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Landscape Architects, Architects,
Engineers, and Planners, P.C.

January 8, 2019

Honorable Chairman Ed Hemminger and Members of the Planning Board
Town of Farmington
1000 County Road 8
Farmington, NY 14425

Re: Photo Simulations
Delaware Solar Photovoltaic Project
466 Yellow Mills Road
Farmington, NY

Dear Honorable Chairman and Members of the Planning Board:

Delaware River Solar seeks approval from the Town of Farmington, NY to construct a solar (photovoltaic) project at 466 Yellow Mills Road. Saratoga Associates, Landscape Architects, Architects, Engineers, and Planners, P.C. was retained to provide photo simulations of the proposed project depicting how the project will appear from nearby vantage points.

To illustrate how the proposed photovoltaic installation will appear photo simulations were prepared from five (5) vantage points along Yellow Mills and Fox Roads. Photo simulations were based on existing condition photographs provided to Saratoga Associates by Delaware Solar and a second set of photos taken by Saratoga Associates.

Existing Conditions photographs taken by Delaware River Solar were originally saved at a resolution of 1280x760 pixels (approximately 1 mega pixel digital resolution). While this resolution is adequate to communicate the overall visual character of the existing condition scene, it is somewhat low to convey the fine detail of the proposed project being simulated. For this reason, photo simulations were generated at a resolution of 6000x 3375 (approximately 20 mega pixel). Thus, the resulting photo simulations display the background photograph at its original resolution and the simulated project elements at the higher resolution. Photo simulations at this resolution are labeled as VP1, VP2 and VP3. Please note these photographs were taken using a wide-angle

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lens which makes the scene appear farther from the observer than it would appear when viewed in the field.

A second set of photo simulations is provided using existing condition photographs taken by Saratoga Associates. These photographs were taken at a resolution of 6240x4160 (approximately 26 mega pixels). Photo simulations at this higher resolution are labeled as VP4 and VP5 and are provided in both a wide-angle lens (24mm focal length) and normal lens (50mm focal length) views. The wide-angle view is provided to illustrate a wider field of view in order to capture a majority of the proposed project within a single photo frame. Please note the wide-angle view makes the scene appear farther from the observer than it would appear when viewed in the field. The normal view provides a more scale-accurate representation of what an an observer would experience from that location.

Photo simulations were developed by superimposing a rendering of a three-dimensional computer model of the proposed Project and currently proposed landscape mitigation into the base photograph taken from each corresponding visual receptor. The three-dimensional computer model was developed using 3D Studio Max Design® software (3D Studio Max).

Simulated perspectives (camera views) were alighted within the corresponding base photograph for each simulated view by replicating the precise coordinates of the field camera position and the focal length of the camera lens used. Precisely matching these parameters assures scale accuracy between the base photograph and the subsequent simulated view. The camera's elevation (Z) value is derived from digital elevation model (DEM) data plus the camera's height above ground level. The camera's target position was set to match the bearing of the corresponding existing condition photograph as recorded in the field. With the existing conditions photograph displayed as a "viewport background," and the viewport properties set to match the photograph's pixel dimensions (enhanced 20 mega pixel resolution), minor camera adjustments were made (horizontal and vertical positioning, and camera roll) to align the horizon in the background photograph with the corresponding features of the 3D model.

To verify the camera alignment, elements visible within the photograph (e.g., existing buildings, utility poles, topography, vegetation, roads, etc.) were identified and digitized from digital orthophotos as needed. Each element was assigned a Z value based on DEM data and then imported to 3D Studio Max. A 3D terrain model was also created (using DEM data) to replicate the existing local topography. The digitized elements were then aligned with corresponding elements in the photograph by adjusting the camera target. If necessary, slight camera adjustments were made for accurate alignment.

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A daylight system was created matching the exact date and time of each baseline photograph to assure proper shading and shadowing of modeled elements.

Once the camera alignment was verified, a to-scale 3D model of the proposed photovoltaic project was merged into the model space. The 3D model of solar project was constructed based on information and dimensions found in the site plan documents previously submitted to the Planning Board. The 3D model was constructed in sufficient detail to accurately convey visual character and reveal impacts. The scale, alignment, elevations and location of the visible elements of the proposed tower are true to the conceptual design. Post production editing (i.e., airbrush out portion of project that falls below or behind foreground topography and vegetation) was completed using Adobe Photoshop software. The 3D model and its placement within the existing condition photograph accurately represents the location, height and visual character of the proposed project.

Photo simulations are provided in Appendix A.

Thank you for your attention to this matter.

Matthew W. Allen, RLA
Principal
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Landscape Architects, Architects, Engineers, and Planners, P.C.

Attachment A

Photo Simulations