

GOLF COURSE SAFETY REPORT
MARLWOOD GOLF & COUNTRY CLUB
WASAGA BEACH, ONTARIO

Prepared for:

Marlwood Golf & Country Club
445 Golf Course Road
Wasaga Beach, Ontario
L0L 2P0

Prepared by:

MBTW Golf Design
255 Wicksteed Avenue
Unit 1A
Toronto, Ontario
M4H 1G8

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1.0 INTRODUCTION

The Marlwood Golf and Country Club is an existing 18-hole golf course located on Golf Course Road in Wasaga Beach, Ontario. The golf course was established as a private 9 hole course in the early 40's before expanding to an 18 hole, semi private golf course in the 1950's. The par 71 layout measures 5,425 yards and occupies approximately 146 acres (59 hectares).

The Owner of the golf course, T.P.C. at Marlwood Inc., is proposing to re-develop two separate areas of the golf course into residential development. The smaller of the two areas is a 10 lot Draft Plan located along Golf Course Road in the area of the existing 1st green and 2nd tees. The second area is larger and is located in the south west portion of the golf course. The 54 lot Draft Plan proposes an extension of Masters Lane. Please refer to Appendix A for the proposed Draft Plans.

The proposed residential development will have an impact on the existing golf course layout. Specifically, changes to the existing golf course are required for Holes 1, 2, 3, 13, 14, 16, 17 and 18. MBTW Golf Design has reviewed options for re-routing the golf course and have completed a revised golf course routing plan maintaining an 18 hole golf course. The proposed golf course layout plan is included in Appendix B.

As part of a complete submission, the Town of Wasaga Beach has requested that a qualified professional outline the potential impacts of the proposed residential development with respect to the existing golf course and any potential safety implications. MBTW Golf Design has been retained by the applicant to complete this requisite analysis.

2.0 OVERVIEW

This report provides both a general summary of safety principles related to golf course community design and a detailed analysis of safety issues related to the Marlwood Golf and Country Club. Recommendations will also been made regarding measures that should be implemented to mitigate safety concerns. For the purpose of clarity, the report has been organized under the following headings:

Section A: *General Golf Course Community Design Principles*

1.0 *General Safety Design*

2.0 *Marlwood Golf and Country Club – Safety Design Criteria*

Section B: *Marlwood Golf and Country Club*

1.0 *General Observations*

2.0 *Hole-by-Hole Analysis and Recommendations*

SECTION A: GENERAL GOLF COURSE COMMUNITY DESIGN PRINCIPLES

1.0 General Safety Design

Golf Course Architects and their organizations have not adopted any specific design and safety standards for a golf course layout within residential developments. Written documents typically provide general recommendations and strongly emphasize the importance of site-specific design criteria and the use of an experienced and reputable Golf Course Architect. There are, however, precedents throughout North America that demonstrate suitable fairway widths, distances between golf holes and safety setbacks of greens, fairways and tees from adjacent residential development and roads.

The key elements related to golf course design safety can be illustrated using the following images - Image 1: Minimum Dimensions for a Double-Fairway Golf Corridor and Image 2: Design Safety Elements.

Image 1: Minimum Dimensions for a Double-Fairway Golf Corridor is from *Golf Course Development and Real Estate*, a book written by Desmond Muirhead (Golf Course Architect) and Guy L. Rando (Golf Course Architect and Land Planner) that was published by the Urban Land Institute in 1998. The image illustrates a golf course safety corridor based on an unrestricted, flat site. Between golf hole centerlines the illustration shows a separation of 200' to 225' (61m to 68m) and from the centerline of a golf hole to a property line the illustration shows a minimum distance of 150' (45m).

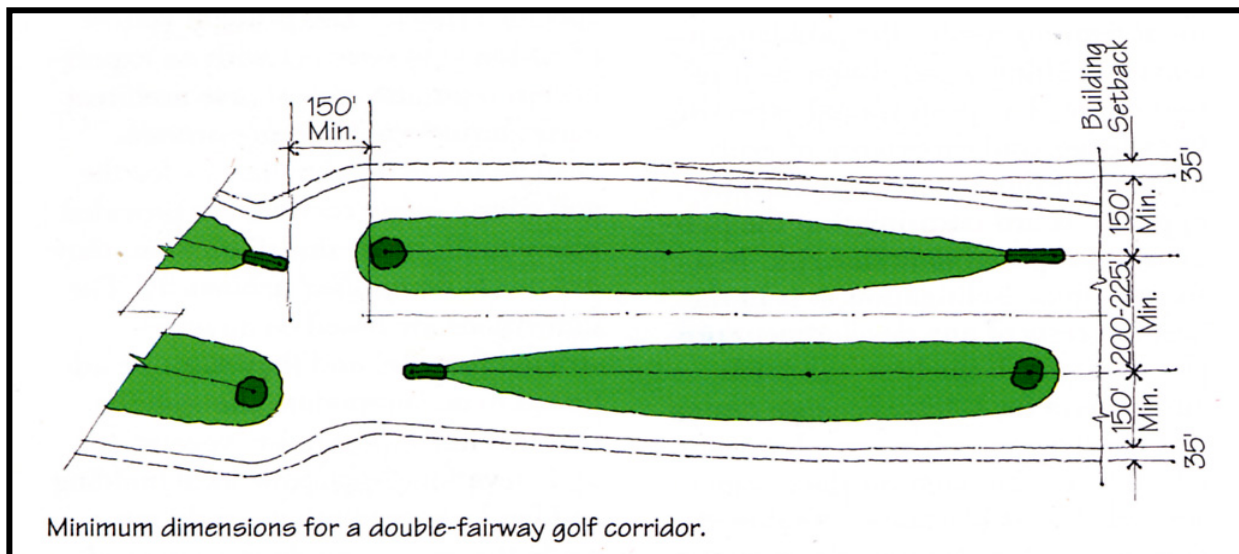
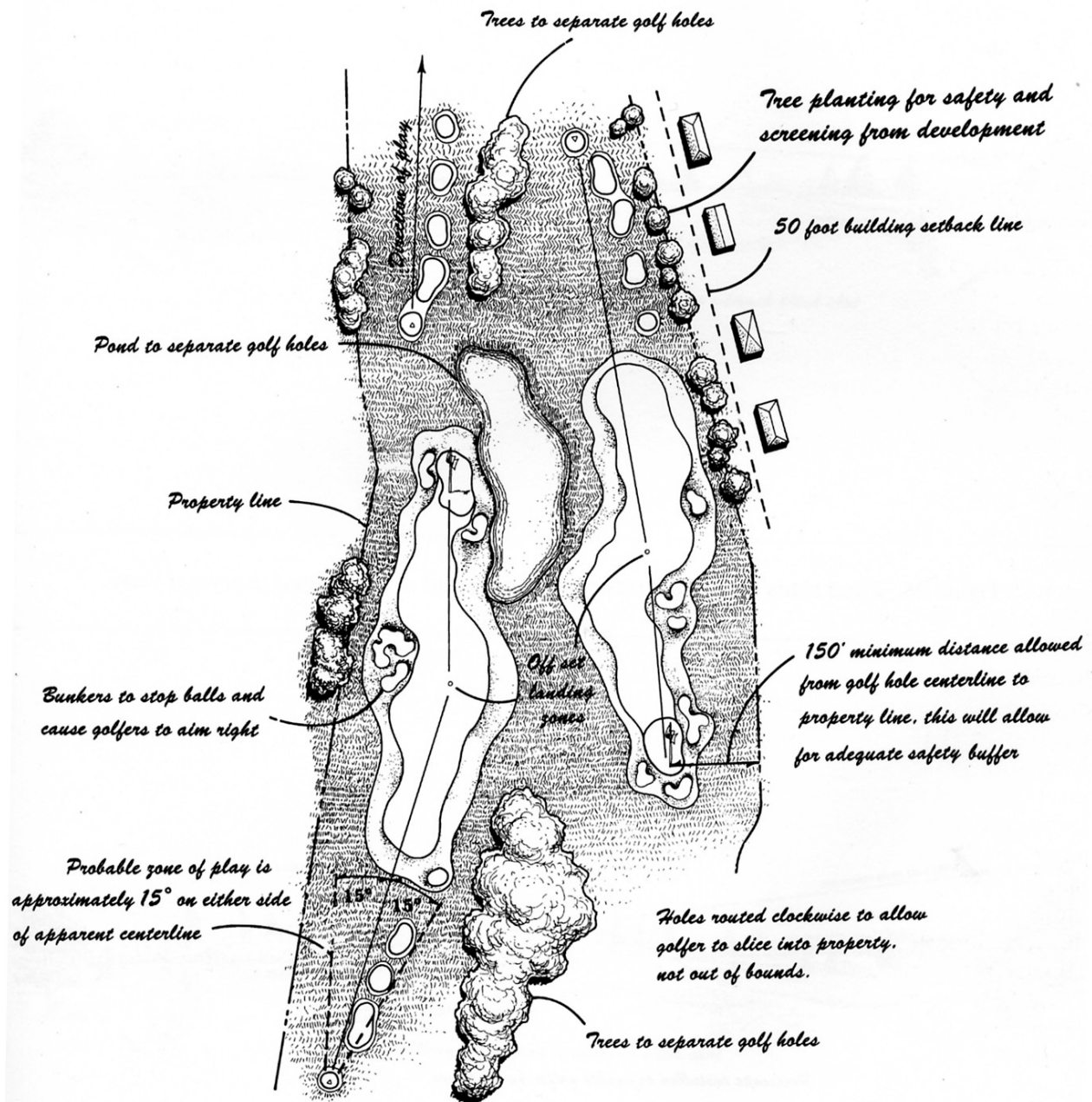


Image 2: Design Safety Elements (shown below) is from Golf Course Architecture – Design, Construction and Restoration, a book written by Dr. Michael Hurdzan (Golf Course Architect) that was published by Sleeping Bear Press in 1996. Similar to the first example, this image shows a minimum 150' (45m) setback to a residential property line. The image also identifies another key element to design safety on a golf course – the Probable Zone of Play from the tee decks. The Probable Zone of Play is an area 15° either side of the apparent golf hole centerline. Studies suggest that 93% of all shots by golfers will land within the Probable Zone of Play.

DESIGN SAFETY ELEMENTS



2.0 Marlwood Golf and Country Club – Safety Design Criteria

Based on the key elements and minimum distances outlined above, we propose to utilize the following general setbacks and design criteria for the purpose of our detailed hole-by-hole analysis of the holes affected by the proposed residential lands at the Marlwood Golf and Country Club:

Fairway Widths

In general, fairways are designed so that the greatest width is located in the landing area / turn point, which is typically located at a 225 yard distance from the back tee. Fairways should be 35 to 50 yards wide (32 to 45m) in the landing area depending on the length and difficulty of the hole.

Fairway (Landing Area) Setbacks

Based on the Zone of Probable Play principle outlined above, a 225 yard (205m) tee shot would require a 55 yard (50m) wide setback be established on either side of the fairway centre line at the landing area / turn point. For our analysis of the Marlwood Golf and Country Club, we will utilize the 55 yard (50m) setback for fairway landing areas from the tee.

Green Separation from Housing and Roads

Separation distances from green sites to adjacent houses and roads are typically less than fairway landing areas due to greater player accuracy of iron shots compared to drivers. Based on the zone of probable play, a 150 yard tee shot would require a 40 yard (36.5m) separation distance from center of green to residential lot lines and/or road right-of-way.

Tee Separation from Housing or Roads

The location of tees adjacent to residential development has been successfully achieved by implementing a 10-metre separation distance. The key to tee placement, however, is not only adhered through appropriate setbacks, but by alignment. Both separation distances and alignment of tees will be reviewed.

SECTION B: MARLWOOD GOLF AND COUNTRY CLUB

1.0 GENERAL OBSERVATIONS

The following general observations related to safety concerns have been noted:

- **Golf Holes Affected by Proposed Residential Development:**
Eight of the existing eighteen golf holes will be affected by the proposed residential development. Alterations to the layout are required for holes 1, 3, 13, 14, 16 and 17, while modifications to the tees are required for holes 2 and 18. Proposed Golf Hole Layouts have been provided in Appendix C.
- **Golf Course Orientation:**
The proposed residential development is located along the perimeter of the existing golf course. Existing holes 1, 2 and 18 have the proposed residential lands located to the left. When a golfer misses a shot, the typical result is a slice – the ball turning away to the right away from the residential lots, including holes 1, 2, 3, 13 and 18.

- **Site Topography:**

Ideally golf course communities are built with the elevations of the residential areas above those of the golf course. This allows for opportunities to provide topographic relief, separation and added safety to a development. Due to the flatness of the site there is no opportunity to build up the elevation of the residential development.

- **Existing Pond Locations:**

There are a number of existing ponds within the golf course. Based on the final routing plan, the existing ponds are located on the left side of the golf holes - between the golf hole and proposed residential development. The presence of the water hazards in these locations will force players to aim away from the existing and proposed residential lots.

2.0 HOLE-BY-HOLE ANALYSIS & RECOMMENDED CHANGES

HOLE # 1

The opening hole is a short dog leg left par 4 that measures 348 yard from the back tees. The future residential development will impact the current green location.

Recommendations:

- Reconfigure the golf hole to be a straight-away par 4 that measures 306 yards.
- Preserve all existing vegetation to the left of the golf hole to maintain a treed buffer to existing and proposal residential lots.
- Construct a new green 40 meters from the proposed residential lot line and consider planting trees to the left of the proposed green to continue a treed buffer between the golf hole and future residential lands.

HOLE # 2

Hole 2 is a downhill par 3 measuring 133 yards. The future residential development will impact the current tee locations. The green is well bunkered to catch errant tee shots.

Recommendations:

- Construct new tees and shorten the golf hole to 90 yards.
- Maintain the existing mature trees to the left side of the golf hole to create a treed buffer between the golf hole and existing residential lots.

HOLE # 3

Hole 3 is a sharp dogleg left that plays to a yardage of 309 yards and plays around existing residential lots. Many players try to cut the corner of the hole to shorten the second shot. This aggressive line of play creates a safety concern with the existing residential lots. Some tree planting along the left side of the golf hole has discouraged players from taking this aggressive line. The existing hole is poorly designed as the fairway narrows at the 175 yard mark.

Recommendations:

- Redesign the golf hole so that players must hit a full tee shot to a well defined landing area 225 yards from the tee.

- Expand the existing pond to the west towards the landing area so that players will be discouraged from trying to short cut the golf hole and will aim away from the pond.

HOLE # 4 – 12

Holes 4 to 12 are not impacted by the proposed residential development and do not require any modifications or re-alignment.

HOLE # 13

Hole 13 is a par 5 measuring 436 yards. The entire hole will be impacted by the future residential development.

Recommendations:

- Redesign the golf hole to play as a par 3 measuring 150 yards. This will require the construction of new tees and green complex. Ensure that the green is located a minimum of 40 yards from the future residential lot line.
- Utilize the existing pond to create a suitable separation/hazard between the green and future residential lots.
- Construct new tees that angle away from the future residential lot lines.

HOLE # 14

Hole 14 is a 310 yard par 4 that doglegs around an existing pond. The entire hole will be impacted by the future residential development.

Recommendations:

- Redesign the golf hole to play as a par 3 measuring 135 yards. This will require the construction of new tees and a green complex.
- Preserve the existing trees to the right of the new tees to create a buffer to the new 13th hole.
- Consider tree planting to the right of the green to provide a buffer with 13 tees.

HOLE # 15

Hole 15 is not impacted by the proposal residential development and does not require any modifications or re-alignment.

HOLE # 16

Hole 16 is a short, straight away par 4 measuring 285 yards. Most of the existing hole will be impacted by the residential development future.

Recommendations:

- Redesign the golf hole to play as a par 3 measuring 165 yards. Utilize the existing 17th green and construct new tees.
- Reconfigure the pond to create separation between the 16th and 17th holes.

HOLE # 17

Hole 17 is a sharp dogleg left that plays to 290 yards. Almost the entire hole will be impacted by the proposed residential development.

Recommendations:

- Redesign the golf hole to play as a par 3 measuring 125 yards. Construct new tees and green complex. Ensure that green has 40 m separation from future residential lot line.
- Preserve some trees to the right of the hole to provide separation between hole 17 and 18.

HOLE # 18

Hole 18 is a 183 yard par 3 finishing hole. The tees for this hole will be impacted by the future residential development.

Recommendations:

- Shorten the golf hole to play as a par 3 measuring 160 yards. Construct new tees and ensure that they are aligned to the existing green.
- Maintain the existing pond to the left of the hole to enhance the safety with Marlwood Avenue.

3.0 CONCLUSION

This Golf Course Safety Report identifies specific safety concerns and provides recommended mitigation measures to improve the safety between the proposed residential development and the existing Marlwood Golf and Country Club. Please be advised that golfers are ultimately responsible for their actions and any possible damage or injury. Further, we recommend that a warning clause identifying potential risks from errant golf shots be included in the purchase-of-sale agreement for the development.

We feel that the redesign of the golf course will aid in reducing incidents with errant golf balls. In the event that incidents of errant shots are not suitably addressed by these changes, we would recommend that golf safety netting be installed along the property lines as an added precautionary measure.

The renovation to the golf course should be co-ordinated to minimize the disruption of play on the existing golf course during peak, summer months. Implementation of the golf course modifications will require the preparation of detailed grading and planting plans in conjunction with the site plan for the development.

4.0 CLOSURE

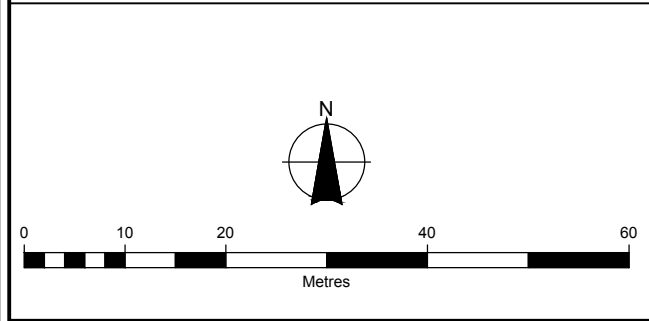
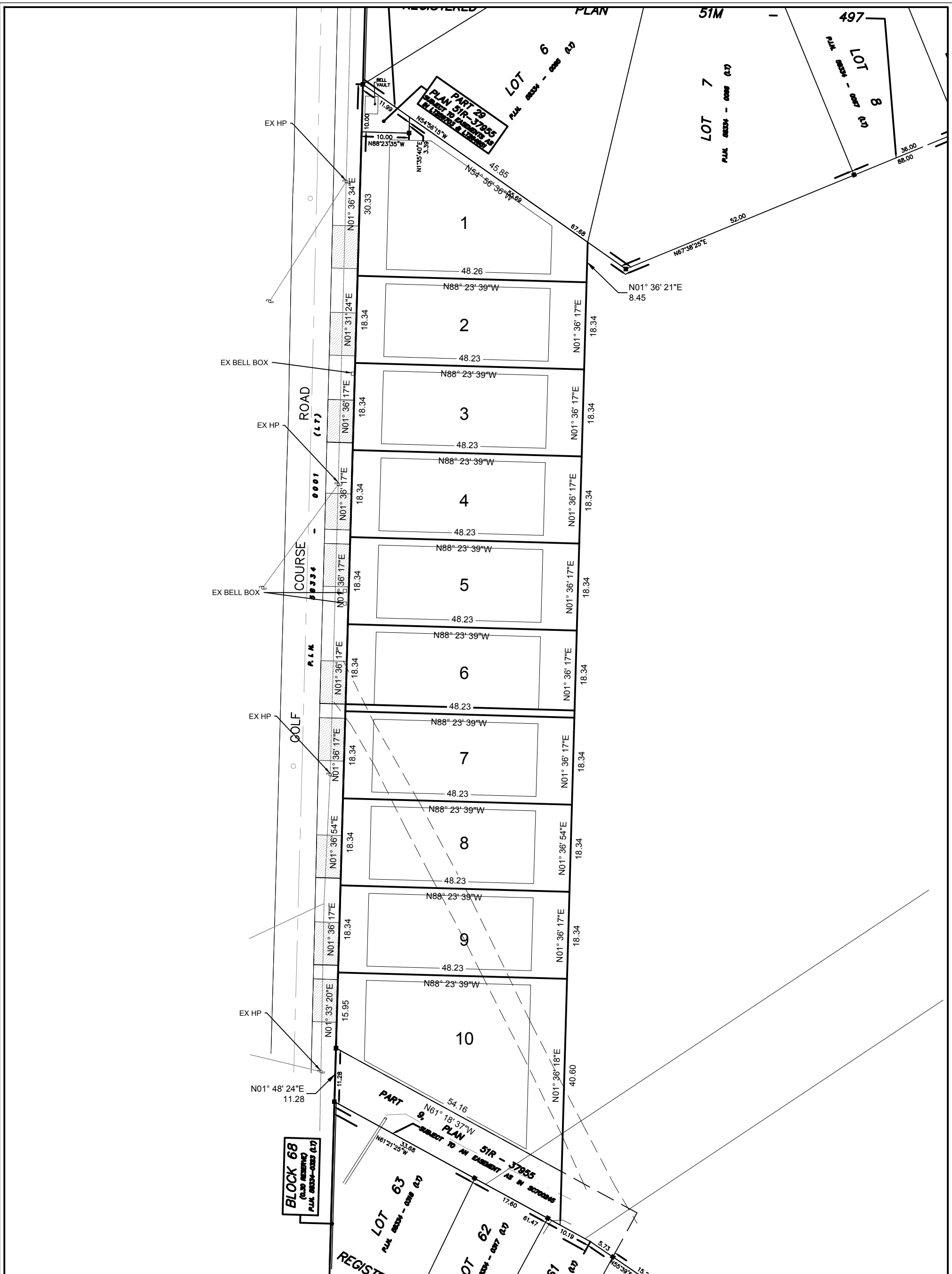
We trust that this report satisfies the Town of Wasaga Beach concerns related to the potential impacts of the proposed residential development with respect to the existing golf course and potential safety implications. During your review of this report, if you have any questions or require clarification of the information provided, please do not hesitate to contact the undersigned.

Sincerely,
MBTW Golf Design

A handwritten signature in black ink, appearing to read "K. Holmes". The signature is fluid and cursive, with a large initial "K" and a stylized "H".

Kevin Holmes, Golf Course Architect

Appendix A: Proposed Draft Plans



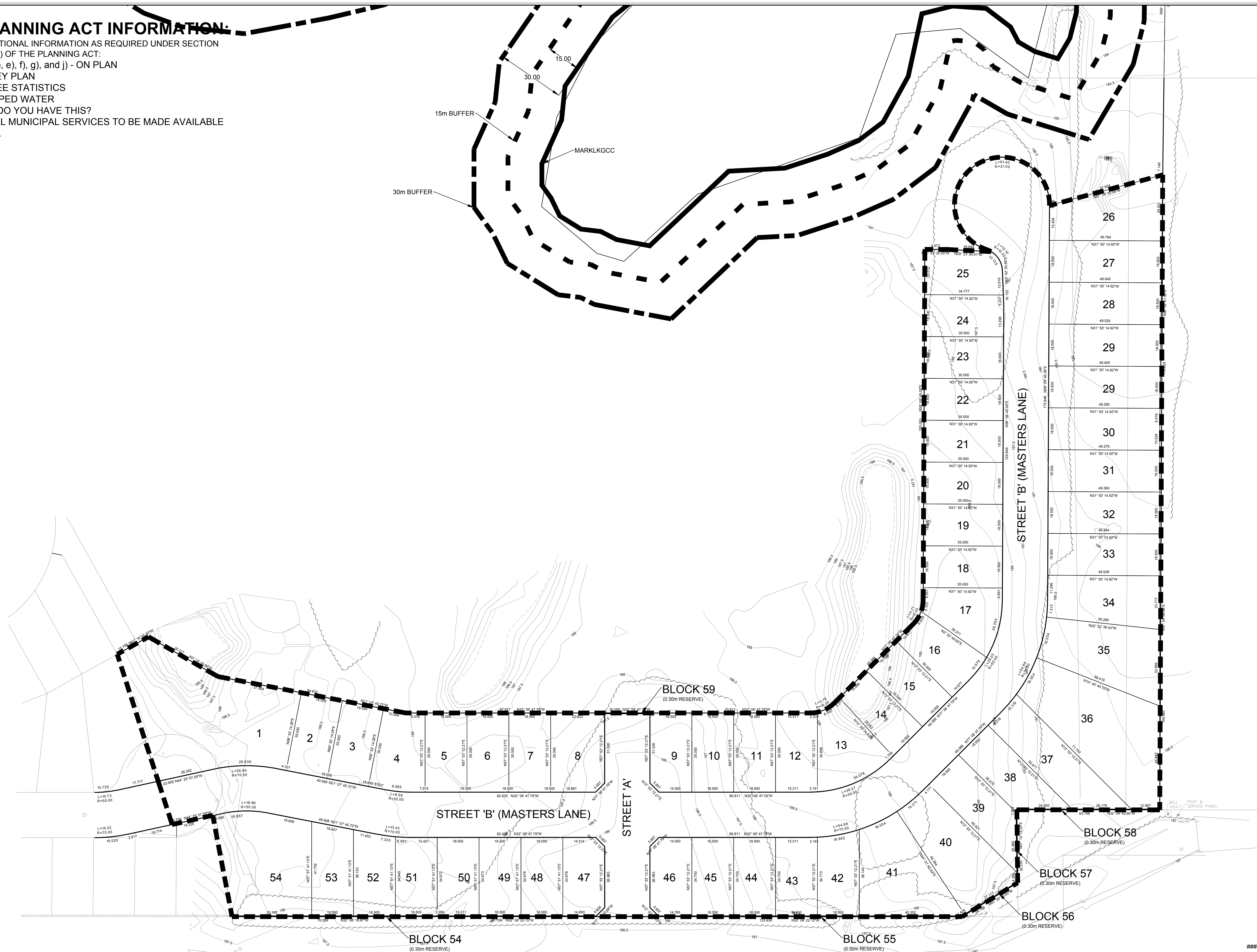
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TPC MARLWOOD INC.

Figure Title MARLWOOD (10 LOTS) PRELIMINARY DRAFT PLAN			
Drawn KG	Checked EDT	Date 16/10/27	Figure No. 1
Scale 1:750	Project No. 300039210		

PLANNING ACT INFORMATION:

ADDITIONAL INFORMATION AS REQUIRED UNDER SECTION 51(17) OF THE PLANNING ACT:

- a), b), e), f), g), and j) - ON PLAN
- c) KEY PLAN
- d) SEE STATISTICS
- h) PIPED WATER
- i)DO YOU HAVE THIS?
- k) ALL MUNICIPAL SERVICES TO BE MADE AVAILABLE
- l) NIL



Client: #####

Figure Title: #####

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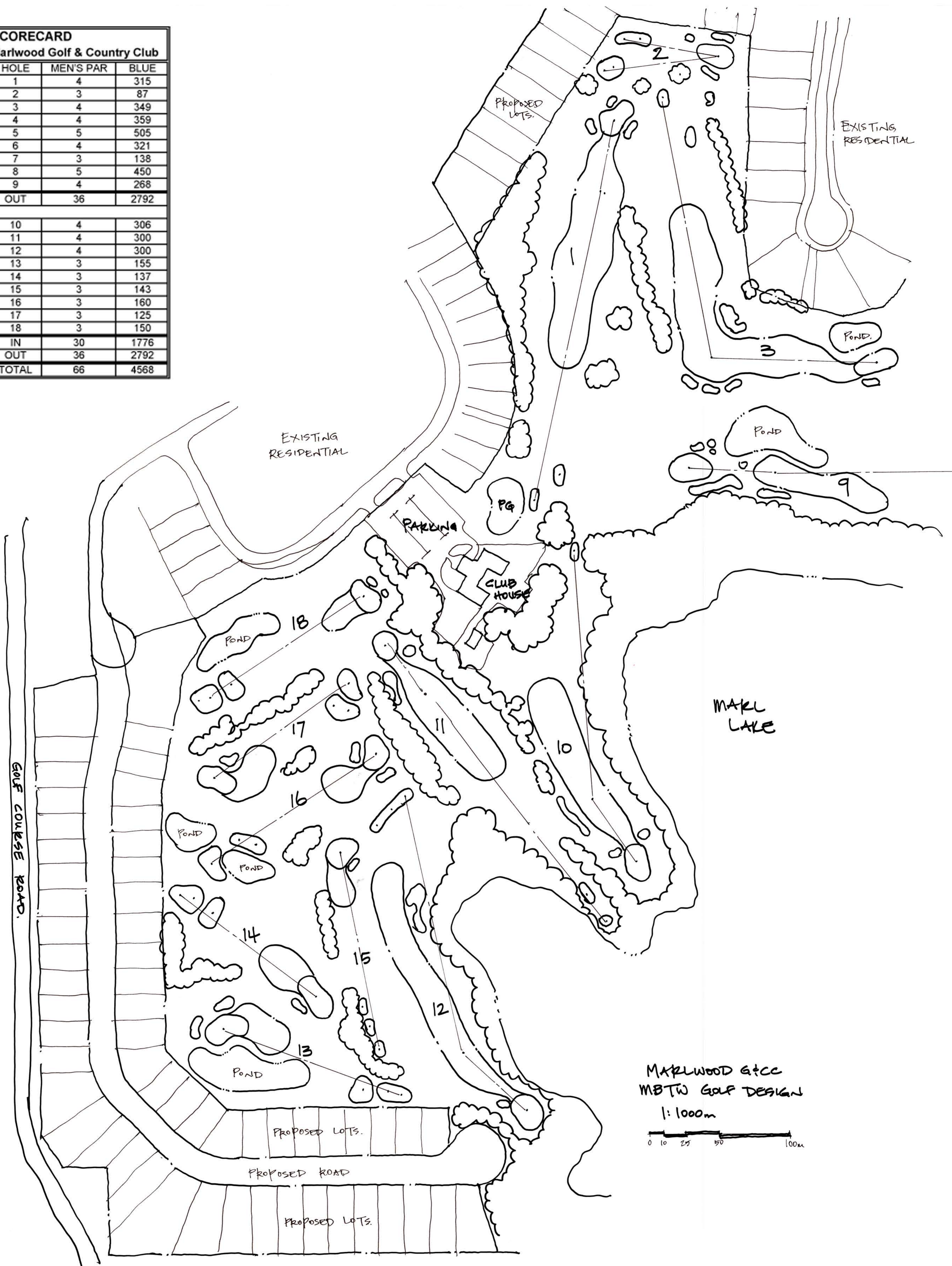
LOFT
LAND MANAGEMENT & PROJECT MANAGEMENT
7.755.446.1148 | E. Kristina@loft.com.au

BURNSIDE

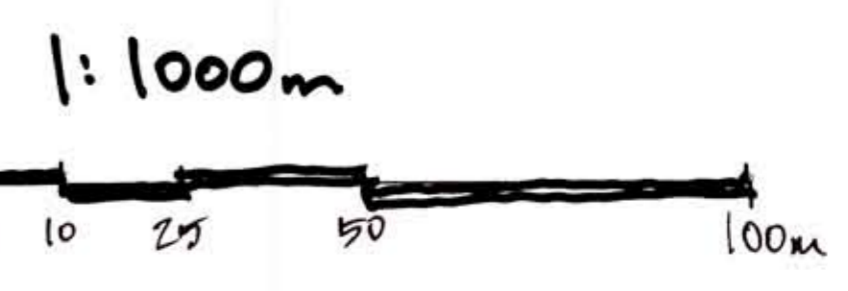
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Appendix B: 18 Hole Golf Course Routing Plan

SCORECARD		
Marlwood Golf & Country Club		
HOLE	MEN'S PAR	BLUE
1	4	315
2	3	87
3	4	349
4	4	359
5	5	505
6	4	321
7	3	138
8	5	450
9	4	268
OUT	36	2792
10	4	306
11	4	300
12	4	300
13	3	155
14	3	137
15	3	143
16	3	160
17	3	125
18	3	150
IN	30	1776
OUT	36	2792
TOTAL	66	4568



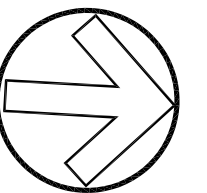
MARLWOOD G&CC
 MBTW GOLF DESIGN



Appendix C: Proposed Golf Hole Layout Plans

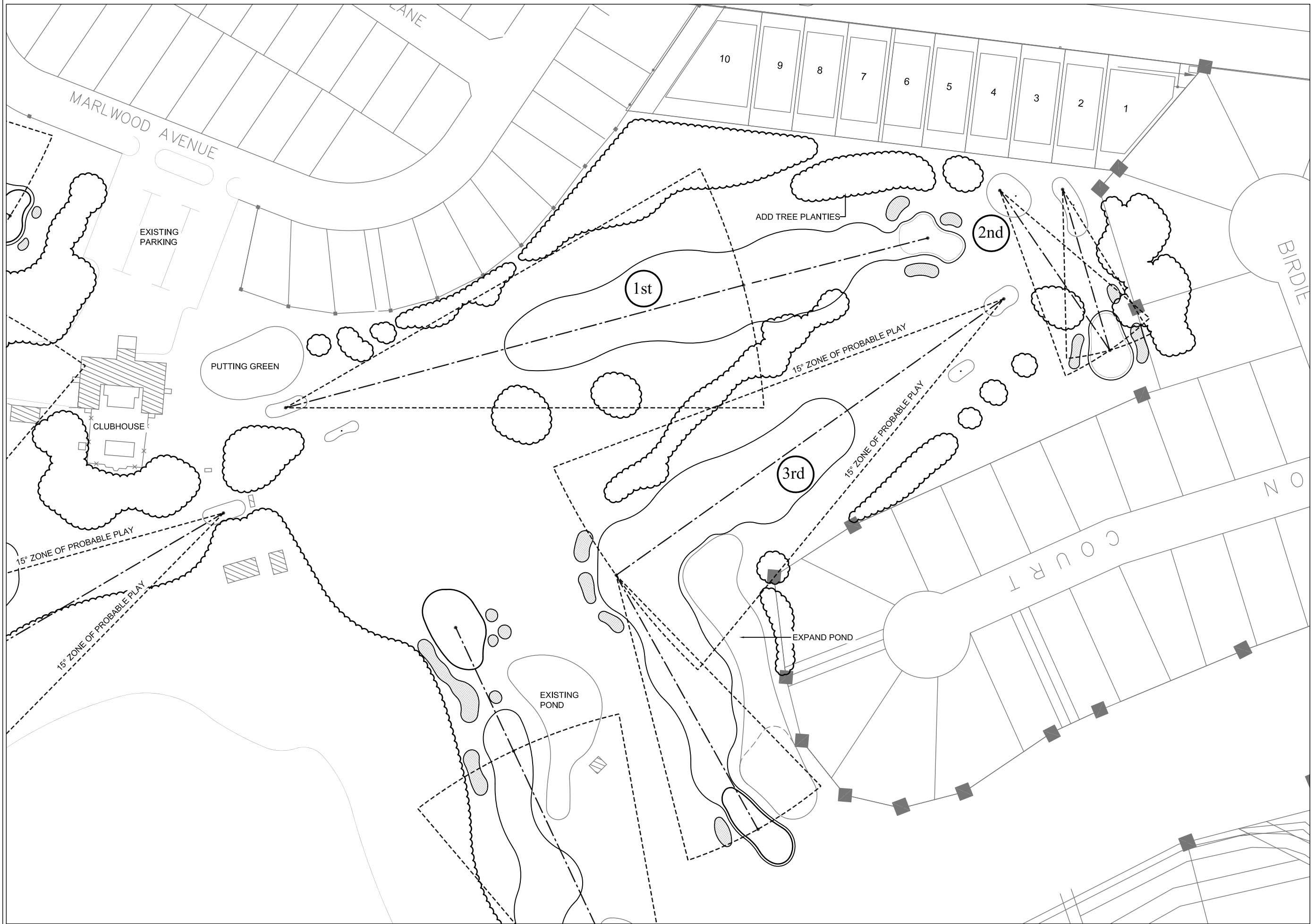


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MARLWOOD GOLF & COUNTRY CLUB
MARCH 2017



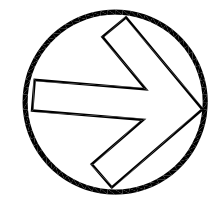
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HOLES #
1,2,3



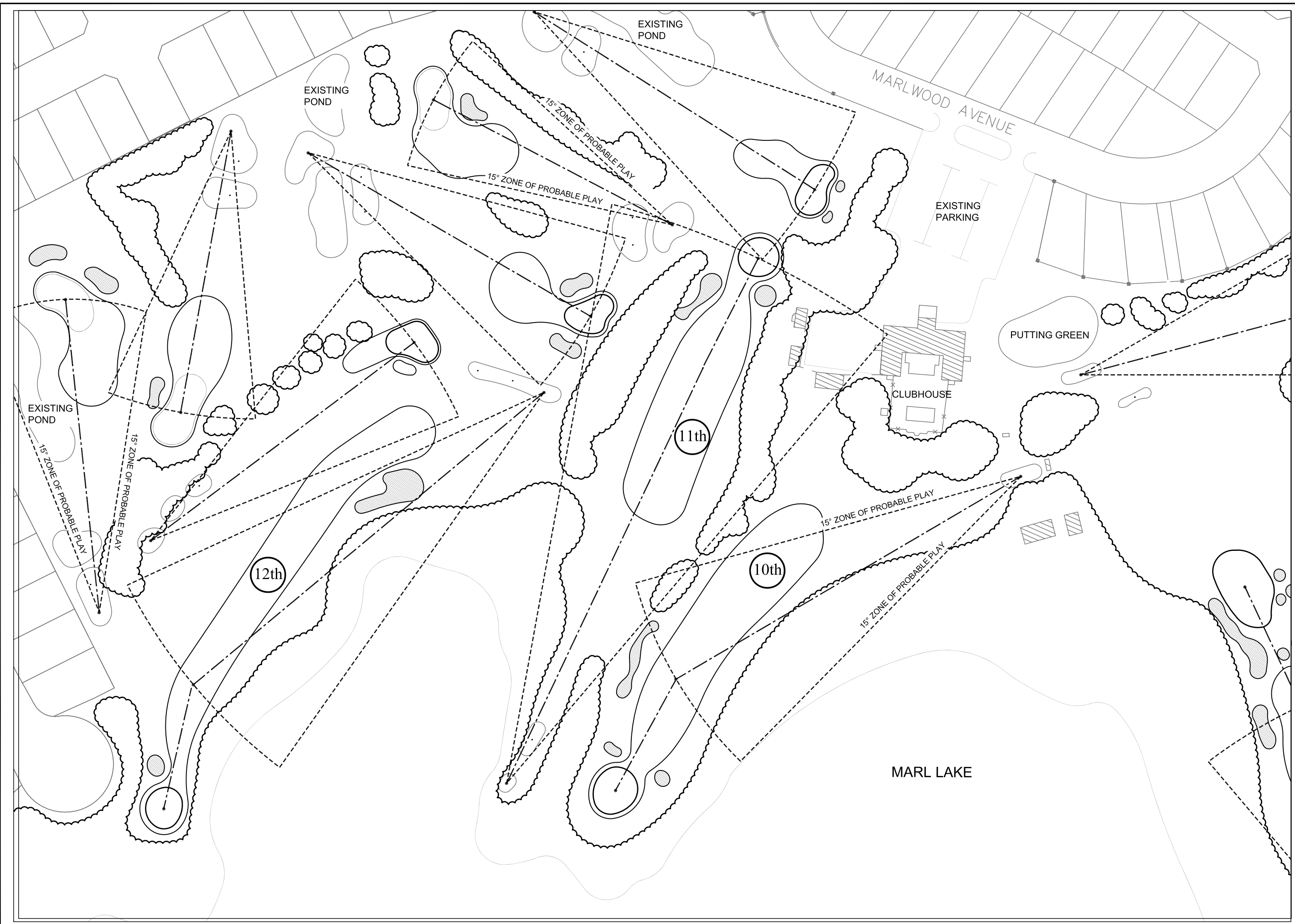


GOLF COURSE ANALYSIS
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MARCH 2017



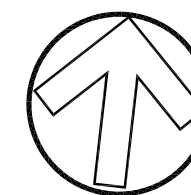
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HOLES #
10, 11, 12



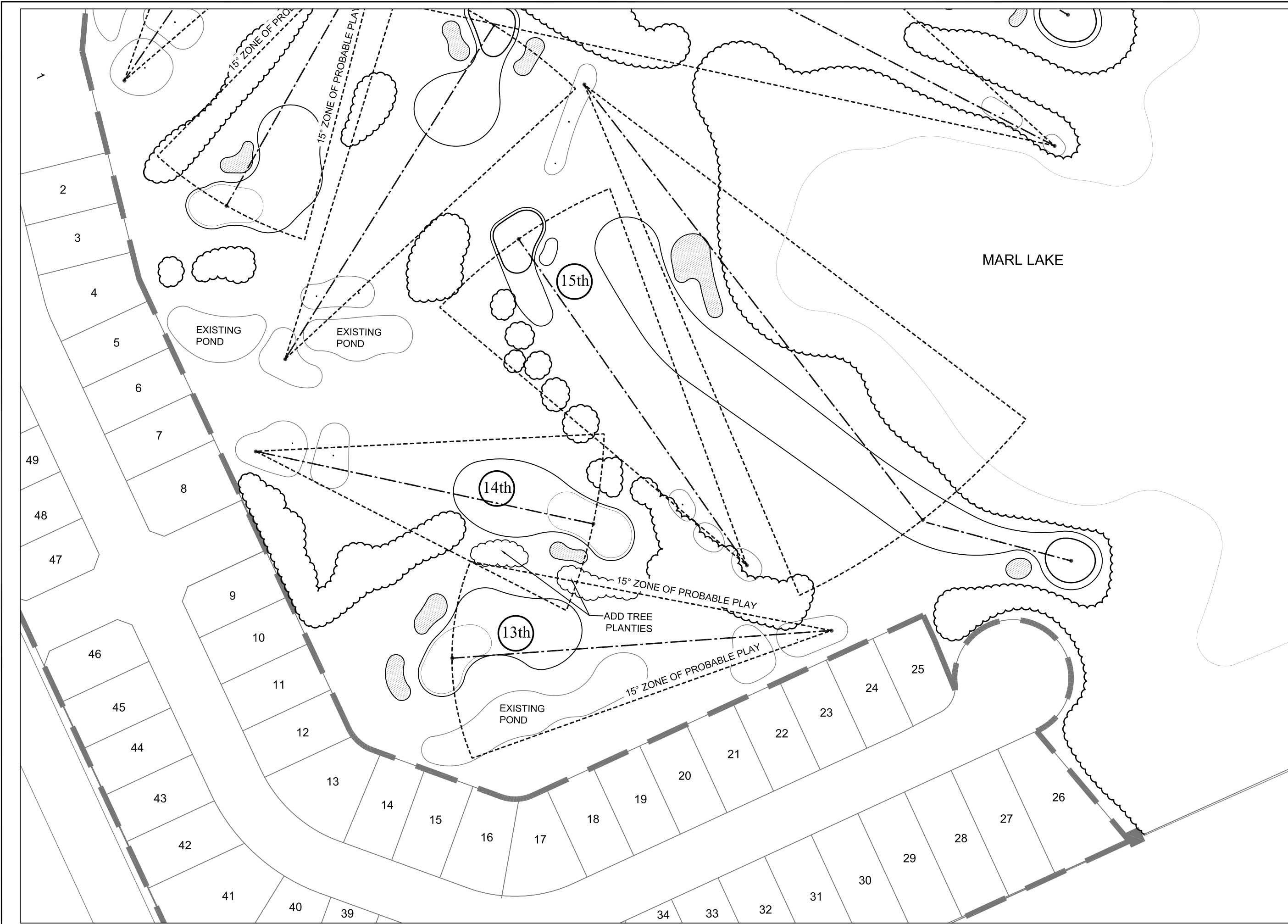


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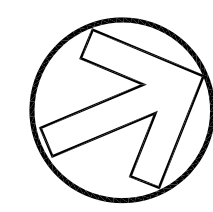
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HOLES #
13, 14, 15





GOLF COURSE ANALYSIS
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MARCH 2017



SCALE 1:1250

HOLES #
16, 17, 18

