

APPENDIX C

LAND DEVELOPMENT ENGINEERING TECHNICAL REPORT

Engineering Assessment (Subdivision)

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| Land Development Engineer | Malcolm Brown |
| Planner: | Cameron Aplin, Consultant Planner |
| Date: | 29 September 2019 |
| Application No: | SUB0165/19 |
| Applicant: | G & S Singleton Heritage Limited |
| Property Address: | 635 State Highway 23 WHATAWHATA |
| Legal Description | LOT 1 DPS 12627 BLK I HAMILTON SD LOT 2 DPS 12627 BLK I HAMILTON SD |

INTRODUCTION

- The property is comprised in two parcels and was previously operated as a golf course with associated building facilities and accommodation for greenkeepers. The subdivision will result in six vacant Lots for residential purposes, proposed Lot 3 contains an existing dwelling, proposed Lots 8 & 9 will contain existing buildings previously associated with the golf course, and proposed Lot 10 (balance Lot) contains an existing dwelling and shed.

Subdivision scheme plan



SUPPORTING INFORMATION

The following documents that are used for engineering assessment have been submitted with the subdivision application.

- Letter and consent conditions from the NZTA - Ref 318286 Dated 28 February 2019.
- Floodplain Analysis, 635 Whatawhata Road, Hamilton from Dr Steven Joynes, Version 4 dated October 2019.
- Stormwater Management Plan from Cheal Consultants Limited – Ref MI3246AP2 – Final Dated 20 December 2019”.
- Preliminary Geotechnical Investigation Report for Proposed Residential Development 635 Whatawhata Road, from CMW Geosciences Ref: HAM2018-0112AB Rev 2, Dated 15 August 2019.

DISTRICT PLAN ASSESSMENT

An assessment of the proposal’s compliance with the relevant rules of the Operative District Plan has been completed. In summary, the proposal triggers consent under the following rules:

| DP or RITS | Rule Name | Comment |
|------------------------------|--------------------------------|--|
| DP Appendix A A21.1 (d) | Access and entrances | NZTA have provided conditions as the SH 23 road controlling authority. |
| DP Appendix B B2, B4, B5, B6 | wastewater, water, stormwater. | Refer to wastewater, water and stormwater notes below |

ASSESSMENT OF EFFECTS

General (include earthworks/hazards(non-natural))

Earthworks will be required to upgrade the existing access tracks to District Plan right-of-way standards.

Water

There is no public water supply available, There are two existing water bores located on the eastern boundary, One bore and pump shed is located within Lot 8, This bore pumps water to the water tank on the south side of the golf clubrooms/academy building and is thereafter distributed to three structures, the golf clubroom /academy, green keepers dwelling and golf pro shop café. Easements will be required at 223 approval upon water pipe locations having been identified. A second water bore is located within balance Lot 10, This bore feeds an irrigation system and the south east water storage tank within the allotment. Lot 3 has it own water tank to collect and detain rain water, Future dwellings within Lots 1, 2, 4, 5, 6, and 7 will require onsite water detention tanks for domestic use.

Wastewater

The existing golf clubrooms / academy is serviced by septic tanks and effluent field located as shown the application plan Sheet 2, immediately to the west and within the slope and within Lot 8. The effluent field is located in the north east corner of proposed Lot 8. A second septic tank is located to the west of the green keepers dwelling at the base of the slope at road level and within Lot 10. The effluent field runs to the south also wholly contained in Lot 10. The former golf pro shop and café within Lot 9 is serviced by its own septic tank and effluent field located as shown the application plan Sheet 2. The existing shed contained in proposed Lot 3 has its own septic tank and effluent field located as shown on application plan sheet 5.

The CMW Geosciences report confirms on page 7 that due to the shallow water table wastewater management will require advanced aerated systems. The elevated sites (Lots 2, 5, 6, 7 & 10) are suitable to utilise conventional shallow trenches or advanced aerated systems.

Stormwater

Lot 8 golf clubroom/academy directs all roof storm water to the water tank for detention and use. Overflow, if any, is discharged to the internal driveway and three catch pits eventually discharging to the eastern boundary drain.

The green keepers dwelling within Lot 10 discharges storm water into pipes located adjacent the eastern wall discharging via pipe to a pond in the south and within Lot 10. The utility and consented storage shed will discharge storm directly to the eastern drain.

The pro golf shop/cafe and utility shed discharge to ground. Lot 3 shed directs rainwater to a water detention tank and any overflow to ground.

CMW Geosciences report states that due to shallow ground water encountered on the low lying areas soakage to ground is expected to be limited as it will be for the elevated area given the clays and silts resulting in low permeability.

Runoff from roofs is to be collected and detained with via a low flow orifice. Overflow structures are proposed to be feed into nearby existing ponds.

Flooding effects on neighbouring properties due to the development is considered to be acceptable. (see Item 1 of Steven Joynes' responses SW review, dated 28th November 20119) New dwellings and associated paved areas will require attenuation to limit effects to existing stormwater flows. Consent conditions will required existing access roadways will be sealed, however the additional run-off is negligible as metalled areas that have been trafficked have similar runoff properties to seal. Culverts will be provided under raised ROW to mitigate the effect on stormwater flows.

Roading

Lots 8 and 9 have direct access to SH23 but will utilise the existing entrance and access geometry. The remaining 8 Lots will gain access to SH23 via a proposed right-of-way aligned on existing access tracks. The right-of-way pavement will require upgrading to a sealed standard in accordance with the District Plan and NZTA requirements, and engineering design plans for the ROW will be required for approval via consent conditions.

NZTA have provided conditions they require to be imposed via the consent conditions. It is concluded that if NZTA had any issues with the entrance standard or location they would have included requirements in their letter.

Natural Hazards

The Natural Hazards Risk Assessment attached to the Preliminary Geotechnical Investigation Report has identified the natural hazards that are applicable to the site and the Preliminary Geotechnical Investigation Report has proposed mitigation measures to reduce the risk to a level acceptable under section 106 of the RMA.

SUBMISSIONS

Waikato Regional Council

The three outstanding matters are:

- 1. (Waikato Regional) Council strongly recommends that consultation is undertaken with the neighbouring landowner at 679 SH23 Whatawhata Road in relation to the proposed increase in flood extents on their land.*
- 2. Either an easement is provided in favour of Waikato Regional Council over Lots 7 and 10 or the applicant secure agreement with the property owner at 679 SH23 Whatawhata Road (to be added to property title) to always have the Council drain maintained from their property.*
- 3. The drawing in the Stormwater Management Plan showing the 1% AEP needs to be updated to show the updated flow path from Campbells Drain past Lot 7. It should also be updated to show the flood extents on the property to the west of the site.*

Item 1

In regard to item 1, these flooding effects have been assessed by BECA on behalf of Waikato District Council. In particular that they have stated the following in regard to this property.

- We infer from the modelling there will be a minor flood impact (tens of millimetres) on neighbouring land to the west of the drain however, this land is already subject to flooding (in parts over 1m deep). Climate change will provide a significant impact on flood levels irrespective of the development occurring or not.*

Assessment of Item 1

Flooding effects on neighbouring properties due to the development is considered to be acceptable (see Item 1 of Steven Joynes' responses SW review, dated 28th November 2019) New dwellings and associated paved areas will require attenuation to limit effects to existing stormwater flows. Consent conditions will require existing access roadways to be sealed, however the additional run-off is negligible as metalled areas that have been trafficked have similar runoff properties to seal. Culverts will be provided under raised ROW to mitigate the effect on stormwater flows.

Item 2

I recommend that a condition of consent (if granted) should be imposed requiring that an easement is provided as requested by Waikato Regional Council. The easement will provide certainty of access to the drain for maintenance purposes.

Item 3

The applicant has provided this on 21/05/2020 but due to timeframes to pre-circulate this 42A report, Waikato Regional Council, as at 21/05/20, have not yet advised whether this plan is acceptable.

Fire and Emergency New Zealand (FENZ)

FENZ have raised issues of fire fighting water storage and access for fire fighting appliances. FENZ have subsequently confirmed that if Council is willing to impose a consent notice on all Lots of the proposed subdivision to require a minimum of 45,000l of water storage within 90m of each dwelling then that will address FENZ submission on water supply for firefighting purposes, and they no longer wish to speak at the Hearing in support of our submission. The applicant has accepted the imposition of that condition. Issues regarding road surface for fire fighting appliances will be addressed through consent conditions requiring sealed access roads. Turn and manoeuvring areas may be able to be addressed through the engineering plan approval process.

PROPOSED ENGINEERING CONDITIONS

General Conditions

Developer's representative

- 1 Prior to commencing any engineering design or construction works, the Consent Holder shall appoint an appropriately qualified and competent Developer's Representative/s, acceptable to the Waikato District Council's Land Development Engineer in accordance with the requirements of the Regional Infrastructure Technical Specifications.

Notification of intention to start works

- 2 The Consent Holder shall notify Waikato District Council's Land Development Engineer, in writing, of their intention to commence works, a minimum of 10 working days prior to commencement of works. Notification shall include the following details:
 - (a) Name/s and telephone number/s of the Developers Representative/s.
 - (b) Site Address to which the consent relates.
 - (c) The Waikato District Council subdivision reference number
 - (d) Work to be undertaken.
 - (e) Expected duration of the works.

Advice Note: The preferred means of notification is via email to subdivisions@waidc.govt.nz

Prior to application for approval of the survey plan (s223), the Consent Holder must comply with the following conditions:

Engineering plans

- 3 Prior to commencing any construction works on the property, the Consent Holder must submit for the approval of the Waikato District Council's Land Development Engineer, engineering design details and plans, prepared by a suitably qualified and experienced Engineer, including but not limited to the following:
- a) 10m wide Right of Way "A", "B", "C", "D" and "E" to a sealed standard in accordance with the requirements of Part 3 - Appendices A, Traffic, of the Operative Waikato District Plan (Waikato Section), including long and cross sections of right-of-ways, including flood levels, and locations and details of passing bays;
 - b) All physical works including the Right of Way design must take into account the requirements and recommendations contained in section 3 and 4 of the Stormwater Management Plan (attached as appendix 3 to this consent decision) from Cheal Consultants Limited – Ref M13246AP2 – Final Dated 20 December 2019 and attached appendices, and be in accordance with Part 3, Appendices B5 of the of the Operative Waikato District Plan (Waikato Section);
 - c) Right of Way design must take into account the requirements for hard surfaces contained within Section 6 of the Landscape Visual Assessment prepared by Boffa Miskell dated 26 September 2019. These requirements are reproduced below.
 - *Providing all right of ways with flush kerb with either rip rap, grass or planted swales for stormwater management. Raised kerb and channels shall be avoided.*
 - *Providing asphaltic concrete, dark coloured concrete or exposed aggregate concrete surfaces.*
 - d) Vehicle entrances off the proposed Right-of-Way's to Lots 1, 2, 4, 5, 6, and 7 including stormwater controls;
 - e) Identification of any overland flow paths; and
 - f) Identification of any additional easements for infrastructure such as existing water supplies or overland flowpaths not shown on the approved scheme plans.

The design details and plans must be in accordance with the Regional Infrastructure Technical Specifications (RITS).

Easements

- 4 Easements for Right of Way and Right to Drain Water shall be set out on the Land Transfer Plan and included in a memorandum.
- 5 Any additional easements, including overland flowpaths, identified in the approved engineering plans required by this consent must be set out on the Land Transfer Plan and included in a memorandum. Easements must be as required by the Regional Infrastructure Technical Specifications and the Waikato District Council's Easement Policy.

Prior to the application for s224 approval, the Consent Holder must comply with the following conditions:

Prior to Construction

- 6 Prior to, and during physical works on the property, the consent holder shall install and maintain erosion and sediment control measures in accordance with the Waikato Regional Council's Erosion and Sediment Control Guidelines for Soil Disturbing Activities: January 2009.

Works to be undertaken

- 7 The Consent Holder must undertake engineering works in accordance with the engineering design plans approved under Condition 7 of this consent.
- 8 A copy of the required authorisation as agreed by the applicant from New Zealand Transport Agency pursuant to Section 91 of the Government Roading Powers Act 1989 (GRPA) shall be provided to Waikato District Council.
- 9 Confirmation shall be provided to Waikato District Councils Consent Team, that New Zealand Transport Agency is satisfied that the property screened to mitigate the risk of internal headlight glare causing distraction to State Highway 23 users.

Advice Note: As agreed by the applicant, a screening design shall be submitted to and approved by the New Zealand Transport Agency prior to installation.

- 10 Confirmation shall be provided to Waikato District Council Consent Team, that New Zealand Transport Agency is satisfied that the existing boulders that currently surround the (Westlands) sign shall be removed from State Highway 23 legal road and the signage posts shall be replaced with frangible posts.

Advice note: As agreed by the applicant, any alterations to the sign including wording or design, will require further approval from the New Zealand Transport Agency.

Certification

- 11 A 'Contractors Certificate – Construction', for each separate work undertaken by each individual contractor as part of the consented subdivision, must be provided for certification by the Land Development Engineer, Waikato District Council.

Advice Note: An acceptable format for certification upon completion of works can be found in the NZS4404-2010 Schedule 1B (Contractor's certificate upon completion of land development/subdivision).

- 12 A 'Certificate of Completion of Development Works' prepared and signed by the Developer's Representative or a suitably qualified professional, must be provided for certification by the Land Development Engineer, Waikato District Council, to confirm that all works have been carried out in accordance with the approved plans as required by condition 7 of this consent and appropriate standards contained within the Operative District Plan (Waikato Section) and the Regional Infrastructure Technical Specifications (RITS).

Advice Note: An acceptable format for a 'Certificate of Completion of Development Works' can be found NZS4404-2010 Schedule 1C (Certification upon completion of land development/subdivision).

In accordance with section 221 of the Resource Management Act 1991 the following condition/s must apply on an ongoing basis by the subdividing owner and subsequent owners and must be registered against the relevant certificates of title.;

- (a) Any earthworks, minimum floor levels, foundation design, wastewater and stormwater management for a building consent application on Lot 1, 2, 4, 5, 6, 7 and 10 shall be undertaken in accordance with the restrictions and recommendations of the following reports:
- (a) Section 6 and 7 of the Preliminary Geotechnical Investigation Report for Proposed Residential Development 635 Whatawhata Road, from CMW Geosciences Ref: HAM2018-0112AB Rev 2, Dated 15 August 2019.
 - (b) Section 3 and 4 Stormwater Management Plan from Cheal Consultants Limited – Ref M13246AP2 – Final Dated 20 December 2019”.
 - (c) Floodplain Analysis, 635 Whatawhata Road, Hamilton from Dr Steven Joynes, Version 4 dated October 2019.

Unless alternative reports, prepared by suitably qualified and experienced Professional Engineers, are approved in writing by the Waikato District Councils Land Development Engineering Team.

- (b) Stormwater management for a building consent application on Lots 1, 2, 4, 5, 6, 7 and 10 shall ensure to the satisfaction of the Waikato District Council Building Team; that the stormwater management system must be capable of providing a means of managing and disposing of stormwater in accordance with Section 4, Stormwater of the Regional Infrastructure Technical Specifications (RITS).
- (c) A minimum of 45,000L of water storage shall be located on Lots 1 - 10 within 90m of each dwelling in accordance with the New Zealand Fire Service Water Supplies Code of Practice.

Signed By

Malcolm Brown
Land Development Engineer
Date: 21 May 2020