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January 29, 2020

Project B1909819

Mr. Michael Roebuck
Ron Clark Construction, Inc.
7500 W 78th Street
Edina, MN 55439

Re: Slope Evaluation Letter
Crown Plaza Site
3601 American Blvd E
Bloomington, Minnesota

Dear Mr. Roebuck:

We are pleased to present this Slope Evaluation Letter for the proposed development at the Crown Plaza Site in Bloomington, Minnesota.

Scope of Services

We visited the site on November 20, 2019 to observe the condition of the slopes around the stormwater management pond on the southeast portion of the site. The purpose of our site visit was to look for evidence of deep seated and surface instability as well as evidence of historic or recent seepage and slope movement. We viewed the slopes uphill from the pond to the north and west and also the slopes downhill from the pond to the south and east. We also reviewed historic aerial images and USGS Quadrangle maps of the site.

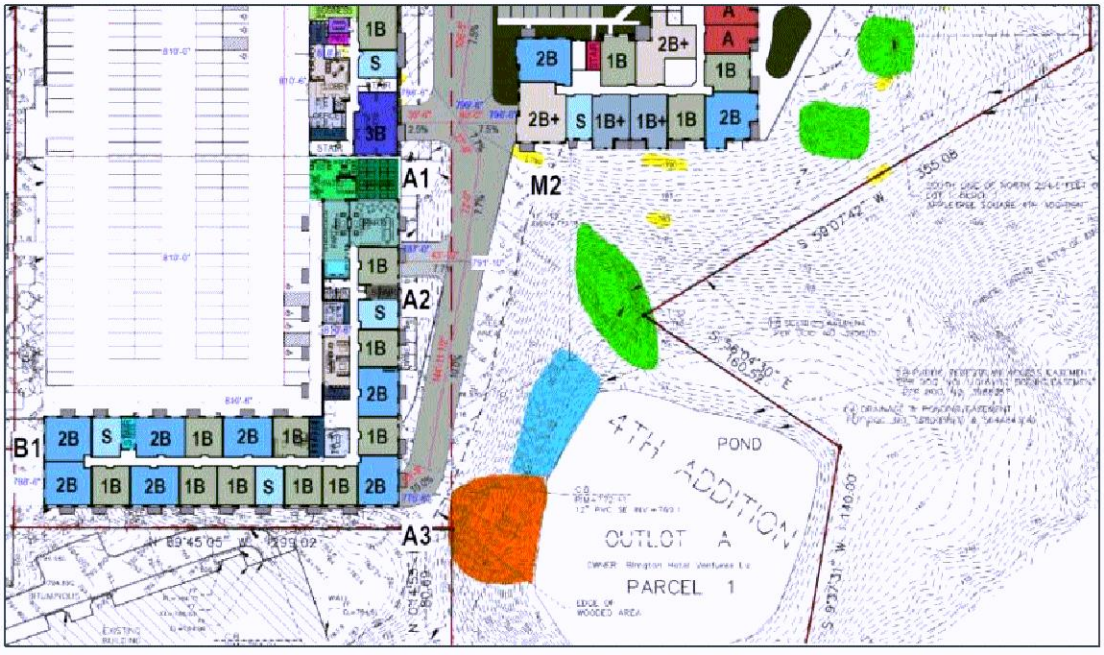
Results

In our review of historic aerial images and USGS Quadrangle maps, we noted that a gravel pit was operated on the site. The images suggest the east and south slopes of what is now the pond were likely filled in the late 1950s, possibly as part of the mining operation. The pond itself first shows up in an aerial image from 1984, and based on county records we assume it was constructed either when the office tower and parking ramp were built in 1973 or when the Crown Plaza Hotel was built in 1980, about 40+ years ago.

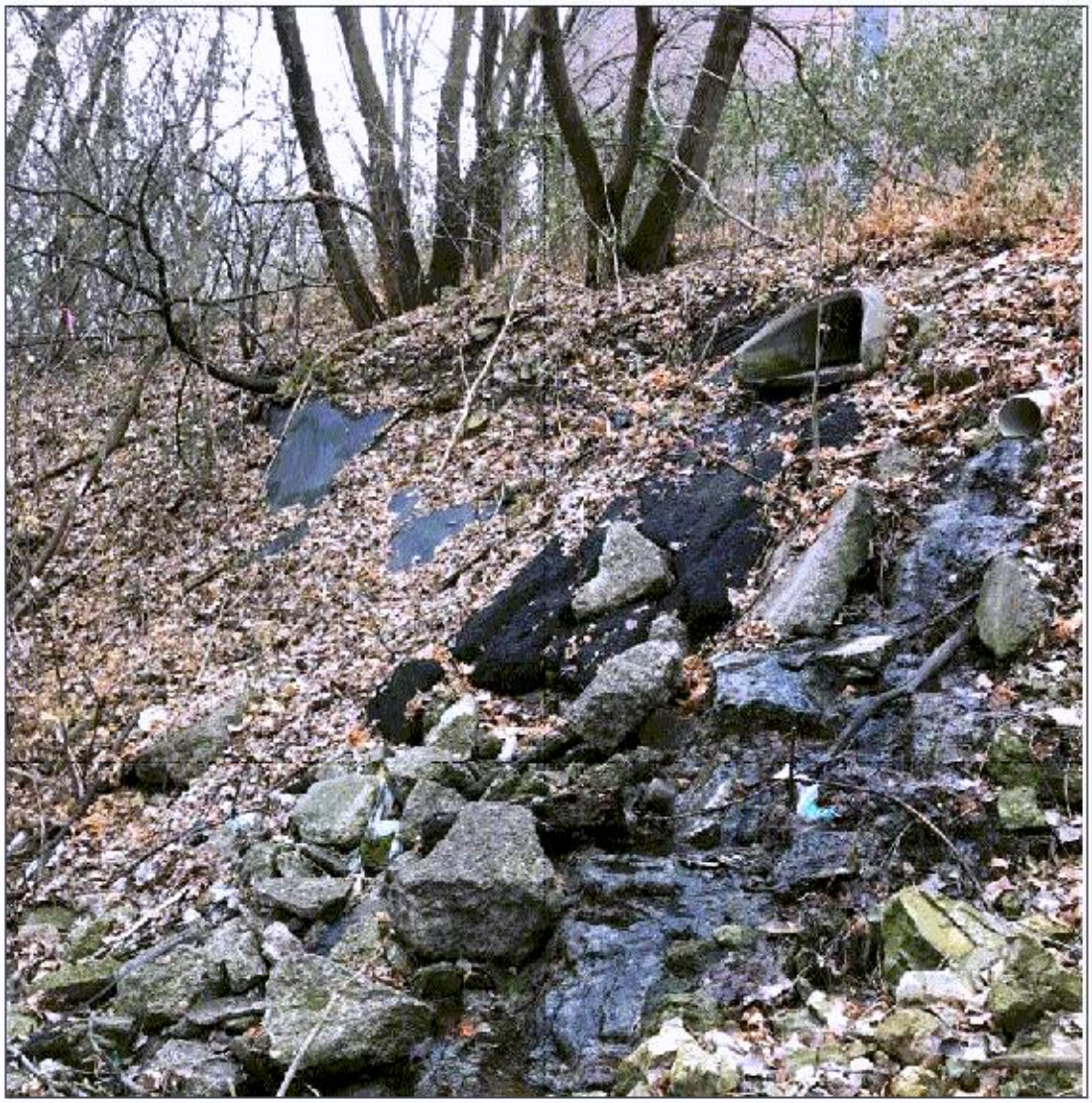
During our site visit, we did not observe evidence of deep seated or surface instability on the downhill slopes of the pond to the south and east. The information previously mentioned suggests that these slopes are about 60 years old, and the type and size of vegetation on the slopes corroborates that assumption. We found two seeps within the hillside, one about 250 feet NNE from the pond and one about 100 feet SSE from the pond. Topographic maps of the site indicate these seeps are near elevation 730 or lower, which is generally consistent with the downward gradient of regional groundwater across the site towards the river valley.

On the slopes uphill from the pond to the north and west, we noted slope instability in various locations. In Figure 1, the three areas shaded in green approximate the location of erosional cuts downhill from areas where stormwater drainage is concentrated. The area shaded in blue represents a section of the slope where some minor surface erosion has steepened the base of a slope. The area shaded in red represents a location where erosion from concentrated water flow has occurred and has led to movement of the slope. The slope movement generally appears to be shallow and within a few feet of the surface. Within the red area there are three pipes, two near the top of the slope and one at the base of the slope. All three have had a constant flow of water during our visits to the site in October and November, with flow ranging from a trickle of water to a flow of about 1/4-inch deep. Photograph 1 further illustrates this location. Note the exposed fabric to the left of the pipe, presumably placed either as a base for slope protection (rip rap) or to aid in growth of vegetation.

Figure 1. Slope Conditions



Photograph 1. West Slope of Pond



Opinions and Recommendations

Based on the information noted in our site visit and historical document review, it is our professional opinion there is little risk to instability of the slopes downhill from the stormwater management pond provided that the grades within and downhill from the pond are not altered, and the pond is operated at the same or below the same water level as its current operation.

For the slopes directly adjacent the proposed development, uphill to the north and west of the pond, we recommend that we be engaged to review the stability of the slope if structures will be placed within a horizontal distance from the top edge of the slope equal to the height of the slope. Depending on the location and depth of proposed structures, a review of the slope stability may reveal that some modifications may be needed to the existing slopes. Potential modifications could include flattening the slopes, incorporating some form of slope reinforcement, or providing surface protection to the slope face. Furthermore, we recommend that no structures (including pavements) be planned for location within the current slopes, unless a detailed slope stability assessment is conducted as part of the design.

Use of Report

This report is for the exclusive use of the addressed parties. Without written approval, we assume no responsibility to other parties regarding this report. Our evaluation, analyses and recommendations may not be appropriate for other parties or projects.

Standard of Care

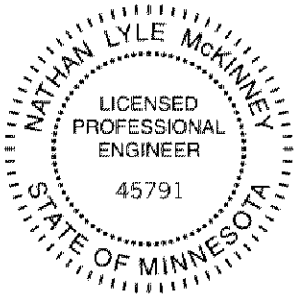
In performing its services, Braun Intertec used that degree of care and skill ordinarily exercised under similar circumstances by reputable members of its profession currently practicing in the same locality. No warranty, express or implied, is made.

Thank you for making Braun Intertec your geotechnical consultant for this project. If you have questions about this report, or if there are other services that we can provide in support of our work to date, please contact Chris Kehl at 952.995.2386 (ckehl@braunintertec.com) or Nate McKinney at 612.369.5731 (nmckinney@braunintertec.com).

Sincerely,

BRAUN INTERTEC CORPORATION

Professional Certification:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Minnesota.



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