

Visual Analysis Report

Proposed Telecommunications Facility
140' Monopole
Exeter Drive
Sterling, CT 06377

June 2007 - Revision 0

Prepared for:

MCF Communications, Inc.
733 Turnpike Street, Suite 105
North Andover, MA 01845

Prepared by:

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CHA Project 14957-1003-1601

INTRODUCTION:

Clough Harbour & Associates LLP (CHA) conducted a visibility study for the proposed 140'-0" monopole located on Exeter Drive, Sterling, CT. The purpose of the study was to determine the visual impact, if any, that a proposed 140'-0" monopole would have on the surrounding community within a two mile radius study area. Two techniques were utilized to determine the visual impact within the study area: a computer model using topography and vegetation as constraints to estimate the visual limits and a field analysis to verify the visual limits determined from the computer model. Research of the study area was also conducted to determine locations of sensitive visual receptors.

SITE & STUDY AREA DESCRIPTION:

The subject parcel is approximately 10.83 acres. A majority of the parcel is wooded with a cleared area surfaced with crushed stone. There are no residences, structures, or watercourses located on the parcel. The proposed facility is located at the Southeast corner of the parcel within the open area surfaced with crushed stone. The base of the tower will be 541' AMSL. The wooded area surrounding the open crushed stone area and proposed facility will act as a visual buffer to the adjacent parcels.

The topography within the study area consists of hills ranging from 300' AMSL to 600' AMSL. Approximately 6,020 acres, or 75%, of the 8,053 acre study area is covered with vegetation. The rolling hills and heavy vegetation in the study area will help screen the facility in the surrounding study area. Watercourses occupy approximately 112 acres, or 1.4%, of the study area. There are two historical sites, two parks/recreational areas, one school, and no cemeteries or churches within the study area. The MoosupValley State Park Trail runs across the study area and is approximately 4.5 miles in length. There is a designated scenic road along Route 14A from Route 49 East to Porter Pond Road, which is approximately 0.60 miles long and 1.82 miles from the proposed facility.

COMPUTER MODEL VISUAL ANALYSIS:

A computer model was developed using a proprietary AutoCAD-based application developed by our Technology Solutions Group to estimate how the surrounding topography and vegetation within a 2 mile radius may obstruct the monopole's visibility. The visibility calculations are completed using digital elevation models (DEM), which is a model of the earth's surface represented by a grid of elevations spaced 10 or 30 meters and is based on USGS topography maps. Each point in the DEM is independently tested for visibility based on the surrounding topography developed from the USGS maps. Once all points have been tested, a map is generated showing areas of visibility and areas screened by topography. Knowing which areas are screened by topography will assist in field determining which areas within the study area may have seasonal visibility. Next, vegetation within the study area is added to the map by digitizing it from 2004 aerial photographs. CHA's application utilizes a vegetation outline layer which is assigned the standard 65' height. A new map is generated showing only areas of visibility based on topography and the vegetation constraint. The visible areas on the map based on the surrounding topography and vegetation will be verified during the field visual analysis.

VISUAL RECEPTOR RESEARCH:

Research of the surrounding study area was conducted to determine the locations of sensitive visual receptors such as historic sites, historic districts, schools, churches, cemeteries, parks, playgrounds, recreational areas, beaches, and scenic roads. Historic sites and districts were determined from national and state registers. Surrounding schools, churches, cemeteries, parks, playgrounds, recreational areas, and beaches were determined from street maps and town

GIS data. Scenic roads were determined from the CTDOT list of designated scenic roads. All of the above sensitive visual receptors were added to the viewshed map.

FIELD VISUAL ANALYSIS:

On June 15, 2007 a field visual analysis was conducted to verify the sensitive visual receptors and the limit of visibility determined from our research and computer model. Weather conditions were favorable on the date of the visibility study as it was a clear and sunny day with winds between 10 and 12 MPH; therefore, visibility of the balloon from surrounding areas was not affected. In general, the field visibility study was conducted as follows: A 60" diameter red balloon was flown at a height of 140'-0" above existing grade. Once the balloon was flown, CHA completed a field drive of the surrounding area to determine the visibility of the balloon, and thus the proposed tower. Visibility from the sensitive visual receptors was our primary focus so photos were taken from each of these locations. Photos were also taken from major streets, intersections, and residential areas; from key areas where the balloon was visible; and from key areas where it was not visible. The limits of visibility determined from the computer model were field verified and adjusted as needed. Areas of potential seasonal visibility were field determined and marked on the viewshed map. Finally, the number of residences within the seasonal and year round visible areas was determined.

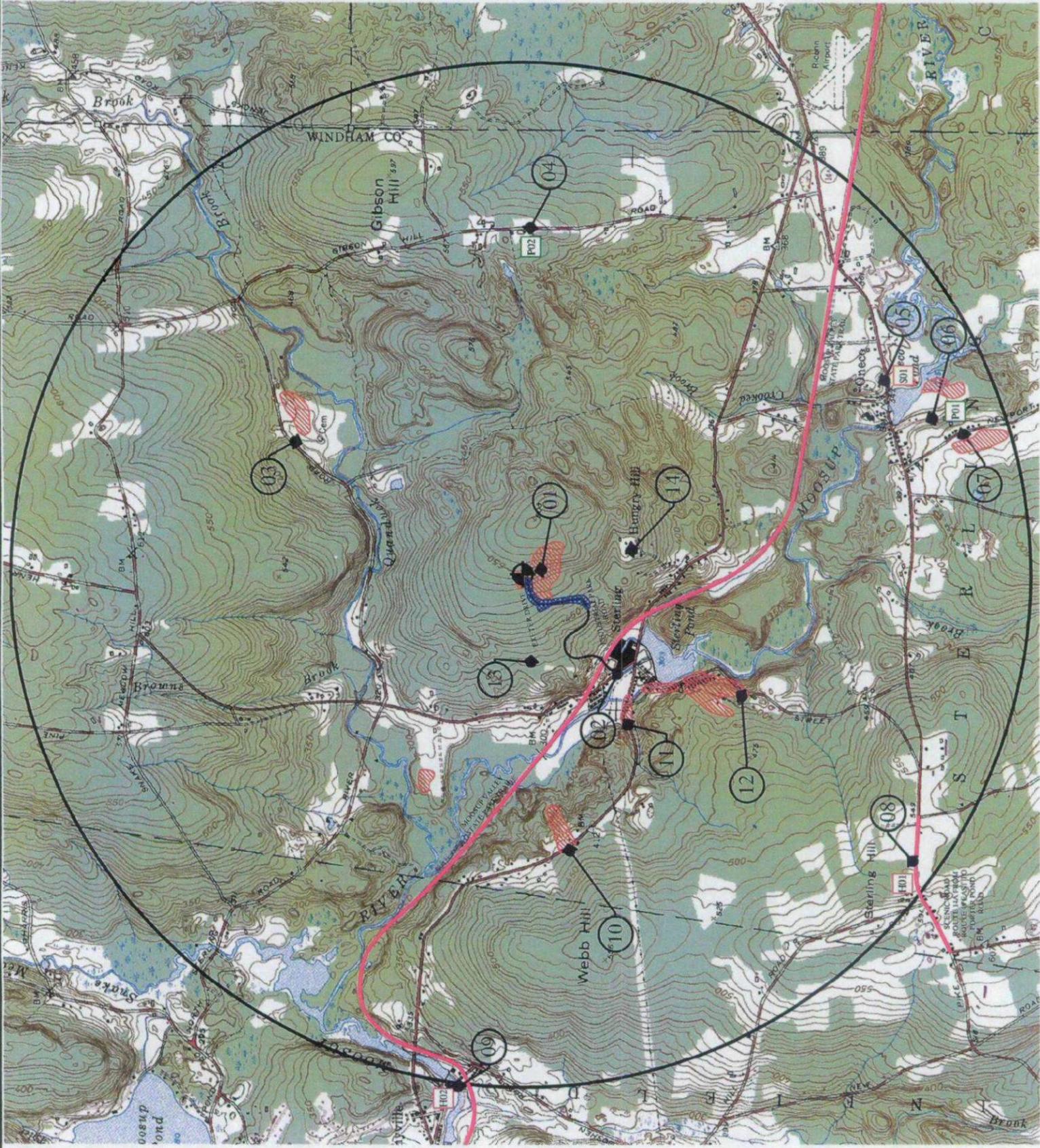
CONCLUSION:

The results of our visual study are summarized in the following attachments: Attachment A: Viewshed Map, and Attachment B: Photosimulations. In conclusion, the year round visual impact to the surrounding community within a two mile radius is limited to the red hatched areas on the viewshed map, which is approximately 0.8%, or 67.2 Acres, of the total study area. The limit of year round visibility includes the area surrounding the following public streets: a 1,020' stretch along Route 14, a 1,500' stretch along Church Street, and a 200' stretch along Exeter Drive. Church Street contains residential properties and will impact 10 residences year round. The proposed monopole will not be seen year round from any of the sensitive visual receptors listed on the viewshed map. As can be seen from the photosims, a large smokestack is visible adjacent to the proposed monopole in all of the year round visible locations. The large smokestack is much more prominent than the proposed tower; therefore, the additional visual impact caused by the tower will be minimal compared to the existing visual pollution caused by the large, more prominent smokestack.

The blue hatched areas on the viewshed map indicate the seasonal visual impact, which is approximately 0.1%, or 6.3 acres, of the total study area. The limit of seasonal visibility includes the area surrounding the following public streets: a 400' stretch along Exeter Drive, and a 950' stretch along Industrial Park Road. These areas contain no residential properties and will not impact residences. The proposed monopole will not be seen seasonally from any of the sensitive visual receptors listed on the viewshed map. There is minimal seasonal impact due to the thick vegetation surrounding the facility within the study area.

The remainder of the two mile radius study area is screened by topography (1,845 acres, 23%) & vegetation (6,134.5 Acres, 76.1%). Photos documenting the non-visible and visible conditions described above have been included in the photo-simulations with their locations marked on the viewshed map.

ATTACHMENT A
VIEWSHED MAP



NOTES:

1. Only visible areas are shown on the map utilizing the process described in note 2. The remainder of the map has been estimated to be nonvisible utilizing the process described in note 3.
2. Seasonal and year round areas of visibility were estimated from a field visual analysis within public R.O.W. and public properties. Areas shown on private property were interpolated from the field visual analysis.
3. Nonvisible areas were estimated from a computer generated topography & vegetation analysis and field verification of vegetation & building screening within public R.O.W. and public properties. Vegetation limits were determined from 2004 aerial photos and is assumed to be 65' high. Verification of vegetation height, coverage, and type within private areas not visible from public R.O.W. or public properties was not field verified.
4. Historical areas were determined from national and state historical registers.
5. Parks, schools, cemeteries, and churches were determined from street maps and field observations.
6. Scenic roads, if any, were determined from the CTDOT list of designated scenic roads and field observations.

Legend

APPROXIMATE LOCATION OF PROPOSED MONOPOLE	COMPUTER SIMULATION PHOTOGRAPH LOCATION
APPROXIMATE LIMIT OF SEASONAL TOWER VISIBILITY	APPROXIMATE LIMIT OF YEAR ROUND TOWER VISIBILITY
CHURCH/CEMETERY	PARK
HISTORICAL SITE	SCHOOL
TRAIL OR SCENIC ROAD	

Visibility by Acreage

ITEM	APPROXIMATE ACRES	% OF TOTAL AREA
2 MILE RADIUS AREA	8,053	100%
NOT VISIBLE DUE TO TOPOGRAPHY	1,845	23%
NOT VISIBLE DUE TO VEGETATION	6,134.5	76.1%
VISIBLE YEAR ROUND	67.2	0.8%
POTENTIAL SEASONAL VISIBILITY	6.3	0.1%

Distances from Photo Locations to Tower

PHOTO	DIST. (FT)	PHOTO	DIST. (FT)
01	350	10	5,800
02	2,850	11	3,800
03	5,450	12	5,200
04	7,150	13	1,800
05	8,550	14	2,350
06	9,100		
07	9,200		
08	10,050		
09	10,600		

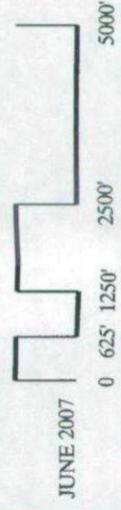
2 MILE VIEWSHED ANALYSIS MAP
STERLING
VISUAL IMPACT ASSESSMENT

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Drawing Copyright © 2007 Clough Harbour & Associates LLP
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CHWA Project No. 14951-001-1-01



FIGURE
VS-STERLING



Historic Sites:

STERLING HILLS HISTORIC DISTRICT/DORRANCE INN 748 PLAINFIELD PIKE STERLING, CT	GLEN FALLS BRIDGE/ BRUNSWICK AVENUE BRIDGE PLAINFIELD, CT
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Parks/Recreational:

RIVERBEND CAMP GROUND	STERLING PARK CAMP GROUND
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Schools:

STERLING MEMORIAL SCHOOL

Scenic Roads:

1. Route 11A is designated as scenic from Route 49 East to Porter Pond Road. See map for location.

Visibility by Residence

STREET	RESIDENCES
CHURCH STREET	10 (Y)

(S) = SEASONAL VIEW
(Y) = YEAR ROUND VIEW

ATTACHMENT B
PHOTOSIMS



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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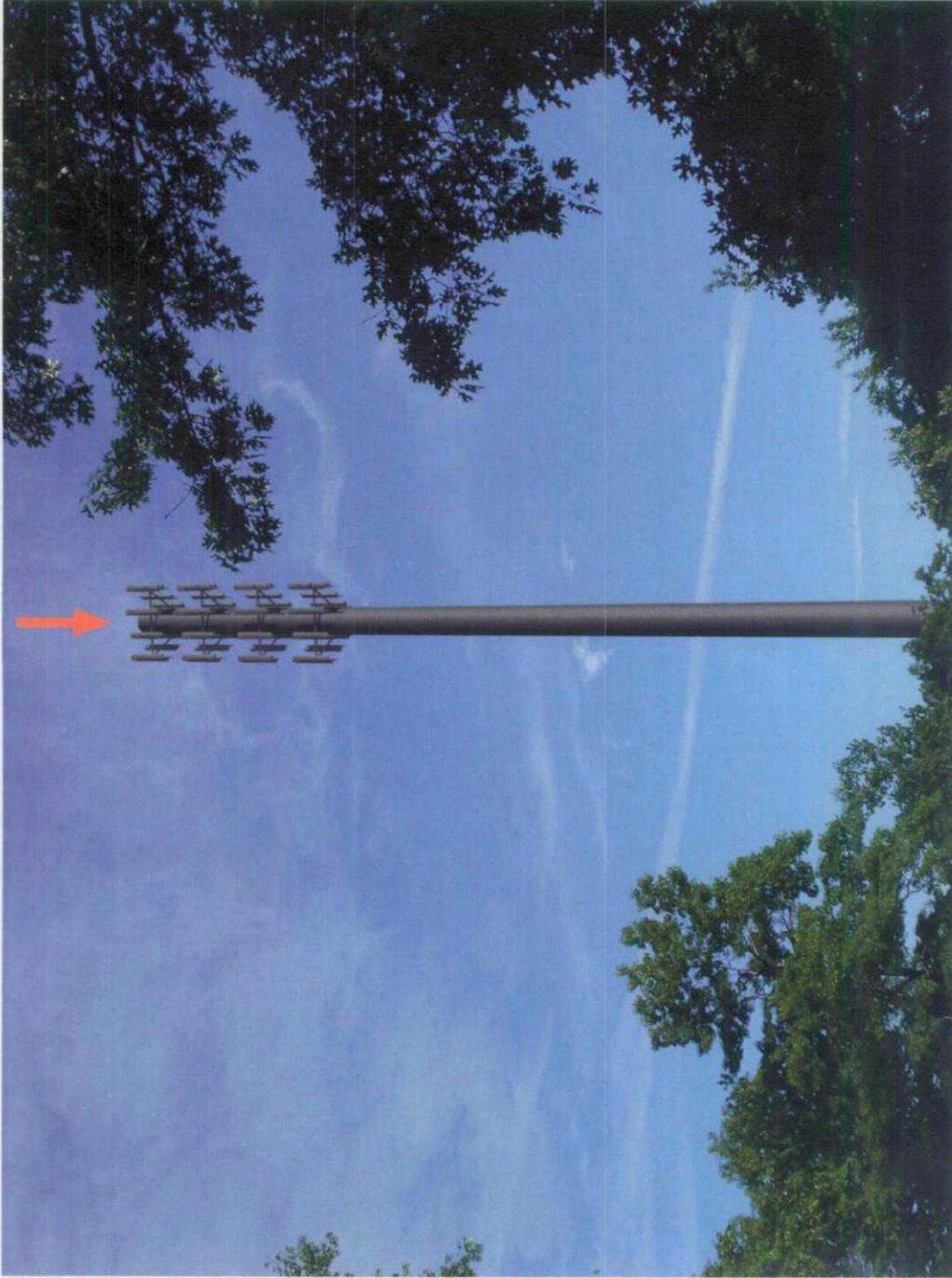
DATE: JUNE 2007

SITE: STERLING

VIEW 1 - EXISTING VIEW FROM
EXETER DRIVE LOOKING
NORTHWEST TOWARDS SITE

MCF Communications, Inc.

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NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design

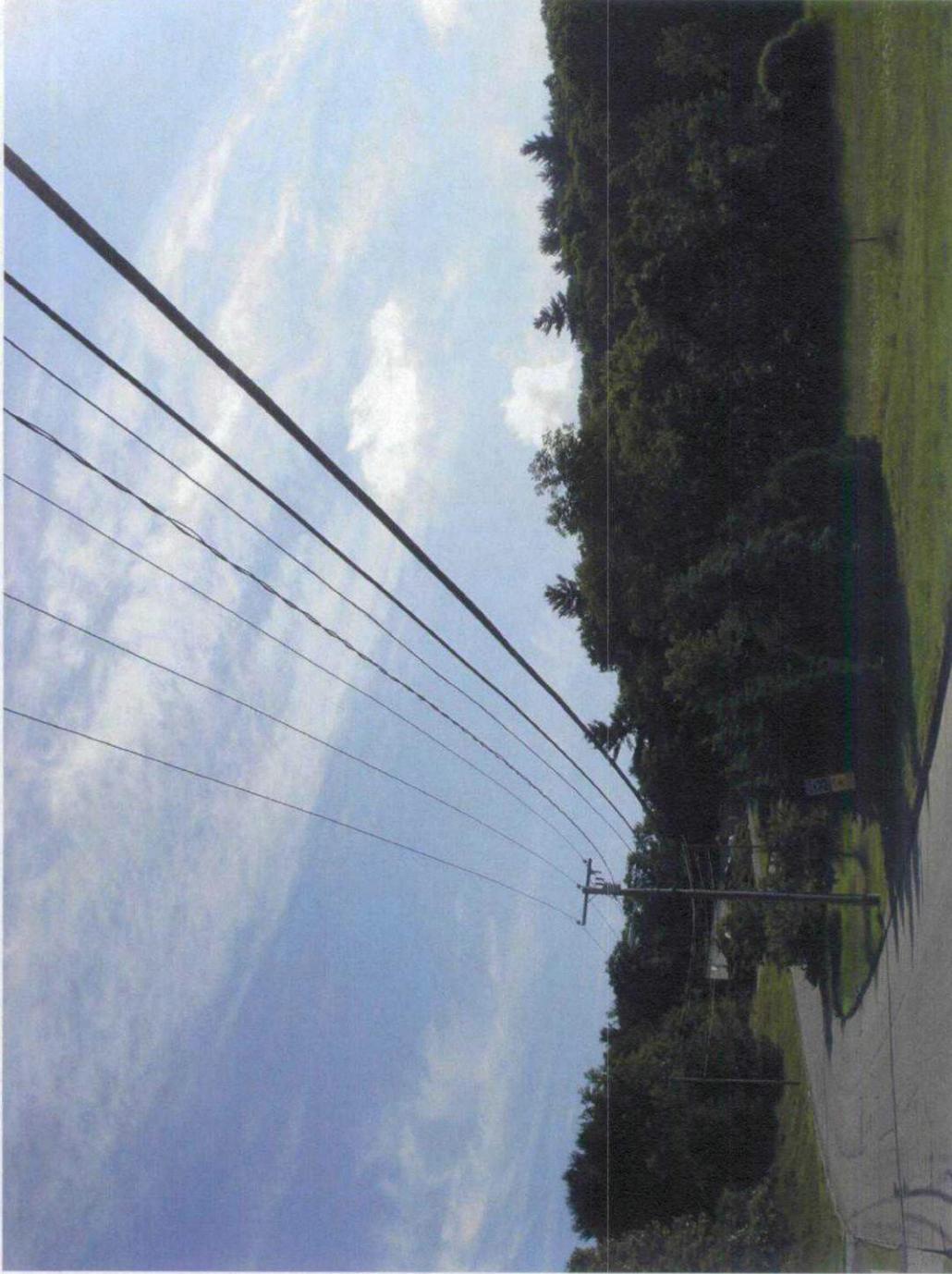


DATE: JUNE 2007

SITE: STERLING

VIEW 1 - PROPOSED VIEW
FROM EXETER DRIVE LOOKING
NORTHWEST TOWARDS SITE

MCF Communications, Inc.
733 TURNPIKE STREET, SUITE 105
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DATE: JUNE 2007

SITE: STERLING

VIEW 2 - NON-VISIBLE
FROM INTERSECTION OF MAIN
STREET & INDUSTRIAL PARK ROAD
LOOKING NORTHEAST TOWARDS
SITE

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NORTH ANDOVER, MA 01845



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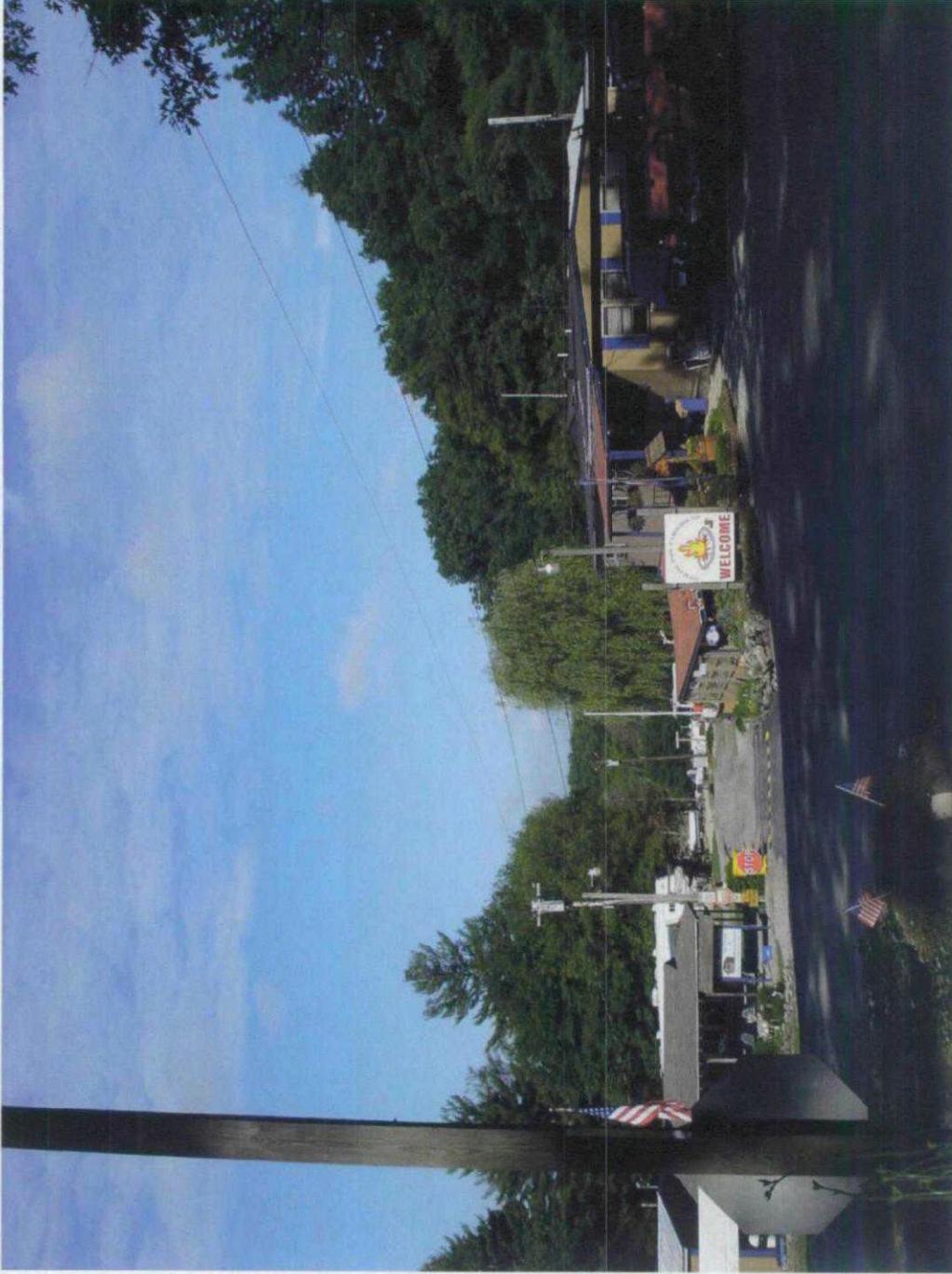
DATE: JUNE 2007

SITE: STERLING

VIEW 3 - NON-VISIBLE
FROM RIVER ROAD LOOKING
SOUTHWEST TOWARDS SITE

MCF Communications, Inc.

733 TURNPIKE STREET, SUITE 105
NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design

VIEW 4 - NON-VISIBLE
 FROM STERLING PARK
 CAMPGROUND LOOKING
 NORTHWEST TOWARDS SITE

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 NORTH ANDOVER, MA 01845



Clough Harbour & Associates LLP

DATE: JUNE 2007

SITE: STERLING



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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SITE: STERLING

VIEW 5 - NON-VISIBLE
FROM STERLING MEMORIAL SCHOOL
LOOKING NORTHWEST TOWARDS
SITE

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Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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SITE: STERLING

VIEW 6 - NON-VISIBLE
FROM RIVERBEND CAMPGROUND
LOOKING NORTHWEST TOWARDS
SITE

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Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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VIEW 7 - NON-VISIBLE
FROM NEWPORT ROAD LOOKING
NORTHWEST TOWARDS SITE

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DATE: JUNE 2007

SITE: STERLING



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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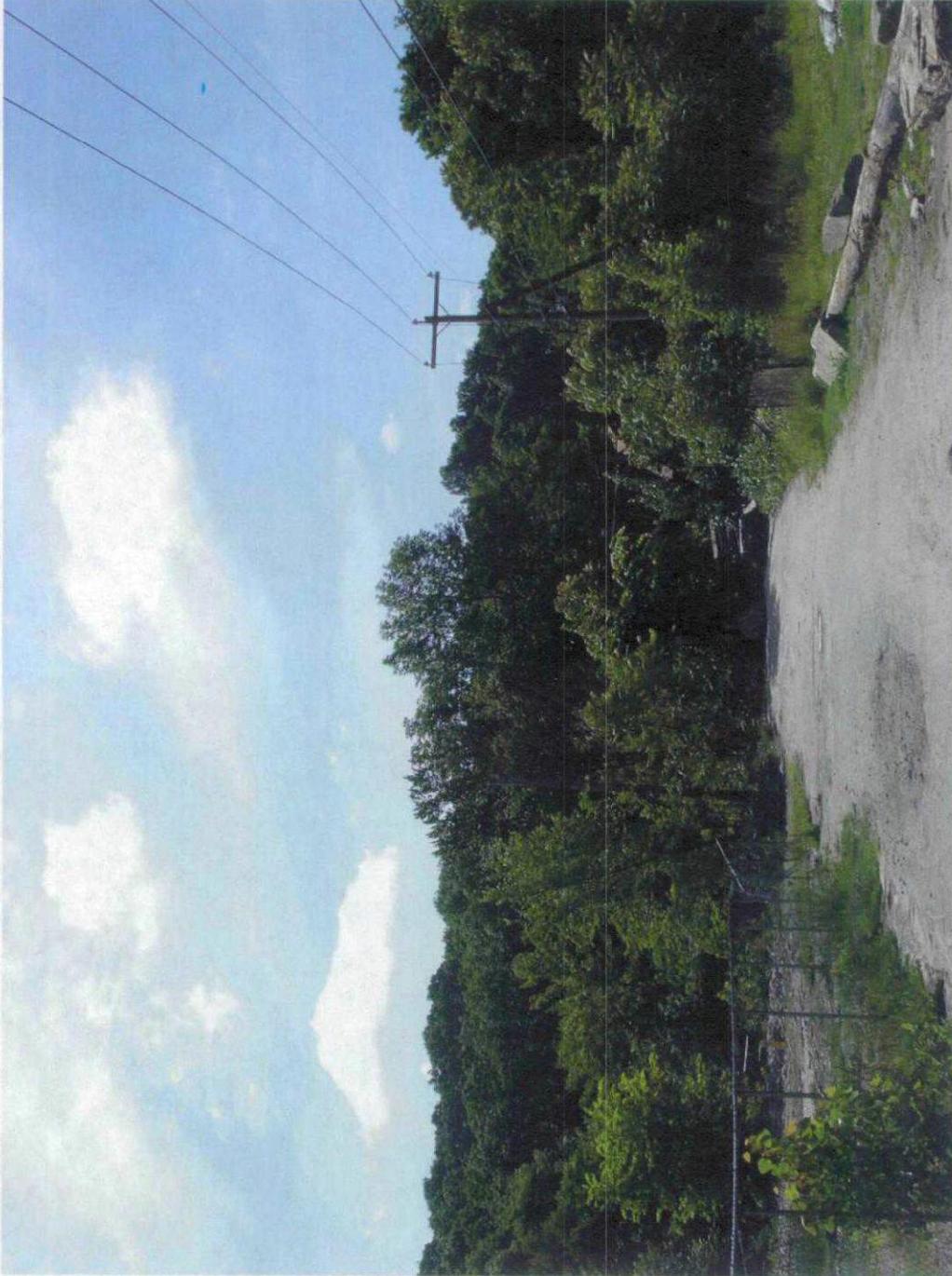
DATE: JUNE 2007

SITE: STERLING

VIEW 8 - NON-VISIBLE
FROM STERLING HILL HISTORIC
DISTRICT & SCENIC PORTION OF
ROUTE 14A LOOKING NORTHEAST
TOWARDS SITE

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NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



DATE: JUNE 2007

SITE: STERLING

VIEW 9 - NON-VISIBLE
FROM GLEN FALLS HISTORIC BRIDGE
LOOKING EAST TOWARDS SITE

MCF Communications, Inc.
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NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



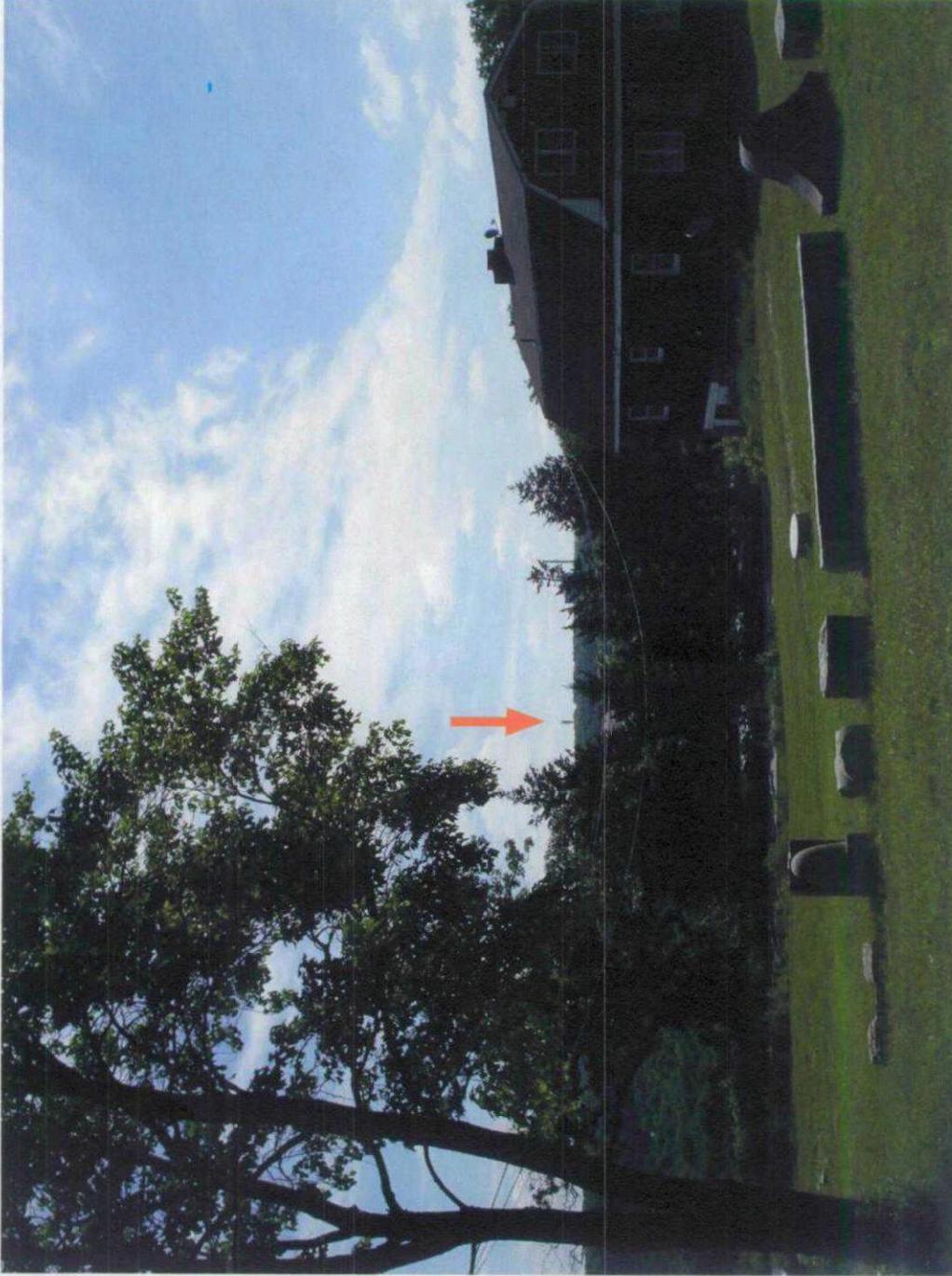
DATE: JUNE 2007

SITE: STERLING

VIEW 10 - EXISTING VIEW
FROM ROUTE 14 LOOKING
NORTHEAST TOWARDS SITE

MCF Communications, Inc.

733 TURNPIKE STREET, SUITE 105
NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



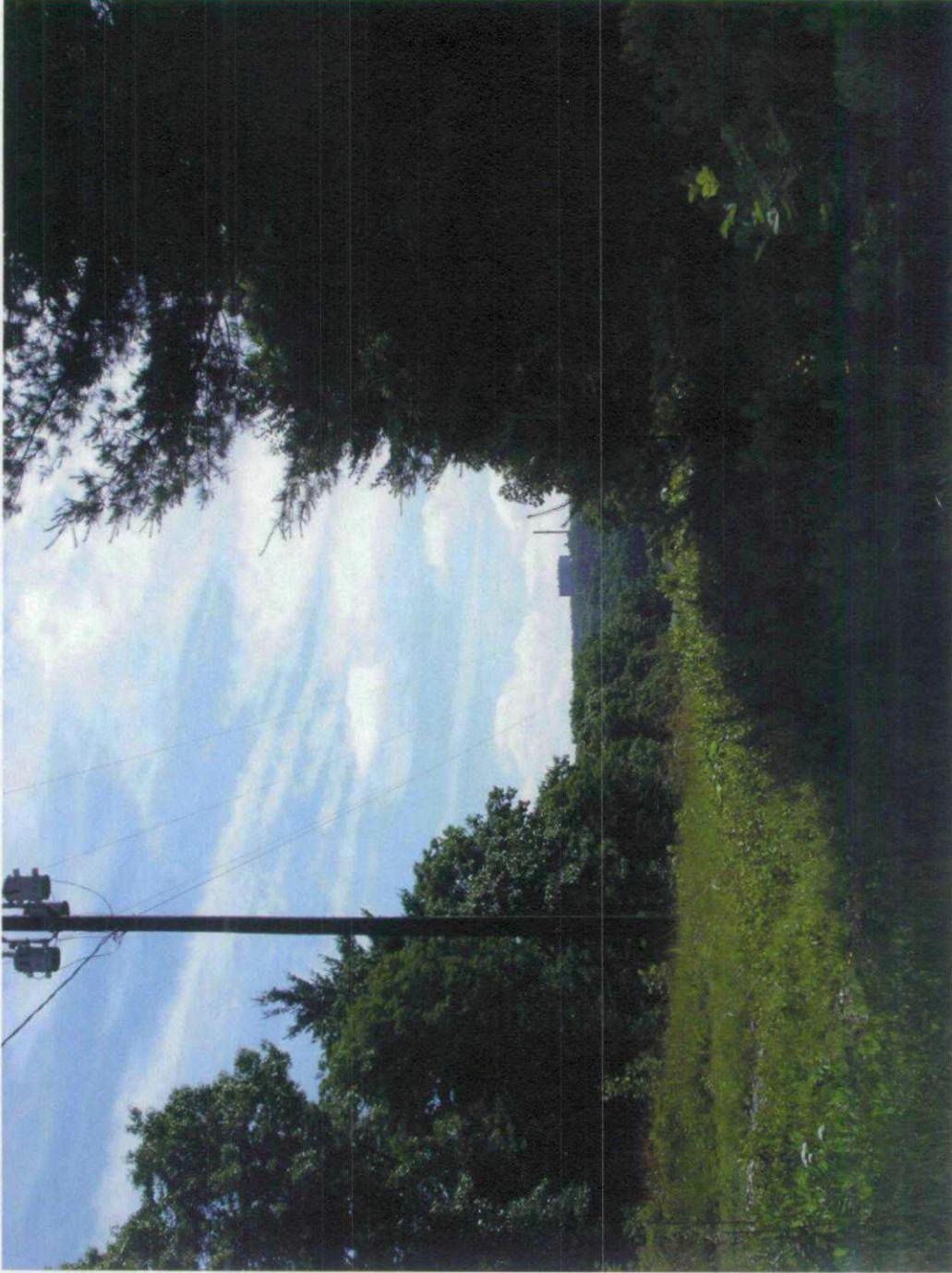
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DATE: JUNE 2007

SITE: STERLING

VIEW 10 - PROPOSED VIEW
FROM ROUTE 14 LOOKING
NORTHEAST TOWARDS SITE

MCF Communications, Inc.
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NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design

VIEW 11 - EXISTING VIEW
FROM ROUTE 14 LOOKING
NORTHEAST TOWARDS SITE

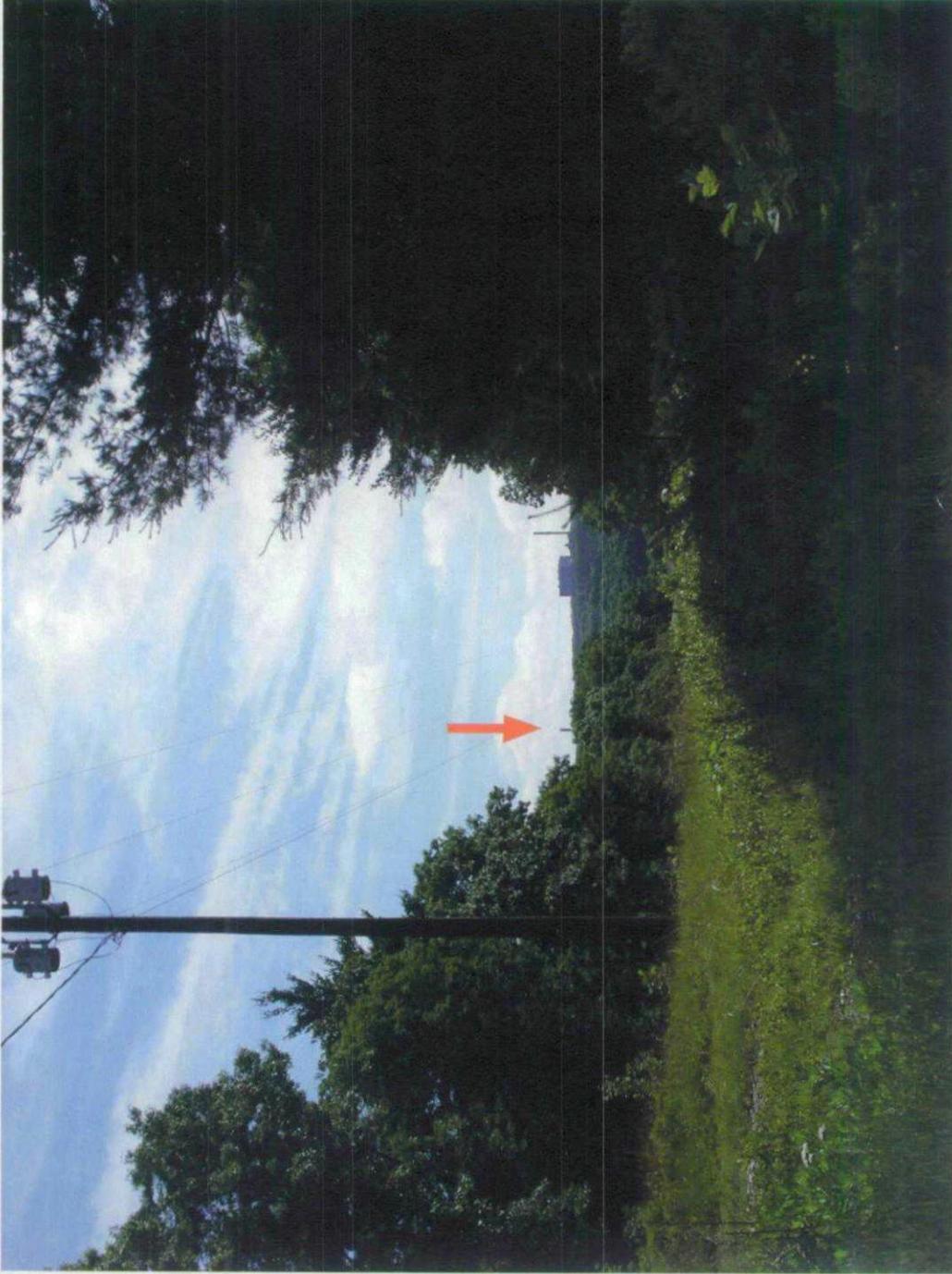
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DATE: JUNE 2007

SITE: STERLING



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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DATE: JUNE 2007

SITE: STERLING

VIEW 11 - PROPOSED VIEW
FROM ROUTE 14 LOOKING
NORTHEAST TOWARDS SITE

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Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design

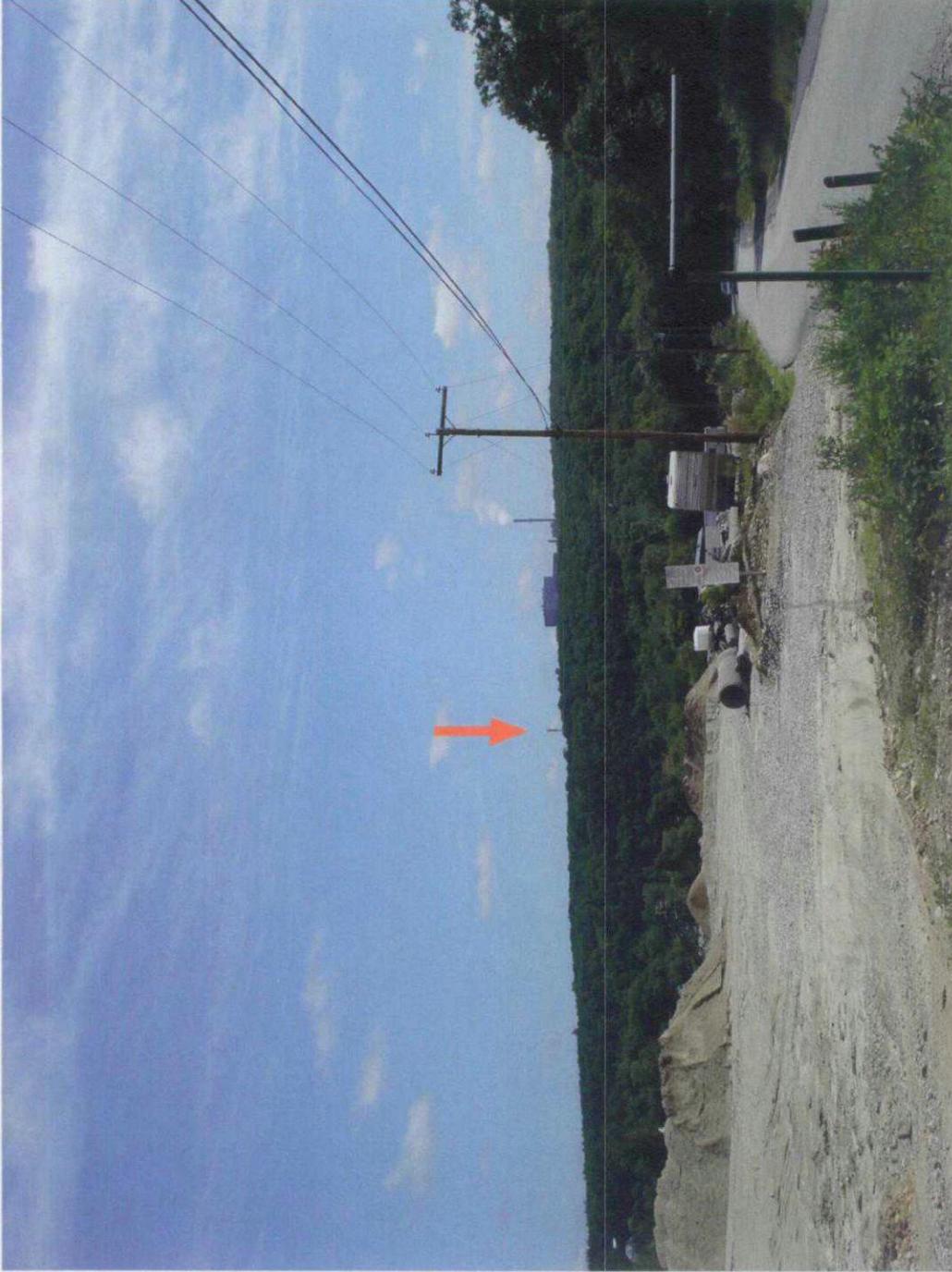
VIEW 12 - EXISTING VIEW
FROM CHURCH STREET LOOKING
NORTHEAST TOWARDS SITE

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NORTH ANDOVER, MA 01845



DATE: JUNE 2007

SITE: STERLING



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DATE: JUNE 2007

SITE: STERLING

VIEW 12 - PROPOSED VIEW
FROM CHURCH STREET LOOKING
NORTHEAST TOWARDS SITE

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NORTH ANDOVER, MA 01845



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design

VIEW 13 - NON-VISIBLE
FROM STERLING RIDGE LANE
LOOKING EAST TOWARDS SITE

MCF Communications, Inc.
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NORTH ANDOVER, MA 01845



CLOUGH HARBOUR & ASSOCIATES LLP

DATE: JUNE 2007

SITE: STERLING



Photosim for conceptual purposes only - actual antenna & equipment locations to be determined based on final engineering design



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DATE: JUNE 2007

SITE: STERLING

VIEW 14 - NON-VISIBLE
FROM HUNGRY HILL ROAD LOOKING
NORTHWEST TOWARDS SITE

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