Appendix H-3
Dynamic Earth Correspondence
July 8, 2019

DYNAMIC
ENGINEERING EARTH SURVEY TRAFFIC

Dynamic Earth, LLC
www.dynamic-earth.com
50 Park Place, Mezzanine Level
Newark, NJ 07102
T. 973-755-7200

Date: July 8, 2019
Via email: *jtsunis@northwindgroup.com*

THE PRESERVE AT INDIAN HILLS, LLC
c/o THE NORTHWIND GROUP, LLC
One Rabro Drive, Suite 100
Hauppauge, NY 11788

Attn: Jim Tsunis

Regarding: **RESPONSE TO COMMENTS FROM TOWN OF HUNTINGTON**
The Preserve at Indian Hills
Northport, Town of Huntington, Suffolk County, New York
Dynamic Earth Project No.: 3114-99-001EC

Dear Mr. Tsunis,

As requested, this letter responds to geotechnical related comments dated June 3, 2018 *[I presume that 2018 is a typographical error, and it should read 2019]*, provided by the Town of Huntington regarding their review of the Draft Environmental Impact Statement for the above referenced project. Dynamic Earth, LLC (Dynamic) is uniquely qualified to respond to the Town of Huntington comments because Mr. Marc G. Dyer who is currently a Senor Geotechnical Engineer at Dynamic was previously employed by Paulus, Sokolowski and Sartor Engineering, PC (PS&S) and was intricately involved in the original Geotechnical Engineering Services Report, dated July 25, 2008, by PS&S for Phase I of the Bluff Area Stability Evaluation, and the subsequent Geotechnical Engineering Investigation and Slope Stability Analysis, dated January 14, 2019 (revised April 15, 2019), by PS&S for The Preserve at Indian Hills project.

COMMENT 2.1.2 Anticipated Impacts - ***"…identify potential impacts from topographic alterations including the potential for slope destabilization, erosion, and sedimentation;…historical rate of erosion and projected drainage changes;…"***

RESPONSE: As stated in the **Discussion and Evaluation** section on page 7 of the July 25, 2008 PS&S report, *"Slopes become unstable by either an increase in the driving forces, a decrease in the resisting forces, or a combination of both. Driving forces are typically increased when weight is added to the upper portion of the slope by water infiltration, fill placement, or surcharge loads (i.e., loads from traffic or structures). Resisting forces are typically decreased when the weight of soil is reduced at the lower portion or toe of the slope by either natural processes (i.e. erosion or scour along the water's edge) or mechanical excavation. It is also possible to decrease the resisting forces by lowering the shear strength of the supporting soils. An increase in the soil moisture content may result in a softening of the soil and a decrease of the shear strength of that soil. As such, groundwater plays an important factor in the stability of a slope because it can reduce the resisting force and increase the driving force."*

The impact of The Preserve at Indian Hills development on the stability of the slope was evaluated as part of the January 14, 2019 (revised April 15, 2019) PS&S report. As stated on page 4, "*The analyses indicate that by maintaining a minimum 120-foot buffer, the slope stability factor of safety for the proposed development was calculated to be the same as for the current existing conditions and therefore would not have an adverse impact on existing conditions. It is PS&S's recommendation that all proposed site improvements, including buildings, landscaping, etc., be maintained outside the 120-foot buffer zone.*"

In summary, as discussed in the aforementioned reports by PS&S, topographic alterations that raise grades within the 120-foot buffer zone and drainage changes that increase water infiltration within the 120-foot buffer zone would have an adverse impact on slope stability and potentially increase bluff erosion. It is recommended that site improvements, including raising grades and increasing surface infiltration, be limited to outside the 120-foot buffer zone.

COMMENT 2.1.2 Anticipated Impacts –***"The historical rate of erosion is not addressed."***

RESPONSE: The July 25, 2008 PS&S report reviewed topographic surveys dated 2000, 2002, 2003, and 2008 and documented surficial movements at 16 monitoring points throughout the subject area. A comparison of the topographic surveys indicated that the ground surface within the landslide impacted area (north of the CEHA line) generally moved downward and laterally northward toward the Long Island Sound. The 2008 topography also indicated that the rip rap revetment wall (beach shoreline erosion protection) reportedly constructed in 2002 had moved up to about 17 feet further north (outward) than where it was originally constructed. The monitoring points were surveyed eight times from March 24, 2008 through July 8, 2008 which indicated total movements ranging from about 4.5 inches to 7.4 inches within the landslide impacted area (north of the CEHA line) but relatively negligible movement outside the impacted area (south of the CEHA line). Historical documents indicate this northward land movement has been ongoing since well before 1904. However, the boundaries (location, length, width) of the landslide appear to be roughly the same since 1904 as supported by the location of the CEHA line which has not substantially changed since it was surveyed in the 1980s. Dynamic recommends that topographic surveying and surface monitoring be continued on a quarterly annual basis, and that additional surface monitoring points be established in the buffer zone in the area of the proposed development.

COMMENT 2.1.3 Proposed Mitigation –***"Determine potential impact of irrigation as related to added burden on underlying clay, slippage and slope failure."***

RESPONSE: As discussed in the aforementioned reports by PS&S, an increase in groundwater infiltration, as would occur from irrigation events, may result in softening of the underlying clay and a decrease of the shear strength of the soil which would have an adverse impact on the stability of the slope. Irrigation should not be performed within the 120-foot buffer zone and all surface water drainage and infiltration should be directed away from and outside the buffer zone.

COMMENT 2.2.1 Existing Conditions – ***"…describe subsurface geologic conditions;"***

RESPONSE: See reports by PS&S dated July 25, 2008 and January 14, 2019 (revised April 15, 2019) which discuss regional geology based on readily available public information and site-specific subsurface conditions based on subsurface investigations previously performed by Soil Mechanics Drilling Corp. in August 1994; Nelson and Pope, LLP in August 2001; Roux Associates, Inc. in September 2007; and PS&S in June/July 2018.

COMMENT 2.2.1 Existing Conditions – **"*Past, current and projected surficial movements are not discussed.*"**

RESPONSE: See response to Comment 2.1.2 above regarding the historical rate of erosion and documented surficial movements.

Feel free to contact us with any questions regarding these matters.

Sincerely,

DYNAMIC EARTH, LLC

Marc G. Dyer, P.E.
Senior Geotechnical Engineer
NY PE License No. 083672

Jeffrey W. Schaumburg, P.E.
Principal

O:\EARTH Projects\3114 The Northwind Group LLC\99-001EC Huntington\Reports by Dearth\FINAL REPORTS\Response to Huntington Comments (2019-0708).doc