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Golf Architect / Living Community & Environmental Consultant

August 27th, 2023

Great Gulf, Division of Great Gulf Group of Companies
351 King Street East, 13th Floor
Toronto, ON, Canada M5A 0L6

Attention: Mr. Kenneth Hale, Vice President, Development

Re: GOLF SHOT SPRAY SAFETY ANALYSIS – 7th (16th) & 8th (17th) Holes at the Lora Bay Golf Club, Thornbury, ON
Lora Bay Residential Development Master Plan/ Phase 4 B
Town of The Blue Mountains, ON (Grey County)

Dear Kenneth,

In response to your study request, the purpose of this communicate is to submit our ‘Golf Shot Spray Safety Analysis’ of play on Lora Bay Golf Club’s 7th and 8th Holes, recently redesignated as the 16th and 17th respectively, in relation to possible impacts to the adjacent 6.35 ha/15.7 acre ‘Phase 4B’ Residential development envelope proposed by Great Gulf located immediately to the south of the subject 7th Golf Hole and due west of the 8th Hole, north-east of Highway 26, east of the Village of Thornbury, in the Town of The Blue Mountains, Grey County, Ontario.

I. ABSTRACT

The conclusion of this site specific ‘Golf Shot Spray Analysis’, based on the parameters, factors and site assessment presented below, does confirm that the proposed Great Gulf ‘Phase 4B’ Residential development will not be tangibly impacted by golf play on the adjacent Lora Bay Golf Course in as much as the current, well-established golf hole design and turf management regime, strategic directional mature specimen trees at the Teeing area, generous 40-60 yard ‘buffer’ woodlot margins from the active golf Fairway & Rough areas to the backlot property lines, etc. do provide a reasonable and in fact, high degree of safety from errant golf balls for future residents whose properties will abut directly onto the 7th (now 16th) and 8th (now 17th) Fairways of the Lora Bay GC. Observed golfer play patterns, past and present, including golf shot tracking and actual ball counts, beyond ‘theoretical’ assessment, ‘effectively’ bear this conclusion out.

II. PREFACE & QUALIFICATION

For reference, our firm, R.F. Moote & Associates Ltd. (*rfm&a* / MOOTE) has provided golf architectural services primarily in Ontario but extensively in the Maritimes, Alberta and Quebec with projects covering the balance of Canada, New York state and the Caribbean since 1975. Beyond golf architecture, the staff and associates of *rfm&a* / MOOTE have developed niche specialties in golf & community design safety and risk assessment, environmental turf & water management, golf community HOA management, heritage golf landscapes, golf facility transformations, etc.

In recent years and presently on-going, *rfm&a* / MOOTE Golf Spray Analysis endeavors in reasonable proximity to the subject Lora Bay site in the Town of The Blue Mountains include Cranberry Golf Course by Living Water Resorts in Collingwood, Skyline Second Nature – Phase 3, Crestview Estates, and the Royalton ‘Blue Vista’ development, all in the Town of The Blue Mountains, Nottawasaga Resort Inn Golf Courses in Alliston, Ladies’ Golf Club of Toronto, Dundas Valley Golf & Curling Club in Hamilton, as well as several others that have been and/or are being undertaken in strictest confidence.

Our golf safety reference base, in addition to desk-top and library research plus local, well-known, observed tendencies, is largely based on in-house, on-site annual logging of golf shot spray data for all calibers of golfer and interest groups at at least two courses annually over the past 27 year period. We have been very fortunate to have maintained an exemplary track record to date both from the neighbouring developer’s and home owners’ side, as well as across the fenceline, so to speak, from the golf course side and that of its golfing clientele.

III. SITE OVERVIEW & OBSERVATION

Plans of Great Gulf’s proposed ‘Phase 4B’ residential development including aerial photography covering the specific location of the proposed residential lots and Lora Bay Golf’s 7th (16th) and 8th (17th) Holes, have been reviewed and utilized as a base plan for the theoretical spatial component of our golf shot spray analysis and ‘Phase 4B’ residential risk assessment. Further, four site visits were conducted between late June and early August 2022, as well as two additional in August 2023, in order to observe potentially impacting actual on-site dynamics such as vegetation, existing golf hole design, actual golf play, turf maintenance, etc.

Illustrations and notes on the attached *Graphic Sheets I to IV – with identifiers LB.27.07.22.01 to 04 sp* found in VIII. the APPENDIX will assist in clarifying the inherent site condition, as well as the application of Safety Cones and the ultimate conclusions. Please note that the graphics provided are best printed at 11 x 17” and in colour.

The Lora Bay Golf Course is a well-respected, well maintained, high quality, exceptionally designed, sporty layout that provides challenging and adventuresome golf to local clientele, as well as Resort area tourists of all golf calibers, ages and interest levels. As such, golf shot targets must be and are well defined as a priority, as are consistent day-to-day playable conditions. The Par 3 7th (16th) Hole epitomizes these

objectives, as does the Par 4 8th (17th) Hole. Unusually erratic play and golf shots are not the norm as a result.

Contour elevation change on the subject 7th (16th) & 8th (17th) Golf Holes from tee-to-green is perceptually flat but slightly downhill on the former, not arduous, with little-to-token increase to normal shot spray. Wind direction is generally WNW with summertime golf season velocities not particularly onerous or impacting to golf shots, nor causing shots to drift significantly to the south (#7/16) and west (#8/17) into the neighbouring 'Phase 4 B' proposed residential property envelope. Daily on-shore and off-shore breezes are in evidence which can add adventure for golfers, rather than safety risk to residents. Both holes, to a large extent, are subject to a prevailing cross-wind, slightly helping on the 8th (16th) Hole, but for the most part carrying shots away from the Phase 4 B lands. Elevation above sea level is within the median range of 200-250m for the core south-central/western Ontario golf market thereby presenting no atypical net effect to area golf spray norms.

The five (5) tee decks with graduated yardages and varying alignment ranging from 212 to 101 yds. at No. 7 (16) and 443 to 344 yds. at No. 8, (17) are directionally well-oriented to the intended 1st landing area, or Green in the case of No. 7 (16), with easily defined target areas and straight-forward strategy. All calibres of golfer are presented with a fair but still exciting challenge. Recently residential development is in-process or has been built-out along the north or left side of the 7th (16th) Hole and to the left or east side of the 8th (17th) Hole. Perimeter trees, as well as topographical relief, signature bunkering and mounding defining Kentucky Bluegrass/Fine fescue groomed rough, naturalized areas and turf contour fairway mowing patterns all speak to easily-identified target areas, as well as to physical shot containment within the intended golf play corridor. The Fairways themselves at Nos. 7 (16) and 8 (17) are of very reasonable and generous width, as is the wide expanse of the primary bluegrass/fescue Rough between Fairway and treelines and then again to the Phase 4B property lines. All of this speaks to greater chances for golfers to correctly set up and align on the respective tee decks, thereby minimizing errant, potentially risky shots which could impact neighbouring properties.

Unquestionably KEY to our analysis and fundamental to risk assessment in this case study, for the record, the Arboricultural and Ecological members of the project consulting team confer with this office's tree and woodlot inventory and assessment that the existing, mature trees located immediately adjacent to the right side of the Tee decks at Nos. 7/16 (south) and 8/17 (west) are considered to be healthy and sustainable over time, and similarly along the length of the Fairway and Rough areas, the same as can be said for the integrity of the woodlot 'buffer' or margin between the subject golf holes and the Phase 4B residential properties.

For the most part, today along Holes 7 (16) and 8 (17), existing woodlot tree growth is mature and dense at heights of 50-80'. Errant shots are physically impeded but just as importantly, the linearity, colour and texture of the trees positively influence the success of 1st shots or drives from the tees such that a higher-than-normal percentage of golf shots come to rest in the fairway itself, or primary playable rough, with decidedly fewer errant shots, in particular to the right sides of Nos. 7 (16) and 8 (17) in the woodlot.

Moving from experiential architectural assessment of the strategic site features that comprise the 7th (16th) and 8th (17th) Holes from tee-to-green, to on-site observation and characterization of actual play, and on to

practical application, four site visits were made from late June to early August 2020 and two additional in August 2023 with actual golf shot tracking of a very diverse sampling of +82 golfers on the 7th (16th) Hole ranging from top caliber males and females, average players, once per season occasional and resort tourist players, young and old. Of the players observed, two (2) tee shots from the Black Tee deck (longest) and Silver (shown as ‘yellow’ on Appendix illustrations) on No. 7 (16) ended up in the woods to the right or south of the Approach area and Green-site with NONE coming to rest within 20 yards of the Phase 4 backlot property line. Wandering through the bush, although admittedly dense, wet in places and arduous to traverse and actually see balls, eight (8) were found on the right side approximately 15-25 yards from the Phase 4 backlot line. These lost balls would have been there over a long period of time and in addition to those observed.

On the 8th (17th) Hole of the +103 players observed, again from the long, Black and Silver (shown as yellow in the Appendix illustrations) tee decks where errant shots were observed, four (4) tee shots came to rest to the right, west of the Primary Rough in the mature woodlot, all having been ‘knocked-down’ or impeded by taller 50’-60’ vegetation and coming to rest some 25-30 yards from the proposed Phase 4 backlot property line. Walking through this right-side woodlot, some 21 lost balls from play over a significant period of time were observed but again, all were a significant distance from the proposed Phase 4B residential property line, as at No. 7 (16) illustrating the importance of the existing trees at the Tee as well as ‘buffer’ woodlot area along the Fairway & Rough.

Noting that ‘golf-side living’ does not come with a covenant guaranteeing 100% prevention of wayward shots crossing into such residential properties as proposed in Phase 4, even with the implementation of extra-ordinary measures, netting included, the afore-noted shot counts (admittedly not not empirically-sound data collection, but indicative and representative ...), speak volumes to the inherent and existing positive protection by the woodlot and the original golf design set-backs planned to accommodate future residential property lines, well beyond normally acceptable neighbouring golf-residential corridor standards and expectations.

IV. ASSESSMENT CRITERIA

Factoring into our risk assessment and determination of golf shot spray angles and safety cones in this specific Hole No. 7 (16) and Hole No. 8 (17) location of the Lora Bay Golf property are the following parameters:

- prevailing micro-climate and daily weather conditions including wind directional & velocity tendencies
- topography and contour elevation changes within the specific golf hole
- elevation above sea level
- treed vegetation including height and woodlot density
- turfgrass types, cultivars and quality
- type of golfing clientele

- golf hole design challenge, playability and perimeter containment features such as mounds and bunkers
- level of golf maintenance and consistency
- target alignment and visibility
- innate directional queues
- backdrop distance definition, etc.

Typical golf shot spray or Safety Cones for first shots or drives from the tee deck range from 9.5 degrees to 16.5 degrees from the centre-line laterally to each side of the safety cone in this part of Ontario (per the effects of altitude/elevation on golf shots).

Based on the afore-noted parameters, as well as observed play patterns and MOOTE in-house, data-logged tendencies at neighbouring Collingwood-Town of the Blue Mountains area golf courses, a 16.5 DEGREE SPRAY ANGLE, also referenced as 16.5 DEGREE SAFETY CONE, was chosen as being conservatively appropriate for this corner of the Lora Bay site.

For the record, this 16.5 degree spray angle and cone area does exceed the continent-wide ‘guideline-of-the-day’ of 15 degrees at this elevation and climatic region, albeit in the acknowledged context of being an inexact science and established subjectively as a generality within the golf architectural Society membership (ASGCA) but not publicly promoted as a professional ‘standard’. Once again, with the data collected by MOOTE over a significant period of time plus consideration of not only present but future play parameters impacting Golf Shot Spray, the increased margin or study threshold of 16.5 degrees is duly justified in the current analysis.

Illustrations and notes on the attached *Graphic Sheets I to IV – with identifiers LB.27.07.22.01 to 04 sp* found in VIII. the APPENDIX, will assist in clarifying the application of the 16.5 degrees and the conclusions reached in this analytic study. As previously noted, the graphic illustrations are best viewed and understood when printed in colour and at 11” x 17”.

Continuing on, the 16.5 Degree Safety Cone, **applied on paper** as a spatial determinant duly labelled as **‘THEORETICAL’**, takes into consideration current & foreseeable golf club & ball technology, player philosophical & physical play dynamics, site specific micro-climate, prevailing winds, elevation, topography, architectural design of the existing golf hole, ie. tee deck alignment, visual cues from the Tee to the intended Fairway landing areas, aesthetics & vistas, strategic features such as mowing patterns, defining grass types, sand & grass traps, berming, water courses, environmental areas, etc.; however, **NOT INCLUDED in ‘THEORETICAL’** are vegetative features such mature woodlot ‘buffers’, existing strategic specimen trees AND existing physical structures such as residential.

Reference to VIII. APPENDIX Sheet II. ‘THEORETICAL’ EXTENT of GOLF SHOT SPRAY ~ Safety Cones @ 16.5 degrees, identified as page LB.27.07.22.02 sp, clearly illustrates the 16.5 degree Shot Spray from the various Tee deck areas to the Green for No. 7 (16) and to the Fairway 1st landing area for No. 8 (17) in relation to proposed Phase 4B Development Area.

‘THEORETICAL’, as noted, does NOT include and is therefore subject to the effect of existing, healthy, mature, dense woodlots and specimen trees of 50-80’ feet in height especially when in close proximity to the tee as well as along the entire length of the fairway/rough; for example, on the right or west side of the 8th (17th) Hole from the longest Tee decks where the respective safety cone is in effect reduced by the existence of the current woodlot and specimen trees. In this instance, the reduced ‘Theoretical’ safety cone, deemed the ‘**EFFECTIVE Safety Cone**’ is in reality 13.5 degrees for the Black Tee deck cone vs. the theoretical spatial 16.5 degrees once the existing trees are considered, thereby further removing risk away from the adjacent ‘Phase 4B’ homes immediately west of the adjacent property line.

Reference to VIII. the APPENDIX Sheet III. ‘EFFECTIVE’ EXTENT of GOLF SHOT SPRAY ~ Safety Cones including Trees and Woodlot Considerations, identified as page LB.27.07.22.03 sp, clearly illustrates the impact of Trees reducing the 16.5 degree Shot Spray to an acceptable 13.5 degree cone from the various Tee deck areas to the Green for No. 7 (16) and to the Fairway 1st landing area for No. 8 (17) in relation to proposed Phase 4B Development Area.

Golf Shot Spray analysis at GREEN sites, and APPROACHES, such as at No. 7 (16), is impacted by the length of golf shot coming into the Green and the observed spray radius to both sides and the back from the centre of the Green. Typically, depending on the back-to-front or side-to-side orientation of a Green, the radius of the ‘SAFETY ARC’ can be 20-30m. A very liberal radius ARC of 30m (33 yds) from the centre of the 7th (16th) Green has been utilized to determine the distance of high-to-moderate risk errant golf shots coming to rest behind & to the sides of the Green.

Just as with Tee Safety Shot Cones, with the existence of substantial woodlots and trees to the back and/or sides of a Green, an ‘EFFECTIVE Safety Arc’ brings reality into the calculation, thereby effectively reducing safety distance set-backs. In the case of the 7th (16th) Green at Lora Bay, the Effective Safety Arc reduces the spatial calculation from 30m to 25m from the centre of the Green. In addition to trees, a reminder that mounding of significance, sandtraps, primary rough turf types, etc. factor into determination of the Effective Safety Arc.

V. ILLUSTRATIONS

A series of four (4) Graphic Illustrations have been included in VIII. the APPENDIX to this study which may assist in following the analytic thought process through to final assessment and conclusions:

Study Graphic Sheets I to IV – with identifiers LB.27.07.22.01 to 04 sp

- I. ‘EXISTING’ Golf Course Layout and Proposed Phase 4B Residential Development Envelope ...
LB.27.07.22.01 sp

- This graphic shows the ‘existing’ golf course as a line drawing on the left panel and on the right panel, on an aerial photo, focusing on Holes 7 (16) & 8 (17), with the proposed Phase 4B ‘inserted’ as a reference starting point in the study progression.

II. ‘THEORETICAL’ EXTENT of GOLF SHOT SPRAY ~ Safety Cones @ 16.5 degrees ...
LB.27.07.22.02 sp

- Overlaid on the existing line drawing and aerial photo of the current golf course routing for Holes 7 (16) & 8 (17) are 16.5 degree Safety Cones from the various tee decks at both subject golf holes.
- ‘THEORETICAL’ Shot Spray Cone ... takes into consideration current & foreseeable golf club & ball technology, player philosophical & physical dynamics, site specific micro-climate, prevailing winds, elevation, topography, architectural design of the existing golf hole, ie. tee deck alignment, visual cues from the Tee to the intended Fairway landing area, aesthetics & vistas, strategic features such as mowing patterns, defining grass types, sand & grass traps, berming, water courses, environmental areas, etc.; however ...

NOT INCLUDED in ‘THEORETICAL’ are vegetative features such as Woodlot, existing strategic specimen Trees AND existing physical structures such as residential.

- For the most part with the exception being the back, easterly most part of the backlots of 4B Residential properties 19 and 20, this desktop exercise shows some risk, albeit very minimal at 16.5 degrees to future Phase 4B residents WITHOUT consideration at this analytic, desktop stage for consideration of the existing ‘buffer’ woodlot along the Fairway and strategic, height-and-breadth specific, specimen trees for Tee deck alignment as well as strategic directional set-up for golfers at the tee decks plus errant-shot ‘knock-down’.

III. ‘EFFECTIVE’ EXTENT of GOLF SHOT SPRAY ~ ‘Concluding’ Safety Cones factoring in Mature, Healthy, Existing Specimen Trees and Dense Woodlot ... LB.27.07.22.03 sp

- ‘EFFECTIVE’ Shot Spray Cone ... includes the ‘Theoretical’ assessment considerations cited above PLUS the inclusion of vegetative features such as woodlot components and healthy, existing, strategic specimen trees.
- This graphic sheet shows the lessor, resultant Safety Cone area taking into account existing Trees & Woodlot which inherently reduces risk considerably to almost ‘non-existent, albeit duly noting that ‘golf-side living’ can never covenant a 100% guarantee that golf shot incursion into neighbouring properties will not happen from time-to-time.

IV. SUMMARY ~ Spray/ Safety Envelopes: ‘THEORETICAL’ compared with ‘Concluding’ ‘EFFECTIVE’ ... LB.27.07.22.04 sp

- This final aerial graphic compares Safety Cones, Theoretical vs. the ‘concluding’ ‘EFFECTIVE’ assessment.

VI. ANALYSIS & COMMENTARY

Following application of the cited parameters as well as the theoretical spatial 16.5 degree Safety Cone, *rfm&a* / MOOTE has concluded that Great Gulf's proposed 'Phase 4B' properties along the south boundary of Lora Bay's 7th (16) Hole and west side of No, 8 (17) are satisfactorily situated to assure reasonable safety with minimal errant golf shot incursion emanating from the respective Tee decks. Although generally conclusive by spatial assessment, the safety of the subject residential properties is further augmented by the existence of the 50-80' high Tee area and Fairway-to-property line Woodlot Trees establishing an increased safety 'buffer' per EFFECTIVE Safety Cones along the full length of the 8th (17th) Fairway and EFFECTIVE Safety Arc at the 7th (16th) Green and Approach.

Although no guarantees can assure that there will never be incidents of golf ball incursion into future 'Phase 4B' residential properties, the likelihood is low and certainly few and far between from those purposefully playing golf on the 7th (16th) and 8th (17th) Holes at Lora Bay. The exceptions are more likely to be wilful acts of mischief, malice and vandalism or an incidental, inadvertent random accident akin to that experienced from time-to-time in household, park and neighbourhood situations. As in all facets of life, it is anticipated and hoped that this will be minimal-to-non-existent.

VII. CONCLUSION & RECOMMENDATIONS

In conclusion, *rfm&a* | MOOTE is confident that a reasonable and very safe environment exists, well in exceedance of the norm, for future residents and property owners of Great Gulf's 15.7 acre Residential Development 'Phase 4B' block backing onto the 7th (16th) and 8th (17th) Holes of the Lora Bay Golf Club.

R.F. Moote & Associates Ltd. (*rfm&a* / MOOTE) has appreciated the opportunity to provide this Golf Spray (Safety) Analysis for Great Gulf. Should there be clarifications required or questions, please feel free to contact David Moote directly at 905.866.3295 (cell/text) or david@mootegolfarchitects.com

Yours truly,



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Associates assigned to Lora Bay Dev. Phase 4 B – Lora Bay GC Holes No. 7 (16) & 8 (17) ‘Golf Spray Analysis’:

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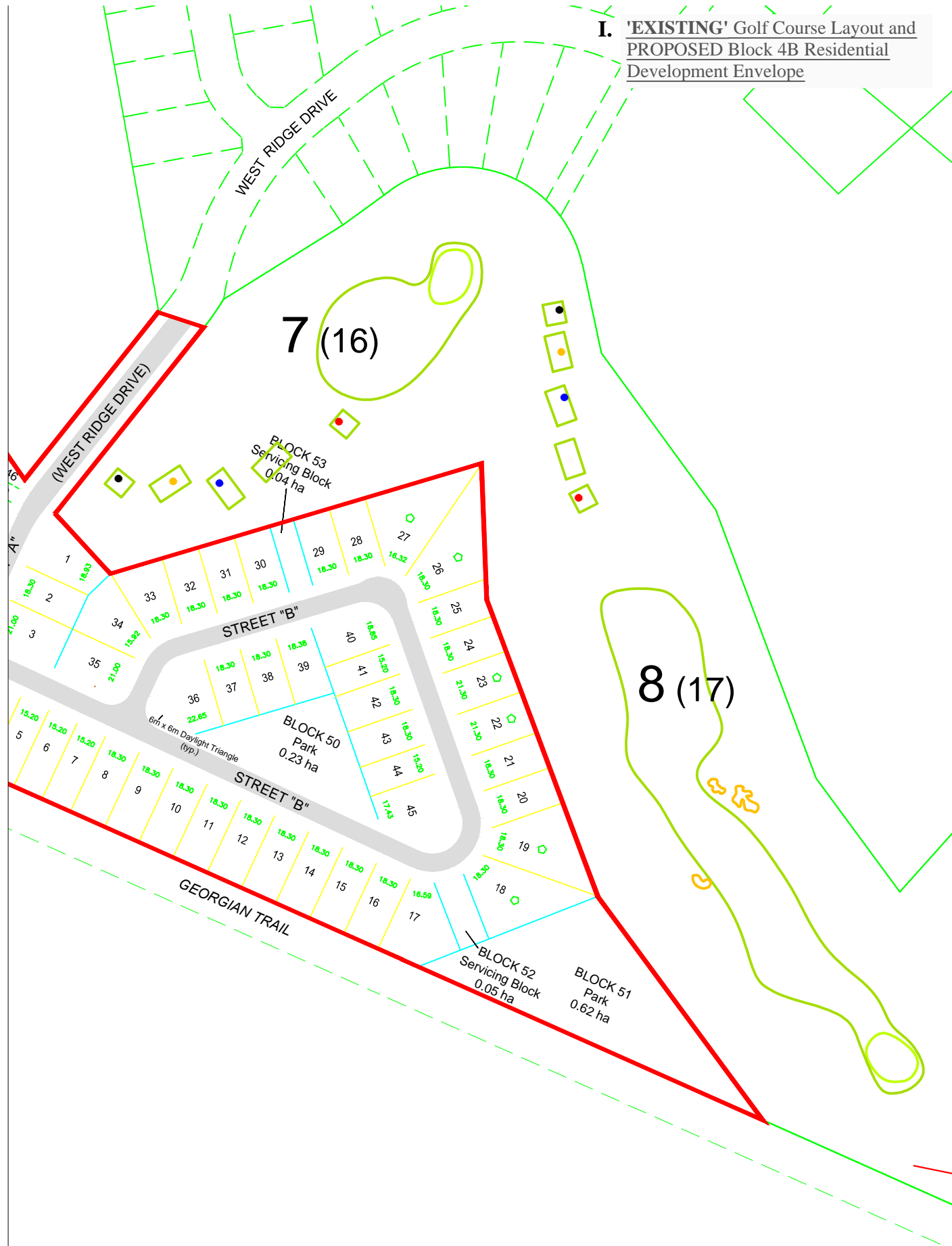
James Smith ~ Golf Designer/Landscape Horticulturalist/Golf Management Consultant
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VIII. The APPENDIX

Study Graphic Sheets I to IV – with identifiers LB.27.07.22.01 to 04 sp

- I. EXISTING Golf Course Layout and Proposed Phase 4B Residential Development Envelope ... LB.27.07.22.01 sp
- II. ‘THEORETICAL’ EXTENT of GOLF SHOT SPRAY ~ Safety Cones @ 16.5 degrees ... LB.27.07.22.02 sp
- III. ‘EFFECTIVE’ EXTENT of GOLF SHOT SPRAY ~ ‘Concluding’ Safety Cones factoring in Mature, Healthy, Existing Specimen Trees and Dense Woodlot ... LB.27.07.22.03 sp
- IV. SUMMARY ~ Spray/ Safety Envelopes: ‘THEORETICAL’ compared with ‘Concluding’ ‘EFFECTIVE’ ... LB.27.07.22.04 sp

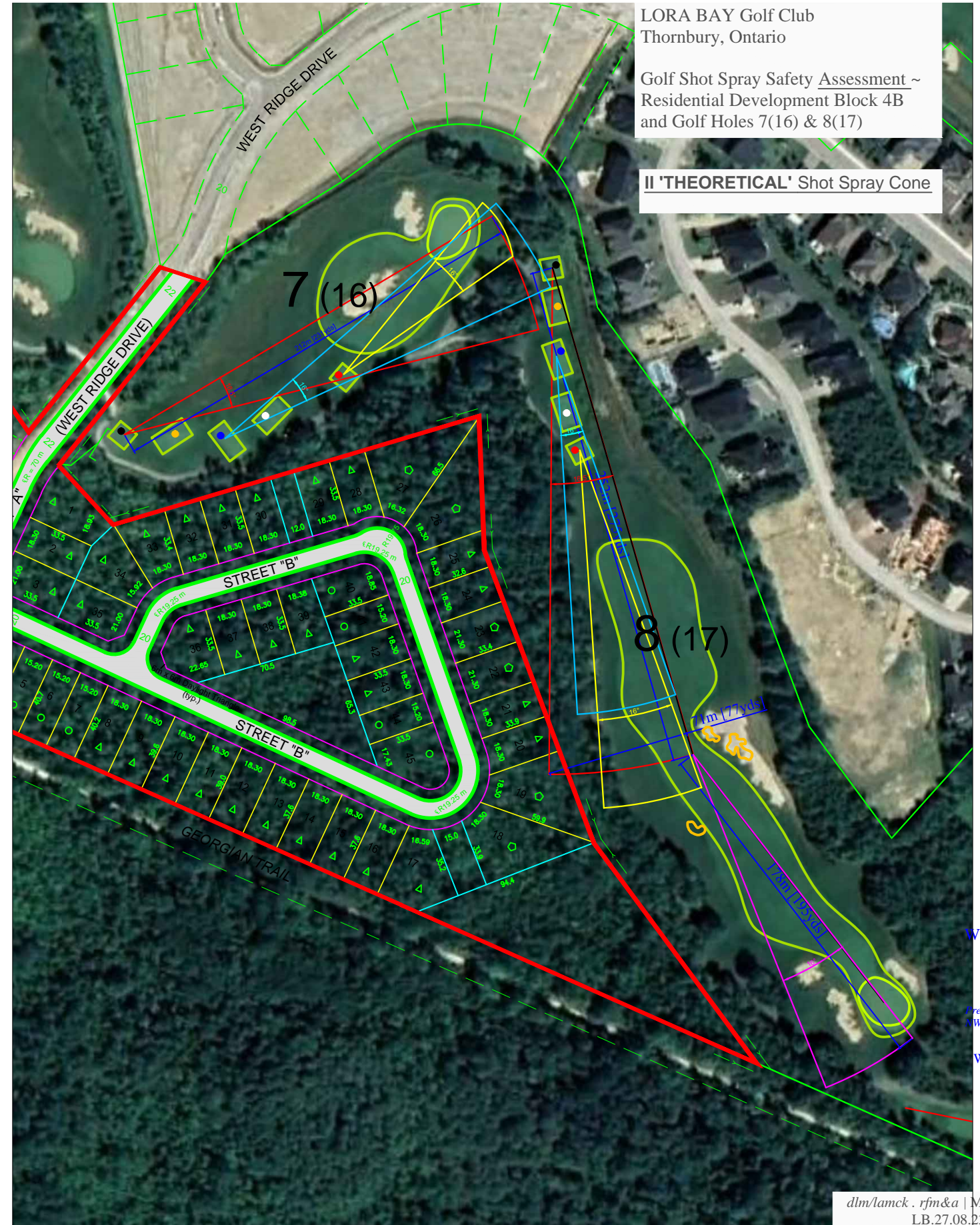
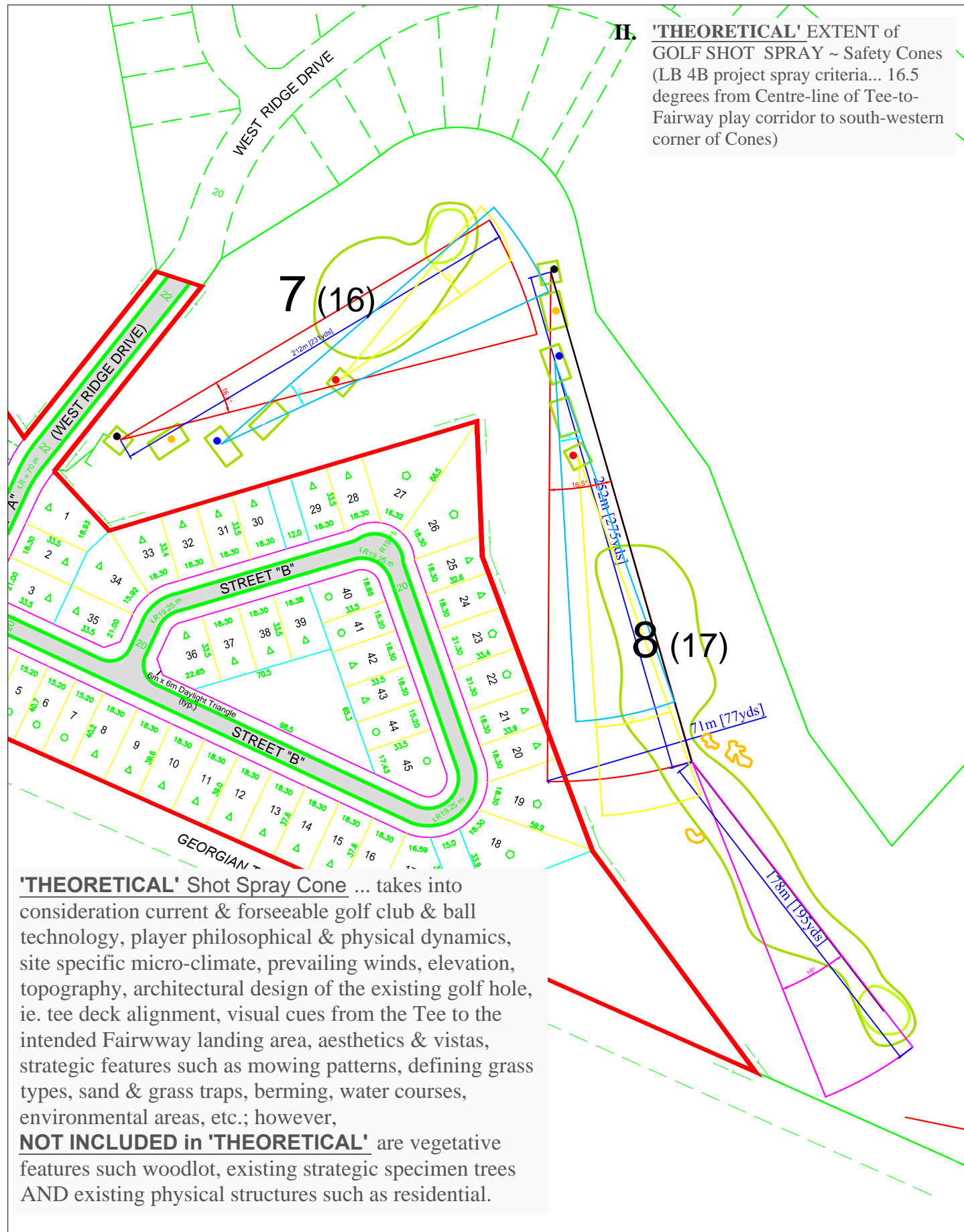
I. 'EXISTING' Golf Course Layout and PROPOSED Block 4B Residential Development Envelope



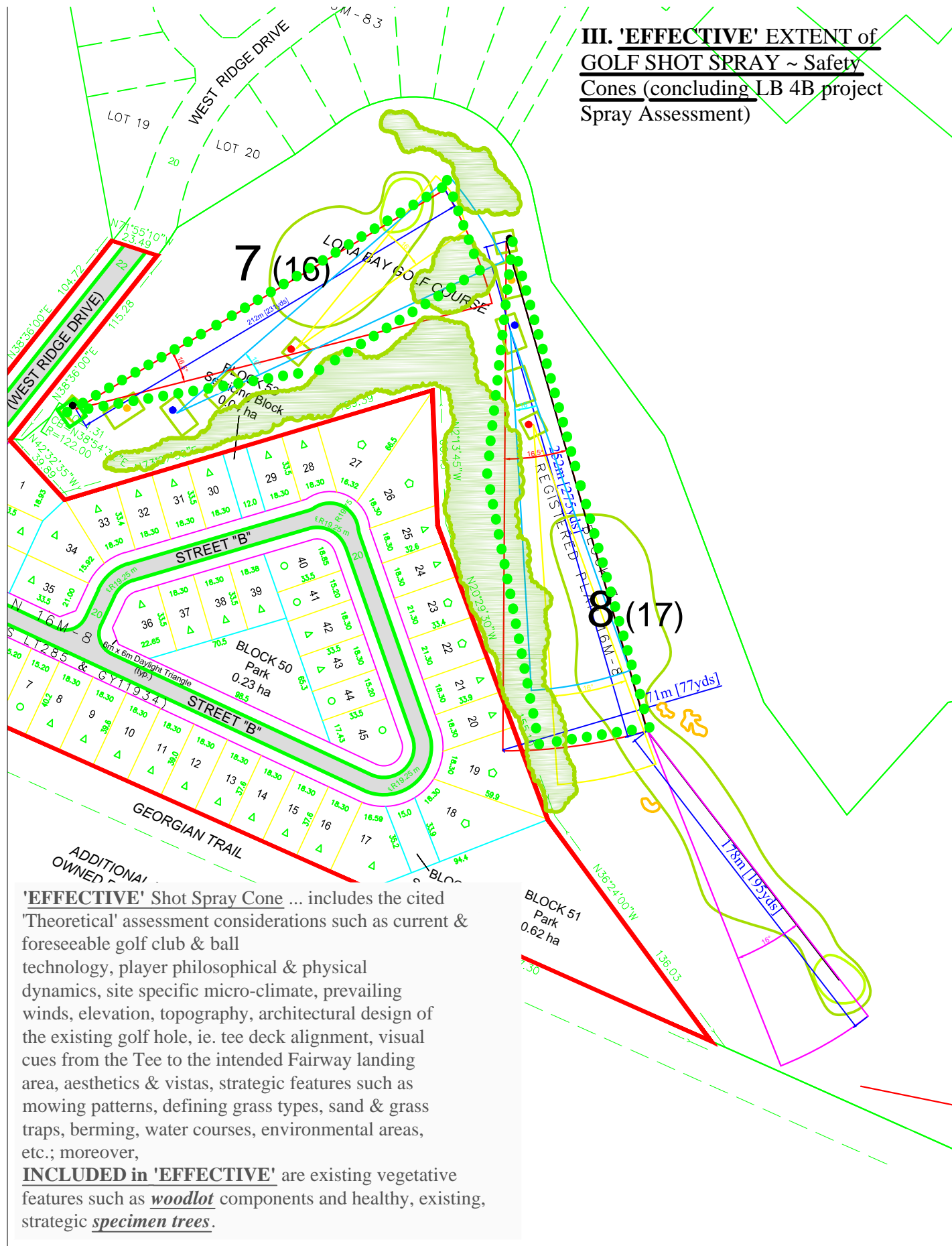
**LORA BAY Golf Club
Thornbury, Ontario**

**Golf Shot Spray Safety Assessment ~
Residential Development Block 4B
and Golf Holes 7(16) & 8(17)**





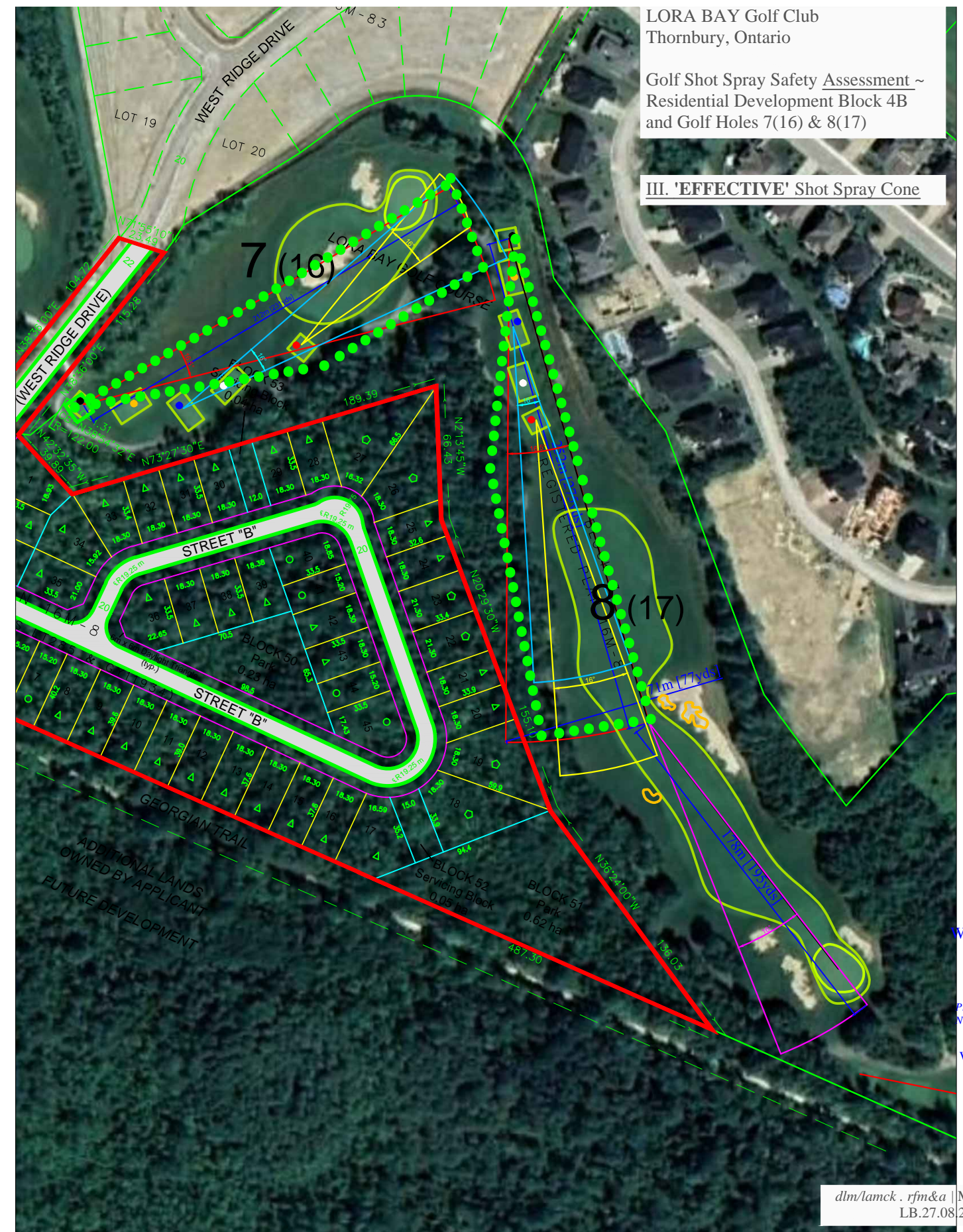
III. 'EFFECTIVE' EXTENT of GOLF SHOT SPRAY ~ Safety Cones (concluding LB 4B project Spray Assessment)



'EFFECTIVE' Shot Spray Cone ... includes the cited 'Theoretical' assessment considerations such as current & foreseeable golf club & ball technology, player philosophical & physical dynamics, site specific micro-climate, prevailing winds, elevation, topography, architectural design of the existing golf hole, ie. tee deck alignment, visual cues from the Tee to the intended Fairway landing area, aesthetics & vistas, strategic features such as mowing patterns, defining grass types, sand & grass traps, berming, water courses, environmental areas, etc.; moreover, INCLUDED in 'EFFECTIVE' are existing vegetative features such as *woodlot* components and healthy, existing, strategic *specimen trees*.

LORA BAY Golf Club
Thornbury, Ontario
Golf Shot Spray Safety Assessment ~
Residential Development Block 4B
and Golf Holes 7(16) & 8(17)

III. 'EFFECTIVE' Shot Spray Cone



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LB.27.08 23-03 sp

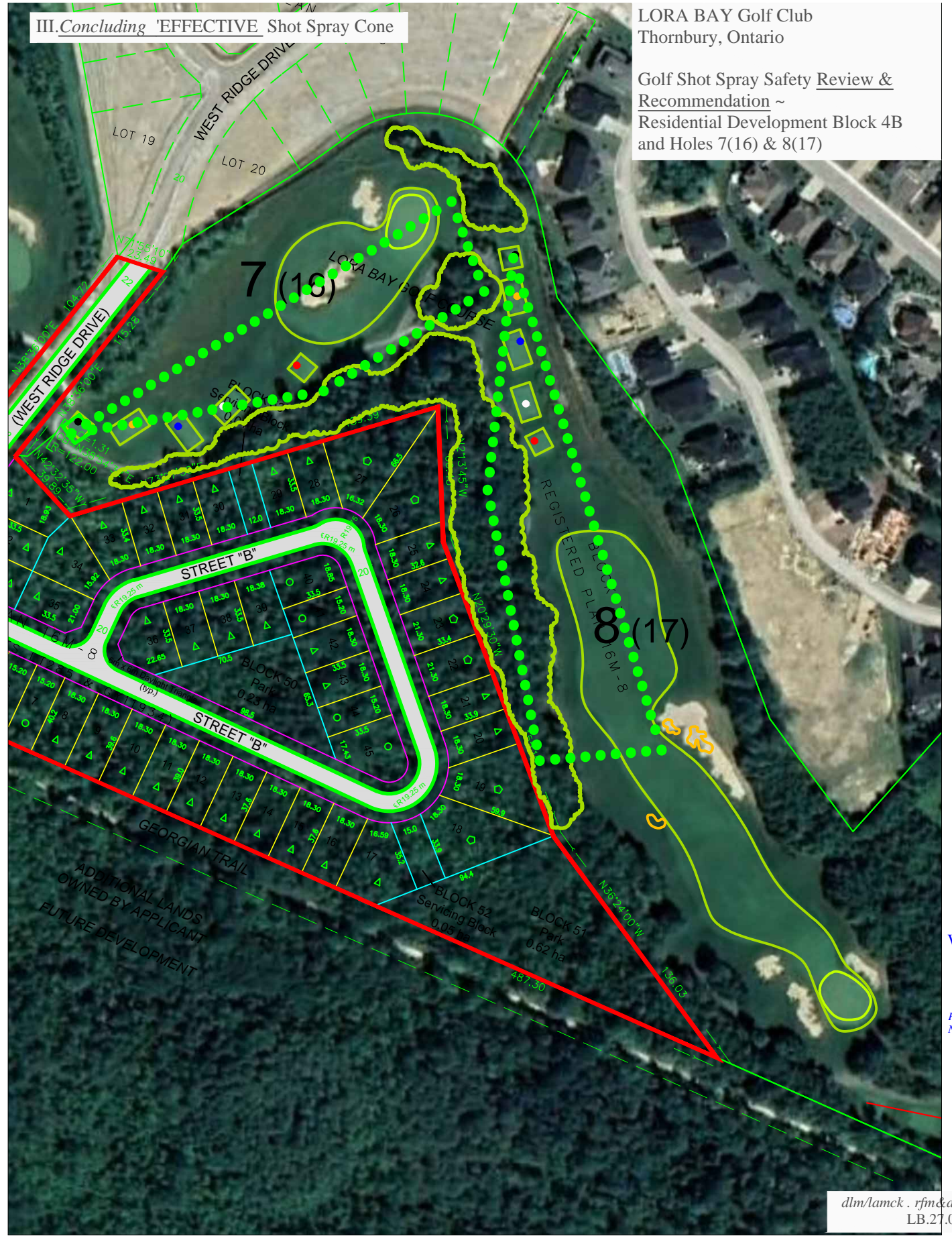
IV. 'SUMMARY' Spray/Safety Envelope

'THEORETICAL' (left panel) compared with Concluding 'EFFECTIVE' (right panel)



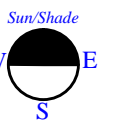
II. 'THEORETICAL' Shot Spray Cone

III. Concluding 'EFFECTIVE' Shot Spray Cone



LORA BAY Golf Club
Thornbury, Ontario

Golf Shot Spray Safety Review &
Recommendation ~
Residential Development Block 4B
and Holes 7(16) & 8(17)



Prevailing NW Wind

