BEACON ENVIRONMENTAL

GUIDING SOLUTIONS IN THE NATURAL ENVIRONMENT

June 11, 2020 BEL 219257

Mr. John Spina
The Manors of Belfountain Corp.
7681 Hwy 27, Unit 16
Woodbridge, Ontario L4L 4M5

Re: Manors of Belfountain – Environmental Impact Study Addendum

Dear Mr. Spina:

Beacon Environmental Limited (Beacon) is pleased to present this Environmental Impact Study (EIS) Addendum letter report in support of the Manors of Belfountain Draft Plan of Subdivision for the property legally described as Part of the East Half and West Half of Lot 9, Concession 5, W.H.S. in the hamlet of Belfountain, Caledon (subject property).

Reliance on this letter is extended to review agencies such as Niagara Escarpment Commission, Town of Caledon, Credit Valley Conservation Authority and Regional Municipality of Peel.

A scoped Environmental Impact Study (EIS) was prepared in support of a previous Draft Plan by Savanta in March 2018. Since the completion of the 2018 EIS, there have been a number of revisions made to the design in order to respond to agency comments as well as recommendations from updated technical studies.

Key changes to the Draft Plan include:

1. A new stormwater management (SWM) strategy to address quantity and quality control and maintain site water balance;
2. Adjusted limits of development to respect the habitats of threatened and endangered species as well as landforms unique to the Niagara Escarpment as identified by the agencies;
3. Adjustments to development fabric to integrate more hedgerow trees and preserve the open landscape nature; and
4. A sidewalk internal to the development fabric that connects with the previously proposed trail in the natural area east of the development fabric.

The primary purpose of this EIS Addendum is to confirm that the findings, conclusions and recommendations contained in the 2018 EIS remain valid and applicable to the revised Draft Plan.

In preparing this EIS Addendum, Beacon reviewed the following:

- Scoped EIS: The Manors of Belfountain (Savanta; March 2018);
- Agency comments on the EIS (various dates, 2018);

- Councillor Sinclair comments (June 2019);
- Functional Servicing Report (FSR) (Cole Engineering, June 2020);
- Hydrogeological Investigation Report (HIS) appendices (Cole Engineering, May 29, 2020);
- Tree Inventory Report (Baker Turner, May 19, 2020);
- Draft plan of subdivision, Manors of Belfountain (MDTR Group, April 24, 2020);
- The Ministry of Natural Resources and Forestry's Natural Heritage Information Centre online make-a-map website; and,
- 2020 aerial photography (Google, 2020).

The revised Draft Plan prepared by MDTR Group and dated April 24, 2020 (appended to end of document) consists of 75 estate residential lots, several (SWM) blocks within lands currently used for agriculture, as well as natural heritage/parkland blocks. Each residential lot will be independently serviced by private wells and septic systems. The revised Draft Plan also includes a network of sidewalks that run east-west internal to the subdivision and connects to a proposed trail within Open Space/Park Blocks 76-78 on the eastern side. From there, the proposed trail passes through Block 76 to connect to Mississauga Road giving access to the village centre and conservation area. The alignment of this trail connection through Blocks 76-78 is currently being discussed with the agencies, however for the purposes of this EIS Addendum, it is assumed that the trail will utilize the existing farm lane.

Furthermore, the landscaped SWM blocks provide additional greenspace and new opportunities for wildlife movement within and outside of the subject property from north to south and west to southwest. Integration of hedgerows within the development fabric, where feasible, provides additional corridor functions for (primarily avian) wildlife.

In preparing this EIS Addendum, Beacon has undertaken an extensive review of the 2018 EIS, including the methods and analyses that were used to characterize natural heritage resources and ecological functions associated with the site and adjacent lands as well as the evaluation criteria used to identify their significance and sensitives. Through this review, Beacon has confirmed that the 2018 EIS has adequately characterized existing natural heritage resources and their ecological functions using appropriate survey methodologies and applying applicable guidance and policy criteria to identify their significance and level of constraint to development. Additionally, the review has confirmed that the recommended mitigation measures proposed in the 2018 EIS are appropriate and most continue to apply to the revised Draft Plan.

The 2018 EIS identified the following natural heritage features as constraints to development:

- significant wetlands;
- significant woodlands;
- significant woodland buffers;
- significant wildlife habitat (SWH);
- confirmed habitat for several endangered or threatened species including Bobolink (*Dolichonyx oryzivorus*), Eastern Meadowlark (*Sturnella magna*), Butternut (*Juglans cinerea*) and Jefferson Salamander (*Ambystoma jeffersonianum*);
- potential habitat for endangered bats (i.e. significant woodlands); and
- fish habitat.

Beacon has confirmed that these constraints have been appropriately identified and mapped (see Savanta Figure 6 – *Existing Natural Features and Development Constraints*) using applicable guidance and policy documents and that the revised Draft Plan does not overlap with these features (with the exception of seasonal fish habitat – see discussion below) thereby minimizing any potential impacts.

Wetlands

Our review did identify one exception which relates to the status of the wetlands in the north east portion of the subject property. While these wetlands meet the criteria for provincial significance due to the presence of Jefferson Salamander, they have not been evaluated according to the Ontario Wetland Evaluation System and thus cannot be considered significant. Accordingly, these wetlands should be considered "other wetlands".

According to policy 2.7.1 the Niagara Escarpment Plan (NEP), wetlands are considered key natural heritage features (KNHFs). In accordance with NEP policies the wetlands on and adjacent to the subject property are to be generally excluded from the impacts of development. Per NEP policy 2.7.6, it is required that a natural heritage evaluation prepared in support of development within 120 m of a KNHF:

a) demonstrates that the development, including any alteration of the natural grade or drainage, will protect the key natural heritage feature or the related functions of that feature;
b) identifies planning, design and construction practices that will minimize erosion, sedimentation and the introduction of nutrients or pollutants and protect and, where possible, enhance or restore the health, diversity and size of the key natural heritage feature;
c) determines the minimum vegetation *protection zone required* to protect and where possible enhance the key natural heritage feature and its functions; and
d) demonstrates that the connectivity between key natural heritage features and key hydrologic features located within 240 metres of each other will be maintained and where possible enhanced for the movement of native plants and animals across the landscape.

Furthermore, per NEP policy 2.7.7, a vegetation protection zone shall:

a) be of sufficient width to protect and where possible enhance the key natural heritage feature and its functions from the impacts of the proposed change and associated activities that may occur before, during, and after, construction;
b) be established to achieve, and be maintained as, natural self- sustaining vegetation;
…

Woodlands

Further to Savanta's response letter to MNRF, dated November 12, 2018, Beacon has also confirmed that the hedgerow feature adjacent to Shaw's Creek Road does not meet the definition of a woodland, and as such does not represent a Significant Woodland constraint to development. The hedgerow feature is less than 30 m in width (approx.) at its widest point, <0.5 ha in area and does not provide a linkage function. The Town of Caledon's Official Plan requires that woodlands be a minimum of 40 m in width; no criteria for minimum gap/opening size is provided. Accordingly, the hedgerow does not meet the applicable policy criteria as a significant woodland / Core woodland.

Nevertheless, under the revised Draft Plan most of this hedgerow feature will be retained post-development. The design has been revised to situate building envelopes, wells and septic beds at least 11 m outside this feature. Driveways will however be required to access the lots. To retain tree cover, the disturbance and grading footprints of the driveways has been reduced to the extent practicable.

Habitat of Species at Risk Birds

In addition to avoiding natural heritage constraints and buffers, the revised Draft Plan also excludes development of areas exhibiting steep topography, which coincidentally results in an increase of habitat available to open-country species at risk (SAR) birds. This increase in habitat provides a net benefit to the natural heritage system. Both SAR bird habitat and steep slopes are preserved within Block 84.

Fish Habitat

The SWM retention facility proposed in Block 81 is in an area where a headwater drainage feature (HDF) RB1 is located (see Savanta Figure 5 – *Headwater Drainage Features and Aquatic Habitat*). Water in HDF RB1 infiltrates into the overburden in a depression during "precipitation, and snowmelt and freshet events" (Cole, May 2020). This HDF was identified by Savanta as seasonal fish habitat (note: the source of fish observations is not provided) and represents an extension of off-site tributary RB1. The HDF is ephemeral and is assigned a management recommendation of "conservation", meaning that the feature could remain on the lands or be relocated provided its important functions (i.e. groundwater recharge) are maintained.

Beacon agrees with Savanta's conclusion that the protection of the groundwater recharge function of HDF RB1 is important and that protection of seasonal fish habitat is not, as fish entering the feature would likely perish. Given the inevitable perishing of fish within this ephemeral feature, it is highly likely that the removal of this feature will have a positive impact on the productive capacity of the upstream watercourse.

Under Section 35 of the *Fisheries Act* (1985), "no person shall carry on any work, undertaking or activity that results in the harmful alteration, disruption or destruction of fish habitat" unless authorized to do so. Accordingly, as a next step Beacon recommends that a permit from the Department of Fisheries and Oceans be obtained prior to site disturbance related to the proposed SWM plan.

Stormwater and Water Resources

There are no natural drainage outlets or watercourses on the subject property. The stormwater management strategy proposed by Cole Engineering (June 2020) was developed to a) maintain existing drainage conditions and flow paths to natural heritage features; b) maintain and, where appropriate, enhance infiltration; and c) provide quantity and quality control necessary to accommodate back-to-back 100-year storm events.

To accommodate storage and detention for two consecutive 100-year storm events, additional SWM facilities have been incorporated into the design. The proposed SWM system is comprised of a series of interconnected dry ponds that have been positioned to correspond with several of the larger depressional features to respect the existing drainage catchment internal and external to the subject property. The ponds provide for storage as well as enhanced infiltration in all seasons. Runoff from the development will be conveyed to these ponds via roadside ditches and rear yard catch basins connected to roads via storm sewers at natural low points located within rear yards. Road runoff will be treated using oil grit separators prior to being discharged to the pond. During the second consecutive 100-year storm event, some overland flow from within and external to the subject property flows westward through the subject property towards Shaw's Creek Road, thereby mimicking pre-development conditions.

Surface Water
Under existing conditions, surface runoff is captured in a number of depressional features where it infiltrates over time. It should be noted that, per Cole Engineering's Hydrogeological Investigation Report (May 2020), there is no surface or subsurface hydrologic connection between features RA1 (north of subject property) and RB1 (south of subject property).

Groundwater
As the groundwater inputs partially contribute to the hydrology of a breeding pond for Jefferson Salamander[1] and fish habitat in off-site tributary RA1, infiltration was a significant consideration in developing the proposed stormwater management strategy. Rear-yard catch basins proposed in areas of natural low relief will also aid in maintaining existing infiltration characteristics within the subject property. Proposed diversion of minor overland flow from the MAS3-1 and SWT3-2 wetlands to SWM Block 81 is counterbalanced by diversion of flow from rooftops and driveways, achieving no significant change to the hydrology of the wetland (see Section 5.7 – Water Balance in Cole FSR, June 2020 for more information). Roof and lawn run-off from the lots north of the drainage divide is considered clean, and as the lots are located over 200 m away from the wetlands, this post-development condition will not adversely impact on adjacent natural features, including wetlands.

Environmental Protection Areas

With the exception of Lots 50-55 the entire subdivision will be situated outside the limits of any environmentally designated areas. Lots 50-55 overlap with an existing agricultural field and do not support any significant natural heritage features and functions, however the rears of these lots are

[1] *Note that groundwater inputs to on-site wetland communities MAS3-1 and SWT3-2 were found to be negligible (see Section 7.2.1 of Cole, May 2020).*

designated as Environmental Protection Areas (EPAs) in the Niagara Escarpment Plan (NEP). To maintain consistency with the NEP, these areas will be subject to a restrictive covenant placed on title limiting uses and prohibiting structures within the portion of lots zoned as EPA.

Impacts and Mitigation

Beacon has reviewed the various mitigation measures proposed in Section 7.5 of the 2018 EIS as well as the conclusions provided in the FSR (Cole Engineering, June 2020) and are of the opinion that if recommended mitigation and stormwater management measures are implemented that the proposed development will not likely result in significant negative impacts to the ecological form or function of terrestrial and most aquatic natural heritage features eligible for protection under applicable Acts and policies. It is further recommended that, should the trail in the eastern portion of the subject property be constructed, that the owner of the land include educational signage at trailheads, urging trail users to stay on the trail and keep pets leashed.

Wetlands

Per Sections 7.2.1 and 7.2.2 of the Hydrogeological Investigation Report (Cole Engineering, May 2020), negative hydrologic impacts to on-site and off-site wetlands are not anticipated. Refer to Cole's report for detailed information.

With respect to a vegetation protection zone,

- Wetlands on and adjacent to the north east portion of the subject property are over 200 m away from the limits of development and are surrounded by extensive woodlands to which a minimum 10 m vegetation protection zone has been applied;
- connectivity between wetlands has been maintained through protection of wetland and woodlands, and enhanced through retention of hedgerows which provide opportunities for plant and wildlife movement; and
- The pre-existing hydrologic conditions are proposed to be maintained post-development.

Woodlands

The proposed 10 m woodland buffers satisfies all buffer requirements contained within the Niagara Escarpment Plan, as well as the Official Plans of the Town of Caledon and the Region of Peel. Section 7.5.5 of the 2018 EIS and p.3-5 of the November 2018 Response Letter to MNRF speaks to buffers, and impacts on the significant woodland are addressed within Table 14 of the EIS.

Potential impacts to the significant woodlands will be partly mitigated through the proposed development pattern. As a low density, estate residential development, there will only be eight residential lots that directly abut the woodland in the east, and on each of those, the proposed residence will be located a minimum of 30 m away from the dripline of the feature. Four of these lots will abut cultural units of the significant woodland, which are more tolerant to development. As previously mentioned, lots 50 – 55 will have restrictive covenants placed on title, thereby excluding future development within the rear portion of the parcels. Two residential lots are proposed near the 0.25 ha

triangular woodland in the southwest of the subject property. Owing to the feature's size and history of impacts due to agricultural activities, this woodland provides minimal ecological function.

Given the low density of development in proximity to these features, and the existing nature of these features as previously discussed, potential impacts as a result of noise and light from the nearby residences is considered to be minimal, and will likely not have a measurable impact on wildlife use of the features. To satisfy the requirement of the NEP, the minimum vegetation protection zone, or buffer, should be of sufficient width to protect and where possible enhance the key natural heritage feature and its functions from the impacts of the proposed change and associated activities that may occur before, during, and after, construction.

The proposed 10 m buffer will ensure that critical root zones of individual trees within the woodland community are protected from potential impacts during construction. The 10 m buffer will also enhance the feature through restoration of natural self-sustaining vegetation on lands that have been maintained in row crop agricultural production. The buffer will also provide some measure of protection against ad-hoc access to the feature from neighbouring residents and pets, however the key preventative measures in this regard will be education of new landowners. To this end, it is proposed that educational materials be prepared for new residents to ensure they are aware of the importance of the system and the potential impacts that ad-hoc access, dumping, or pet intrusion into the feature may cause. There is no expectation that a buffer of larger width would provide further protection to the significant woodlands from ad-hoc access or pets.

Given the above, the proposed 10 m buffer is considered sufficient to both protect and enhance the significant woodland, when implemented in association with other mitigation measures identified above.

Fish Habitat

The ecological form and function of seasonal fish habitat provided by HDF RB1 is proposed to be altered. However, its replacement with a SWM Block maintains the feature's important groundwater recharge function and represents an overall benefit to the upstream fish community through elimination of fish mortality (see Section 4.3.4 of Savanta, 2018).

Species at Risk Birds

As habitat for open-country SAR birds is being protected and expanded, there is no longer a requirement for compensation. It is recommended that the feature be fenced to limit access by pedestrians and pets.

Monitoring

Section 8.0 and Table 14 of the 2018 EIS recommended undertaking certain types of monitoring related to mitigation measures and natural resource management. Revisions to the Draft Plan have necessitated the need for minor updates to the monitoring plan. Beacon considers most of the recommendations related to monitoring significant woodlands, wetlands, significant wildlife habitat and the hydrology of wetlands supporting Jefferson Salamander to remain applicable. However, Beacon proposed the following changes:

- As the triangular-shaped significant woodland in the south west portion of the subject property is proposed to be held in private ownership, monitoring is likely not feasible. Should the woodland come into public ownership, it is recommended that the woodland be included in significant woodland monitoring efforts.
- It should be clarified that monitoring for amphibian breeding within wetlands MAS3-1 and SWT3-2 is to consist of anuran calling surveys.
- As habitat for open-country SAR birds is being protected, habitat compensation and monitoring are no longer recommended.
- Monitoring related to HDF RB1 is no longer recommended, as the feature and its functions are proposed to replaced by a SWM facility. However, it is recommended that erosion and sediment control monitoring related to off-site tributary RB1 be included in the construction monitoring plan.
- Observed impacts related to erosion and sediment control should be remediated immediately.
- Observed impacts to significant woodlands, buffers and those related to trails (e.g. encroachment, vegetation impacts, invasive species, etc.) should be remediated or a plan developed to remediate within two months upon discovery.
- Erosion and sediment control monitoring should be in place prior to site preparation and maintained throughout the construction period until stabilization is achieved.
- Significant woodlands, buffers, trail-related impacts, road mortality and anuran breeding should be subject to monitoring during construction and for three years from registration. It is recommended that monitoring reports be submitted to agencies on an annual basis. Should impacts or deficiencies be recorded, then appropriate remedial actions should be taken. If warranted, the monitoring period can be expanded for up to two additional years to monitor the efficacy of remedial actions.

Closing Remarks

Through the preparation of this EIS addendum, Beacon has reviewed the findings, conclusions and recommendations of the 2018 EIS and find them to remain applicable to the revised draft plan (March 2020). Beacon has reviewed the various design changes and is of the opinion that the proposed development will not have a negative impact on the ecological form and function of the natural heritage system within and adjacent to the subject property. Some measures, such as the increase in habitat area available to open country SAR birds and the elimination of a fish mortality sink, will likely result in an increased benefit to the natural heritage system. Adaptive monitoring and management of natural heritage features and buffers during construction and for a minimum of three years from registration ensures that deficiencies, if found, are addressed, and potential impacts are limited.

We trust that that information provided herein proves useful. Should you have any questions or points for discussion, please do not hesitate to contact the undersigned.

Yours truly,
Beacon Environmental

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Sr. Ecologist / Arborist

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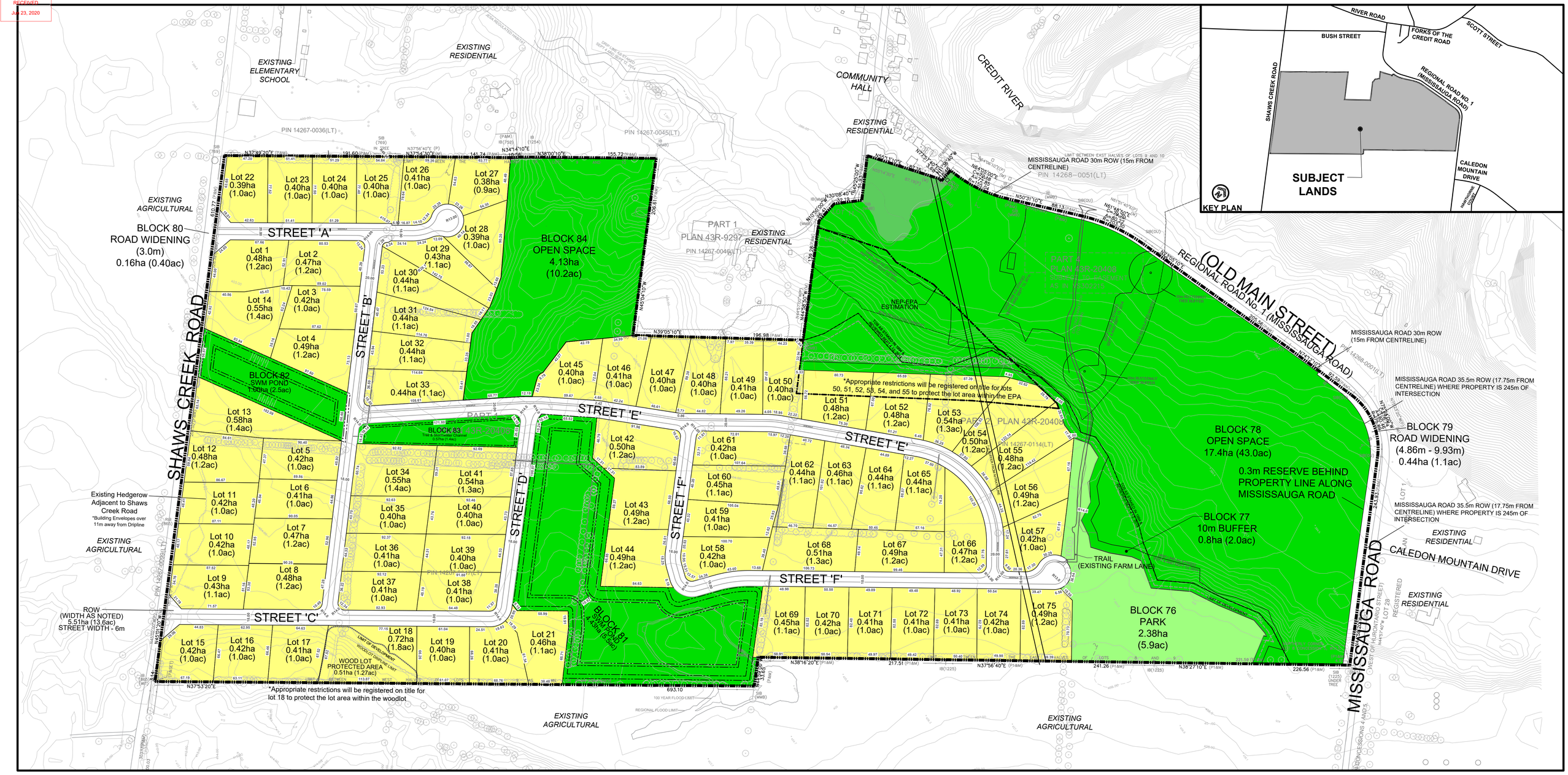

DRAFT PLAN OF SUBDIVISION
MANORS OF BELFOUNTAIN CORP

FILE # 21T-91015C

PART OF EAST HALF AND WEST HALF LOT 9
CONCESSION 5, W.H.S.
(HAMLET OF BELFOUNTAIN)
TOWN OF CALEDON,
REGIONAL MUNICIPALITY OF PEEL

SURVEYORS CERTIFICATE

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LANDS TO BE SUBDIVIDED AS SHOWN ON THIS PLAN AND THEIR RELATIONSHIP TO ADJACENT LANDS ARE CORRECTLY AND ACCURATELY SHOWN.

SIGNED _____ DATE: _____

ALISTER SANKEY, OLS
DAVID B. SEARLES SURVEYING LTD.
4255 SHERWOODTOWNE BLVD. SUITE 206
MISSISSAUGA, ON, L4Z 1Y5
PHONE: 905-273-6840
EMAIL: info@dbsearles.ca

OWNER'S AUTHORIZATION

I AUTHORIZE MDTR GROUP TO PREPARE AND SUBMIT THIS PLAN FOR DRAFT APPROVAL.

SIGNED _____ DATE: _____

JOHN SPINA, ASO
THE MANORS OF BELFOUNTAIN CORP.
7681 HWY 27 UNIT 16,
WOODBRIDGE, ONTARIO
L4L 4M5

ADDITIONAL INFORMATION

(UNDER SECTION 51(17) OF THE PLANNING ACT) INFORMATION REQUIRED BY CLAUSES A,B,C,D,E,F,G, & J ARE SHOWN ON THE DRAFT AND KEY PLANS.
H) INDIVIDUAL WELLS TO BE PROVIDED
I) SANDY LOAM AND CLAY LOAM
K) INDIVIDUAL SEPTIC TO BE PROVIDED; MUNICIPAL STORM SEWERS TO BE PROVIDED
L) NIL

NOTES

-Pavement illustration is diagrammatic only
-Local to local radii - approx. 14m
-Streets 'A' & 'C' to Shaws Creek Rd. daylight triangles - 15.0 x 15.0
-Top of Slope as staked in 1994, reviewed September 4 & 12, 2014
-Dripline staked Septemer 4 & 12, 2014

REVISIONS

#	Description	Date (YYYY-MM-DD)	By
1	ISSUED FOR MEETING WITH AGENCIES	2018-12-21	N.Y.
2	REVISION	2020-02-21	N.Y.
3	REVISION	2020-01-17	N.Y.
4	REVISION	2020-02-21	N.Y.
5	REVISION	2020-01-17	N.Y.
6	ISSUED FOR RESUBMISSION	2020-03-02	N.Y.
7	REVISION	2020-03-31	N.Y.
8	REVISION	2020-04-21	N.Y.
9	REVISION	2020-04-24	N.Y.

LAND USE SCHEDULE

LAND USE	LOTS/BLOCKS	AREA (HA)	AREA (AC)	UNITS
ESTATE RESIDENTIAL	1-75	33.48	82.7	75
OPEN SPACE	78,84	21.53	53.2	
PARK	76	2.38	5.9	
10m BUFFER	77	0.80	2.0	
STORMWATER PONDS	81,82	5.41	13.4	
STORMWATER CHANNEL	83	0.57	1.4	
ROAD WIDENING	79, 80	0.60	1.5	
18.0m/20.0m ROW (2,840m APPROX. LENGTH)		5.51	13.6	
TOTAL	84	70.28	173.7	75

Scale: 1=2000
April 24, 2020