STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

MERIDEN GAS TURBINES, LLC CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY AND PUBLIC NEED FOR A 530 MW COMBINED CYCLE GENERATING PLANT IN MERIDEN, CONNECTICUT. **Reopening of this docket pursuant to Conn. Gen. Stat. § 4-181a(b) limited to Council consideration of changed conditions and Decommissioning Plan.**	:	DOCKET NO. 190B July 9, 2013

PRE-FILED TESTIMONY OF MICHAEL LIBERTINE

Q.1. Please state your name and position.

My name is Michael Libertine. I am the Director of Siting and Permitting for All-Points Technology Corporation, P.C. ("APT"). Additional biographical and background information is contained in **Exhibit CITY-7**.

Q.2. What is the purpose of your testimony?

The purpose of my testimony is to discuss the environmental impacts of Meriden Gas Turbines, LLC's ("MGT") 530-megawatt combined-cycle electric generating facility (the "Project") at 500 South Mountain Road in Meriden (the "Site") that have occurred since the Connecticut Siting Council (the "Council") issued its Decision and Order ("D&O") granting a certificate of environmental compatibility and public need (the "Certificate") for the Project in Docket No. 190 on April 27, 1999.

Q.3. Describe your involvement with the Project.

In 2012, I was asked by the City of Meriden (the "City") to review Docket 190 with respect to environmental issues including visibility, landscaping, wetland resources, and surface water runoff. The City requested that I identify environmental impacts that have occurred resulting from the construction of the Project and that I evaluate MGT's

compliance with the Council's D&O document, the approved development and management plans ("D&M Plans"), and the City's site plan, subdivision, and wetlands approvals.

Q.4. Identify the environmental issues that you identified related to the Project?

Based on available information, it is my opinion that MGT's commencement and subsequent abandonment of construction activities at the Site have resulted in a number of unforeseen adverse environmental impacts. Importantly, MGT has neither fully complied with the D&O nor fully implemented the approved D&M Plans. Specifically, I noted the following issues:

- The nature and extent of the visual impact of the Project appears greater than what was represented to the City and the Council. The existing Power Plant-Generator Building in particular is far more visible than predicted at the time of approval. The degree of visual impact resulting from the Power Plant-Generator Building is attributable to its height, mass and color; its location near the top of a prominent trap rock ridge; and the lack of any vegetative screening. I reviewed a part of a document filed in Docket No. 190 titled *Environmental and Community Effects of the Proposed Project* that included, as Section 4.10.3, a Visual Impact Assessment for the Project, prepared by MGT's consultant EarthTech. An excerpt containing Section 4.10.3 is attached as **Proposed Exhibit CITY-14**. Page 4-82 of the Visual Impact Assessment describes the visual characteristics of the site and its surroundings and suggests that visibility would primarily be restricted to areas south/southeast of the site and that those views would be limited based on the Project's distance, its design features to blend in with the surrounding environment, and the existence of buildings and landscaping within the Meriden downtown area. While it is true that views to the west are effectively shielded by the ridgeline of Cathole Mountain and the high points northward, views are achieved from several areas northeast, east, southeast and south of the site. The size and color of the Power Plant-Generator Building on the dominant ridge overlooking the City results in the facility being highly visible from numerous locations. The Visibility Impact Assessment focuses primarily on the Project's

exhaust stacks, which were proposed to rise to a height of 180 feet above grade, and not the Power Plant-Generator Building. The photographs presented in the EarthTech Visibility Impact Assessment depict the exhaust stacks as being visible from selected photo locations; the Power Plant-Generator Building and other infrastructure are largely absent, suggesting that the tree canopy and other intervening vegetation would almost entirely obscure the facility. The discussion concludes on page 4-100 "the Project is not anticipated to be visible from many of the surrounding locations. Where the Project structures will be visible the impacts are anticipated to be insignificant due the distance from the site, the limited amount of the facility which will be visible, the design of the plant, and the presence of existing buildings and other structures in the existing viewsheds." The Visibility Impact Assessment was based on a proposed building height of 72 feet; the structure was subsequently approved and built to a height of 82 feet.

In preparation for my testimony, I performed a visibility analysis of the Project. The visibility analysis map and photographs are attached as **Proposed Exhibit CITY-15**. My analysis demonstrates that the Project's visual impacts greatly exceed the impact predicted by MGT. The visibility analysis map depicts locations of within a two-mile radius of the Project site where views of the Power Plant-Generator Building can be achieved. This map is based on a combination of computer modeling and in-field verification via a vehicular reconnaissance. The accompanying Photolog contains photographs of existing conditions views from four representative locations. As the photographs demonstrate, despite the absence of the exhaust stacks, the Power Plant-Generator Building is, as one Council member put it, "highly visible and clearly sticks out in several locations. . . . it sticks out along [Interstate] 691, as well as over to the east side where there's an unobstructed view." Docket No. 190A, Transcript, August 24, 2010 (2:05 p.m.), Statements of Philip Ashton, p. 33.

My visibility analysis is consistent with comments made in an Intradepartmental Memo issued by the Connecticut Department of Environmental Protection ("CTDEP Memo") from Frederick Riese to Carmine DiBattista, dated February 14, 2000, **Proposed Exhibit CITY-16)**. In the CTDEP Memo, Mr. Riese opines that the

Project would be visible from many areas and prominently displayed to viewers in central and northern Meriden. Mr. Riese states that the "size and bulk of the facility, especially the generation building which will measure 160' x 90' and be 72' in height, at such a prominent location, will create a landscape feature which will be clearly seen above the city from much of Meriden." The CTDEP Memo also asserts that the Visibility Impact Assessment prepared for the Project understated the Project's prominence on the Meriden landscape in both the selection of receptor locations and the estimated visibility from some of the selected viewing points, including Downtown Meriden.

- The Project's visibility is intensified by MGT's failure to implement the required visual mitigation techniques. Visual mitigation measures proposed by MGT and approved by the Council consisted of architectural treatment (i.e. painting of the building) and landscape plantings to buffer direct views of the facility. The painting is ineffective (the color contrasts sharply with its surroundings) and the landscape plantings were never initiated.

  The **Council's Staff Report (dated 12/11/01)** identifies the proposed color for the building(s) as an earth-tone, described as a sandstone color. Presumably, the intent was to use a color on the structure that would be visually compatible with the surrounding trap rock setting. However, the color ultimately selected and used to paint the building may more accurately be characterized as a cream, which provides for a dramatic contrast when both viewed with the mountain as a backdrop and when the building's profile is silhouetted by the sky.

  The Council required the D&M Plans to include the "planting of new coniferous vegetation to provide ecological habitat, visual screening, and acoustical buffers . . . "architectural treatment of all building components to minimize visual effects on scenic resources." **Docket No. 190, Decision and Order, §§ 2.e. and 2.f.** The **Council's Staff Report (dated 12/11/01)** describes conceptual landscaping design envisioned at that time. Landscaping efforts were to include several shade and ornamental trees around the buildings and parking areas and, most notably, 90±

evergreens (white pine) were to be planted in clusters on the slopes of the access drive and at the base of the cut slope behind the facility to provide partial screening. No such plantings were implemented and today the Power Plant-Generator Building is unobstructed eastward by any intervening vegetation on the property. Had the plantings been completed at the time of the Project's construction, some softening effect would have been achieved by now, at least of the lower half of the Power Plant-Generator Building. After establishing itself, white pine can grow approximately three (3) feet per year.[1] If pine trees eight (8) to ten (10) feet in height had been planted in 2003, the trees would now be approaching 30 to 35 feet in height. At that height, the trees would provide some degree of visual mitigation.

- Wetland restoration activities were not completed as required by the Council in the approved December 13, 2001 D&M Plan. MGT was required to establish more than 35,000 sq. ft. of scrub shrub, wet meadow, marsh, and aquatic habitat to mitigate the removal and disturbance of existing wetlands. See Docket No. 190, Decision and Order, Finding of Fact #76. MGT stated in its response to Council Interrogatory Q-CSC-13 for Docket No. 370B (dated May 29, 2009) that "[n]o wetlands were created following the project."

- Stormwater controls required by the D&M Plans are incomplete at best, with several never having been installed. Deficiencies were identified by the City's Planning and Engineering Staff during field reviews in 2008 and 2012. City staff concluded that site work was either incomplete (based on the City's Planning and Zoning Commission site plan and subdivision approvals; substantially the same requirements contained in the Council's D&M Plans) or needed repair. See City of Meriden Planning Division Memoranda dated Sept. 4, 2008 and July 14, 2012, **Exhibits CITY-4 and CITY-5**. Deficiencies identified by the City staff included:

    1. A detention pond that was improperly constructed and lacked proper seeding at its base and along its sides;
    2. Overgrown vegetation present in drainage swales and detention pond;

[1] http://www.na.fs.fed.us/pubs/silvics_manual/Volume_1/pinus/strobus.htm

3. A lack of stormwater and erosion controls at rock slopes;
4. Large amounts of incomplete bituminous and concrete curbing;
5. Damaged catch basins, some requiring maintenance and others likely in need of replacement;
6. Lack of plantings for bank stabilization and slope restoration (trees, herbaceous plants and shrubs, sod and ground cover were never planted or had not been properly maintained to promote their survival); and,
7. Erosion of steep banks, particularly noted on the west side of the site.

I conducted inspections of accessible portions of the property in April and May 2013 and found the conditions similar to those noted above. It is apparent that no restoration or maintenance work has been conducted to address these deficiencies since the initial development of the Project.

In summary, MGT's abandonment of the partially-completed Project has resulted in a number of unforeseen adverse environmental impacts. The nature and extent of the visibility of the Project was substantially underestimated during the Docket proceedings. The visibility of the Power Plant-Generator Building is negatively enhanced by the incompatible color choice and lack of vegetative screening that MGT was required by the Council to establish and maintain. In addition, wetland restoration activities and proper installation and maintenance of stormwater controls as required by the D&M Plans were not implemented. Therefore, I believe that MGT's failure to comply with the requirements of the D&O and D&M Plans constitutes a changed condition.

Q.5. Were you able to access the Power Plant parcel for inspection of conditions on that part of the site?

No. I have not had the opportunity to inspect that portion of the site. My observations were limited to the access road and those portions of the Power Plant site that are visible from the locked gate at the terminus of Sams Road.

Q.6. In your opinion, do the unforeseen adverse environmental impacts you have identified justify the reopening of Docket No. 190 and the implementation of a decommissioning plan?

Yes. I believe the unexpected visible impacts associated with the Project, combined with MGT's failure to comply with the D&O and to fully implement the D&M Plans, have created a significant adverse effect on the environment that justify the reopening of Docket No. 190 and the implementation of a decommissioning plan.

When evaluating mitigation for softening the visibility of the Power Plant-Generator Building, the options are limited. Painting the surface of the structure a different color could improve the existing stark contrast, but that is a matter of personal taste. There is also the challenge of perspectives - the building can be seen from several locations both with and without a portion of the mountain as a background; those views where the building is silhouetted against the sky may not benefit to the same degree as those with the land form as a backdrop (or vice versa depending upon the color chosen). There is a possibility that a large-scale mural could be painted on the façade to resemble an abstract forest setting, but I would imagine the costs might be prohibitive. Any painting also requires upkeep, so there are additional long-term costs associated with maintenance. Extensive landscaping is required to provide any kind of substantive buffer, and trees planted today would not have an effect for numerous years. There is also a long-term maintenance effort associated with landscaping to ensure survival and adequate growth. I understand that the building is not necessarily suited for future redevelopment opportunities envisioned by the City. In light of that, and the facility's inoperative status, I think demolition of the Power Plant-Generator Building may be the best and most cost-effective visual mitigation option available, and it should be strongly considered as a critical component of any Decommissioning Plan.

It is clear from visual observations that the lack of implementing restoration activities and stormwater controls, combined with no apparent efforts to resolve these problems, has resulted in several inadequacies that are having a negative effect on the environment. Absent full compliance with the requirements of the D&M Plans, which

should also be part of a Decommissioning Plan, conditions at the site will only continue to deteriorate and cause additional adverse environmental impacts.

Q.7. Does this conclude your testimony?

Yes.

List of Proposed Exhibits

1. **Proposed Exhibit CITY-14** Report: *Environmental and Community Effects of the Proposed Project* (excerpts)
2. **Proposed Exhibit CITY-15** Visibility Analysis by All-Points Technology Corporation, P.C.
3. **Proposed Exhibit CITY-16** Memorandum from Frederick Riese to Carmine DiBattista, dated February 14, 2000

Proposed Exhibit CITY-14

Report: *Environmental and Community Effects of the Proposed Project* (excerpts)

practical and consistent with skill and operational requirements, employees will be hired from the local labor market. The small number of positions required is not expected to significantly affect population, labor or housing trends in the Meriden area. Similarly, this small number is not expected to represent an added burden to local utility services (potable water, sewer, roadway) or social services (schools, fire and police protection). Significant worker relocation into the area will not result from Project operation.

Demands of the operational facility on municipal services will be minimal. Electricity needs will be met internally. Adequate water supplies are available for the Project; the wastewater generated at the Project will be returned for treatment to the Meriden Wastewater Treatment Facility, and will comply with all limits established by that facility. On-site personnel will be trained in fire protection and emergency response measures, and will coordinate in advance with local providers to ensure appropriate protocols are in place prior to operation of the facility. The provision of first aid stations and fire suppression technology at the Project site will further minimize the need for local services.

The proposed Project represents a significant investment by the Applicant. The Project will result in an increase in the City of Meriden tax base as well as significant additional economic benefits to the community and workforce. Development of the proposed Project will be fully consistent with the provisions of the PDD zoning district and will further many of the objectives of that development district while allowing for protection of significant resources in the Project site vicinity. Overall socioeconomic and land use impacts from the proposed Project will be positive.

4.10 Visual

The Project's potential visual impacts were considered in the design and placement of the proposed Project. One consideration in siting the plant was to select a site from which visual impacts resulting from the Project would be minimal. The proposed site was selected in part due to the fact that the existing terrain will significantly buffer the surrounding areas from the proposed facility. Furthermore, by selecting a disturbed area the Project will minimally displace existing scenic resources.

practical and consistent with skill and operational requirements, employees will be hired from the local labor market. The small number of positions required is not expected to significantly affect population, labor or housing trends in the Meriden area. Similarly, this small number is not expected to represent an added burden to local utility services (potable water, sewer, roadway) or social services (schools, fire and police protection). Significant worker relocation into the area will not result from Project operation.

Demands of the operational facility on municipal services will be minimal. Electricity needs will be met internally. Adequate water supplies are available for the Project; the wastewater generated at the Project will be returned for treatment to the Meriden Wastewater Treatment Facility, and will comply with all limits established by that facility. On-site personnel will be trained in fire protection and emergency response measures, and will coordinate in advance with local providers to ensure appropriate protocols are in place prior to operation of the facility. The provision of first aid stations and fire suppression technology at the Project site will further minimize the need for local services.

The proposed Project represents a significant investment by the Applicant. The Project will result in an increase in the City of Meriden tax base as well as significant additional economic benefits to the community and workforce. Development of the proposed Project will be fully consistent with the provisions of the PDD zoning district and will further many of the objectives of that development district while allowing for protection of significant resources in the Project site vicinity. Overall socioeconomic and land use impacts from the proposed Project will be positive.

4.10 Visual

The Project's potential visual impacts were considered in the design and placement of the proposed Project. One consideration in siting the plant was to select a site from which visual impacts resulting from the Project would be minimal. The proposed site was selected in part due to the fact that the existing terrain will significantly buffer the surrounding areas from the proposed facility. Furthermore, by selecting a disturbed area the Project will minimally displace existing scenic resources.

surfaced with smooth painted metal panels as is typical of modern industrial buildings. The cooling tower, approximately 390 feet long by 52 feet wide and 50 feet tall, will be located to the southwest of the main generation building. Final determination of the stack height will be based on air quality and related analyses; it is currently proposed at 180 feet. This is an allowed height under the Meriden PDD zoning regulations.

The remaining facilities, including a variety of smaller buildings and miscellaneous storage tanks, will be of industrial appearance but considerably smaller and less prominent than the main structures. All buildings and the facility stack will be painted a neutral color to minimize visibility. In addition, landscaping plans will focus on screening and softening line-of-sight views of the Project site.

4.10.3 Visual Impact Assessment

4.10.3.1 Avoidance of Visual Impact Through Facility Location and Design

The potential visual impacts of the Project are not anticipated to significantly impact the viewsheds of surrounding receptors. The proposed Project site is immediately surrounded by large areas of undeveloped land and is located a significant distance from residential receptor locations. Being located a substantial distance from surrounding receptors will reduce any potential visual impacts which may result from the Project. The site is also situated within a depression on a hillside, and is surrounded in three directions by undeveloped ridge lines and hills. Mature hardwood forests cover a majority of the area. The existing terrain buffers surrounding areas from views of the Project. Therefore, the proposed site location is situated such that, due to distance, vegetation, and the existing terrain, visual impacts will be significantly minimized.

The Project has also incorporated design measures to minimize visibility. The Project footprint has been designed to be as compact as possible, requiring an area of approximately 36 acres. The exhaust stack height will be limited to the minimal height acceptable under Good Engineering Practices (180 feet). The facility will also be painted and landscaped to fit in with the existing character of the area to the maximum extent possible. These design features will ensure minimal visual impact.

Given the Project design characteristics and the proposed setting, it is not expected that the Project will be visually intrusive, or even visible, from most of the surrounding area. Existing vegetation, topography, distance from existing receptors, and the concentration of structures in an urban setting will all act as visual barriers which will either prevent or minimize views of the Project.

4.10.3.2 Computerized Modeling

In order to assess the potential visual impacts associated with the proposed Project site, a viewshed analysis of the surrounding area was conducted. Computerized methods were used to identify areas from which the stack or other elements of the facility might be visible. This screening of potentially impacted areas was done by creating a digital elevation model of the area from USGS topographic maps. To account for vegetation, the approximate extent of forested areas was digitized from recent aerial photographs (1991 and 1992), assigned a conservative height based on field reconnaissance, and combined with the elevation data to account for both terrain and vegetation. It is important to note that the digital elevation model does *not* account for existing houses and other structures, which, in urban areas such as downtown Meriden, greatly reduce the available viewsheds toward distant points.

Using the visibility function within the computer model, the areas from which the top of the stack could potentially be seen were identified (a GEP stack height of 180 feet above a base elevation of 375 feet above mean sea level was assumed). Views of the facility would potentially be available primarily from areas to the south and southeast. However, as discussed, most of these would be obstructed by existing houses and buildings in the densely developed urban setting. A very limited number of views would be expected from the north, east and west. At greater distances views are very limited or not discernible, irrespective of direction.

4.10.3.3 Choice of Viewshed Locations

Visual receptor locations within the study area were identified by the following process. Using the computerized modeling techniques described in section 4.10.3.2, locations where the Project may

impact existing viewsheds were identified. These locations were then examined to determine if sensitive receptors existed in the area. If it was determined that an area may be visually impacted by the Project, and there were sensitive receptors located in, or proximate to, the area, then the area was selected as a viewshed location. A field study was then conducted at the selected locations to confirm the results of the computer model analysis. The immediate area around the selected viewshed sites was surveyed to ensure the photographs taken represented the worst case scenario. To present a balanced assessment of overall potential visual impact, the viewshed analysis included representative locations from which the stack is not likely to be seen. The locations are listed in Table 4.10-1. These locations include the nearest and most predominant potential views surrounding the Project site.

All viewshed photographs were taken in August, 1998 using a digital camera. The pictures were taken to represent the views which would be experienced by an ordinary person looking at the proposed site from the location where the facility will be most visible. Computerized perspective views of the facility structures were generated for each location by creating a three-dimensional digitized model of the facility, positioning the viewer at the appropriate receptor point, and specifying a field of view equal to that of the 50 mm lens used to take the actual photographs. These perspective views were then superimposed on the viewshed photographs to present a depiction of the visual impacts to the surrounding areas that are anticipated to result from the proposed development.

Table 4.10-1 : Representative Viewshed Locations

Viewshed 1 - From Chamberlain Highway north of Park Drive (Berlin)
Viewshed 2 - From Hartland Terrace/Turkey Hill (Berlin)
Viewshed 3 - From Hicks Avenue at Beaver Pond (Meriden)
Viewshed 4 - From Reynolds Drive at Country Club Dr.(Meriden)
Viewshed 5 - From Kensington Avenue at Summary St. (Meriden)
Viewshed 6 - From North Colony and Amity streets (Meriden)
Viewshed 7 - From Dexter Avenue atop Buckwheat Hill (Meriden)
Viewshed 8 - From Elm and Silver streets (Meriden)
Viewshed 9 - From Wall St. at St. Patrick's cemetery (Meriden)
Viewshed 10 - From Pleasant and East Main streets (Meriden)
Viewshed 11 - Near south bank of Hanover Pond (Meriden)

4.10.3.4 Analysis of Viewshed Study

Photographs of these selected locations are presented in Figures 4.10-3 through 4.10-13. The Figures depict photographs which demonstrate the potential visual impacts of the Project by comparing pre- and post-construction views of the proposed site from the selected viewshed locations. The photographs demonstrate that the Project will not be visible from many of the surrounding areas. No visual impacts are anticipated from viewshed locations 2, 3, 8, 9, and 11.

Where the facility will be visible, it will not be easily discernible. The photographs show that limited visual impacts are anticipated from viewshed locations 1, 4, 5, 6, 7, and 10. Figure 4.10-3 depicts the view from Route 71 (Chamberlain Highway), north of Park Drive, northwest of the site. The figure demonstrates that the only part of the plant that will be able to be seen from this location is the very top of the stacks. The anticipated visual impact represents a minimal intrusion upon the existing viewshed. Figure 4.10-6 depicts the view from Reynolds Drive and Country Club Drive, southeast of the proposed site. The only part of the plant that will

(2) Photo Location

Figure 4.10 - 1

Photo Viewshed Locations

Existing

Build

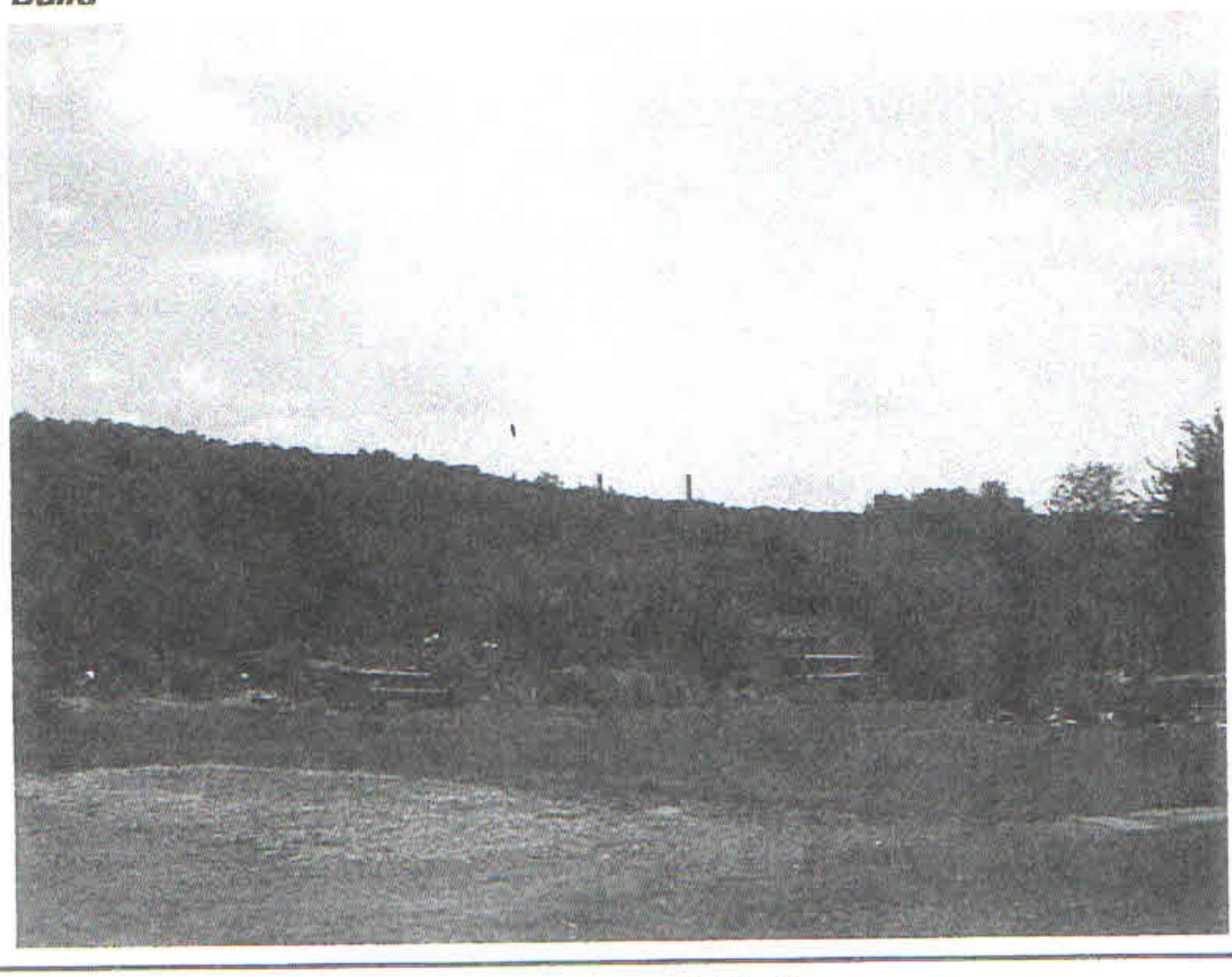


Figure 4.10 - 2
Photo Location 1
Chamberlain Highway North of Park Drive, Berlin

Existing

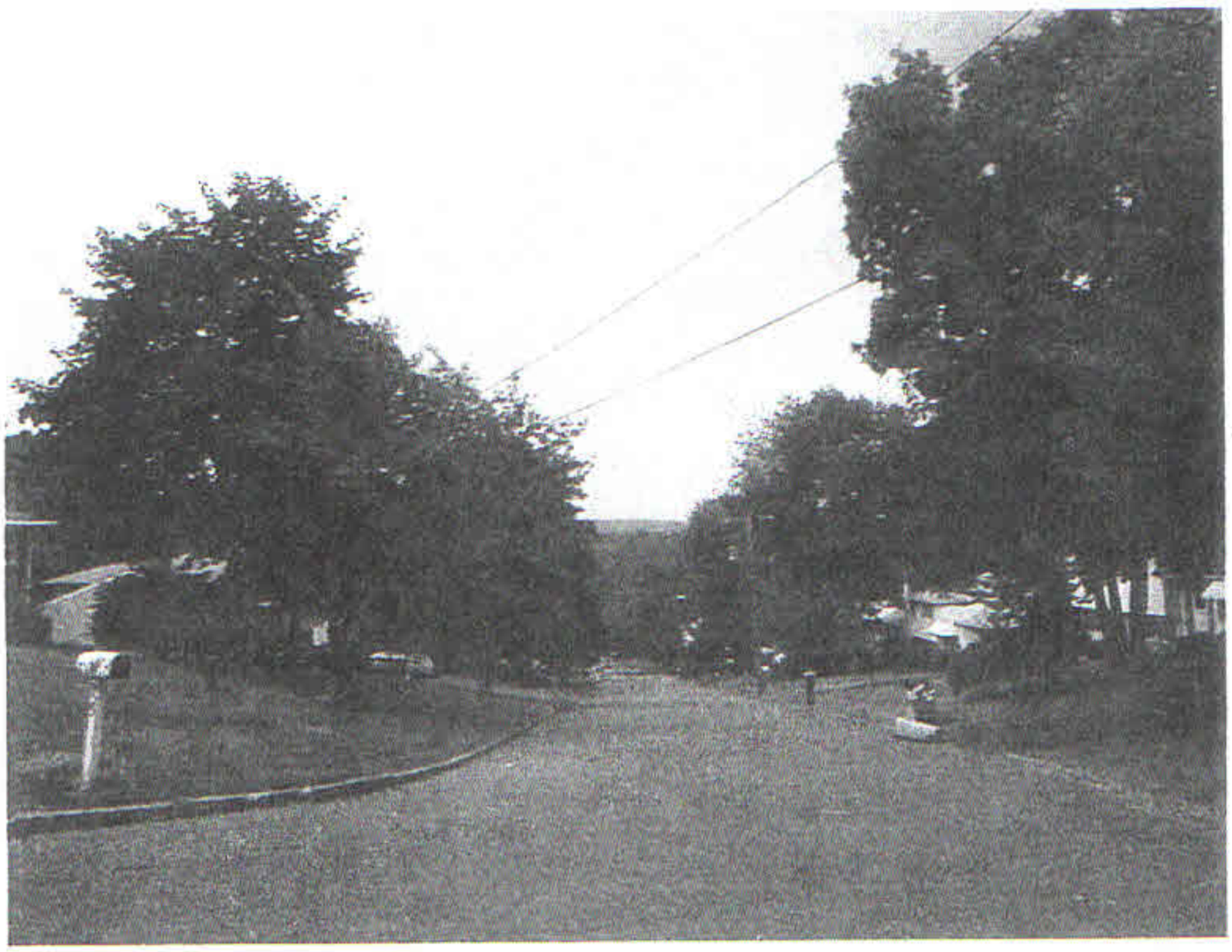
Build

Figure 4.10 - 3
Photo Location 2
Turkey Hill, Berlin

Existing

Build

Figure 4.10 - 4
Photo Location 3
South End of Beaver Pond



Existing

Build

Figure 4.10 - 5
Photo Location 4
Reynolds Drive and Shadycrest Road, Meriden

Existing

Build

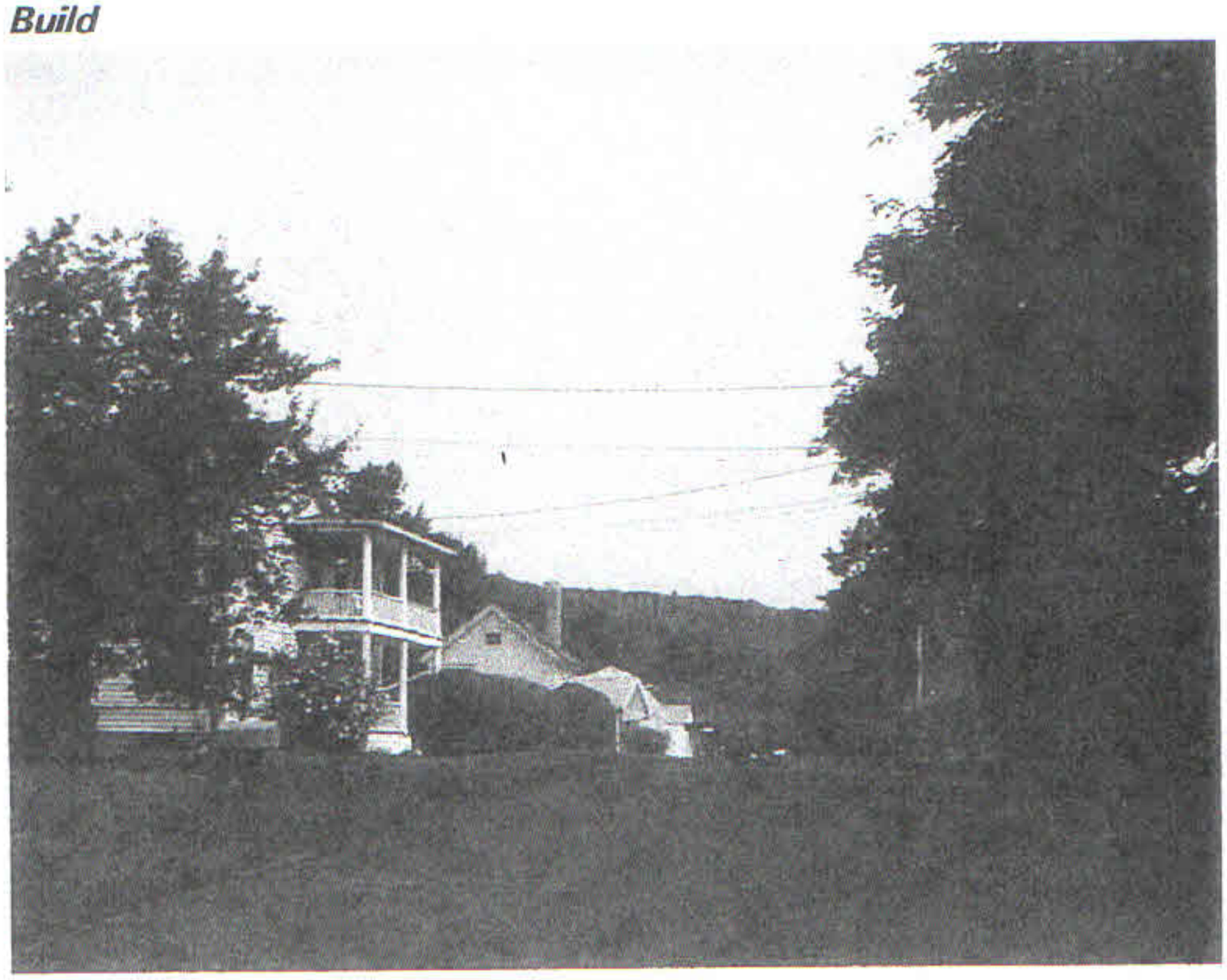
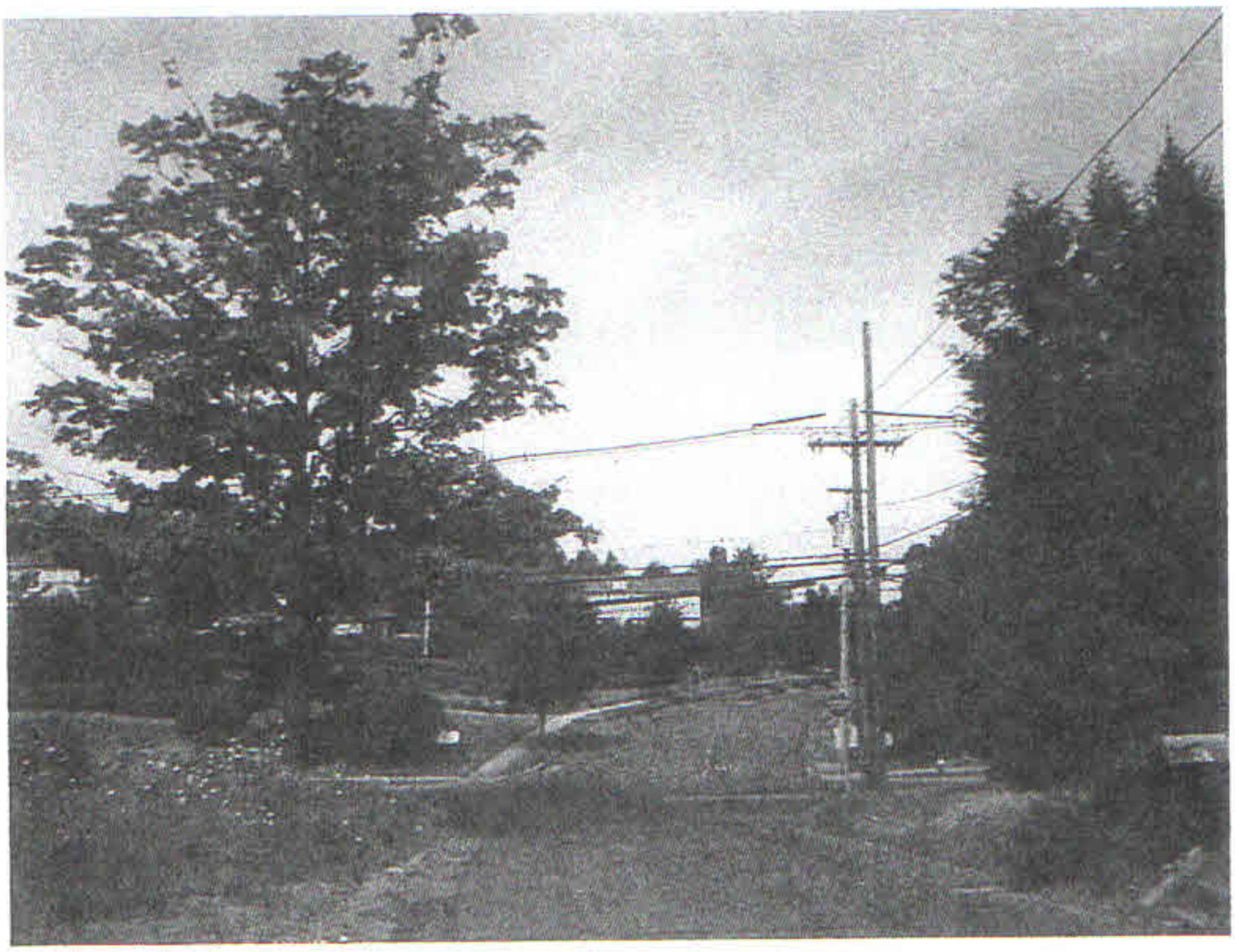


Figure 4.10 - 6
Photo Location 5
Kensington Avenue, Meriden



Existing

Build

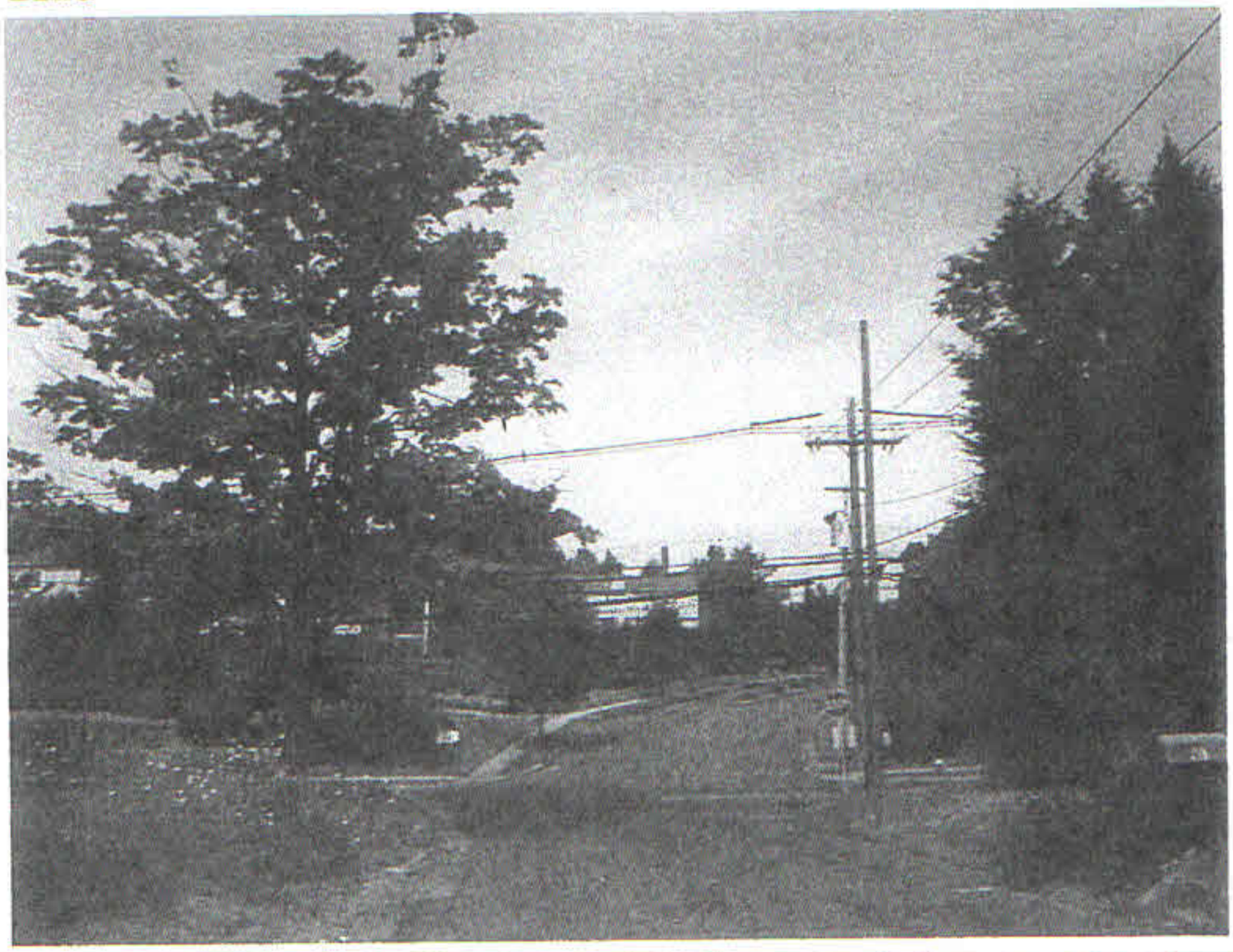
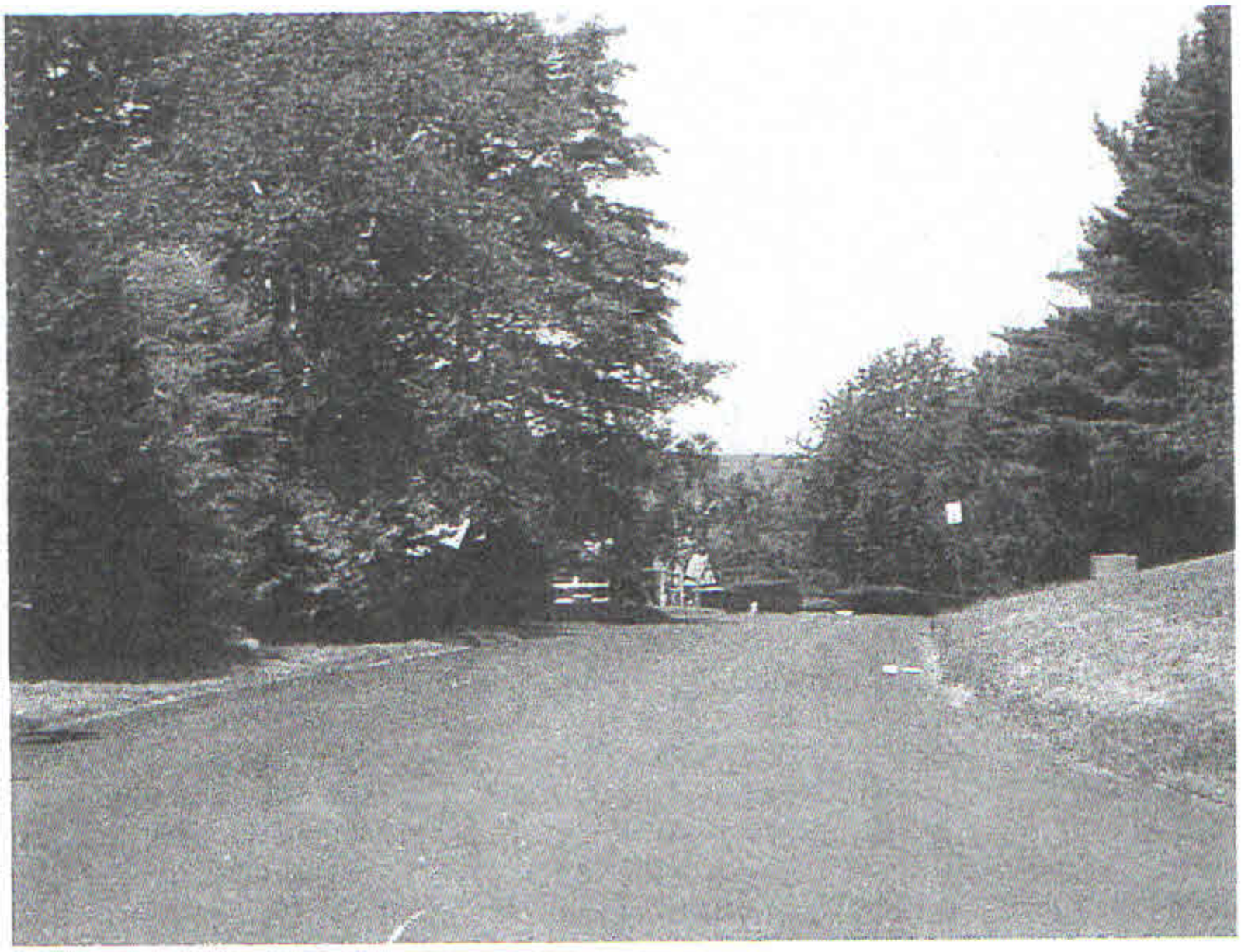


Figure 4.10 - 7
Photo Location 6
North Colony Street at Amity Street, Meriden



Existing

Build

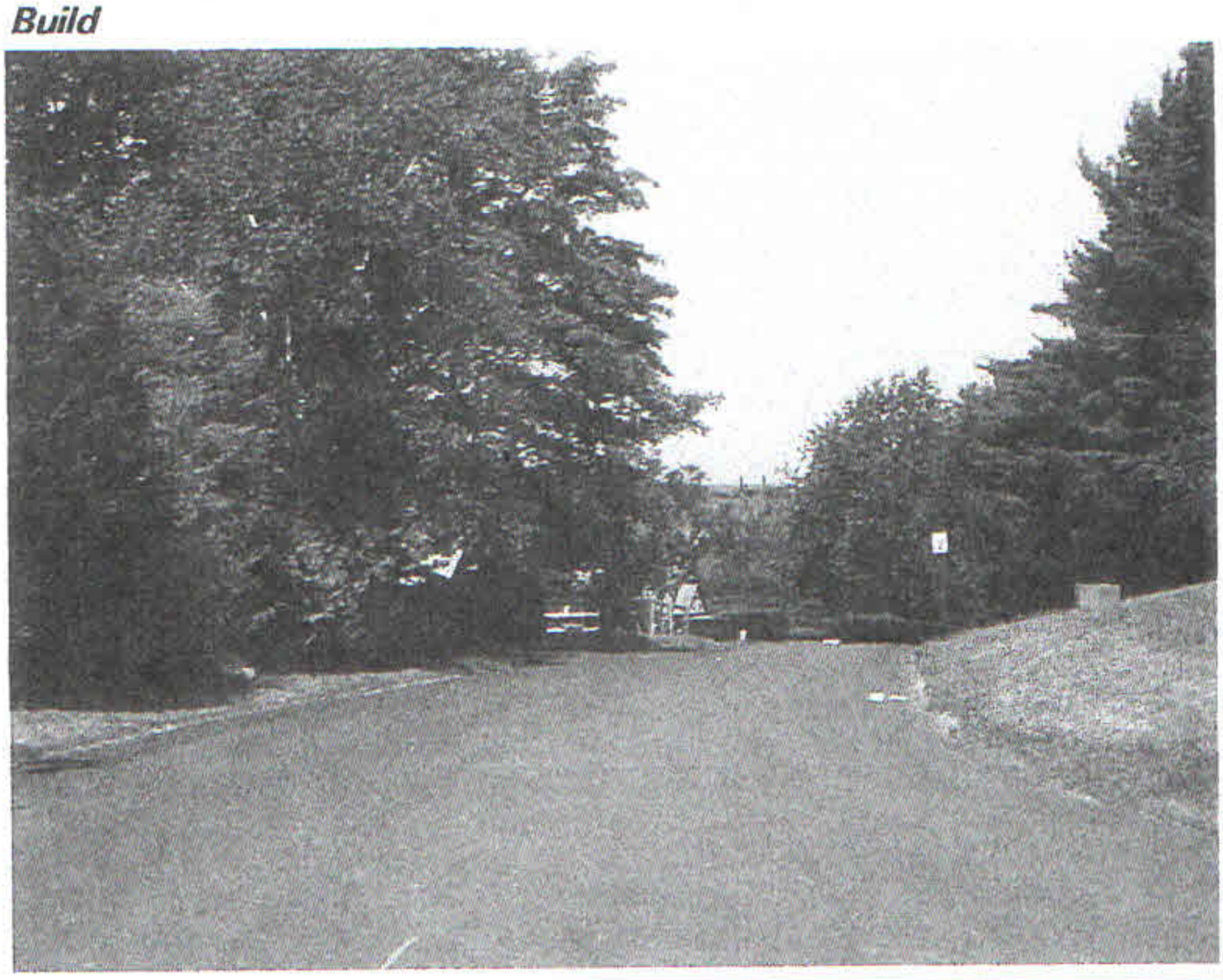


Figure 4.10 - 8
Photo Location 7
Buckwheat Hill, Meriden

Existing

Build

Figure 4.10 - 9
Photo Location 8
Elm Street and Silver Street, Meriden

Existing

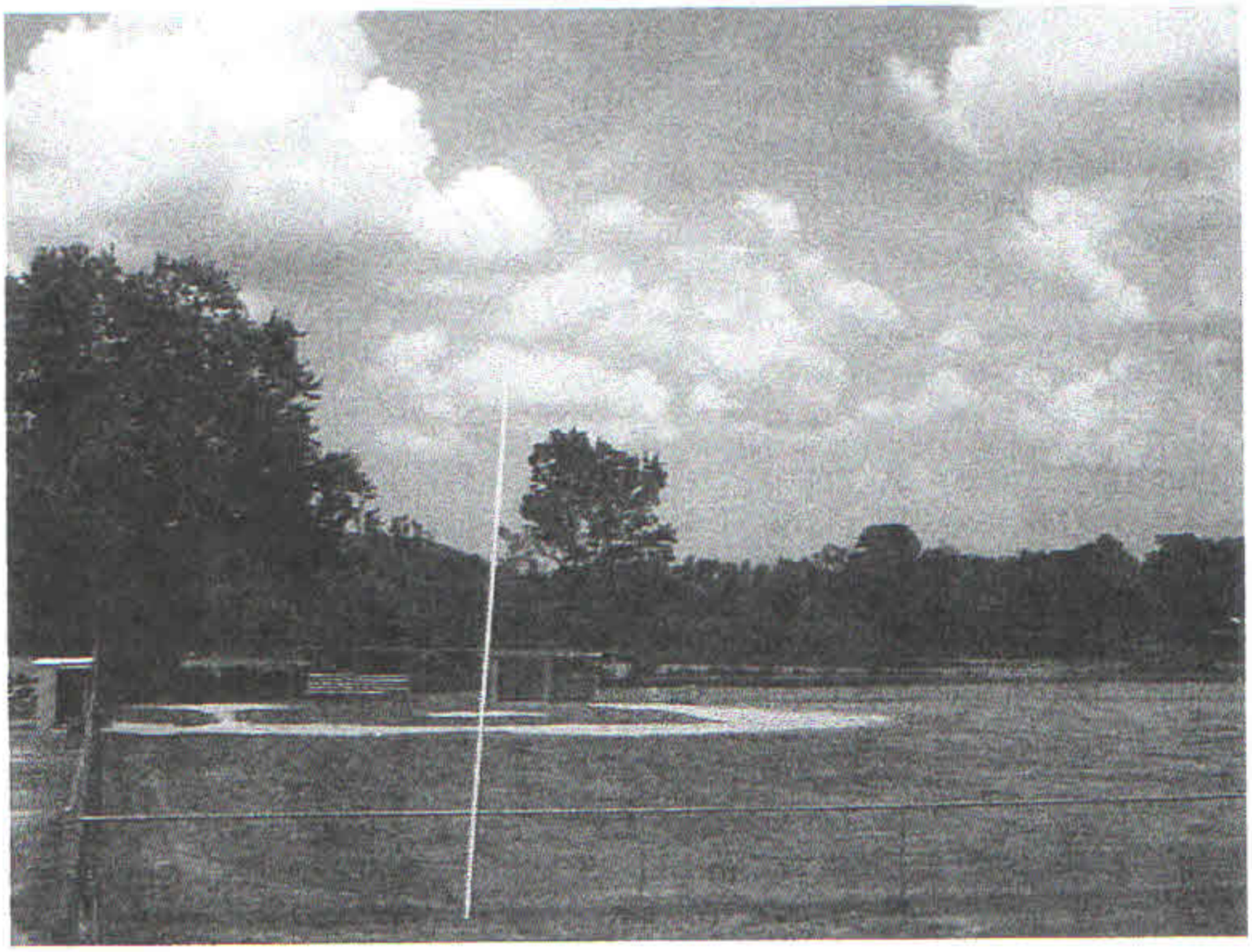
Build

Figure 4.10 - 10
Photo Location 9
Wall Street at St. Patrick's Cemetery, Meriden

Existing

Build

Figure 4.10 - 11
Photo Location 10
City Hall Vicinity, Meriden



Existing

Build

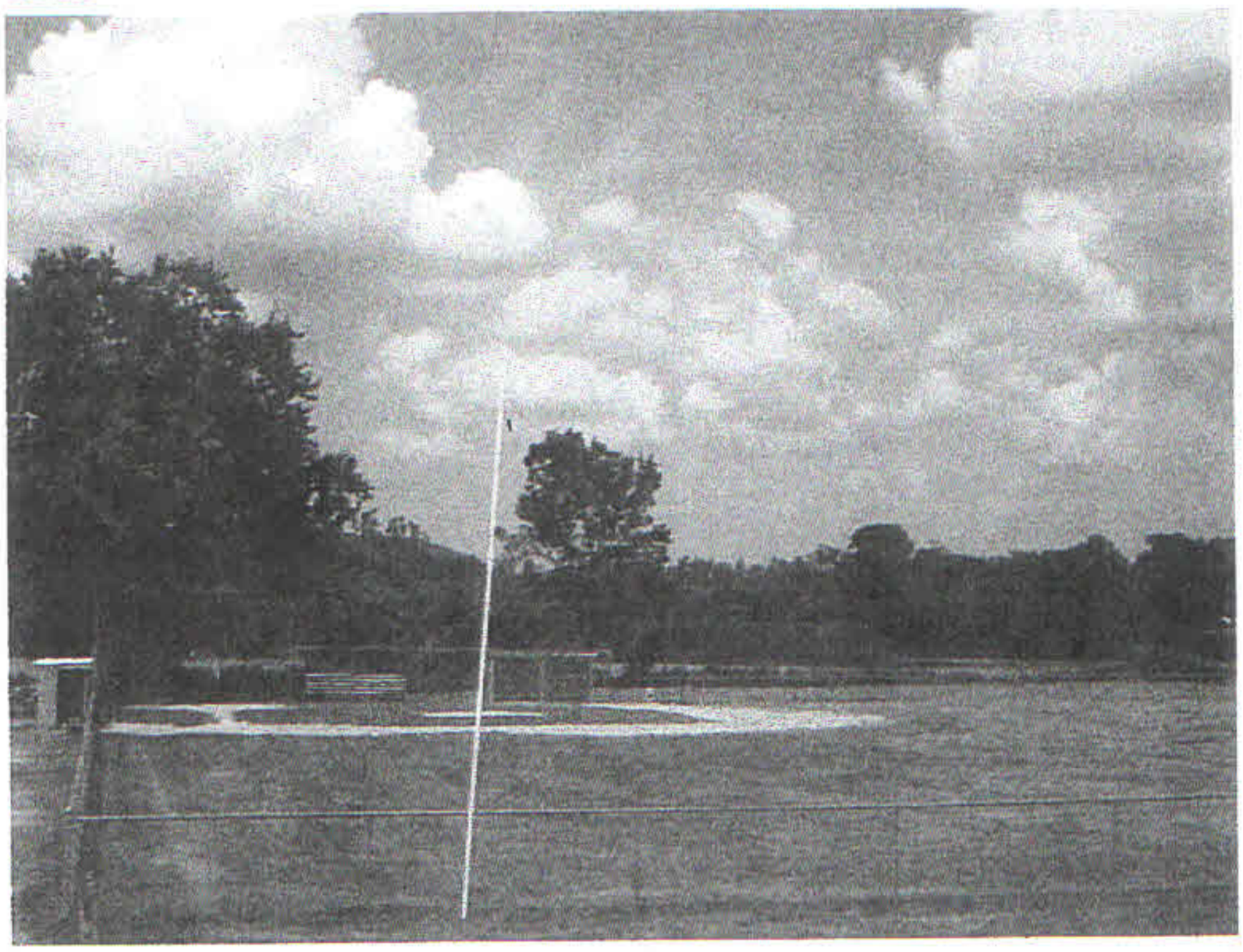


Figure 4.10 - 12
Photo Location 11
Habershon Field, Meriden

be able to be seen from this location is the very top of the stacks. The figure demonstrates that the limited amount of the facility which will be visible, combined with the viewing distance will result in minimal impact to the existing viewshed. Figure 4.10-7 depicts the view from Kensington Avenue and Summary Street, south of the proposed site. This figure demonstrates that only the top of the stacks are anticipated to be visible from this location, and that they will not be visible above the tree line. The fact that the stacks will not be above the tree line combined with the fact that they will be painted to blend with the existing landscape, will result in minimal impact to the viewshed from this location.

Figure 4.10-8 depicts the view from North Colony Street and Amity Street, southeast of the proposed site. This figure demonstrates that only the top of one of the stacks will be visible from this location and that there are existing utility poles and electrical lines and apartment buildings which are prominent in the existing viewshed. Due to the presence of the existing utility structures and apartment buildings, and the minimal amount of the facility which will be visible, the visual impacts to this viewshed area are anticipated to be insignificant. Figure 4.10-9 depicts the view from Buckwheat Hill (the top of Dexter Ave.), south of the proposed site. The figure demonstrates that only the top of the stacks are anticipated to be visible from this location. The figure also shows that this area is a significant distance from the proposed site, and that the distance greatly decreases the visual impact. Due to the minimal amount of the facility which will be visible and the significant distance from the site, the visual impacts to this viewshed area are anticipated to be insignificant. Figure 4.10-12 depicts the view from Pleasant Street and East Main Street (Meriden City Hall vicinity), south of the proposed site. The figure demonstrates that portions of the stacks and the facility structures are anticipated to be visible from this location. However, due to the significant distance from the facility, the fact that the facility is designed to blend with the existing landscape, and the fact that only a small part of the stacks will be visible above the tree line, the impacts at this location are considered to be insignificant. Furthermore, the figure also demonstrates that street lights, chimneys, the church steeple, and buildings are prominent in the existing

viewshed. The presence of these structures in the existing viewshed significantly reduces the visual impact of the Project facilities.

The above discussion demonstrates that the Project is not anticipated to be visible from many of the surrounding locations. Where the Project structures will be visible the impacts are anticipated to be insignificant due to the distance from the site, the limited amount of the facility which will be visible, the design of the plant, and the presence of existing buildings and other structures in the existing viewsheds.

4.11 Traffic

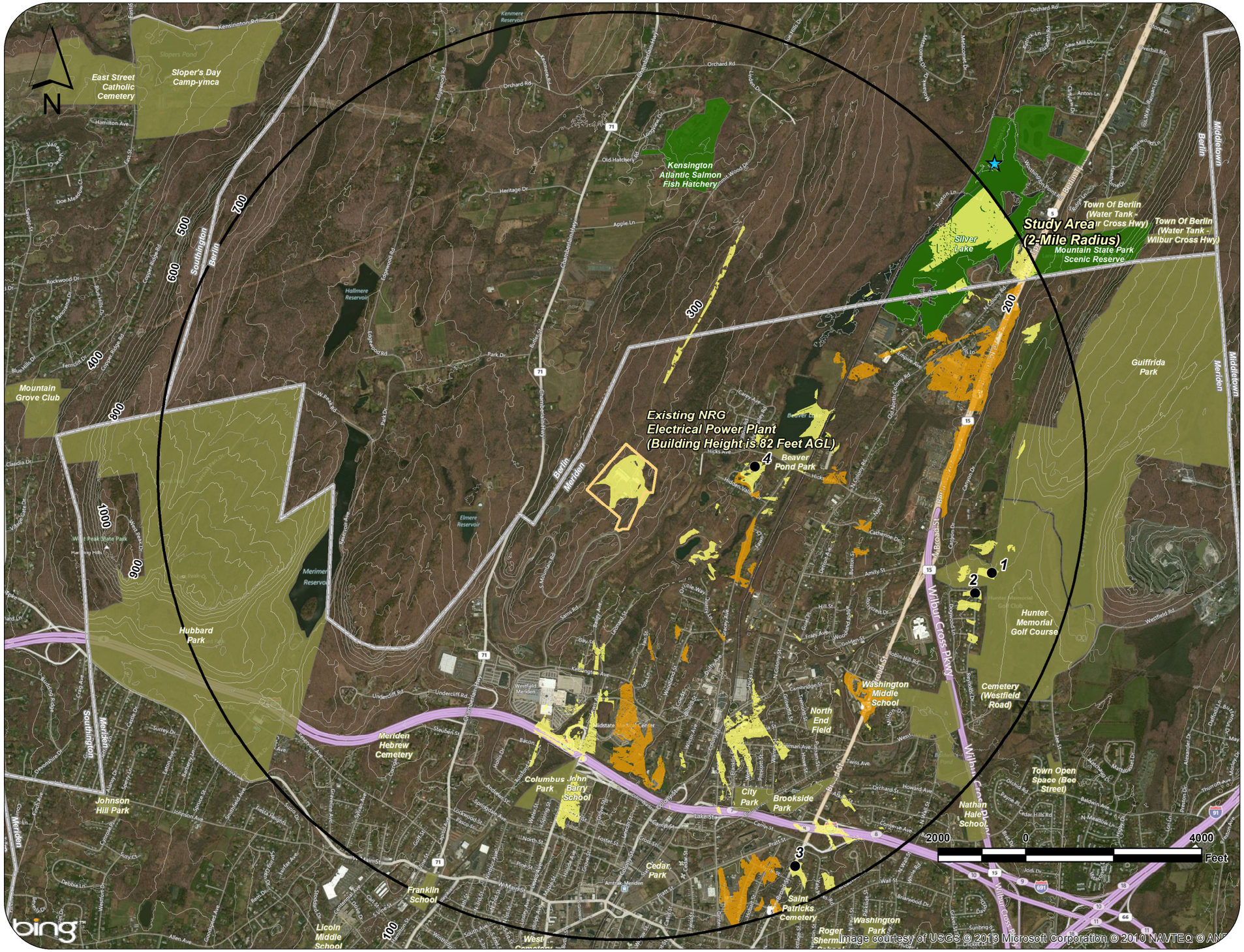
Construction and operation activities associated with the proposed Meriden Power Project will be designed to have minimal impacts to local traffic conditions. Scheduling and routing of traffic will be planned to ensure minimal overlap with anticipated times and locations of non-Project related traffic constraints. The following sections describe the analyses conducted to evaluate the potential traffic impacts associated with construction and operation of the proposed Project. As described below, analyses were conducted for the major intersections in the immediate vicinity of the site. These analyses of the traffic impacts associated with construction and operation of the Meriden Power Project are very conservative, i.e., relying on assumptions that traffic impacts from construction and operation will coincide partially or completely with non-Project related traffic peaks. These analyses show that the proposed Project will have a negligible impact on existing traffic conditions during operation, and that measures to mitigate construction-related traffic impacts will be employed such that no adverse impacts will result.

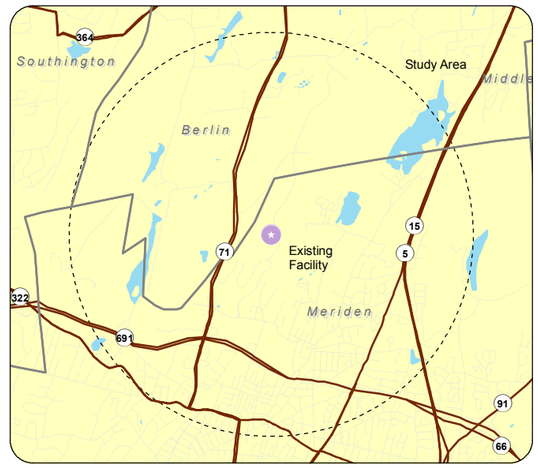
4.11.1 1998 Existing Conditions

In order to assess the potential traffic impacts of construction and operation of the proposed Meriden Power Project, existing traffic conditions were identified and analyzed. The study area for the purposes of this impact analysis included nine intersections: Lewis Avenue at the I-691 westbound ramp, Lewis Avenue at the Meriden Square east drive, Lewis Avenue at Kensington Avenue, Lewis Avenue at

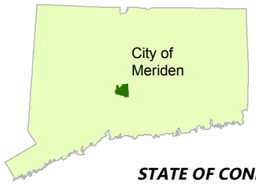
Proposed Exhibit CITY-15

Visibility Analysis by All-Points Technology Corporation, P.C.





PROJECT AREA AND VICINITY



STATE OF CONNECTICUT

Legend

- Subject Parcel (City of Meriden)
- Study Area (2-Mile Radius)
- Photographic Locations

Potential Visibility

- Year-Round Visibility
- Seasonal Visibility
- 50-Foot Contours
- 100-Foot Contours
- DEP Boat Launch
- Town Line
- Protected Properties (CTDEP, May 2007)
- Protected Properties (Municipal)
- Scenic Roads (None in Study Area)

VISIBILITY ANALYSIS MAP

EXISTING NRG ELECTRICAL POWER PLANT
600 SOUTH MOUNTAIN ROAD
MERIDEN, CONNECTICUT

NOTE:
- *Map compiled July 2012*
- *Viewshed analysis conducted using ESRI's Spatial Analyst.*
- *Visibility calculated for a 2-mile radius surrounding the existing facility.*
- *Height of existing building is 82 feet AGL.*
- *Existing tree canopy height modeled at 50 feet.*

DATA SOURCES:
- *Digital elevation model (DEM) derived from Connecticut LiDAR-based Digital Elevation Data (collected in 2000) with a 10-foot spatial resolution produced by the University of Connecticut and the Center for Land Use Education and Research (CLEAR); 2007*
- *Forest areas derived from 2010 ESRI/Bing digital orthophotos with 1-foot pixel resolution; digitized by All-Points Technology Corp., 2012*
- *Base map comprised of Meriden USGS 7.5-Minute Topographic Quadrangle Map*

ALL-POINTS TECHNOLOGY CORPORATION

Photo Location 1: View from Hunters Golf Course looking west toward site. Photographed with 50 mm lens setting.

Photo Location 1: View from Hunters Golf Course looking west toward site. Photographed with 180 mm lens setting.

Photo Location 2: View from Reynolds Drive, looking west. Photographed with 50 mm lens setting.

Photo Location 2: View from Reynolds Drive, looking west. Photographed with 180 mm lens setting.

Photo Location 3: View from Broadview Terrace looking northwest toward site. Photographed with 50 mm lens setting.

Photo Location 3: View from Broadview Terrace looking northwest toward site. Photographed with 180 mm lens setting.

Photo Location 4: View from Quiet Brook Court, looking southwest. Photographed with 50 mm lens setting.

Photo Location 4: View from Quiet Brook Court, looking southwest. Photographed with 180 mm lens setting.

Photo Location 3: Leaf-on view from Broadview Terrace looking northwest toward site. Photographed with 50 mm lens setting.

Photo Location 4: Leaf-on view from Quiet Brook Court, looking southwest. Photographed with 50 mm lens setting.

View from Broad Street overpass I-691, looking northwest. Photographed with 50 mm lens setting.

Photo of detention pond with no vegetation established.

Proposed Exhibit CITY-16

Intradepartmental Memo from Frederick Riese to Carmine DiBattista, dated February 14, 2000

STATE OF CONNECTICUT
DEPARTMENT OF ENVIRONMENTAL PROTECTION

INTRADEPARTMENTAL MEMO

TO: Carmine DiBattista, Bureau Chief, Air Management
FROM: Frederick Riese, Sr. Environmental Analyst, Environmental Review Fred Riese
TOPIC: Ridgeline Policy Analysis for PDC-El Paso Meriden Power Project
DATE: February 14, 2000

Pursuant to a request of January 20, 2000 from Chris James to Dave Fox, I have reviewed the Visibility Impact Assessment for the PDC- El Paso Meriden Power Project relative to DEP's Ridgeline and Summit Protection Policy. This review was performed because the site of the proposed Meriden Power Project is atop Cathole Mountain, a ridgeline specifically recognized in Public Act 95-239 as meriting special protection and made eligible for special local zoning restrictions. DEP's review of PDC- El Paso's air permit application qualifies as an indirect action by the department subject to review under the Ridgeline and Summit Protection Policy. In performing the review pursuant to this policy, I have evaluated (1) the Earth Tech Visibility Impact Assessment, (2) the visibility analysis contained in PDC- El Paso's application to the Connecticut Siting Council (Docket No. 190) for the Meriden Power Project, (3) the Council's Decision and Order in that docket, (4) DEP's Ridgeline and Summit Protection Policy, and (5) visited the site and several areas in downtown and north central Meriden within the viewshed of the Meriden Power Project site.

The rationale for ridgeline and summit protection lies in the twofold significance of (1) the visual values of these areas upon our landscape and (2) in the habitat, geologic, natural history and educational values these geologic features offer. To this end, state efforts to protect these areas aim to discourage inappropriate development of ridgelines and summits, limit forest clearing, preserve distinctive plant and animal habitats, and protect the geologic, natural history and educational values of these areas.

In light of their project site location on a trap rock ridge, PDC- El Paso has taken steps to be consistent with these goals. The applicant has specified the use of neutral exterior colors for plant components to blend in as much as possible with background colors. The use of the cleared and roughly graded quarry site also reduces development impacts, although the Meriden Power Project will not fit completely within the existing quarry and will require substantial clearing and excavation at the site, mostly to the rear (northwest) side of the quarry. Finally, the applicant has pledged to preserve 105 acres of its larger land holdings beyond the immediate project site with permanent conservation easements or restrictions. These areas comprise 60 acres around the northern half of Beaver Pond, 30 acres of steep slopes circling the southern end of Cathole Mountain, and 15 acres containing wetlands and vernal pools immediately behind (northwest of) the power plant. The remainder of the 821-acre parcel not used for the power project will be deeded over to the municipalities of Meriden and Berlin.

Notwithstanding the above discussion, the development of the Meriden Power Project at the proposed site does not appear to be consistent with the goals and intent of the Ridgeline and Summit Protection Policy. The size and bulk of the facility, especially the generation building which will measure 160' x 90' and be 72' in height, at such a prominent location, will create a landscape feature which will be clearly seen above the city from much of Meriden. Standing atop the back wall of the quarry, approximately 50' above the grade of the level quarry bottom, unobstructed views across northern Meriden to Lamentation Mountain, Chauncey Peak and Higby Mountain, all named Public Act 95-239 ridges, are afforded. The former two features are approximately two miles from the plant site while Higby Mountain is roughly three miles distant. North central Meriden from Interstate 691 northward is clearly seen from the site. The Earth Tech Visibility Impact Assessment is accurate in noting that existing buildings and trees will block many views of Cathole Mountain from downtown and the northern Meriden valley, but it will certainly still be visible from many areas.

A detailed visibility assessment evaluating eleven sight lines was performed for the Connecticut Siting Council application and is referenced in the Earth Tech report. While there are certainly difficulties involved in the analysis of the visibility of a non-existent structure, it appears that the Docket 190 application's visibility assessment understated its prominence on the Meriden landscape in both the selection of receptor locations and the estimated visibility from some of the selected viewing points. Downtown Meriden is one case in point. From viewpoint #10, the church across the street from City Hall, the quarry face is clearly seen. The generation building, even without the 180' stacks, will rise above the height of the quarry wall. While no view was foreseen from St. Patrick's Cemetery in the analysis performed for the Siting Council, the quarry can be seen along portions of Broad Street from the same area on the eastern edge of downtown. Perhaps the most prominent views of the site and plant would be those from Interstate 691, especially westbound, from which Cathole Mountain and the quarry are clearly seen. Cathole Mountain is clearly a secondary ridgeline, in terms of height, compared to South Mountain or East and West Peaks, but it is closer to downtown Meriden than its taller brethren. A facility of the size and bulk of the Meriden Power Project at the Cathole Mountain site will be prominently displayed to viewers in central and northern Meriden. This does not seem to be consistent with the goals that the General Assembly had when it specifically designated Cathole Mountain as among the significant ridgelines in the state.

The Earth Tech Visibility Impact Assessment also analyzed the visibility of the plant from several other ridgelines and summits. Among its findings, it concludes (page 2-4) that "views of the facility will not be available from the stone tower" referring to Castle Craig on East Peak. Castle Craig was mentioned because it is a site that receives substantial public use from park visitors at Hubbard Park who climb the tower to take advantage of the panoramic views it affords. On my approach to the quarry site via the road which reaches the back of the quarry from the south, Castle Craig was clearly visible along most of this road, not finally disappearing from view until almost my entry onto the plant site proper. While the plant itself may not be seen from Castle Craig, the two 180' stacks certainly will be visible from there, at a distance of 9,000 feet.

At DEP's request, the applicant performed a plume analysis using the CALPUFF model. It appears that conditions which might result in more substantial plumes were excluded from consideration in the modeling by limiting modeling to the period from mid-April to mid-October, thus

avoiding cooler weather. Periods of calm wind conditions were also excluded. Both cooler weather and calmer conditions would favor more pronounced plumes. The CALPUFF analysis indicates plumes exceeding the height of the 180' stacks will occur, depending on wind direction, somewhere between 6% and 21% of the time. Plumes exceeding the height of the generation building will occur between 13% and 60% of the time depending on the wind direction relative to the cooling tower axis alignment. While we cannot comment on how accurate these estimates might be, any visible plume above the generation building height will add to the overall visual conspicuousness of the plant atop Cathole Mountain.

Concerning the protection of the habitat, geologic and other non-scenic values of Cathole Mountain, it should be noted that the aforementioned 105 acres which will be restricted from development are the only portions of the 821-acre site so protected. Though the Earth Tech report intimates that the remainder of the site is protected through its transfer to the two municipalities, at present there are no commitments from Meriden or Berlin to preserve any other areas of the property. If additional portions of the larger site were to be formally preserved in an undeveloped state, a protection which they do not enjoy now, it could be argued that this would offset other values lost at the site. The Connecticut Siting Council could attempt to address this issue in its approval of the Development and Management Plan for the Meriden Power Project. At present, the proposed transfer of unused portions of the site to Meriden and Berlin merely represent, as stated on page E-2 of the Earth Tech report, "...the POTENTIAL (emphasis added) for public enjoyment and use of the very resources afforded consideration in this policy." Therefore, it is premature to claim, as the following sentence does, that the development of the proposed project "... will enhance protection and public enjoyment of the resources, consistent with the intent of this policy." The Earth Tech report largely oversells the preservation benefits and underestimates the visual impacts of the project. On balance, as the proposal presently stands, it is not consistent with the goals and intents of the DEP Ridgeline and Summit Protection Policy. However, because the matter currently before the department involves a regulatory decision rather than a direct DEP action, the policy seeks to apply education and mitigation rather than absolute conformance. It appears that these objectives have been adequately met to the extent possible in siting such a large facility at this location.

Thank you for consulting with the Office of Environmental Review and providing us with the opportunity to review the Visibility Impact Assessment.

cc: Jane Stahl
David Leff
Chris James
Jude Catalano