excluded from environmental processing" all Commission actions except for those specifically identified in section 1.1307. If a licensee's proposed action falls within one of the categories of 1.1307, section 1.1308(a) requires the licensee to consider the potential environmental effects from its construction of antenna facilities or structures, and disclose those effects in an environmental assessment (EA) which is filed with the Commission for review.

54 Tuttle Place  
Middletown, Connecticut 06457-1847  
860.632.1500 • FAX 860.632.7879  
email: info@vhb.com  
www.vhb.com

VHB has reviewed the following source information for identification, location, and impacts to environmentally sensitive areas:

1. **Officially designated wilderness areas** - State of Connecticut, Department of Environmental Protection (CTDEP) Geographic Information System (GIS) data layers, CTDEP Natural Resources Center and Natural Diversity Data Base (NDDDB). See attached NEPA screen map prepared by VHB, Inc and letter from CTDEP.
2. **Officially designated wildlife preserve** – CTDEP GIS data layers, CTDEP Natural Resources Center and NDDDB. See attached NEPA screen map and letter from CTDEP.
3. **Threatened or Endangered Species or designated critical habitats** – CTDEP GIS data, CTDEP's Natural Resources Center and NDDDB, and United States Department of Interior – Fish and Wildlife Service, (USFWS) New England Field Office. See attached NEPA screen map and letters from CTDEP and USFWS.
4. **National Register of Historic Places** – State of Connecticut Commission on Cultural & Tourism, Historic Preservation & Museum Division, State Historic Preservation Officer (SHPO); National Register and Reported Archeological Sites Connecticut Geographic Information System data layer provided by Heritage Consultants, LLC; and public notice. See attached NEPA screen map prepared by VHB, Inc., SHPO letter, and a copy of the public notice published in the Guilford Courier on June 8, 2006.
5. **Indian Religious Sites** - State of Connecticut, Connecticut Commission on Cultural & Tourism, Historic Preservation & Museum Division SHPO, public notice, National Register and Reported Archeological Sites Connecticut Geographic Information System data layer provided by Heritage Consultants, LLC, and all interested Native American Tribes (NAT) and/or Native Hawaiian Organizations (NHO) identified on FCC's online Tower Construction Notification System (TCNS). As identified via TCNS, VHB has notified the Mashantucket Pequot Tribe and the Narragansett Indian Tribe and invited their review and comment regarding the proposed replacement facility. See attached SHPO letter, a copy of the public notice legal ad posted in the Guilford Courier on June 8, 2006, and appropriate correspondence from NATs. Please note that in the unlikely event that tribal artifacts or human remains are encountered during construction activities, excavation is required to be halted immediately and the appropriate NATs and SHPO are to be contacted as pursuant to Title 47 CFR Sec. 1.1312 of the Commission's rules.
6. **Flood Plain** – Flood Insurance Rate Maps (FIRM) by Federal Emergency Management Agency (FEMA) Federal Insurance Administration, Office of Risk Assessment 50 C Street, SW Washington, DC 20472; CTDEP GIS data layer. See attached NEPA screen map prepared by VHB, Inc.



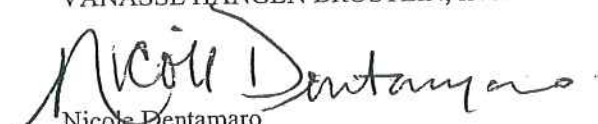
Ms. Julie D. Kohler, Esq.  
Cohen and Wolf, PPC  
July 10, 2006  
Page 3

7. **Significant change in surface features** –Cohen and Wolf provided VHB with a wetland delineation and reconnaissance survey report dated February 7, 2005 performed at the Site, and the surrounding subject property, by Environmental Planning Services. Based on Environmental Planning Services findings and current Site construction plans, proposed project activities do not appear to involve a significant change in surface features or disturbance of existing wetlands that exist on the surrounding subject property. See attached report prepared by Environmental Planning Services dated February 7, 2005.
8. **High Intensity white lights located in residential neighborhoods** – No lighting information was provided to VHB. However, we understand that no lighting is required on this facility.

Based on the information currently available, VHB has found that the proposed facility does not fall under any of the listed categories of Section 1.1307 under the NPA. The NEPA checklist and NEPA screen map, which outlines the location of the Site and the location of environmental resources, agency correspondence, and current Site Plans are attached to this letter.

Very truly yours,

VANASSE HANGEN BRUSTLIN, INC.

  
Nicole Dentamaro  
Environmental Scientist

Attachments



<b>Contact Name:</b> Julie D. Kohler, Esq.	<b>Site type (choose one):</b> <input checked="" type="checkbox"/> Raw land <input type="checkbox"/> Tower colo* <input type="checkbox"/> Other colo*	<b>Global Signal Site ID #:</b> N/A	<b>Site Name &amp; Address:</b> 1919 Boston Post Road Guilford, CT
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## NEPA Land Use Screening Checklist

FCC NEPA Category	Consulting Agency to Contact	SSEO Document Reference	Check appropriate box(es) below			
			No Adverse Impact	Potential Adverse Impact	Exempt from Review*	CNPA Applies**
1. Designated Wilderness Areas	National Park Service, US Forest Service, Bureau of Land Management (BLM), CTDEP GIS data layers and Natural Diversity Data Base (NDDB)	Section 3.4.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Designated Wildlife Preserves	National Park Service, US Forest Service, BLM, CTDEP GIS data layers and NDDB	Section 3.4.1	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Threatened or Endangered Species & Critical Habitats	CTDEP NDDB, US Fish & Wildlife Service - Field Office (USF&WS)	Section 3.4.2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Historic Places	State Historic Preservation Officer (SHPO), Tribal Historic Preservation Officer (THPO); Public Notice	Section 3.4.3	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Indian Religious Sites	SHPO, Tower Construction Notification System (TCNS) website – Native American Tribes (NATs), and/or Native Hawaiian Organizations (NHOs), Bureau of Indian Affairs (BIA)	Section 3.4.4	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Floodplain	Federal Emergency Management Agency (FEMA)	Section 3.4.5	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Wetlands & Surface Waterways	US Army Corps of Engineers (ACOE)	Section 3.4.6	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. High Intensity White Lights in Residential Neighborhoods	Lighting information, if applicable, to be provided by client via FAA form or other relevant lighting documentation – N/A	Section 3.4.7	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

\*For collocation projects that are not subject to exemption under the CNPA, NEPA Land Use Screening Categories 4 and 5 are only required. The remaining categories are categorically excluded.

\*\*Based on the CNPA the collocation project is exempt from Section 106 review.

Prepared By: Nicole Dentamaro  
 (print name): Nicole Dentamaro

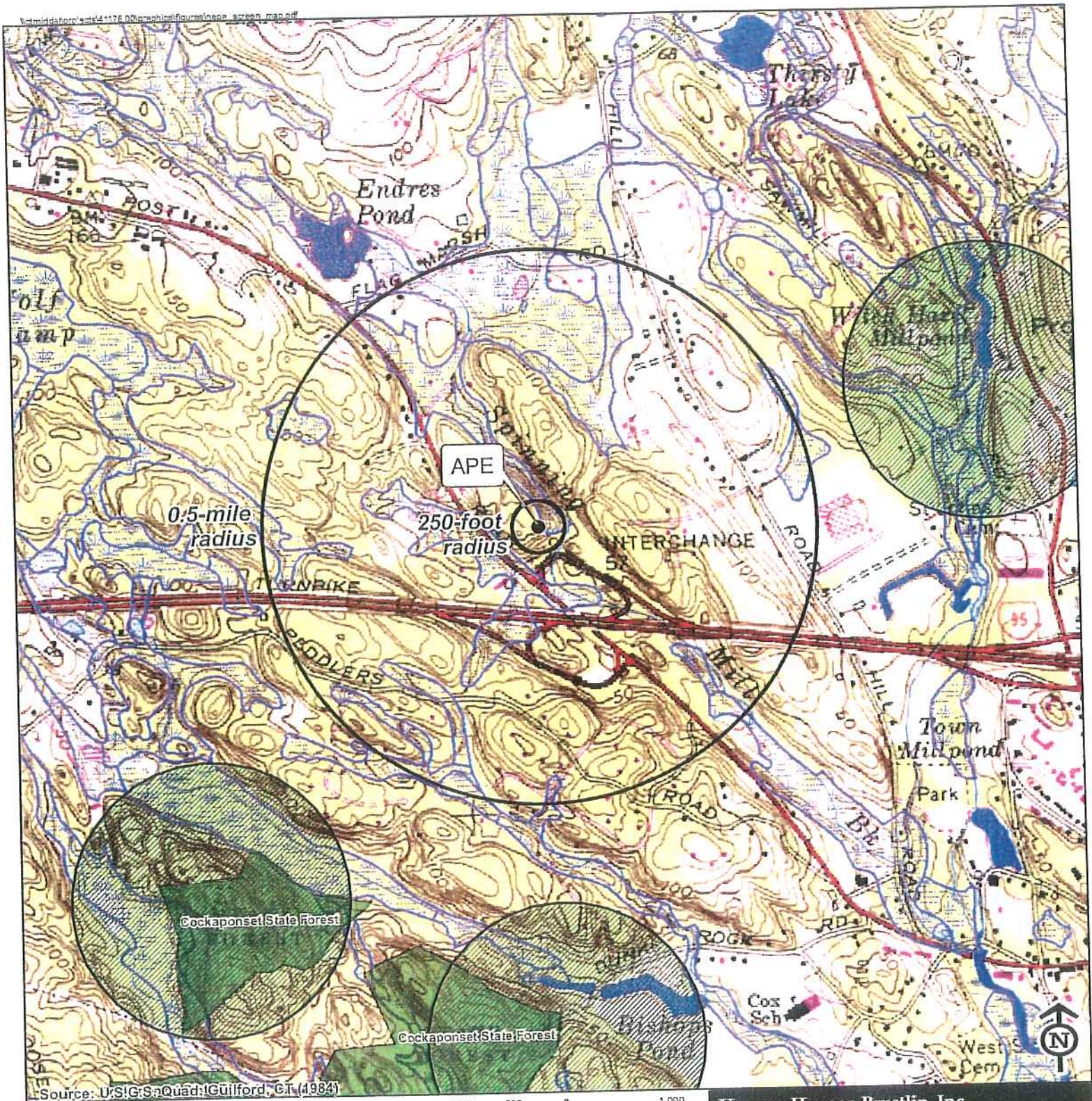
Company: Vanasse Hangen Brustlin, Inc.  
 Date: July 10, 2006

**The undersigned has reviewed and approved this Checklist prior to commencement of site construction.**

By: \_\_\_\_\_  
 Site Development Manager or Director

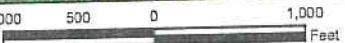
Date: \_\_\_\_\_





- Area of Potential Effect (APE)
- ▨ Natural Diversity Database Threatened and Endangered Species (updated June 2005, buffered)
- National Register Historic Sites\*
- ▨ National Register Historic Districts\*
- ▨ Reported Archaeological Sites (buffered)\*
- Open Water
- Wetlands
- Floodplains**
- 100 Year Floodplain
- 500 Year Floodplain
- ▨ Floodway

- Protected Properties (CT DEP; 2002)**
- State Forest
- State Park
- DEP Owned Waterbody
- State Park Scenic Reserve
- ▨ Historic Preserve
- ▨ Natural Area Preserve
- ▨ Fish Hatchery
- ▨ Flood Control
- ▨ Other
- ▨ State Park Trail
- ▨ Water Access
- ▨ Wildlife Area
- ▨ Wildlife Sanctuary
- ▨ Protected Properties (Federal; 2002)

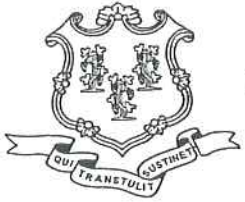


**Vanasse Hangen Brustlin, Inc.**

**NEPA Screen Map**  
**Proposed Wireless Telecommunications Facility**  
 Lat: 41 17 57.48 Long: 72 42 19.16  
 1919 Boston Post Road (US Route 1)  
 Guilford, Connecticut

May 30, 2006

\*no historic resources or previously identified archaeological resources within 1/2 mile of APE



STATE OF CONNECTICUT  
DEPARTMENT OF ENVIRONMENTAL PROTECTION



June 13, 2006



Ms. Nicole Dentamaro  
Transportation Land Development  
Environmental Services  
54 Tuttle Place  
Middletown, CT 06457-1847

Re: Proposed Wireless Facility  
Replacement, 1919 Boston Post Road,  
Guilford

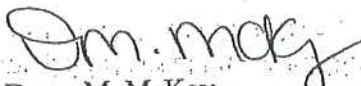
Dear Ms. Dentamaro:

I have reviewed Natural Diversity Data Base maps and files regarding the area delineated on the map you provided for the proposed wireless telecommunications facility replacement on Boston Post Road in Guilford, Connecticut. According to our information there are no known extant populations of Federal or State Endangered, Threatened or Special Concern Species that occur at the site in question.

Natural Diversity Data Base information includes all information regarding critical biological resources available to us at the time of the request. This information is a compilation of data collected over the years by the Natural Resources Center's Geological and Natural History Survey and cooperating units of DEP, private conservation groups and the scientific community. This information is not necessarily the result of comprehensive or site-specific field investigations. Consultations with the Data Base should not be substitutes for on-site surveys required for environmental assessments. Current research projects and new contributors continue to identify additional populations of species and locations of habitats of concern, as well as, enhance existing data. Such new information is incorporated into the Data Base as it becomes available.

Please contact me if you have further questions at 424-3592. Thank you for consulting the Natural Diversity Data Base. Also be advised that this is a preliminary review and not a final determination. A more detailed review may be conducted as part of any subsequent environmental permit applications submitted to DEP for the proposed site.

Sincerely,

  
Dawn M. McKay  
Biologist/Environmental Analyst

DMM/blm



# United States Department of the Interior



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

July 6, 2006

Reference:	<u>Project</u>	<u>Location</u>
	Tower replacement	Guilford, CT, Ref: 41176.00
	Tower	Waterbury, CT, Ref: 40999.08

Nicole Dentamaro  
Vanasse Hangen Brustlin, Inc.  
54 Tuttle Place  
Middletown, CT 06457-1847



Dear Ms. Dentamaro:

This responds to your recent correspondence requesting information on the presence of federally-listed and/or proposed endangered or threatened species in relation to the proposed activity(ies) referenced above.

Based on information currently available to us, no federally-listed or proposed, threatened or endangered species or critical habitat under the jurisdiction of the U.S. Fish and Wildlife Service are known to occur in the project area(s). Preparation of a Biological Assessment or further consultation with us under Section 7 of the Endangered Species Act is not required.

This concludes our review of listed species and critical habitat in the project location(s) and environs referenced above. No further Endangered Species Act coordination of this type is necessary for a period of one year from the date of this letter, unless additional information on listed or proposed species becomes available.

Thank you for your coordination. Please contact us at 603-223-2541 if we can be of further assistance.

Sincerely yours,

Michael J. Amaral  
Endangered Species Specialist  
New England Field Office



Connecticut Commission on Culture & Tourism



June 7, 2006

Historic Preservation  
& Museum Division

Ms. Nicole Dentamaro  
Vanasse Hangen Brustlin Inc.  
54 Tuttle Place  
Middletown, CT 06457-1847

59 South Prospect Street  
Hartford, Connecticut  
06106

(v) 860.566.3005  
(f) 860.566.5078

Subject: Telecommunications Facilities  
1919 Boston Post Road  
Guilford, CT

Dear Ms. Dentamaro:

The State Historic Preservation Office has reviewed the above-named project. This office expects that the proposed undertaking will have no effect on historic, architectural, or archaeological resources listed on or eligible for the National Register of Historic Places.

This office appreciates the opportunity to have reviewed and commented upon the proposed undertaking.

This comment is provided in accordance with the National Historic Preservation Act and the Connecticut Environmental Policy Act.

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

Sincerely,

J. Paul Loether  
Division Director and Deputy  
State Historic Preservation Officer

Patric  
1 (AKA 2,  
Guilford, CT

## Legal Notice

Global Signal is proposing to install a new wireless telecommunications facility, consisting of a ±150-foot tall monopole, antenna, and associated ground equipment, located at 1919 Boston Post Road, Guilford, Connecticut. The existing ±150-foot tall monopole facility will be removed.

Parties interested in submitting comments regarding any potential effects of the proposed facility on historic properties may do so by sending comments to Vanasse Hangen Brustlin, Inc., 54 Tuttle Place, Middletown, CT, 06457, to the attention of Nicole Dentamaro. Questions about this proposed project may be submitted via regular mail, email to [ndentamaro@vhb.com](mailto:ndentamaro@vhb.com), or by calling (860) 632-1500 ext. 2317.

VHB will be accepting comments and/or questions within 30 days of the date of this publication. Therefore, all comments or questions regarding this matter should be postmarked/submitted by no later than July 8, 2006.

# Town Calendar

7:30 p.m.



6-14-06

Ms. Nicole Dentamaro  
Environmental Scientist  
Vanasse Hangen Brustlin, Inc.  
54 Tuttle Place  
Middletown, CT 06457-1847

Re: Phase Ia Archaeological Assessment Survey Of The Proposed Office Complex:  
Boston Post Road at I-95, Exit 57 In The Town of Guilford, Connecticut

Dear Ms Dentamaro,

I have reviewed the Phase I Archaeological Reconnaissance Report entitled "Phase Ia Archaeological Assessment Survey Of The Proposed Office Complex: Boston Post Road At I-95, Exit 57 In The Town Of Guilford, Connecticut" submitted by ACS Archaeological Consulting Services. The research design and testing strategy meets acceptable professional standards, and 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](http://www.pequotmuseum.org)

ENVIRONMENTAL PLANNING SERVICES

**WETLAND DELINEATION AND RECONNAISSANCE  
SURVEY**

**PREPARED FOR:**

**BL COMPANIES**

**February 7, 2005**

89 BELKNAP ROAD WEST HARTFORD, CONNECTICUT 06117  
PHONE (860) 236-1578 FAX

# ENVIRONMENTAL PLANNING SERVICES

## INTRODUCTION

This report documents the results of investigations conducted by Environmental Planning Services (EPS) at a site located on the north side of Boston Post Road (RT 1) and the west side of Joan Drive in Guilford, CT. EPS was retained to flag the limits of inland wetlands at the site and conduct preliminary wildlife and wetland functional assessments. Field visits were conducted on January 17 and 31, 2005.

The site's wildlife value in relation to the surrounding area was also assessed using GIS (Geographic Information System) data obtained from the CT Department of Environmental Protection. Because wildlife species do not recognize man-made boundaries, a landscape scale analysis is important to better understand the site's overall biological value.

## WETLANDS

At the Federal level, four agencies are principally involved with wetland identification and delineation: Army Corp of Engineers (ACOE), Environmental Protection Agency (US EPA), Fish and Wildlife Service (F&WS), and Natural Resources (formerly Soil) Conservation Service (NRCS). Each of these agencies has developed techniques for identifying the limits of wetlands for various purposes. The ACOE and USEPA are responsible for making jurisdictional determinations of wetlands regulated under Section 404 of the Clean Water Act (formerly known as the Federal Water Pollution Control Act, 33 U.S.C.1344). The regulatory definition of wetlands used by the USEPA and ACOE for administering the Section 404 program is: those areas that are inundated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas (EPA, 40 CFR 230.3 and 33 CFR 328.3).

The working definition is based on the fact that wetlands possess three essential characteristics: (1) hydrophytic vegetation, (2) hydric soils, and (3) wetland hydrology, which is the driving force creating all wetlands. These three parameters are also referred to as mandatory technical criteria, and if three are met for an area, it must be identified as a wetland. Such wetlands are often referred to as jurisdictional wetlands. The requirements of 33 CFR Part 328.3 apply once the limits of the jurisdictional wetland (or watercourses) are defined, if the proposed site activity results in the deposition of dredged or fill material into a wetland or water of the U.S. Deposition of fill is defined liberally, to include material deposited ahead of the machine, as a result of bulldozing or scraping soil out of an area.

However, the primary wetland jurisdiction in the state of Connecticut is at the municipal level under state enabling legislation (Connecticut Inland Wetlands and Watercourses Act). The ACOE has overlapping jurisdiction, but for permitting purposes, local project approvals (Site Plan Approval) typically start at the local level.



The requirements of 33 CFR Part 328.3 do not apply with respect to determining the limits of regulated wetlands or watercourses under the Connecticut Inland Wetlands and Watercourses Act. Connecticut wetlands are defined as areas of poorly drained, very poorly drained, floodplain, and alluvial soils. Watercourses are defined as bogs, swamps, or marches, as well as lakes, ponds, rivers, streams, etc., whether man-made, permanent or intermittent. The limits of jurisdiction are typically similar to federal wetlands, but there are important exceptions, especially in floodplains. In addition, under the Connecticut Wetlands and Watercourses Act, the municipal wetland agency has the ability to establish an upland review area, typically 50- to 100-feet from the limit of the wetland/watercourse. The municipal agency may restrict certain activities within the upland review area, however the ACOE typically does not.

Therefore, our determination of the presence of regulated wetlands or watercourse on the site or adjacent to the site has been made by a soil scientist, based on criteria established in the Connecticut Inland Wetlands and Watercourses Act, i.e., areas of poorly drained, very poorly drained, floodplain, and alluvial soils. The wetlands were delineated by walking across the parcel in question on January 17, 2005, and examining the upper 20" of the soil profile with a spade and auger. Those areas meeting the requirements noted above were marked with pink plastic flagging tape numbered with the following sequences: WL 1-1 through 64 (includes flags 1-1 through 1-21) and WL 65-110.

Wetland soils on the site consist of Raypol soils. The Raypol series consists of very deep, poorly drained soils formed in loamy over sandy and gravelly glacial outwash. They are nearly level to gently sloping soils in shallow drainageways and low-lying positions on terraces and plains. The soils have a water table at or near the surface much of the year.

The non-wetland soils were not examined in detail, except as was necessary to delineate the wetland boundary. They consist of Hollis-rock outcrop complex and Udorthent soils. The Hollis series consists of shallow, well drained and somewhat excessively drained soils formed in a thin mantle of glacial till derived mainly from gneiss, schist, and granite. They are nearly level to very steep upland soils on bedrock controlled hills and ridges. Depth to hard bedrock ranges from 10 to 20 inches. Bedrock outcrops vary from few to many.

Udorthents is a miscellaneous land type used to denote moderately well to excessively drained earthen material which has been so disturbed by cutting, filling, or grading that the original soil profile can no longer be discerned.

Under Connecticut law, local municipal Wetland Agencies enforce the State of Connecticut enabling legislation. They also have the authority under the statute to regulate activity in an upland review area adjacent to wetlands. The depth or width of this upland review area is determined by each municipality, but is typically 50-100 feet from the wetland boundary. The New England District ACOE does not enforce a buffer zone or upland review area. The ACOE believes that their jurisdiction ends at the limit of the jurisdictional wetlands.

The flanking forested wetlands consist of fairly typically wooded swamp habitat. The tree canopy consists mainly of Red Maple (*Acer rubrum*) and Black Birch (*Betula lenta*) with scattered Hemlock (*Tsuga canadensis*). The shrub layer consists of Pepperbush (*Clethra spp.*) and Spicebush (*Lindera benzoin*) with scattered Mountain Laurel (*Kalmia latifolia*) and Greenbriar (*Smilax spp.*).

The primary functions and values of the site's wetlands are fish habitat, floodwater storage and wetland wildlife habitat.

#### *Upland Habitats*

The majority of the non-wetland areas of the site have undergone some significant clearing, filling and re-grading in the past and consist mostly of "old field" habitat. The vegetation consists mainly of a variety of herbaceous vegetation (grasses, forbs) and Autumn Olive\* (*Elaeagnus umbellata*) with scattered Multiflora Rose\* (*Rosa multiflora*) Red Cedar (*Juniperus virginiana*) and Sumac (*Rhus spp.*). Old field "edges" consist mainly of young black birch and Cottonwood (*Populus deltoides*). A small portion of the southeastern area of the site is mixed hardwood forest consisting mainly of black birch, Red Oak (*Quercus rubrum*), Black Oak (*Quercus velutina*), and American Beech (*Fagus grandifolia*).

### OVERALL WILDLIFE VALUE

The site is suitable habitat for a variety of songbird and mammalian species associated with riparian and early-successional (open, unforested) habitats. The past disturbance (cutting, filling, re-grading) which has occurred on the site has likely had a negative impact on the overall wildlife value of the site. Small scale clearing of vegetation typically has little or no negative impacts to wildlife and can often be a benefit to many species. However it is the filling and re-grading of the land associated with that clearing that tends to have a deleterious affect on wildlife. The site is not likely to support a diversity of amphibian species.

### NATURAL DIVERSITY DATABASE REVIEW

The Connecticut Department of Environmental Protection's Natural Diversity Database program represents current documented data showing the known locations of any endangered, threatened or special concern species and significant natural communities. Submission to the database for information regarding a given site is done if the subject site:

1. Occurs within a designated NDDB area
2. Overlaps a water body that has been designated a NDDB area
3. Is upstream or downstream (by less than ½ a mile) from a NDDB area

---

\* Invasive, non-native species

The most recent maps dated June 2004 were reviewed. The subject site does not fit any of the above criteria. Therefore, no information request was made to the DEP's Natural Diversity Database Program regarding review of the proposed activities. A topographic map showing the natural diversity database areas relative to the subject site has been attached in this report.

## STATE-LISTED SPECIES

State-listed species represent species listed as endangered, threatened or special concern by the Connecticut Endangered Species Act. Suitable habitat was found on the site for one species of special concern<sup>1</sup>, the Wood Turtle (*Clemmys insculpta*). The wood turtle inhabits riparian habitats bordered by floodplain, woodlands or meadows. Terrestrial habitats used during the summer include pastures, old fields, woodlands, powerline cuts, and railroad beds, bordering on or adjacent to streams and rivers<sup>2</sup>. Because the site contains a perennial stream bordered by old field habitat, and wood turtle are known to occur in the town of Guilford, the use of this site by wood turtle cannot be ruled out on the basis of habitat conditions. Spring-summer surveys would be required to confirm the presence of wood turtle on this site.

## FLOODZONES AND AQUIFERS

The area surrounding Spinning Mill Brook is located within the FEMA's floodzone A. The site is not located within any aquifer protection areas but is located in close proximity to the Guilford Well field, a preliminary aquifer protection area operated by the Connecticut Water Company.

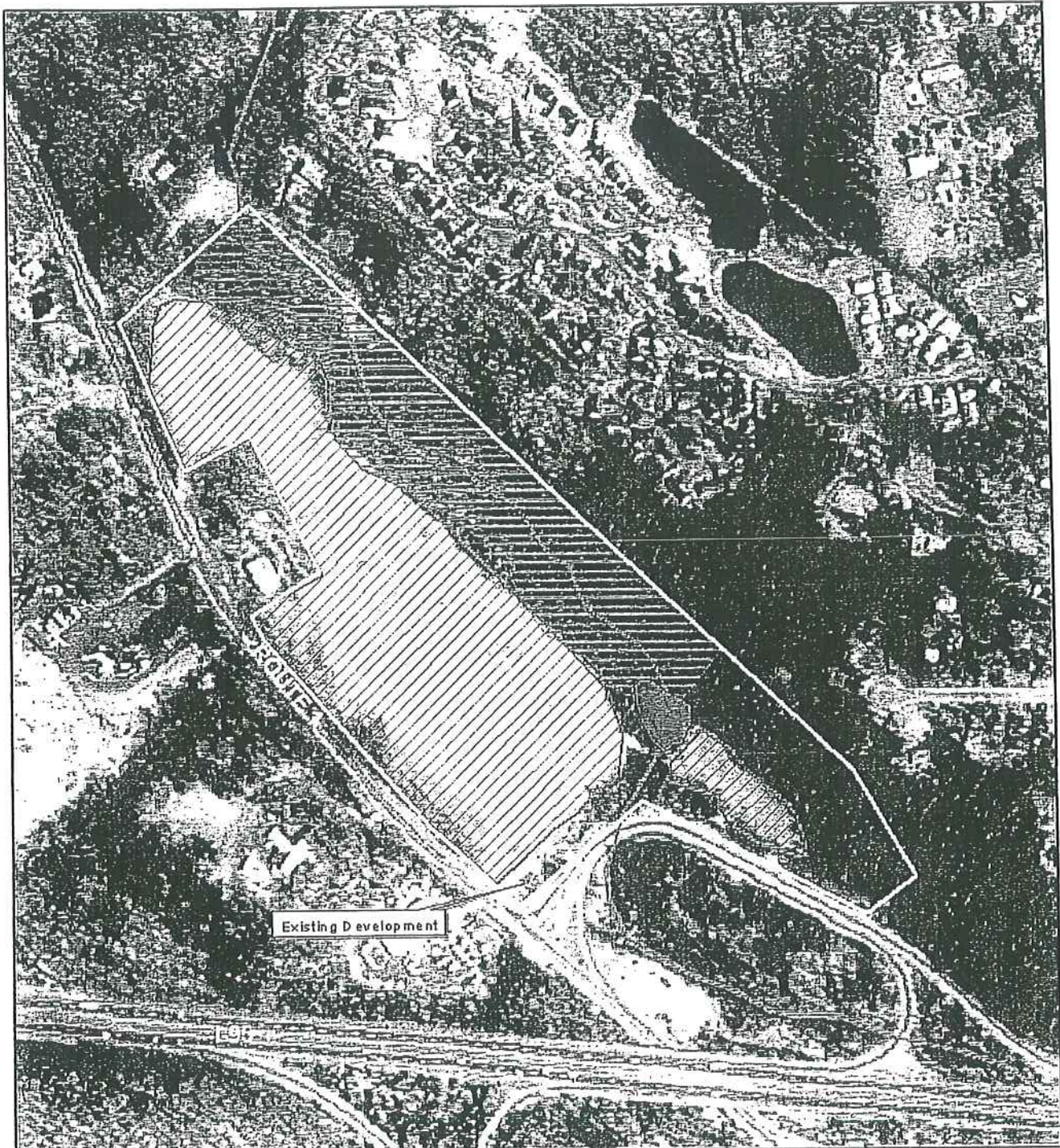
Respectfully submitted,

Michael S. Klein, Principal  
Registered Soil Scientist  
Certified Professional Wetland Scientist








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<sup>1</sup> "Species of Special Concern" means any native plant species or any native nonharvested wildlife species documented by scientific research and inventory to have a naturally restricted range or habitat in the state, to be at a low population level, to be in such high demand by man that its unregulated taking would be detrimental to the conservation of its population or has been extirpated from the state (CT Endangered Species Act).

<sup>2</sup> Klemens, M. W. 1993. Amphibians and Reptiles of Connecticut and Adjacent Regions. CT DEP Bulletin 112



**LEGEND**

-  Wooded Swamp-Riparian Forest
-  Floodplain Complex
-  Pond
-  Property Boundary
-  Old Field
-  Spinning Mill Brook
-  Mixed Hardwood Forest (unmarked areas)

**WILDLIFE HABITAT MAP**  
**Route 1 and Jones Drive, Guilford**

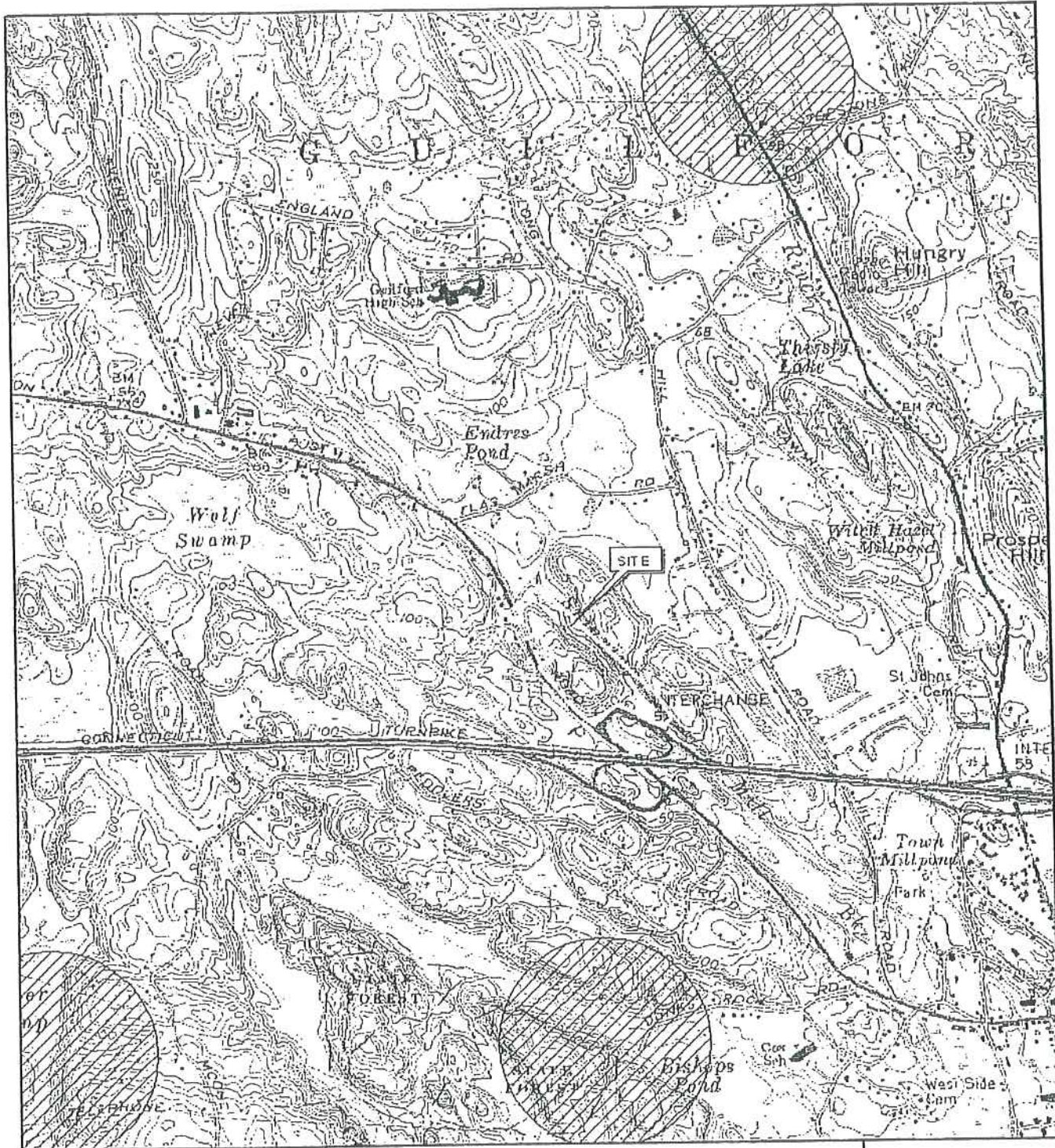
Map showing wildlife habitats based on CT DEP aerial photograph (1995). This map is intended for general planning purposes only.

*Environmental Planning Services, West Hartford, CT (860) 236-1578*




**SCALE**  
 80 0 80 Feet





**KEY**

- Site Boundary
-  NDDB Areas

**NATURAL DIVERSITY DATABASE MAP**

USGS topographic map showing the CT DEP's natural diversity database areas (maps dated June 2004). This map is intended for general planning purposes only.

Environmental Planning Services, West Hartford, CT (860) 236-1578



**SCALE**

400 0 400 800 Feet

**WETLAND FLAGGING SKETCH**

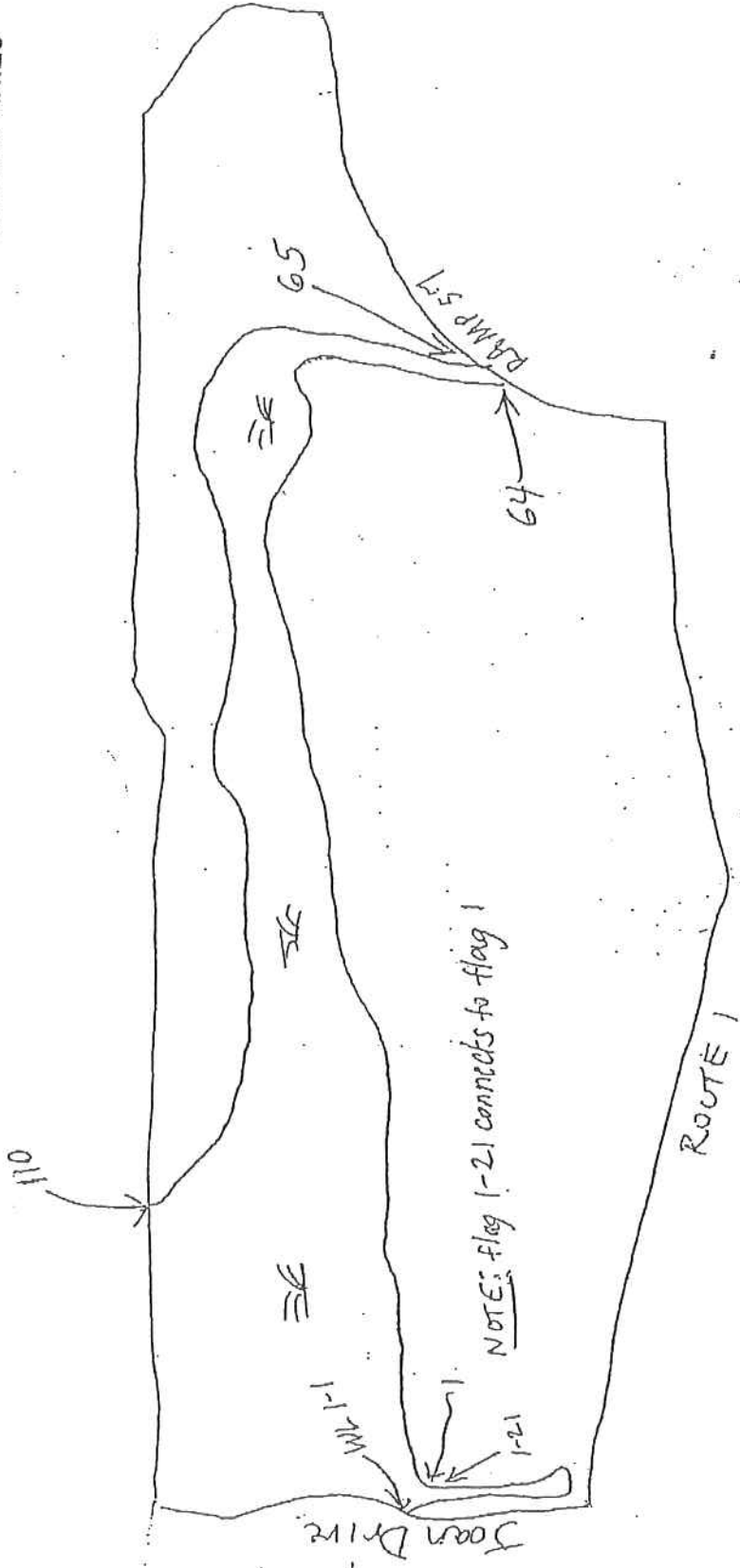
Environmental Planning Services  
89 Belknap Road  
West Hartford, CT 06117  
860-236-1578

RECEIVED

JAN 17 2005

BL COMPANIES

*\* Report is in the mail*

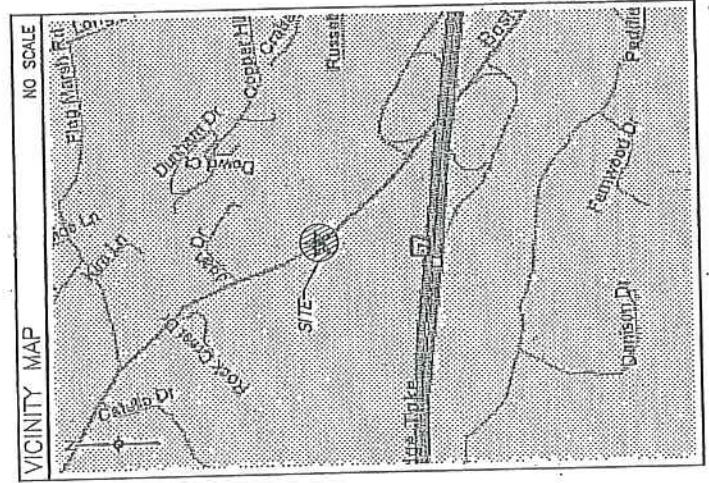


Note: the information shown on this sketch, including the wetland boundary, is approximate. This map is intended for surveying purposes only.

<b>SITE LOCATION:</b>	
<b>FROM:</b>	Eric Davison Phone: 860-803-0938 (cell) Email: <a href="mailto:edavison@isnet.net">edavison@isnet.net</a>
<b>TO:</b>	Sen Marks
<b>DATE:</b>	1/17/05

# WIRELESS COMMUNICATIONS FACILITY GUILFORD

1919 BOSTON POST ROAD  
GUILFORD, CONNECTICUT



## PROJECT SUMMARY

**SITE NAME:** GUILFORD  
**SITE ADDRESS:** 1919 BOSTON POST ROAD, GUILFORD, CT 06430  
**CONTACT PERSON:** ERIC L. SHAW, 203-261-1000  
**APPROXIMATE DATE OF CONSTRUCTION:** 2002  
**CONTRACT NUMBER:** CONSTRUCTION STATE SIGNAL COUNCIL  
**CONTRACT CODES:** CONSTRUCTION STATE SIGNAL COUNCIL AND UTILITY SAFETY CODE  
**APPLICANT:** SIGNAL SIGNAL, 203-261-1000  
**APPROVER:** VTS CORPORATION A.E.S., 1919 BOSTON POST ROAD, GUILFORD, CT 06430  
**DATE:** 1/27/02

## LEGEND

SYMBOL	DESCRIPTION
	TOWER OR ANTENNA LOCATION
	STREET NAME CHANGE/SECTION OCCURS
	ELEVATION MARKER
	STREET NAME ELEVATION CHANGE

## ABBREVIATIONS

W/L: WIRELESS LOCATION  
 V.P.: VERTICAL POSITION  
 O.C.: ON CENTER  
 P.P.: POINT/ZONE POINT  
 TYP.: TYPICAL  
 FT.: FEET  
 M.: METERS  
 N/A.: NOT APPLICABLE

## SHEET INDEX

SHEET NO.	DESCRIPTION
T-1	TITLE SHEET - GENERAL NOTES AND LEGENDS
SM-1	SITE PLAN, CONSTRUCTION PLAN AND ELEVATION

**PROJECT NO.:** 200111111111  
**JOB NO.:** 051-001  
**DRAWN BY:** MHL  
**CHECKED BY:**  
**ISSUED FOR:**  
**DATE:** 10-25-01

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**GUILFORD**  
 1919 BOSTON POST ROAD  
 GUILFORD, CONNECTICUT  
 SCALE: AS NOTED

**TITLE SHEET - GENERAL NOTES AND LEGENDS**

T-1

JAC 7/14  
**DES CONSULTANTS LLC**  
 600 ENTERPRISE DRIVE  
 ROCKY HILL, CONNECTICUT  
 13544-328-802

JAC 204

PROJECT NO: 308777777  
 JOB NO: 031-001  
 DRAWN BY: WJD  
 CHECKED BY:

ISSUED FOR  
 0 10-25-2010

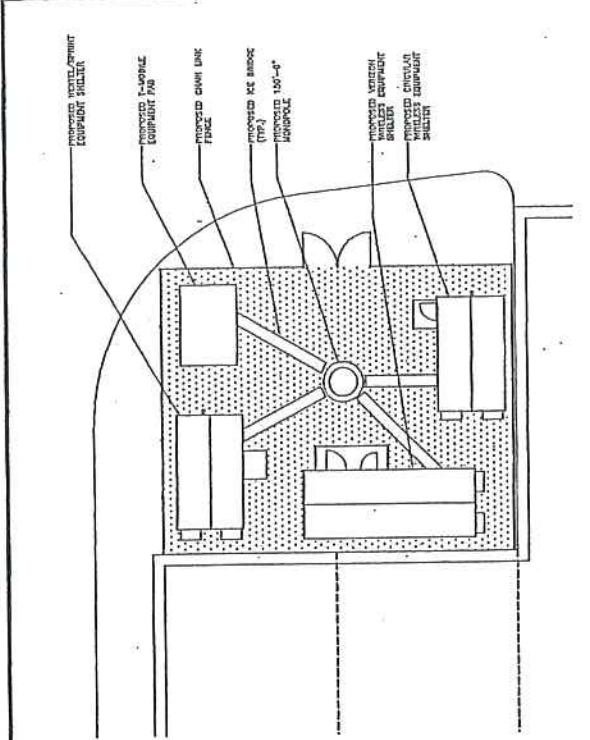
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GUILFORD  
 1919 BOSTON POST ROAD  
 GUILFORD, CONNECTICUT

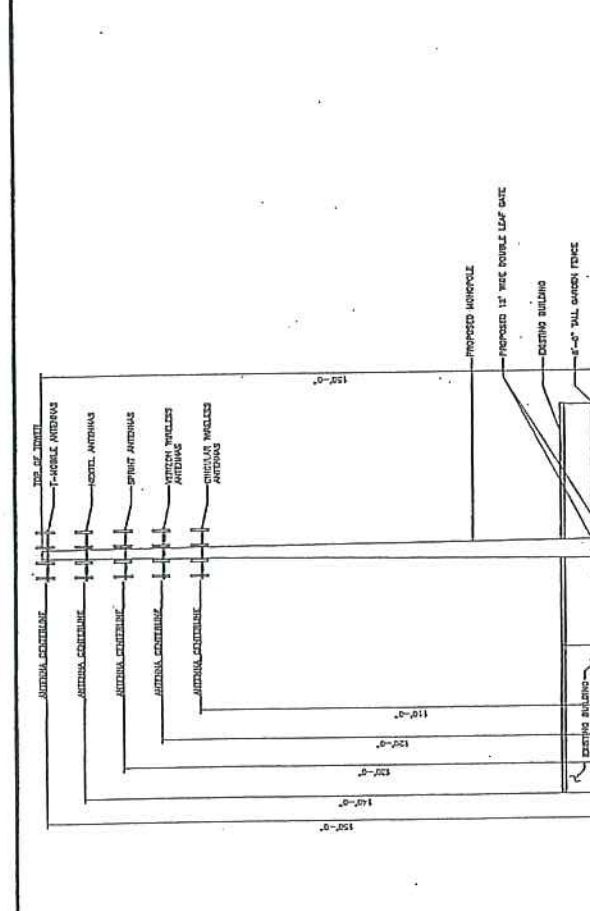
SCALE: AS NOTED

SITE PLAN,  
 COMPOUND PLAN  
 AND ELEVATION

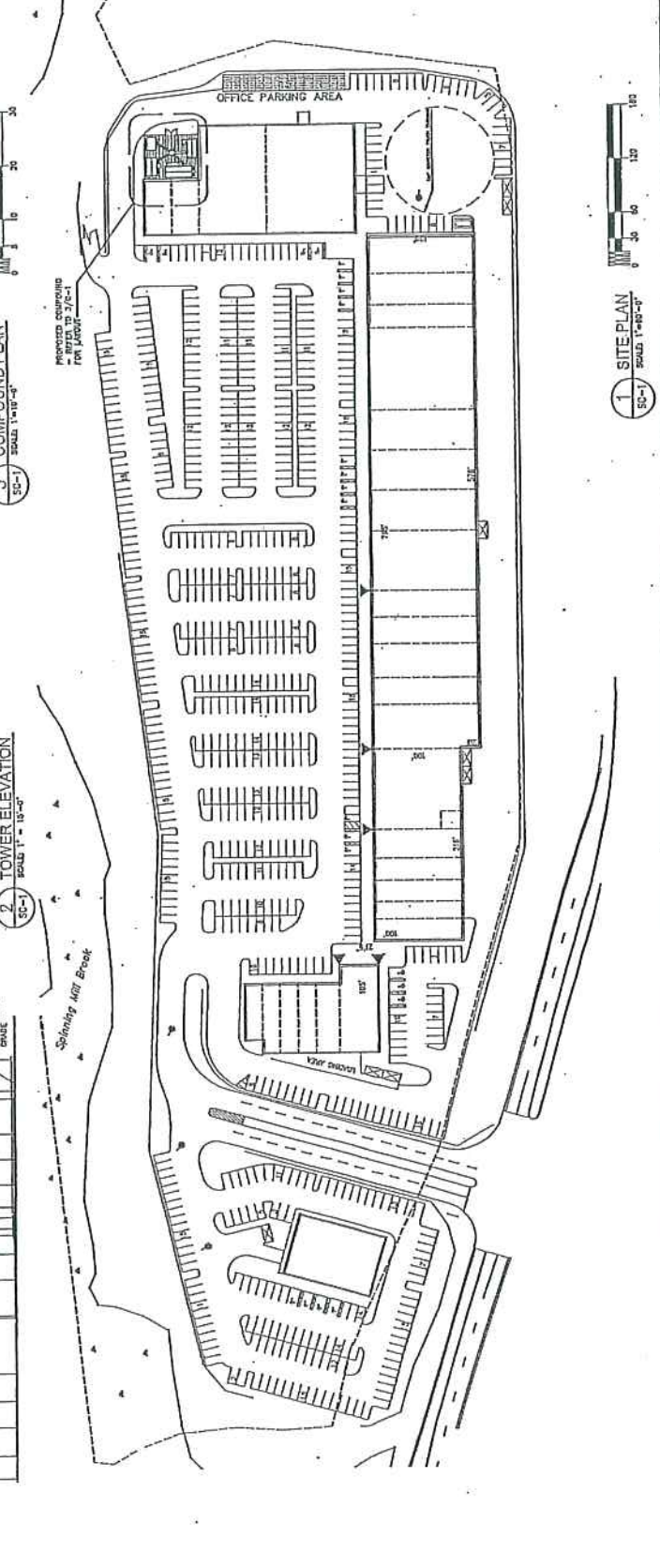
SC-1



3 COMPOUND PLAN  
 SCALE: 1" = 10'-0"



2 TOWER ELEVATION  
 SCALE: 1" = 10'-0"



1 SITE PLAN  
 SCALE: 1" = 40'-0"