

**Before the Hearings Panel appointed by
Taupo District Council**

In the Matter of

the Resource Management Act 1991
(Act)

And

In the Matter of

An application for land use consent [RM240388], subdivision consent [RM240389] and variation to subdivision consent RM200118B for: 83 residential lots, 4 reserves, 5 road and over 6 stages; land use consent for earthworks and for additional building coverage, plot ratio and building setbacks; variation to Stage 9 of the previous subdivision stage.

Statement of Evidence of
Thomas Brand
for Seven Oaks Kinloch Limited
Dated: 12 August 2025

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INTRODUCTION

Qualifications and Experience

1. My name is Thomas William Brand
2. I am the Regional Manager and Senior Civil Engineer for Cheal Consultants in Taupo, specialising in land development projects. I hold a Bachelor's degree in Civil Engineering from Calvin University in Grand Rapids, Michigan, USA. I worked as a civil engineer in both Michigan and then in the Los Angeles area, where I became a Registered Professional Engineer in the State of California. I have 26 years of total experience and have now been with Cheal in Taupo for nearly 17 years. I am also a Chartered Professional Engineer (Civil), International Professional Engineer, and Chartered Member of Engineering New Zealand.

Code of Conduct

3. While this is not an Environment Court hearing I have read and agree to comply with the Code of Conduct for Expert Witnesses in the Environment Court Practice Note 2023. This evidence is within my area of expertise, except where I state that I am relying on material produced by another person. I have not omitted to consider material facts known to me that might alter or detract from the opinions that I express.

Project Involvement

4. I have been involved with the Seven Oaks developments for several years. For this specific application, my involvement has included oversight of the preliminary design and layout for earthworks, roading, stormwater, sewer, and water supply networks. This includes preparation of the Engineering Services Report (ESR), associated preliminary design drawings, coordination with Taupo District Council (TDC) with regards to water supply, preparing required documentation for submission to the Waikato Regional Council (WRC) to obtain consents for earthworks and for stormwater diversion.

5. I confirm the validity of the information provided in the most recent Engineering Services Report which was updated and submitted to TDC (dated 3 June 2025) as part of the Section 92 process. Since that ESR was prepared and submitted, there have been further developments regarding earthworks which I will cover within the body of my evidence.
6. In addition, I provided a further report, (dated 3 June 2025) and titled Stormwater Management Summary – Balance Land. This report was prepared and submitted to provide additional clarification regarding stormwater treatment and management in response to a submission from WRC. I confirm that the information provided in Stormwater Management Summary is still current and valid.

SCOPE OF EVIDENCE

7. My evidence will address the following:
 - (a) Earthworks
 - (b) Roading
 - (c) Stormwater Management
 - (d) Water Supply
 - (e) Wastewater Disposal
 - (f) Conclusions.

SUMMARY

8. Earthworks
 - (a) WRC has granted consent for earthworks and supports the application.¹

¹ WRC – Letter to be tabled for Seven Oaks Hearing (dated 15 July 2025)

- (b) Earthworks will be minimised and consists of general recontouring of existing undulating land. The effects of the proposed earthworks are minimal (minor or less than minor).
- (c) A 10m earthworks setback is now proposed. Final detailed design will further reduce earthworks in proximity to the existing boundaries.
- (d) As detailed in the Engineering Services Report, some areas require earthworks within the setbacks. However, the areas requiring earthworks are limited and minimal within the setbacks.
- (e) Robust Erosion and sediment controls have been proposed and meet or exceed the WRC guidelines.

9. Roding

- (a) Roding layout has been designed in accordance with Taupo District Council guidelines and to service the proposed lots, cater for pedestrian and cyclist movements, and to suit stormwater collection, treatment and conveyance to attenuation ponds.
- (b) Oakdale Drive is designed as a collector road and will not be significantly impacted by the development in terms of its overall capacity. Consequently, in my opinion, resurfacing with noise reducing pavement is not necessary.

10. Stormwater Management

- (a) WRC has granted both Earthworks and Stormwater Diversion consents, which included review of proposed stormwater treatment and disposal measures. WRC also now supports the application, being satisfied that appropriate measures will be implemented for proper treatment and control of stormwater runoff. This has been confirmed via a letter from WRC to TDC on 15 July 2025.

- (b) Treatment of stormwater runoff consists of vegetated swales and attenuation ponds discharging to ground for 10-year events.
- (c) The proposed stormwater attenuation ponds ensure runoff flow rates and volumes are controlled and scouring potential minimised. The proposed design eliminates any discharge from the development for at least a 10-year event and ensures controlled discharge to existing flow paths via vegetated spillways. The stormwater system has been designed conservatively and will fully contain flows from storm events well in excess of the 10-year event.

11. Water Supply

- (a) TDC water modelling has confirmed that TDC infrastructure is capable of supplying water to the proposed development.
- (b) Additionally, the Memo supplied by TDC dated 23 June 2025 regarding Kinloch Water and Wastewater Capacities confirms that the Council system water design is conservative and capable of delivering the required flow rates, fire flow, and storage capacity inclusive of the proposed 83 lot development.

12. Wastewater Disposal

- (a) Similarly to the water supply, TDC has confirmed that the Council provisions (current and proposed) for wastewater disposal and treatment are sufficient for the proposed development. This has been confirmed via the Memo supplied by TDC dated 23 June 2025 regarding Kinloch Water and Wastewater Capacities. As per this Memo, TDC confirms that the currently scheduled upgrades to the Kinloch Wastewater Treatment Plant (WWTP) are adequate to meet currently proposed and future requirements.

13. Conclusions

- (a) Earthworks have been minimised and setbacks increased which will further reduce earthworks during detailed design. Stormwater treatment and controls are robust, along with erosion and sediment control measures during construction. The result of the above is that both Earthworks and Stormwater Diversion consents have been granted by WRC, who now also supports the application.
- (b) Additionally, existing and proposed TDC water supply and wastewater management have been confirmed to be adequate and conservative to service future development, including the additional lots specifically proposed with this application.

EARTHWORKS

- 14. The current ESR, dated 3 June 2025, outlines the following aspects of the proposed earthworks for the development:
 - (a) The proposed earthworks philosophy seeks to minimise earthworks by eliminating earthworks in the larger lots where possible, smoothing the current land profile, and avoiding retaining walls or steep terraces.
 - (b) The ESR demonstrates compliance with the WRC Permitted Activity Rules, specifically Rule 5.1.4.11, but states that consent for earthworks will still be sought from WRC. This consent has since been granted by WRC.
 - (c) Preliminary earthworks volumes and depths are discussed. Specific areas are highlighted where earthworks fall within 7.5m of Department of Conservation (DoC) property. However, the extent of these earthworks is shown to be minimal, and earthworks never cross the boundary into any neighbouring land.

- (d) Proposed erosion and sediment controls follow the WRC guidelines, including provision for flocculation of sediment ponds and decanting earth bunds should it be necessary. Though not required by the WRC guidelines, previous stages of Seven Oaks developments have utilised pumps to transfer sediment laden water to a central holding pond. This method would be implemented for this proposed development as well, depending upon staging of the earthworks and specific site requirements during construction. This provides a further layer of sediment control during earthworks which exceeds WRC requirements.
15. Following preparation of the current ESR, the applicant now proposes to reduce impact on the adjacent scenic reserves by revising earthworks setbacks to neighbouring properties (including DoC) to 10m, rather than the 7.5m previously proposed. Consequently, the earthworks design will be adjusted during detailed design to allow for that additional setback.
 16. It is likely that the areas that currently encroach on the 7.5m setback [as noted in comment 14 (c)] will still encroach on the 10m setback, but these earthworks are still minimal and unobtrusive. In these areas, regardless of the general setback requirement, the actual proposed earthworks are unlikely to change except that these may further reduce depth or extent. Regardless, this change will result in earthworks being even further setback from existing DoC boundaries than what was originally proposed when the consent application was lodged with TDC.
 17. As proposed in the ESR, an application was lodged with WRC for an earthworks consent based upon the preliminary drawings supplied in the ESR. This earthworks consent has now been granted by WRC who also now supports the application.
 18. The above commentary and associated ESR addresses the concerns raised in submissions regarding extent of earthworks, setbacks, and erosion and sediment control from Larissa Coubrough, Taupo Lakes and Waterways, and Tukairangi Trust.

ROADING

19. As detailed in the ESR, the roading proposed within the development is consistent with previous Seven Oaks developments and aligns with the TDC Code of Practice.
20. The roading system features low impact design such as vegetated swales and minimising paved surface area.
21. Pedestrian and cycle way connectivity is also featured to improve pedestrian flow and amenity of the development and connection with existing and future neighbouring developments.
22. In response to the submission by Te Kowhai Ridge Residents and their concerns regarding traffic noise on Oakdale because of higher traffic volumes, the traffic modelling and evidence provided by others confirms that the wider roading network and associated collector roads (including Oakdale Drive) are adequate for the expected traffic volumes. As these existing roads have been designed and constructed to be collector roads to cater for future development and are not at capacity (and will not be at capacity due to the proposed development), in my opinion resurfacing with noise reducing pavement is not necessary.

STORMWATER MANAGEMENT

23. The current ESR, dated 3 June 2025, outlines the following aspects of the proposed stormwater management for the development. The supporting Stormwater Management Summary Report further clarifies the conservatism built into the design, adherence to WRC Stormwater Management Guidelines, secondary overland flow and compliance with Permitted Activity Rules.
 - (a) The proposed stormwater management philosophy seeks to follow similar methodologies used in previous stages of Seven Oaks development, including vegetated swales, reticulated primary stormwater flows to vegetated attenuation ponds, overland flow

paths for larger events to pass through attenuation ponds and discharge in a controlled manner to existing flow paths via vegetated spillways.

- (b) The Primary system is designed to cater for the 10-year storm event. Consequently, swales, inlets, reticulation, soakage systems and attenuation ponds are all designed to cater for at least this event.
- (c) Treatment of runoff is proposed at source with roadside swales on each proposed road. In addition, all runoff will be directed to vegetated attenuation ponds which discharge all the primary flows to ground.
- (d) The primary system has been designed conservatively and caters for a rainfall event well in excess of the 10-year event. The conservative design includes pond sizing for the 10-year event runoff volumes using the worst-case climate change adjusted rainfall, ignoring soakage in the pond during the rain event, ignoring soakage within the swales during the rain event, ignoring effects of vegetation within the swales, and ignoring ponding within the swales.
- (e) Overland flow within the development is contained within the road corridors, with discharge from ponds selected to align with existing flow paths into the adjacent downstream land.
- (f) Overland flow from adjacent, upstream property is controlled via diversion bunding, swales, and culverts as required to safely convey these flows through or around the development. Stormwater diversion consents have been granted by WRC for this development as well as for the neighbouring upstream property.
- (g) Compliance with WRC Permitted Activity rule 3.5.11.5 has also been demonstrated as all primary stormwater runoff for the proposed development discharges to ground.

24. The Stormwater Management Summary report submitted in response to the Section 92 request clarified the additional treatment measures, overland flow design, and conservatism within the design. WRC has subsequently approved the stormwater diversion consent and now supports the application.
25. The above commentary addresses the concerns raised in submissions by WRC (though they now support the application), Taupo Lakes and Waterways, and Tukairangi Trust.

WATER SUPPLY

26. As per the ESR submitted as part of the Section 92 request, water modelling has been completed by WSP (Consultant for TDC) to investigate water supply capability for the proposed development. The results of this modelling indicated that the proposed development can be serviced by existing Council infrastructure. I also note that at the time of modelling, the proposed development included 100 lots and now consists of 83 lots. Consequently, the modelling completed is on the conservative side due to the reduced number of lots.
27. Following the Seven Oaks response to the Section 92 request, TDC has confirmed that the Council provisions (current and proposed) for water supply are sufficient for the proposed development. This confirmation is by way of a Memo supplied by TDC dated 23 June 2025 regarding Kinloch Water and Wastewater Capacities. As per this memo, TDC confirms that the Council system water design is conservative and capable of delivering the required flow rates, fire flow, and storage capacity inclusive of the proposed 83 lot development.
28. The above commentary and TDC memo address the water supply concerns raised in submissions.

WASTEWATER DISPOSAL

29. As per the ESR submitted by Seven Oaks in response to the TDC section 92 request, proposed wastewater disposal consists primarily of a gravity system, with 16 lots requiring private pump stations.
30. Peak flow rate calculations were performed to confirm that a standard 150mm gravity main is sufficient.
31. Volume calculations were also performed to support the required upgrade for an additional storage tank at the Lisland Drive Pump Station.
32. As part of the ESR, Cheal assessed the Kinloch Treatment capacities to check if the current infrastructure plan allows sufficient capacity for the lots proposed in this development. As a result, it was determined that the infrastructure plan can accommodate the additional proposed wastewater flows, along with allowance for other potential future development or infill.
33. Subsequent to Seven Oaks' response to the Section 92 request, TDC has confirmed that the Council provisions (current and proposed) for wastewater treatment are sufficient for the proposed development. This confirmation is by way of a Memo supplied by TDC dated 23 June 2025 regarding Kinloch Water and Wastewater Capacities. As per this memo, TDC confirms that the upgrade to the Kinloch Wastewater Treatment Plant has been sized conservatively and includes provision for the lots proposed in this development.
34. In my opinion, the commentary set out above, together with the TDC memo, address the wastewater system concerns raised in submissions.

CONCLUSION

35. The proposed preliminary designs for earthworks, erosion and sediment control, roading, water supply and wastewater disposal have been designed in a robust manner, meeting or exceeding regulatory requirements.

36. Effort has been made to minimise earthworks across the site and setback requirements have now also been increased, which will further reduce earthworks extent during detailed design.
37. Erosion and sediment controls have been designed as per the WRC guidelines for soil disturbing activities.
38. The Waikato Regional Council has granted earthworks consent for the proposed development.
39. Stormwater management design adheres to WRC guidelines and has been designed conservatively to provide multiple treatment stages, robust attenuation, and allowance for overland flow within and through the development.
40. The Waikato Regional Council has granted stormwater diversion consent for the proposed development.
41. Water supply has been confirmed to be adequate as per TDC modelling and subsequent TDC memo stating the existing and proposed water supply upgrades are conservative and will accommodate the additional lots proposed in this development.
42. Wastewater treatment and capacity has been confirmed to be adequate as per TDC memo stating the Kinloch Wastewater Treatment Plant upgrades are conservative and will accommodate the additional lots proposed in this development.



Thomas Brand

12 August 2025

ANNEXURE A – STORMWATER SUMMARY REPORT (3 JUNE 2025)

Seven Oaks Kinloch Limited

30 Okaia Drive, Kinloch

Stormwater Management Summary – Balance Land

220225
3 June 2025

Seven Oaks Kinloch Limited

30 Okaia Drive, Kinloch

Stormwater Management Summary – Balance Land

Prepared by:



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Sunil Prasad
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Dip (Civil), AdvDip (Civil), BE (Hons) Civil, MEngNZ

Date: 3 June 2025
Reference: 220225
Status: FINAL
Revision: -
Previous Revision Date: -

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1. Cheal Concept Drawings for Earthworks (Final Contours) and Services
2. Sample Design Drawings from Seven Oaks Stage 2
3. Photos of existing Stage 2 swales and ponds during rain event

1. SCOPE

This report has been prepared to provide additional commentary on the approach to stormwater management and treatment for the proposed subdivision, in response to Further Information Request Item 6 from Taupō District Council (TDC) on 16 April 2025 and based upon a submission from the Waikato Regional Council (WRC). Specifically, Item 6 – Stormwater states the following:

Item 6 Stormwater

The submission from the Waikato Regional Council discussed stormwater management. Please provide further information and plan designs for stormwater management methodology to ensure that pre-treatment of stormwater from the roading network occurs prior to soakage in the soakage basins. The submission also refers to the Ecological Report and that the recommendations of that report should be implemented and maintained (see point 4 of this letter).

“Point 4” also refers to “including treatment of stormwater prior to entering the watercourses”.

Consequently, information provided below is a summary the Engineering Services Report, additional information provided to WRC during the earthworks and diversion consent process (both consents now granted), as well as additional information to clarify the stormwater approach.

2. STORMWATER APPROACH

Stormwater treatment and disposal for the balance land is proposed to follow similar methodologies used in previous stages of the Seven Oaks development. This will consist of the following:

- Pre-treatment via vegetated swales for all roads
- Attenuation via soakage ponds of all runoff for at least the 10-year post-development event, ignoring pre-development flows
- Disposal via soakage for all attenuated flow
- Discharge to the existing environment of greater storm events via spillways
- Additionally, the balance land has an added consideration of upstream catchments which currently drain through the proposed development. Consequently, overland flow paths are proposed both through and around the site to allow for these flows.

Please refer to Appendix 1 for the proposed earthworks plans and conceptual services plans.

2.1 Conservative Design as per previous Seven Oaks Stages

Nine stages have already been constructed within the greater Seven Oaks subdivision (Seven Oaks – Stages 1 to 7; Terraces – Stages 1 and 2). In all of these stages, the same approach to stormwater has been adopted and has now been in place for several years. The swales are all well vegetated, with check dams as/where required and ponds are functioning as intended. As the system is designed conservatively, there is rarely any runoff entering the ponds and when it does, the pond only contains a minor volume of water. It has been found that the ability of the swales to attenuate runoff before entering the ponds is considerable.

The ponds are designed for the 10-year event, but as mentioned, they have been designed conservatively due to the following:

- Attenuation within swale subsoil scoria filled trench has not been accounted for
- Attenuation behind check dams has not been accounted for
- Soakage within swales and check dams has not been accounted for
- Pond sizing has been based upon 100% of post-development (ignoring pre-development flows) runoff entering the pond, with no discharge. I.e. soakage of runoff within the pond during the storm event has not been taken into consideration. Soakage during a storm event would be considerable given the free draining soils and therefore the true capacity of the pond is much larger than the design volume.
- Additional soak holes have been installed in ponds to further mitigate against any runoff leaving the pond. Again, these have been installed as an added measure and have not been considered in the design.
- Most ponds include a preliminary forebay (small pond) as an additional gross pollutant trap, treatment and attenuation measure.

Please refer to Appendix 2 for a sample of drawings from Seven Oaks Stage 2, which contains typical plan views, swale/check dam sections, and various pond details. The balance land subdivision would contain the same details for swales and ponds and the same conservative design approach.

Please refer to Appendix 3 for photos taken in Stage 2 during a significant rain event in 2023. The attenuation behind check dams is evident and the pond never contained more than approximately 0.5m of water. Additional photos have been supplied from late May 2025 which show the significant vegetation within the swales, providing even further treatment and attenuation.

2.2 Adherence to the Waikato Stormwater Management Guidelines

The intent of the stormwater design for the balance land, as per previous stages of Seven Oaks developments, is to adhere to the principles of the Waikato Stormwater Management Guidelines. These guidelines recommend a low impact approach with an aim to deal with runoff at source, use natural drainage systems (such as swales) where possible and then use stormwater devices such as forebays and ponds for attenuation and additional treatment where required.

Due to the free draining pumice soils found commonly in the Taupō District, it is a TDC requirement that all individual dwellings capture all runoff from roofs and hardstand areas up to the 10-year, 1-hour event and discharge this volume to soakage within the lot. Any proposed privately owned rights of way will utilise kerb and channel, with a catchpit draining to a concrete lined drilled soakhole for disposal of the 10-year, 1 hour storm volume. This approach is entirely consistent with the Waikato Stormwater Management Guidelines as it provides the ability to contain and dispose of stormwater at source, rather than discharge to an alternative outlet. Consequently, only the public road runoff needs to be considered for treatment and attenuation at the time of subdivision.

The balance land will utilise densely vegetated swales in all roads. For the main road, Kahikatea Drive, this will be central median swale for the entire length of the road. For the other roads, including the cul-de-sacs, there will be a swale on one side with sheet flow discharge from the corresponding side of the road and curb and channel on the other side, with pipes under the road discharging to the swale for pre-treatment. The swales also contain a subsoil system containing a scoria filled trench to provide additional treatment, attenuation, and discharge to soakage. To reduce the risk of

erosion from higher flow velocity, and to encourage water to infiltrate into the scoria subsoil drain, check dams are installed in all swales with a gradient greater than 5%. All swales are planted with various grasses and plants as per landscape architect specifications to provide further treatment opportunity via filtration, evapo-transpiration, and nutrient uptake in the root structure. This approach is consistent with the principles of the Guidelines.

At the end of the swales, flows are collected generally via scruffy dome inlet and discharge to a small pond forebay which acts as a gross pollutant trap for any coarse material before ultimately discharging to the primary pond via a high-flow bypass system activated once the forebay is full, and which also discharges via soakage except for very large events. As per the commentary in Section 2.1 above regarding conservatism within the system, the ponds will not discharge any runoff for events much larger than the 10-year event and therefore meet the TDC Code of Practice as well as the permitted activity rules in the WRC Regional Plan.

Consequently, the overall approach aligns with the Waikato guidelines and provides a robust and conservative system for treatment and flow control of runoff generated from the development.

2.3 Secondary Overland Flow

For storm events greater than the 10-year, 1 hour event, or should the primary system experience blockages, secondary flow paths and emergency spillways are provided to safely allow for passage of these flows. These flow paths will be provided within the road corridors and then through the Stormwater Reserves towards the existing flows paths below the site. Discharge points have been selected to align with existing flow paths into the adjacent downstream land. These flow paths will also be designed to safely convey any overland flow runoff from upstream catchments that will pass through the balance land in two locations – down Road 1 and also through the specific stormwater reserve adjacent the Terraces block to the north.

Due to the conservative design already discussed, activation of the spillways and overland flow paths is likely to be very rare. A Discharge Consent has been granted from Waikato Regional Council for this activity.

2.4 Permitted Activity Compliance

As stated in the Engineering Services Report, the proposed stormwater system (treatment/disposal) will meet the requirements of the WRC Permitted Activity Rule 3.5.11.5 of the Regional Plan for “Discharge of Stormwater Onto or Into Land”.

The discharge runoff from the development (roads) is through swales and ponds into the land via soakage and there is no discharge to watercourses. The other conditions of this permitted activity rule are met as per comment within the Engineering Services Report but reiterated below.

- a) *The discharge shall not originate from a catchment that includes any high-risk facility or contaminated land unless there is an interceptor system in place.*
All runoff discharge originates from public roads or private residential lots and not from any high-risk facility.

- b) *The discharge shall be below a rate that would cause flooding outside the design discharge soakage area, except in rain events equivalent to the 10% Annual Exceedance Probability design storm or greater. Any exceedance shall go into designated overland flow paths.*
The proposed Stormwater treatment design captures and stores all runoff for storm events up to (and exceeding) the 10% AEP event. These flows are discharged to ground. Overland flow from larger events will be directed to existing overland flow paths.
- c) *There shall not be any overland flow resulting in a discharge to surface water, except in rain events equivalent to the 10% Annual Exceedance Probability design storm or greater; then there shall be no adverse surface water effects as a result of the discharge.*
The proposed Stormwater treatment and disposal design captures and stores all runoff for storm events up to (and exceeding) the 10% AEP event. These flows are all discharged to ground. In any case, overland flows are all directed to existing designated flow paths and not to any surface water.
- d) *Any erosion occurring as a result of the discharge shall be remedied as soon as practicable.*
Although measures will be implemented to ensure that no erosion occurs, the eventual Construction Management Plan will require this condition to be met.
- e) *The discharge shall not contain concentrations of hazardous substances that may cause significant adverse effects on aquatic life or the suitability of the water for human consumption after treatment.*
Given the nature of the development being residential, no significant hazardous substances are anticipated. Additionally, the Stormwater runoff will be treated first through swales and then through settlement ponds which are primarily discharged to ground which utilises filtration through the soil.

Therefore, Stormwater discharge to ground from the proposed subdivision will be fully compliant with the Permitted Activity Rules in the WRC Regional Plan.

3. CONCLUSION

The proposed Seven Oaks Balance Land subdivision will continue the managed stormwater approach and low impact design successfully implemented in previous Seven Oaks stages. This aligns with the principles of the Waikato Stormwater Management Guidelines, utilising a suite of treatment methods including extensive swales, subsoil drainage trenches under the swales, rock check dams and forebays provide treatment of flows prior to entering the soakage ponds. In addition, the system completely eliminates discharge (including sediment) from the subdivision for rainfall events up to (and exceeding) a 10-year probability, inclusive of climate change.

4. DISCLAIMER

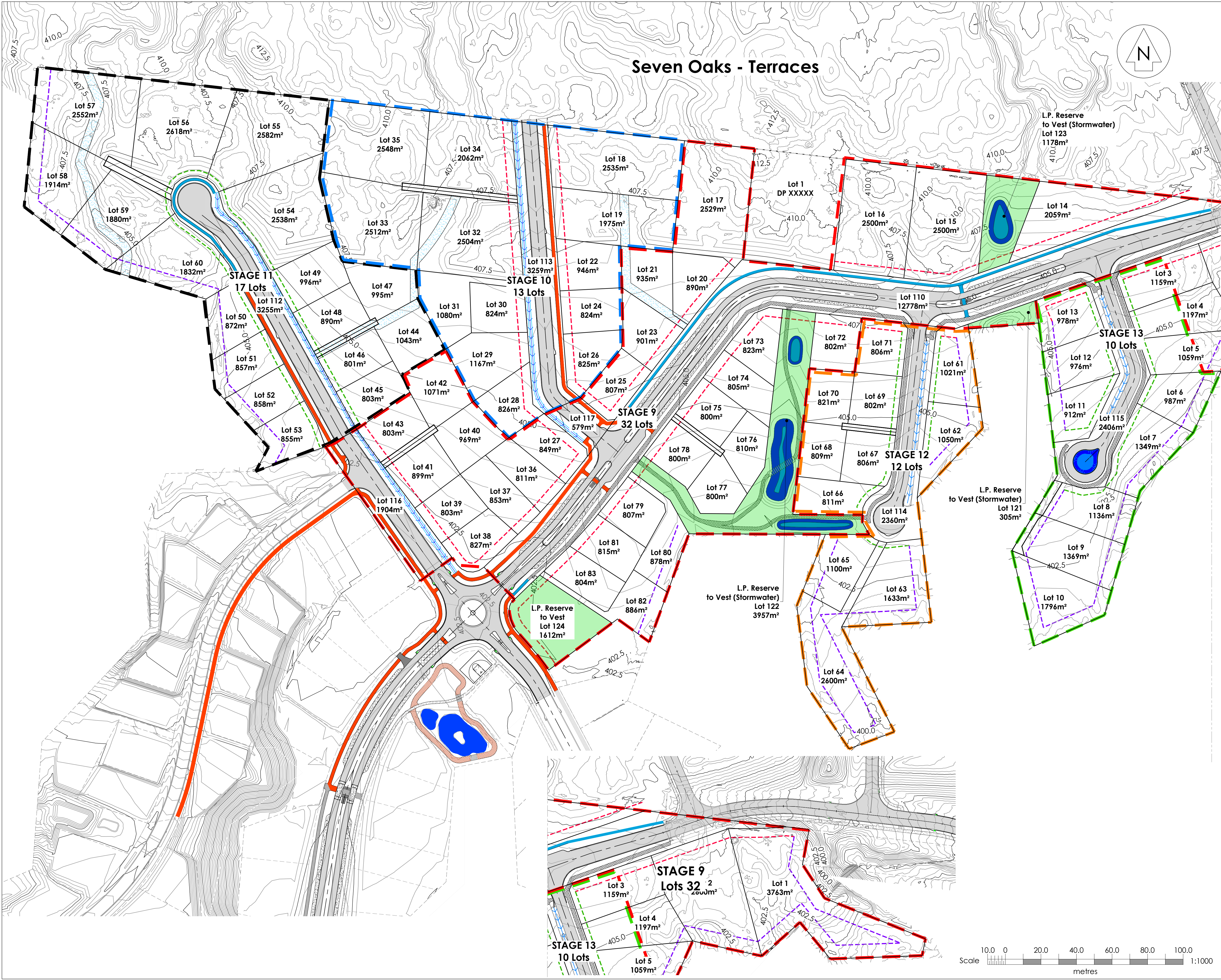
This Report has been prepared solely for the use of our client with respect to the particular brief given to Cheal Consultants Limited.

No liability is accepted in respect of its use for any other purpose or by any other person or entity. All future owners of this property should seek professional geotechnical advice to satisfy themselves as to its ongoing suitability for their intended use.

CHEAL CONSULTANTS LIMITED
3 June 2025

Appendix 1

Cheal Concept Drawings
for Earthworks (Final
Contours) and Services



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NOTES:

This plan has been prepared for the purpose of a resource consent application only. It is not a precise survey plan. As areas and dimensions are likely to vary upon survey it should not be attached to any sale & purchase agreements without an appropriate condition to cover such variations.

Owner: Seven Oaks Kinloch Ltd

Record of Title: 1109169
Total Area: 18.255 ha

Reticulated services will require additional easements after final construction and development of the legal survey.

Rights of way to rear Lots are a minimum 4m wide.

Pool Fence along DOC Land Boundary.

Legend:

- Reserve to Vest (Recreation & Stormwater)
- Stormwater Overland Flow Path
- Design Contours Major
- Design Contours Minor
- Easement
- Existing Culvert
- Footpath 1.4m
- Cycleway 1.8m
- Combined Footpath & Cycleway 2.0m
- 3m Setback
- 5m Setback
- 7.5m Setback
- Stage 9 Boundary
- Stage 10 Boundary
- Stage 11 Boundary
- Stage 12 Boundary
- Stage 13 Boundary

SEVEN OAKS

E	14/05/25	For Resource Consent	MM	SH	TWB
D	31/01/25	For Resource Consent	RR	SH	TWB
C	07/11/24	For Resource Consent	RR	SC	TWB
B	16/05/23	For Resource Consent	JZL	LU	TWB
A	21/12/22	For Resource Consent	PH	LU	TWB
Rev	Date	Amendment	By	Chk	App

Project Title
Seven Oaks Kinloch Limited
Okaia Drive
Kinloch

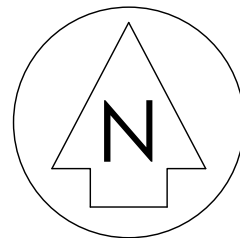
Drawing Title
Balance Land
Earthworks
Proposed Contour Plan

Surveyed	G.Ripoll	10/22	GR
Designed	S.Pen	12/22	SP
Drawn	P.Harris	21/12/22	PH
Checked	L.Urieete	21/12/22	LU
Approved	T.Brand	21/12/22	TWB

Status **RESOURCE CONSENT**

Scale A1 1:1000
A3 1:2000 | A1

Drawing Number
220225-SK202 | E



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Owner: Seven Oaks Kinloch Ltd

Record of Title: 1109169
Total Area: 18.255 ha

Reticulated services will require additional easements after final construction and development of the legal survey.

Rights of way to rear Lots are a minimum 4m wide.

Pool Fence along DOC Land Boundary.

Legend:

- SW Stormwater Line Proposed
- SWMH Proposed
- Cesspit Proposed
- SSWH Proposed
- SW Soakage Pit
- SS Sewer Line Proposed
- SS Sewer Rising Main Proposed
- SSW Swale Proposed
- SSMH Proposed
- SSMH Existing
- Reserve to Vest (Recreation & Stormwater)
- Stormwater Overland Flow Path
- Easement
- ROW
- Stage 9 Boundary
- Stage 10 Boundary
- Stage 11 Boundary
- Stage 12 Boundary
- Stage 13 Boundary

SEVEN OAKS

E	14/05/25	For Resource Consent	MM	SH	TWB
D	31/01/25	For Resource Consent	RR	SH	TWB
C	07/11/24	For Resource Consent	SC	SH	TWB
B	16/05/23	For Resource Consent	JZL	LU	TWB
A	21/12/22	For Resource Consent	PH	LU	TWB
Rev	Date	Amendment	By	Chk	App

Project Title
Seven Oaks Kinloch Limited
Okaia Drive
Kinloch

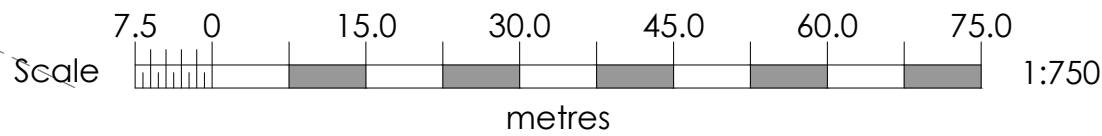
Drawing Title
Balance Land Services
Conceptual Layout Plan
Sheet 1 of 2

Surveyed	G.Ripoll	10/22	GR
Designed	S.Pen	12/22	SP
Drawn	P.Harris	21/12/22	PH
Checked	L.Uriarte	21/12/22	LU
Approved	T.Brand	21/12/22	TWB

Status **RESOURCE CONSENT**

Scale A1 1:750
A3 1:1500 | A1

Drawing Number 220225-SK401
Rev E



This plan has been prepared for the purpose of a resource consent application only. It is not a precise survey plan. As areas and dimensions are likely to vary upon survey it should not be attached to any sale & purchase agreements without an appropriate condition to cover such variations.

Owner: Seven Oaks Kinloch Ltd

Record of Title: 1109169
Total Area: 18.255 ha

Reticulated services will require additional easements after final construction and development of the legal survey.

Rights of way to rear Lots are a minimum 4m wide.

Pool Fence along DOC Land Boundary.

All Lots marked with an asterisk (eg Lot 9 *) require individual sewer pumps

Legend:

- SW Stormwater Line Proposed
- SWMH Proposed
- Cesspit Proposed
- SWSH Proposed
- SW Soakage Pit
- Culvert Proposed
- (E-one) Individual SS Pump Station
- SS Sewer Line Proposed
- SS Sewer Rising Main Proposed
- SS SW Swale Proposed
- SSMH Proposed
- SSMH Existing
- Reserve to Vest (Recreation & Stormwater)
- Easement
- ROW
- Stage 9 Boundary
- Stage 10 Boundary
- Stage 11 Boundary
- Stage 12 Boundary
- Stage 13 Boundary

SEVEN OAKS

E	14/05/25	For Resource Consent	MM	SH	TWB
D	31/01/25	For Resource Consent	RR	SH	TWB
C	07/11/24	For Resource Consent	SC	SH	TWB
B	16/05/23	For Resource Consent	JZL	LU	TWB
A	21/12/22	For Resource Consent	PH	LU	TWB
Rev	Date	Amendment	By	Chk	App

Project Title
Seven Oaks Kinloch Limited
Okiaia Drive
Kinloch

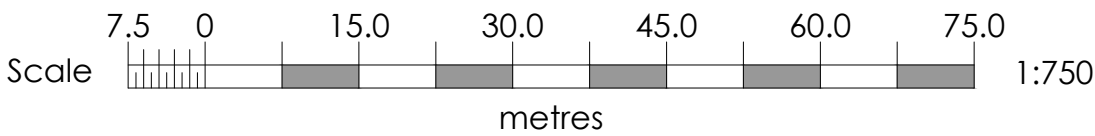
Drawing Title
Balance Land Services
Conceptual Layout Plan
Sheet 2 of 2

Surveyed	G.Ripoll	10/22	GR
Designed	S.Pen	12/22	SP
Drawn	P.Harris	21/12/22	PH
Checked	L.Uriaete	21/12/22	LU
Approved	T.Brand	21/12/22	TWB

Status **RESOURCE CONSENT**

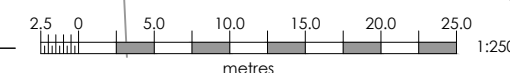
Scale	A1	1:750	A1
	A3	1:1500	

Drawing Number
220225-SK402
Rev
E



Appendix 2

Sample Design Drawings
from Seven Oaks Stage 2





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NOTES:

- All work shall be done in accordance with the Taupo District Council Code of Practice.
- Reduced Levels are in terms of Moturiki Vertical Datum 1953
Level Origin : DT8J
RL: 369.623
Contour Interval = Major 1m
Minor 0.5m
- Contractor to locate and identify existing utility location and depths prior to construction. The project engineer shall be informed of any discrepancies to the information depicted on these plans immediately for revised drawings.
- Contractor shall install and maintain all stormwater, dust, and erosion control during construction as per earthworks management plan and the Waikato Regional Council Erosion and Sediment Control - "Guidelines for soil disturbing activities".
- All disturbed areas shall be re-topped and grassed within 30 days upon completion of contract works.
Dust control shall be maintained until grassed areas have become established.
- All single sump (cesspit) leads to be DN225 RCRRJ Class 2 unless stated otherwise.
All double sump (cesspit) leads to be DN300 RCRRJ Class 2 unless stated otherwise.
All double sump (cesspit) in low points, leads to be DN375 RCRRJ Class 2 unless stated otherwise.
- All soak holes on ROW's are 6m depth.

Legend:

- SW Stormwater Line Proposed
- SW Stormwater Line Existing
- SWMH Proposed
- SWMH Existing
- Cesspit Proposed
- Cesspit Existing
- SWSH Proposed
- SW Connection
- Swale Drain
- Rock check dams
- Kerb & Channel
- Proposed Road
- Proposed Footpath
- Proposed Cycleway



Rev	Date	Amendment	By	Chk	JRT
2	03/06/21	Lot 54 Overland Flow Path Added	PH	LU	JRT
1	09/03/21	For Construction	PH	LU	JRT

Project Title
Seven Oaks Kinloch Ltd
Stage 2 to 5 Okia Drive
Kinloch

Drawing Title
Stormwater Reticulation
Layout Plan
Sheet 5 of 9

Surveyed	-	-	-
Designed	A.Cook	11/12/20	AMC
Drawn	P.Harris	11/12/20	PH
Checked	L.Uarte	11/12/20	LU
Approved	S.Prasad	23/12/20	SP

Status	CONSTRUCTION	
Scale	A1 1:250 or As Shown	A1
	A3 1:500	
Drawing Number	19630-605	Rev 2

NOTES:

- All work shall be done in accordance with the Taupo District Council Code of Practice.
- Reduced Levels are in terms of : Moturiki Datum 1953
Level Origin : DT8J
RL: 369.623
Contour Interval = Major 1m
Minor 0.5m
- Contractor to locate and identify existing utility location and depths prior to construction. The project engineer shall be informed of any discrepancies to the information depicted on these plans immediately for revised drawings.
- Contractor shall install and maintain all stormwater, dust, and erosion control during construction as per earthworks management plan and the Waikato Regional Council Erosion and Sediment Control - "Guidelines for soil disturbing activities".
- All disturbed areas shall be re-topsoiled and grassed within 30 days upon completion of contract works.
Dust control shall be maintained until grassed areas have become established.
- All geotech lining to be installed to the manufactures specifications.

Rev	Date	Amendment	By	Chk	App
1	09/03/21	For Construction	PH	LU	JRT

Project Title

Seven Oaks Kinloch Ltd
Stage 2 - 5 Okaia Drive
Kinloch

Drawing Title

Stormwater
Pond 2 Layout Plan
& Typical Cross Section

Surveyed	-	-	-
Designed	A.Cook	11/12/20	AMC
Drawn	P.Harris	11/12/20	PH
Checked	L.Uarte	11/12/20	LU
Approved	S.Prasad	23/12/20	SP

Status

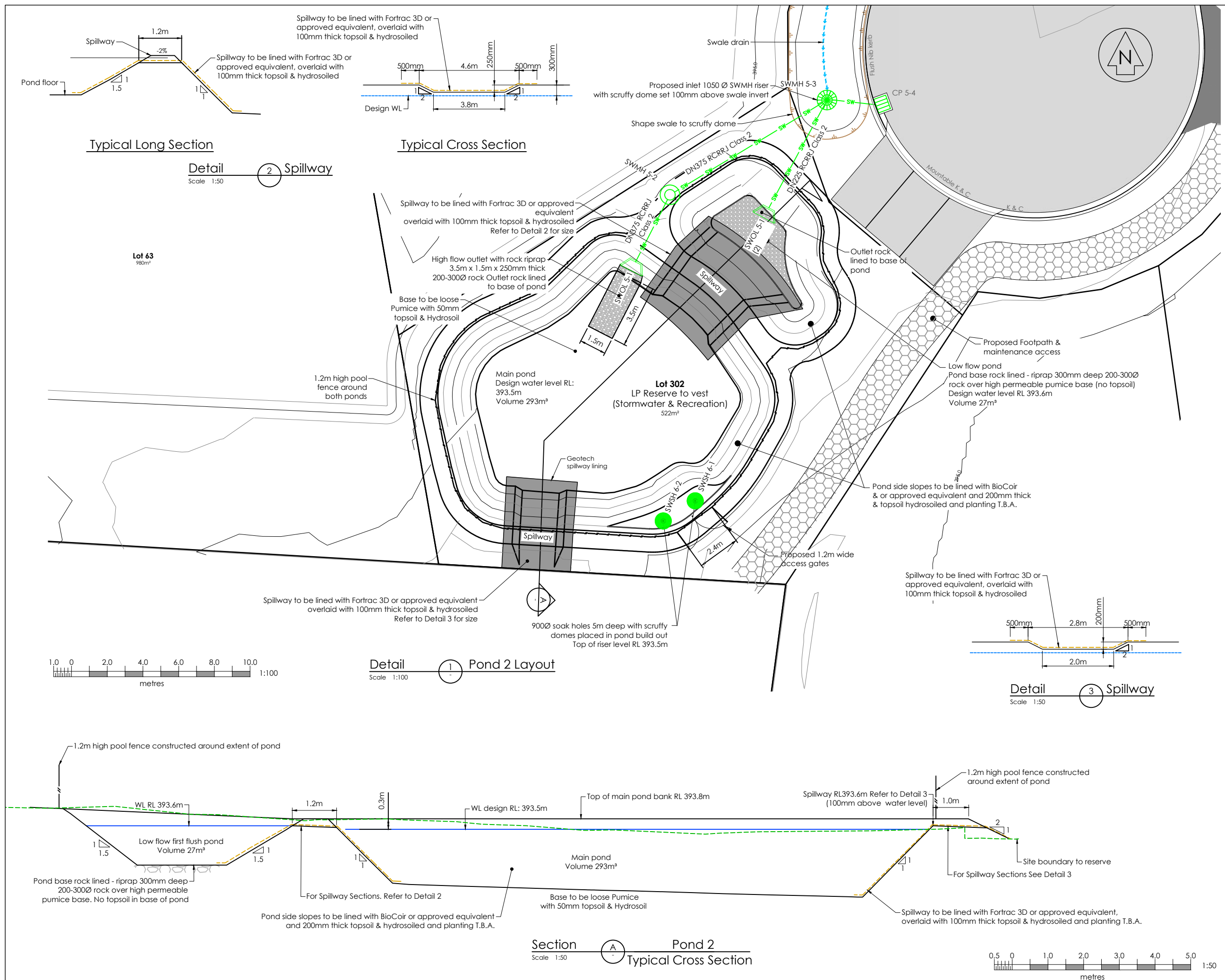
CONSTRUCTION

Scale	A1	As Shown	A1
	A3	As Shown x 2	

Drawing Number	Rev
----------------	-----

19630-618

1





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NOTES:

1. All work shall be done in accordance with the Taupo District Council Code of Practice.
2. Reduced Levels are in terms of Moturiki Vertical Datum 1953
Level Origin : DT8J
RL: 369.623
3. Contractor to locate and identify existing utility location and depths prior to construction. The project engineer shall be informed of any discrepancies to the information depicted on these plans immediately for revised drawings.
4. Contractor shall install and maintain all stormwater, dust, and erosion control during construction as per earthworks management plan and the Waikato Regional Council Erosion and Sediment Control - "Guidelines for soil disturbing activities".
5. All disturbed areas shall be re-topsoiled and grassed within 30 days upon completion of contract works.
Dust control shall be maintained until grassed areas have become established.
6. All steel fixings to be Hot Dip Galvanised.
7. All timber poles must be normal density poles complying with Table 7:1 of NZS3603:1993.
8. Geotech advice must be obtained before carrying out the construction to confirm the suitability of soil.



Rev	Date	Amendment	By	Chk	App
2	09/12/21	Section C, Boardwalk Width Reduced	PH	LU	LU
1	09/03/21	For Construction	PH	LU	JRT

Project Title
Seven Oaks Kinloch Ltd
Stage 2 to 5 Okia Drive
Kinloch

Drawing Title
Stormwater
Pond 4 Layout Plan

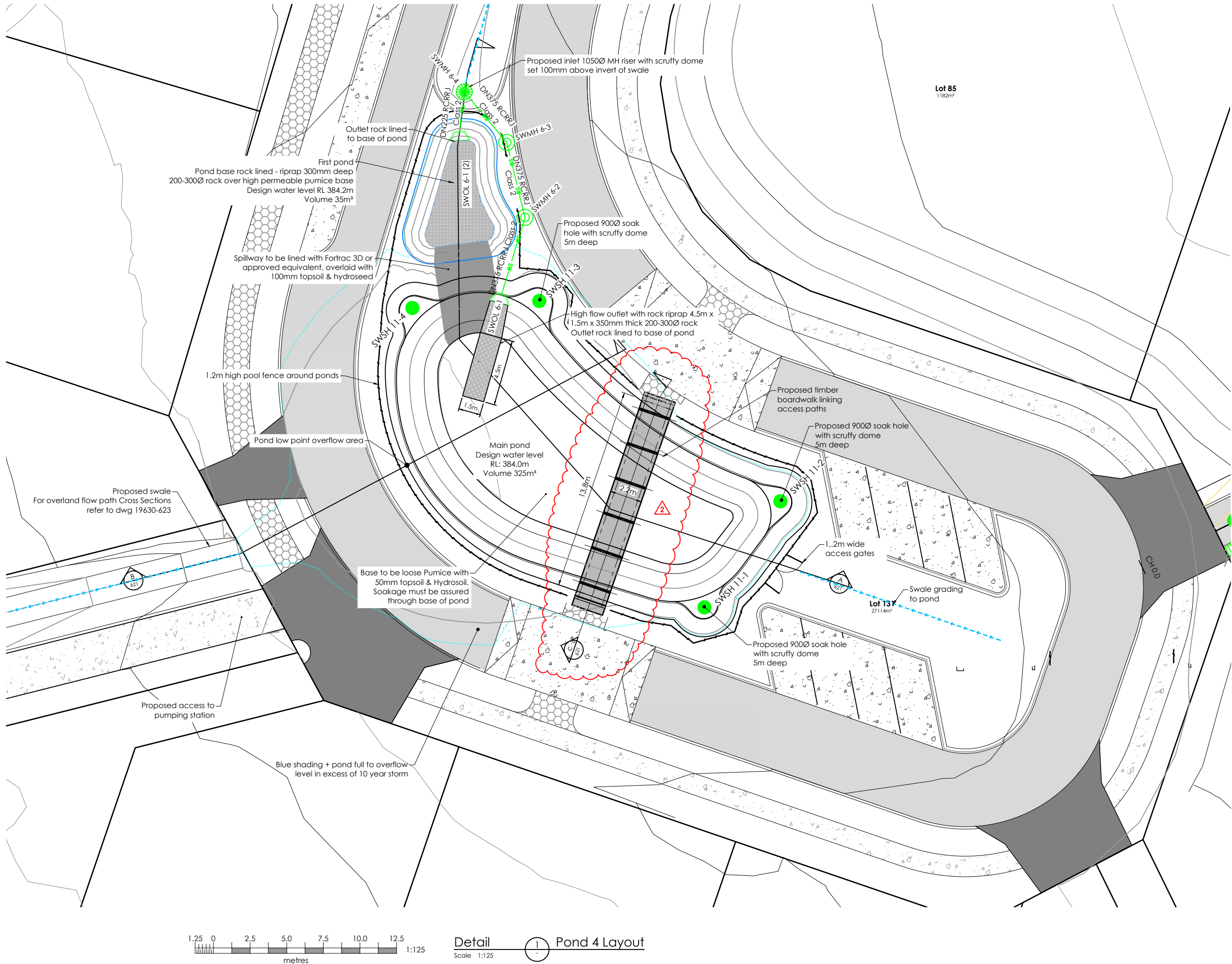
Surveyed	-	-	-
Designed	A.Cook	11/12/20	AMC
Drawn	P.Harris	11/12/20	PH
Checked	L.Uiate	11/12/20	LU
Approved	S.Prasad	23/12/20	SP

Status **CONSTRUCTION**

Scale	A1	1:125	A1
	A3	1:250	

Drawing Number
19630-620

Rev
2



1. All work shall be done in accordance with the Taupo District Council Code of Practice.
2. Reduced Levels are in terms of Moturiki Vertical Datum 1953
Level Origin : D18J
RL: 369.623
3. Contractor to locate and identify existing utility location and depths prior to construction. The project engineer shall be informed of any discrepancies to the information depicted on these plans immediately for revised drawings.
4. Contractor shall install and maintain all stormwater, dust, and erosion control during construction as per earthworks management plan and the Waikato Regional Council Erosion and Sediment Control - "Guidelines for soil disturbing activities".
5. All disturbed areas shall be re-topsoiled and grassed within 30 days upon completion of contract works.
Dust control shall be maintained until grassed areas have become established.
6. All geotech lining to be installed to the manufactures specifications.

2	09/12/21	Levels Amended, Boardwalk Ref	PH	LU	LU	
1	09/03/21	For Construction	PH	LU	JRT	
Rev	Date	Amendment	By	Chk	App	

Project Title

Seven Oaks Kinloch Ltd
Stage 2 to 5 Okaia Drive
Kinloch

Drawing Title

Stormwater
Pond 4
Typical Cross Section

Surveyed	-	-	
Designed	A.Cook	11/12/20	AMC
Drawn	P.Harris	11/12/20	PH
Checked	L.Uriarte	11/12/20	LU
Approved	S.Prasad	23/12/20	SP

Status

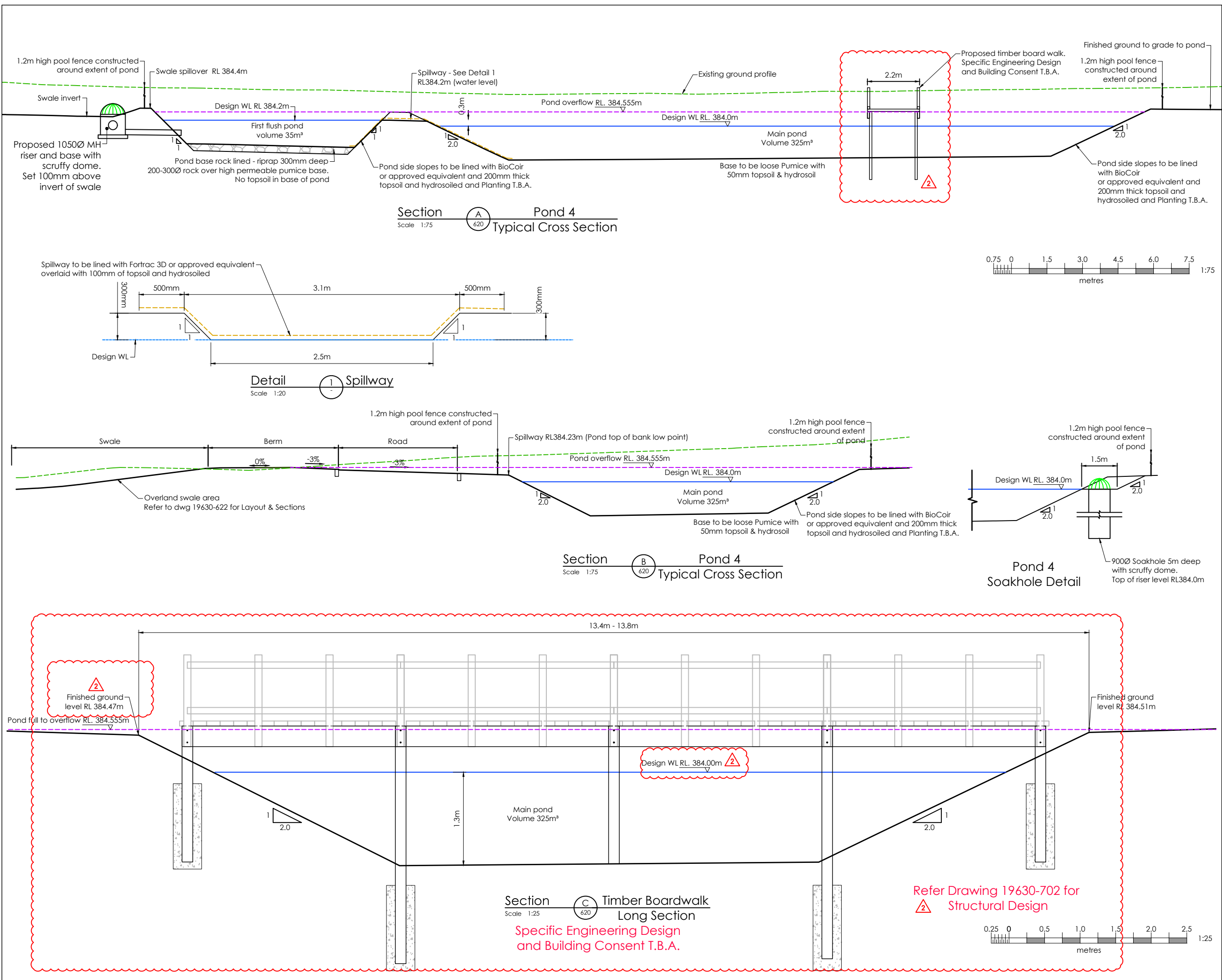
CONSTRUCTION

Scale A1

As Shown

Drawing Number

19630-621



Appendix 3

Photos of existing Stage 2
swales and ponds during
rain event

Photo 1 – Typical Swale



Photo 2 – Swale Inlet to Pond



Photo 3 – Swale Under Footpath (Inlet)



Photo 4 – Swale Under Footpath (Outlet)



Photo 5 – Check Dam



Photo 6 – Stormwater Pond Forebay



Photo 7 – Stormwater Pond



Photo 8 – Vegetated Swale Sample 1 – May 2025



Photo 9 – Vegetated Swale Sample 2 – May 2025

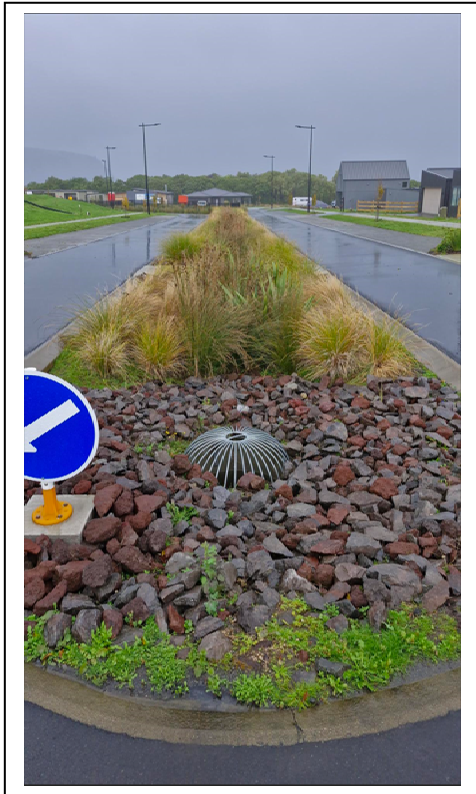


Photo 10 – Vegetated Swale Sample 3 – May 2025



Photo 11 – Vegetated Swale Sample 4 – May 2025

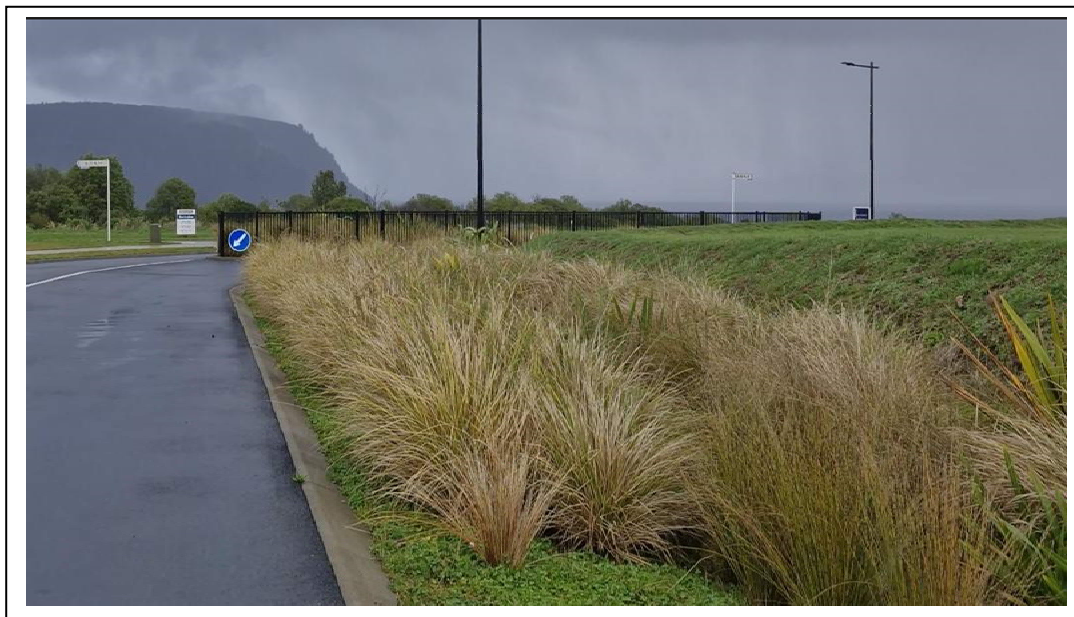


Photo 12 – Vegetated Swale Sample 5 – May 2025

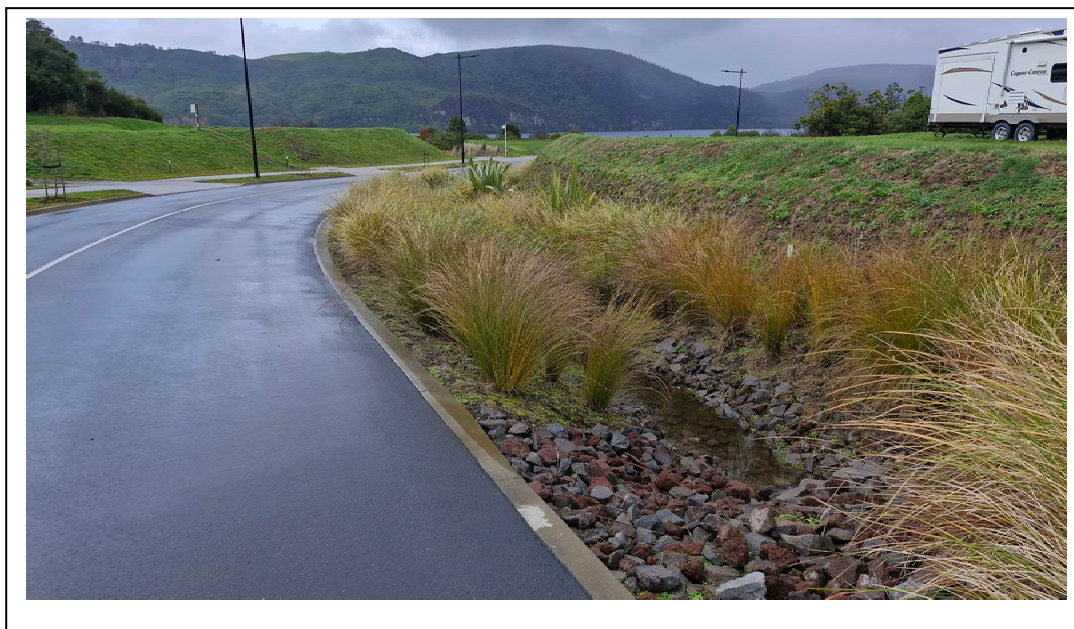


Photo 13 – Vegetated Attenuation Pond Sample – May 2025



**ANNEXURE B – TDC MEMO (23 JUNE 2025) REGARDING KINLOCH WATER AND
WASTEWATER CAPACITY**



MEMO

TO: Louise Wood - Senior Resource Consents Planner

FROM: Michael Cordell - Wastewater Asset Manager
Tom Swindells - Water Asset Manager

DATE: 2025-06-23

DOC ID : A3779330

SUBJECT: Kinloch Water and Wastewater Capacity

The table below shows the current number of connected properties, and the number of rating units connected to TDC water and wastewater services in Kinloch.

A property with a rating factor of 0.5 indicated a connection is available at the property but no dwelling is yet connected. A property with a rating factor of 2 indicated there are two rating units (dwellings within the same property). Properties with water meters have a rating factor of 1 and are charged by the meter regardless of the number of dwellings within the property.

Wastewater					
		Properties Connected		Sum of Factor	
Rates Factor	Count	Current	Current + Available	Current	Current + Available
0.5	225		225		225
1	1161	1161	1161	1161	1161
2	19	19	19	38	38
4	1	1	1	4	4
26	1	1	1	26	26
Total	1426	1182	1407	1229	1454

Water					
		Properties Connected		Sum of Factor	
Rates Factor	Count	Current	Current + Available	Current	Current + Available
0.5	221		221		221
1	1186	1186	1186	1186	1186
2	19	19	19	38	38
Total	1426	1205	1426	1224	1445

The table below takes the current connected properties (rates factor) and adds the connections expected from already consented developments and identified future developments.

		Wastewater	Water
Current connected + available	Rates Factor	1454	1445
Granted Consents (remaining connections)		172	240
Potential Future Development		110	140
<i>Seven Oaks - Balance Land</i>	<i>RM# 240389</i>	83	83
<i>Infill potential</i>		24	24
<i>Hunt Club</i>			30
<i>190 Kinloch Road (workshop)</i>		3	3
TOTAL		1736	1825

Wastewater

The total number of wastewaters connected lots expected at full development is 1,736, within the design capacity and the consented capacity of the Kinloch WWTP (1,810). The treatment plant has also been conservatively sized assuming there could be a change in occupancy in Kinloch overtime i.e. more permanent occupancy.

A capacity upgrade to the Kinloch WWTP is scheduled for 2025/26 and 2026/27 with a budget of \$1,725,000. The treated wastewater disposal system is a combination of drip irrigation within the golf course and treatment plant surrounds, and a rapid infiltration system adjacent to the treatment plant. There are no expansions of the disposal systems planned as the capacity currently provided is expected to meet future requirements.

Water

The total number of water connections in Kinloch is expected to be 1,825. In addition to Kinloch there are 76 properties on the Whakaroa rural water scheme that is supplied from Kinloch. The maximum potential water take from the Whakaroa area is 500 m³/day. There is no water supply growth planned in the Whakaroa area.

The Kinloch water system (network and plant) is being designed to deliver 5,000m³/day of treated water and there is more than this volume consented to take from the source if needed. Removing the maximum potential volume supplied to the Whakaroa scheme leaves 4,500m³/day for use in Kinloch. This equates to approximately 2.5m³/day of water use per property. To put this usage level in context, our target water per property across the district is 1.5m³/day. It is also worth noting that many of the remaining development areas in Kinloch are rural and will have restricted connections which allow a maximum flow of 1.7m³/day. The Kinloch water system upgrades have been conservatively sized.

There is currently 2,450m³ of storage between the Locheagles and Whakaroa Low (Boojum Dell) reservoirs. A new 2,000m³ reservoir is planned which will bring total storage to 4,450m³. This will provide the community with approximately 24 hours of storage during very high demand periods. There is additional storage on the Whakaroa scheme.

The volume of water required for firefighting in residential areas (FW2 classification) is 45m³ and for small commercial areas is 180m³ (FW3 classification). These requirements are clearly met by both the current and future planned reservoir storage volumes.