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Golf Architect / Living Community & Environmental Consultant

August 8th, 2019 r2 - FINAL

Mr. Colin Travis MCIP RPP
Travis & Associates
7 – 275 First Street
Collingwood, ON L9Y 1A8

cc. Ms. Susan Williston, Royalton Homes

Re: GOLF SPRAY ANALYSIS – 13th Hole Monterra Golf at Blue Mountain Resort,
Royalton Homes' Proposed 'Blue Vista' Residential Development
Town of The Blue Mountains, ON (Grey County)

Dear Colin,

In response to your initial study request plus authorization from Susan Williston of Royalton Homes and follow-up from Tatham Engineering yesterday, the purpose of this communique is to submit our 'Golf Spray Analysis' of play on Monterra Golf's 13th Hole and determination of impact to the adjacent 50 acre 'Blue Vista' residential development envelope proposed by Royalton Homes immediately to the south of the subject golf hole and Crestview Court, west of Grey Road 21/Simcoe County Road 34, also known as Osler Bluff Road, in the Town of The Blue Mountains Grey County.

I. ABSTRACT

The conclusion of this 'Golf Spray Analysis', based on the parameters, factors and site assessment presented below, does confirm that the proposed Royalton Homes 'Blue Vista' residential development will not be tangibly impacted in general by golf play on the adjacent Monterra Golf Course in as much as the current, well-established golf hole design and turf management regime, as well as the existing mature property line woodlot do provide a reasonable and high degree of safety from errant golf balls for future residents whose properties will abut directly onto the 13th Fairway of Monterra.

Although theoretically and logistically acceptable in its present state, a suggestion has been put forward in this report to consider the transplanting of several coniferous (5) and deciduous (4) trees of reasonable size on the Monterra side of the property line in the visual opening due south of the Black and Grey tee decks on the 13th Hole. It goes without saying that an agreement would be necessary with the Monterra

Golf Course principals to accommodate such a request. Further, it is duly noted that this is not a recommendation nor a condition of development acceptability, rather a suggestion that would provide aesthetic separation between the two properties by filling the void, thereby completing the property-line woodlot and in the process coincidentally adding a supplemental layer of safety to 'Blue Vista' residents.

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 Monterra site in the Town of The Blue Mountains include Cranberry Golf Course by Living Water Resorts in Collingwood, Skyline Second Nature – Phase 3 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 25 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 Royalton's proposed 'Blue Vista' residential development provided by Travis & Associates, Planners, and by Tatham Engineering including aerial photography covering the specific location of the proposed residential lots and Monterra Golf's 13th Hole, have been reviewed and utilized a base plan for the theoretical spatial component of our golf shot spray analysis and 'Blue Vista' residential risk assessment. Further, four site visits have been made between mid-July and early August 2019 in order to observe potentially impacting actual on-site demographics such as vegetation, existing golf hole design, actual golf play and turf maintenance dynamics, etc.

Illustrations and notes on the attached *Graphic Sheet MG.08.08.S2c* will assist in clarifying the inherent site condition, as well as the application of the Safety Cones and the ultimate conclusions. Please note that the graphic is best printed at 11 x 17" and in colour.

The Monterra 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 tourists of all golf calibres, ages and interest levels. As such, golf shot targets are well defined and consistent day-to-day playable conditions are priority. The Par 5 13th Hole epitomizes these objectives.

Contour elevation change on the subject 13th Golf Hole from tee-to-green is perceptually flat but slightly uphill, not arduous, with token reduction 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 into the neighbouring 'Blue Vista' property. The hole, to a large extent, plays into the prevailing wind, thereby tending to prematurely knock down shots and reduce spray, albeit nominally. Elevation above sea level is within the median range of 200-250m for the core Southern Ontario golf market thereby presenting no net effect to area golf spray norms.

The five (5) tee decks with graduated yardages and varying alignment ranging from 578 to 343 yds., are directionally well-oriented to the intended 1st landing area with easily defined target areas and straight-forward strategy. All calibres of golfer are presented with a fair but still exciting challenge. Recently the Plateau East residential development has been built-out along the north or right side of the 13th Hole. Coniferous transplants in strategic and aesthetic groupings are now of reasonable size and density along the Plateau East residential property lines. Blue Mountain ski runs provide an appealing vista in the distance and backdrop which serve to psychologically make for better shot set-up, alignment and in turn a higher percentage of good golf shots, as do the mature, quite dense woodlot and specimen trees along the south or left side of the Fairway/rough and the Approach to the Green. The trees, as well as topographical relief, signature perimeter mounding of considerable height, defining Kentucky Bluegrass/Fine fescue groomed rough, naturalized areas and creeping bentgrass 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 Fairway itself is of reasonable and generous width, as is the wide expanse of the primary bluegrass/fescue rough between fairway and the property lines, north and south.

Key to our analysis, the 13th hole is tree lined to the south along the property line, with but one exception, a 'gap' opposite the Black and Grey tee decks. For the most part, 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 and 2nd shots from the fairway 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 left or south side.

The south side woodlot is predominantly on the golf course property with some established trees straddling of the property line extending into the 'Blue Vista' property opposite and just short of the first fairway landing area. The woodlot composition adjacent to 'Blue Vista' is a good mix of mature Poplars, also referred to as Cottonwood, Basswood, Ash, Maple, Choke Cherry, Paper Birch, etc. West and behind the Green, although not physically impacting the Royalton 'Blue Vista' development, the woodlot becomes more predominantly Poplar, much covered in wild grape vines, with some Dogwood and Swamp Willow growth as well as a Spruce grove to the north-west back of the 13th Green. Poison Ivy

abounds to the south-west of the Green and Approach to the Green continuing on through the bush westerly to the back of the 14th Hole's long Black tee deck.

For the most part the southern property line woodlot is on the golf course side but does straddle the boundary in one area. This property line woodlot, although not entirely necessary to provide reasonable safety for future 'Blue Vista' residents, does add a significant degree of additional assurance! Please note that the assumption has been made, fundamental to final commentary and conclusions, that the woodlot remains in place, largely untouched by the golf course maintenance staff beyond routine care, over time and furthermore, that 'Blue Vista' construction cautiously removes only the necessary portion of the woodlot on its side of the property line to create backlot drainage swales and install fencing. As a cautionary note, Royalton is urged to exercise extreme care during construction to minimize tree root and canopy damage of the woodlot and trees that straddle the property line. Qualified arborists are recommended to be engaged in this critical exercise.

First and second shots which play alongside the south property line are the main focus of our study. The third shot or approach shot into the GREEN of the Par 5 13th Hole has little-to-no physical impact in itself on risk to the 'Blue Vista' properties as both APPROACH and green are beyond the residential areas and if memory serves correct, adjacent to an intermittent tributary watercourse running through a heavily wooded open space block. That said, the 13th Green does play a role in shot spray as it the focal point, or the primary visual target of the hole from as far back as the tee decks. Slope of the green towards approaching players, protective perimeter sandtraps and back-drop mounding plus generous bluegrass/fescue primary rough surrounding the green clearly serve to direct shots from the fairway and near rough to the receptive creeping bentgrass/poa annua putting surface. Approach shots are short, ranging from 65 yards to 125 yards, thereby minimizing the potential for any potential extra-ordinary spray and atypically errant shots. Again, the dynamics of the 13th Green combine to have relevance to first and second shots in so much as they provide a comfortable, clearly defined route from fairway to the distant Green. To re-iterate, the 13th Green, although physically somewhat removed from the focal safety areas along the south side of the Fairway, plays an important role in assessing shot spray from the tee decks and from the fairway on 2nd and 3rd golf shots.

Moving from experiential architectural assessment of the strategic site features that comprise the 13th Hole from Tee-to-Green, to on-site observation and characterization of actual play, and on to practical application, four site visits were made from mid-July to early August 2019 with actual golf shot tracking of a very diverse sampling of +100 golfers ranging from top caliber males and females, average players, once per season occasional and resort tourist players, young and old. Of the players observed, only four (4) tee shots came to rest in the southern property line woodlot and one (1) in the 'Blue Vista' open pastureland approximately 3m south of the woodlot. This was a very positive result, noting that 100% prevention of wayward shots crossing such a property line is impossible no matter what measures have been implemented, netting included, and must be recognized as a part of golf-side living. Beyond player observation, trekking through the property line woodlot from east to west, and vice versa, was undertaken on 3 occasions from tee to green and an unusually low number of lost golf balls were found (9, many of which were quite weathered and had been there possibly for years). As well, a total of six (6) balls were found in the open field 'Blue Vista' areas no more than 2m or 2.2 yds outside the woodlot where Lots 52-

55 and 63-64 are to be located. Although not empirically-sound data collection, this speaks volumes to the inherent and existing positive protection, 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. 13 location of the Monterra 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 13.5 degrees to 16 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 tendencies at neighbouring Collingwood-area golf courses, a 15 DEGREE SPRAY ANGLE, also referenced as 15 DEGREE SAFETY CONE, was chosen as being appropriate for this corner of the Monterra site. Although spray angles and safety cones are typically less for 2nd Fairway shots and Approach shots to the green, we have chosen to liberally apply the same 15 degree measure from each side of the intended line of ball flight for 2nd and 3rd shots.

Illustrations and notes on the attached *Graphic Sheet MG.08.08.S2c* will assist in clarifying the application of the 15 degrees and the conclusions reached in this analytic study. As previously noted, this graphic is best viewed and understood when printed in colour and at 11 x 17”.

Continuing on, the 15 Degree Safety Cone, applied on paper as a spatial determinant, is subject to the effect of mature dense woodlots and specimen trees of 50-80’ feet in height especially when in close proximity to the tee and along the entire length of the fairway/rough; for example, on the left or south side of the 13th Hole from the longest or Black tee deck and mid-range Grey deck and their respective safety

cones, the current woodlot actually reduces the cone on the south side of the hole quite significantly. In this instance, the reduced safety cone, or 'EFFECTIVE Safety Cone' is in reality 9 degrees for the Black cone and 7 degrees for the Grey vs. the theoretical spatial 15 degrees, thereby further removing risk away from the adjacent 'Blue Vista' homes immediately south of the adjacent property line. Note too that in addition to trees, mounding of significance, sandtraps, rough area turf types, naturalized areas, etc. factor into determination of the Effective Safety Cone. On the 13th Hole, the such existing and noteworthy design features do come into play, in a positive way, when assessing safety to the proposed adjacent 'Blue Vista' properties.

Golf Shot Spray analysis at GREEN sites, and APPROACHES 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 13th 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 and Fairway 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 13th Green at Monterra, the Effective Safety Arc reduces the spatial calculation from 30m to 25m from the centre of the Green. In addition to trees, mounding of significance, sandtraps, primary rough turf types, etc. factor into determination of the Effective Safety Arc.

Utilization of the 'EFFECTIVE Safety Cone' and 'EFFECTIVE Safety Arc' for the 'Blue Vista' safety study assumes that the existing woodlot bordering Hole No. 13 to the south along the property line will remain in place, largely untouched by the golf course maintenance staff beyond routine care, over time and that Blue Vista construction, ie. backlot swales, lot grading and landscaping, fence installation, etc. is carefully undertaken such that there is minimal-to-no damage to tree roots and canopy extending over the property line from the golf course as well as in the limited treed areas present on the residential side of the property line Lots 51-56.

V. ANALYSIS & COMMENTARY

Following application of the cited parameters as well as the theoretical spatial 15 degree Safety Cone, *rfm&a* / MOOTE has concluded that the proposed 'Blue Vista' properties along the south boundary of Monterra's 13th Hole as conceptualized by Travis & Associates Planners and Tatham Engineering are satisfactorily situated to assure reasonable safety from errant golf shots originating from the Tee decks, 2nd, possibly 3rd shots from the Fairway, and from Approach shots to the 13th Green. Although generally conclusive by spatial assessment, the safety of the subject residential properties is further augmented by the existence of the 50-80' high property line woodlot trees establishing an increased safety buffer per EFFECTIVE Safety Cones along the full length of the Fairway and EFFECTIVE Safety Arc at the 13th Green and Approach.

It should be pointed out, as per reference to accompanying *Graphic Sheet MG.08.08.S2c*, that two areas of theoretical SPATIAL incursion or risk exist to the backlots of proposed Lots 54-56 from the mid-range GREY tee deck and to Lots 53-54 from the longest distance BLACK tee deck. Concern for these two areas is however waved knowing that the 15 degree yardstick is very liberal, arguably overly cautious in this location, and that when the dense, high woodlot is brought into consideration, the EFFECTIVE Safety Cone dramatically reduces the golf shot spray area.

Although no guarantees can assure that there will never be incidents of golf ball incursion into future 'Blue Vista' residential properties, the likelihood is low and certainly few and far between from those purposefully playing golf on the 13th Hole at Monterra. 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.

Prior to concluding this report, *rfm&a* | MOOTE would like to re-emphasize that future 'Blue Vista' residential property owners situated immediately adjacent to the 13th Hole at Monterra can be given reasonable assurance that all rational safety requirements relative to risk from errant golf shots have been addressed and in fact are in place today. That said, there is one suggestion, quite different from a definitive recommendation or a condition of this report, that Royalton may wish to voluntarily consider: that being the planting of reasonably sized new trees (5 White Spruce or similar and 4 Red Maples) suitably located on the Monterra property so as to both aesthetically provide separation between the two properties and to re-establish continuity in the property line woodlot by filling in the existing void immediately south-south west of the BLACK tee deck at the east end of the 13th Hole inside the Monterra golf property. By coincidence and quite by default, in the process, a supplemental bonus layer of safety to 'Blue Vista' residents would be added. It goes without saying that any such consideration would require an agreement and understanding with the principals and management of Monterra Golf. Once again, the afore-noted is a suggestion only, one founded in peripheral subjectivity as opposed to absolute necessity. This in no way is to be considered as a fundamental priority condition of development acceptability in this study.

VI. 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 Royalton Homes' 'Blue Vista' development backing onto the 13th Hole of the Monterra Golf Course. This conclusion and recommendation comes without the need for mitigation measures, albeit with caution to be exercised during residential development backlot drainage and fenceline construction work to minimize impact to shared property line woodlot tree roots and canopy.

R.F. Moote & Associates Ltd. (*rfm&a* / MOOTE) has appreciated the opportunity to provide this Golf Spray (Safety) Analysis for Royalton Homes and Travis & Associates Planner. 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,



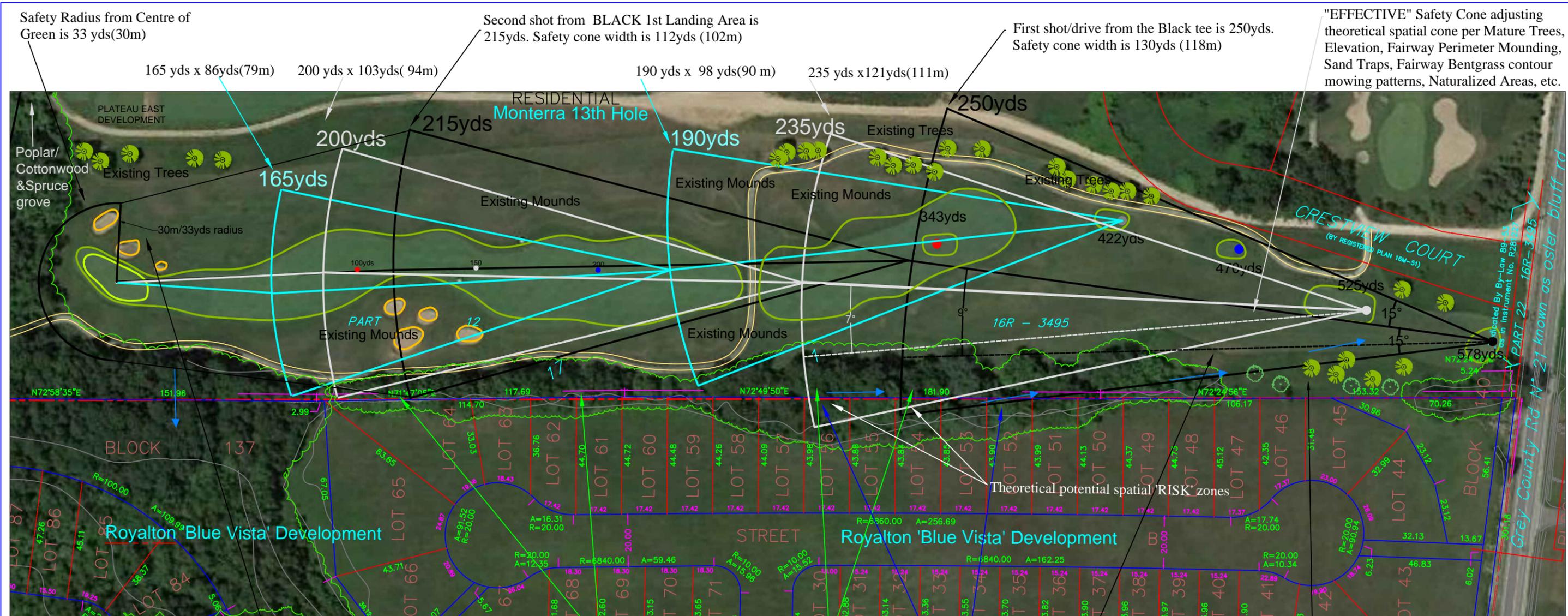
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Associates assigned to Royalton Homes-Monterra Hole No. 13 'Golf Spray Analysis':

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'Shot Distances' for Spray & Safety Assessment Purposes:

	1st Shot/Drive	2nd Shot
Black Tee	250yds	215
Grey Tee	235	200
Silver Tee	190	165

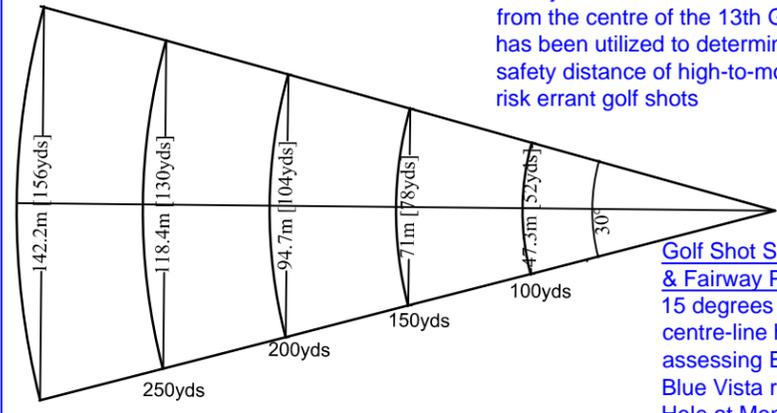
It is assumed & fundamental to this assessment that the existing mature mixed deciduous property line woodlot, comprised of Poplar/Cottonwood, Sugar Maples, Basswood, Ash, Paper Birch, Choke Cherry, etc. located on the golf course property, will remain as at present.

Golf Shot Spray at Green
A very liberal radius of 30m (33 yds) from the centre of the 13th Green has been utilized to determine the safety distance of high-to-moderate risk errant golf shots

Assuming residential backlot surface drainage will require some tree removal, this should be minimized to whatever extent possible, to maximize safety. Backlot grading and 'fence' installation require care such that tree root damage is avoided.

"EFFECTIVE" Safety Cone adjusting theoretical spatial cone per Mature Trees, Elevation, Fairway Perimeter Mounding, Sand Traps, Fairway Bentgrass contour mowing patterns, Naturalized Areas, etc.

New Tree Transplanting (5 White Spruce or similar and 4 Red Maple or similar) suggested on golf course property with caution to not impact golfers' 1st shot/drive set-up on BLACK tee deck, alignment and orientation to the north/right side of the fairway



Golf Shot Spray Safety Cone for Tee & Fairway Play
15 degrees each side of intended centre-line has been utilized in assessing Errant Golf Shot Risk to Blue Vista residents south of the 13th Hole at Monterra Golf

LEGEND

- Property Line: - - - - -
- Safety Cone: [Cone symbol]
- Deciduous Trees: [Tree symbol]
- Conifers: [Tree symbol]
- Existing Treeline: [Line with trees symbol]
- Drainage Tendency: [Arrow symbol]

HOLE No. 13 ~ DISTANCES

BLACK	578 yds
GREY	525
BLUE	470
SILVER	422
RED	343

Par 5, 10th handicap stroke hole

GOLF SPRAY ANALYSIS

13th Hole Monterra Golf at Blue Mountain

Proposed 'Blue Vista' Residential Development - Royalton Homes

Town of The Blue Mountains
County of Grey
Ontario



Scale 1:1500 @ 11x17



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MG.08.08.S2c