



May 24, 2018
Our File: 217375

LEARI Holdings Ltd.

7506 Wellington Road 11
RR#1 Alma, ON N0B 1A0

Attention: Rick and Leanna Struyk

Re: Site Servicing Review
Additional Discussion
215750 Concession 4
Conc. 4, Pt Lot 22
Township of Chatsworth

Dear Mr. Struyk,

This letter is further to our Site Servicing Review (dated January 11, 2018) and provides additional discussion based on comments received during the public meeting on April 18, 2018.

Firstly, we remind you that the purpose of the Site Servicing Review (the Study) is not to comment on the condition of existing servicing, but rather if it is reasonable to expect that the site can be serviced without causing impact or interference with area resources. The Study was completed to support the re-zoning and planning permitting process as opposed to specific design to support the building permit stage. Although several comments were made regarding the existing works on the site, these are considered to be beyond of the scope of the Study and this letter. Works that may be completed on the site (if the zoning is approved) will be subject to permitting through the Township of Chatsworth and/or Ontario Building Code (OBC).

1. Permit to Take Water – Not Applicable

We confirm that a Permit to Take Water (PTTW) under the Ontario Water Resources Act (OWRA) is not applicable in this scenario. As noted in the meeting, the actual takings at a property govern the need for a permit, not the potential ability to take water. Although wells in the area may be capable of providing greater than 50,000 L per day, a PTTW would only be required if indeed greater than 50,000 L per day is being taken/used (subject to exceptions or depending on use per the OWRA). In this instance, the expected water use at the property is estimated to be in the range of 3,000 to 6,000 L per day when the trailer and residential units are in use.

2. Potential for Impacts

We understand that concern was raised regarding the overall dilution area used with respect to the sewage system under the Ministry of Environment and Climate Change (MOECC) D-5-4 Guideline (the Guideline). The concern raised is related to the fact that the sewage system would be placed in the northerly part of the property, and that the dilution area of sewage may be limited to that area (i.e., north of the dug ponds and

connecting channel to the northerly property boundary). This reduced area is estimated to be 3 hectares (30,000 m²), as compared to the lot area, which is approximately 24.4 ha.

The dilution approach prescribed the D-5-4 Guideline is a conservative approach since it only accounts for dilution of groundwater and ignores other attenuation mechanisms, such as dilution with groundwater. Under the Guideline, which provides an estimate of sustainable lot density for planning purposes, a holistic approach is taken, as opposed to a lot specific approach only. Accordingly, our analysis is consistent with the requirements of the Guideline.

From a practical perspective, we also note that this dilution approach is typically waived where the density of development on a lots is one (1) hectare or greater per residential unit. Based on OBC design flows, nine (9) trailers generate 3,825 L of sewage per day. In comparison, a 3 bedroom home has design flow of 1,600 L per day. Therefore, the trailers (when all are in use) are considered equivalent to 2.4 houses. Therefore, the equivalent lot density would be greater than 1 hectare residential unit (even under the use of the reduced land area of 3 ha) and the MOECC Guideline states that further analysis is not required.

Furthermore, when the above-described reduced area is used in the dilution model, the resultant nitrate concentration is 5.4 mg/L of nitrate, which is below the Guideline limit of 10 mg/L.

The findings and recommendations of our impact assessment within our letter report of January 11, 2018 remain. No impacts to groundwater or surface water resources are anticipated due to the proposed development.

3. Tile Bed Accommodation on Lot

It appears that there was also concern regarding the lot's ability to site the proposed sewage system's tile bed. Based on calculations, the tile bed would require a total area of 385 m². This bed area includes the mantle, which may be of native materials where soil conditions permit. The current soil conditions meet the requirements for use of the native soils to achieve the mantle.

A review of the proposed location of the tile bed has been completed. A conceptual layout is enclosed. The set-backs under the OBC can be met. As per planning staff comments, the tile bed will be located fully in the area proposed by re-zoning. Under this review, the locating of the sewage system on the lot is not considered to be a constraint for the proposed development.

From the practical perspective, the reduced area described above (3 ha) development area can easily accommodate the sewage system infrastructure and the dilution area. As per the discussion above, the sewage system sizing is similar to that of 2.4 residential homes, and the reduced area provides for over 1 hectare per home equivalent in which to accommodate a tile bed. The locating of a tile bed does not typically become constrained unless lots are highly irregular in shape or smaller than approximately 0.4 hectares (1 acre).

4. Use of Trailers – Dumping/Hook-Ups

Concerns regarding one-time, or bulk, dumping of sewage from all trailers was discussed. It is noted that the trailers are proposed to have sewer line hook-ups to the septic tank. This will allow continual dumping from the trailers while in use, preventing one-time dumping. It is understood that many owners may plan on continually discharging grey water during hook-up, with holding of black water for dumping at the end of the stay.

Under a scenario of black water holding, a sewage flow of 230 L per unit is considered. This is based on a 190 L (50 gallon) holding tank and 40 L clean-out (10 gallon). Assuming all trailers left on the same day, this would result in a daily flow of 2,070 L. Based on the minimum required septic tank size of 7,650 L, the black water volume that is being dumped is not considered to influence sewage system operations.



I trust this provides sufficient information to support your development application. Should you require any additional information, please do not hesitate to contact me.

Yours truly,
GM BLUEPLAN ENGINEERING LIMITED
Per:

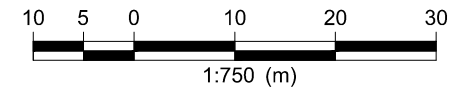
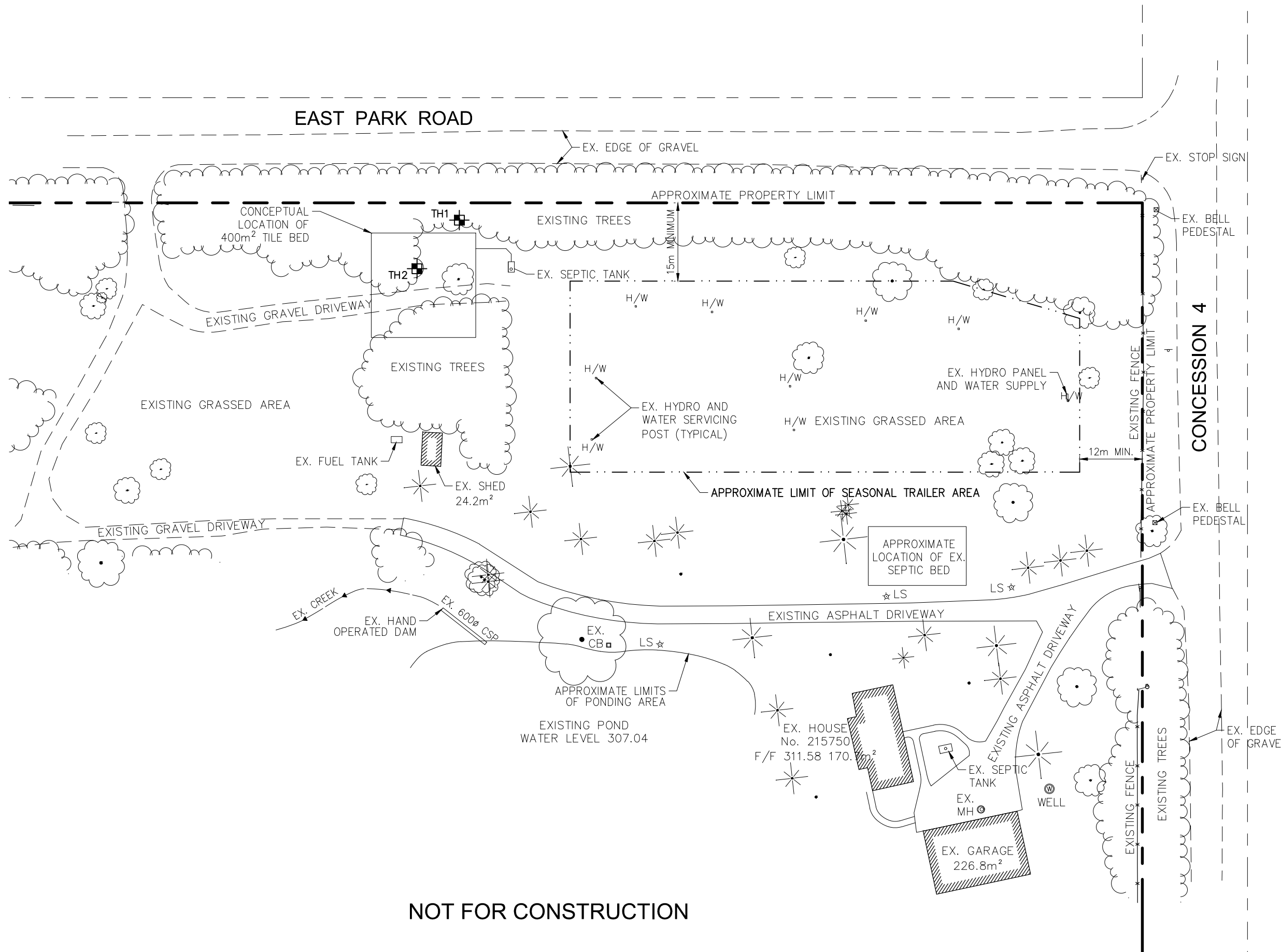
A handwritten signature in blue ink, appearing to read 'Matthew Nelson', with a long horizontal flourish extending to the right.

Matthew Nelson, P.Eng., P.Geo.
MN/mz

Encl. Figure 1

Cc: Ron Davidson, Township of Chatsworth Planner
Genevieve Scott, Cuesta Planning

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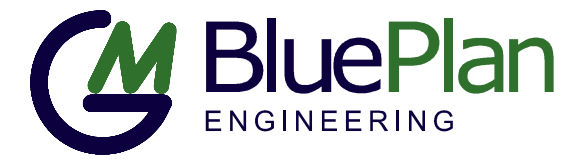
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CONCEPTUAL SITE PLAN

LEARI HOLDINGS LTD.
PART LOT 22
CONCESSION 4

Figure No. 1

NOT FOR CONSTRUCTION



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LAST SAVED BY:Rhunter, 5/24/2018 10:03:12 AM PLOTTED BY:Rebecca Hunter - GM BluePlan, 5/24/2018 10:59:46 AM