

DEIS APPENDIX 11

VISUAL IMPACT ASSESSMENT

Carriage Hill Estates
Draft Environmental Impact Statement

Project No. 2004-035.20M

Town of Brunswick
Rensselaer County
New York

October 3, 2005

Prepared for:



400 Jordan Road
Troy, NY 12180

Prepared by:

Saratoga Associates
443 Broadway
Saratoga Springs, NY 12866

Visual Impact Assessment

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Section 1

1.1 VISUAL ASSESSMENT METHODOLOGY

- > The landscape character of the project site and surrounding project-affected landscape were analyzed to establish the baseline visual condition from which the nature of the visual impact was determined;
- > Observer characteristics were determined and presented;
- > A viewshed map was prepared showing all areas within two (2) miles with a potential view of the Project.
- > Designated scenic and aesthetic resources, and sensitive areas of public view were identified;
- > Worst-case line-of-sight profiles that show project visibility from selected sensitive receptors were prepared and presented;
- > Site visits to sensitive areas to assess their aesthetic values and to field check the potential visibility were undertaken;
- > Nearby roads were visited;
- > The nature of the visual impact was assessed and described;
- > A summary of mitigation steps was prepared and presented.

Section 2

2.1 DESCRIPTION OF VISUAL STUDIES AND METHODS EMPLOYED

- > Methods employed included desktop research, viewshed analysis, land use analysis, field assessments, direct observations and mitigation analysis.
- > Viewshed Analysis

The viewshed mapping identifies the geographic area within which there is a relatively high probability that some portion of the proposed project would be visible. A viewshed map for the proposed buildings was created. Control points used in the calculation of the viewshed included the corners of each building at the following heights:

- Residential Homes – 25 feet above existing grade
- Senior Housing – 45 feet above existing grade
- One level structure – 20 feet above existing grade

A viewshed map was prepared for the proposed buildings defining the area within which there would be no visibility of the project because of the screening effect of intervening topography and vegetation. This analysis, although not considered perfectly definitive, acceptably identifies the geographic area within which one would expect to be substantially screened by intervening topography and forest vegetation.

The viewshed map does not, by itself, determine the degree or character of visual impact, but rather identify the geographic area within which there is a relatively high probability that some portion of the proposed project would be visible. Their primary purpose is to assist in determining the potential visibility of the proposed project from the identified visual resources.

In this evaluation, ArcGIS 9.0 software with the 3D Analyst and Spatial Analyst extensions were used to generate a viewshed map within an approximate 2-mile radius of the Project site. The data used to generate this viewshed was based on publicly available digital topographic and vegetation data sets. The viewshed map was prepared by first creating a grid of the study area from 1:24,000-scale digital elevation models (DEM) that represent the land surface elevations. This DEM, obtainable through the Cornell University Geographic Information Repository (CUGIR), is based on 1:24,000 scale USGS topographic maps (10-foot contour intervals) and accurate to a 10-meter grid cell resolution.

To illustrate the potential screening effect of existing vegetation, forest data was incorporated into the viewshed analysis. The forest data was extracted from a 30-meter Multi-Resolution Land Characteristics [MRLC] dataset (also obtained through CUGIR) containing satellite imagery representing deciduous, coniferous and mixed-use forests. It is important to note that the MRLC dataset is based on interpretation of forest areas that are clearly distinguishable from infrared satellite imagery. As such, the potential screening value of site-specific vegetative cover such as small hedgerows and individual trees and other areas of non-forest tree cover may not be

represented in the realistic viewshed analysis. Those features and potential screening value of existing structures will be considered and factored into the construction as is reasonable to include.

The MRLC data set, produced by the USGS EROS Data Center, was developed from Thematic Mapper (TM) LandSat imagery (1992) and is accurate to a 30-meter grid cell resolution¹. This 30-meter cell-size grid representing deciduous, coniferous and mixed-use forest cover at a height of 40 feet was combined with the land surface grid. Based on field observation, most trees in forested portions of the study area are significantly taller than 45 feet. This height thus represents a conservative estimate of the effect of vegetative screening. In addition to incorporating vegetative screening into the viewshed analysis, the proposed buildings on the project site were added to the surface model. The 10-meter surface grid was re-sampled to 5-meter to accommodate a more refined representation of the proposed buildings.

A viewshed was then calculated using the 5-meter grid that represents surface, vegetation and proposed building elevations. To do this, the computer scans 360 degrees across the grid from the high point of each subject study control points, distinguishing grid cells that would be hidden from view from those that would be visible. An appropriate analogy would be to think of a light bulb located at the study point(s) representing each primary project component. Areas that are illuminated by the bulb would potentially be visible; areas in shadow would not be visible.

The resultant viewshed illustrates areas of visibility including forested areas. Assuming that an individual standing in a forest is screened from objects beyond the forest, the grid cells identified as being visible and in a forest were removed from the viewshed. Thus, the final viewshed represents only the non-forested areas from which an observer has a high probability of viewing the proposed buildings.

¹ 30-meter resolution is the smallest vegetative grid cell increment commonly available for the project region. This resolution provides an appropriate degree of accuracy for development of 2-mile viewshed maps given the fairly broad patterns of existing land use in the area, as well as the accuracy of mapped topographic data (i.e., 1:24,000 scale USGS topographic maps with 10 foot contour interval).

Section 3

3.1 VISUAL IMPACT ASSESSMENT FINDINGS

Visual impact is dependent upon the aesthetic characteristics of the surrounding landscape and project site, the aesthetic characteristics of the project development, the presence or absence of designated aesthetic resources open to the public and other sensitive areas, the characteristics of the observers, the geographic extent of project visibility and mitigation.

The Surrounding Landscape

The Project site is located in the Town of Brunswick approximately 2 miles east of the City of Troy. This proximity means that the Town functions as a developing suburb of the City as well as the larger Capitol District. The project site is located between NYS Route 2, a principal arterial, and the Poestenkill Creek to the north. Single-family homes lie to the east; Pinewoods Avenue and additional single-family homes lie to the south while the County Club of Troy is a major presence to the west.

Because it is a developing suburb, the surrounding regional landscape consists of varied housing types and other suburban development including an expanding road system. Admixtures of natural wooded hills and open fields with an interspersed pattern of ornamentally vegetated landscapes are also characteristic.

The Site

The Project site is currently undeveloped and mostly vegetated with forests and open fields. An overhead electric transmission line passes through the eastern part of the site and there are a few abandoned structures as well. The topography is mostly rolling to moderately steep. Open areas and forest trees grow above a mixture of lower shrubs and herbaceous vegetation.

The Project

The Project consists of the construction of a variety of homes on varying lot sizes, and senior apartments in the Town of Brunswick, Rensselaer County, New York. The individual Project components are as follows:

- > A total of 106 homes are proposed and will include two separate housing styles:
 - o **Carriage Hill Landing** will include 87 carriage homes on 0.25+ acres to 0.5+ acre lots and are anticipated to attract empty nesters and homeowners looking to downsize.
 - o **Carriage Hill Estates** will include 19 estate homes on lots ranging in size from 2.3+ acres to 8.2+ acres.

-
- > **Orchard Village at Carriage Hill – Senior Apartments:** The proposed senior apartment component will include a total of 204 units available to individuals 62 years of age and older.
 - > The development will have a total of 87± acres of land to be designated as open space and forever wild, with no plans for future development. This open space will consist of the following components:
 - o Approximately 10.48 acres of lands labeled as Conservation Zone on *Figure 2 - Project Concept*, which has been identified and set aside as a protective buffer between the Project development areas and the Troy Country Club.
 - o Approximately 1.25 acres of walking trails will be provided along the interior connector road.
 - o The remaining 75.30± acres will consist of the undeveloped portions of the Project site not devoted to building lots, roads, driveways, or parking areas, as depicted on Figure 2.
 - > The NYS Route 2 and Pinewoods entrances will be beautifully landscaped.

The following are detailed descriptions of each of the proposed development components:

Carriage Hill Landing – 87 Carriage Homes

- > Two separate areas have been designated on the Project site for the carriage homes totaling approximately 27 acres.
 - o 56 homes will be located east of the Niagara Mohawk right-of-way and termed ***Carriage Hill Landing East***
 - o 9 homes will be in the southern portion of the site and will be referred to as ***Carriage Hill Landing South***.
 - o 22 homes will be in the southwestern portion of the site and will be referred to as ***Carriage Hill Landing West***.
- > Lot sizes for these homes will range from 0.25 to 0.50 acres.
- > First floor footprints for each home will range between approximately 1,600 and 1,800 square feet.
- > Carriage Hill Landing homeowners will belong to the Carriage Hill Home Owners Association (CHHOA) paying dues to cover the costs associated with the maintenance of specific items, including but not limited to the following: lawns, trees, shrubs, driveways and sidewalks. In addition, these homeowners will pay dues associated with maintaining the recreational amenities along with the landscaped entrances at Pinewoods Avenue and NYS Route 2.

Architecture

- > There will be a variety of carriage home design styles consisting of one and one and one-half story homes with full basements, garden basements or walkout basements.
- > Prior to construction, all home designs will require separate approvals by United Development Corp. before applying for a building permit from the Town of Brunswick Building Department.

Carriage Hill Estates – 19 Estate Homes

- > 19 total lots are proposed and will range in size from 2.3± acres to 8.2± acres in area.
- > The home sites are proposed to occupy an area of approximately 73 acres in the center of the site, stretching from the Niagara Mohawk property west to the boundary with The Country Club of Troy as shown on Figure 2.
- > The homes will be custom built after the lots are sold.
- > The minimum home size permitted will be 4,000 sf in area.
- > All home designs will need to be approved by United Development Corp. before being submitted to the Town of Brunswick Building Department.
- > As depicted on *Figure 2 – Project Concept*, in addition to the 100 ft. rear yard-building setback for Carriage Hill Estate Lots 1 and 2, the rear property boundary will be located approximately 150 ft. from the overall project development boundary with The Country Club of Troy. This 250 ft. total setback will provide additional protection of the golf course views.
- > All homes will be part of the CHHOA and will pay dues associated with maintaining the common area recreational amenities and landscaped areas at sites main entrances along Pinewoods Avenue and NYS Route 2.

Orchard Village at Carriage Hill – Independent Living Senior Apartments 204 Units

- > A total of 204 one and two-bedroom senior apartment units are proposed for nine, three-story apartment buildings and eight, two-story attached rental units (known as Patio Homes) on a total of 43± acres at the northern section of the Project site.
- > The proposed apartment units will consist of a mix of the following:
 - 52 one-bedroom/one-bath;
 - 54 two-bedroom/one-bath;
 - 81 two-bedroom/two-bath units; and
 - 17 three-bedroom – two-bathroom units.
- > The site will also provide enclosed parking for a total of 32 vehicles as follows:
 - 1 garage per Patio Home unit
 - 24 garages within six of the nine apartment buildings,
- > The Project will have a 10,000± sf clubhouse with a media center/theatre room, conference room, game room; large community room with fireplace and views of the courtyard and surrounding wooded area. In addition, a residential kitchen for social functions, indoor lap pool, a fitness center with men's and women's locker rooms, consultation rooms, administrative offices, a patio, and salon will be included in the Clubhouse design.

Inventory of Aesthetic Resources

Research was conducted to determine whether aesthetic resources are present within two miles of the proposed project. Aesthetic resources include all National, State and locally designated

places as may be listed under The New York State Department of Environmental Conservation Program Policy "Assessing and Mitigating Visual Impacts, July 31, 2000, or as may be listed in official planning and or zoning documents of the Town.

Three State-level resources were identified within two miles of the proposed development. The Garfield School, a designated historic property is located east of the project site along NYS Route 2. At the outer two mile assessment distance exists the Emma Willard Educational Institution and the Henry Coon House to the southeast in the City of Rensselaer, New York.

Other Potentially Sensitive Places

A total of 8 other potentially sensitive locations that may afford views of the Project Site were identified during the public scoping process. As depicted on *Figure 15B – Line of Sight Analysis*, these sites include (1) Brunswick Hills Development, (2) Highland Hills Development, (3) looking east on NYS Route 2, (4) looking west on NYS Route 2, (5) Pine Woods Hills Development, (6) Eagle Ridge Development, (7) the 7th fairway on the Troy Country Club, and (8) the 5th tee of the Troy Country Club.

The Brunswick Hills Development lies approximately 3,000 feet to the northwest of the Project and north of NYS Route 2 consists of more than 30 homes. Existing views consist of roads, housing and wooded and ornamentally vegetated landscapes.

Highland Hills Development is located approximately 1,750 feet to the northwest, just east of Brunswick Hills and consists of approximately 16 homes. Existing views consist of roads, housing and wooded and ornamentally vegetated landscapes.

NYS Route 2 provides arterial access to the Project. It is classified as an urban principal arterial with average daily traffic volumes of approximately 4,500 vehicles. The adjacent land uses are generally residential though passing motorists can see periodic views of wooded slopes and fields

Both Pine Woods Hills and Eagle Ridge residential developments are located approximately 1,000 feet to the southeast of the Project Site, south of Pinewoods Avenue. Pine Woods Hills is a large residential development with more than 30 homes, while Eagle Ridge is a much smaller development consisting of 6 homes. The existing view from both of these developments consists of housing, roads and wooded and ornamental landscapes.

The Country Club of Troy is located to the west of the Project. It consists of an 18- hole golf course, clubhouse and ornamentally landscaped lawn surfaces. Both the 7th fairway and the 5th tee are positioned in such a way that views of the Project may be afforded.

Section 4

4.1 VISUAL ASSESSMENT

A viewshed map, *Figure 15A – Viewshed Map*, shows all areas from which a potential view of the Project exists. The extent of visibility was limited to an outer distance of two (2) miles. Two miles was the selected distance because the effects of size perspective on housing over two miles sufficiently diminish the visual impact to levels considered background in developing suburban environments.

As depicted on Figure 15A, the Garfield School located east of the project site along NYS Route 2 will not be visible from any portion of the historic property. According to Figure 15A, both the Emma Willard School and the Henry Coon House may have views of the Project Site.

Regarding the remaining 8 receptor sites, *Figure 15C – Line of Sight Profiles* provides line of site profiles for each. The line of site profiles depict the intervening topography and not the vegetation. Based upon Figures 15A and 15C, the Project may be visible from certain locations within each adjoining residential development, as well as from portions of NYS Route 2 near the Project Site. View of the Project from the Troy Country Club's 7th fairway and 5th Tee may also be possible.

Section 5

5.1 MITIGATION AND SIGNIFICANCE OF PROJECT VISIBILITY

Mitigation

To mitigate the view of the Project Site from the Troy County Club a 250 foot wide vegetated buffer zone will be maintained between the course and the Project Site in order to preserve the natural appearance of the Course setting while providing continued spatial enclosure to the fairways and greens.

To mitigate the views from NYS Route 2, an attractive, architecturally designed landscape, providing a sense of entrance will be designed for the NYS Route 2 entranceways.

To further mitigate the views of the Project from surrounding areas including the adjoining residential developments, the building architecture will be soft-toned and multihued. The apartments will be designed with a residential home look complete with dormer elements and peaked rooflines. In addition, extensive set asides including natural areas, wetlands, and fields will compliment ornamental plantings to soften the development and help blend it into the existing landscape patterns.

Significance of Impacts

The intervening vegetation and the built-urban environment that surrounds the Henry Koon House and the Emma Willard School will likely diminish views of the proposed Project from these sites. Further, the Project is likely to be backdropped and blended in with existing residential development, further decreasing the visibility of the Project from these sites. Based upon the distance of these sites from the Project Site, the built-urban environment surrounding each and the existing built environment between these sites and the Project Site, the visibility of the Project is not anticipated to result in significant adverse impacts.

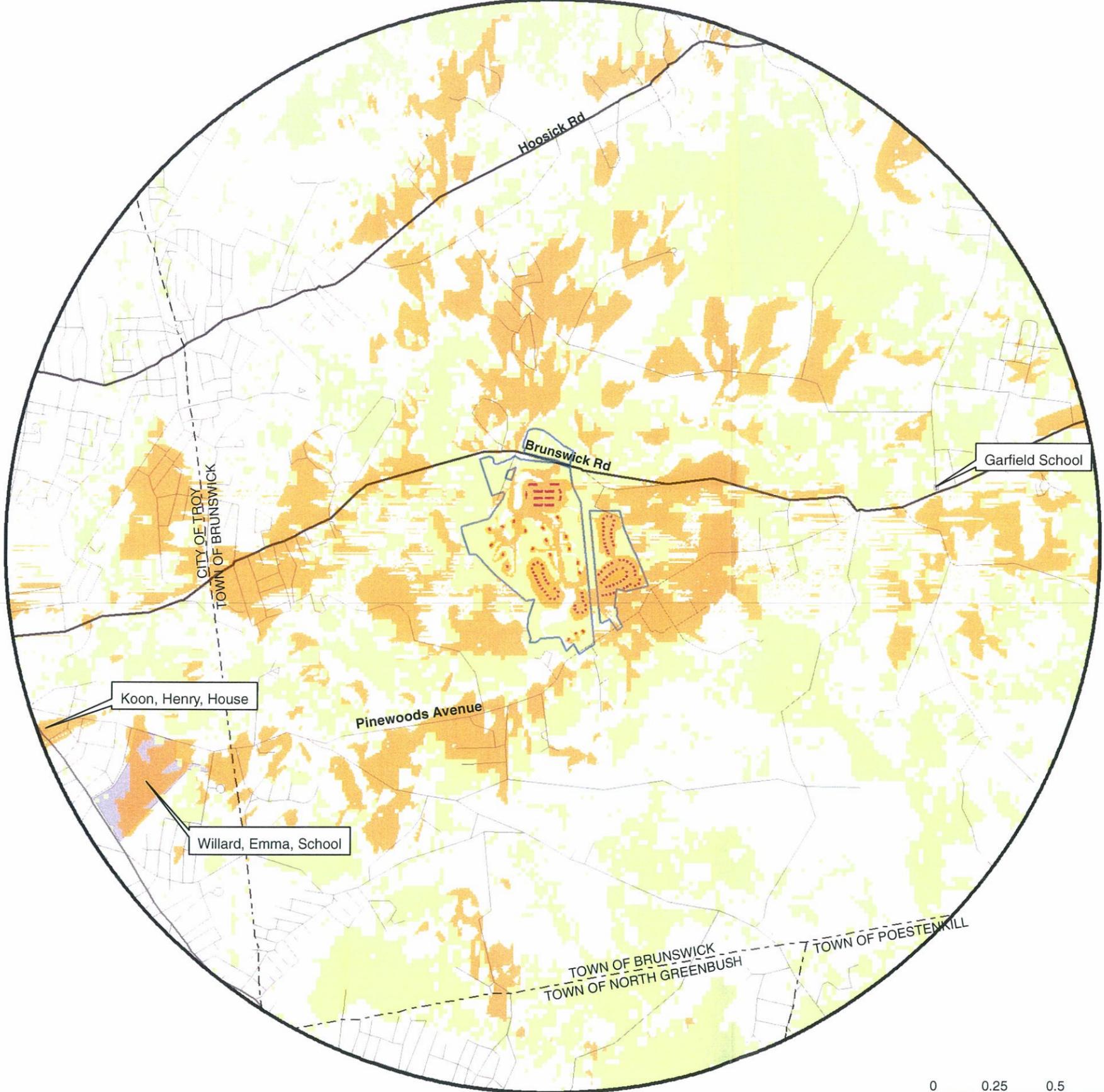
Most of the observers of the proposed residential development will be local residents in the adjoining existing residential subdivisions as well as commuters on NYS Route 2. Residents immediately adjacent to the proposed development are likely to have the best understanding of the local aesthetic character and existing site conditions and therefore may consider the visibility of the Project as an adverse impact. They know the local landscape and may be sensitive to changes in particular views that are important to them. Based upon the NYSDEDC Program Policy "Assessing and Mitigating Visual Impacts, July 31, 2000", the identified adjoining residential subdivisions are not considered aesthetic resources of local, state or national significance and therefore the visibility of the Project from these areas is not considered a significant adverse impact. Further, for those local residents that may be sensitive to changes in the landscape their sensitivity may be diminished over time due to repeated exposure.

Another group of viewers will be “through travelers.” This group includes non-local viewers such as those using Route 2 to travel from the Capitol District to Vermont. These viewers are typically moving and would be exposed to views of the project intermittently, peripherally and/or for short duration. Further, NYS Route 2 is not considered an aesthetic resource of significance pursuant to NYSDEC, and therefore, the Project Visibility from the road is not considered a significant adverse environmental impact.

If the Project is visible from the Troy County Club even after the proposed mitigative plantings, such visibility also does not rise to the level of a significant adverse environmental impact as the golf course is not a listed aesthetic resource of significance.

VIEWSHED ANALYSIS

Figure 15A
 Carriage Hill Estates
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- KEY**
- 2-MILE BUFFER
 - PROPOSED PROJECT BOUNDARY
 - PROPOSED BUILDING
 - VISIBILITY FROM PROPOSED BUILDINGS
 - FOREST
 - NATIONAL REGISTER SITE
 - MUNICIPAL BOUNDARY

NOTE: Viewshed calculated from a series of elevation points representing building corners of proposed buildings. See report for complete description of viewshed methodology.

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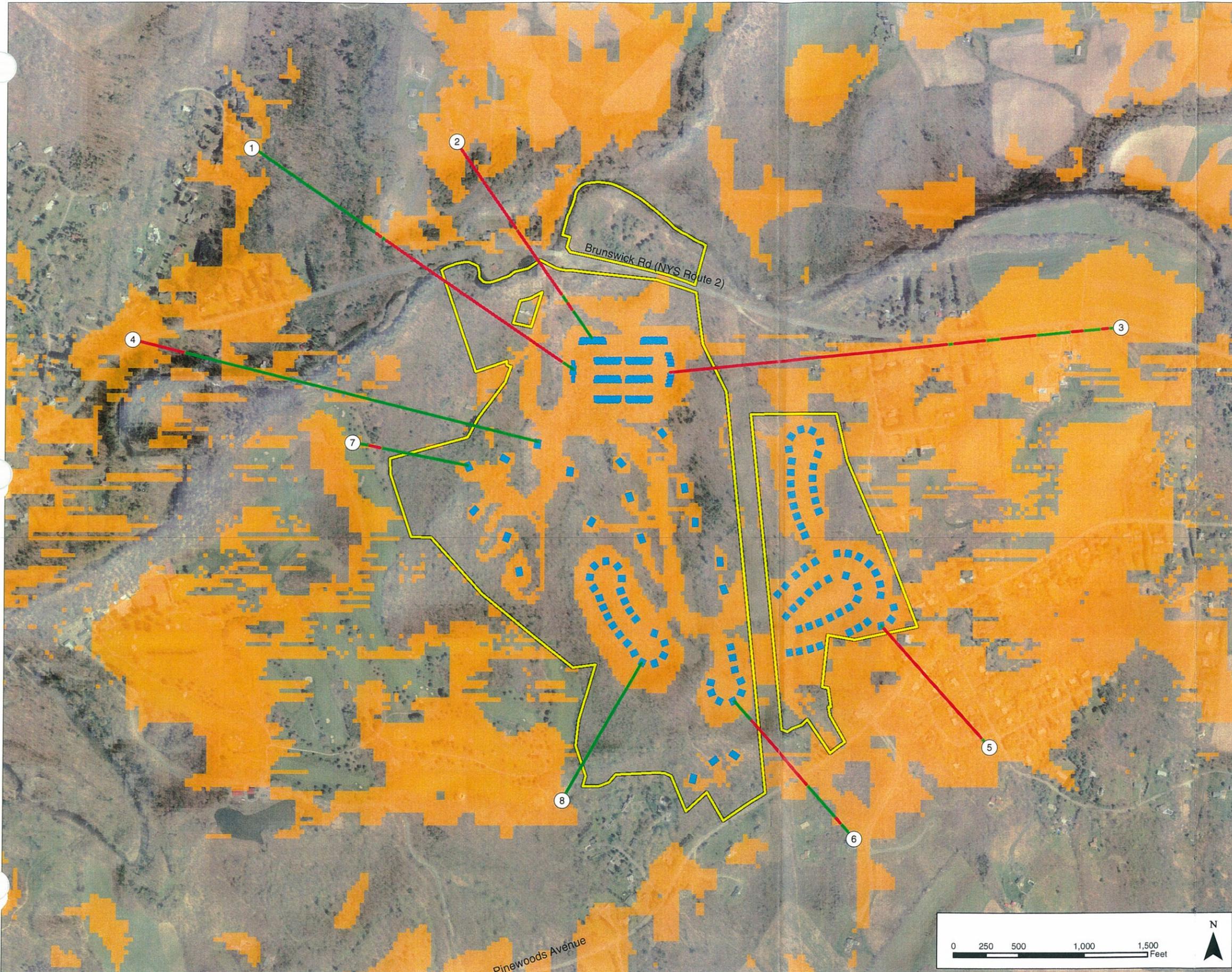


LINE OF SITE ANALYSIS

Figure 15B
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KEY

- PROPOSED PROJECT BOUNDARY
 - - MUNICIPAL BOUNDARY
 - PROPOSED BUILDINGS
 - VISIBILITY FROM PROPOSED BUILDINGS
 - LINE OF SITE
 - VISIBLE FROM ORIGIN
 - NOT VISIBLE FROM ORIGIN
 - LINE OF SITE ORIGINS
1. BRUNSWICK HILLS DEVELOPMENT
 2. HIGHLAND HILLS DEVELOPMENT
 3. NYS ROUTE 2 - EAST
 4. NYS ROUTE 2 - WEST
 5. PINE WOODS HILLS DEVELOPMENT
 6. EAGLE RIDGE DEVELOPMENT
 7. TROY COUNTRY CLUB 7TH FAIRWAY
 8. TROY COUNTRY CLUB 5TH TEE



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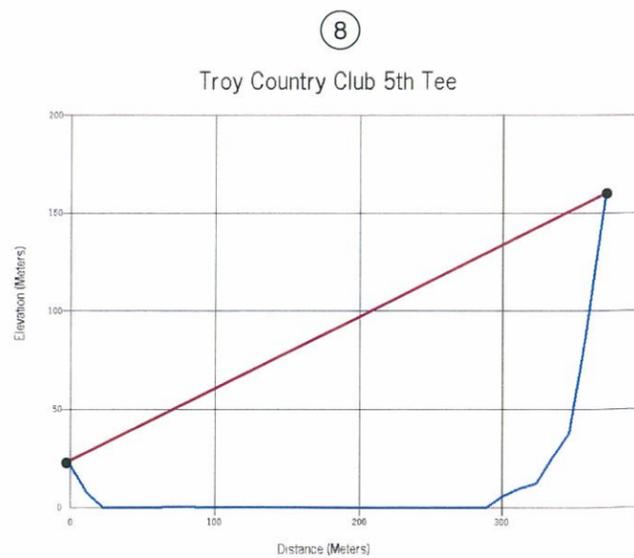
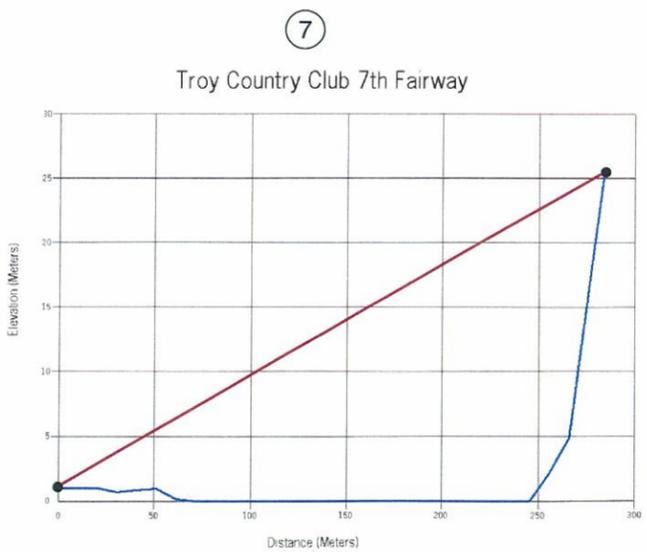
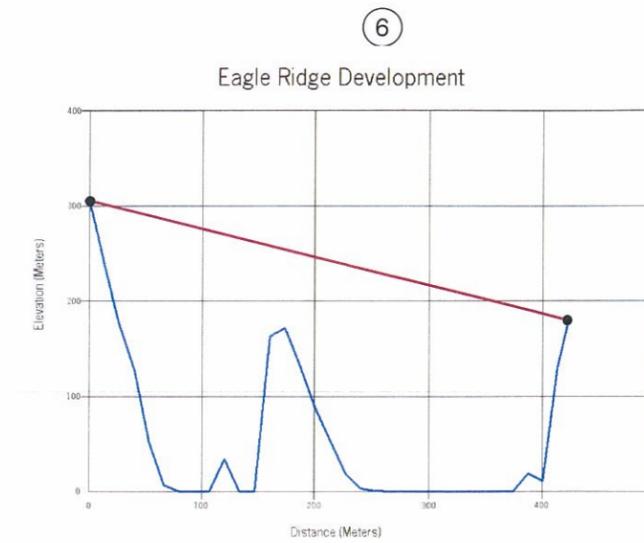
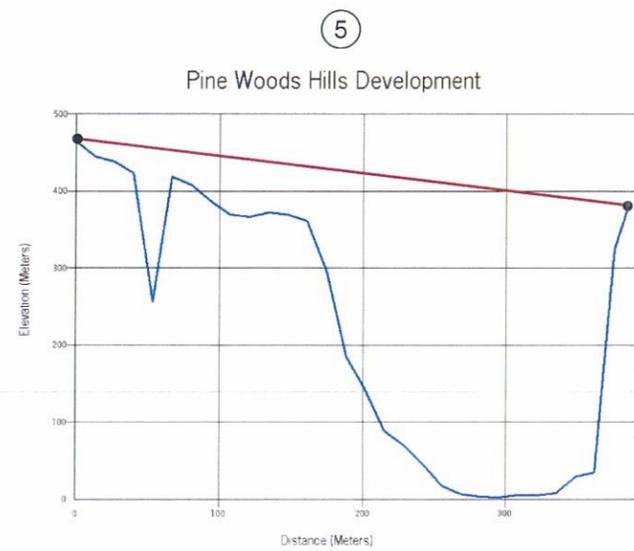
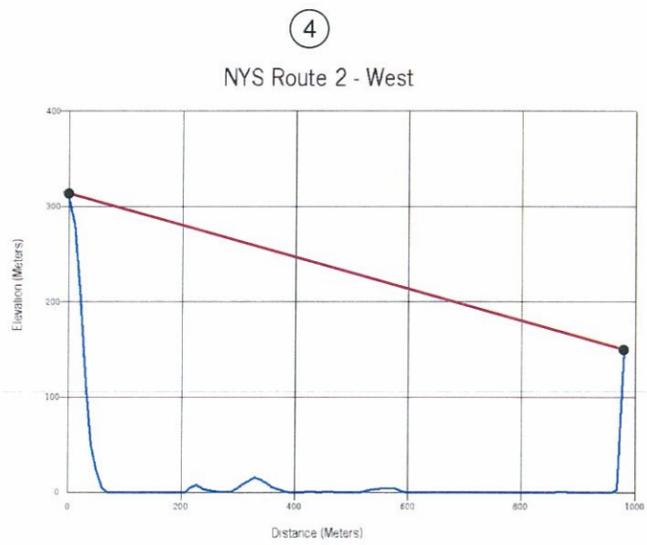
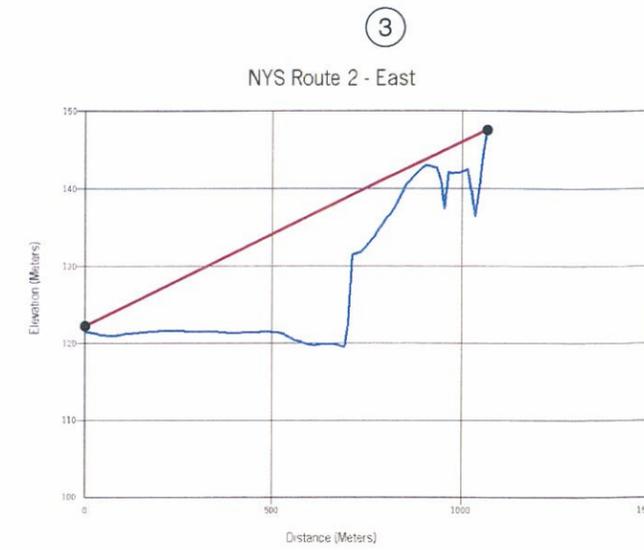
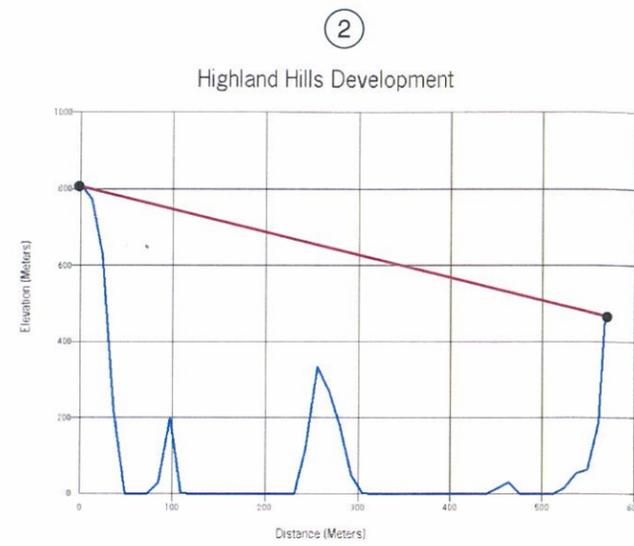
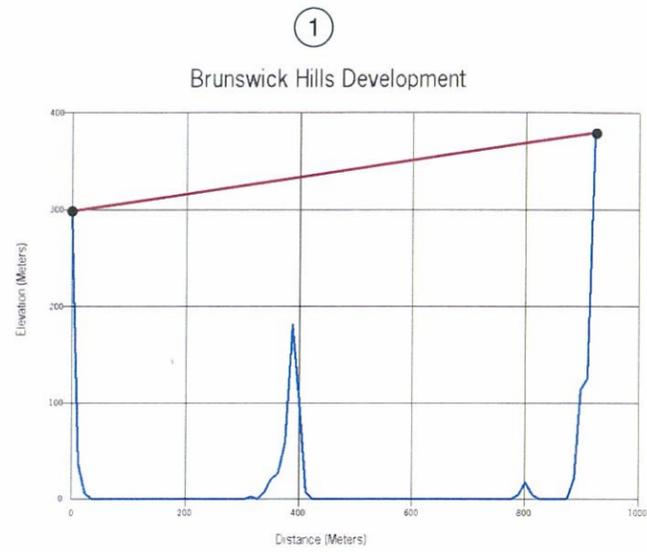
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LINE OF SITE PROFILES

Figure 15C
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