

Brunello Golf Safety Assessment

Dear Andrew,

As I understand, HRM would like better certainty on the safety aspects of the proposed land use changes around the edge of the golf course; particularly in the areas where you are proposing new housing close to a golf hole. Staff at HRM who know me as a planner, may not know that I am also a practicing golf course architect with design certificates from Harvard University and dozens of course designs, renovations and master plans to my credit. I have worked on golf course designs in Russia, Morocco, Australia, India, Egypt, Libya and of course Canada. My most recent course opened at Aspotogan Ridge (a 9-hole with plans for a future 9). I have also worked on several safety audits for several courses in Canada and as an expert witness on 2 course legal issues regarding safety.

This letter outlines how the proposed land use changes at Brunello could be accommodated with some specific changes to the golf course. As I understand from our discussion and the maps provided, you are looking to rezone some land from golf to housing along some of the road frontages. In particular, holes 2, 9 and 16 will add some new housing near the green sites which could pose some safety issues if not addressed through course design changes. Golf safety assessments is an inexact science and safety can be influenced by wind, temperature, topography, vegetation, out of bounds, and turf conditions. Statistics can help narrow down the safety margins for average golfers and both the American and European Institute of Golf Course Architects have some rules of thumb and guidelines which are useful to follow when doing safety audits. Some of the considerations include:

1. Since most golfers are right handed (90-93% in Canada) and most tend to slice (right-sided shot for a right handed golfer and left-sided shot for a left handed golfer), architects must provide a greater safety margin on the right side of a golf hole than the left side.
2. The longer the distance a ball is struck, the greater the chance for a mis-shot misaligned from the centre of the fairway or green.
3. The generally accepted rule of thumb is that "15 degrees on either side of the apparent line of play will account for 92% of golf shots" (M. Hurdzan, 2006. "Golf Course Architecture").

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Hole 2

Hole 2 is proposing to add 4 new lots north of the current green site. From the back tee, the hole is an intermediate length par-3 with a length of 185 yards from the back tee, 153 yards from the main centre tee, and 100 yards from the front tee. There is an elevation drop of about 6m from the back tee to the green. Most golfers would use a 6-8 iron which provides more control than a low iron (1-5 iron). The green is currently almost 12,000 sq.ft. which is larger than a typical par-3 and could be cut back on the north side to 10,000 sq.ft. without impacting the playability of the hole. A sandtrap has recently been constructed on the right side of the green which forces most players to play to the left. The 15 degree rule from the longest tee



creates a safety radius of about 44m from the centre of the green which is close to the rear lot line of the proposed new lots. These rear lots could expect about less than 10% of all shots to enter the back yards. There are several potential remedies for this including creating an out of bounds area near the rear lot lines, adding a safety fence along the rear lot lines, reducing the green size to move the centre of the green further south, and moving the back tees closer to the northern property line to change the angle of approach. We would recommend first reducing the mowed green size on the north side of the green and eliminating the pin positions on the north of the green by about 8m. The owner could explore moving the back tee further north, and creating a new out-of-bounds area on the north side of the green. Safety fencing would be a last resort if the previous recommendations do not create the required safety outcomes but we think the chances of stray balls in these backyards would be minimal given the short distance of the Home. The back yards of the future homes, like on any new modern course, should be designed with safety in mind and the developer may want to explore enclosed decks and naturalized rear yards or conservation areas that is rarely mowed to reduce the potential for conflict. Given the above notes, new housing on hole 2 should be a manageable safety issue for the club and future homeowners.



NEW SINGLE FAMILY RESIDENTIAL LOTS

NEW CART PATH ALIGNMENT AROUND NEW SINGLE FAMILY RESIDENTIAL LOTS

REMOVE THIS PORTION OF EXISTING GREEN

NEW LIMITS OF REDUCED EXISTING GREEN



5m GRID LINES

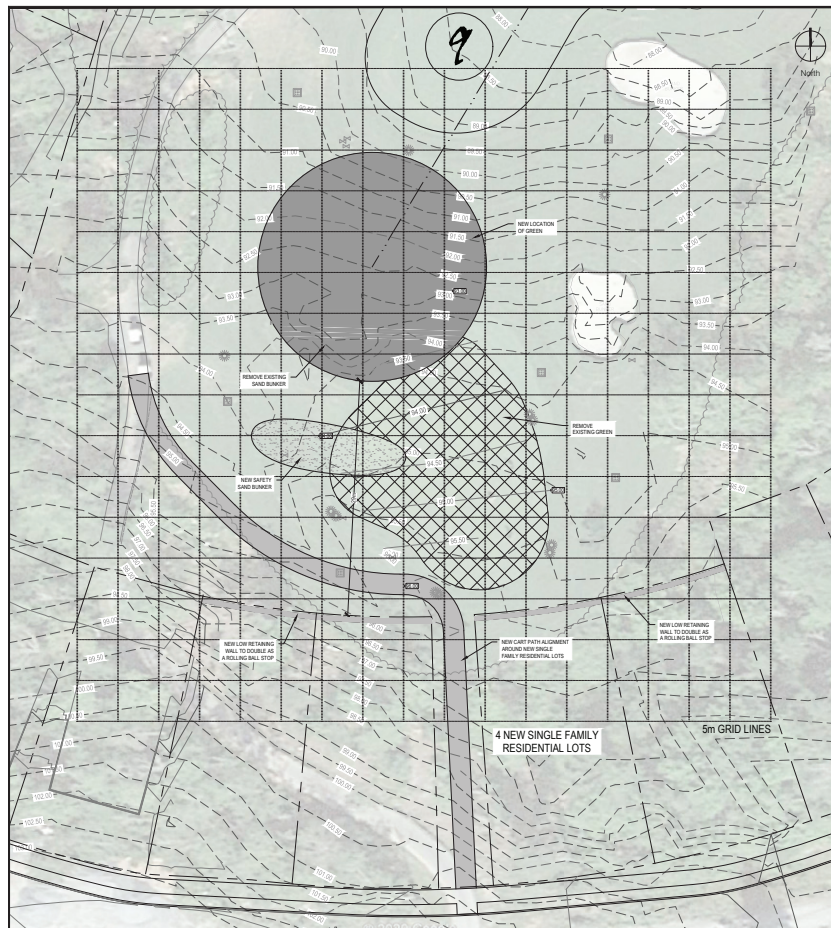


Hole 9

Hole #9 is a 548 yard par-5 which is considered an average to long par-5. The hole width at the 2 landing areas is generally considered very wide at 65 yards, which provides a good margin of safety for non-professionals. There are additional 10-15m 'rough' areas beyond the fairway which on each side and, taken together, these widths of play provide ample safe width along the fairway.

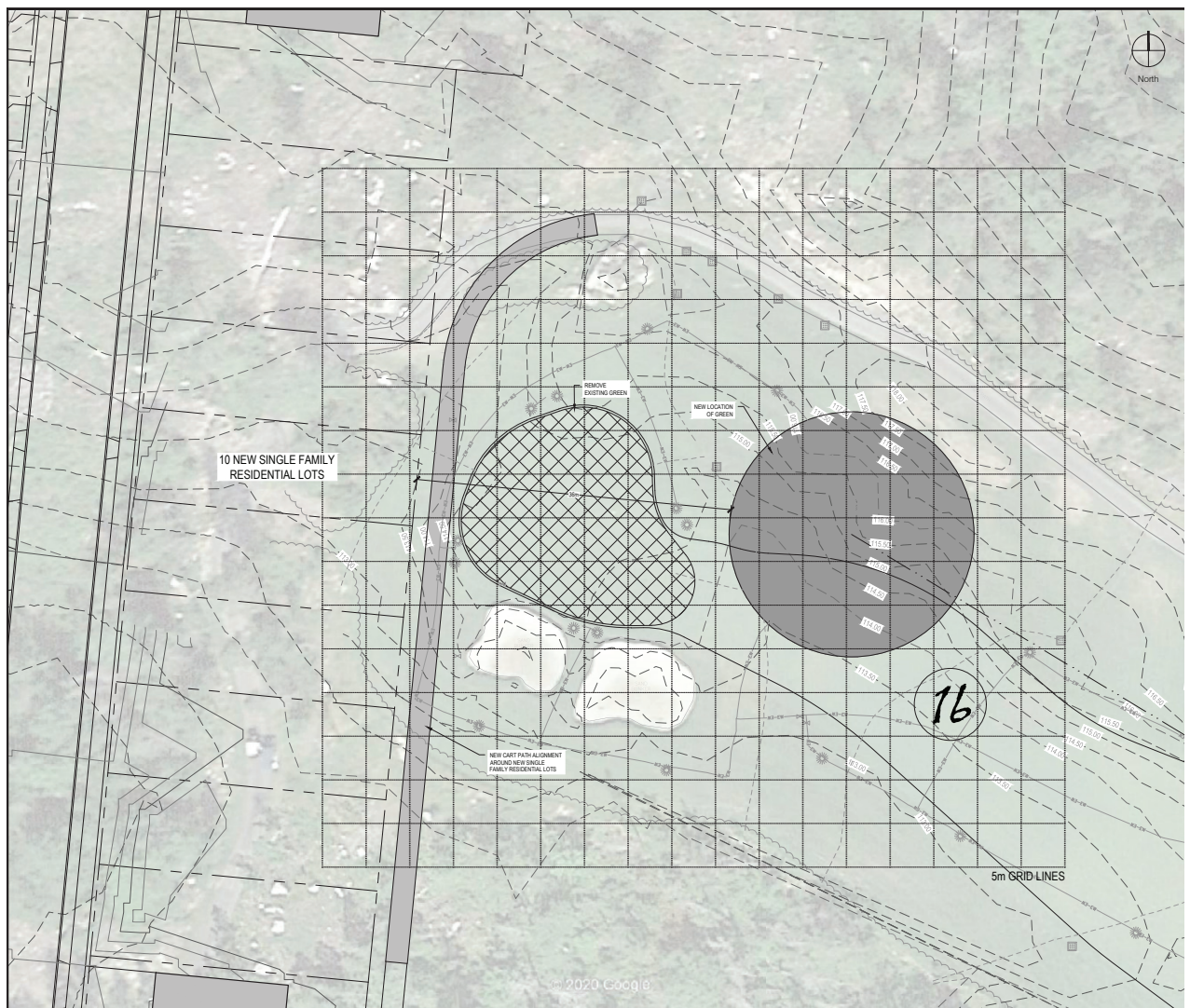
Long par-5 holes require larger than normal safety areas around the greens because golfers are approaching the green from a range of very different distances. After the first landing area, the hole rises about 10m from 85m to 95m, making the hole play even longer than it feels. The orientation of this hole to the southwest also plays into the prevailing wind during the summer and fall months, often requiring additional club to reach the green suggesting many golfers will play this hole short. The new proposed homes will be built well above the new green (the road is roughly at 101m in height and the new green will likely be at an elevation of 90m) so even with a walkout basement, we would expect the new lots to require some retaining walls near the back property line. These walls should significantly help in the safety margin for any 'skulled' balls.

Unlike hole 2, the green of hole 9 will need to be completely rebuilt and pushed to the north by about 30 yards to create the necessary safety margins for overshots. Relocating the green will have the added safety benefit of reducing the hole length by 30 yards to an average to short par-5 of about 520 yards, and reducing the vertical rise to the green from 10m to about 6-8m. A 2m min rock retaining wall at the property line would reduce rear yard errant shots and this could be supplemented by a new safety bunkering around the new green. The existing and future green layout is shown below.



Hole 16

Hole # 16 is a 515 yard par-5 from the back tees. The back tees have recently been relocated south to provide more safety for players on #11 green and for adjacent future development on the left side of the hole. The landing area for hole #16 is about 60 yards wide with no rough (just woods). This is generally considered a wide fairway though any future residential development to the south of this hole should preserve a 30m wooded buffer if possible. The fairway is generally flat from the landing area to the green and the west orientation of the hole means that prevailing winds from the south west will push balls north into hole #11 rather than to any future residential to the south. The green is relatively small at 4,870 sq.ft. which slightly compensates for the short par-5 hole length. Like hole #9, to accommodate 30m deep lots behind the green, the green will need to be pushed to the east by about 20 yards to maintain a 30 yard safety margin from lots. Reducing the hole length to a very short par-5 of about 495 yards, the new green should be purposely slightly smaller than the standard 6,000 sq.ft. to maintain the hole difficulty but to still preserve the safety factor for new homes. A safety bunker behind the green and in front of the green site and possibly a dry laid stone wall at the property boundary would further reduce the potential for conflicts.




Implementing the recommended safety concerns in this report should significantly reduce risk impacts from golf on future residential properties. In closing, based on current accepted guidelines and standards for golf course design, the proposed changes and recommendations at Holes 2, 9 and 16 will allow for adequate safety measures to minimize the risk of stray golf balls between the golf course and the proposed residential development.

If you have any questions, please feel free to reach out to me at your convenience.

Sincerely,

A solid black rectangular box redacting the signature of Rob LeBlanc.

Rob LeBlanc, Golf Course Architect
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