

# **VISUAL RESOURCE EVALUATION**

## **PROPOSED 65' TALL TELECOMMUNICATIONS STRUCTURE**

**Highland Falls  
1530 RTE 9W  
Village of Highland Falls  
Orange County  
New York, 10928**

Submitted by:



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## **VISUAL RESOURCE EVALUATION**

Tectonic Engineering Consultants, Geologists & Land Surveyors, D.P.C., was contracted by Verizon Wireless to conduct a “Visual Resource Evaluation” to determine which areas within the Village of Highland Falls will contain views of the proposed 65 foot tall wireless telecommunications structure.

### **Setting:**

The proposed site is located at 1530 Rte 9W in the Village of Highland Falls, Orange County, New York. The surrounding land use is primarily residential with large wooded areas. Within the study area the topography ranges in elevation from 167' +/- AMSL (Above Mean Sea Level) to 309' +/- AMSL. The predominant forest species are mixed deciduous and coniferous, with an estimated height of 60-90 feet. The field study for this visual resource evaluation was conducted in the early-spring season during 100% leaf off conditions. The leaf off condition represents a worst case scenario in that it is a scenario in which the visibility of the structure is maximized due to the lack of leaves on existing deciduous vegetation.

### **Methodology:**

On Wednesday, April 13, 2022, Tectonic conducted a field investigation for the purpose of evaluating the viewshed associated with the proposed installation of the 65 foot tower. Conditions were sunny with a temperature of approximately 60°, and with wind speeds of approximately 6-8 mph with partial periods of gusting of approximately 10-12 mph. The study area consisted of a 1 mile radius from the project site.

The methodology utilized during this field investigation is referred to as a “balloon test.” The height of the proposed structure was simulated by floating a 4' diameter, helium-filled weather balloon at 65 feet above ground level (AGL). The balloon provided reference points for height as well as location and also provides a known dimension that later aids in the production of photo simulations.

Tectonic drove the study area to confirm the potential visibility of the structure. During the “in field” review the participants reviewed and documented those areas from which views of the structure may be “visible” and those which are blocked by topography, vegetation, and structures. The viewshed analysis resulted in the discovery that the proposed structure would only be visible from a few roads, and only partially visible through tree branches in the immediate vicinity of the proposed structure. Furthermore during the spring, summer, and early fall months, deciduous foliage will completely block any view of the proposed structure in the partially visible locations.

Photographs were taken from various vantage points within the study area to document the actual view towards the proposed structure, as well as the general character of the viewshed. Each photograph attached includes a brief description of the location and orientation from which it was taken, and the photo number corresponds to the key number on the photo log map.

### **Process:**

Photographs of the weather balloon from the viewpoints noted were taken with a Nikon D5300 Digital 24 megapixel camera using a 55mm focal length lens to mimic the view as observed from the human eye. A 4-foot diameter red helium filled balloon was floated to a height of 65'.

In order to analyze the potential visual impacts of the proposed structure, Tectonic took photographs of the balloon from locations within the search area for the purpose of preparing simulations of the proposed structure. Photographs for which there is a corresponding simulated view (#6,11,12) of the proposed structure were produced by first photographing an existing similar type structure, then photographing the view towards the proposed site where the marker balloon was set to a height of 65' AGL. The digital images of the balloons and similar structure were then merged and scaled through the use of the image editing software, "Adobe Photoshop CS5." With this process, the structure is scaled to the correct height and width by scaling the similar type structure using measurements from the marker balloon. The similar type structure used has an antenna array that spans eight feet (8'). By measuring the balloon width of 4', one can determine the proper width of the antenna array by multiplying the balloon width by a factor of 2. The composite is printed out directly on a color printer, producing the final image.

**Conclusion:**

The Viewshed Analysis Map presents a conservative delineation of the viewshed within the study area and along public roadways and parks. The photo slides have been prepared per the methodology described above and provide a general depiction of the appearance of the structure from the photographed viewpoints.

Sincerely,

TECTONIC ENGINEERING CONSULTANTS, GEOLOGISTS & LAND SURVEYORS, D.P.C.

A handwritten signature in blue ink, appearing to read 'S. Matthews', with a stylized flourish extending to the right.

Steven M. Matthews, PE  
Director of Engineering



































































