Potential A F Thomas Park stormwater detention with integrated recreation outcomes - view looking south towards Takapuna and CBD

Wairau Blue-Green Network Stage 1 - A F Thomas Park

Concept Feasibility Report - Appendix B

Revision 1 | 06 August 2025

Auckland Council
Te Kaunihera o Tāmaki Makaurau

Appendix B - Takapuna Golf Club Concept Design Options TGC-R0 and TGC-R1

TGC Option R0 (24th April 2025)

NOTES:

STAGE 1

1.1. STAGE 1 INCLUDES ALL DRAINAGE INLETTING AND OUTLETTING STRUCTURES INTO THE PARK, EXISTING WATERCARE PIPE BRIDGE SUPPORT IMPROVEMENTS (2NO.) IF REQUIRED, AND EARTHWORKS WITHIN THE RED/PINK SHADED AREA.

1.2. FILL AREA IS WITHIN DRIVING RANGE AREA, AND IS SUBJECT TO GEOTECH INVESTIGATIONS AND CONFIRMATION FROM WATERCARE ON ACCEPTABILITY OF WORKS OVER TRANSMISSION WW LINE. THIS WORK IS TO BE PROGRESSED DURING PRELIMINARY DESIGN.

1.3. HOLES TO CONTINUE TO BE PLAYED IN STAGE 2 AREA IN THE ORDER AS FOLLOWS OR AS DETERMINED BY OTHERS:

1.3.1. 1, 2, 18, 10, 11, 12, 13, 17, 9

STAGE 2

1.1. STAGE 2 COMPLETES EARTHWORKS WITHIN THE BLUE SHADED AREA.

1.2. HOLES TO CONTINUE TO BE PLAYED IN THE STAGE 1 AREA IN THE ORDER AS FOLLOWS OR AS DETERMINED BY OTHERS:

1.2.1. 8, 6, 5, 3, 4, 16, 14, 15, 7

Kāpia Kura
KURA GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS

Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
PROPOSED LAYOUT PLAN
OPTION 6

SCALE: (A1/A3) 1:2000 / 1:4000

SCALE BAR 1:4000@A3 0 40 80 120 160 200m

ISSUE STATUS: PRELIMINARY DRAFT

PROJECT NUMBER: HPCL1945 DRAWING NUMBER: SK07-1 REV: 1

REVISION DETAILS: PRELIMINARY DRAFT TO HWFR

REVISION DATE: 24 27 025

DRAWN: RJP CHECKED: RJP APPROVED: RJP

Printed by: RYAN@24.04.25 // Filepath: S:\JOBS\HPCL1945 - TAKAPUNA GOLF CLUB\CIVILPLAN\CAD\1945-01-SK07-1-OPTION 6.DWG

TGC Option R0 (24th April 2025)

LEGEND

- EXISTING CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EARTHWORK EXTENT
- PROPOSED 14m RL CONTOUR

NOTES:

1. IF IN DOUBT PLEASE ASK.
2. DO NOT SCALE FROM THE DRAWINGS.
3. LEVELS ARE IN TERMS OF AVD 1946.
   ORIGIN OF LEVELS - AUCKLAND COUNCIL GIS
4. EXISTING CONTOURS ARE SHOWN AT 0.5m INTERVALS.
5. DESIGN CONTOURS ARE SHOWN AT 0.5m INTERVALS.
6. DESIGN CONTOURS SHOWN ARE FINISHED SURFACE LEVELS.
7. EROSION AND SEDIMENT CONTROL IS TO BE DESIGNED AT PRELIMINARY DESIGN TO COMPLEMENT THE STAGING ON SHEET SK07-1.
8. IT IS INTENDED THAT THE CONTRACTOR SHALL GRADE THE EARTHWORKS TO THE FINISHED CONTOURS SHOWN. HOWEVER, THE FINAL MARRYING AND SHAPING OF THE EARTHWORKS AREAS IS SUBJECT TO THE ENGINEERS AND GOLF DESIGNER'S APPROVAL.
9. DESIGN IS SUBJECT TO THE RESULTS OF THE FOLLOWING INVESTIGATIVE REPORTING TO BE COMPLETED BY HWFR OR OTHERS:
   - 9.1. GEOTECHNICAL REPORT
   - 9.2. GROUNDWATER REPORT
   - 9.3. CONTAMINATION REPORT
   - 9.4. ECOLOGY REPORT
   - 9.5. STORMWATER CATCHMENT FLOOD MODELLING REPORT
   - 9.6. WATERCARE WASTEWATER TRANSMISSION PIPE AND STRUCTURES INTEGRITY REPORT
   - 9.7. ELECTRICAL STUDY AND LINES REPORT

Kiripiti Kua
KURA
GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
FINISHED CONTOUR PLAN
OPTION 6

SCALE: (A1/A3)	1:2000 / 1:4000
SCALE BAR 1:4000@A3	0 40 80 120 160 200m
ISSUE STATUS:	PRELIMINARY DRAFT
PROJECT NUMBER:	HPCL1945
DRAWING NUMBER:	SK07-2
REV:	1
REVISION DETAILS:	PRELIMINARY DRAFT TO HWFR
REVISION DATE:	24 28 025
DRAWN:	RJP
CHECKED:	RJP
APPROVED:	RJP

Printed by: RYAN@28.04.25 // Filepath: S:\JOBS\HPCL1945 - TAKAPUNA GOLF CLUB\CIVILPLAN\CAD\1945-01-SK07-1-OPTION 6.DWG

TGC Option R0 (24th April 2025)

40m3/s FLOW DIVERTS INTO CHANNEL IL AT RL 13.5m, FALLING AT 0.5% INTO GOLF COURSE. TRAPEZOIDAL CHANNEL 10m BASE WIDTH, 16m TOP WIDTH.

FLOODING VOLUME AVAILABLE TO RL14.0m = 562,000m3

LOWER/RELOCATE EXISTING MV CABLES CROSSING AT THIS LOCATION

REBUILD GRAVEL FOOTPATH AS NEEDED WHERE EARTHWORKS OVERLAPS, WITH CONNECTIONS TO THE NORTH AND WEST

EXG OVERHEAD POWER POLES, UNDERGROUND CABLES, GRAVEL FOOTPATH AND CHANNEL TO REMAIN AS EXISTING ALONG EASTERN BOUNDARY.

EXTENT OF WORKS DRAPED ONTO EXISTING GROUND LEVEL AT LEAST 2.5m FROM EXG POLE CENTRELINES AND EXG UNDERGROUND MV CABLE ALONG EASTERN BOUNDARY, IN ACCORDANCE WITH NZECP 34:2000 FIGURE 1.

WORKS TO BE COMPLETED IN ACCORDANCE WITH NZECP 34:2000 AND WITH APPROVAL FROM VECTOR, REFER TO SCHEMATIC ABOVE FOR SAFE WORKING DISTANCES.

CUT

CUT

CUT

CUT

CUT

CUT

FILL

FILL

STAGE 1

STAGE 2

NOTES:

1. DO NOT SCALE FROM THE DRAWINGS.
2. PROPOSED DEPTH CONTOURS ARE SHOWN AT 0.5m INTERVALS.
3. AUCKLAND COUNCIL CONFIRMED AT A MEETING ON 21 MARCH 2025 THAT:
   - 3.1. THE REQUIRED VOLUME TO ACHIEVE UNDER THE SITE'S SPILLWAY HEIGHT OF 14mRL = 550,000m³. THIS WILL ENSURE THAT DETENTION STORAGE VOLUME IS LINKED TO MAIN WAIRAU CATCHMENT IN MAIN CHANNEL TO NORTH-WEST OF SITE.
   - 3.2. PEAK FLOW IN MAIN CHANNEL IS 110m³/S.
   - 3.3. TRIBUTARY TO THE WEST OF SITE HAS PEAK FLOW OCCURRING 1HR PRIOR TO MAIN CHANNEL FLOW, THEREFORE DETENTION OF THIS FLOW IS NOT RECOMMENDED AND SHOULD BE PASSED THROUGH CATCHMENT WITHOUT DETENTION PRIOR TO THE MAJOR PEAK FLOW OCCURRING.
   - 3.4. PEAK FLOW IN WESTERN TRIBUTARY IS 60m³/S.
4. EXISTING/CURRENT FLOOD STORAGE IN GOLF COURSE FROM EXISTING GROUND LEVEL TO SPILLWAY HEIGHT OF 14mRL = 90,600m³.
5. AREA OF PROPOSED EARTHWORKS = 38.57ha
6. EARTHWORK VOLUMES ARE FROM EXISTING SURFACE TO FINISHED SURFACE
7. EARTHWORKS VOLUMES ARE:
   - 7.1. CUT VOLUME = 722,000 m³
   - 7.2. FILL VOLUME = 119,000 m³
   - 7.3. SURPLUS = 603,000 m³
8. PROPOSED FLOOD STORAGE IN GOLF COURSE FROM PROPOSED FINISHED GROUND LEVEL TO SPILLWAY HEIGHT OF 14mRL = 562,000m³ WHICH PROVES THIS CONCEPT TO ACHIEVE THE REQUIRED 550,000m³.
7. EROSION AND SEDIMENT CONTROL IS TO BE DESIGNED AT PRELIMINARY DESIGN TO COMPLEMENT THE STAGING ON SHEET SK07-1.
8. IT IS INTENDED THAT THE CONTRACTOR SHALL GRADE THE EARTHWORKS TO THE FINISHED CONTOURS SHOWN. HOWEVER, THE FINAL MARRYING AND SHAPING OF THE EARTHWORKS AREAS IS SUBJECT TO THE ENGINEERS AND GOLF DESIGNER'S APPROVAL.
9. DESIGN IS SUBJECT TO THE RESULTS OF THE FOLLOWING INVESTIGATIVE REPORTING TO BE COMPLETED BY HWFR OR OTHERS:
   - 9.1. GEOTECHNICAL REPORT
   - 9.2. GROUNDWATER REPORT
   - 9.3. CONTAMINATION REPORT
   - 9.4. ECOLOGY REPORT
   - 9.5. STORMWATER CATCHMENT FLOOD MODELLING REPORT
   - 9.6. WATERCARE WASTEWATER TRANSMISSION PIPE AND STRUCTURES INTEGRITY REPORT
   - 9.7. ELECTRICAL STUDY AND LINES REPORT

LEGEND

- -1.0 — PROPOSED CUT ISOPACH
- 1.0 — PROPOSED FILL ISOPACH
- EARTHWORKS ZERO CUT/FILL LINE
- EARTHWORK EXTENT
- CUT — PROPOSED CUT
- FILL — PROPOSED FILL
- EXG POWER O/H OR U/G ALIGNMENT CLOSEST TO EARTHWORKS
- 2.5m OFFSET FROM EXG POWER
- 5.0m OFFSET FROM EXG POWER
- 7.5m OFFSET FROM EXG POWER
- 10.0m OFFSET FROM EXG POWER

Kirkpatrick Kerr KURA GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
DEPTH CONTOURS
OPTION 6

SCALE: (A1/A3) 1:2000 / 1:4000

SCALE BAR 1:4000@A3 0 40 80 120 160 200m

ISSUE STATUS: PRELIMINARY DRAFT

PROJECT NUMBER: HPCL1945 DRAWING NUMBER: SK07-3 REV: 1

REVISION DETAILS: PRELIMINARY DRAFT TO HWFR REVISION DATE: 24 29 025

DRAWN:	CHECKED:	APPROVED:
RJP	RJP	RJP

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TGC Option R0 (24th April 2025)

40m3/s FLOW DIVERTS INTO CHANNEL IL AT RL 13.5m, FALLING AT 0.5% INTO GOLF COURSE. TRAPEZOIDAL CHANNEL 10m BASE WIDTH, 16m TOP WIDTH.

RIP RAP TO MINIMUM SIZING SHOWN ON THIS SHEET. ACTUAL DIMENSIONS ARE 30m WIDE BY 25m LONG TO PREVENT EROSION OF SLOPE.

FLOODING VOLUME AVAILABLE TO RL14.0m ≈ 562,000m3

LOWER/RELOCATE EXISTING MV CABLES CROSSING AT THIS LOCATION

EXG OVERHEAD POWER POLES, GRAVEL FOOTPATH AND CHANNEL TO REMAIN AS EXISTING ALONG EASTERN BOUNDARY.

SITE OF EXG EXPOSED TRANSMISSION MAIN (SUPPORTED). EXISTING STEEL PIPE BRIDGE SUPPORT STRUCTURE TO BE REVIEWED AND POTENTIALLY UPGRADED TO SUIT NEW LEVELS. LIAISON WITH WATERCARE REQUIRED DURING PRELIMINARY DESIGN.

SITE OF EXG EXPOSED TRANSMISSION MAIN (UNSUPPORTED). A PROPOSED STEEL PIPE BRIDGE SUPPORT STRUCTURE TO BE DESIGNED TO SUIT NEW LEVELS. LIAISON WITH WATERCARE REQUIRED DURING PRELIMINARY DESIGN.

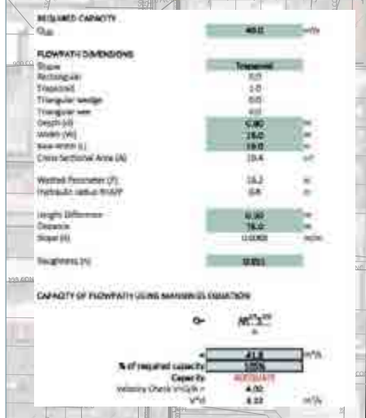
EXTENT OF WORKS DRAPED ONTO EXISTING GROUND LEVEL AT LEAST 2.5m FROM EXG POLE CENTRELINES AND EXG UNDERGROUND MV CABLE ALONG EASTERN BOUNDARY.

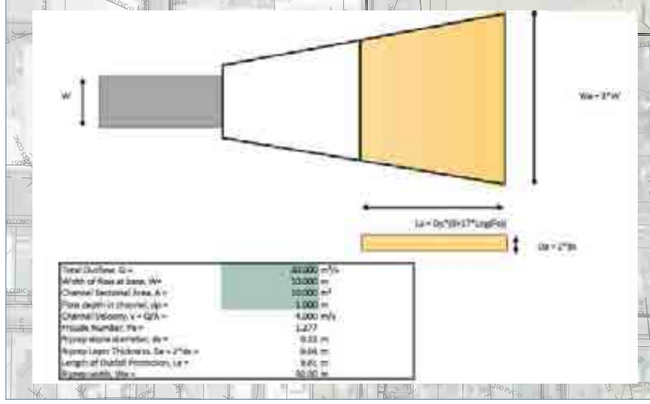
WORKS TO BE COMPLETED IN ACCORDANCE WITH NZECP 34:2000 AND WITH APPROVAL FROM VECTOR. REFER TO SCHEMATIC ABOVE FOR SAFE WORKING DISTANCES.

GEOTECHNICAL AND WATERCARE REPORTING TO CONFIRM THAT PROPOSED FILLING OVER EXG PIPE WILL NOT ADVERSELY AFFECT THE PIPE'S STRUCTURAL INTEGRITY. LIAISON WITH WATERCARE REQUIRED DURING PRELIMINARY DESIGN.

STAGE 1

DN600 DN450 DN375 DN300





NOTES:

1. IF IN DOUBT PLEASE ASK.
2. DO NOT SCALE FROM THE DRAWINGS.
3. ALL PUBLIC DRAINAGE WORKS AND MATERIALS ARE TO COMPLY WITH THE AUCKLAND COUNCIL CODE OF PRACTICE - CHAPTER 4 STORMWATER
4. ALL PRIVATE DRAINAGE WORKS AND MATERIALS ARE TO COMPLY WITH THE NZ BUILDING CODE - CHAPTER E1 SURFACE WATER AND CHAPTER G13 FOUL WATER.
5. ALL WORKS ON EXISTING STORMWATER INFRASTRUCTURE ARE TO BE CARRIED OUT BY AN APPROVED, LICENSED CONTRACTOR.
7. DESIGN IS SUBJECT TO THE RESULTS OF THE FOLLOWING INVESTIGATIVE REPORTING TO BE COMPLETED BY HWFR OR OTHERS:

7.1. GEOTECHNICAL REPORT
7.2. GROUNDWATER REPORT
7.3. CONTAMINATION REPORT
7.4. ECOLOGY REPORT
7.5. STORMWATER CATCHMENT FLOOD MODELLING REPORT
7.6. WATERCARE WASTEWATER TRANSMISSION PIPE AND STRUCTURES INTEGRITY REPORT
7.7. ELECTRICAL STUDY AND LINES REPORT

LEGEND

EXISTING

(CR) PLOTTED FROM COUNCIL RECORDS

DN300 STORMWATER LINE AND MANHOLE

WASTEWATER LINE AND MANHOLE

PROPOSED

DN300 STORMWATER LINE AND MANHOLE

EXISTING LINE TO BE REMOVED

STORMWATER CATCHPIT

SCRUFFY DOME INLET/OUTLET MANHOLE

STORMWATER INLET / OUTLET

STORMWATER RIP RAP

LOW AREAS SUBSOIL DRAIN
REFER TO DETAIL ON SK07-5

TEE SUBSOIL DRAINAGE
REFER TO DETAIL ON SK07-5

FAIRWAY / BUNKER SUBSOIL DRAINAGE
REFER TO DETAIL ON SK07-5

GREEN SUBSOIL DRAINAGE
REFER TO DETAIL ON SK07-5

FEATURE WETLAND BELOW FLOOD STORAGE - TOP WATER LEVEL 11.1mRL

Kraftsmen Kerr
KURA
GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
DRAINAGE LAYOUT
OPTION 6

SCALE: (A1/A3) 1:2000 / 1:4000

SCALE BAR 1:4000@A3 0 40 80 120 160 200m

ISSUE STATUS: PRELIMINARY DRAFT

PROJECT NUMBER: HPCL1945 DRAWING NUMBER: SK07-4 REV: 1

REVISION DETAILS: PRELIMINARY DRAFT TO HWFR REVISION DATE: 24 30 025

DRAWN: RJP CHECKED: RJP APPROVED: RJP

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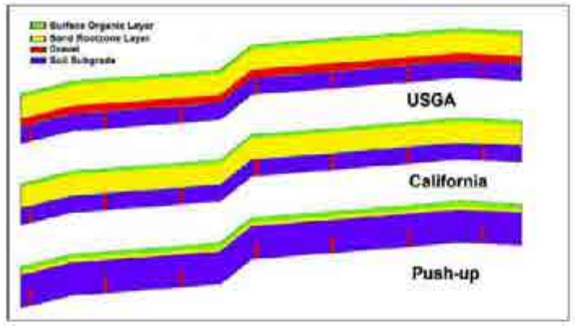
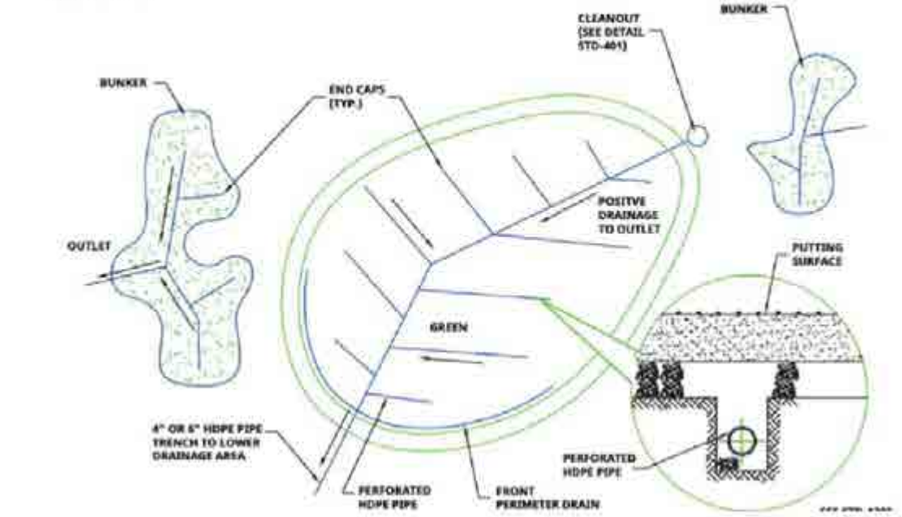
TGC Option R0 (24th April 2025)

TAKAPUNA GOLF CLUB
SAMPLE GREEN CONSTRUCTION DETAILS

The most preferred modern specifications for greens construction is either "USGA" or "California" and include either trenched perforated pipe or flat pipe in a herringbone pattern. California can be more cost effective without cost of trenching and the gravel layer.

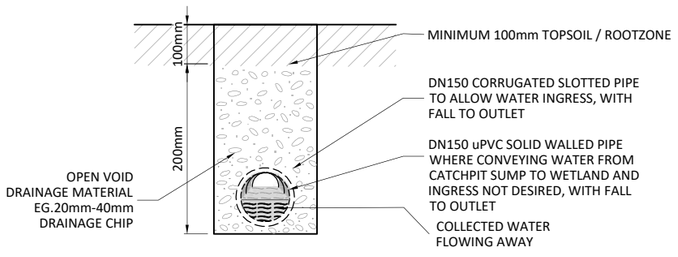
Sections below for flat pipe show AdvanEdge Pipe, in NZ we mostly use Megaflow.



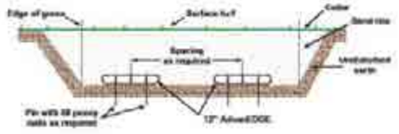


NOTES:

1. DETAILS PROVIDED BY KURA GOLF COURSE DESIGN, WITH PERMISSION.
2. DESIGN IS SUBJECT TO THE RESULTS OF THE FOLLOWING INVESTIGATIVE REPORTING TO BE COMPLETED BY HWFR OR OTHERS:
   - 2.1. GEOTECHNICAL REPORT
   - 2.2. GROUNDWATER REPORT
   - 2.3. CONTAMINATION REPORT
   - 2.4. ECOLOGY REPORT
   - 2.5. STORMWATER CATCHMENT FLOOD MODELLING REPORT
   - 2.6. WATERCARE WASTEWATER TRANSMISSION PIPE AND STRUCTURES INTEGRITY REPORT
   - 2.7. ELECTRICAL STUDY AND LINES REPORT



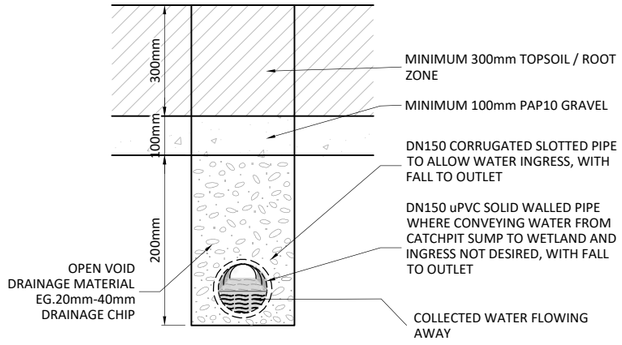
FAIRWAY SUBSOIL DRAINAGE SCHEMATIC



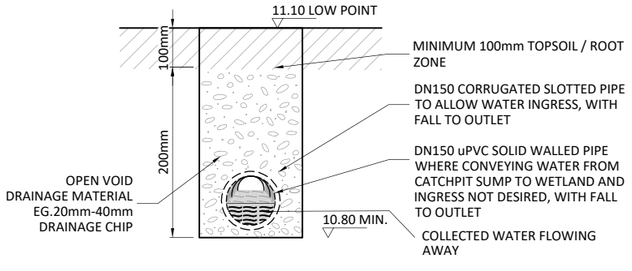
California Greens

California greens feature an all-sand root zone with no gravel layer. AdvanEDGE flat pipe is recommended for use with both types. California green specifications call for the flat pipe to be covered with a geotextile sock.

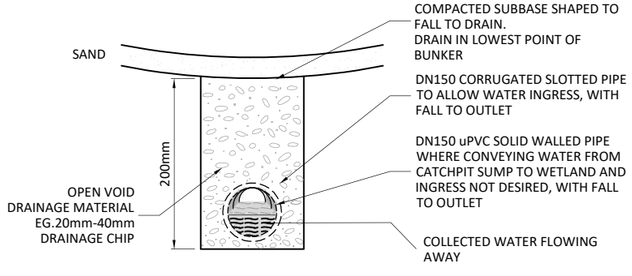
GREENS SUBSOIL DRAINAGE SCHEMATIC
OPTION 1 - FLAT MEGAFLOW, NO TRENCHING



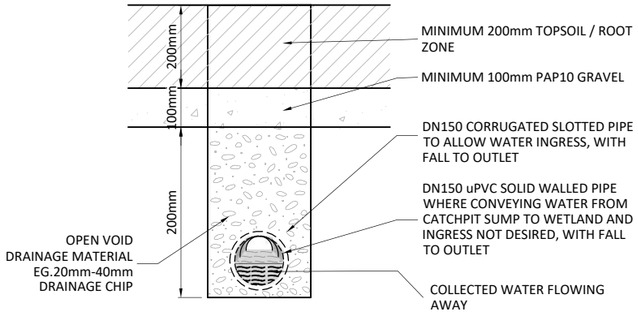
GREENS SUBSOIL DRAINAGE SCHEMATIC
OPTION 2 - TRENCHED PIPE



LOW AREA SUBSOIL DRAINAGE SCHEMATIC



BUNKER SUBSOIL DRAINAGE SCHEMATIC



TEE SUBSOIL DRAINAGE SCHEMATIC

CIVILPLAN CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
TYPICAL GOLF HOLE DRAINAGE
OPTION 6

SCALE: (A1/A3)	NOT TO SCALE
SCALE BAR N.T.S.	
ISSUE STATUS:	PRELIMINARY DRAFT
PROJECT NUMBER:	HPCL1945
DRAWING NUMBER:	SK07-5
REV:	1
REVISION DETAILS:	PRELIMINARY DRAFT TO HWFR
REVISION DATE:	24 31 025
DRAWN:	RJP
CHECKED:	RJP
APPROVED:	RJP

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mps limited
29 Chamberlain Street
Grey Lynn,
Auckland 1021
www.mps.net.nz

12 June 2025

Head of Sustainable Partnerships
Healthy Waters & Flood Resilience
Auckland Council
135 Albert Street
Auckland 1010
[**by email**]

Attention: Tom Mansell

Takapuna Golf Course Flood Storage Submission

Dear Tom

On behalf of Takapuna Golf Course (TGC), please find enclosed our revised flood storage proposal (TGC-R1) and supporting technical material. This submission has been prepared in response to Council's ongoing engagement regarding the Wairau Blue-Green Network, including your recent correspondence of 6 June.

Purpose of the Project
TGC recognises that Auckland Council's Wairau Blue-Green Network aims to deliver significant flood attenuation benefits across the Wairau catchment, with a Stage 1 target of 550,000 m³ of flood storage. The Takapuna Golf Course site has been identified as a preferred location due to its size, proximity to Wairau Stream, and its status as publicly owned open space.

Significance of the Golf Course
TGC is a long-standing, highly valued public recreational facility that supports year-round access to golf, a driving range, and passive green space. Beyond its recreational role, the course contributes to local wellbeing, open space continuity, and urban green infrastructure. TGC staff also actively manage overland flow paths and site drainage to support stormwater and flood resilience. Historical debris and sediment issues have not been problematic to manage on-site.

The Revised TGC Proposal – A Balanced, Constructible Solution
The updated TGC-R1 concept delivers the same flood storage outcome as the Healthy Waters (HW) proposal — 550,000 m³ — with an equivalent 40 m inlet and assumed outlet configuration. Importantly, it does so while preserving recreational use of the site for golf, a valued community asset.

The proposal is the result of collaboration between civil contractors and designers, including input from golf course designers. It is an exercise in smart land shaping and integration, not opposition and demonstrates how flood infrastructure and community assets can coexist when they are considered together at the outset and not as an afterthought.

We consider that the cost to deliver the solution can be delivered within the $58M budget as we believe it achieves the same outcomes as the Healthy Waters' concept.

Golf Course Design
Final hole count is subject to refinement, largely due to outstanding information from Council — including Council's proposed terrain (DTM), groundwater levels, wetland design and drainage, and flood storage form. However, current layouts show potential to retain up to 18 holes and a driving range. We anticipate some potential summer-playable areas in seasonally inundated zones, with final hole alignment dependent on hydrological modelling and site-level validation.

While significant earthworks are required, the revised proposal is constructible and allows continued operation of the golf course and driving range, with only limited disruption over two construction seasons. TGC and its partners are ready to begin the next design phase immediately, pending confirmation of funding and scope alignment with Council.

Earthworks Methodology
TGC has engaged an experienced earthworks contractor with a proven track record in delivering large-scale bulk earthworks projects while retaining golf course functionality during construction. This contractor has previously worked on sites where golf operations were maintained in parallel with staged earthworks and has reviewed the current TGC concept to inform a high-level construction methodology.

TGC has received a conceptual earthworks methodology and has been advised that a carefully staged approach, beginning with excavation of the north-eastern dry basin and progressing to shaping of the north-western sector would allow flood control measures to be prioritised while enabling phased construction. This approach supports a progressive increase in flood storage capacity as the works advance.

Crucially, this sequencing would allow the golf course to remain partially operational throughout the construction period, with a minimum of nine holes playable at all times and uninterrupted access to the clubhouse. This ensures continuity of community use and minimises disruption to club operations.

The ability to implement the works in a way that respects both the flood storage objectives and the recreational function of the site reflects TGC's commitment to delivering a balanced solution that serves both infrastructure needs and community values.

Wetland Viability Considerations
Longstanding local knowledge, supported by TGC staff observations, raises concerns regarding the feasibility of the proposed permanent wetland under the HW concept. Drainage channels on site routinely dry out in summer, and the contributing catchment is relatively constrained. Without reliable inflows, the proposed wetland may underperform and pose new risks related to water quality, stagnation, and ecological health.

We believe a more modest wetland footprint would be appropriate and would also enable further refinement of the course layout and playable area.

In addition, we note that Council's current cost estimate allocates $10.7 million to design and consenting, representing over 18% of the total project cost. In our view, this is disproportionately high for a project of this type and scale. TGC believes it can deliver both the flood storage facility and a functioning golf course more efficiently, in a way that is cost-effective, outcome-driven, and beneficial to the community for generations to come.

Submission Materials
The following documents are included with this submission:

1. **3D Ground Model (NZVD1946)** – refer to digital DWG files provided by email with this letter.

a. Note: Hole count remains indicative until Council's Digital Terrain Model (DTM), functional description, geotechnical and groundwater information is provided. Two-hole layout plans have been prepared showing 18 playable holes.

2. **Updated Site Plan and Cross Sections** – Refer plans to HPCL1945-SK08-1-Rev 1-SET.pdf provided by email with this letter. Note additional sections can be extracted by from the 3D model if required.

a. **Supporting Technical Information** – further material can be provided on request. However, given the high alignment between TGC-R1 and the HW proposal, we expect most requests will apply equally to both schemes.

Next Steps
TGC remains committed to progressing a viable and integrated flood storage solution that aligns with Council's objectives while retaining important community value. We welcome further technical discussion and engagement to:

- Clarify operational, hydrological, drainage and delivery assumptions
- Align on a shared DTM and ground model
- Meet with WSP and Council operations staff to refine feasibility, operational considerations and next-stage planning

TGC has assembled a team of experienced consultants and contractors who are actively engaged in the design process and ready to collaborate with Council on the next phase of development. We are also working with landscape and arboricultural experts, who are currently undertaking a tree survey with the aim of retaining as many existing trees as practicable.

In addition, TGC has access to a broader network of expertise, including a professional economist, health and wellbeing specialists, and individuals with deep knowledge of the social, recreational, and environmental benefits of golf course facilities. This expertise will support a well-rounded, evidence-based case for the value of retaining golf as part of an integrated flood mitigation solution. We expect ongoing engagement with Council and its advisors throughout the Benefit–Cost Ratio (BCR) assessment process to ensure the TGC proposal is fairly and accurately evaluated.

TGC would welcome the opportunity to discuss potential funding and delivery options including support to progress detailed TGC design work, a design–build delivery model, or alternative partnership arrangements.

Finally, we respectfully request written confirmation of an updated overall programme, including key dates and milestones — such as deliverables from Healthy Waters, reporting timelines to the Local Board and Council committees, and proposed dates for future feedback and collaboration sessions with TGC. In addition, we seek confirmation of the timeframe for the delivery and release of the outstanding technical information previously identified in our correspondence and summarised in Attachment A of this submission.

We note that several previously indicated dates for the provision of information — such as the release of the Healthy Waters digital terrain model (DTM) have now passed. Timely access to this material is essential to ensure meaningful engagement and continued progress.

Yours sincerely

Phil Jaggard
Director, MPS Limited

NOTES:

STAGE 1

1.1. FILL AREA IS IN THE SOUTHERN AREA, AND IS A COMMON SOLUTION, QUANTUM, PROGRAMMING AND COST TO THE HWFR SOLUTION. AS WITH THE HWFR SOLUTION IT IS SUBJECT TO GEOTECH INVESTIGATIONS AND CONFIRMATION FROM WATERCARE ON ACCEPTABILITY OF WORKS OVER TRANSMISSION WW LINE. THIS WORK IS TO BE PROGRESSED DURING PRELIMINARY DESIGN.

1.2. HOLES TO CONTINUE TO BE PLAYED IN STAGE 2 AREA IN THE ORDER AS FOLLOWS OR AS DETERMINED BY OTHERS: 10-18.

STAGE 2

1.1. STAGE 2 COMPLETES EARTHWORKS WITHIN STAGE 2 AREA.

1.2. HOLES TO CONTINUE TO BE PLAYED IN THE STAGE 1 AREA IN THE ORDER AS FOLLOWS OR AS DETERMINED BY OTHERS: 1-9.

Kāpia Kia Kura

KURA GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS

Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
PROPOSED LAYOUT PLAN
OPTION 7

SCALE: (A1/A3)	1:2000 / 1:4000
SCALE BAR 1:4000@A3	0 40 80 120 160 200m
ISSUE STATUS:	PRELIMINARY DRAFT
PROJECT NUMBER: HPCL1945	DRAWING NUMBER: SK08-1 REV: 1
REVISION DETAILS: PRELIMINARY DRAFT TO HWFR	REVISION DATE: 11 34 025
DRAWN: RJP CHECKED: RJP	APPROVED: RJP

Printed by: RYAN@11.06.25 // Filepath: S:\JOBS\HPCL1945 - TAKAPUNA GOLF CLUB\CIVILPLAN\CAD\1945-01-SK08-1-OPTION 7.DWG

TGC Option R1 (12th June 2025)

2no. EXG PIPES TO MAIN CREEK (DN600 AND DN1350) TO REMAIN AS WITH HWFR DESIGN.

FLOOD CHANNEL DESIGNED AS PER HWFR REQUEST AND DESIGN.

FLOODING VOLUME AVAILABLE TO RL14.0m = 558,000m3

LOWER/RELOCATE EXISTING MV CABLES CROSSING AT THIS LOCATION, AS WITH HWFR DESIGN.

EXTENT OF FLOODING UP TO RL 14.0m

EXG OVERHEAD POWER POLES, GRAVEL FOOTPATH AND CHANNEL TO REMAIN AS EXISTING ALONG EASTERN BOUNDARY.

EXTENT OF WORKS DRAPED ONTO EXISTING GROUND LEVEL AT 10m FROM EXG UNDERGROUND MV CABLE ALONG EASTERN BOUNDARY, AS REQUESTED BY HWFR.

WORKS TO BE COMPLETED IN ACCORDANCE WITH NZECP 34:2000 AND WITH APPROVAL FROM VECTOR, AS WITH HWFR DESIGN.

STAGE 1

STAGE 2

2 SK08-4

1 SK08-4

A SK08-4

B SK08-4

C SK08-4

NOTES:

1. IF IN DOUBT PLEASE ASK.
2. DO NOT SCALE FROM THE DRAWINGS.
3. LEVELS ARE IN TERMS OF AVD 1946.
   ORIGIN OF LEVELS - AUCKLAND COUNCIL GIS
4. EXISTING CONTOURS ARE SHOWN AT 0.5m INTERVALS.
5. DESIGN CONTOURS ARE SHOWN AT 0.5m INTERVALS.
6. DESIGN CONTOURS SHOWN ARE FINISHED SURFACE LEVELS.
7. EROSION AND SEDIMENT CONTROL IS TO BE DESIGNED AT PRELIMINARY DESIGN TO COMPLEMENT THE STAGING ON SHEET SK07-1.
8. IT IS INTENDED THAT THE CONTRACTOR SHALL GRADE THE EARTHWORKS TO THE FINISHED CONTOURS SHOWN. HOWEVER, THE FINAL MARRYING AND SHAPING OF THE EARTHWORKS AREAS IS SUBJECT TO THE ENGINEERS AND GOLF DESIGNER'S APPROVAL.
9. AS WITH THE HWFR DESIGN, THIS DESIGN IS ALSO SUBJECT TO THE RESULTS OF THE FOLLOWING INVESTIGATIVE REPORTING AND DESIGN TO BE COMPLETED BY HWFR OR OTHERS:
   - 9.1. DRAINAGE SUBSOIL DESIGN (LOW PROFILE MEGAFLOW IN GRID PATTERN AND REGULAR OUTFALLS)
   - 9.2. GEOTECHNICAL REPORT
   - 9.3. GROUNDWATER REPORT
   - 9.4. CONTAMINATION REPORT
   - 9.5. ECOLOGY REPORT
   - 9.6. STORMWATER CATCHMENT FLOOD MODELLING REPORT
   - 9.7. WATERCARE WASTEWATER TRANSMISSION PIPE AND STRUCTURES INTEGRITY REPORT
   - 9.8. ELECTRICAL STUDY AND LINES REPORT

LEGEND

- EXISTING CONTOUR
- PROPOSED MINOR CONTOUR
- PROPOSED MAJOR CONTOUR
- EARTHWORK EXTENT
- PROPOSED 14m RL CONTOUR

Kōrihi Kori KURA GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

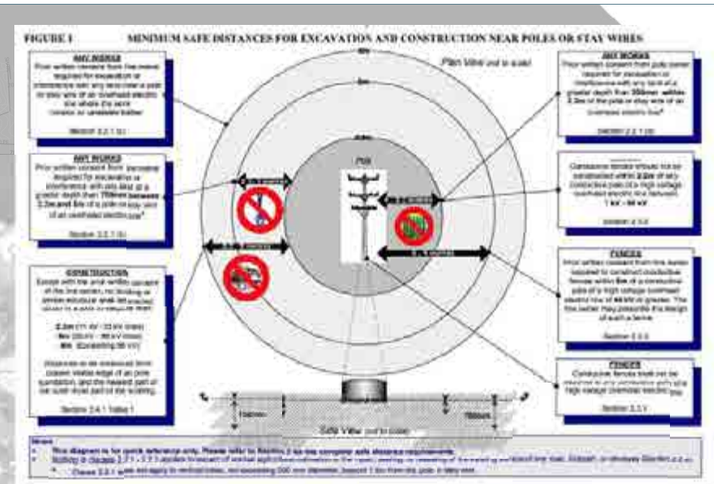
PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
FINISHED CONTOUR PLAN
OPTION 7

SCALE: (A1/A3)	1:2000 / 1:4000
SCALE BAR 1:4000@A3	0 40 80 120 160 200m
ISSUE STATUS:	PRELIMINARY DRAFT
PROJECT NUMBER:	HPCL1945
DRAWING NUMBER:	SK08-2
REV:	1
REVISION DETAILS:	PRELIMINARY DRAFT TO HWFR
REVISION DATE:	11 35 025
DRAWN:	RJP
CHECKED:	RJP
APPROVED:	RJP

Printed by: RYAN@11.06.25 // Filepath: S:\JOBS\HPCL1945 - TAKAPUNA GOLF CLUB\CIVILPLAN\CAD\1945-01-SK08-1-OPTION 7.DWG

TGC Option R1 (12th June 2025)



FLOOD CHANNEL DESIGNED AS PER HWFR REQUEST AND DESIGN.

FLOODING VOLUME AVAILABLE TO RL14.0m = 558,000m3

LOWER/RELOCATE EXISTING MV CABLES CROSSING AT THIS LOCATION, AS WITH HWFR DESIGN.

REBUILD GRAVEL FOOTPATH AS NEEDED WHERE EARTHWORKS OVERLAPS, WITH CONNECTIONS TO THE NORTH AND WEST

EXG OVERHEAD POWER POLES, UNDERGROUND CABLES, GRAVEL FOOTPATH AND CHANNEL TO REMAIN AS EXISTING ALONG EASTERN BOUNDARY.

EXTENT OF WORKS DRAPED ONTO EXISTING GROUND LEVEL AT 10m FROM EXG UNDERGROUND MV CABLE ALONG EASTERN BOUNDARY, IN ACCORDANCE WITH NZECP 34:2000 FIGURE 1.

WORKS TO BE COMPLETED IN ACCORDANCE WITH NZECP 34:2000 AND WITH APPROVAL FROM VECTOR, AS WITH HWFR DESIGN. REFER TO SCHEMATIC ABOVE FOR SAFE WORKING DISTANCES.

AS WITH THE HWFR DESIGN, GEOTECHNICAL AND WATERCARE REPORTING TO CONFIRM THAT PROPOSED FILLING OVER EXG PIPE WILL NOT ADVERSELY AFFECT THE PIPE'S STRUCTURAL INTEGRITY. LIAISON WITH WATERCARE REQUIRED DURING PRELIMINARY DESIGN. THIS IS COMMON TO BOTH DESIGNS.

CUT

STAGE 1

CUT

FILL

CUT

STAGE 2

CUT

FILL

A SK08-4

B SK08-4

C SK08-4

NOTES:

1. DO NOT SCALE FROM THE DRAWINGS.
2. PROPOSED DEPTH CONTOURS ARE SHOWN AT 0.5m INTERVALS.
3. AUCKLAND COUNCIL CONFIRMED AT A MEETING ON 21 MARCH 2025 THAT:
   - 3.1. THE REQUIRED VOLUME TO ACHIEVE UNDER THE SITE'S SPILLWAY HEIGHT OF 14mRL = 550,000m^3. THIS WILL ENSURE THAT DETENTION STORAGE VOLUME IS LINKED TO MAIN WAIRAU CATCHMENT IN MAIN CHANNEL TO NORTH-WEST OF SITE.
   - 3.2. PEAK FLOW IN MAIN CHANNEL IS 110m^3/S.
   - 3.3. TRIBUTARY TO THE WEST OF SITE HAS PEAK FLOW OCCURRING 1HR PRIOR TO MAIN CHANNEL FLOW, THEREFORE DETENTION OF THIS FLOW IS NOT RECOMMENDED AND SHOULD BE PASSED THROUGH CATCHMENT WITHOUT DETENTION PRIOR TO THE MAJOR PEAK FLOW OCCURRING.
   - 3.4. PEAK FLOW IN WESTERN TRIBUTARY IS 60m^3/S.
4. EXISTING/CURRENT FLOOD STORAGE IN GOLF COURSE FROM EXISTING GROUND LEVEL TO SPILLWAY HEIGHT OF 14mRL = 90,600m^3.
5. TOTAL AREA OF PROPOSED EARTHWORKS = 39.1ha.
   - 5.1. STAGE 1 = 20.6ha
   - 5.2. STAGE 2 = 18.5ha
6. EARTHWORK VOLUMES ARE FROM EXISTING SURFACE TO FINISHED SURFACE
7. EARTHWORKS VOLUMES ARE:
   - 7.1. TOTAL CUT VOLUME (COMPACTED X 0.8) = 584,000 m^3
     - 7.1.1. STAGE 1 CUT = 257,000m^3
     - 7.1.2. STAGE 2 CUT = 327,000m^3
   - 7.2. TOTAL FILL VOLUME = 613,000 m^3
     - 7.2.1. STAGE 1 FILL = 292,000m^3
     - 7.2.2. STAGE 2 FILL = 321,000m^3
   - 7.3. TOTAL DEFICIT SHOWN (IE EWS BALANCE / NO FILL OFF SITE / STOP FILLING THE MOUND) = 29,000 m^3
     - 7.3.1. STAGE 1 DEFICIT = 34,000m^3
     - 7.3.2. STAGE 2 SURPLUS INTO STAGE 1 = 5,000m^3
8. PROPOSED FLOOD STORAGE IN GOLF COURSE FROM PROPOSED FINISHED GROUND LEVEL TO SPILLWAY HEIGHT OF 14mRL = 558,000m^3 WHICH PROVES THIS CONCEPT TO ACHIEVE THE REQUIRED 550,000m^3.
7. EROSION AND SEDIMENT CONTROL IS TO BE DESIGNED AT PRELIMINARY DESIGN TO COMPLEMENT THE STAGING ON SHEET SK07-1.
8. IT IS INTENDED THAT THE CONTRACTOR SHALL GRADE THE EARTHWORKS TO THE FINISHED CONTOURS SHOWN. HOWEVER, THE FINAL MARRYING AND SHAPING OF THE EARTHWORKS AREAS IS SUBJECT TO THE ENGINEERS AND GOLF DESIGNER'S APPROVAL.
9. AS WITH THE HWFR DESIGN, THIS DESIGN IS ALSO SUBJECT TO THE RESULTS OF THE FOLLOWING INVESTIGATIVE REPORTING AND DESIGN TO BE COMPLETED BY HWFR OR OTHERS:
   - 9.1. DRAINAGE SUBSOIL DESIGN (LOW PROFILE MEGAFLOW IN GRID PATTERN AND REGULAR OUTFALLS)
   - 9.2. GEOTECHNICAL REPORT
   - 9.3. GROUNDWATER REPORT
   - 9.4. CONTAMINATION REPORT
   - 9.5. ECOLOGY REPORT
   - 9.6. STORMWATER CATCHMENT FLOOD MODELLING REPORT
   - 9.7. WATERCARE WASTEWATER TRANSMISSION PIPE AND STRUCTURES INTEGRITY REPORT
   - 9.8. ELECTRICAL STUDY AND LINES REPORT

LEGEND

-1.0	PROPOSED CUT ISOPACH
1.0	PROPOSED FILL ISOPACH
	EARTHWORKS ZERO CUT/FILL LINE
	EARTHWORK EXTENT
CUT	PROPOSED CUT
FILL	PROPOSED FILL
	EXG POWER O/H OR U/G ALIGNMENT CLOSEST TO EARTHWORKS
	10.0m OFFSET FROM EXG POWER

Kaupapa Kura
KURA
GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
DEPTH CONTOURS
OPTION 7

SCALE: (A1/A3) 1:2000 / 1:4000

SCALE BAR 1:4000@A3 0 40 80 120 160 200m

ISSUE STATUS: PRELIMINARY DRAFT

PROJECT NUMBER: HPCL1945 DRAWING NUMBER: SK08-3 REV: 1

REVISION DETAILS: PRELIMINARY DRAFT TO HWFR REVISION DATE: 11 36 025

DRAWN:	CHECKED:	APPROVED:
RJP	RJP	RJP

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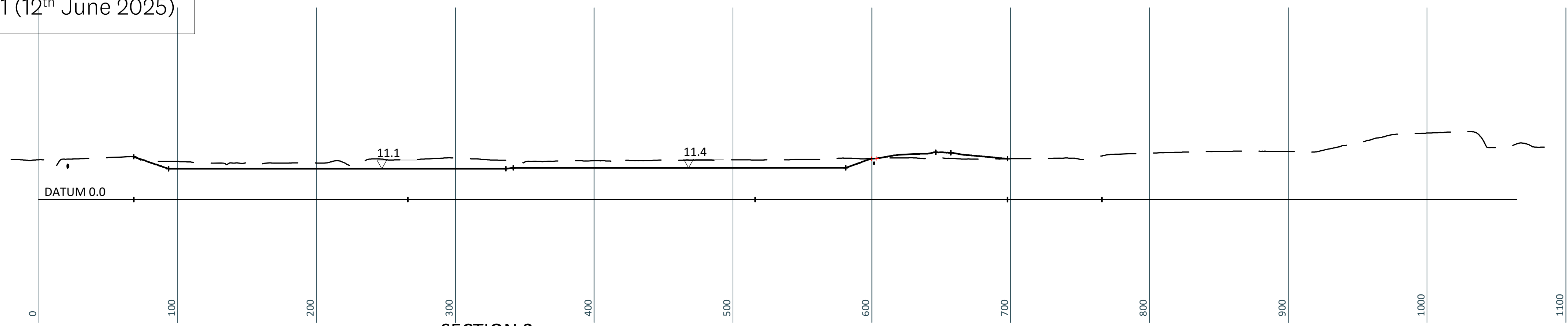
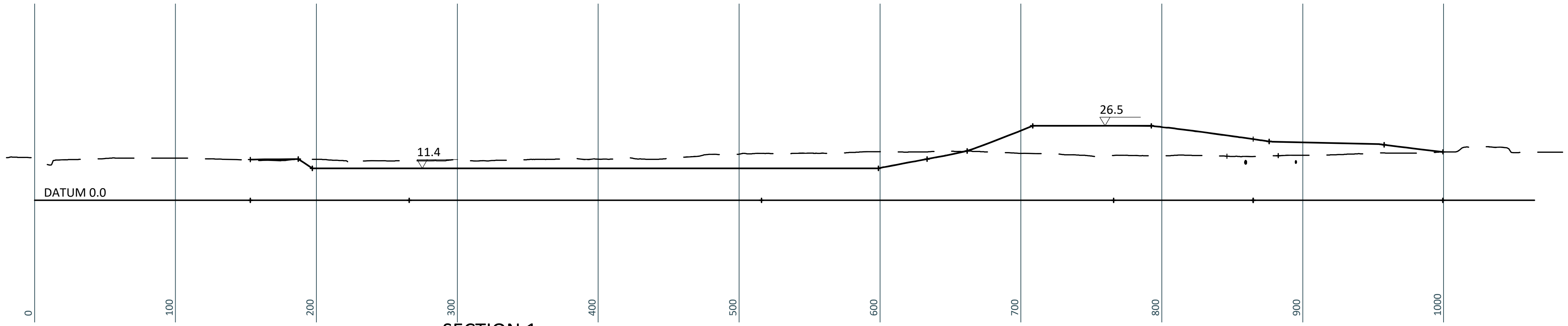
TGC Option R1 (12th June 2025)



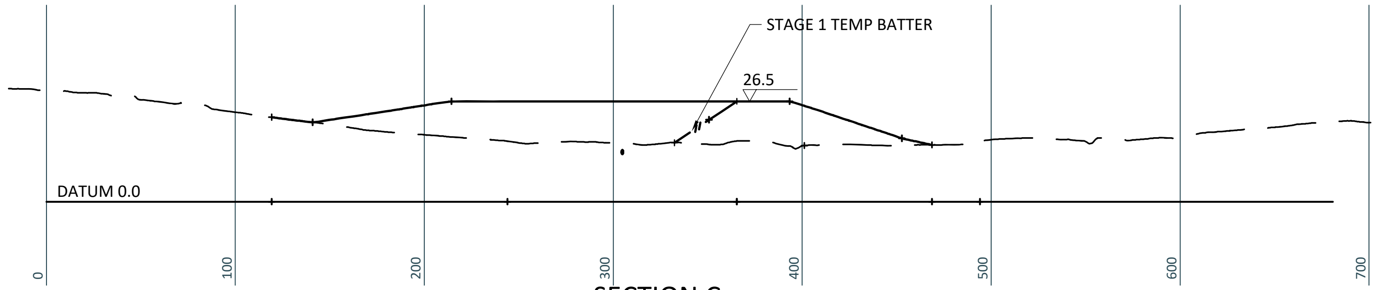
SECTION 2

SCALE: (A1/A3) 1:2000H 1:1000V / 1:4000H 1:2000V



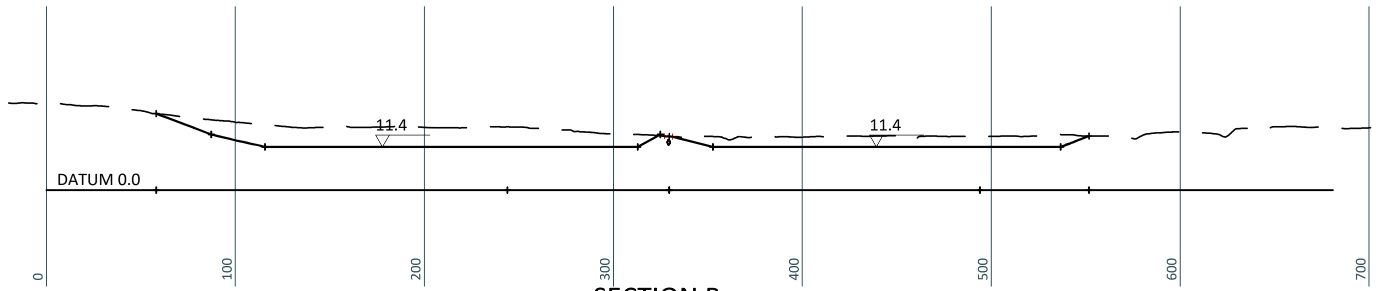
SECTION 1

SCALE: (A1/A3) 1:2000H 1:1000V / 1:4000H 1:2000V



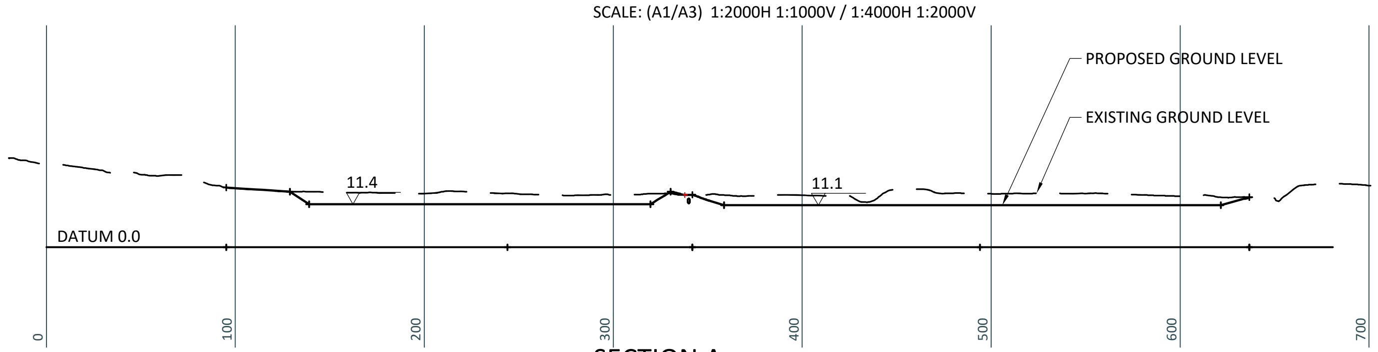
SECTION C

SCALE: (A1/A3) 1:2000H 1:1000V / 1:4000H 1:2000V



SECTION B

SCALE: (A1/A3) 1:2000H 1:1000V / 1:4000H 1:2000V



SECTION A

SCALE: (A1/A3) 1:2000H 1:1000V / 1:4000H 1:2000V

KURA GOLF COURSE DESIGN

CIVILPLAN CONSULTANTS

Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE: TAKAPUNA GOLF COURSE NORTHCOTE ROAD TAKAPUNA

SHEET TITLE: SITE CROSS SECTIONS OPTION 7

SCALE: (A1/A3)	AS SHOWN
SCALE BAR N.T.S.	
ISSUE STATUS:	PRELIMINARY DRAFT
PROJECT NUMBER: HPCL1945	DRAWING NUMBER: SK08-3 · REV: 1
REVISION DETAILS: PRELIMINARY DRAFT TO HWFR	REVISION DATE: 11 37 025
DRAWN: RJP · CHECKED: RJP	APPROVED: RJP

NOTES:

STAGE 1

1.1. FILL AREA IS IN THE SOUTHERN AREA, AND IS A COMMON SOLUTION, QUANTUM, PROGRAMMING AND COST TO THE HWFR SOLUTION. AS WITH THE HWFR SOLUTION IT IS SUBJECT TO GEOTECH INVESTIGATIONS AND CONFIRMATION FROM WATERCARE ON ACCEPTABILITY OF WORKS OVER TRANSMISSION WW LINE. THIS WORK IS TO BE PROGRESSED DURING PRELIMINARY DESIGN.

1.2. HOLES TO CONTINUE TO BE PLAYED IN STAGE 2 AREA IN THE ORDER AS FOLLOWS OR AS DETERMINED BY OTHERS: 10-18.

STAGE 2

1.1. STAGE 2 COMPLETES EARTHWORKS WITHIN STAGE 2 AREA.

1.2. HOLES TO CONTINUE TO BE PLAYED IN THE STAGE 1 AREA IN THE ORDER AS FOLLOWS OR AS DETERMINED BY OTHERS: 1-9.

Kura
KURA
GOLF COURSE DESIGN

CIVILPLAN
CONSULTANTS
Level 12, 17 Albert Street, Auckland Central. Phone: 09 222 2445

PROJECT TITLE:
TAKAPUNA GOLF COURSE
NORTHCOTE ROAD
TAKAPUNA

SHEET TITLE:
PROPOSED LAYOUT PLAN
OPTION 7A

SCALE: (A1/A3) 1:2000 / 1:4000
SCALE BAR 1:4000@A3 0 40 80 120 160 200m

ISSUE STATUS: PRELIMINARY DRAFT

PROJECT NUMBER: HPCL1945 DRAWING NUMBER: SK08-6 REV: 1

REVISION DETAILS: PRELIMINARY DRAFT TO HWFR
REVISION DATE: 11 38 025

DRAWN: RJP CHECKED: RJP APPROVED: RJP

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mps limited
29 Chamberlain Street
Grey Lynn,
Auckland 1021
www.mps.net.nz

18 June 2025

Principal Project Manager | Blue Green Networks
Auckland Council
135 Albert Street
Auckland 1010
[**by email**]

Attention: Sara Zwart

Takapuna Golf Course Flood Storage Submission - Additional Information

Dear Sara

As noted, you have advised that the feasibility assessment of TGC proposal is **NOT** a collaboration process, and Healthy Waters (HW) design has been changing throughout this process. TGC considers that the process has made it difficult to prepare a proposal on a like-for-like basis, particularly without access to available information and a stable baseline for comparison. We attach a summary of the process from our perspective to this letter.

Furthermore, following on from today's meeting to discuss TGC's proposal, we are providing the following clarification on concept assumptions and observations regarding the feasibility process and comparison of options.

Overall, we consider the TGC and Healthy Waters (HW) proposals are comparable in all but a few minor aspects. As the design process has progressed, the two solutions have converged significantly. As requested at the meeting we can provide the following clarifications when assessing the TGC concept differences.

Wetland Area
The 11.1m RL storage area is outside any proposed golf holes and from a TGC perspective can be a fully wetted area of 66,883m^2 or a small wetted area of say 4,844m^2 (equivalent to approximately two times the area of the existing wetlands/ponds currently located on the site), or anything in between. The larger wetting area option will have higher costs but potentially greater ecological benefit. Please advise and apply whatever is most favourable (cost and benefit) to the feasibility assessment and TGC will undertake to incorporate that in the next design iteration.

Delivery Programme
The TGC construction programme allows for operational continuity throughout the works over two construction seasons. Our staging programme will overlap, and through smart and efficient planning, TGC would apply a flexible management approach to retaining a playable golf course throughout the project. TGC to date has developed an earthworks staging approach that enables nine holes to remain playable throughout construction following feedback from our experienced earthworks contractor. Further detail on potential earthworks staging can be found in the attached *Takapuna Golf Course Design - Construction Methodology and Wetland Area,* by CivilPlan dated 18 June 2025.

As noted, this is shorter than the construction programme identified in HW's Strategic Business Case, which shows the main works occurring over a three-year period (Year 3: $14.6M; Year 4: $16.2M; Year 5: $14.5M; Year 6: $1M), implying a longer period of disruption and site unavailability.

Integrated Design
We note that the end point of the two options are not directly comparable. HW concept has not been developed as an integrated design with the final land use clearly identified. Whereas the TGC proposal has been shaped around retaining a public recreational asset from the outset. When Council finalises how it will repurpose the balance land (non-wetted area) for either recreational or non-recreational purposes, this will impose additional costs related to engineering, earthworks, recontouring, drainage, compaction, and stabilisation — costs that do not apply to the TGC solution. Unlike the TGC proposal, there could conceivably be significant delays between completion of the flood storage works and re-purposing of the balance lands.

We remain committed to progressing a viable, cost-effective solution that supports both Council's flood mitigation goals and the community's long-term recreational use of the site.

We also respectfully request that this letter and attachments be forwarded to the feasibility team responsible for assessing both the TGC and Healthy Waters options.

Please confirm whether any further clarification is required.

Yours sincerely

Phil Jaggard
Director, MPS Limited

MEMO

To:	Healthy Waters Flood Resilience - Sara Zwart	**Date:**	18 June 2025
From:	Ryan Pitkethley	**CivilPlan Project No:**	1945
Subject:	Takapuna Golf Course Design - Construction Methodology and Wetland Area		

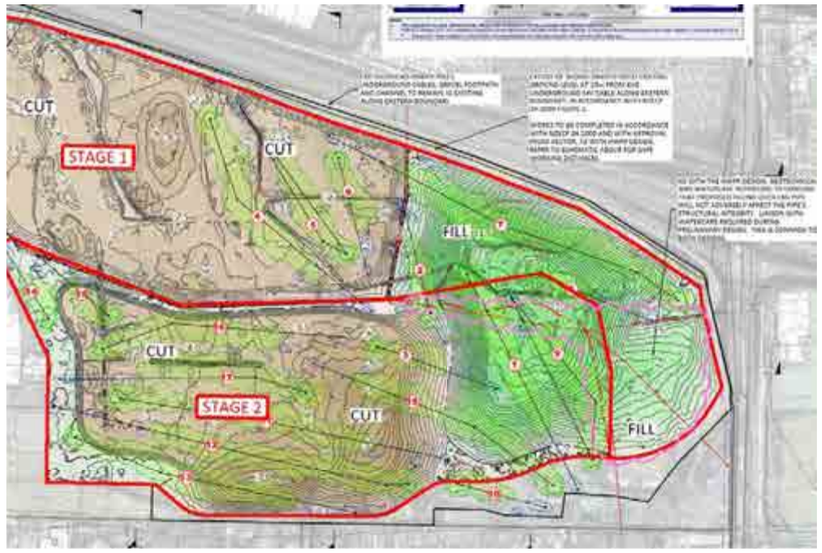
1. Construction Methodology – Option 1

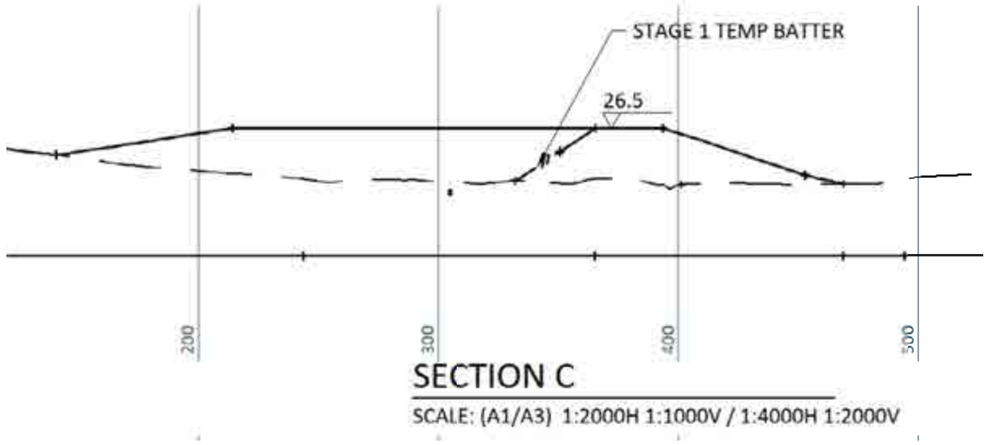
We provide a construction methodology to show how the golf course will continue to operate whilst construction is completed.

1.1. Volumes

Plan SK08-3 notes the indicative preliminary earthworks volumes for each stage. We note that this design is not final and should match the HWFR earthworks design when comparing costs.

5. TOTAL AREA OF PROPOSED EARTHWORKS = 39.1ha.
   - 5.1. STAGE 1 = 20.6ha
   - 5.2. STAGE 2 = 18.5ha
6. EARTHWORK VOLUMES ARE FROM EXISTING SURFACE TO FINISHED SURFACE
7. EARTHWORKS VOLUMES ARE:
   - 7.1. TOTAL CUT VOLUME (COMPACTED X 0.8) = 584,000 m^3
     - 7.1.1. STAGE 1 CUT = 257,000m^3
     - 7.1.2. STAGE 2 CUT = 327,000m^3
   - 7.2. TOTAL FILL VOLUME = 613,000 m^3
     - 7.2.1. STAGE 1 FILL = 292,000m^3
     - 7.2.2. STAGE 2 FILL = 321,000m^3
   - 7.3. TOTAL DEFICIT SHOWN (IE EWS BALANCE / NO FILL OFF SITE / STOP FILLING THE MOUND) = 29,000 m^3
     - 7.3.1. STAGE 1 DEFICIT = 34,000m^3
     - 7.3.2. STAGE 2 SURPLUS INTO STAGE 1 = 5,000m^3





The red dashed line in plan and cross section C shows the temporary batter extent into stage 2 to complete the stage 1 fill.

1.2. Earthmoving Capacity Per Season

TGC are working with a well known and reputable Auckland based contractor who has been in business for more than 30 years. They have the capability of moving up to 1.1 million cubic metres per season. A recent development they completed in difficult peat soils moved 750,000m3 in a season.

To demonstrate golf course experience, they have been involved in a 500 lot residential subdivision at Peninsula Golf Course at Red Beach which moved 600,000m3. They also built the new Wainui golf club for the club to move to.

The risk of unknown ground conditions is common to both designs. If there is basalt rock found in the cuts this will however delay the project, and the program may not be achievable for either design.

However with the information on hand, it is therefore concluded that it is very reasonable to assume that the approximately 300,000m3 of cut to fill earthworks can be completed in each stage, ie within 2 earthworks seasons, and the golf course can continue to operate in some form throughout the periods.

1.3. Phase 1 – North-Eastern Dry Basin and Initial Filling

1.3.1. Objectives:

- Excavate a dry basin in the lowest, north-eastern corner of the site.
- Commence sediment control measures aligned with Auckland Council's GD05 standards.
- Strip topsoil, use excavated spoil to fill two designated areas: the driving range (up to 4.5 metres TBC) and the southern mound (up to 11 metres TBC).

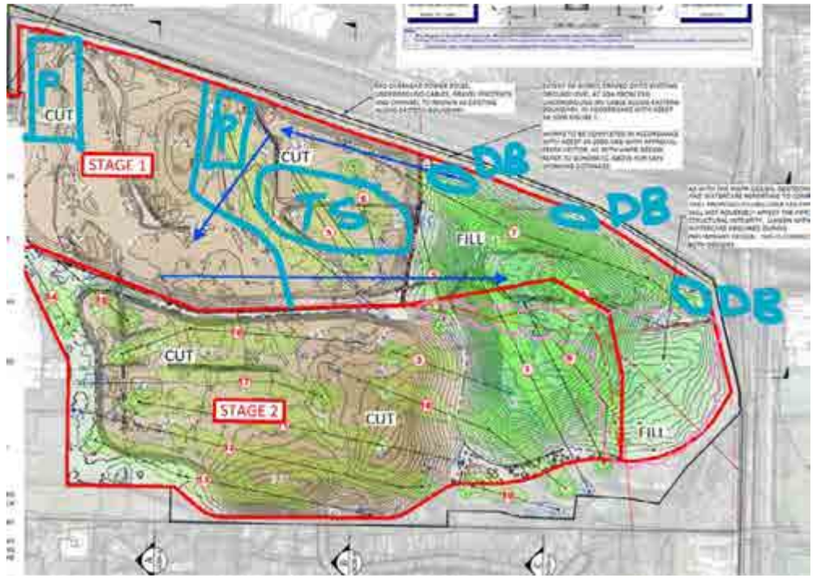
1.3.2. Description:

Phase 1 begins in the lowest-lying area of the site, allowing immediate control of stormwater inflow from surrounding urban areas. This phase includes large-scale clearing of trees, fairways, and existing golf features. Ecologists and arborists will supervise tree removal to retain or reuse viable specimens where possible. Excavation of the dry basin will be sequenced to prioritise water management benefits and facilitate compliance with erosion and sediment controls from the outset.

The driving range will be closed temporarily (approximately 6 months, 3 months earthworks, 3 months grass strike) to allow for safe and efficient fill placement. Once fill in the southern mound area is underway, the driving range will be reshaped, resurfaced, and reopened. Sediment controls such as silt fences, decanting earth bunds, and sediment ponds will be installed prior to any earthworks, and continuously maintained.

1.3.3. Indicative site movements and sequencing

Stage 1a – indicative site movements as blue arrows, topsoil (TS) erosion and sediment controls (P, DB) in teal



Stage 1b – indicative site movements as blue arrows, topsoil (TS) erosion and sediment controls (P, DB) in teal. Stabilised areas in green.

1.4. Phase 2 – North-West Area and Final Shaping

1.4.1. Objectives:

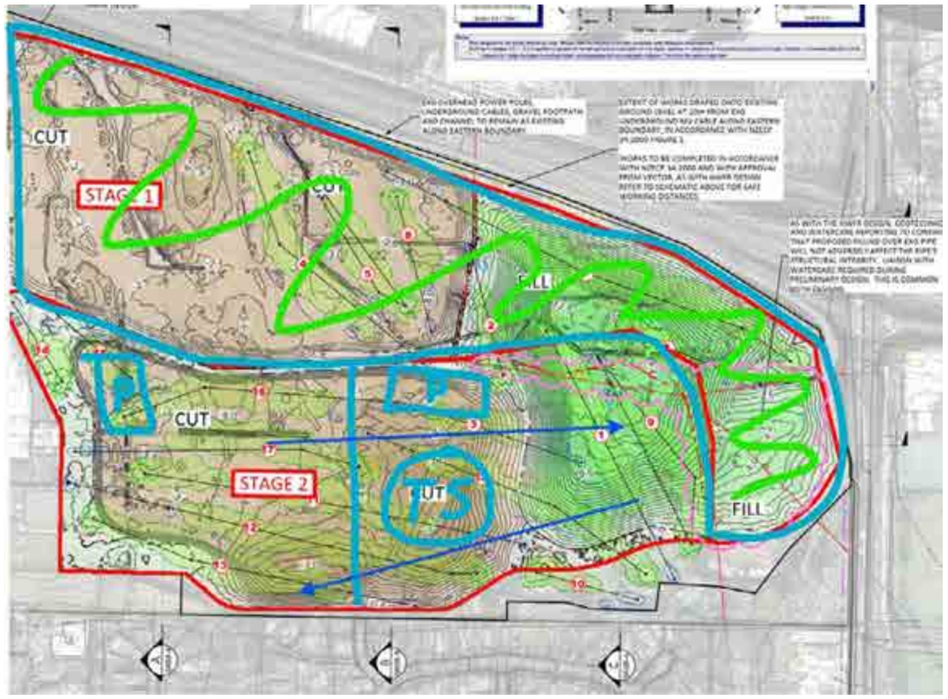
- Relocate temporary golf activities to this area upon Phase 1 completion.
- Commence sediment control measures aligned with Auckland Council's GD05 standards.
- Strip topsoil, complete bulk earthworks across the north-western portion of the site.
- Finalise cut and fill operations, including shaping.

1.4.2. Description:

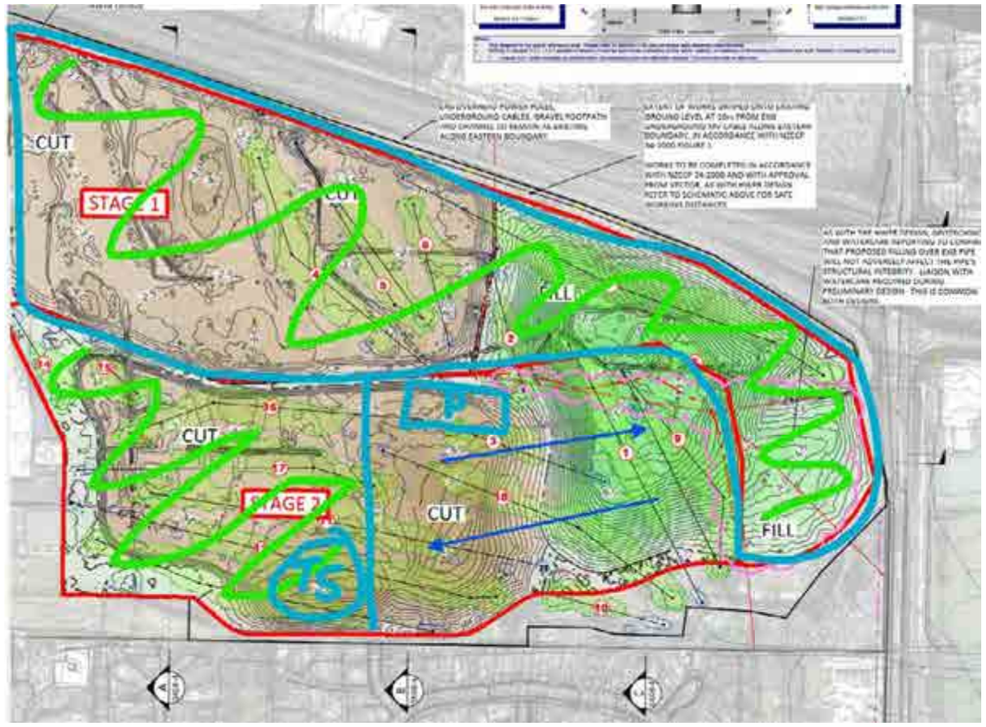
Upon completion of Phase 1, the focus will shift to the north-western area. This phase includes large-scale clearing of trees, fairways, and existing golf features. Ecologists and arborists will supervise tree removal to retain or reuse viable specimens where possible. Sediment controls will be expanded to include new contributing catchments. Final basin contouring and stormwater flow paths will be integrated into the earthworks, ensuring that the site captures and redirects runoff away from sensitive boundaries.

1.4.3. Indicative site movements and sequencing

Stage 2a – indicative site movements as blue arrows, topsoil (TS) erosion and sediment controls (P) in teal. Stabilised areas in green.



Stage 2b – indicative site movements as blue arrows, topsoil (TS) erosion and sediment controls (P) in teal. Stabilised areas in green.



1.5. Haul Road Construction and Access Planning

The contractor will establish a network of haul roads to facilitate efficient movement of machinery and materials throughout the site. These roads will:

- Be constructed using site-won material where quality and quantity allow.
- Incorporate hardfill where required to ensure year-round operability.
- Be strategically located to avoid sensitive golf operations and reduce haul distances.
- Include adequate turning radii, drainage culverts, and safety signage.

All haul roads will be decommissioned or integrated into final landforms once earthworks are complete.

1.6. Sediment and Erosion Control (GD05 Compliance)

All sediment and erosion control measures will adhere to Auckland Council's Technical Publication GD05. Key controls include:

- Decanting Earth Bunds: Constructed early in Phase 1 to manage stormwater in initial catchment areas.
- Sediment Ponds: Sized according to catchment runoff volume; designed with baffles and decanting structures.
- Silt Fences: Installed along perimeter boundaries and downslope of all active earthworks.
- Diversion Channels: Direct clean runoff away from disturbed areas.
- Entry/Exit Stabilisation Zones: Minimise tracking of sediment onto public roads.

These measures will be monitored, adapted, and maintained for the full duration of works.

1.7. Safety and Delineation

The contractor prioritises safety across all operations. Site boundaries and work zones will be clearly defined using:

- Water-filled barriers and temporary fencing.
- Colour-coded signage and delineators.
- Dedicated pedestrian paths where public access intersects with construction.
- Daily toolbox meetings and safety briefings.
- Traffic management plans to separate construction and golf activities.

Emergency response plans, hazard registers, and incident protocols will be maintained onsite.

1.8. Vegetation and Course Feature Removal

All existing course features and vegetation in construction zones will be cleared.

Large and historically significant trees will be assessed by an arborist. Where feasible, mature trees will be:

- Protected and retained.
- Transplanted or relocated.
- Reused as landscape or structural features post-construction.

An ecologist will advise on habitat preservation and relocation of fauna if discovered during clearing operations.

1.9. Community Engagement and Programme Efficiency

The contractor recognises that the community expects timely delivery and minimal disruption.

To meet these expectations:

- A streamlined programme will be developed to shorten earthworks duration.
- The use of site-won basalt will reduce haulage and environmental impact.
- Haul roads will extend the construction season into wetter months.
- Phased works ensure continuous golf operations and clubroom access.

Regular communication with Takapuna Golf Club, Auckland Council, and nearby property owners will ensure transparency and responsiveness to concerns.

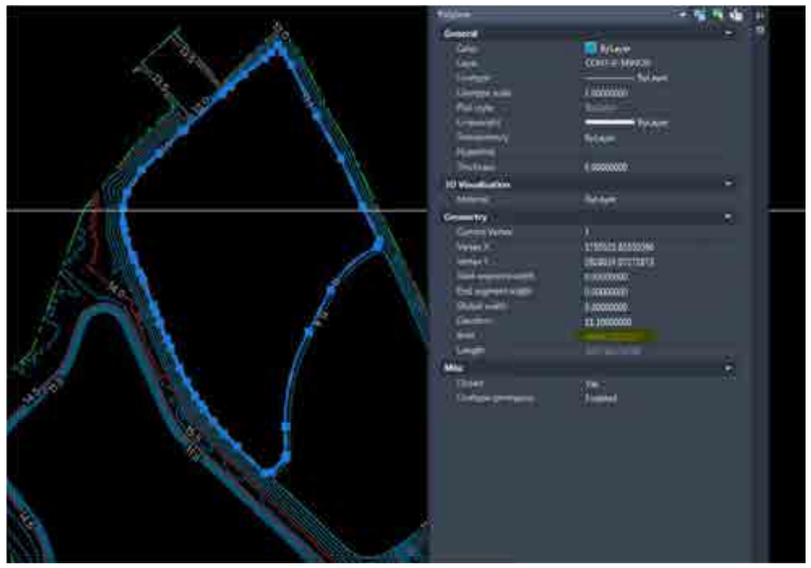
2. Construction Methodology – Option 2

In the instance where program is delayed due to bad weather or unforeseen ground conditions the Takapuna Golf Course tenants are flexible about how many golf holes stay open at any one time. They have noted that a 6-hole golf course is also manageable for a temporary amount of time.

The above design and methodology is also flexible so as to move stage boundaries to proactively respond to any situations avoiding any programme delays.

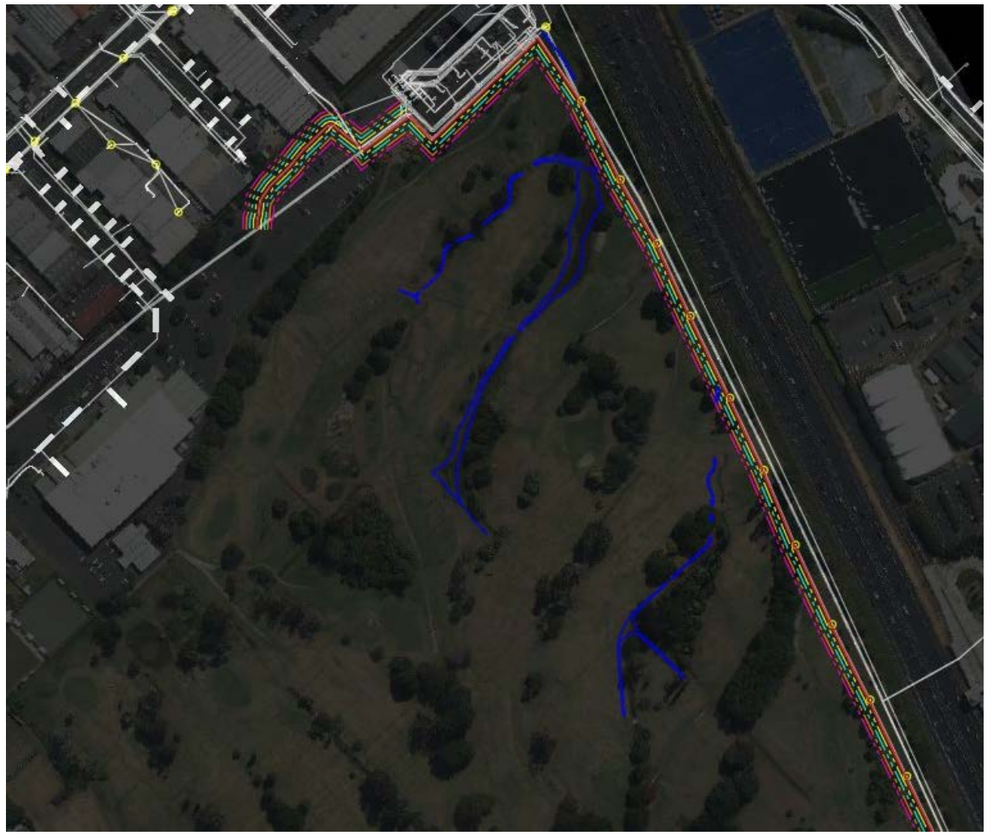
3. Wetland Area Assumption

Finished contour plan SK08-2 shows the lowest area of the site being an area of 66,883m2 at the 11.1mRL contour (shown below). This may be wetland to offset any stream loss from the works (yet to be determined), however is not required for flood mitigation or water treatment.



To assess what the estimated minimum wetland area may need to be, a best guess to allow for a minimum area of twice the existing ponding on site. We estimate the existing ponding area to be 2,422m2 (the area shown below in the NE corner of the site defined by survey completed 30 May 2025), therefore twice this is 4,844m2. By this logic the wetland shown is potentially 13 times larger than required. This is all dependant on the outcome of the ecological reporting.

For the purposes of the comparison, the TGC design should be comparable to the HWFR design. Therefore, apply whatever is most favourable (cost and benefit) to the feasibility assessment given the minimum and maximum wetted area available, including consideration of planting/mowing requirements. TGC will undertake to incorporate that in the next design iteration.



The area that isn't wetland can be grassed with planting at a density similar to the existing golf course situation.

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Auckland Council
Te Kaunihera o Tāmaki Makaurau