Planning. Traffic. Development.

Subdivision and land use resource consent application prepared for

BRAEBURN PROPERTY LIMITED

320 & 320A Cumnor Terrace, Christchurch

December 2022

Resource consent application

prepared for

BRAEBURN PROPERTY LIMITED

320 & 320A Cumnor Terrace, Christchurch

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Document Date:	7/12/2022
Document Version/Status:	FINAL version 3
Project Reference:	022074
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Form 9: Application for Resource Consent
Under Section 88 of the Resource Management Act 1991

TO: Christchurch City Council

We: Braeburn Property Limited ('**the applicant**'), apply for the subdivision and land use consent described below.

1. The activity to which the application relates is as follows:

   Subdivision

   Resource consent is sought to undertake a boundary adjustment and associated vesting of an esplanade reserve along the true right of the Heathcote River.

   Land use

   Resource consent is sought to authorise:

   - sealed hardstand and fencing within the Landscape and Stormwater Area (Green Space) shown on the Portlink Industrial Park Outline Development Plan;
   - use of the sealed area within the Landscape and Stormwater Area (Green Space) for activities permitted in the Industrial General Zone (Portlink Industrial Park);
   - building height exceeding 11 metres within the 11-metre building height restriction area shown on the Portlink Industrial Park Outline Development Plan,
   - earthworks, fencing and industrial activities within a water body setback; and
   - earthworks within a Flood Management Area.

   The proposed activities for which consent is sought will be undertaken in accordance with the details, information and plans that accompany and form part of the application, including the Assessment of Effects on the Environment ('**AEE**') attached.

2. The site at which the proposed activity is to occur is as follows:

   The application site is located at 320 & 320A Cumnor Terrace, Christchurch legally described as Lot 301 Deposited Plan 463785, Lot 302 Deposited Plan 473298 and Lot 305 Deposited Plan 525615.

   The natural and physical characteristics of the site and any adjacent uses that may be relevant to the consideration of the application is set out in further detail within the details, information and plans that accompany and form part of the application, including the attached AEE.

3. The full name and address of each owner or occupier (other than the applicant) of the site to which the application relates are as follows:

The applicant owns the site and leases it to:

- NZ Express Transport (2006) Limited
  C/- Gabites Limited
  54 Cass Street
  ASHBURTON 7700

- Pinnacle Corporation Limited
  Level 3 Woburn House
  40 Bloomfield Terrace
  LOWER HUTT 5010

- International Primary Products (NZ) Limited
  C/- Nexia New Zealand
  Level 1, 5 William Laurie Place
  AUCKLAND 0632

- Champion Materials Limited
  C/- E3 Business Accountants Limited
  94 Disraeli Street
  CHRISTCHURCH 8023

4. There are no other activities that are part of the proposal to which this application relates.

   No other resource consents are required for the development.

5. We attach an assessment of the proposed activity's effect on the environment that—

   (a) includes the information required by clause 6 of Schedule 4 of the Resource Management Act 1991; and

   (b) addresses the matters specified in clause 7 of Schedule 4 of the Resource Management Act 1991; and

   (c) includes such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

6. We attach an assessment of the proposed activity against the matters set out in Part 2 of the Resource Management Act 1991.

7. We attach an assessment of the proposed activity against any relevant provisions of a document referred to in section 104(1)(b) of the Resource Management Act 1991, including the information required by clause 2(2) of Schedule 4 of that Act.

8. We attach an assessment of the proposed activity against the resource management matters set out in the relevant planning documents.

9. We attach all necessary further information required to be included in this application by the district plan, the regional plan, the Resource Management Act 1991, or any regulations made under that Act.

10. We attach information that adequately defines the following:

(a) the position of all new boundaries; and

(b) the areas of all new allotments; and

(c) the locations and areas of new reserves to be created, including any esplanade reserves and esplanade strips; and

(d) the locations and areas of any existing esplanade reserves, esplanade strips, and access strips; and

(e) the locations and areas of any parts of the bed of a river or lake to be vested in the territorial authority under section 237A of the Resource Management Act 1991; and

(f) the locations and areas of any land within the coastal marine area (which is to become part of the common marine and coastal area under section 237A of the Resource Management Act 1991); and

(g) the locations and areas of land to be set aside as new roads.

Tim Walsh, Senior Planner **DATED:** 7 December 2022

(Signature of applicant or person authorised to sign on behalf)

Address for service:

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Assessment of Effects on the Environment

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Introduction

1. This application seeks subdivision consent to authorise a boundary adjustment and associated vesting of an esplanade reserve along the true right bank of the Heathcote River. The application also seeks land use consent to authorise:

    - sealed hardstand and fencing within the Landscape and Stormwater Area (Green Space) shown on the Portlink Industrial Park Outline Development Plan ('**ODP**'),

    - use of the sealed area within the Landscape and Stormwater Area (Green Space) for activities permitted in the in the Industrial General Zone (Portlink Industrial Park),

    - building height exceeding 11 metres within the 11-metre building height limit area shown on the Portlink Industrial Park Outline Development Plan,

    - earthworks, fencing and industrial activities within a water body setback, and

    - earthworks within a Flood Management Area ('**FMA**').

2. Overall, resource consent is required for a discretionary activity.

3. Section 88 of the Resource Management Act 1991 ('**the Act**') sets out the requirements for persons making an application to a local authority for a resource consent. Section 88(2)(b) states that:

    an application must be made in the prescribed form and manner; and include, in accordance with Schedule 4 of the Act, an assessment of environmental effects in such detail as corresponds with the scale and significance of the effects that the activity may have on the environment.

4. The following assessment is made in accordance with these requirements.

The Site and Surrounding Environment

5. The application site is located at 320 & 320A Cumnor Terrace, Woolston, Christchurch and is legally described as Lot 301 Deposited Plan 463785, Lot 302 Deposited Plan 473298 and Lot 305 Deposited Plan 525615. Refer to the Record of Title in **Appendix 1**. **Figure 1** over the page shows the site which measures approximately 12 hectares in area and is bisected by a narrow strip of Council land.

6. The site occupies the northern end of the Portlink Industrial Park which is bound by the Heathcote River, Tunnel Road (State Highway 74), the Main Trunk Rail Line that terminates in Lyttleton, and Chapmans Road.

7. Kennaway Road extends from its intersection with Chapmans Road and terminates at a turning circle near the centre of the application site. Within the site it provides access to a series of yards which are currently used for temporary outdoor storage for transiting shipping containers.

8. The contour of the site is generally flat with a series of swales for conveyance of stormwater to a stormwater management area that is located adjacent to the Heathcote River on the southwest boundary. An earth bund ('**the northwest bund**') has been formed along the entire length of the northwest boundary. Another bund ('**the southwest bund**') extends from Lot 24 Deposited Plan 525615 to the south side of the stormwater management area.

9. Of note, an area on the northwest fringe of the site is habitat of native southern grass skinks (*Oligosoma aff. polychroma*).

10. Beyond the site on the other side of the river, industrial activities are located to the southwest/west, and residential properties are located to the northwest/north. Open space occupies the land to the east of Tunnel Road.

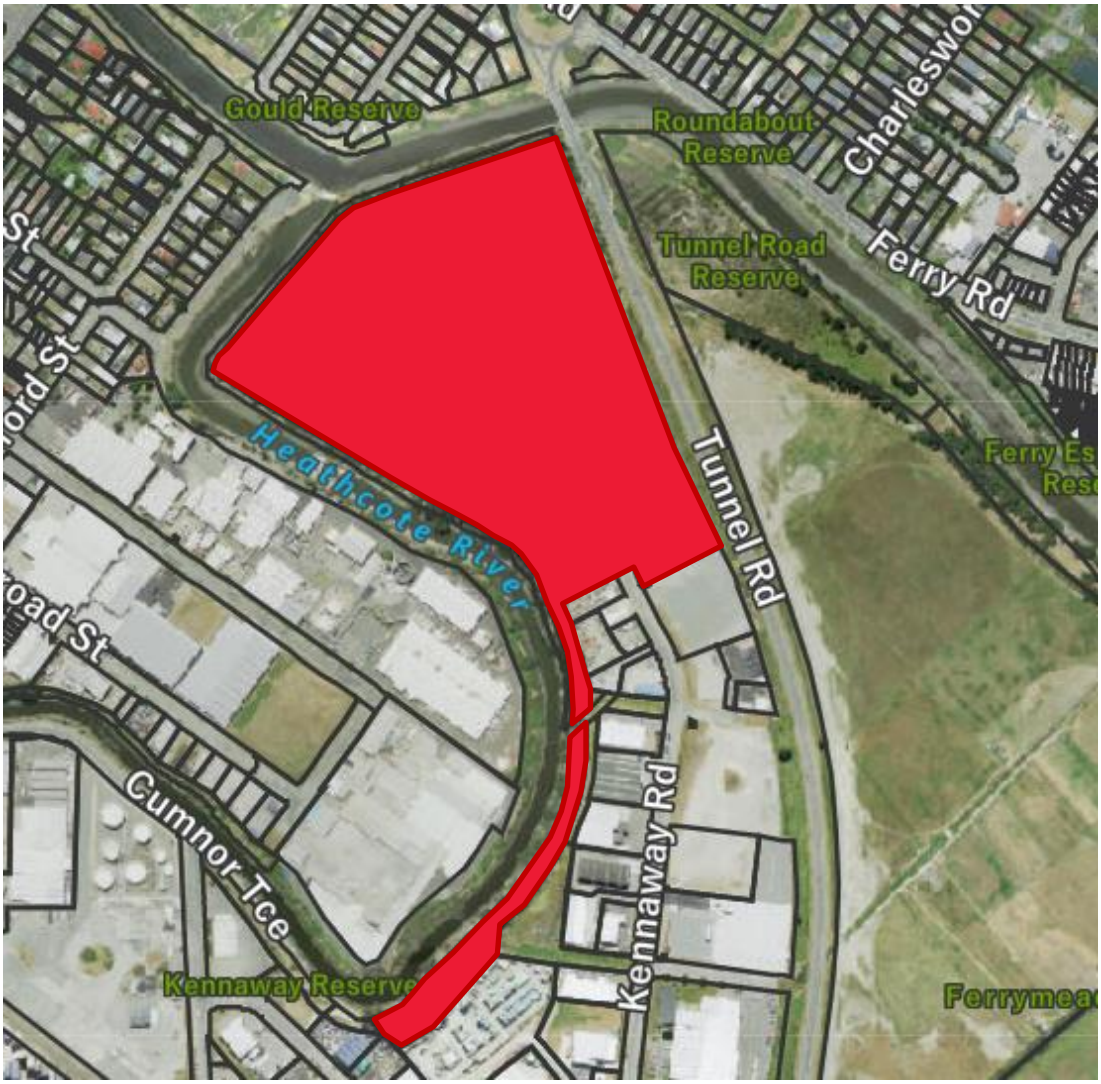


Figure 1: Site location (Source: Canterbury Maps)

Relevant Consent History

11. The Portlink Industrial Park is approximately 30 hectares in area and has been subdivided and developed for industrial use. Extensive earthworks have been consented and undertaken (including within the application site) to form the subdivision including filling to raise the ground level across a wide area.

12. The following resource consents are relevant to the current application:

- Resource consent RMA92023697 was issued on 25 October 2013 authorising earthworks at the northern end of Portlink Industrial Park including within a flood management area and within a 30-metre setback from the Heathcote River. In respect of the waterway setback, earthworks are consented up to 20 metres from the river and closer for the formation of a (now decommissioned) haul road.

- RMA/2019/1823 is a change of conditions consent in respect of RMA92023697 issued on 6 December 2019. It authorises uncrushed concrete to be transported to the site from Lancaster Park which would then be crushed on site and used as fill material.

- RMA/2017/947 and the associated change of conditions consent RMA/2017/947A were issued on 14 September 2017 and 7 September 2018 respectively. The consent authorises stages 5 and 6 of the Portlink Industrial Park Development subdivision (stages 1-4 having been previously consented). The area adjoining the Heathcote River was required under the Plan to be provided as esplanade reserve, but it was agreed that it would remain as part of the balance allotment (Lots 302 and 305 – the application site) and vested at a later stage in the development.

- Resource consent RMA/2017/947 also has a land use component (referred to by Council as a 'global consent') authorising a narrower landscape strip than required by the Portlink OPD in respect of Lots 21-22 23-24, 30-33[1]. A 3-metre-wide strip was authorised where the ODP requires approximately 10 metres. The remainder of the area can be used for buildings, fences, structures and car parking, but not for outdoor storage or waste facilities.

13. In addition to the above, an application was granted on 6 July 2022 pursuant to s348 of the Local Government Act 1974 for a right of way over Lot 305 (the application site). It allows for the formation of Kennaway Road over the site and is a precursor to the vesting of this road to Council. The approval authorised water, sewer and stormwater connections in association with the formation of the right of way.

[1] Lots 30-33 were part of stage 6 of the subdivision and have not been created. The area of Lots 30-33 covers a portion of the application site.

The Proposal

14. The application seeks to authorise a boundary adjustment subdivision with associated vesting of an esplanade reserve. It also seeks land use consent to authorise sealed hardstand, fencing and uses permitted under the Industrial General Zone (Portlink Industrial Park) within the ODP Landscape and Stormwater Area ('**ODP Green Space**') subject to a maximum height of 11.6 metres (in the northern ODP Green Space); building height exceeding 11 metres within the 11-metre building height limit area of the ODP; earthworks, fencing and industrial activities within a water body setback; and earthworks within a FMA. We note that consent is sought retrospectively in respect of some aspects of the proposal.

Subdivision

15. The boundaries between Lots 301, 302 and 305 are to be adjusted to create two allotments (proposed Lots 2 and 3) that, by way of a proposed amalgamation condition, are to be held in the same record of title and vested as esplanade reserve in Council, and the balance of the land (proposed Lot 1) for industrial use, as shown on the subdivision plan included at **Appendix 2**. No changes to existing access or servicing are required and no new easements are required.

16. The proposed esplanade reserve is in accordance with Rule 8.6.6 of the Christchurch District Plan ('**District Plan**' or '**Plan**') which requires a minimum 20-metre-wide esplanade from the edge of the bed of the river. The esplanade reserve was not vested previously because it was used as a construction haul road until recently. Instead, the vesting of the reserve was deferred until a subsequent subdivision and protected by encumbrances.

17. The esplanade reserve will be landscaped in accordance with the proposed landscape plan contained in **Appendix 3**. The southwest bund is mostly located within the proposed esplanade reserve. The bund slopes at a grade of approximately 1:2 with a metre wide crest . The alignment of walking and cycling tracks within the esplanade reserve are shown on the landscape plan.

Land Use

Activities within the ODP Green Space

18. Hardstand and fencing are proposed to be located within part of the northern ODP Green Space, and along a section adjacent the southwest boundary, as indicated on the plans included at **Appendix 3**. The proposed sealed area (within the ODP Green Space) is proposed to be used for activities permitted in the Industrial General Zone (Portlink Industrial Park). The remainder of the ODP Green Space is proposed to be landscaped in accordance with the ODP except within lizard habitat (as discussed below).

19. The hardstand area within the OPD Green Space is an extension of the asphalt sealed yards which are edged with kerb and channel. Currently, only the north-eastern yard has been sealed within the OPD Green Space.

20. The fencing within the ODP Green Space includes proposed/existing 2.4-metre-high chainlink security fencing along the outer edge of the sealed yards and a proposed 2.4-metre-high solid timber acoustic fence on top of the northern bund.

21. The proposed maximum height of any permitted activities, including outdoor storage and buildings, within the northern ODP Green Space is 11.6 metres above existing ground level (i.e. the ground level that will be established by way of the proposed subdivision).

22. The proposed landscaping to be established within the OPD Green Space (as indicated in **Appendix 3**), comprises a variety of species in accordance with the requirements of the District Plan.

23. Part of the ODP Green Space along the northwest fringe of the site is habitat of the previously mentioned native skink. No planting is proposed in this area. We note that there is no skink habitat on the bund where planting is proposed.

Building Height Limit Area

24. Building height is restricted to a maximum of 11 metres in the northern portion of the Portlink ODP as indicated with diagonal hatching in **Figure 2**. The applicant seeks consent for future buildings to extend above the 11-metre height restriction and instead be constrained by a proposed height plane which rises from approximately 13.6 metres at the north-west boundary of the height restriction area and is capped at 18 metres. Cross-sectional diagrams contained in **Appendix 3** illustrate the proposed height plane.

Figure 2: Excerpt from District Plan Appendix 16.8.3

Earthworks

25. All earthworks within the site not closer than 20 metres from the Heathcote River have been previously authorised by resource consent. Additional earthworks within 20 metres of the river relate to the construction of the northwest and southwest bunds. We note that the majority of these bunds are beyond 20 metres of the river. Further, some minor earthworks are required to bury the haul road, to provide a bed of topsoil for planting, and regrade

towards the river. This applies where the haul road is within 20 metres of the river south of the southwest bund. The locations of proposed earthworks are indicated on the plan included at **Appendix 4**.

Statutory Framework

National Environmental Standard (NES) for Contaminants in Soil

26. The Environment Canterbury Listed Land Use Register identifies a Hazardous Activities and Industries List ('**HAIL**') activity within the site (see **Appendix 5**). The HAIL site (site 122022: Kennaway Farm) is indicated as having been partially investigated.

27. Resource consent RMA/2017/947 provides the following commentary relevant to NES considerations:

> *On the original site, the NES regulations do not apply as land contamination levels are below background levels. The site has been subject to extensive filling which currently still being completed and the consent includes provision to ensure that the fill is cleanfill. On this basis, consent is not required under the NES for the disturbance of earth or change of use.*

28. Consistent with this approach, the NES does not apply to the proposed activity.

Christchurch District Plan

Zoning

29. The site is zoned *Industrial General (Portlink Industrial Park)* and *Open Space Water and Margins* in the District Plan and is subject to the following overlays and notations:

- Flood Management Area,
- Fixed Minimum Floor Level Overlay within Flood Management Area,
- Liquefaction Management Area,
- Christchurch International Airport Protection Surfaces,
- Water Body Setback, and
- Ngā Wai Lakes, Rivers and Streams.

30. The site also adjoins a *Site of Ecological Significance* being the Heathcote River and Tributaries (site number SES/LP/25) and is subject to the *Portlink Industrial Park Outline Development Plan* shown at Appendix 16.8.3 of the Plan.

Outline Development Plan

31. One of two ODP features relevant to this application is the Green Space (the other being the 11-metre height restricted area). The exact extent of the Green Space cannot be

determined with a high degree of accuracy given the scale of the ODP. We understand that in relation to the northwest boundary, the width of the landscape strip was determined by a measurement extending from the river. This accounts for the fact that the southern boundary of the ODP Green Space does not run evenly parallel to the property boundary. The ODP was created by Woods surveyors which is useful in this instance given Woods are also the applicant's surveyor. We consider that Woods are best placed to show the extent of the ODP Green Space as accurately as is possible.

Waterway Setback

32. There is some ambiguity in respect of the waterbody setback from the Heathcote River. The river is classified as a Downstream waterway in the Plan and the setback is measured from the bank. Appendix 6.11.5.3 guides interpretation of banks of water bodies and contains two diagrams relevant to the application, one of which is shown below in **Figure** 3. The explanatory text for the diagram refers to "normal low flow water levels" and "normal average flow water level". Given the 'low flow' reference is specifically related to the setback distance, we consider this is the correct point to measure the setback from.

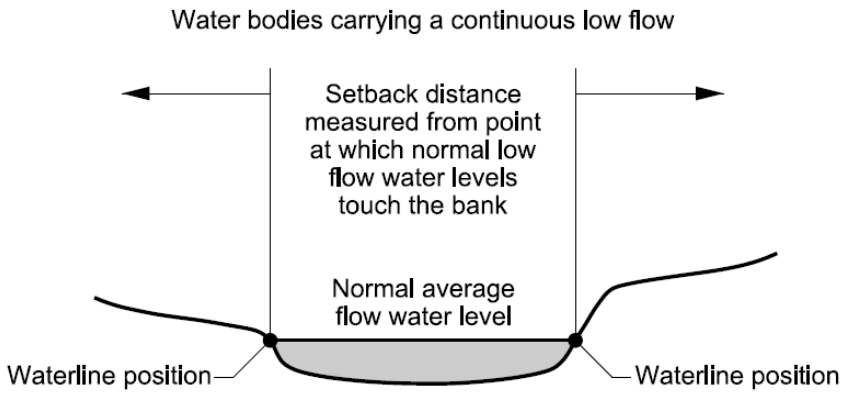


Figure 3: Excerpt from District Plan Appendix 6.11.5.3

Reasons for Consent

33. We note that the district plan rule interpretation in this application is that of Novo Group and is not a substitution of Council's own assessment. Resource consent is applied in respect of the proposal described in the 'The Proposal' section, including any plans and other information submitted. Resource consent is applied for the rule infringements described in this application and any other resource consents required (whether specifically identified or not) to authorise the proposal.

34. An assessment of the proposal's compliance with the applicable rules in the District Plan is set out in **Appendix 6**. Based on that assessment, resource consent is required in respect of the following matters:

Chapter 5 Natural Hazards (Flood Hazards)

- Rule 5.4.1.5 (RD2): Earthworks proposed/undertaken to form a bund and bury the haul road exceed the depth and volume limits specified at Rule 5.4.1.1 P14.

Chapter 6 General Rules and Procedures (Water Body Setbacks)

- Rule 6.6.4.4 (D1): Several activities within the water body setback are discretionary given the site is adjacent a Site of Ecological Significance (the Heathcote River and Tributaries, site number SES/LP/25). The activities within the water body setback include:
    - Earthworks relating to the construction of the northwest and southwest bunds, and burying of the haul road,
    - An acoustic fence on top of the northwest bund, and
    - Industrial activities where located within the 30-metre water body setback adjacent the northwest boundary.

  We note that earthworks not within 20 metres of the river have been previously consented.

Chapter 8 Subdivision, Development and Earthworks

- Rule 8.5.1.3 (RD4): The proposed subdivision is in a Flood Management Area.
- Rule 8.9.2.3 (RD1): The proposed earthworks do not comply with Rule 8.9.2.1.

Chapter 16 – Industrial General Zone (Portlink Industrial Park)

- Rule 16.4.4.1.3 (RD1): The proposal does not comply with built form standards 16.4.4.2.1 in respect of building height and 16.4.4.2.3 in respect of landscaping adjacent the Heathcote River and provision of legal public access within the landscaping strip.

35. We note that noise from the proposal and activities occurring on site comply with relevant noise standards in the District Plan. The applicant leases the site to several tenants. Those tenants are required by way of the lease agreements to "comply with the provisions of all statues, ordinances, regulations and by-laws". This includes the District Plan noise standard.

Activity status

36. Overall, the proposal is assessed as a **discretionary** activity under the District Plan.

Resource Management Act 1991

37. In terms of the notification considerations in sections 95A-95E of the Act, we note the following:

    i. public notification is not requested by the applicant; and

    ii. there are no special circumstances necessitating public notification.

38. Pursuant to section 104 of the Act, Council must have regard to the actual or potential effects on the environment of the proposal and the relevant provisions of the statutory documents listed at section 104(b) and any other relevant matters it considers necessary. To assist Council in determining the application, the relevant assessments are set out in the following sections of this application.

39. As a discretionary activity, the Council can grant or refuse the application under section 104B. If the Council decides to grant consent, conditions can be imposed under section 108.

Assessment of Actual or Potential Effects on the Environment

Permitted Baseline

40. Prior to assessing the actual or potential effects of the activity on the environment, it is relevant to consider the effects baseline that applies to the site and wider environment. When considering an application for resource consent, the consenting authority may, pursuant to section 104(2) of the Act, disregard an adverse effect of the activity on the environment if the plan permits an activity with that effect. Case law has found that the discretion to apply the permitted baseline involves assessing the lawfully existing environment, overlaid with non-fanciful permitted activities and/or any unimplemented or partially implemented resource consents.

41. The northern portion of Portlink Industrial Park (as indicated with diagonal hatching in **Figure 2**) is subject to an 11-metre building height restriction measured from ground level – *ground level* as defined in the District Plan as:

> *natural ground level or, where the land has been subdivided, the level of the ground existing when works associated with any prior subdivision of the land were completed…*

42. Currently, height within this area is technically measured from natural ground, which is lower than the existing ground level due to (consented) earthworks which raised the ground level across a large area of Portlink Industrial Park. However, for the purposes of assessing effects in this application, we consider an 11-metre height limit measured from existing ground. While we acknowledge that this does not (yet) represent the permitted baseline in respect of building height, it would following a controlled activity subdivision. The subdivision component of this application will establish the new ground level for the site. While subdivision would have ideally preceded the land use component, it was considered in the public interest to apply for land use without delay – hence the combined application.

43. It is reasonable to consider that 11-metre-high buildings could occupy a large portion of the area subject to the height restriction. It is also possible that permitted activities, such as temporary outdoor storage of items (such as wrecked vehicles) may be stacked higher than 11 metres within this area provided any such storage would not constitute a ‘building’ as defined in the District Plan.

44. Building height is unrestricted through the remainder of Portlink Industrial Park. In respect of this land, it is not unrealistic to anticipate the construction of buildings approximately 20-25 metres in height.

45. These factors are important when considering the potential adverse effects of proposed activities within the northern ODP Green Space and in respect of buildings over 11 metres in height within the ODP 11-metre height limit area.

Effects Assessment

46. The application is for a discretionary activity and therefore Council is not restricted in the matters it can consider when assessing the proposal. While discretion is not limited, we consider that the matters listed at **Appendix 7** cover the full breadth of relevant actual and potential adverse effects of the proposal (noting that many of the matters listed are of little or no relevance).

47. The following assessment of effects addresses:

- subdivision,
- activities within the ODP Green Space,
- building height,
- activities within the water body setback and FMA, and
- earthworks.

Subdivision

48. The proposed boundary adjustment is listed as a restricted discretionary activity (given the site is within a FMA) and therefore the matters of discretion include the full suite listed at Clause 8.7.4. Despite this, given the proposal is for a straightforward boundary adjustment to enable the vesting of an esplanade reserve, we consider the matters at Clause 8.8.1 (as listed below) to be most applicable as well as the FMA matters at Clause 8.8.7. These and other relevant matters are addressed below.

8.8.1 Boundary adjustments

a. Whether access to the sites will continue to be appropriate and safe.
a. Whether each allotment has connections to services.
b. Whether the allotments are of sufficient size and dimension to provide for the existing or proposed purpose or land use.
c. The degree to which natural topography, drainage and other features of the natural environment, sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6, or existing built features of significance, determine site boundaries where that is practicable.
d. The relationship of the proposed allotments within the site and their compatibility with the pattern of the adjoining subdivision and land use activities.

Allotments

49. The dimensions of proposed Lots 2 and 3 reflect their future function as an esplanade reserve and are appropriate in that respect. Proposed Lot 1 represents the balance of the

application site which contains land for industrial use, stormwater management, access and landscaping. It is a large allotment which can be subdivided further. All the proposed allotments are considered to be compatible with the existing pattern of subdivision and land use in the vicinity.

Site of Ngāi Tahu cultural significance

50. The site is adjacent to a site of Ngāi Tahu cultural significance (Ngā Wai) and there is a small portion of the site which is within the Ngā Wai overlay. We consider that the proposed subdivision has no adverse effects on cultural values.

Access, servicing and works

51. Access to proposed Lot 1 is via Kennaway Road which has been formed within the site and will be vested in Council at a later stage. Servicing is as existing, and no physical works are proposed beyond those required to implement resource consent RMA92023697 (except for the formation of part of the northwest and southwest bunds, and burying of the haul road which are addressed below under the earthworks section). On this basis, no adverse effects are anticipated to arise in respect of access, servicing and works.

Land suitability

52. All of the developable land within proposed Lot 1 has been raised with engineered fill and is certified on completion by a suitably qualified geotechnical engineer from Engeo (noting that a large area of the site has already be certified). A report by Engeo is included at **Appendix 8** detailing the geotechnical earthworks and dynamic compaction specification, summarising laboratory testing, general fill, and dynamic compaction requirements in relation to the land within proposed Lot 1. This gives Council surety that the applicable land within proposed Lot 1 is suitable for subdivision.

53. A geotechnical assessment in respect of proposed Lots 2 and 3 is not necessary given these lots are to be vested as esplanade reserve and thus will not be developed.

Natural hazards

54. While the site is subject to potential flooding and liquefaction, these hazards are managed by the controls in the District Plan such that any risk is reduced to an acceptable level. Therefore, we consider the hazards do not render the site inappropriate for subdivision under s106 of the Act.

55. The proposed subdivision does not exacerbate the flood hazard and existing stormwater management facilities within the site assist in reducing the susceptibility of activities within proposed Lot 1 to flooding.

Activities Within the ODP Green Space

56. The part of the site where activities encroach into the ODP Green Space adjacent the southwest bund is subject to resource consent RMA/2017/947. As set out earlier, this resource consent included a global consent component authorising a narrower landscape strip than required by the OPD in respect of Lots 21-22 23-24, 30-33. The area adjacent the southwest bund aligns with Lots 30-33 which have yet not been formed. In this area, a

3-metre-wide strip was authorised where the ODP requires approximately 10 metres. The proposal substantially aligns with resource consent RMA/2017/947 in this respect. Any adverse effects are therefore substantially similar as those assessed previously.

57. The remainder of this section addresses actual or potential adverse effects in respect of the northern ODP Green Space encroachment.

Visual amenity

58. The proposed acoustic fence, existing security fencing, and existing/proposed impervious surface within the ODP Green Space will all be obscured by the existing northwest bund and proposed planting when viewed from public and private vantage points north and west of the site. On this basis, the adverse visual amenity effects of these aspects of the proposal are considered to be de minimis.

59. Chris Greenshields, a landscape architect at DCM Urban, has assessed the proposal in terms of the visual amenity effects of permitted activities such as outdoor storage and/or buildings up to 11.6 metres in height within the ODP Green Space. The DCM Urban visual assessment is included at **Appendix 3**. It concludes that the visual effects are less than minor. We accept and adopt the findings of the assessment.

Ecological values

60. As outlined previously, the global resource consent authorised a narrower landscape strip (a 3-metre-wide strip where the ODP requires approximately 10 metres). The remainder of the area can be used for buildings, fences, structures and car parking. In respect of that non-compliance, Council's landscape architect assessed that the enhanced riparian margins along the river proposed in general accordance with the ODP, would ensure the maintenance and/or enhancement of the visual amenity and ecological margins of the Heathcote River.

61. Similar to resource consent RMA/2017/947, the application proposes a reduction in the width of the required landscaping. We consider the conclusions reached in respect of RMA/2017/947 are equally applicable to the current proposal. While the landscape width is reduced, there remains sufficient space for a generous swathe of native planting while the northwest edge of the ODP Green Space is proposed to be kept as is, to protect lizard habitat as recommended by a herpetologist (see comment from Dr Mandy Tocher at **Appendix 9**). On this basis, we consider the proposal will enhance the ecological values of the margins of the river.

Cultural values

62. As agreed with Council in pre-application discussions, Council will consult with rūnanga on behalf of the applicant during processing of the application. In lieu of consultation before lodgement, we have taken guidance in respect of Ngāi Tahu/mana whenua cultural values from the Mahaanui Iwi Management Plan ('**IMP**') which sets out the broad issues as well as the specifics for particular areas. In respect of the Heathcote (Ōpawaho) River, the IMP says the following:

> *Te Ihutai, the estuary of the Ōtakaro and Ōpawaho rivers, was a significant settlement and food gathering site for generations of Ngāi Tahu.*

The extent and cultural health of coastal wetlands, estuaries and lagoons has declined significantly as a result of both urban and rural land use, and this has had a marked impact on mahinga kai resources and opportunities.

63. The river and its margins are of significant cultural value to rūnanga. In our view, rather than contributing to a further decline in the environmental quality of the river, the proposal will enhance the river margins through appropriate native planting and vesting of the esplanade reserve (in addition to existing comprehensive stormwater management facilities). This is consistent with previous advice from Mahaanui Kurataiao (see resource consent RMA/2017/947) that planting of indigenous vegetation will enhance mahinga kai values and biodiversity of the Heathcote River.

64. Adherence to appropriate conditions of consent in respect of earthworks within the vicinity of the river will ensure adverse effects are avoided or mitigated as the works are carried out.

Habitat of birds and lizards

65. The District Plan is concerned about the extent to which planting and the location of pedestrian/cycle ways protect and enhance the habitat of birds. It is also appropriate in this instance to consider lizard habitat given the presence of the native skink.

66. The application proposes that cycle and pedestrian access remain on the current alignment outside the site. This is to help protect the bird and lizard habitat.

Cycle and pedestrian links

67. Rule 16.4.4.2.3.ii.B. requires legal public access ways within the ODP Green Space adjoining the Heathcote River along the alignment indicated on the ODP. As above, it is proposed that cycle and pedestrian access remain on the current alignment outside the site. This will continue to provide safe and efficient linkages along the riverbank and connections to the wider transport network for walking and cycling.

Building Height

68. While the District Plan does not provide the rationale for the 11-metre building height restriction in the northern part of the ODP, it is likely to have been put in place to protect the visual amenity of the public recreating in the river corridor and the residential neighbours that look across the site.

69. With that in mind, the proposed height plane (that rises from north to south and is capped at 18 metres) effectively replaces the existing 11-metre height restriction in the northern part of the ODP. It has been developed by extending an eye line from the opposite side of the river which intersects with the front edge of the proposed 11.6 metre envelope within the ODP Green Space and caps at 18 metres until it reaches the southern boundary of the 11-metre height restricted area, beyond which there is no limit on building height.

70. The District Plan is concerned about visual dominance effects and how the effects of increased height might be mitigated. These matters are considered in the DCM visual assessment (see **Appendix 3**) which concludes that the adverse effects are less than minor. We accept and adopt the findings of the assessment.

71. The adverse visual effects of the proposed increase in building height within the 11-metre restriction area are no greater than the adverse effects of locating buildings and/or outdoor storage up to 11.6 metres in height within the ODP Green Space (which we find to be less than minor) when viewed from the north and northwest. Those effects increase slightly when the site is viewed from vantage points to the northeast, but remain less than minor – particularly considering the permitted baseline of the part of the site not subject to the 11-metre height limitation.

Activities Within the Water Body Setback and FMA

72. Minor earthworks related to the construction of the northwest and southwest bunds and those required to bury the haul road occur within 20 metres of the Heathcote River. While the District Plan water body setback is 30 metres, consent is already in place for earthworks up to 20 metres from the river. Further, an acoustic fence proposed to be constructed on top of the northwest bund and small areas of industrial activity are located within the water body setback.

73. Given the site is separated from the river by a legal road, Council's discretion would be restricted to Natural hazards (Clause 6.6.7.1) – if the application had not been adjacent a Site of Ecological Significance. In this respect, the proposed earthworks (fill) within 20 metres of the Heathcote River will have little if any impact on the capacity to convey floodwater along the margins of the river. The opposite (true left) bank of the river is more gently sloping compared to the subject bank which means that flooding will currently be more pronounced on the opposite bank.

74. The proposed acoustic fence will not have any impact on flooding as it is located above the modelled flood level.

75. The above assessment is the same in relation to earthworks within the FMA.

76. In respect of potential impacts on the Heathcote River as a Site of Ecological Significance, it is considered that the proposal will have only positive effects with an increase in indigenous biodiversity and natural character values along the river corridor.

Earthworks

77. The relevant matters of discretion are outlined under Clause 8.9.4 and relate to:

- nuisance,
- land stability,
- amenity,
- indigenous biodiversity and natural character, and
- sites of Ngāi Tahu cultural significance.

Nuisance

78. Potential impacts from sedimentation and dust nuisance will be low. Any noise or disturbance effects during the earthworks are not anticipated to be significant – given that they will be for a temporary period only. We anticipate that standard conditions of consent will appropriately avoid or mitigate adverse effects.

Land stability

79. The majority of the proposed earthworks involve a shallow depth of fill to bury the haul road. These works will not affect the stability of adjoining sites. The remaining earthworks are limited to those relating to the northwest and southwest bunds (noting that most of the earthworks to form the bunds are already authorised). The grade of the bunds are such that they will not affect the stability of adjoining sites.

Amenity

80. Without the proposed planting, the bunds may appear incongruous when viewed from the margins of the river (noting again that most of the earthworks to form the bund are already authorised). However, once the proposed planting on the bunds becomes established, it will substantially obscure the altered topography. Further, the bunds will assist in visually and acoustically screening industrial activities being carried out within proposed Lot 1.

Indigenous biodiversity and natural character

81. The proposed planting will increase indigenous biodiversity and natural character values of the river corridor.

Cultural values

82. Consistent with the assessment in relation to a previous application (RMA/2017/947), we consider the proposed landscaping (which will cover and stabilise the proposed earthworks) will support the IMP.

83. In relation to resource consent RMA/2017/947, Mahaanui Kurataiao recommended an Accidental Discovery Protocol be put in place for any future earthworks adjacent the river. While the applicant would accept a condition requiring this, given the proposed earthworks involves only filling there is no need for such a condition.

84. In our view, the proposed earthworks will have little impact on the cultural values of the Heathcote River.

Effects Conclusion

85. Based on the assessment above, we conclude that the actual or potential effects on the environment of the proposal are **less than minor**.

Relevant Provisions of Planning Instruments

86. In accordance with section 104(1)(b) of the Act, the application has been assessed against the objectives and policies of the District Plan. Given the application involves both subdivision and land use activities (including those within/adjacent a water body, a FMA, Ngā Wai and a Site of Ecological Significance) the potentially relevant objectives and policies are numerous. While all the potentially relevant objectives and policies have been considered, only the most relevant are listed and assessed in the **Table 1** below. The application is assessed as being consistent with any provisions not specifically addressed.

Table 1: District Plan objectives and policies

District Plan provision	Comment / Assessment
Chapter 5 – Natural Hazards	
3.3.6 Objective - Natural hazards *a. New subdivision, use and development (other than new critical infrastructure or strategic infrastructure to which paragraph b. applies):* *i. is to be avoided in areas where the risks from natural hazards to people, property and infrastructure are assessed as being unacceptable; and* *ii. in all other areas, is undertaken in a manner that ensures the risks of natural hazards to people, property and infrastructure are appropriately mitigated.* *5.2.2.2.1 Policy - Flooding* *e. Except for filling required to meet minimum floor levels, ensure that filling in urban areas at risk of flooding in a major flood event does not transfer flooding risk to other people, property, infrastructure or the natural environment.*	As assessed previously, the proposed earthworks will have little if any impact on the capacity to convey floodwater along the margins of the river. The opposite (true left) bank of the river is more gently sloping compared to the subject bank which means that flooding will be more pronounced on the opposite bank. Accordingly, the proposal is consistent with this objective and the specific flooding policy.
Chapter 6 – Water Body Setbacks	
6.6.2.1 Objective - Protection of water bodies and their margins from inappropriate use and development *a. Activities and development in water body margins are managed in a way that protects and/or enhances the following values and functions of the water body and its margins: flood management; water quality; riparian or aquatic ecosystems; the natural character and amenity values of the water body; historic heritage or cultural values; and access where appropriate for recreation activities, customary practices including mahinga kai, or maintenance.* *6.6.2.1.1 Policy - Naturalisation of water bodies and their margins* *a. Take a catchment-wide approach to protecting and/or enhancing the natural form, function and ecology of water bodies and their margins in order to maintain or improve (where degraded) water quality, flood control, biodiversity, bank stability, mahinga kai, and amenity values, while:* *i. in City and Settlement areas (see Rule 6.6.4), supporting the provision of ecological corridors and public access where possible, recognising this may not be fully achievable for some classifications of water body because of historic development patterns or adjoining land uses.* *6.6.2.1.2 Policy - Setbacks from water bodies*	The proposed planting within the proposed esplanade reserve is in general accordance with the expectations of the District Plan and will improve the ecology and amenity values of the river corridor consistent with this Policy 6.6.2.1.1. The planting will also stabilise the proposed earthworks within the water body setback and any adverse effects during the construction phase can be appropriately avoided or mitigated by erosion and sediment control (if required), consistent with Policy 6.6.2.1.2.

a. *Manage adverse effects of activities on water bodies and their margins within water body setbacks in a manner that is consistent with the classification of the water body.*

Chapter 8 – Subdivision	
8.2.2 Objective - Design and amenity and the Meadowlands Exemplar Overlay a. *An integrated pattern of development and urban form through subdivision and comprehensive development that:* i. *provides allotments for the anticipated or existing land uses for the zone;* ii. *consolidates development for urban activities;* iii. *improves people's connectivity and accessibility to employment, transport, services and community facilities;* iv. *improves energy efficiency and provides for renewable energy and use; and* v. *enables the recovery of the district.* *8.2.2.3 Policy - Allotments* a. *Ensure that the layouts, sizes and dimensions of allotments created by subdivision are appropriate for the anticipated or existing land uses.* *8.2.2.7 Policy - Open space* a. *Ensure, where appropriate, the provision and development of public open space networks which:* i. *are accessible and safe and provide for various forms of recreation, including active recreation, for the health and wellbeing of communities;* ii. *outside the Central City, are within 400m of new residential allotments in greenfield and brownfield areas;* iii. *recognise the landscape and natural features in the wider area and link or connect to other green or open space, community facilities, commercial centres, areas of higher density residential development, landforms and roads;* iv. *recognise and protect values associated with significant natural features and significant landscapes, and protect or enhance ecological function and biodiversity;* v. *reinforce and uphold the Garden City landscape character of urban Christchurch City and the heritage landscapes and plantings of Banks Peninsula townships and settlements;* vi. *provide access to heritage places and natural and cultural landscapes including the coastline, lakes and waterways and wetlands; and* vii. *strengthen the relationship that Ngāi Tahu and the community have with the land and water, including by protecting or enhancing natural features, customary access, mahinga kai and sites of Ngāi Tahu cultural significance identified in Schedule 9.5.6.1, and by recognising other sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6 where practicable.* *8.2.2.11 Policy - Access to waterways / Mana whakahaere* a. *Provide for appropriate public access and customary access to and along the margins of rivers, lakes, waterways and the*	Of relevance to these provisions, the proposed subdivision is designed to accommodate the future functions of the allotments with appropriate sizes and dimensions, and it enables the creation of new public open space along the river. On this basis, the application is consistent with this objective and associated policies.

coastline, including through esplanade reserves and strips, except…	
8.2.3 Objective - Infrastructure and transport *a. Subdivision design and development promotes efficient provision and use of infrastructure and transport networks.* *b. A legible, well connected, highly walkable, and comprehensive movement network for all transport modes is provided.* *c. Outside the Central City, land is set aside for services which can also be used for other activities, such as pedestrian or cycle ways.*	No changes are proposed to existing servicing and transport infrastructure that has been previously assessed as consistent with this objective.
Chapter 8 - Earthworks	
8.2.4 Objective - Earthworks *a. Earthworks facilitate subdivision, use and development, the provision of utilities, hazard mitigation and the recovery of the district.* *8.2.4.1 Policy - Water quality* *a. Ensure earthworks do not result in erosion, inundation or siltation, and do not have an adverse effect on surface water or groundwater quality.* *8.2.4.3 Policy - Benefits of earthworks* *a. Recognise that earthworks are necessary for subdivision, use and development, the provision of utilities, hazard mitigation and the recovery of the district.* *8.2.4.4 Policy - Amenity* *a. Ensure, once completed, earthworks do not result in any significant shading, visual impact, loss of privacy or other significant detraction from the amenity values enjoyed by those living or working in the locality.* *8.2.5 Objective - Earthworks health and safety* *a. People and property are protected during, and subsequent to, earthworks.* *8.2.5.1 Policy - Land stability* *a. Avoid earthworks that will create a significant risk to people and property through subsidence, rockfall, cliff collapse, erosion, inundation, siltation or overland flows.* *8.2.5.2 Policy - Nuisance* *a. Subject to Policy 8.2.4.3, ensure that earthworks avoid more than minor adverse effects on the health and safety of people and their property, and do not generate continuous or persistent noise, vibration, dust or odour nuisance.* *8.2.5.3 Policy - Vehicle movement* *a. Subject to Policy 8.2.4.3, ensure that the transportation to and from a site of earth, construction or filling material is safe and minimises adverse transport network and local amenity value effects.* *8.2.5.4 Policy - Earthworks design* *a. Ensure that earthworks over identified thresholds are designed to enable the anticipated land use.*	For the reasons discussed in the effects assessment, the application is consistent with this objective and its associated policies.
Chapter 9 Natural and Cultural Heritage	

9.5.2.1.1 Objective - Areas and sites of Ngāi Tahu cultural significance a. *The historic and contemporary relationship of Ngāi Tahu mana whenua with their ancestral lands, water, sites, wāhi tapu and other taonga is recognised and provided for in the rebuild and future development of Ōtautahi, Te Pātaka o Rākaihautū and the greater Christchurch Area.* *9.5.2.1.2 Objective - Integrated management of land and water* a. *Ngāi Tahu cultural values, including as to natural character, associated with water bodies, repo / wetlands, waipuna / springs and the coastal environment of Ōtautahi, Te Pātaka o Rākaihautū and the greater Christchurch Area are maintained or enhanced as part of the rebuild and future development of the District - Ki Uta Ki Tai (from the mountains to the sea).* *9.5.2.2.3 Policy - Ngā Wai* a. *Recognise the cultural significance of the water bodies, waipuna / springs, repo / wetlands and those parts of the coastal environment identified as Ngā Wai, and manage the effects of land uses and activities on the surface of water to:* i. *protect the natural character of these water bodies and coastal waters by maintaining their natural character where it is high and enhancing it where it is degraded, including through the reinstatement of original water courses where practicable;* ii. *recognise historic and contemporary Ngāi Tahu customary uses and values associated with these water bodies and coastal waters and enhance opportunities for customary use and access;* iii. *ensure any land uses or activities on the surface of water in or adjoining these sites do not adversely affect taonga species or Ngāi Tahu customary uses in these areas;* iv. *ensure new land uses do not create an additional demand to be able to discharge sewage or stormwater directly into Ngā Wai, other water bodies or the coastal marine area, and address the need for existing land uses to discharge untreated sewage or stormwater into these areas; and* v. *ensure that cultural values are recognised and provided for in the design, location and installation of utilities, while enabling their safe, secure and efficient installation.* *9.5.2.2.5 Policy - Engagement with Rūnanga* a. *Ngāi Tahu and Council to encourage and facilitate the engagement of landowners and resource consent applicants with the relevant rūnanga prior to undertaking activities and/or applying for resource consent, within or adjacent to identified sites of Ngāi Tahu cultural significance (including silent file areas). Where prior applicant engagement has not been undertaken Council will consult with the relevant rūnanga.*	Ōpawaho is a significant river to rūnanga, as discussed previously. The proposal will not cause further degradation in terms of cultural and ecological values, in fact, the application has only positives effects in this respect. On this basis, the application is consistent with these objectives and the policy relating to Ngā Wai.
Chapter 16 – Industrial	
16.2.1 Objective - Recovery and growth a. *The recovery and economic growth of the district's industry is supported and strengthened in existing and new greenfield industrial zones.*	The application is consistent with this objective.
16.2.3 Objective - Effects of industrial activities a. *Adverse effects of industrial activities and development on the environment are managed to support the anticipated outcome for the zone while recognising that sites adjoining an industrial*	The adverse effects of the proposal have been found to be less than minor and generally in line with the anticipated environmental outcomes for the site. On this basis, the application is consistent

zone will not have the same level of amenity anticipated by the Plan as other areas with the same zoning. *b. The cultural values of Ngāi Tahu/ mana whenua are recognised, protected and enhanced through the use of indigenous species in landscaping and tree planting, a multi-value approach to stormwater management in greenfield areas, low impact urban design, and the protection and enhancement of wāhi tapu and wāhi taonga including waipuna.* *16.2.3.2 Policy - Managing effects on the environment* *a. The effects of development and activities in industrial zones, including reverse sensitivity effects on existing industrial activities as well as, visual, traffic, noise, glare and other effects, are managed through the location of uses, controls on bulk and form, landscaping and screening, particularly at the interface with arterial roads fulfilling a gateway function, and rural and residential areas, while recognising the functional needs of the activity.* *b. Effects of industrial activities are managed in a way that the level of residential amenity (including health, safety, and privacy of residents) adjoining an industrial zone is not adversely affected while recognising that it may be of a lower level than other residential areas.* *c. Development and activities are managed to avoid adverse effects on strategic infrastructure within or in proximity to industrial zones.* *d. The quantity of wastewater discharged in areas over unconfined or semi-confined aquifers is restricted to minimise any risk of contamination.* *e. The cultural values of Ngāi Tahu/mana whenua are recognised and supported through the protection of wāhi tapu and wāhi taonga, including waipuna, from the adverse effects of development, through the use of low impact urban design, use of indigenous species appropriate to the local environment, and stormwater management.*	with this objective and associated policies.

87. Overall, we consider the proposed development accords well with the relevant objectives and policies of the District Plan.

Relevant Other Matters

88. Section 104(1)(c) of the Act allows the consent authority to have regard to any other matter it considers relevant and reasonably necessary to determine the application. The below assessment addresses the 'other matters' considered relevant to the application.

Consultation

89. As agreed in pre-application discussions with Council, Council will consult with rūnanga via Mahaaui Kurataiao as part of processing of the application. No other consultation has been undertaken.

Mitigation measures

90. Based on the assessment of effects in the previous section, no mitigation measures are considered necessary for this proposal. The applicant requests an opportunity to consider and comment on any draft conditions Council intends to impose.

Consideration of alternatives

91. The assessment of effects shows that the proposal will not have any significant adverse effects on the environment. Therefore, an assessment of alternatives is not required.

Recovery Plans

92. We consider that the application is not inconsistent with the Land Use Recovery Plan which has no particular relevance to the proposal.

Part 2 Matters

93. The Operative District Plan is considered a valid, complete and certain planning document. It has already given substance to the principles in Part 2 of the Act as the Plan was prepared in a manner that reflects Part 2, therefore no further assessment against Part 2 matters is required for this application.

94. Regardless, the proposed development is considered to recognise and provide for the relevant matters of Sections 6, 7 and 8 and to represent a sustainable management of the land resource and achieve the purpose of the Act, as well as give substance to Part 2 of the Act.

Conclusion

95. The proposal is consistent with the purpose and principles of the Act in that it enables people to provide for their well-being while maintaining and enhancing the quality and amenity of the local environment and avoiding adverse effects.

96. In terms of section 104, the proposal is consistent with the relevant provisions of the District Plan and will have actual or potential effects on the environment which are de minimis and is consistent with the environmental outcomes envisaged by the relevant statutory planning framework.

97. Accordingly, consent should be granted to the activity on a non-notified basis in accordance with sections 104 and 104B of the Act, subject to appropriate conditions.

Appendix 1

Record of Titles

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**614676**
Land Registration District	**Canterbury**
Date Issued	11 July 2013

Prior References
578312

Estate	Fee Simple
Area	6319 square metres more or less
Legal Description	Lot 301 Deposited Plan 463785
Registered Owners	

Braeburn Property Limited

Interests

Appurtenant hereto is a right of way created by Transfer 811061 - 9.10.1970 at 2:00 pm

Subject to a right to drain water over part marked MB on DP 463785 created by Easement Instrument 9138592.7 - 13.8.2012 at 3:21 pm

Subject to a right to drain water over part marked H on DP 463785 created by Easement Instrument 9446208.9 - 11.7.2013 at 12:01 pm

The easements created by Easement Instrument 9446208.9 are subject to Section 243 (a) Resource Management Act 1991

9446208.13 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 11.7.2013 at 12:01 pm

9750370.7 Surrender of the right to drain water created by Easement Instrument 9446208.9 as appurtenant to Lots 502-3 DP 473298 - 9.6.2014 at 5:10 pm

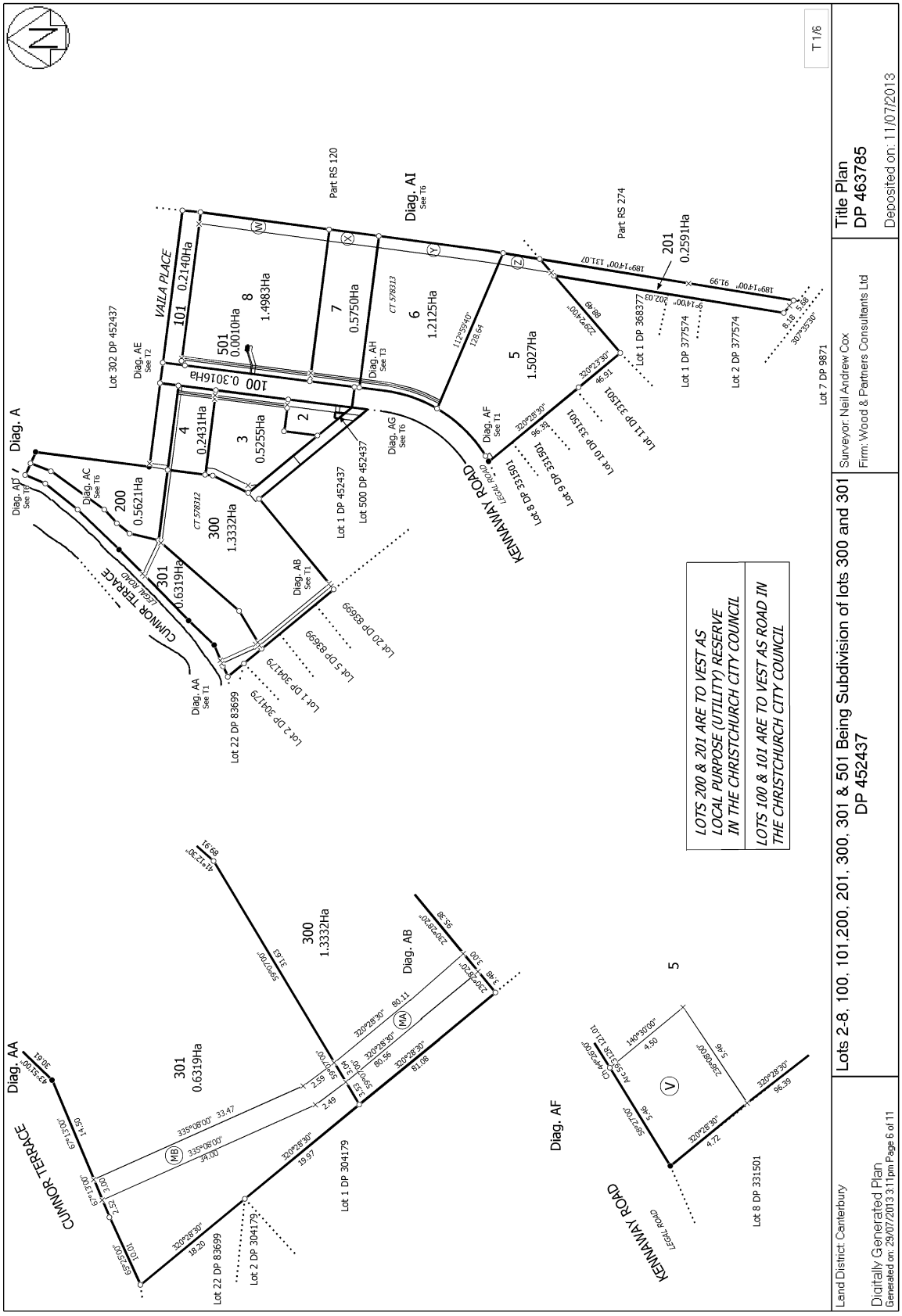
9750370.14 Encumbrance to Christchurch City Council - 9.6.2014 at 5:10 pm

10703567.1 Variation of Encumbrance 9750370.14 - 24.2.2017 at 2:10 pm

10838003.1 Variation of Encumbrance 9750370.14 - 8.8.2017 at 8:46 am

Fencing Covenant in Transfer 11545342.2 - 27.9.2019 at 4:36 pm

12209381.1 Variation of Encumbrance 9750370.14 - 22.12.2021 at 3:36 pm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Surveyor Neil Andrew Cox
Firm: Wood & Partners Consultants Ltd
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LOTS 200 & 201 ARE TO VEST AS LOCAL PURPOSE (UTILITY) RESERVE IN THE CHRISTCHURCH CITY COUNCIL
LOTS 100 & 101 ARE TO VEST AS ROAD IN THE CHRISTCHURCH CITY COUNCIL
Land District Canterbury
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Generated on: 29/07/2013 3:11pm Page 6 of 11
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KENNAWAY ROAD
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Lot 500 DP 452437
Lot 22 DP 83699
Lot 2 DP 304179
Lot 1 DP 304179
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Lot 2 DP 377574
Lot 7 DP 9871
Lot 8 DP 331501
Lot 9 DP 331501
Lot 10 DP 331501
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Lot 20 DP 83699
Lot 5 DP 83699
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Part RS 274
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Diag. AB
Diag. AC
Diag. AD
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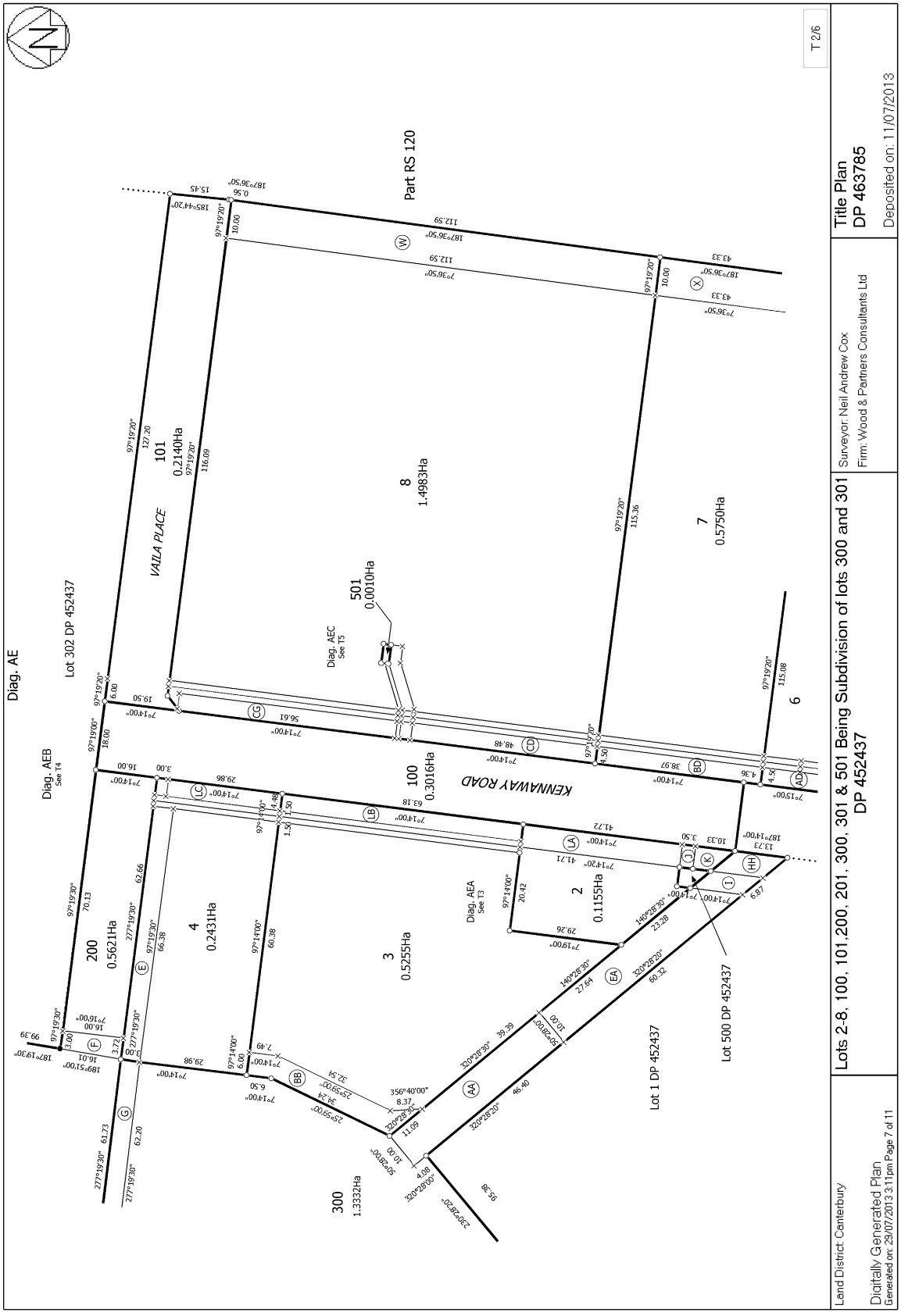
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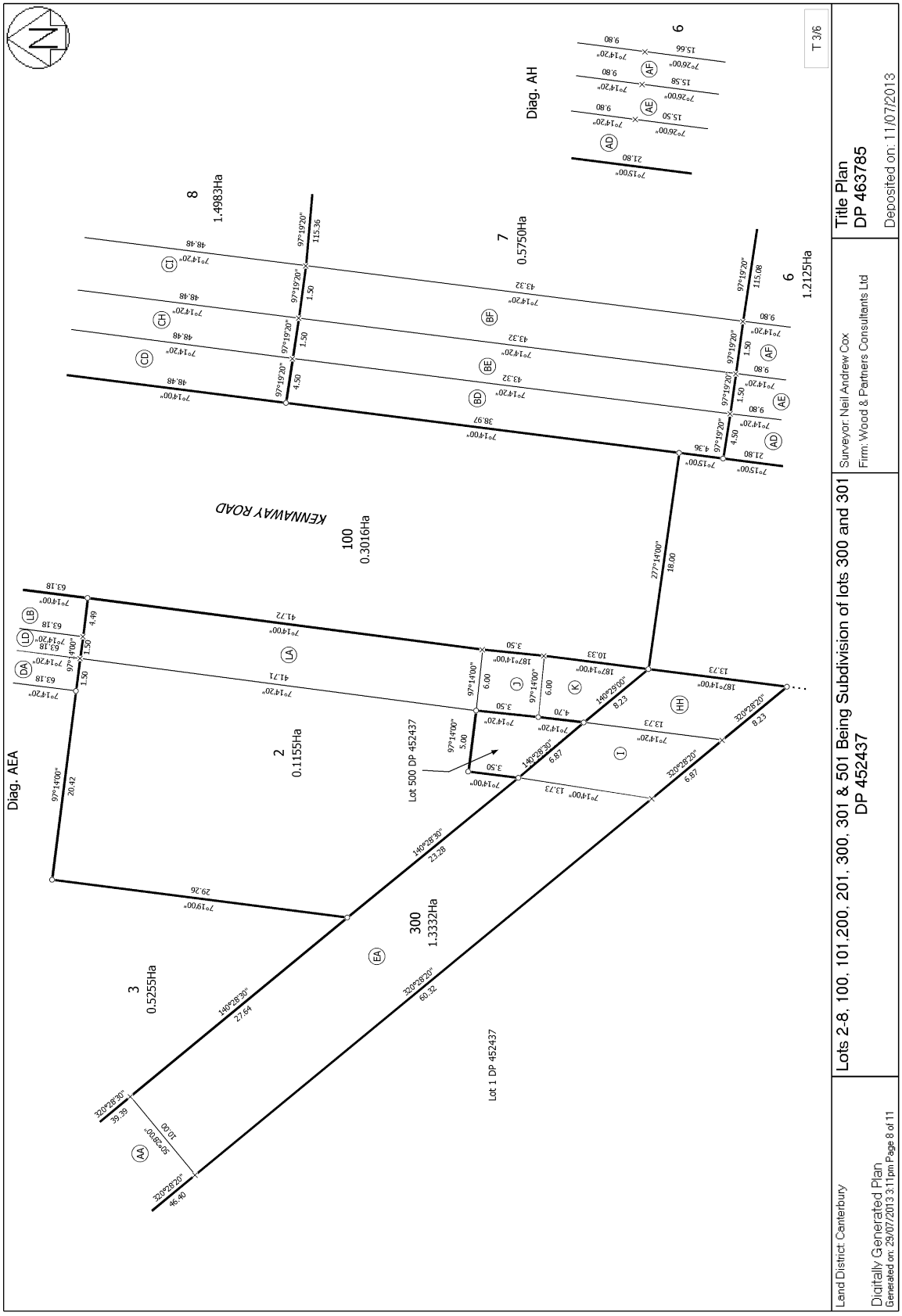
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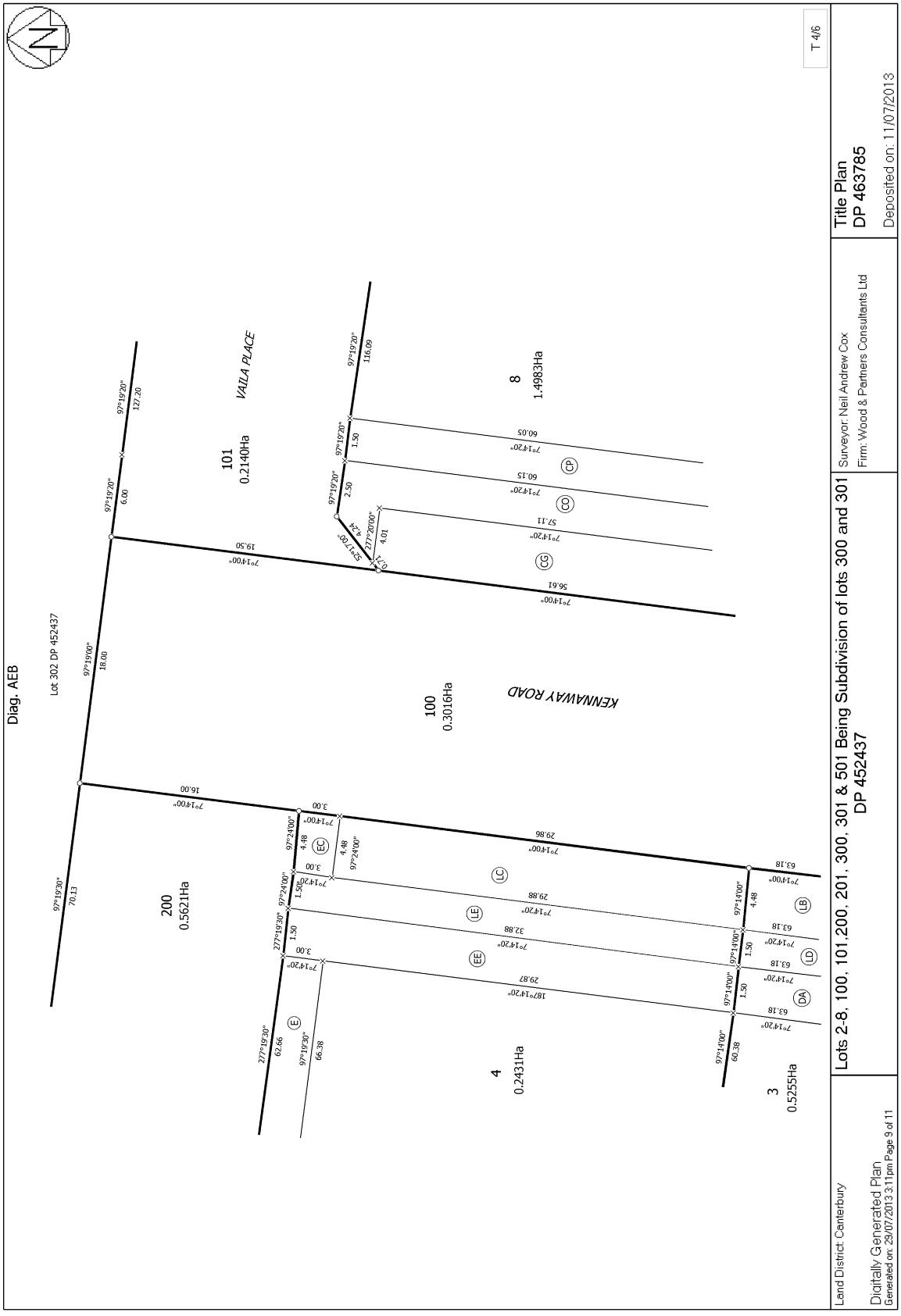
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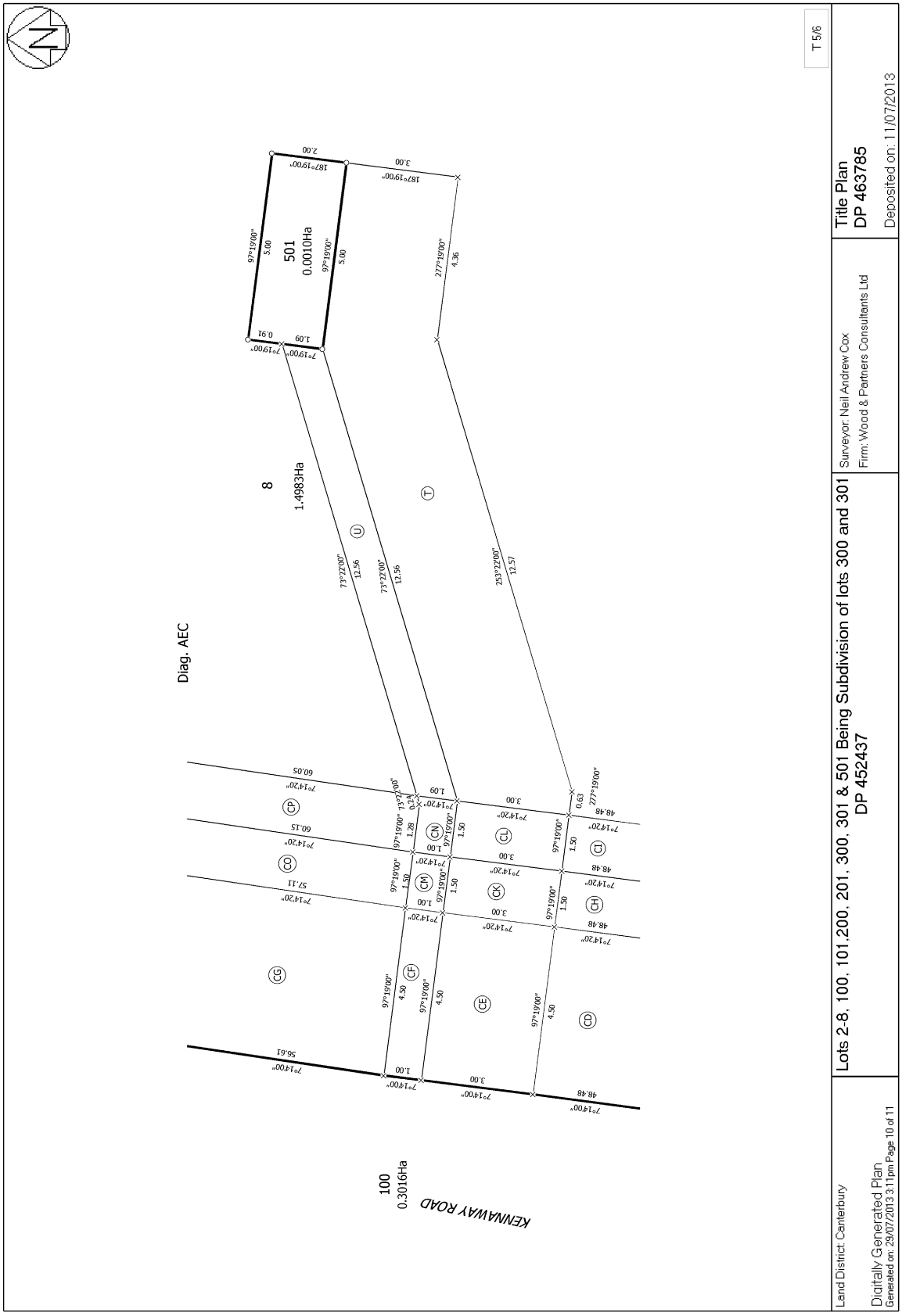
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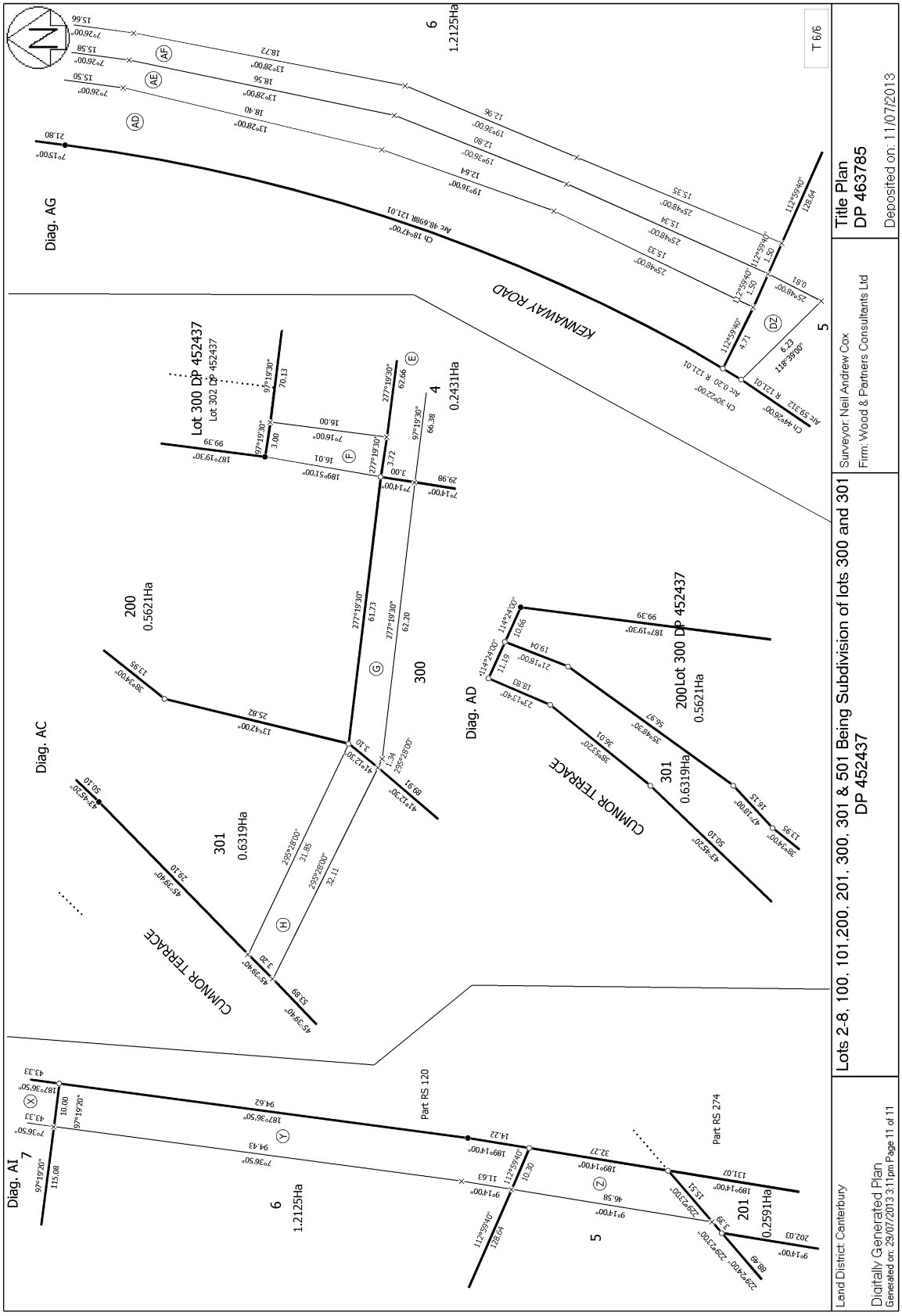
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Diag. AI
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201
0.2591Ha
Part RS 120
Part RS 274

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier **842854**
Land Registration District **Canterbury**
Date Issued 18 December 2018

Prior References
689371

Estate	Fee Simple
Area	12.0077 hectares more or less
Legal Description	Lot 305 Deposited Plan 525615 and Lot 302 Deposited Plan 473298

Registered Owners
Braeburn Property Limited

Interests

Appurtenant to Lot 302 DP 473298 herein and appurtenant to Lot 305 DP 525615 part formerly Lot 1 DP 53089 herein is a right of way created by Transfer 811061 - 9.10.1970 at 2:00 pm

9138592.2 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 13.8.2012 at 3:21 pm (affects Lot 302 DP 473298)

Appurtenant to Lot 302 DP 473298 herein is a right to drain water created by Easement Instrument 9446208.7 - 11.7.2013 at 12:01 pm

The easements created by Easement Instrument 9446208.7 are subject to Section 243 (a) Resource Management Act 1991

Appurtenant to Lot 302 DP 473298 herein is a right to drain water created by Easement Instrument 9446208.9 - 11.7.2013 at 12:01 pm

The easements created by Easement Instrument 9446208.9 are subject to Section 243 (a) Resource Management Act 1991

9750370.5 Variation of Consent Notice 9138592.2 pursuant to Section 221(5) Resource Management Act 1991 - 9.6.2014 at 5:10 pm

9750370.14 Encumbrance to Christchurch City Council - 9.6.2014 at 5:10 pm

10703567.1 Variation of Encumbrance 9750370.14 - 24.2.2017 at 2:10 pm

10838003.1 Variation of Encumbrance 9750370.14 - 8.8.2017 at 8:46 am

Subject to Section 241(2) Resource Management Act 1991 (affects DP 525615)

Subject to a right to drain water over part Lot 305 DP 525615 marked EE, H, J, DD, W, N & FF on DP 525615 created by Easement Instrument 11294647.5 - 18.12.2018 at 2:51 pm

The easements created by Easement Instrument 11294647.5 are subject to Section 243 (a) Resource Management Act 1991

Subject to a right (in gross) to drain water over part Lot 305 DP 525615 marked EE, DD, FF & H on DP 525615 in favour of Christchurch City Council created by Easement Instrument 11294647.7 - 18.12.2018 at 2:51 pm

The easements created by Easement Instrument 11294647.7 are subject to Section 243 (a) Resource Management Act 1991

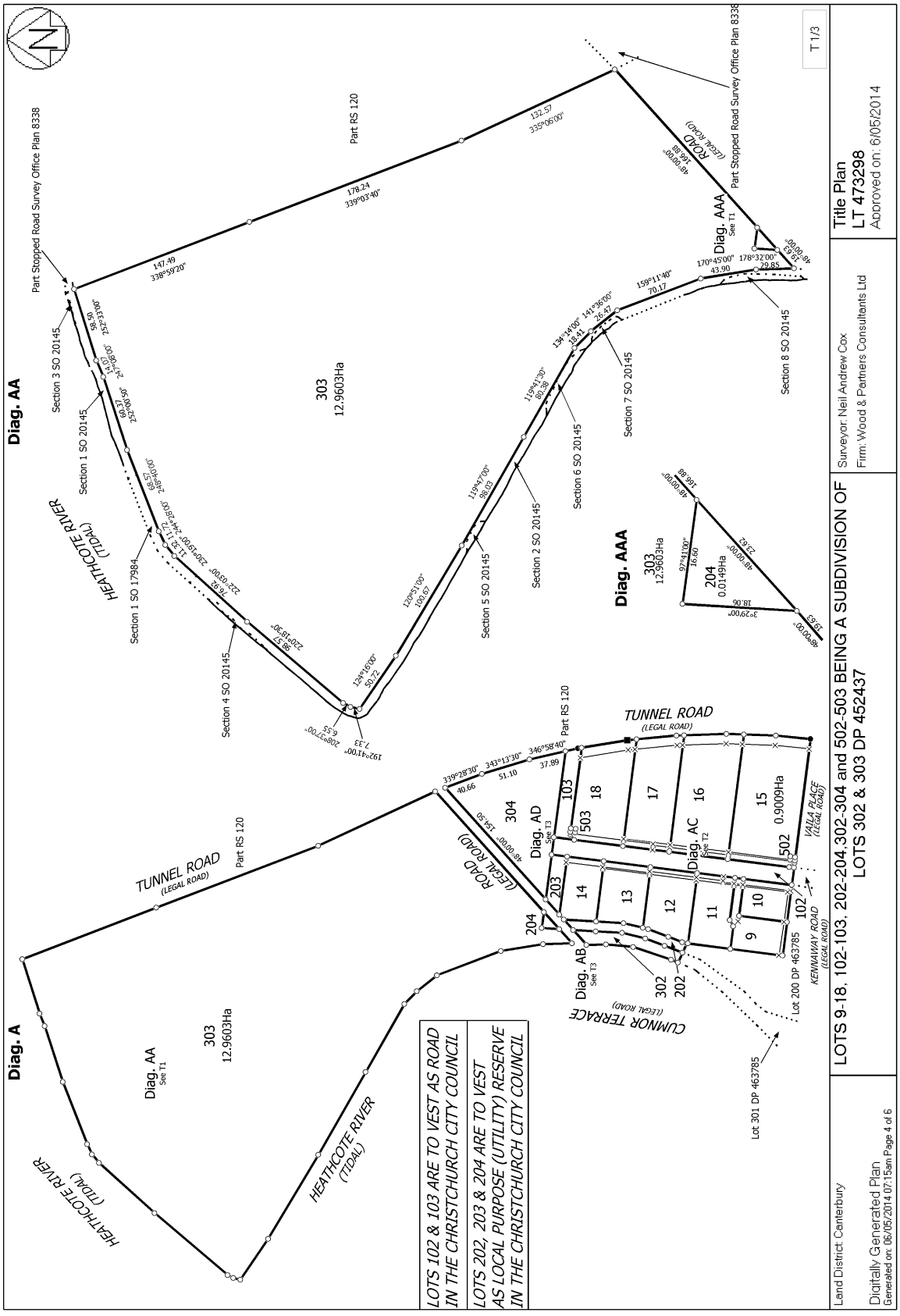
11294647.10 Consent Notice pursuant to Section 221 Resource Management Act 1991 - 18.12.2018 at 2:51 pm (affects Lot 305 DP 525615)

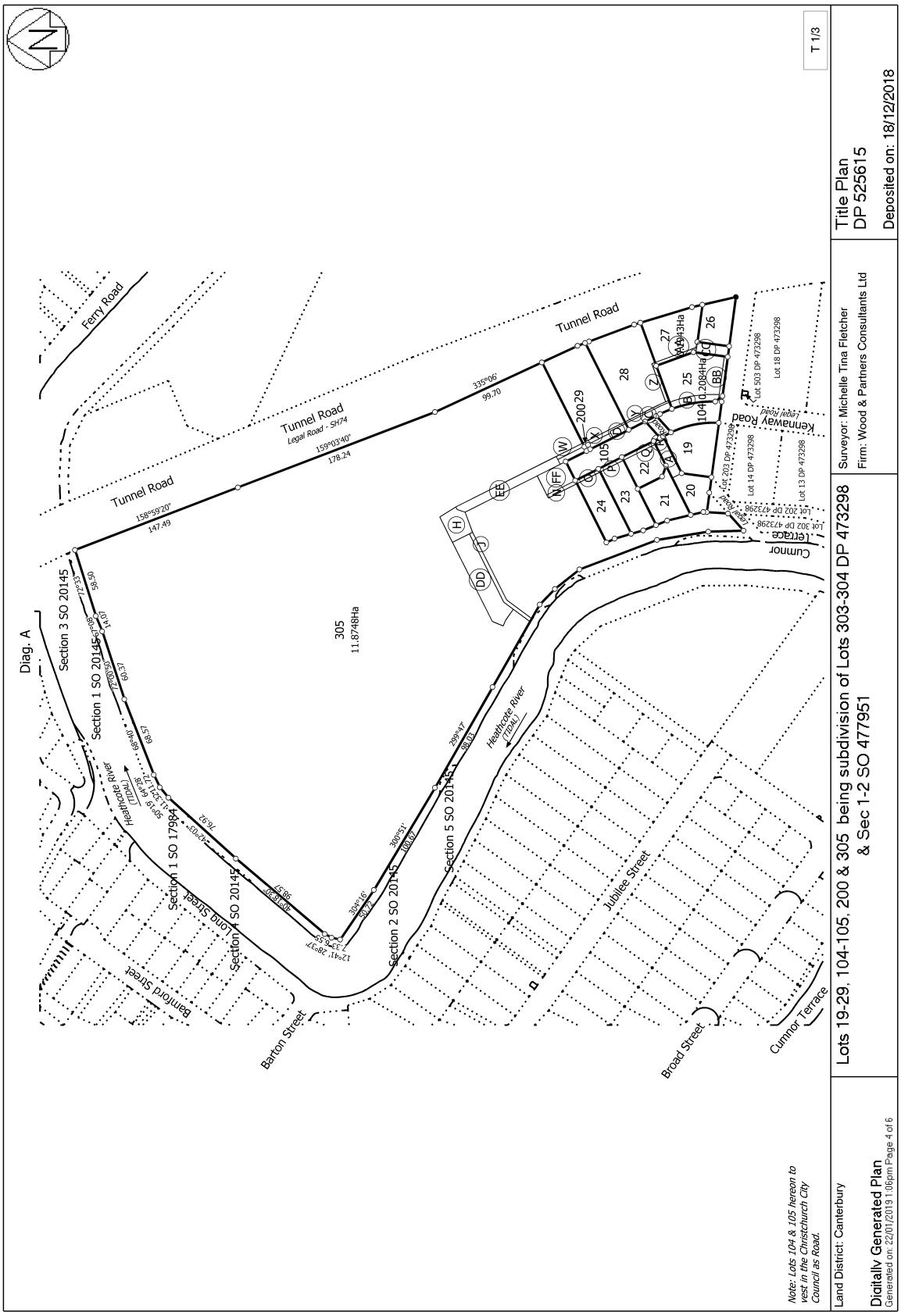
11294647.23 Encumbrance to Christchurch City Council - 18.12.2018 at 2:51 pm (affects Lot 305 DP 525615)

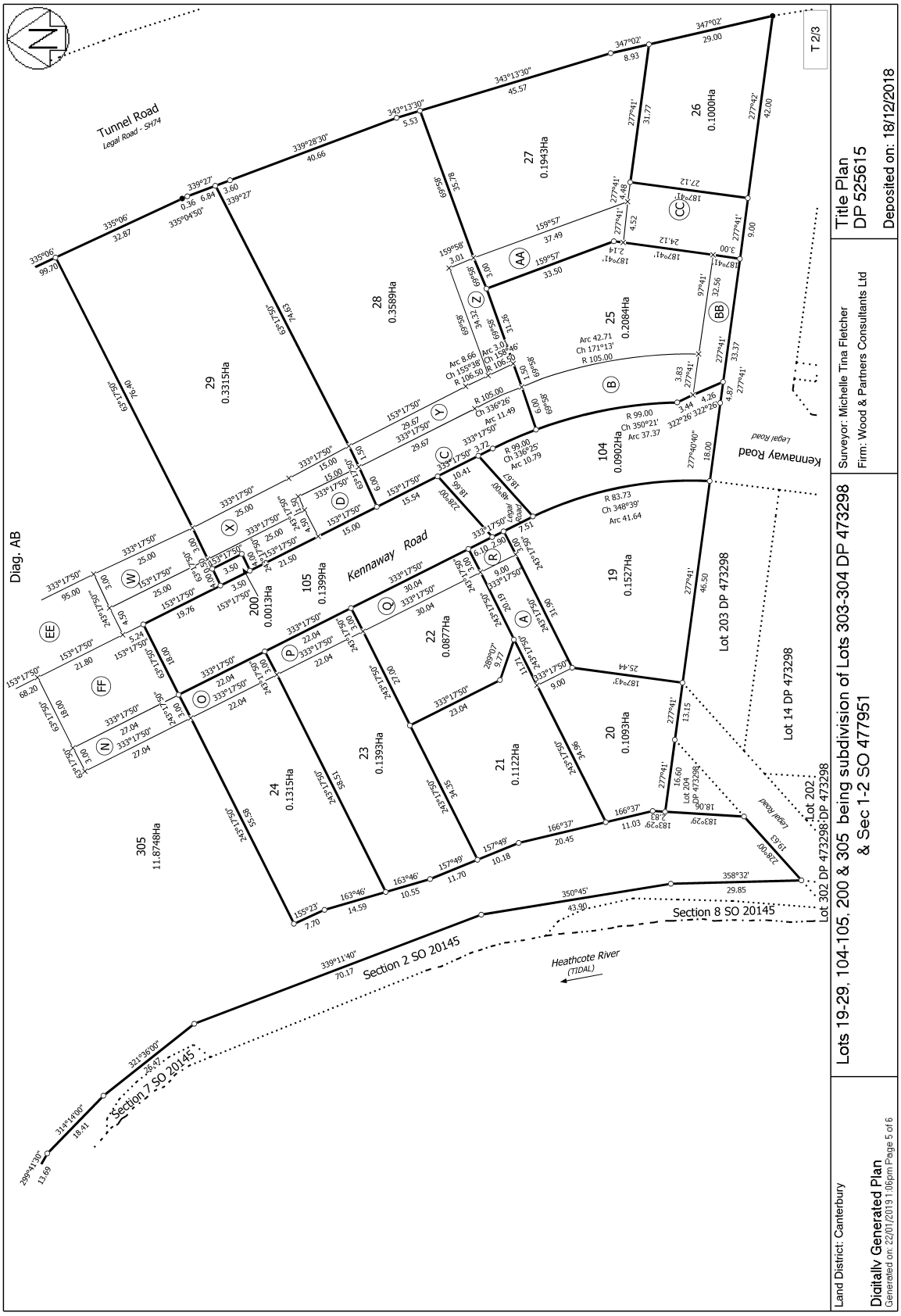
Fencing Covenant in Transfer 11545342.2 - 27.9.2019 at 4:36 pm

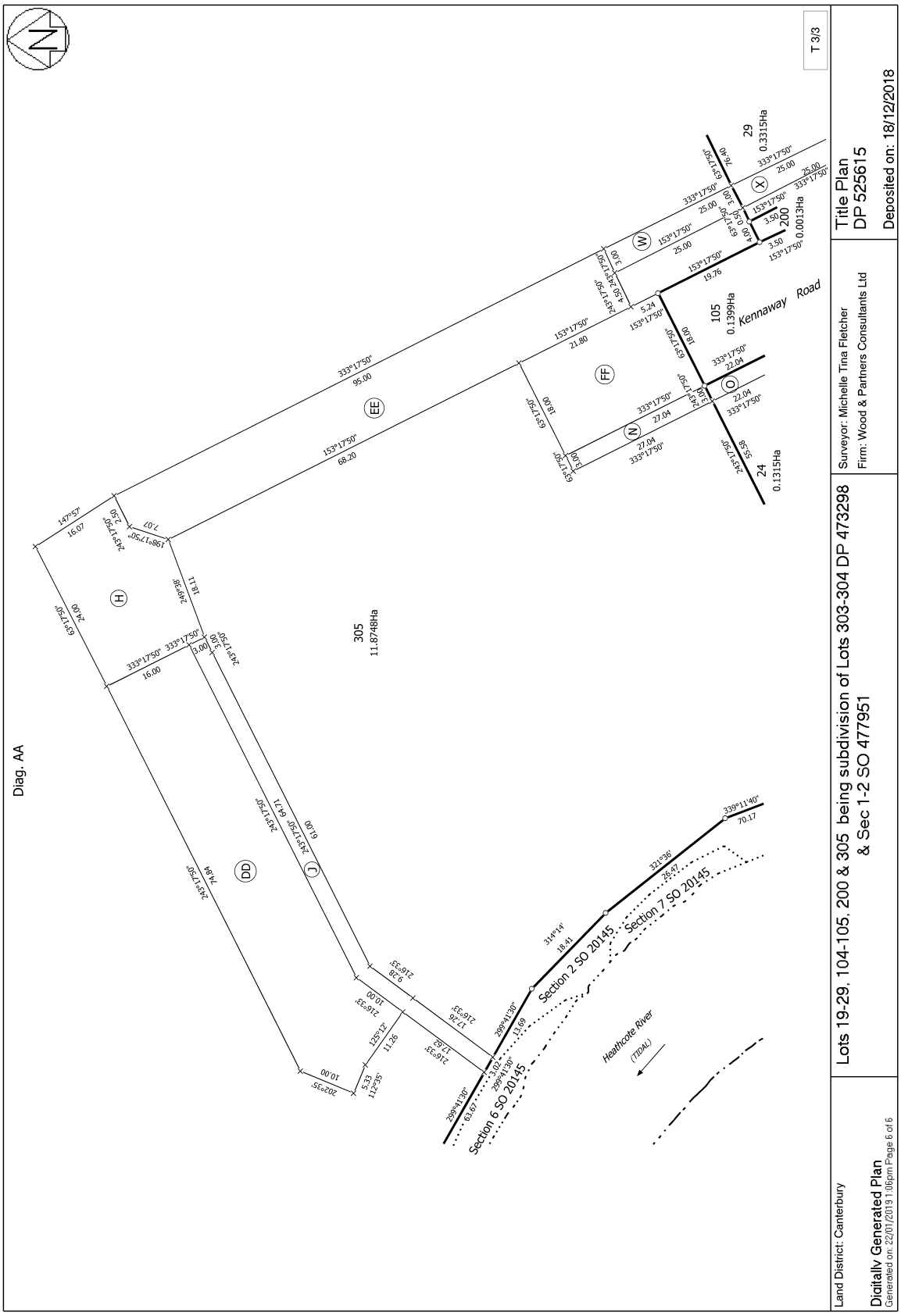
12209381.1 Variation of Encumbrance 9750370.14 - 22.12.2021 at 3:36 pm

12397548.2 Mortgage to Bank of New Zealand - 18.3.2022 at 3:42 pm


Diag. AA
Diag. A
Diag. AAA
Part Stopped Road Survey Office Plan 8338
Part RS 120
Section 3 SO 20145
Section 1 SO 20145
Section 1 SO 17984
Section 4 SO 20145
Section 5 SO 20145
Section 2 SO 20145
Section 6 SO 20145
Section 7 SO 20145
Section 8 SO 20145
303
12.9603Ha
204
0.0149Ha
HEATHCOTE RIVER (TIDAL)
TUNNEL ROAD (LEGAL ROAD)
ROAD (LEGAL ROAD)
CUMNOR TERRACE (LEGAL ROAD)
KENWAY ROAD (LEGAL ROAD)
VALLI PLACE (LEGAL ROAD)
Diag. AB
Diag. AC
Diag. AD
Lot 200 DP 463785
Lot 301 DP 463785
0.9009Ha
LOTS 102 & 103 ARE TO VEST AS ROAD IN THE CHRISTCHURCH CITY COUNCIL
LOTS 202, 203 & 204 ARE TO VEST AS LOCAL PURPOSE (UTILITY) RESERVE IN THE CHRISTCHURCH CITY COUNCIL
LOTS 9-18, 102-103, 202-204,302-304 and 502-503 BEING A SUBDIVISION OF LOTS 302 & 303 DP 452437
Land District Canterbury
Digitally Generated Plan
Generated on: 06/05/2014 07:15am Page 4 of 6
Surveyor Neil Andrew Cox
Firm: Wood & Partners Consultants Ltd
Title Plan
LT 473298
Approved on: 6/05/2014
T 1/3

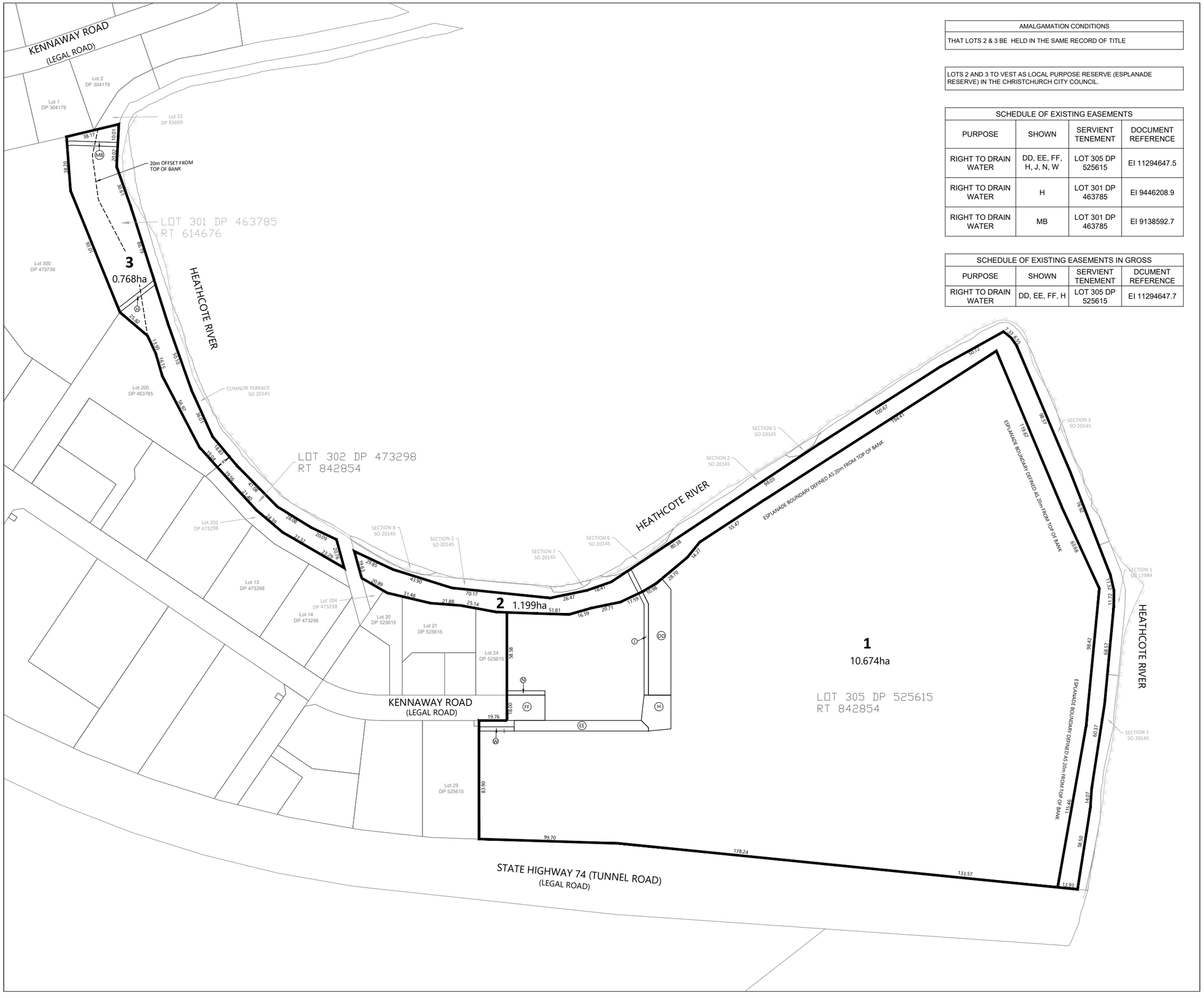

T 1/3
Title Plan
DP 525615
Deposited on: 18/12/2018
Surveyor: Michelle Tina Fletcher
Firm: Wood & Partners Consultants Ltd
Lots 19-29, 104-105, 200 & 305 being subdivision of Lots 303-304 DP 473298
& Sec 1-2 SO 477951
Land District: Canterbury
Digitally Generated Plan
Generated on: 22/01/2013 1:06pm Page 4 of 6
Note: Lots 104 & 105 hereon to vest in the Christchurch City Council as Road.
Diag. A
Section 3 SO 20145
Section 1 SO 20145
Section 1 SO 17984
Section 2 SO 20145
Section 5 SO 20145
Tunnel Road
Legal Road - SH74
Ferry Road
Kennaway Road
Legal Road
Cumnor Terrace
Jubilee Street
Broad Street
Barton Street
Bamford Street
Long Street
Heathcote River
(Tidal)
305
11.8748Ha
104
0.2084Ha
200
29
Lot 503 DP 473298
Lot 18 DP 473298
Lot 201 DP 473298
Lot 14 DP 473298
Lot 13 DP 473298
Lot 302 DP 473298


Tunnel Road
Legal Road - SH74
Kennaway Road
Legal Road
Diag. AB
Lots 19-29, 104-105, 200 & 305 being subdivision of Lots 303-304 DP 473298 & Sec 1-2 SO 477951
Title Plan DP 525615
Deposited on: 18/12/2018
Surveyor: Michelle Tina Fletcher
Firm: Wood & Partners Consultants Ltd
Land District: Canterbury
Digitally Generated Plan
Generated on: 22/01/2013 1:06pm Page 5 of 6
T 2/3
Lot 203 DP 473298
Lot 14 DP 473298
Lot 202 DP 473298
Lot 204 DP 473298
Section 8 SO 20145
Section 2 SO 20145
Section 7 SO 20145
Heathcote River (TIDAL)


T 3/3
Diag. AA
Kennaway Road
Heathcote River
(TIDAL)
Section 2 SO 20145
Section 7 SO 20145
Section 6 SO 20145
305
11.8748Ha
105
0.1399Ha
200
0.0013Ha
24
0.1315Ha
29
0.3315Ha
Land District: Canterbury
Digitally Generated Plan
Generated on: 22/01/2013 1:06pm Page 6 of 6
Lots 19-29, 104-105, 200 & 305 being subdivision of Lots 303-304 DP 473298 & Sec 1-2 SO 477951
Surveyor: Michelle Tina Fletcher
Firm: Wood & Partners Consultants Ltd
Title Plan
DP 525615
Deposited on: 18/12/2018

Appendix 2

Subdivision Plan



AMALGAMATION CONDITIONS
THAT LOTS 2 & 3 BE HELD IN THE SAME RECORD OF TITLE

LOTS 2 AND 3 TO VEST AS LOCAL PURPOSE RESERVE (ESPLANADE RESERVE) IN THE CHRISTCHURCH CITY COUNCIL.

SCHEDULE OF EXISTING EASEMENTS			
PURPOSE	SHOWN	SERVIENT TENEMENT	DOCUMENT REFERENCE
RIGHT TO DRAIN WATER	DD, EE, FF, H, J, N, W	LOT 305 DP 525615	EI 11294647.5
RIGHT TO DRAIN WATER	H	LOT 301 DP 463785	EI 9446208.9
RIGHT TO DRAIN WATER	MB	LOT 301 DP 463785	EI 9138592.7

SCHEDULE OF EXISTING EASEMENTS IN GROSS			
PURPOSE	SHOWN	SERVIENT TENEMENT	DCUMENT REFERENCE
RIGHT TO DRAIN WATER	DD, EE, FF, H	LOT 305 DP 525615	EI 11294647.7

WOODS
EST.1970

LOTS 1-3 BEING SUBDIVISION OF LOT 301 DP 463785, LOT 302 DP 473298 & LOT 305 DP 525615

COMPRISED IN RTs 842854 and 614676

NOTES

1. LOT AREAS AND BOUNDARY DIMENSIONS ARE SUBJECT TO CONFIRMATION UPON FINAL LAND TRANSFER SURVEY.
2. THIS PLAN HAS BEEN PREPARED FOR RESOURCE CONSENT PURPOSES ONLY.

LEGEND

PROPOSED BOUNDARIES

EXISTING BOUNDARIES

HEATHCOTE RIVER TOP OF BANK

SCALEBAR (m) 0 25 50 125

SCALE | 1:2500 @A3 | 1:1250 @A1|

REVISION DETAILS		BY	DATE
1	FOR CONSENT	RH	21/11/22

SURVEYED		KENNAWAY ROAD WOOLSTON CHRISTCHURCH 8023
DESIGNED	RH	
DRAWN	AM	
CHECKED	RH	
APPROVED	RH	WOODS.CO.NZ

portlink INDUSTRIAL PARK

PORTLINK INDUSTRIAL PARK
STAGE 6-8

BOUNDARY ADJUSTMENT SCHEME PLAN

STATUS	FOR CONSENT	REV
SCALE	1:2500 @ A3	1
COUNCIL	CHRISTCHURCH CITY	
DWG NO	P19-321-06-010-GE	

Document No. C:\12DSYNERGY\DATA\WP-PEN-APP-01\P19-321 - PORTLINK STAGE 6,7 & 8_542\CAD\ENG\P19-321-06-010-GE_SCHEME.DWG 21/11/2022 4:49 pm

Appendix 3

Landscape Assessment

Portlink Industrial Subdivision

BRAEBURN PROPERTIES

Visual Impact Assessment

Project No. 2021_138 | C

Portlink Industrial Subdivision VIA

Project no: 2021_138
Document title: Visual Impact Assessment

Revision: C
Date: 23 November 2022
Client name: Braeburn Properties

Author: Nika Kent/ Chris Greenshields
File name: 2021_138 Braeburn Properties Portlink Industrial Subdivision_VIA_C

DOCUMENT HISTORY AND STATUS

REVISION	DATE	DESCRIPTION	BY	REVIEW	APPROVED
A	22/11/2022	DRAFT VIA Report	NK	CG	
B	23/11/2022	VIA Report	NK	CG	DCM
C	23/11/2022	VIA Report	NK	CG	DCM

DCM URBAN DESIGN LIMITED

10/ 245 St Asaph Street,
Christchurch 8011

CONTENTS

1. INTRODUCTION AND PROPOSAL

DCM Urban has been commissioned by Braeburn Properties to prepare a Visual Impact Assessment for a Resource Consent for the Portlink Industrial Subdivision (the application site) located at 320 and 320A Cumnor Terrace, Woolston, Christchurch (Lot 301 Deposited Plan 463785, Lot 302 DP 473298 and Lot 305 DP 525615). The site is zoned Industrial General (Portlink Industrial Park) and Open Space Water and Margins in the Christchurch District Plan (CDP) and is subject to the Portlink Industrial Park Outline Development Plan (ODP).

Relevant to this assessment, the application seeks land use consent for the following:

- sealed hardstand and fencing within the Landscape and Stormwater Area (Green Space) shown on the ODP,
- use of the sealed area within the Green Space for activities permitted in the in the Industrial General Zone (Portlink Industrial Park) – including buildings and outdoor storage to a maximum height of 11.6m,
- building height exceeding 11m within the 11m building height restriction area shown on the Portlink Industrial Park Outline Development Plan,

In respect of the 11m building height limit area, a sloping height plane (that rises from north to south) has been developed by extending an eye line from the opposite side of the river and intersecting with the front edge of the proposed 11.6 metre envelope within the ODP Green Space. The plane continues to the southern boundary of the 11-metre height restricted area beyond which there is not limit on building height.

The application also seeks subdivision consent for a boundary adjustment and associated vesting of an esplanade reserve along the true right of the Heathcote River.

The area of the Green Space not used for industrial activities is proposed to be planted in accordance with the requirements of the CDP (i.e. indigenous tree and shrubs species). Additionally, the proposal seeks to construct a 2.4m acoustic fence on top of an existing 2m high bund.

The resource consent application prepared by Novo Group sets out all CDP matters relevant to the site and proposal

This visual impact assessment relates to the application site and visibility from the surrounding areas within the neighbourhoods of Woolston and Ferrymead, and to a lesser extent Mount Pleasant, in order to discern the visual effects of the proposal as compared to the CDP permitted baseline. This includes the residential dwellings to the north and northwest separated from the application site by the Heathcote River.

This report is a visual assessment only. Agreement has been reached with Council and the applicant that the landscape component of an assessment is not required due to the nature, scale and change of potential landscape effects from the application (when compared to what is anticipated in the CDP), and is of no consequence.

During the preparation of this report three site visits were undertaken, the most recent being on Tuesday the 8th of November 2022. This report is supported by Appendix 1, this containing contextual figures, the landscape concept plan, key viewpoint photos of the existing site and visualisations of the future site with mitigation measures implemented.

2. METHODOLOGY

2.1 INTRODUCTION

The visual impact assessment considers the likely visibility and any potential adverse visual effects arising from the proposal. This visual impact assessment is primarily concerned with the impact on visual amenity within the surrounding areas. This includes visual impacts which may affect Woolston residents neighbouring the site, especially to the north and northwest due to their proximity, as well as users of public roads and walkways. Additionally, the proposal site will be compared to CDP permitted baseline development.

The methodology is based on the guidance provided by Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines (Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022), Landscape Assessment and Sustainable Management 10.1, (NZILA Education Foundation, dated 2.11.2010) and Visual Assessment Best Practice Methodologies (Lisa Rimmer, dated 4.11.2007).

2.2 VISUAL ASSESSMENT METHODOLOGY

In response to s.7(c) of the Resource Management Act (RMA), an evaluation is required to define and describe visual amenity values. This evaluation was carried out using current and accepted professional best practice.

Amenity values are defined in the Act as *"those natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes."* This visual assessment considers key visual receptors and changes to their visual amenity with implementation of the proposal through analysis of selective representative viewpoints. In addition, a comparison of the anticipated effects on visual amenity between the proposal and a permitted baseline for the site.

The visual impact assessment involves the following procedures:

- Identification of key viewpoints: A selection of key viewpoints were identified and confirmed during the site visit. The viewpoints are considered representative of the various viewing audiences within the receiving catchment, being taken from public locations where views of the proposal were possible. The identification of the visual catchment is prepared as a desktop study in the first instance using Council GIS for aerials and contours. This information is then ground-truthed on site to determine the key viewpoints and potential audience.
- Identification of the different groups of receptors or 'audiences' which will be susceptible to visual changes due to the proposal: This includes people residing on properties in the area, users of roads surrounding the proposal, people who use the area for recreation, etc. Although in previous visual impact assessment methodology it was common to assign a 'sensitivity rating' to each group based on factors such as the value and quality of existing views, the type of receiver, duration or frequency of view, distance from the proposal and the degree of visibility, best practice now suggests simply describing the audience. This is preferred as it is understood that 'sensitivity' could vary greatly according to an individual's relationship with the proposal and personal context.
- Assessment of the degree/magnitude of visual effects resulting from the proposal based on distance to the proposal, the visual dominance/prominence or extent to which the proposal contributes to/detracts from existing amenity values.

- Identification of potential mitigation measures: These may take the form of revisions/refinements to the engineering and architectural design to minimise potential effects, and/or the implementation of landscape design measures (e.g. screen planting, colour design of hard landscape features etc.) to alleviate adverse visual effects and generate potentially beneficial long-term effects.
- Prediction and identification of the residual effects after the implementation of the mitigation measures.
- Comparison to the CDP permitted baseline.

2.3 EFFECTS METHODOLOGY

Analysis of the existing landscape and visual environment is focused upon understanding the functioning of how an environment is likely to respond to external change (the proposal). The assessment analyses the resilience of the existing character, values or views and determines their capacity to absorb change. The proposal is assessed in its 'unmitigated' form and then in its mitigated form to determine the likely residual effects. The analysis identifies opportunities, risks, threats, costs and benefits arising from the potential change.

Assessing the magnitude of change (from the proposal) is based on the seven-point scale[1], being:

VERY LOW / LOW / MODERATE-LOW / MODERATE / MODERATE-HIGH / HIGH / VERY HIGH

In determining the extent of adverse effects, considering the landscape or receptor combined with the Magnitude of Change proposed, the level of effects is along a continuum to ensure that each effect has been considered consistently and in turn cumulatively. I define this continuum with the following effects:

- **Very Low** – effects which are negligible or are not readily discernible.
- **Low** – effects which are discernible but do not adversely affect the viewer experience.
- **Moderate – Low** – effects are discernible and start to adversely affect viewer experience.
- **Moderate** – effects are discernible and have an effect on the quality of the view but with the main 'view qualities' still intact.
- **Moderate-High** – effects are discernible and change the quality of the existing view, potentially with the loss of views.
- **High** – effects are discernible and there is a loss of views, or the changes greatly affect the quality of the view so that the character of existing view is fundamentally changed.
- **Very High** – effects are discernible and there is a total loss of views, or the changes significantly affect the quality of the view so that the character of existing view is fundamentally changed.

The following table 1 assists with providing consistency between NZILA and RMA terms to determine where effects lie.

[1] Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines (July 2022), page 150

							Significant
RMA Effects Equivalent	Less Than Minor		Minor	More Than Minor			
NZILA Rating	Very Low	Low	Moderate - Low	Moderate	Moderate - High	High	Very High

Table 1: Consistency between NZILA and RMA terms[2]

The NZILA rating of 'Low' a magnitude of change been divided into 2 RMA effects levels, "Less Than Minor" or "Minor" effects but maybe one or the other depending on site conditions, context, receptor or receiving character and its degree of change.

Identification of potential mitigation or offsetting/compensation measures: These may take the form of revisions/refinements to the engineering and architectural design to minimise potential effects, and/or the implementation of landscape design measures (e.g. screen tree planting, colour design of hard landscape features etc.) to alleviate adverse urban design or visual effects and/or generate potentially beneficial long-term effects.

Prediction and assessment identification of the residual adverse effects occurs after the implementation of the mitigation measures. Residual effects are considered to be five years after the implementation of the proposed mitigation measures, allowing for planting to get established but not to a mature level.

2.4 PHOTOGRAPHY METHODOLOGY

All photos are taken using a SONY A6000 digital camera with a focal length of 50mm. No zoom was used. In the case of stitched photos used as the viewpoint images, a series of 4 portrait photos were taken from the same position to create a panorama. The photos were stitched together automatically in Adobe Photoshop to create the panorama presented in the figures.

3. VISUAL IMPACT ASSESSMENT

3.1 EXISTING SENSITIVITY TO CHANGE

The application site is located on the northern border of an established industrial area in Woolston, with similarly (industrial) zoned land to the south and west. As such, development of much of the neighbouring sites consists of large-scale warehouses, distribution centres, factories and storage yards, including another site utilising land for stacked container storage. The site is directly neighboured on the eastern side by Tunnel Road (SH74), beyond which is pastural land zoned Open Space Natural in the CPD.

To the north and west, the site is directly adjoining the Heathcote River creating a physical separation with the residential neighbourhood across the opposing true left bank to the north, while the opposing land to the west

[2] Te Tangi a te Manu: Aotearoa New Zealand Landscape Assessment Guidelines (July 2022), page 151

contains further industrial activity. The area as a whole is set amongst the backdrop of the eastern stretch of the Port Hills, with views to the ridgeline forming a prominent geographic focal point in the area when looking towards the south.

This part of Woolston is a historically well-recognised and defined as an industrial area, with various factories and industrial buildings visible from the surrounding roads. Visually the industrial area, through the nature of activity, scale of the buildings, rail line, and predominance of trucks (when compared with other transport routes), is well delineated from the surrounding commercial and residential areas. With additional boundaries formed by natural barrier of the Heathcote River and established roads (Tunnel Road and Port Hills Road), industrial activities are clearly confined. The site is considered modified with very low natural character and an easily identifiable industrial character.

Overall, views of industrial activity can be reasonably expected when looking towards the proposal site from several viewpoints, given its zoning and context as part of a well-established industrial area. Due to the location of the site on the fringe of the industrial area and directly adjacent to the Heathcote River, development of the site has greater potential to produce perceived visual effects when compared with some other industrial sites, due to the sites proximity to existing non-industrial surroundings. Despite this, the site is considered to have **low** sensitivity to change.

3.2 VISIBILITY OF THE DEVELOPMENT VS PERMITTED BASELINE

Existing Site

The viewpoints outlined below and shown in the Appendix 1 figures show the visibility of the site as it currently exists, viewed from the surrounding areas. It should be noted that the photos of the containers are stacked higher than the proposed 11.6m height, with a number of the taller stacks containing six containers at an approximate height of 17.4m.

Many views are currently partially open to the site, with vegetation screening at least part of the proposal site, providing some visual softening (View from Rutherford St, Ferry Rd/SH74 roundabout and the Ferry Rd/Heathcote River walkway). In other locations (Palinurus Rd and sections of Ferry Rd) buildings in the foreground also screen the proposal site. Areas where views of the site are most open includes a section of Tunnel Rd (SH74), the vested section of Kennaway Rd on approach to the site and along the Heathcote River walkways to the north of the site.

The flat topography of the area makes any changes in height readily discernible, with little change in elevation to mask views of the site. The closest drastic change in topography is the Port Hills themselves. Views of the site from the lower elevations of the Port Hills (Cannon Hill Crescent) have been assessed, however due to the separation distance, visual effects of the site from this elevation are consider very low. This demonstrates that one of the greatest factors in determining visibility is proximity to the site, with a higher level of visual effects predominantly felt closer to the site. This is particularly applicable to those residences to the northwest, north and northeast of the site, and Heathcote River walkways.

The existing grassed bund along the northwest boundary of the site along with some established planting, does effectively screen the lower containers, decreasing the overall visual dominance, but does not conceal the taller stacked containers. Further mitigation as discussed below in Section 4 and shown in visualisations are intended to improve this screening and enable a predominantly green view, over a view of the container stacks.

Permitted Baseline

Viewpoints and cross section as shown in the Appendix 1 figures show the visibility and comparison between the '11m Building Height Limit Area' and the proposed height restriction in the Green Space of 11.6m. These demonstrate that 11m high buildings will break the skyline of the Port Hills in places when viewed from the southern facing viewpoints. The difference in height is considered a **low** magnitude of change due to both scenarios breaking the skyline of the Port Hills in places. While buildings and/or outdoor storage will initially appear closer being siting within the Green Space, the bund provides immediate height and partial screening, as does the proposed acoustic fence on top of the bund. The bund allows the proposed planting to effectively start higher and therefore provide increased height of screening. As the vegetation reaches maturity of approximately 8m overtime, any remaining visibility of the built form within the Green Space is considered comparable to the permitted baseline, and will maintain a similar level of visual amenity.

While it is accepted that outdoor storage (including shipping containers) has lesser aesthetic appeal compared to buildings (where architectural form and materiality can reduce visual effects), and likely result in a change to the perceived pleasantness of the site and surround environment, the potential visual bulk, height and scale remains comparable. Presence of outdoor storage is common within industrial zoned land and therefore can be reasonably expected.

3.3 STORAGE WITHIN THE SEALED AREA OF 'LANDSCAPE AND STORMWATER AREA (GREEN SPACE)'

According to the CDP, the requirement for landscaping of the ODP Green Space inside the property boundary is intended to *"…maintain or enhance the visual amenity and ecological values of the margins of the Heathcote River; and …contribute to the enhancement of Ngāi Tahu/ mana whenua cultural values ; and …protect and enhance the habitat of birds."*[3]

The application proposes a sealed (asphalt surface) encroachment of approximately 13-16m into the ODP Green Space, including the erection of the 2.4m chain link fence and 2.4m acoustic fence on top of an existing 2m high bund. Some of the sealed surface is already in place as well as the chain link fence. As mentioned previously, it is proposed to use the sealed area within the Green Space for activities permitted in the in the Industrial General Zone (Portlink Industrial Park), including buildings and outdoor storage up to 11.6m in height. As shown on the cross section in Appendix 1, and mentioned above, the use of the sealed encroachment has low visual effects when compared to buildings within the 11m height limit due to the immediate increased height obtained from the bund. Overtime as planting matures above the bund, a similar level of screening is achieved. It is considered the proposal, with mitigation planting, maintains visual amenity similar with the permitted baseline.

Additionally, the indigenous vegetation proposed to be planted on the bund (in accordance with the ODP) will provide a suitable level of screening of buildings and/or outdoor storage overtime. Though the proposed use of the sealed encroachment does lessen the extent of planting possible within the Green Space, the proposed planting of the bund does enhance the site's existing ecological values, mana whenua cultural values and bird habitat. The bund planting will be of a similar depth, height (higher because of the bund) and density to the existing vegetation to the north of the site, which already provides a degree of visual softening and screening.

[3] (Christchurch District Plan) *Area-specific rules - Matters of discretion - 16.7.3.2.2 Landscaping in Portlink Industrial Park Development Plan*

The height from the existing bund and proposed planting is considered more important than the depth of planting to provide better screening outcomes of the site for surrounding neighbours. Planting is generally considered positive for enhancing amenity of an area.

It is noted that the strip of the site to the north of the bund will be left in its current state on the recommendation from a herpetologist. This is to protect the habitat of a native lizard present in this area.

3.4 BUILDINGS WITHIN THE 11M HEIGHT LIMIT AREA

As shown in the Appendix 1 cross section, the proposal seeks to implement a height plane that slopes from north to south capped at 18m, allowing a staggering of built form higher into the site. Buildings within this height plane would not be visible to the neighbours to the north of the site as they would be situated behind buildings and/or outdoor storage within the Green Space. The building height proposal is considered to have a **low** magnitude of change. It is views from the east, such as from Ferry Road, which will obtain a side profile of the site with a potentially higher built form. However due to the separation distance and context within the wider views available, as well as intervening vegetation associated with the Heathcote River, visual effects are considered to be **low (less than minor)**.

3.5 VISUAL AMENITY AND EFFECTS

The visual context of the receiving environment for the site is considered to be contained to Woolston and Ferrymead, with the most noteworthy views of the site visible from these areas. Outward views of the wider landscape from these locations are also impacted by the proposal, notably through the disruption of the Port Hills ridgeline, as they are by permitted baseline development from some viewpoints. The ridgeline is considered to contribute greatly to the visual amenity of these areas. Although the site is visible from Mount Pleasant, as shown in Viewpoint 6, visual impacts of the proposal are considerably less due to the separation distance and context within the wider views available.

A series of key viewpoints were selected to show a representative sample of the likely visual effects which could result from the proposal (refer to attached Appendix 1 figures for relevant photos). The viewpoints are a representative view, as close as possible to the likely views experienced by the receptors, obtained from a public location. These are as follows:

1. View SE from Rutherford St
2. View S from 9 Palinurus Rd
3. View SW from Ferry Rd SH74 roundabout
4. View SW from Ferry Rd/ Heathcote River walkway
5. View NW from 975 Ferry Rd
6. View W from 2/29 Cannon Hill Cres
7. View N from 74 Kennaway Rd
8. View N from Tunnel Rd (SH74)
9. View S from Heathcote River walkway/Gould Cres

In assessing the potential effects on viewing audiences, the key viewpoints outlined above have been used as a reference point where it is considered that the effects are likely to be similar to the viewpoint for a group of viewers. The following table outlines the potential visual effects each visually sensitive receptor group might receive. The assessment considers the likely magnitude of effects (a combination of distance from the proposal and **degree of change from the proposal in relation to the permitted baseline**) and determines what the likely residual effects are will be from the **difference between the proposal and permitted baseline.**

Viewpoint	Visually Sensitive Receptors (VSR)	Approximate Distance to Proposal Site (m)	Type of View (open, partial, screened)	Magnitude of Change	Mitigation Measures	Effects after mitigation measures
1	Vehicle Users of Rutherford St	363m	Partial	Very Low	MM1/ MM2/ MM3/	Less than Minor
	Pedestrian Users of Rutherford St	363m	Partial	Very Low	MM1/ MM2/ MM3/	Less than Minor
2	Vehicle Users of Palinurus Rd	524m	Open/ Partial	Very Low	MM1	Less than Minor
	Residents of 9 Palinurus Rd	524m	Open/ Partial	Very Low		Less than Minor
3	Vehicle Users of Ferry Rd SH74 Roundabout	78m	Partial	Low	MM1/ MM2/ MM3	Less than Minor
4	Pedestrian Users of Ferry Rd/ Heathcote River Walkway	237m	Partial	Low	MM1/ MM2/ MM3	Less than Minor
5	Vehicle Users of Ferry Rd	450m	Partial	Very Low	MM1/ MM2	Less than Minor
	Pedestrian Users of Ferry Rd	450m	Partial	Very Low	MM1/ MM2	Less than Minor
6	Residents of Cannon Hill Cres	1550m	Open/ Partial	Very Low	MM1/ MM2	Less than Minor
	Vehicle Users of Cannon Hill Cres	1550m	Open/ Partial	Very Low	MM1/ MM2	Less than Minor
	Vehicle Users of	143m	Open/ Partial	Very Low	MM1/ MM2	Less than Minor

Viewpoint	Visually Sensitive Receptors (VSR)	Approximate Distance to Proposal Site (m)	Type of View (open, partial, screened)	Magnitude of Change	Mitigation Measures	Effects after mitigation measures
7	Kennaway Rd					
	Pedestrian Users of Kennaway Rd	143m	Open/ Partial	Very Low	MM1/ MM2	Less than Minor
8	Vehicle Users of Tunnel Rd	20m	Open	Very Low	MM1/ MM2/ MM3	Less than Minor
9	Pedestrian Users of Heathcote River Walkway	50m	Open	Low	MM1/ MM2/ MM3	Less than Minor
	Residents of Gould Cres	50m	Open	Low	MM1/ MM2/ MM3	Less than Minor

Table 2: Table Assessment of Effects on Visually Sensitive Receptors in terms of the **difference between the proposal and permitted baseline.**

3.6 SUMMARY OF VISUAL EFFECTS

The proposal within the defined context of its receiving environment would result in an overall change of land use from an undeveloped site. The magnitude of visual change varies depending on the viewpoint, and importantly is the difference between the permitted baseline and the proposed 11.6m height of buildings and/or outdoor storage within the ODP Green Space. The visual change is assessed as **very low (less than minor)** within the industrial zone itself, to **low (less than minor)** from the Heathcote River walkway and neighbouring Gould Crescent. The mitigation measures outlined below in Section 4 will aid in reducing any potential adverse effects and further absorb some of the visual change introduced by the development, diminishing potential residual effects overtime. Even when the vegetation reaches maturity in time, visual effects will endure with the tops of the development likely to be visible and will break the ridgeline (skyline) of the Port Hills in places.

A series of visualisations have been completed from the pedestrian walkways across the Heathcote River to the north of the site, (refer Appendix 1) - as this is the area which is considered to have the greatest levels of visual effects felt before and after mitigation. These visualisations show:

- the existing view as on the 23rd of August 2022 (noting shipping containers are stacked higher than the proposal seeks),
- the view with installation of a 2.4m high acoustic fence,
- the view with vegetation height after 5 years at a height of 4-5m, and
- the view with vegetation at a mature height of 8m.

As shown in these visualisations, the visual impact is greatest in visualisation 1, where the containers (or permitted baseline) are most dominant within the view, and views towards the Port Hills ridgeline are fragmented by development. The introduction of the 2.4m acoustic fence and planting as mitigation measures would make a

considerable difference in concealing views of the site, and instead introducing a wall of greenery to enhance amenity, ecological and mana whenua values. It is also noted that the shipping containers in the visualisations are stacked higher than the proposed 11.6m (4 containers high), and implementation of this height limit would further reduce the dominance of the containers and reintroduce almost complete similar views to the Port Hills ridgeline. With restored views to the ridgeline and a green boundary masking the site, it is considered that this will maintain an acceptable level of visual amenity for those using the Heathcote River Walkway in this area, while any perceived visual impact on the outlook of residents would also be considerably mitigated.

As assessed previously, buildings within the sloping height plane capped at 18m create no additional visual effects for neighbours to the north. It is important to note that buildings within this height plane are lower than provided for in the area of the site not subject to a height restriction, where a 20-25m height building could be constructed.

4. MITIGATION MEASURES

The following mitigation measures are proposed to avoid, remedy or mitigate any potential adverse effects on the visual amenity as viewed from the surrounding neighbourhoods of Woolston and Ferrymead to the application site.

MM1 –Maximum Height within the sealed area of the ODP Green Space

It is proposed that buildings and/or outdoor storage be restricted to a maximum height of 11.6m above existing ground level within the approximate 13-16m sealed area of the ODP Green Space area to minimise the visual dominance.

MM2 – 2.4m High Acoustic Fence

A 2.4m acoustic fence on top of the ~2m existing bund is proposed as part of acoustic mitigation, however this also aids to some degree in visual mitigation. The acoustic fence will provide a uniform barrier to conceal the lower levels of the site. In conjunction with the proposed planting, once established, the fence will provide a solid secondary screen, while planting will soften the appearance of the fence, eventually concealing it completely.

MM3 – Landscape Planting for Screening of Key Viewpoints and Enhancement of Amenity on the Northern Boundary Bund

While the existing bund is effective in screening the lower levels of the site, planting will be used to enhance amenity and provide further taller screening. As mentioned, this will work in conjunction with the acoustic fence as planting becomes established, and as planting matures a relatively tall green belt will form, masking the bulk of development (see Typical Bund Cross Section A-A and Visualisations 1-3 in Appendix 1). Planting shall comprise predominantly indigenous species representative of the existing vegetation.

5. CONCLUSIONS

This visual impact assessment has centred on the Portlink Industrial site proposal at 320 and 320A Cumnor Terrace, Visibility of the proposal has been assessed in relation to the difference between the proposal and the permitted baseline from representative viewpoints within the neighbourhoods of Woolston and Ferrymead (and one viewpoint from Mount Pleasant) surrounding the site with the intention of identifying the anticipated visual effects for various audiences. Visualisations were also completed for 3 viewpoints to the north of the site in order to simulate the implementation and establishment of mitigation measures over time.

From this assessment, the Heathcote River walkways and residences to the north of the site on the opposing true left bank of the river were determined to experience the greatest magnitude in visual change compared to the permitted baseline. This is due to their proximity to the development site and the largely flat topography, which tends to emphasize the introduction of any changes in height. However, after mitigation measures are implemented, residual effects are expected to diminish in this location, due to the reduction of visual dominance through restricting height to 11.6m and screening from the existing bund, proposed acoustic fence and indigenous vegetation. Further, permitted buildings (up to 20-25 metres in height) in the southern portion of the site also influence anticipated visual effects. With these matters considered, the effects are assessed as **low (less than minor)**.

All other viewpoints were considered to experience a **very low (less than minor)** magnitude of visual change, with residual effects diminishing following implementation of mitigation measures and overtime as vegetation establishes.

APPENDIX 1 PORTLINK INDUSTRIAL SUBDIVISION: LANDSCAPE CONCEPT PLAN AND VIA FIGURES

BRAEBURN PROPERTIES

6 December 2022

PROJECT NO. 2021_138

REVISION C

PORTLINK INDUSTRIAL SUBDIVISION

Project no: 2022_067
Document title: PORTLINK INDUSTRIAL SUBDIVISION: LANDSCAPE CONCEPT PLAN AND VIA FIGURES
Revision: C
Date: 6 December 2022
Client name: Braeburn Properties

Author: Chris Greenshields | Nika Kent | Zoe Hughes

File name: 2021_138 Braeburn Properties - Portlink Industrial Subdivision_Appendix 1 VIA_C

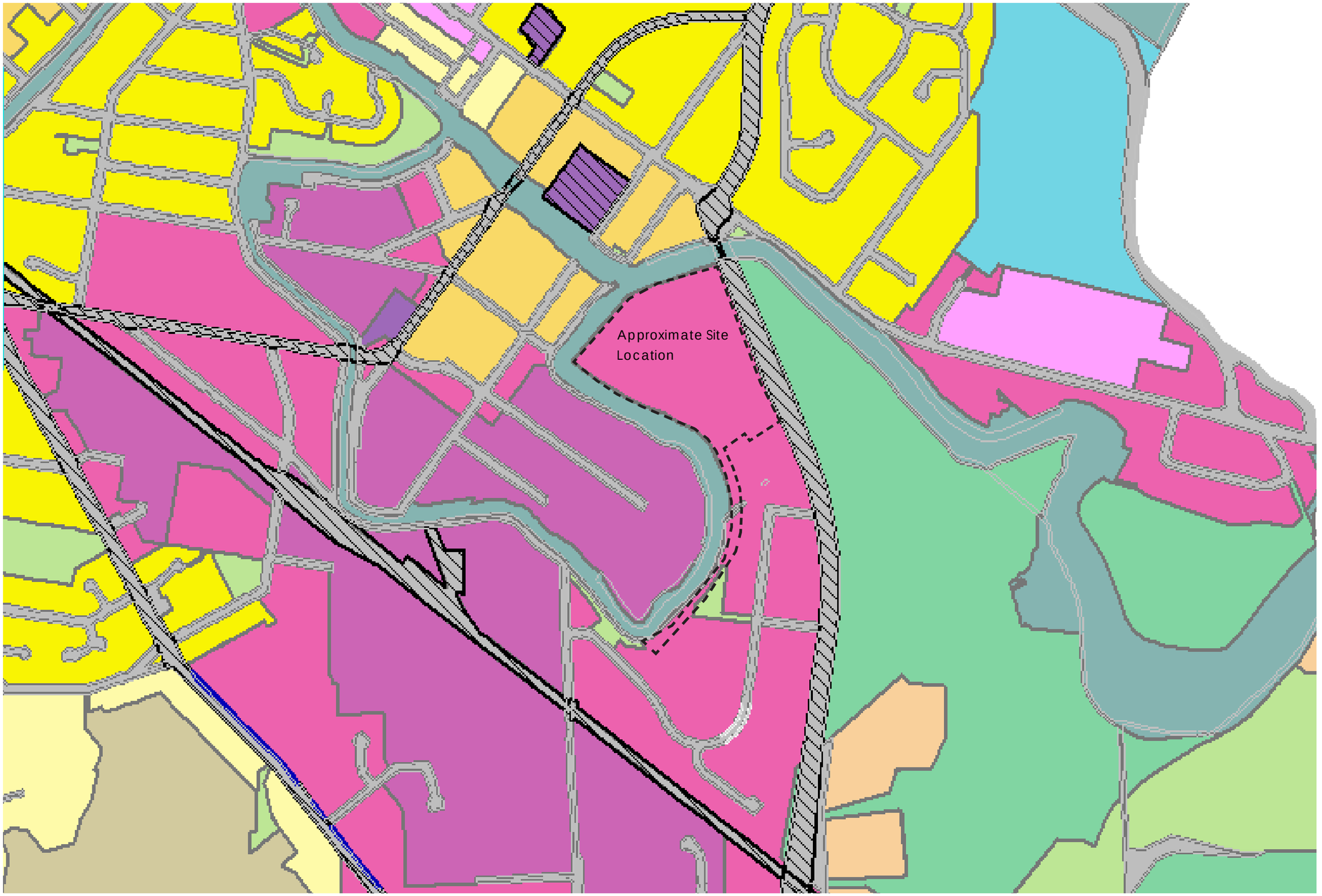
DOCUMENT HISTORY AND STATUS

REVISION	DATE	DESCRIPTION	BY	REVIEW	APPROVED
A	09/11/2022	VIA Draft Issue for comment	NK	CG	DCM
B	24/11/2022	Response to comments	NK	CG	DCM
C	06/12/2022	Response to comments	NK	CG	DCM

DCM URBAN DESIGN LIMITED

Unit 10, 245 St. Asaph Street
Christchurch 8011

CONTENTS



Map Legend

Land Use Zones

Labels

Zone Labels

Zone

- CC — Commercial Core Zone
- IG — Industrial General Zone
- IH — Industrial Heavy Zone
- OC — Open Space Coastal Zone
- OCP — Open Space Community Parks Zone
- ON — Open Space Natural Zone
- OWM — Open Space Water and Margins Zone
- RMD — Residential Medium Density Zone
- RS — Residential Suburban Zone
- RSDT — Residential Suburban Density Transition Zone
- SPC — Specific Purpose (Cemetery) Zone
- SPS — Specific Purpose (School) Zone
- Transport Zone

Designations and Heritage Orders

Designation

- Designation

Plan / image source: Christchurch District Council

Client / project name: BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name: CHRISTCHURCH DISTRICT PLAN
Designed by: TM
Drawn by: CG/ NK/ ZH
Original issue date: 09 NOVEMBER 2022
Scale: NTS

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

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UNIT 10 245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

Project no / drawing no: 2021_138/L103 Revision: C

Appendix 16.8.3i - Portlink Industrial Park Outline Development Plan

LEGEND

- Outline Development Plan Boundary
- Landscape & Stormwater Area (Green Space)
- Road Access
- Existing Vegetation to be Retained
- Pedestrian Access
- 11m Building Height Limit Area

Created by: Woods Engineers, Surveyors, Planners
File name: Outline Development Plan - Portlink Industrial Park
Date created: April 2016

Plan / image source: Woods Engineers, Surveyors, Planners

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	OUTLINE DEVELOPMENT PLAN
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	NTS

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

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Project no / drawing no: 2021_138/L104 Revision: C

WOODS
Est.1970

LEGEND

- LANDSCAPE & STORMWATER AREA AS DEFINED IN ODP
- PROPOSED CONTOURS MAJOR (1m INTERVAL) — 8.0
- PROPOSED CONTOURS MINOR (0.2m INTERVAL)
- MINOR EARTHWORKS
- 20m WATERWAY SETBACK (DEFINED BY LOWTIDE)
- 30m WATERWAY SETBACK (DEFINED BY LOWTIDE)
- SWALE/STORMWATER AREA
- ESPLANDE BOUNDARY

NOTES

1. ALL WORKS AND MATERIALS TO COMPLY WITH THE CCC ENGINEERING STANDARDS AND POLICIES. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.

DATUM

1. LEVELS ARE IN TERMS OF CHRISTCHURCH DRAINAGE DATUM.
2. COORDINATES ARE IN TERMS OF LOCAL CIRCUIT MOUNT PLEASANT 2000.

REVISION DETAILS		BY	DATE
	ISSUED FOR APPROVAL	RJH	21/11/22

SURVEYED	WOODS	KENNAWAY ROAD WOOLSTON CHRISTCHURCH 8023
DESIGNED	RH	
DRAWN	AJM	
CHECKED	MC	
APPROVED	MC	WOODS.CO.NZ

portlink INDUSTRIAL PARK

PORTLINK INDUSTRIAL PARK
STAGE 6-8

P-01\P19-321 - PORTLINK STAGE 6,7 & 8_542\CAD\ENG\P19-321-06-111-MSC_FINAL CONTOURS & BUNDS.DWG 21/11/2022 5:30 pm

Plan / image source: Woods Engineers, Surveyors, Planners

Client / project name: BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name: SURVEY PLAN
Designed by: TM
Drawn by: CG/ NK/ ZH
Original issue date: 09 NOVEMBER 2022
Scale: NTS

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
UNIT 10 245 ST ASAPH STREET
CHRISTCHURCH 8011
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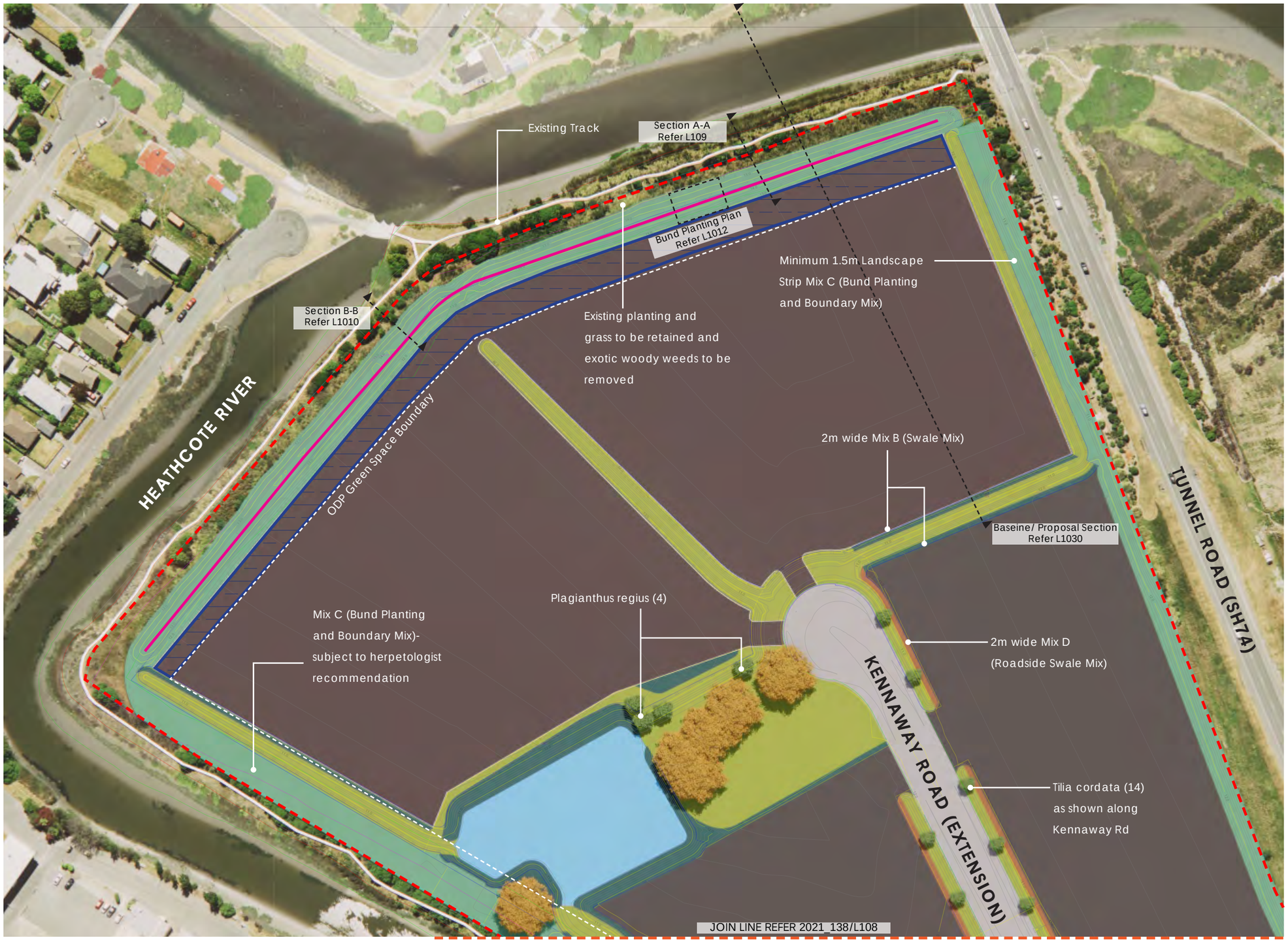
Project no / drawing no: 2021_138/L105 Revision: C

LEGEND

PLANTING MIXES

- Site Boundary
- Mix A - Wetland Mix (3,204 m²)
- Mix B - Swale Mix (3,177 m²)
- Mix C - Bund Planting and Boundary Mix (12,727m²)
- Mix D - Roadside Swale Mix (744m²)
- Grass
- Proposed Tree
- Existing Tree to be Retained
- Existing Track to be Retained
- Extent of Proposed Encroachment on ODP Green Space
- 2.4M High Acoustic Fence

A. LOCATION PLAN



B. LANDSCAPE CONCEPT PLAN (1)

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	LANDSCAPE CONCEPT PLAN (1)
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:1500 @ A3

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

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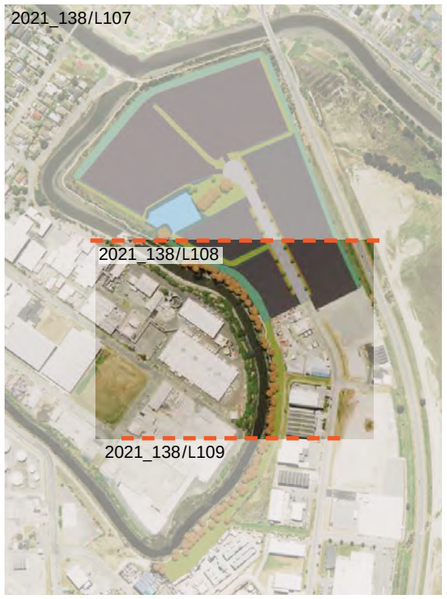
Project no / drawing no: 2021_138/L106 Revision: C

LEGEND

PLANTING MIXES

- Site Boundary
- Mix A - Wetland Mix (3,204 m²)
- Mix B - Swale Mix (3,177 m²)
- Mix C - Bund Planting and Boundary Mix (12,727m²)
- Mix D - Roadside Swale Mix (744m²)
- Grass
- Proposed Tree
- Existing Tree to be Retained
- Existing Track to be Retained
- Extent of Proposed Encroachment on ODP Green Space



A. LOCATION PLAN

B. LANDSCAPE CONCEPT PLAN (2)

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	LANDSCAPE CONCEPT PLAN (2)
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:1500 @ A3

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

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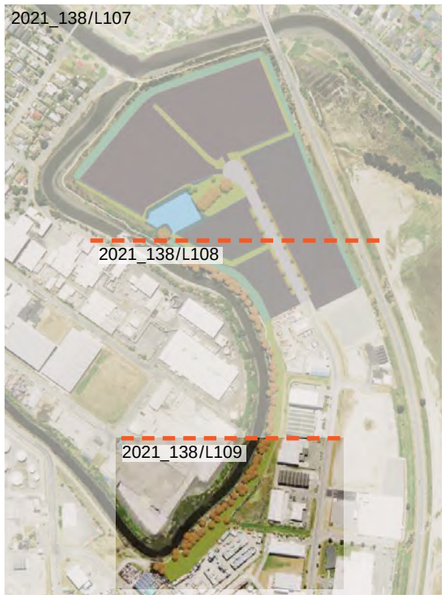
Project no / drawing no: 2021_138/L107 Revision: C

LEGEND

PLANTING MIXES

- Site Boundary
- Mix A - Wetland Mix (3,204 m²)
- Mix B - Swale Mix (3,177 m²)
- Mix C - Bund Planting and Boundary Mix (12,727 m²)
- Mix D - Roadside Swale Mix (744m²)
- Grass
- Proposed Tree
- Existing Tree to be Retained
- Existing Track to be Retained
- Extent of Proposed Encroachment on ODP Green Space



A. LOCATION PLAN

B. LANDSCAPE CONCEPT PLAN (3)

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	LANDSCAPE CONCEPT PLAN (3)
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:1500 @ A3

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

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CHRISTCHURCH 8011
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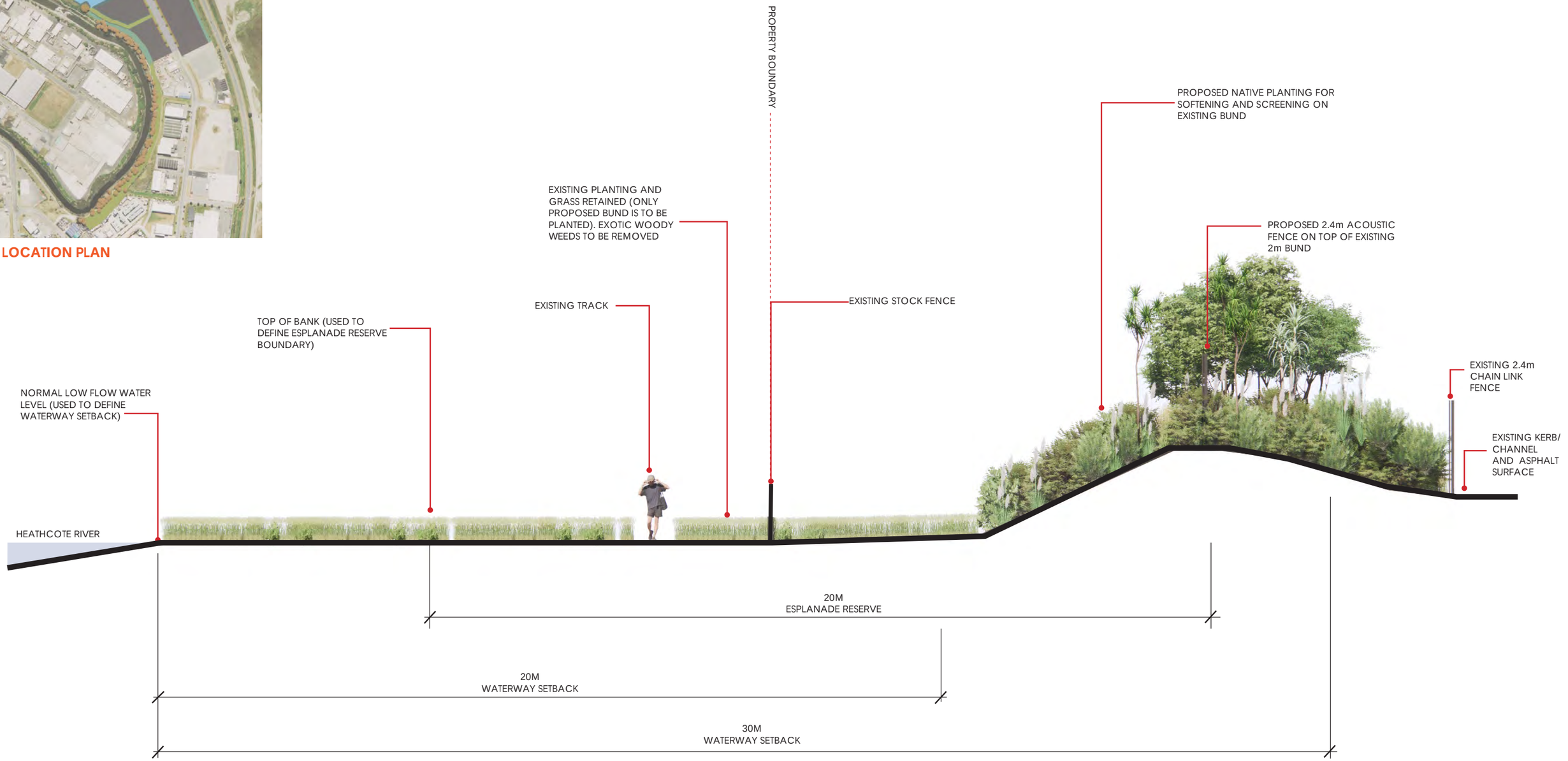
Project no / drawing no: 2021_138/L108 Revision: C

A. LOCATION PLAN



B. BUND CROSS SECTION A-A (SCALE 1:100)

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	BUND CROSS SECTION A-A
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:100

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

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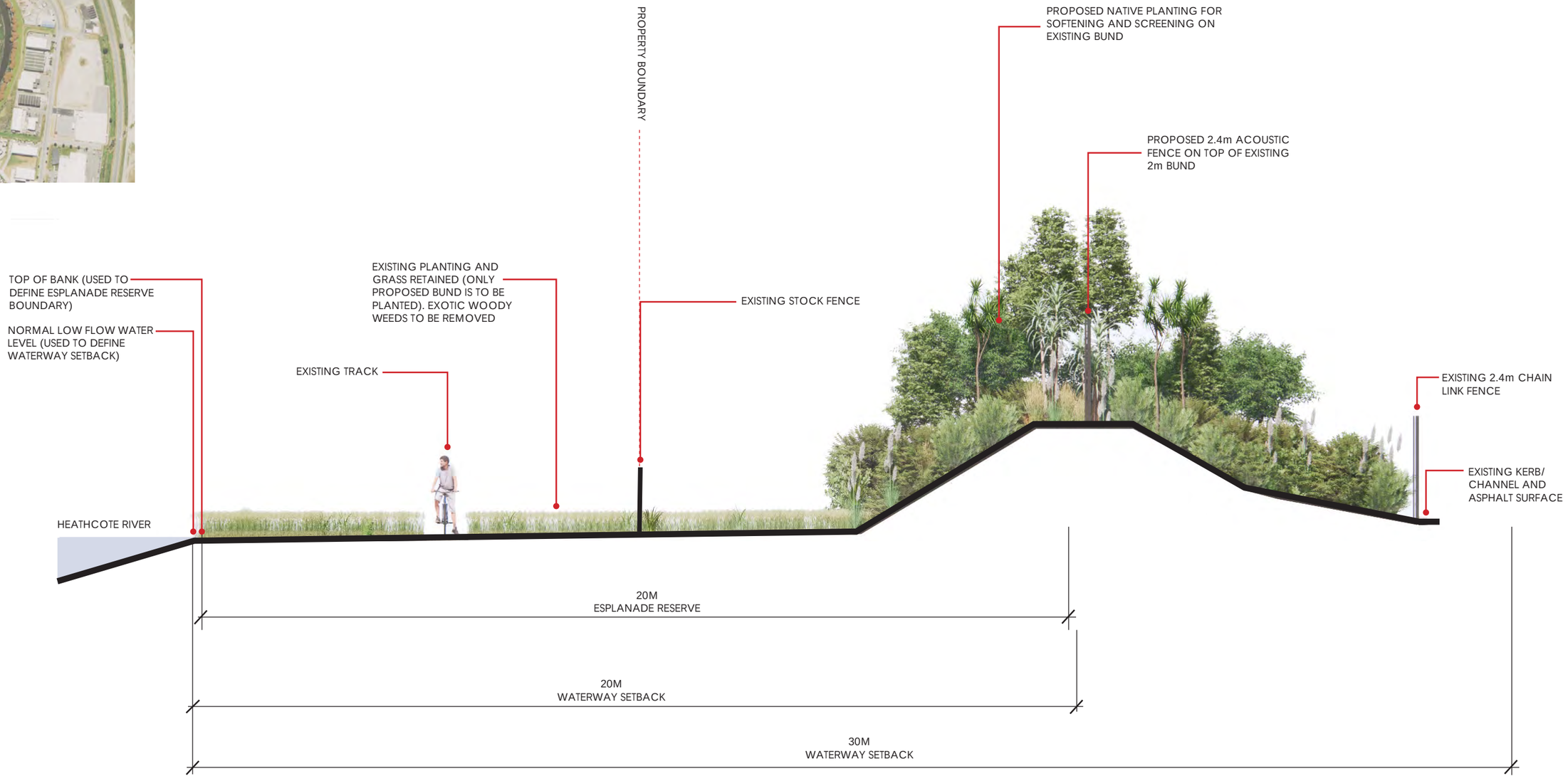
Project no / drawing no: 2021_138/L109 Revision: C

A. LOCATION PLAN



B. BUND CROSS SECTION B-B (SCALE 1:100)

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	BUND CROSS SECTION B-B
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:100

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

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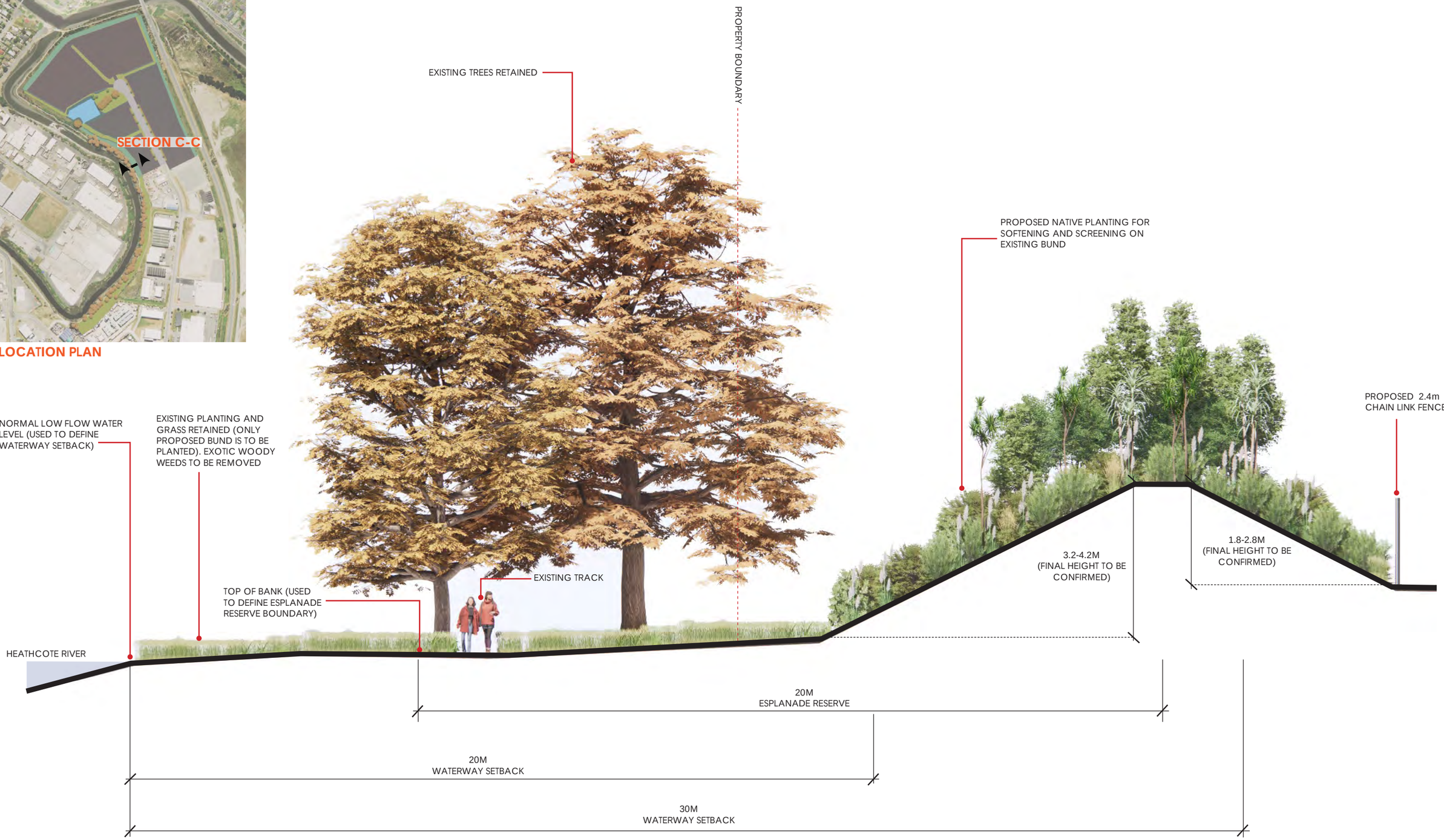
Project no / drawing no: 2021_138/L1010 Revision: C

A. LOCATION PLAN



B. BUND CROSS SECTION C-C (SCALE 1:100)

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	BUND CROSS SECTION C-C
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:100

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

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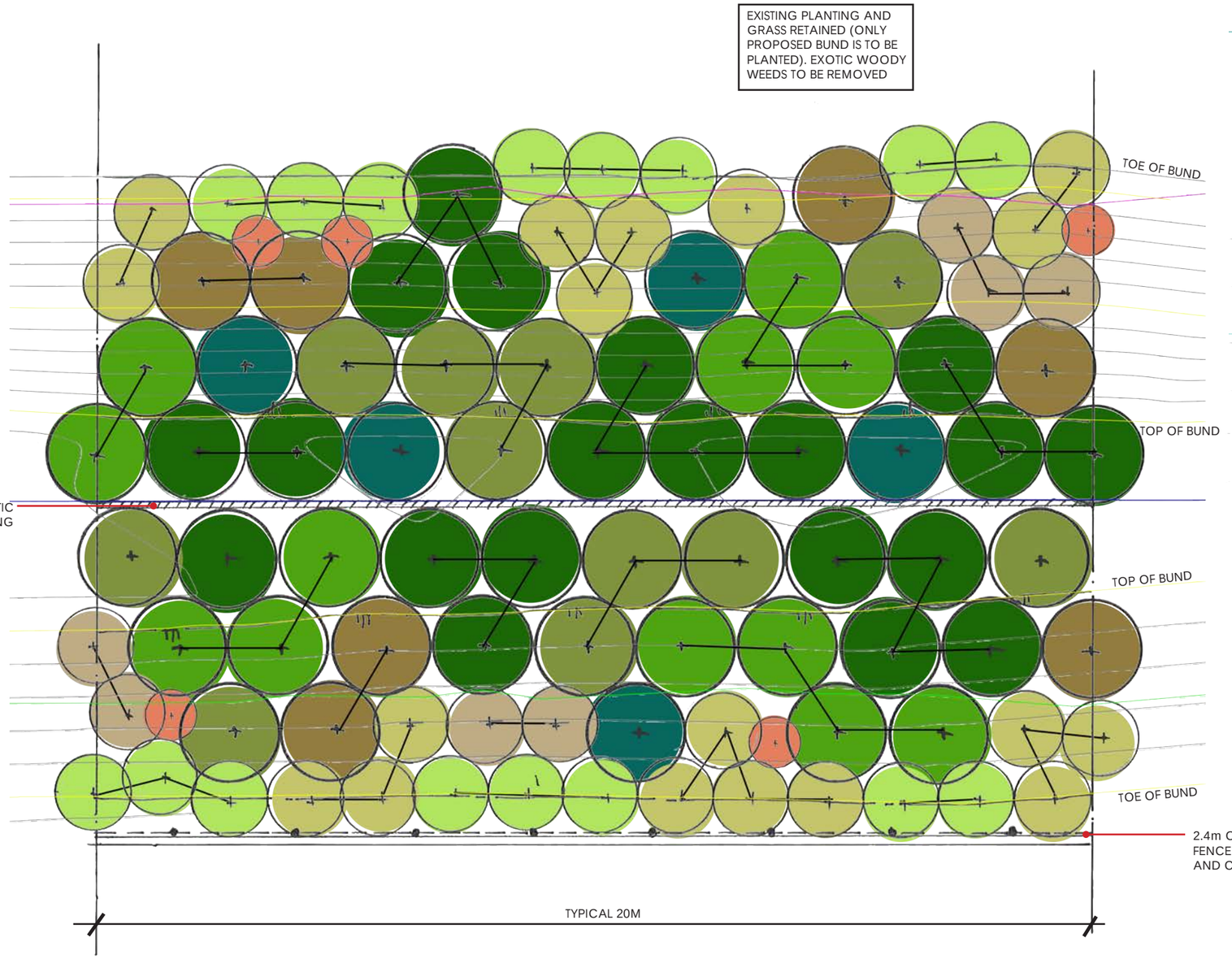
Project no / drawing no: 2021_138/L1011 Revision: C

A. LOCATION PLAN



LEGEND

Ngaio *(Myoporum laetum)* – QTY 20
Planted grade/ height: 2.5L/ 60cm
Height @10yrs: 6m
Spacing: 2m ctrs

Broadleaf *(Grisilinia littoralis)* – QTY 12.
Planted grade/ height: 1L/ 30cm
Height @10yrs: 5m
Spacing: 2m ctrs

Kohuhu *(Pittosporum tenuifolium)* – QTY 11
Planted grade/ height: 2.5L/ 50cm
Height @10yrs: 5m
Spacing: 2m ctrs

Ribbonwood *(Plagianthus regius)* – QTY 5.
Planted grade/ height: 2.5L/ 90cm
Height @10yrs: 7m
Spacing: As Shown

Akeake *(Dodonea viscosa)* – QTY 7.
Planted grade/ height: 1L/ 30cm
Height @10yrs: 4m
Spacing: 2m ctrs

Koromiko *(Veronica salicifolia)* – QTY 18.
Planted grade/ height: 2.5L/ 20cm
Height @10yrs: 3m
Spacing: 1.5m ctrs

Mingimingi *(Coprosma propinqua)* – QTY 7.
Planted grade/ height: 2.5L/ 20cm
Height @10yrs: 3m
Spacing: 1.5m ctrs

NZ Flax *(Phormium cookianum)* – QTY 16.
Planted grade/ height: 1L/ 20cm
Height @10yrs: 3m
Spacing: 1.5m ctrs

Ti Kouka *(Cordyline australis)* – QTY 5.
Planted grade/ height: 2.5L/ 40cm
Height @10yrs: 5m
Spacing: As Shown

NOTES:
PROPOSED SPECIES GRADE SUBJECT TO AVAILABILITY,

FINAL PLANT NUMBERS SUBJECT TO DETAILED DESIGN,

GRASS COVER TO BE RETAINED, SPOT SPRAY FOR PLANTING POSITIONS,

BARK MULCH OR 400X 400MM WOOL MULCH MAT FOR WEED SUPPRESSION,

PLANT PROTECTION SLEEVE REQUIREMENT TO BE DETERMINED,

IRRIGATION SYSTEM OR HAND WATERING TO BE DETERMINED.

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	BUND PLANTING PLAN
Designed by:	CG
Drawn by:	CG/ NK/ ZH
Original issue date:	6 DECEMBER 2022
Scale:	1:100

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

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UNIT 10 245 ST ASAPH STREET
CHRISTCHURCH 8011
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Project no / drawing no: 2021_138/L1012 Revision: C

Indicative Plant list

Botanical Name	Common Name	Size (H, Bagsize)	Spacing (mm)	Unit	Quantity	Comments
Native Speicium Trees						
Plagianthus regius	Ribbonwood	2.5m, 25L	As shown	No	4	
Exotic Trees (Street Trees)						
Tilia cordata	Small leaved line	2.5m, 45L	As shown	No	14	
Plant Mix A Wetland				Area (m^2) =	3204	
Apodasmia similis	oioi, jointed wire rush	rx90	700	40%	2616	Mass plant as directed
Carex secta	Pukio, sedge	rx90	1000	30%	961	Plant around the edges of wetland area
Juncus maritimus	wīwī, sea rush	rx90	1000	30%	961	Mass plant as directed
			Total	**100%**	**4538**	
Plant Mix B Swale Mix				Area (m^2) =	3177	
Anemanthele lessionia	Wind grass	rx90	800	15%	745	Plant in groups of 20-30
Cordyline australis	Cabbage tree	2.5L	AS SHOWN	10%	40	Plant in groups of 3-5
Grisilinia littoralis	Broad leaf	1L pot	3000	10%	35	Plant in groups of 3-5
Veronica salicifolia	Koromiko	2.5L	1500	15%	212	Plant in groups of 5-7
Leptospermum scoparium	Manuka	2.5L	3000	10%	35	Plant in groups of 3-5
Phormium coockaium	mountian flax	1L pot	1500	20%	282	Plant in groups of 7-9
Pittosporum tenuifolium	Kohuhu	2.5L	3000	18%	64	Plant in groups of 5-7
Podocarpus totara	totara	25L	AS SHOWN	2%	25	Plant as directed
			Total	**100%**	**1438**	

Botanical Name	Common Name	Size	Spacing (mm)	Unit	Quantity	Comments
Plant Mix C Bund Planting and Boundary				Area (m^2	12727	
Coprosma propinqua	Mingimingi	2.5L	1500	7%	396	Plant in groups of 11-15
Cordyline australis	Cabbage tree	2.5L	AS SHOWN	6%	300	Plant in groups of 3-5
Dodonea viscosa	Ake ake	1L pot	1500	7%	396	Plant in groups of 11-15
Grisilinia littoralis	Broad leaf	1L pot	2000	12%	382	Plant in groups of 11-15
Myoporum laetum	ngaio	2.5L	2000	19%	605	Plant in groups of 3-5
Phormium cookianum	mountian flax	1L pot	1500	16%	905	Plant in groups of 11-15
Pittosporum tenuifolium	Kohuhu	2.5L	2000	11%	350	Plant in groups of 3-5
Plagianthus regius	Ribbonwood	2.5L	AS SHOWN	5%	300	Plant in groups of 3-5
Veronica salicifolia	Koromiko	2.5L	1500	17%	962	Plant in groups of 7-9
			Total	**100%**	**4595**	
Plant Mix D Roadside Swale				Area (m^2	744	
Anemanthele lessionia	Wind grass	rx90	800	25%	358	Plant in groups of 20-30
Chionochloa flavicans	miniature toetoe	rx1L	1000	30%	343	Plant in groups of 20-30
Cordyline australis	Cabbage tree	2.5L	AS SHOWN	5%	19	Plant in groups of 1-3
Hebe topiaria	hebe	2.5L	700	30%	491	Plant in groups of 20-30
Phormium 'Black rage'	flax cv	2.5L	1200	10%	95	Plant in groups of 5-7
			Total	**100%**	**1306**	

NOTES:
PROPOSED SPECIES GRADE SUBJECT TO AVAILABILITY,

FINAL PLANT NUMBERS SUBJECT TO DETAILED DESIGN.

Client / project name: BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name: PLANT SCHEDULE
Designed by: TM
Drawn by: CG/ NK/ ZH
Original issue date: 09 NOVEMBER 2022
Scale: NTS

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

DCM URBAN DESIGN LIMITED
UNIT 10 245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

Project no / drawing no: 2021_138/L1013 Revision: C

Viewpoint location

Visualisation location

Map / image source: Canterbury Maps

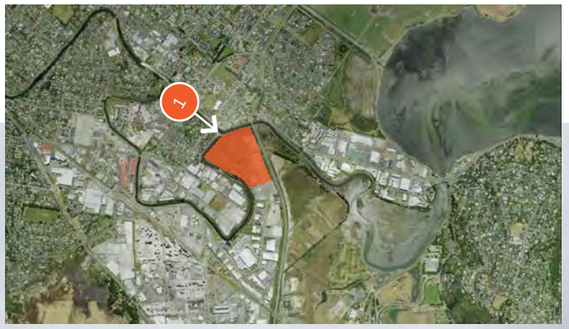
Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	VIEWPOINT AND VISUALISATION LOCATIONS
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:10,000

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
UNIT 10 245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

Project no / drawing no: 2021_138/L1014 Revision: C



Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

1 VIEWPOINT 1 - VIEW SE FROM RUTHERFORD ST

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 1:30pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama

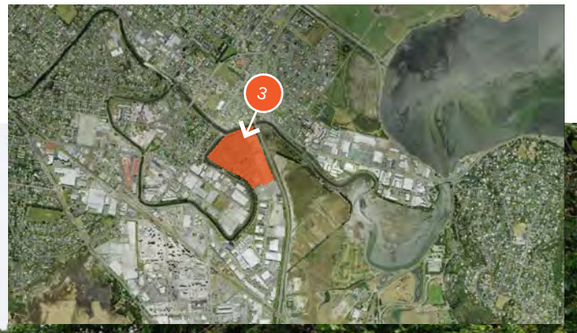
Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

2 VIEWPOINT 2 - VIEW S FROM 9 PALINURUS RD

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 1:37pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama

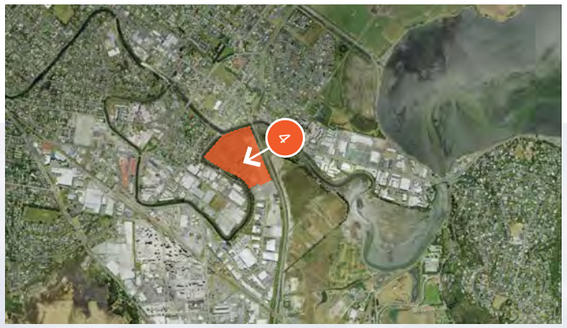


LANDSCAPE PLAN AND VISULISATIONS

3 VIEWPOINT 3 - VIEW SW FROM FERRY RD SH74 ROUNDABOUT

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 1:48pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama



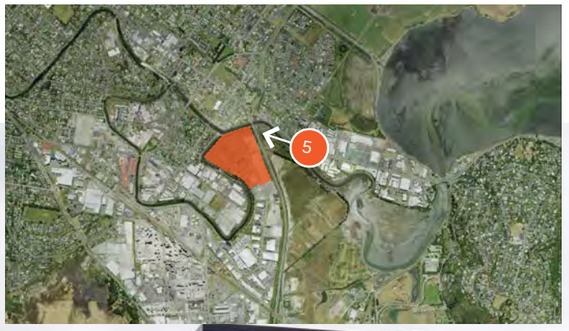
Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

4 VIEWPOINT 4 - VIEW SW FROM FERRY RD/ HEATHCOTE RIVER WALKWAY

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 2:00pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama



Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

5 VIEWPOINT 5 - VIEW NW FROM 975 FERRY RD

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 2:04pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama

Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

6 VIEWPOINT 6 - VIEW W FROM 2/29 CANNON HILL CRES

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 2:15pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama

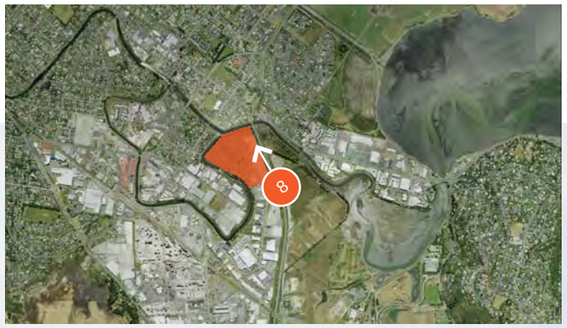
Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

7 VIEWPOINT 7 - VIEW N FROM 74 KENNAWAY RD

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 2:25pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama



Approximate Site Location

LANDSCAPE PLAN AND VISULISATIONS

8 VIEWPOINT 8 - VIEW N FROM TUNNEL RD (SH 74)

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 2:36pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama

LANDSCAPE PLAN AND VISULISATIONS

9 VIEWPOINT 9 - VIEW S FROM HEATHCOTE RIVER WALKWAY/GOULD CRES

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 08 November 2022 at 2:44pm
Height of 1.7 metres
Photos merged in Photoshop CS to create panorama

A. EXISTING VIEW

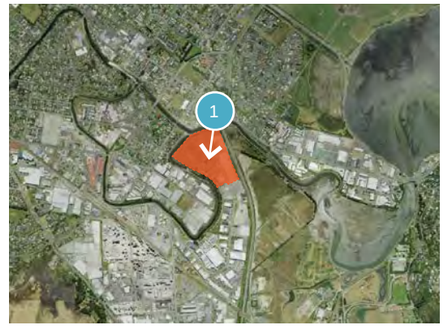
B. VIEW WITH 2.4m HIGH ACOUSTIC FENCE

LANDSCAPE PLAN AND VISULISATIONS

1 VISUALISATION 1 - VIEW S FROM TUNNEL ROAD/ HEATHCOTE RIVER

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 23 August 2022
Height of 1.6 metres
Photos merged in Photoshop CS to create panorama



C. VIEW AFTER 5 YEARS - VEGETATION HEIGHT 4-5M

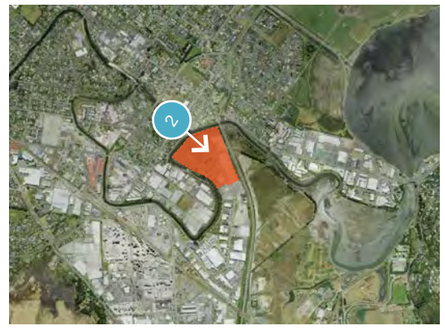
D. VIEW AT MATURITY - VEGETATION HEIGHT 8M

LANDSCAPE PLAN AND VISULISATIONS

1 VISUALISATION 1 - VIEW S FROM TUNNEL ROAD/ HEATHCOTE RIVER

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 23 August 2022
Height of 1.6 metres
Photos merged in Photoshop CS to create panorama



A. EXISTING VIEW

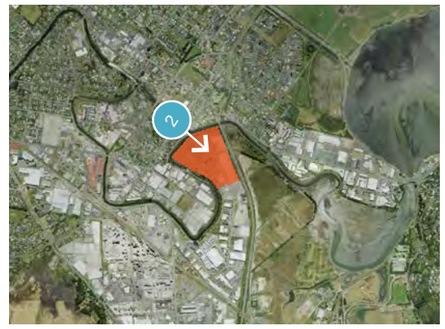
B. VIEW WITH 2.4m HIGH ACOUSTIC FENCE

LANDSCAPE PLAN AND VISULISATIONS

2 VISUALISATION 2 - VIEW S FROM HEATHCOTE RIVER FOOTBRIDGE

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 23 August 2022
Height of 1.6 metres
Photos merged in Photoshop CS to create panorama



C. VIEW AFTER 5 YEARS - VEGETATION HEIGHT 4-5M

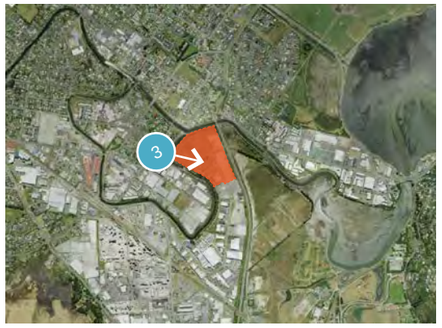
D. VIEW AT MATURITY - VEGETATION HEIGHT 8M

LANDSCAPE PLAN AND VISULISATIONS

2 VISUALISATION 2 - VIEW S FROM HEATHCOTE RIVER FOOTBRIDGE

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 23 August 2022
Height of 1.6 metres
Photos merged in Photoshop CS to create panorama



A. EXISTING VIEW

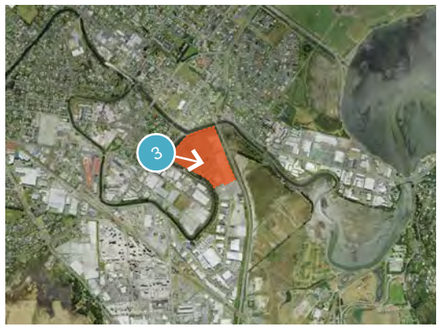
B. VIEW WITH 2.4m HIGH ACOUSTIC FENCE

LANDSCAPE PLAN AND VISULISATIONS

3 VISUALISATION 3 - VIEW E FROM 16 LONG STREET

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 23 August 2022
Height of 1.6 metres
Photos merged in Photoshop CS to create panorama



C. VIEW AFTER 5 YEARS - VEGETATION HEIGHT 4-5M

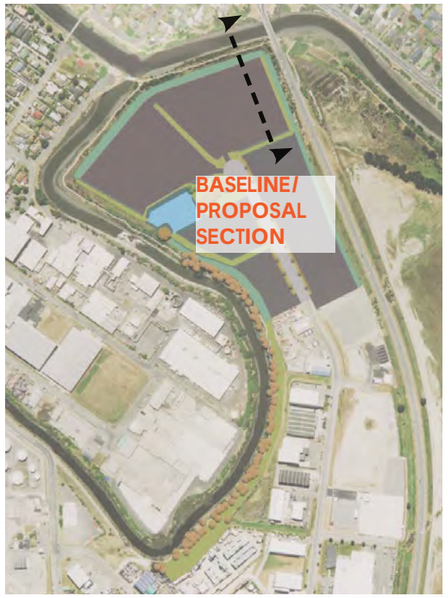
D. VIEW AT MATURITY - VEGETATION HEIGHT 8M

LANDSCAPE PLAN AND VISULISATIONS

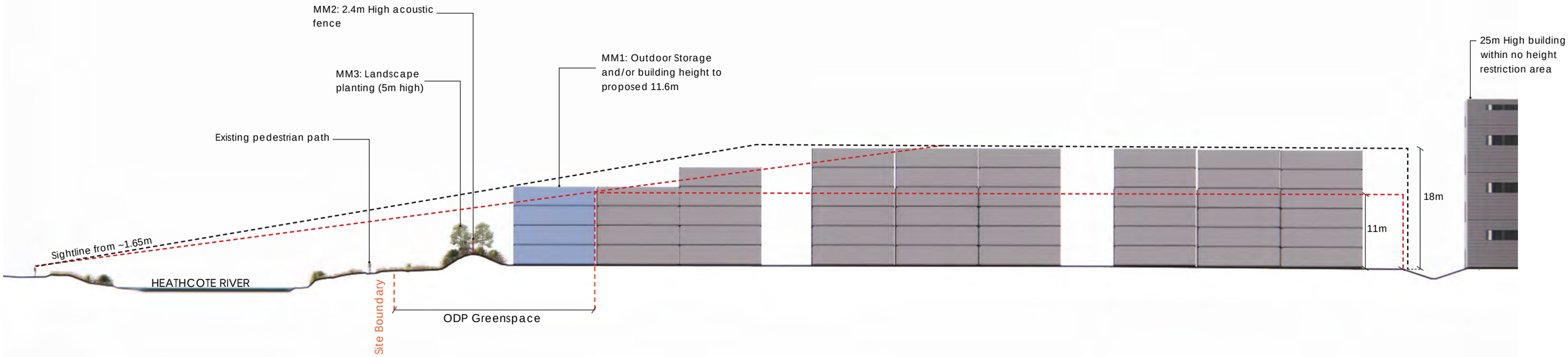
3 VISUALISATION 3 - VIEW E FROM 16 LONG STREET

PORTLINK INDUSTRIAL SUBDIVISION

Image captured on Sony A6000
Focal length of 50mm
Date: 23 August 2022
Height of 1.6 metres
Photos merged in Photoshop CS to create panorama



A. LOCATION PLAN



LEGEND

- Permitted baseline
- Proposal

SCALE: 1:600

NOTE: Survey levels provided by Woods

B. BASELINE/ PROPOSAL SECTION

Client / project name:	BRAEBURN PROPERTIES- PORTLINK SUBDIVISION
Drawing name:	BASELINE/ PROPOSAL SECTION
Designed by:	TM
Drawn by:	CG/ NK/ ZH
Original issue date:	09 NOVEMBER 2022
Scale:	1:600

Revision no:	Amendment:	Approved	Date
A	VIA Draft Issue for comment	DCM	09/11/2022
B	Response to comments	DCM	24/11/2022
C	Response to Comments	DCM	06/12/2022

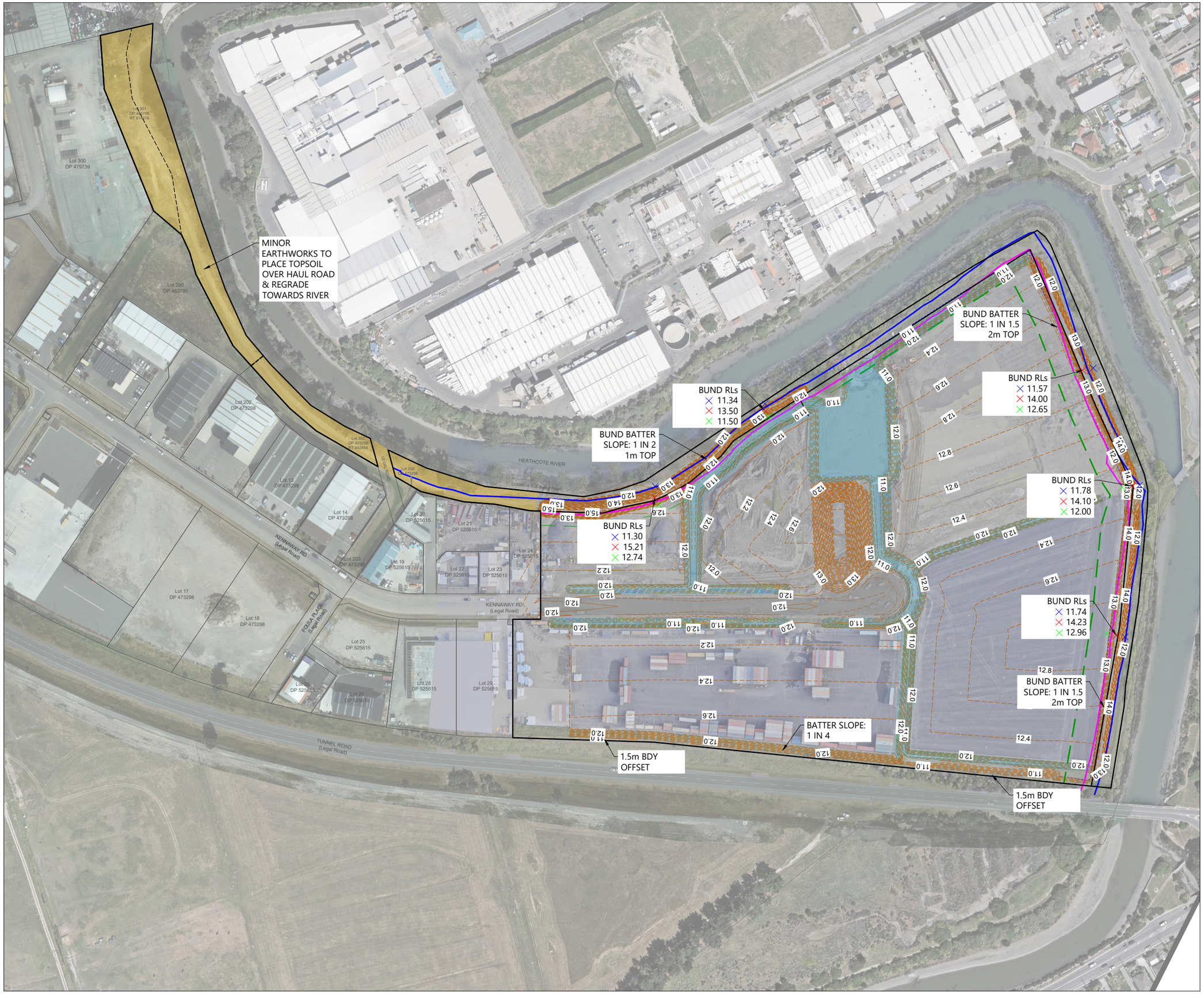
REGISTERED LANDSCAPE ARCHITECT

DCM URBAN DESIGN LIMITED
UNIT 10 245 ST ASAPH STREET
CHRISTCHURCH 8011
WWW.DCMURBAN.COM

Project no / drawing no: 2021_138/L1030 Revision: C

Appendix 4

Earthworks Plan



WOODS
Est.1970

LEGEND

- LANDSCAPE & STORMWATER AREA AS DEFINED IN ODP
- PROPOSED CONTOURS MAJOR (1m INTERVAL) — 8.0
- PROPOSED CONTOURS MINOR (0.2m INTERVAL)
- MINOR EARTHWORKS
- 20m WATERWAY SETBACK (DEFINED BY LOWTIDE)
- 30m WATERWAY SETBACK (DEFINED BY LOWTIDE)
- SWALE/STORMWATER AREA
- ESPLANDE BOUNDARY

NOTES

1. ALL WORKS AND MATERIALS TO COMPLY WITH THE CCC ENGINEERING STANDARDS AND POLICIES. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.

DATUM

1. LEVELS ARE IN TERMS OF CHRISTCHURCH DRAINAGE DATUM.
2. COORDINATES ARE IN TERMS OF LOCAL CIRCUIT MOUNT PLEASANT 2000.

REVISION DETAILS		BY	DATE
	ISSUED FOR APPROVAL	RJH	21/11/22

SURVEYED	WOODS	KENNAWAY ROAD WOOLSTON CHRISTCHURCH 8023
DESIGNED	RH	
DRAWN	AJM	
CHECKED	MC	
APPROVED	MC	WOODS.CO.NZ

portlink INDUSTRIAL PARK

PORTLINK INDUSTRIAL PARK
STAGE 6-8

DESIGN FINAL CONTOURS & BUND PLAN

STATUS	ISSUED FOR APPROVAL	REV
SCALE	1:2500 @ A3	1
COUNCIL	CHRISTCHURCH CITY	
DWG NO	P19-321-06-111-MSC	

Document No. C:\12DSYNERGY\DATA\WP-PEN-APP-01\P19-321 - PORTLINK STAGE 6,7 & 8_542\CAD\ENG\P19-321-06-111-MSC_FINAL CONTOURS & BUNDS.DWG 21/11/2022 5:30 pm

Appendix 5

Listed Land Use Register Report

Environment Canterbury
Regional Council
Kaunihera Taiao ki Waitaha

Customer Services
P. 03 353 9007 or 0800 324 636

PO Box 345
Christchurch 8140

P. 03 365 3828
F. 03 365 3194
E. ecinfo@ecan.govt.nz

www.ecan.govt.nz

Dear Sir/Madam

Thank you for submitting your property enquiry from our Listed Land Use Register (LLUR). The LLUR holds information about sites that have been used or are currently used for activities which have the potential to cause contamination.

The LLUR statement shows the land parcel(s) you enquired about and provides information regarding any potential LLUR sites within a specified radius.

Please note that if a property is not currently registered on the LLUR, it does not mean that an activity with the potential to cause contamination has never occurred, or is not currently occurring there. The LLUR database is not complete, and new sites are regularly being added as we receive information and conduct our own investigations into current and historic land uses.

The LLUR only contains information held by Environment Canterbury in relation to contaminated or potentially contaminated land; additional relevant information may be held in other files (for example consent and enforcement files).

Please contact Environment Canterbury if you wish to discuss the contents of this property statement.

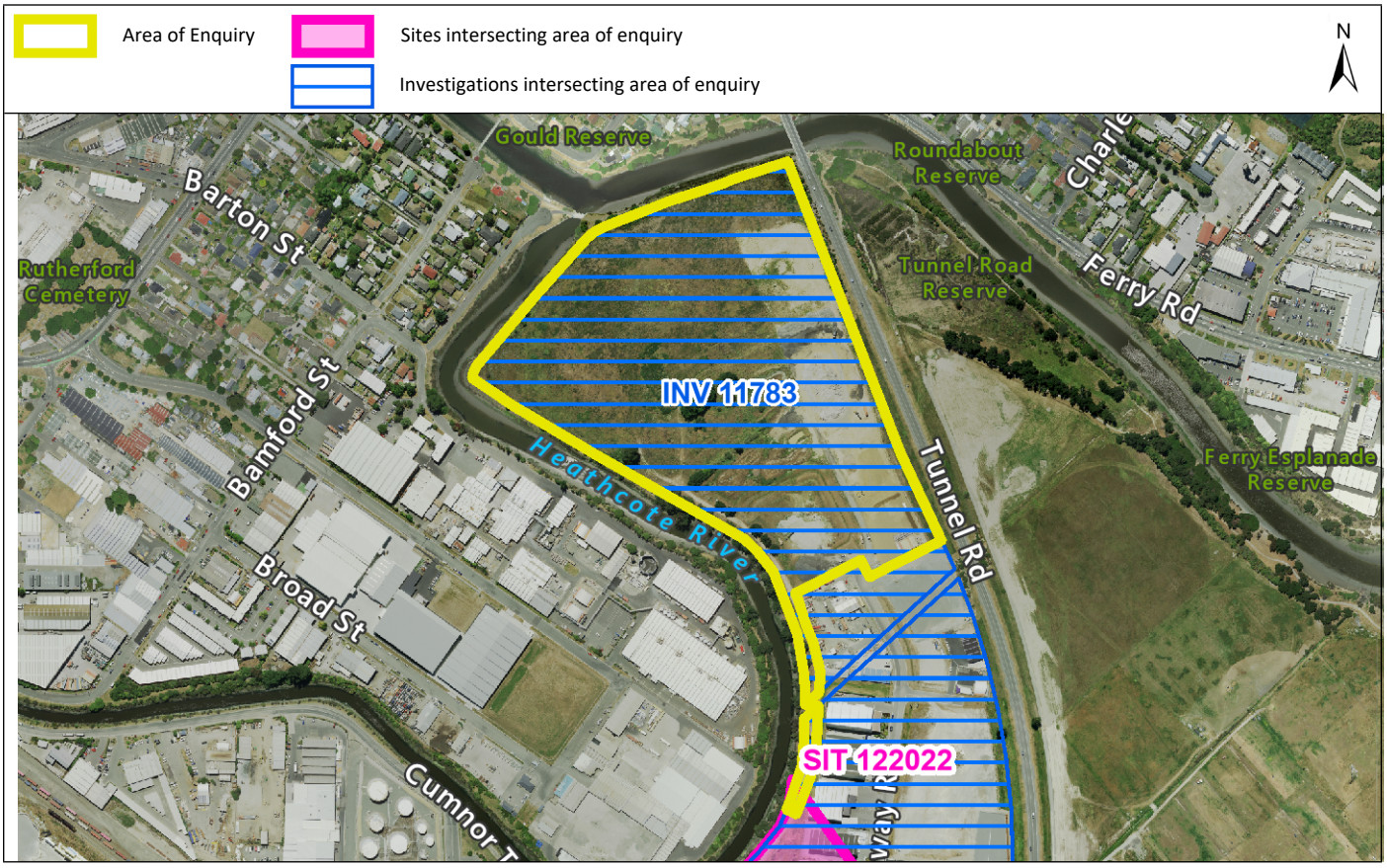
Yours sincerely

Contaminated Sites Team

Property Statement
from the Listed Land Use Register

Visit ecan.govt.nz/HAIL for more information or
contact Customer Services at ecan.govt.nz/contact/ and quote ENQ329368

Date generated: 12 October 2022
Land parcels: Lot 302 DP 473298
Lot 305 DP 525615



The information presented in this map is specific to the property you have selected. Information on nearby properties may not be shown on this map, even if the property is visible.

Sites at a glance

Sites within enquiry area

Site number	Name	Location	HAIL activity(s)	Category
122022	Kennaway Farm	Tunnel Road, Christchurch	A10 - Persistent pesticide bulk storage or use;	Partially Investigated

More detail about the sites

Site 122022: Kennaway Farm (Intersects enquiry area.)

Category: Partially Investigated
Definition: Verified HAIL has been partially investigated.

Location: Tunnel Road, Christchurch
Legal description(s): Lot 10 DP 473298,Lot 102 DP 473298,Lot 11 DP 473298,Lot 12 DP 473298,Lot 200 DP 463785,Lot 202

DP 473298,Lot 3 DP 463785,Lot 300 DP 479739,Lot 301 DP 463785,Lot 302 DP 473298,Lot 4 DP 463785,Lot 9 DP 473298,SO 20145

HAIL activity(s):

Period from	Period to	HAIL activity
Before 1946	After 2004	Persistent pesticide bulk storage or use including sports turfs, market gardens, orchards, glass houses or spray sheds

Notes:

Investigations:

INV 11783 **Kennaway Farm, Tunnel Road, Ferrymead, Christchurch - Preliminary Environmental Site Investigation - INV11783**
Pattle Delamore Partners Ltd - Detailed Site Investigation
6 Jul 2005

Summary of investigation(s):

Site history: Review of aerial photographs from 1941, 1946, 1955, 1965, 1973, 1984, 1994, 2004 and 2011 (by Sephira Environmental) shows an area in the southwestern portion of the site apparently subject to filling at the time of the 1941 photo, but fully covered and grassed by the 1946 photo. Otherwise the property used for paddocks and market gardening following 1946. Between 2004 and 2015, Google Earth images show surface filling prior to construction of commercial/industrial buildings. It is assumed that the filling would have been completed under a building consent from the Christchurch City Council, with appropriate controls for imported fill. The Environment Canterbury GIS database, which includes Christchurch City Council storage tank records, shows no indication of former above ground or underground storage tanks on the property.

Title of report: Kennaway Farm, Tunnel Road, Ferrymead, Christchurch - Preliminary Environmental Site Investigation - INV11783, July 2012
Investigation objective: To provide preliminary information on the surface soils over the site and to provide an assessment as to the potential environmental and human health risks that the soils may pose under a commercial/industrial land use setting.
Results: Elevated lead, arsenic, copper and zinc were detected in surface soil above typical background conditions. Dieldrin and polyaromatic hydrocarbons were detected at trace levels. All metals, pesticides and polyaromatic hydrocarbons in surface soils were below the NES soil contaminant standards for commercial/industrial land use. No intrusive investigations were undertaken in the area thought to have former landfilling.

Conclusions: The proposed category is Partially Investigated.
Justification for proposed category: Since one of the HAIL activities, historic landfilling, was not investigated, the land is considered partially investigated. As the area has been sealed with commercial/industrial buildings and car parks, the risk is likely low for exposure to contaminant however an investigation for landfill gas and the development of a site management plan would be necessary to change the category to Below Environmental Guideline Values – Commercial/Industrial or to Managed – Commercial/Industrial.

Disclaimer

The enclosed information is derived from Environment Canterbury's Listed Land Use Register and is made available to you under the Local Government Official Information and Meetings Act 1987.

The information contained in this report reflects the current records held by Environment Canterbury regarding the activities undertaken on the site, its possible contamination and based on that information, the categorisation of the site. Environment Canterbury has not verified the accuracy or completeness of this information. It is released only as a copy of Environment Canterbury's records and is not intended to provide a full, complete or totally accurate assessment of the site. It is provided on the basis that Environment Canterbury makes no warranty or representation regarding the reliability, accuracy or completeness of the information provided or the level of contamination (if any) at the relevant site or that the site is suitable or otherwise for any particular purpose. Environment Canterbury accepts no responsibility for any loss, cost, damage or expense any person may incur as a result of the use, reference to or reliance on the information contained in this report.

Any person receiving and using this information is bound by the provisions of the Privacy Act 1993.

Appendix 6

Compliance Assessment

DISTRICT PLAN

RULE	COMPLIANCE ASSESSMENT	STATUS
Chapter 5 Natural Hazards (Flood Hazards)		
5.4.1 Activities and earthworks in the Flood Management Area		
5.4.1.1 P14	Filling or excavation in commercial and industrial zones that is not provided for under Rule 5.4.1.1 P10-P12 or P17. a. A maximum height of 0.3m of filling above ground level and 0.6m depth of excavation below ground level; and b. A maximum volume of filling above ground level of $20m^3$ per site, and a maximum cumulative volume of filling and excavation of $50m^3$ per site, in each case within any continuous period of 10 years. Or c. The excavation and filling is associated with the maintenance and/or replacement of underground petroleum storage systems and where, following reinstatement of the underground petroleum storage systems, the site will have a finished contour that is equivalent to the ground level at the commencement of the works.	**Not permitted**
5.4.1.1 P16	Outdoor storage of transiting shipping containers in commercial and industrial zones.	Permitted
5.4.1.5 RD2	Filling or excavation which is not a permitted activity under P10, P11, P12, or P17 set out in Rule 5.4.1.1, or filling or excavation that exceeds the standards in P13 - P15 or P18 set out in Rule 5.4.1.1. **Comment:** *Earthworks undertaken to form a bund and bury the haul road exceeded the depth and volume specified at Rule 5.4.1.1 P14.*	**Restricted discretionary**
Chapter 6 General Rules and Procedures (Noise)		
6.1.5.1 Activity status tables		
6.1.5.1.1 P1	Outside the Central City, any activity that generates noise and which is not exempt by Rule 6.1.4.2 or specified in Rule 6.1.5.1.1 P2 below. Any activity that generates noise shall meet the Zone noise limits outside the Central City in Rule 6.1.5.2.1.	**Permitted**
6.1.5.2 Noise Standards		
6.1.5.2.1 Zone noise limits outside the Central City	Outside the Central City, any activity that generates noise shall meet the Zone noise limits in Table 1 below at any site receiving noise from that activity, as relevant to the zone of the site receiving the noise. **Comment:** *The applicant leases the site to several tenants. Those tenants are required by way of the lease agreements to "comply with the*	Complies

provisions of all statues, ordinances, regulations and by-laws". This includes the noise standard referenced above.

Chapter 6 General Rules and Procedures (Water Body Setbacks)		
6.6.4 Rules - Activity status tables - City and Settlement Water Body Setbacks		
6.6.4.1 P6	Fences a. Shall not be built over any part of a water body. b. Shall allow access to the water body for maintenance purposes. c. Shall not be located closer to the water body bank than 3 metres or 1/3 of the normal water body setback distance, whichever is the greater. d. Shall consist of no greater than 20% solid structure. Exceptions: 1. Temporary fencing or construction hoarding remaining on a site for less than three months are exempt from the activity specific standards. 2. Where a legal road, esplanade reserve or esplanade strip exists between the water body and the fence, the activity specific standards shall not apply. **Comment:** *The portion of the security fence located within the water body setback complies with the standards set out a-d above.* *A completely solid acoustic fence is proposed on top of the northern bund that has been formed within the water body setback. This fence does not comply with d. above.*	**Not permitted**
6.6.4.3 RD1	Earthworks: a. not exempt by Rule 6.6.3 h. and not provided for by Rule 6.6.4.1 P1; and/or b. listed in Rule 6.6.4.1 P1 that do not meet one or more of the activity specific standards; other than earthworks provided for by Rule 6.6.4.4 D1 or D2 **Comment:** *See Rule 6.6.4.4 D1*	Not applicable
6.6.4.3 RD2	a. New buildings, other structures or impervious surfaces not provided for by Rule 6.6.4.1 P2 - P7; and/or b. Buildings, other structures or impervious surfaces listed in Rule 6.6.4.1 P2 - P7 that do not meet one or more of the activity specific standards; c. Other than activities provided for by Rule 6.6.4.4 D1 or D2. d. Any application arising from RD2 b., for activities listed in Rule 6.6.4.1 P5 - P7 in the water body setback of a network waterway or hill waterway, shall not be limited or publicly notified. **Comment:** *See Rule 6.6.4.4 D1*	Not applicable
6.6.4.4 D1	Any activity listed in Rule 6.6.4.3, which is located adjacent to a water body identified as a Site of Ecological Significance listed in Schedule A of Appendix 9.1.6.1 (other than in the Central City).	**Discretionary**

	Comment: *Earthworks undertaken to form a bund within the water body setback, the proposed acoustic fence, and other activities within the water body setback are discretionary activities given the site is adjacent a Site of Ecological Significance (the Heathcote River and Tributaries, site number SES/LP/25)*	
Chapter 7 Transport		
7.4.3 Standards		
7.4.3.1 Minimum and maximum number and dimensions of car parking spaces required	i. Any car parking spaces available to the general public. Car parking spaces shall be provided with the minimum dimensions in Table 7.5.1.2 in Appendix 7.5.1. ii. Any activity: A. where standard car parking spaces are provided (except a. residential developments with less than 3 residential units); or b. visitor accommodation for up to ten guests); or B. containing buildings with a GFA of more than 2,500m². At least the minimum number of mobility parking spaces in accordance with Table 7.5.1.1 in Appendix 7.5.1 shall be provided on the same site as the activity. **Comment:** *Any car parking provided within the site will be provided to the required dimensions. Further, a compliant provision of mobility spaces will be provided where required by this rule.*	Complies
7.4.3.2 Minimum number of cycle parking facilities required	At least the minimum amount of cycle parking facilities in accordance with Appendix 7.5.2 shall be provided on the same site as the activity. **Comment:** *Staff and visitor cycle parking spaces are required at the rates set out at Table 7.5.2.1. Compliant cycle parking will be provided where required.*	Complies
7.4.3.3 Minimum number of loading spaces required	At least the minimum amount of loading spaces in accordance with Appendix 7.5.3 shall be provided on the same site as the activity. **Comment:** *Compliant loading will be provided where required.*	Complies
7.4.3.4 Manoeuvring for parking and loading areas	On-site manoeuvring area shall be provided in accordance with Appendix 7.5.6. **Comment:** *The proposed access complies with the applicable standards.*	Complies
7.4.3.5 Gradient of parking and loading areas	For all non-residential activities with vehicle access: - Gradient of surfaces at 90 degrees to the angle of parking (i.e. parking stall width) - Gradient shall be ≤ 1:16 (6.25%) - Gradient of surfaces parallel to the angle of parking (i.e. parking stall length) - Gradient shall be ≤ 1:20 (5%) - Gradient of mobility car park spaces. - Gradient shall be ≤ 1:50 (2%)	Complies

	Comment: *The gradient of car parking complies with the applicable standards.*	
7.4.3.6 Design of parking and loading areas	All non-residential activities with parking and/or loading areas used during hours of darkness: the lighting of parking and loading areas shall be maintained at a minimum level of two lux, with high uniformity, during the hours of operation. Any urban activity: the surface of all car parking, loading, and associated access areas shall be formed, sealed and drained and car parking spaces permanently marked. **Comment:** *These standards will be complied with where required.*	Complies
7.4.3.7 Access design	Any activity with vehicle access: the access shall be provided in accordance with Appendix 7.5.7. **Comment:** *The existing access complies with the applicable standards.*	Complies
7.4.3.8 Vehicle crossings	Any activity with a vehicle access to any road or service lane: a vehicle crossing shall be provided constructed from the property boundary to the edge of the carriageway / service lane. Any activity with a vehicle crossing: - the maximum number of vehicle crossings shall be in accordance with Table 7.5.11.3 in Appendix 7.5.11; and - the minimum distance between a vehicle crossing and an intersection shall be in accordance with the Table 7.5.11.5 in Appendix 7.5.11. **Comment:** *Complies in respect of both the number of crossings and the intersection setback requirement.*	Complies
7.4.3.9 Location of buildings and access in relation to road/rail level crossings	Any new road or access that crosses a railway line: no new road or access shall cross a railway line. All new road intersections located less than 30 metres from a rail level crossing limit line: the road intersection shall be designed to give priority to rail movements at the level crossing through road traffic signals. All new vehicle crossings located less than 30 metres from a rail level crossing limit line: no new vehicle crossing shall be located less than 30 metres from a rail level crossing limit line unless the boundaries of a site do not enable the vehicle crossing to be more than 30 metres from a rail level crossing limit line. Any building located close to a level crossing not controlled by automated warning devices (such as alarms and/or barrier arms): buildings shall be located outside of the sight triangles in Appendix 7.5.13. **Comment:** *No rail level crossings are located near the site.*	N/A
7.4.3.10 High trip generators	This rule applies to activities located outside the Central City, and activities within the Central City that are not exempt from this rule under b. below, that exceed the following thresholds. **Comment:** *N/A*	N/A

Chapter 8 Subdivision		
8.5.1 Activity status tables		
8.5.1.3 RD4	Subdivision in a Flood Management Area except as otherwise specified in: Rule 8.5.1.4 D1 to D5; and Rule 8.5.1.5 NC1 to NC6 and NC8. **Comment:** *The site is within a Flood Management Area.*	**Restricted discretionary**
Note: But for the fact that the site is within a FMA, we understand the proposed subdivision would be a controlled activity pursuant to Rule 8.5.1.2 C1 and C4.		
8.6 Activity standards		
Note: The following standards are considered applicable to proposed Lot 1 only given proposed Lots 2 and 3 are being created to vest as esplanade reserve.		
8.6.1 Minimum net site area and dimension	d. Allotments in any zone except the Residential New Neighbourhood Zone shall meet the minimum net site area and other requirements specified at Tables 1 - 5 to this rule **Comment:** *The proposed allotments are greater than the minimum net site area specified in Table 2 for the Industrial General Zone (500m^2).*	Complies
8.6.2 Allotments with existing or proposed buildings	a. Where an allotment is to be created around an existing building (that has been constructed to the extent that its exterior is fully closed in), or a proposed building (where the subdivision consent is to be issued at the same time as, or after, the building consent for that building is issued): i. the provisions of Rule 8.6.1 do not apply to that allotment; and ii. the existing or proposed building(s) shall either meet all relevant standards for a permitted activity in relation to the proposed allotment boundaries, or have been approved through a resource consent in relation to any standards that are not met, to the extent provided for in that resource consent, including any non-compliance with site coverage standards; and iii. no allotment shall be less than the minimum net site area specified in Table 6 to this rule. b. Where a. above applies and a building is not yet constructed, the subdivision consent holder shall be required to erect the building before obtaining a certificate under section 224 of the Resource Management Act 1991, and the subdivision consent shall have attached to it a condition to that effect. **Comment:** *N/A*	N/A
8.6.3 Access	All sites shall have access which is able to allow vehicles to pass to and from a formed road, and such access shall be in accordance with Appendix 8.10.2 to this chapter and the standards set out in Chapter 7. **Comment:** *Proposed Lot 1 has access to a formed road.*	Complies

8.6.6 Esplanade reserve, strip or additional land	a. Esplanade reserves and strips shall be provided in accordance with Appendix 8.10.1. **Comment:** *The proposed esplanade reserve is in accordance with Appendix 8.10.1.*	Complies
8.6.7 Water supply	b. All allotments shall be provided with the ability to connect to a safe potable water supply. c. Provision shall be made for sufficient water supply and access to water supplies for firefighting consistent with the New Zealand Fire Service Firefighting Water Supplies Code of Practice (SNZ PAS:4509:2008), except where the allotment is for a utility, road, reserve or access purposes. **Comment:** *Proposed Lot 1 has an existing connection.*	Complies
8.6.8 Wastewater disposal	a. All allotments shall be provided with the ability to connect to a wastewater system. b. A valid certificate, issued in accordance with Rule 8.4.1.3, is held which certifies that the wastewater system has adequate capacity for the respective potential land uses on all proposed allotments, except where a relevant outline development plan shows that adequate wastewater capacity is available. c. Where a reticulated sewer is available, and discharge is accepted in the Council's network, each new allotment shall be provided with a piped outfall connection laid at least 600mm into the net site area of the allotment. **Comment:** *Proposed Lot 1 has an existing connection.*	Complies
8.6.9 Stormwater disposal	All allotments shall be provided with a means for the management of collected surface water from all impervious surfaces. Where discharge is accepted in the Council's network, each new allotment shall be provided with a piped outfall laid at least 600mm into the net site area of the allotment. **Comment:** *The proposal will comply with the above.*	Complies
Chapter 8 Earthworks		
8.9.2 Activity status tables		
8.9.2.1 P1	a. Earthworks shall not exceed the volumes in Table 9 over any 12 month time period. b. Earthworks in zones listed in Table 9 shall not exceed a maximum depth of 0.6m, other than in relation to farming activities, quarrying activities or permitted education activities. c. Earthworks shall not occur on land which has a gradient that is steeper than 1 in 6. d. Earthworks involving soil compaction methods which create vibration shall comply with DIN 4150 1999-02 and compliance shall be certified through a statement of professional opinion provided to the Council from a suitably qualified and experienced chartered or registered engineer. e. Earthworks involving mechanical or illuminating equipment shall not be undertaken outside the hours of 0700 – 1900 in a Residential Zone. Advice note 1. between 0700 and 1900 hours, the noise standards in Chapter 6 Rule 6.1.5.2 and the light spill standards at Chapter 6 Rule 6.3.6 both apply. f. Earthworks involving mechanical equipment, other than in residential zones, shall not occur outside the hours of 0700 and 2200 except where compliant with NZS6803:1999. Advice note	**Not permitted**

	1. between 0700 and 2200 hours, the noise standards in Chapter 6 Rule 6.1.5.2 apply except where NZS6803.1999 is complied with, and the light spill standards in Chapter 6 Rule 6.3.6 apply. g. Fill shall consist of clean fill. h. The activity standards listed in Rule 8.9.2.1 P3, P4 and P5. i. Earthworks shall not occur within 5 metres of a heritage item or within a heritage setting listed in Appendix 9.3.7.2. **Comment:** *Earthworks to form a bund and bury the haul road involve filling to a depth greater than 0.6 metres. Further, some of the proposed filling is within the Open Space Water and Margins Zone which has a volume limit of 50m^3/ha.*	
8.9.2.3 RD1	Any activity listed in Rule 8.9.2.1 P1 or Rule 8.9.2.2 C1 that does not meet any one or more of the activity standards. **Comment:** *The proposed earthworks do not comply with 8.9.2.1. given a depth of fill greater than 0.6 metres is proposed and volume limit of 50m^3/ha is exceeded.*	**Restricted discretionary**
Chapter 16 Industrial (Industrial General Zone)		
16.4.1 Activity status tables		
P2	Industrial activity **Comment:** *The activity is an industrial activity.*	Permitted
17.5.2 Built form standards		
16.4.2.1 Maximum height for buildings	The maximum height of any building within 20 metres of a residential zone shall be 15 metres **Comment:** *Any buildings will comply with the applicable height limit.*	Complies
16.4.2.2 Minimum building setback from road boundaries/ railway corridor	The minimum building setback from a road boundary and a rail corridor boundary shall be as follows: i. Any activity unless specified below: 1.5 metres ii. Any activity fronting on to an arterial road or opposite a residential zone unless specified in (iii): 3 metres iii. Buildings, balconies and decks on sites adjacent to or abutting railway lines: 4 metres from the rail corridor boundary **Comment:** *No buildings are located within the applicable setbacks.*	Complies
16.4.2.3 Minimum building setback from the boundary with a residential zone	The minimum building setback from the boundary with a residential zone shall be as follows: All buildings within sites which share a boundary with a residential zone: 3 metres **Comment:** *The site does not share a boundary with a residential zone.*	N/A
16.4.2.4 Sunlight and outlook at	Where an internal site boundary adjoins a residential zone, no part of any building shall project beyond a building envelope contained by a	N/A

boundary with a residential zone and road	recession plane measured at any point 2.3 metres above the internal boundary in accordance with the relevant diagram in Appendix 16.8.11. **Comment:** *The site adjoins an open space zone, not a residential zone.*	
16.4.2.5 Outdoor storage of materials	Any outdoor storage areas shall: i. not be located within the minimum setbacks specified in Rule 16.4.2.2. ii. be screened by landscaping, fencing or other screening to a minimum of 1.8 metres in height from any adjoining residential zone. **Comment:** *No outdoor storage areas are located with the setbacks specified in Rule 16.4.2.2. Otherwise, the site adjoins an open space zone, not a residential zone.*	Complies
16.4.2.6 Landscaped areas	Landscaping and trees shall be provided as follows: i. The road frontage of all sites opposite a residential zone or listed below shall have a landscaping strip with a minimum width of 1.5 metres, and minimum of 1 tree for every 10 metres of road frontage or part thereof. A. Sites adjoining Main North Road (SH1) between Dickeys Road and Factory Road; B. Sites adjoining Main South Road, between Barters Road and Halswell Junction Road; and C. Sites adjoining Tunnel Road. D. This standard shall not apply to an emergency service facility or vehicle access to any site. ii. On sites adjoining a residential zone, trees shall be planted adjacent to the shared boundary at a ratio of at least 1 tree for every 10 metres of the boundary or part thereof. iii. All landscaping / trees required by these rules shall be in accordance with the provisions in Appendix 6.11.6 of Chapter 6. **Comment:** *The site adjoins Tunnel Road and provides the required landscaping.*	Complies
16.4.2.7 Visual amenity and screening	Where a site adjoins an Open Space, Specific Purpose (School), Specific Purpose (Cemetery) or Specific Purpose (Tertiary Education) Zone, provision shall be made for landscaping, fence(s), wall(s) or a combination to at least 1.8 metres in height along the length of the zone boundary, excluding any road frontages. Where landscaping is provided, it shall be continuous and for a minimum depth of 1.5 metres along the zone boundary. **Comment:** *The site adjoins an Open Space Zone and provides the required landscaping.*	Complies
16.4.2.8 Access to Industrial General Zone (Deans Avenue)	Any activity in the Industrial General zone bound by Deans Avenue, Lester Lane and the railway line shall only have access from Lester Lane. In the event that Lester Lane is realigned, site access shall be solely from the realigned Lester Lane. **Comment:** *Not applicable.*	N/A

16.4.2.9 Water supply for fire fighting	Provision for sufficient water supply and access to water supplies for firefighting shall be made available to all buildings via Council's urban reticulated system (where available) in accordance with the New Zealand Fire Service Firefighting Water Supplies Code of Practice (SNZ PAS: 4509:2008). **Comment:** *Compliance assumed.*	Complies
16.4.4.1 Area-specific activities - Industrial General Zone (Portlink Industrial Park)		
16.4.4.1.3 RD1	Any activity listed in Rule 16.4.4.1.1 P1 that does not meet one or more of the built form standards in Rule 16.4.4.2. **Comment:** *The proposal does not comply with built form standards 16.4.4.2.1 in respect of building height and 16.4.4.2.3. in respect of landscaping adjacent the Heathcote River.*	**Restricted discretionary**
16.4.4.2 Area-specific built form standards - Industrial General Zone (Portlink Industrial Park)		
16.4.4.2.1 Maximum height of buildings	The maximum height of any building within the '11m Building Height Limit Area' defined on the development plan in Appendix 16.8.3 shall be 11 metres. **Comment:** *Consent is sought to allow buildings to exceed the 11-metre height restriction.*	**Does not comply**
16.4.4.2.2 Minimum building setback from road boundaries	The minimum building setback from the road boundary with Tunnel Road shall be 3 metres. **Comment:** *No buildings are proposed to be located within 3 metres of Tunnel Road.*	Complies
16.4.4.2.3 Landscaped areas	Landscaping and trees shall be provided as follows: i. Tunnel Road frontage only A. Any site that adjoins Tunnel Road shall have a landscaping strip with a minimum width of 1.5 metres along the site boundary with Tunnel Road with the exception of that part defined on the development plan in Appendix 16.8.3 as 'Landscape and stormwater area (Green Space)'; and B. Planting of trees and shrubs within the landscaping strip adjacent to Tunnel Road shall be in accordance with the Landscape Plan and Plant Species List (see Appendix 16.8.3) and shall meet the requirements specified in Part A of Appendix 6.11.6 of Chapter 6; and C. The landscaping required under Rule 16.4.4.2.3 i. shall be completed as a condition of subdivision consent, or if there is no subdivision required, in conjunction with development in the locations that clause (a) relates to as a permitted activity standard. ii. Landscaping adjacent to the Heathcote River and within the zone A. Planting of trees and shrubs within the 'Landscape and stormwater area (Green Space)' defined on the development plan in Appendix 16.8.3 adjacent to the Heathcote River shall be in accordance with the Landscape Plan and Plant Species List (see Appendix	**Does not comply**

16.8.3) and the requirements specified in Part A of Appendix 6.11.6 of Chapter 6; and

B. Legal public access ways within the landscaping strip adjoining the Heathcote River shall be provided as indicated by 'Pedestrian access' on the development plan in Appendix 16.8.3; and

C. There shall be no erection of buildings, fences, the display of outdoor advertisements, parking of vehicles or use for any purpose other than landscaping, passive recreation or ecological enhancement within the 'Landscape and Stormwater Area (Green Space)' defined on the development plan in Appendix 16.8.3, and

D. Existing vegetation as marked on the development plan in Appendix 16.8.3 as 'Existing vegetation to be retained' shall be maintained.

Comment:

Compliant landscaping is proposed in respect of the Tunnel Road frontage.

The proposal does not comply with (ii) above given fencing and uses other than for landscaping, passive recreation or ecological enhancement are proposed within the Green Space area. Further, legal public access ways are not provided for within the Green Space area.

Appendix 7

District Plan Matters of Discretion

Chapter 5 Natural Hazards (Flood Hazards) - Rule 5.4.1.5 (RD2)

a. The Council's discretion is limited to the following matters:
    i. timing, location, scale and nature of earthworks;
    ii. earthworks method; and
    iii. mitigation of effects as they impact flooding and surface drainage
b. These restricted discretionary activities will be assessed against the following criteria:
    i. Whether any effects arise from filling or excavation on land stability, flooding, water bodies, groundwater and natural ground levels on and/or off site, including:
        A. any likelihood of exacerbation of flooding, erosion, or siltation either upstream or downstream of the site;
        B. any likelihood of affecting the stability of adjoining land, including its susceptibility to subsidence or erosion;
        C. any adverse effects on other properties from disturbances to surface drainage patterns;
        D. effects on flood storage capacity and function in the immediate area, and any wider effects on the flood storage in the catchment including any compensatory storage proposed; and any effects on existing stormwater and flood protection works;
        E. any implications for groundwater and the water table, on or off site; and
        F. any benefits associated with flood management.
    ii. Whether there are any benefits arising that enable the reasonable use of the site.
    iii. Whether any mitigation measures are proposed, their effectiveness and whether, and to what extent there is a transfer of adverse effects to other properties.

Chapter 6 General Rules and Procedures (Water Body Setbacks) - Rule 6.6.4.3 (RD1 & RD2)

6.6.7.1 Natural hazards

All activities

a. Any adverse effects on surface drainage.
    i. Earthworks, buildings, or other structures including fences, decks, posts and struts, located in water body setbacks shall not impede the capability of waterway channels or ponding areas to store or convey surface water.
    ii. Adverse effects shall not be displaced to adjacent properties.
b. The cumulative effect of developments adjacent to the water body on land drainage or flood risk.
c. Any adverse effects likely as a result of tidal influences during flood periods including the potential for exacerbation of effects with sea level rise.

d. The likely effects on the natural functioning of the water body, including any likelihood of work undertaken exacerbating inundation, erosion, alluvion or avulsion, whether upstream or downstream of the site.
e. Any beneficial effects of the proposal for the function of the water body, such as decreased likelihood of blockage or improved surface drainage where these effects remain consistent with protecting the ecological health of the water body.
f. Any functional necessity for the activity to locate within the water body setback.

Additional for buildings, other structures and impervious surfaces

g. The risk of damage to buildings and property posed by natural hazards including flooding, liquefaction (including lateral spread) and slumping and the scale and likelihood of that potential damage.

Additional within a Flood Management Area:

h. Matters of discretion that apply to buildings and/or filling and excavation in a Flood Management Area (Rules 5.4.1.5, 5.4.2.4 and 5.4.3.3, as relevant to the Flood Management Area).

6.6.7.2 Natural values

a. Any beneficial or adverse effects on the natural qualities of the water body and the ecology of areas within and adjacent to the water body including cumulative effects.
b. The extent to which naturalisation of the water body is achieved at the time of development, or potential for naturalisation in the future is retained.
c. Any adverse effects of discharge of sediment to the water body and the downstream receiving environment.
d. The timing and duration of any proposed earthworks or construction and its implication for seasonal and long-term natural cycles in the water body habitat.
e. Proximity of any proposed earthworks or buildings to significant trees listed in Appendix 9.4.7.1.
f. The extent to which the proposal has regard to any relevant operative Council-approved master plans or management plans.
g. The extent to which the proposal avoids, or has minimal adverse effect (including cumulative effects) on, the natural values of the area, including:
    i. biodiversity and any measures proposed to protect, enhance and provide for indigenous vegetation and indigenous fauna;
    ii. nesting, feeding and breeding areas;
    iii. the habitat of threatened or protected species, both terrestrial and aquatic; and
    iv. disruption of ecological corridors or other potential connections between ecosystems.

6.6.7.5 Maintenance access

a. Any adverse effects on access to or along the water body for maintenance of the water body or any associated natural hazard protection works.

6.6.7.3 Amenity and character

a. Any beneficial or adverse visual impacts on the natural form and character of the water body, including landscape treatment, screening, site layout and design and preservation of viewing opportunities of the water body from adjoining sites.
b. The degree to which the proximity or bulk of any structure dominates or otherwise detracts from the spaciousness and open character of the water body.
c. The extent to which the proposal has regard to any relevant operative Council-approved master plans or management plans.

6.6.7.4 Cultural values

a. Any beneficial or adverse effects on cultural practices, including mahinga kai or customary use.
b. The degree to which the proposal has had regard to the objectives and policies of the Mahaanui Iwi Management Plan.
c. Any adverse effects on archaeological sites or historic heritage.
d. Any adverse effects on customary access where applicable.
e. The degree to which the proposal on Māori land in the Papakāinga / Kāinga Nohoanga Zone is in accordance with Tikanga Māori.
f. Within a site of Ngāi Tahu Cultural Significance identified in Appendix 9.5.6, the matters set out in Rule 9.5.5 as relevant to the site classification:
    i. 9.5.5.1 – Wāhi Tapu / Wāhi Taonga, Mahaanui Iwi Management Plan Silent Files and Kaitōrete Spit;
    ii. 9.5.5.2 – Ngā Tūranga Tūpuna;
    iii. 9.5.5.3 – Ngā Wai.

6.6.7.6 Public/Recreational access

a. Any beneficial or adverse effects on legal public or recreational access to or along the water body.

Exception for sites adjoining Downstream Waterways with features intervening between the site and the waterway

Where a:

i. legal road; or
ii. esplanade reserve; or
iii. esplanade strip wider than 10 metres

exists between a Downstream Waterway and a site being assessed, Council's discretion with respect to that part of the site separated from the water body is restricted to Natural hazards - Rule 6.6.7.1.

Chapter 8 Subdivision - Rule 8.5.1.3 (RD1)

8.7.4 General Matters

8.7.4.1 Subdivision design

a. Whether the allotments (including any balance allotment) are of sufficient size and dimension to provide for any existing land use or a permitted land use such as might reasonably be expected to establish on a site, and provision of access, storage space and service connections.
b. Whether the dimensions and orientation of the allotments will ensure the capture of solar gain appropriate to the subsequent land uses.
c. Outside the Central City, whether any corner allotments have an appropriate corner rounding.
d. The relationship of the proposed allotments within the site and their compatibility with the pattern of the adjoining subdivision and land use activities.
e. The degree to which natural topography, drainage and other features of the natural environment, sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6, or existing built features of significance, determine site boundaries where that is practicable.
f. Whether any local purpose reserves, or easements are required, such as for services, stormwater, access, party walls, floors or ceilings, and that they are sufficiently designed for their purpose.
g. The extent to which the subdivision design mitigates adverse effects, including reverse sensitivity to nearby National Grid or electricity distribution lines shown on the planning maps, Radio New Zealand Limited's Gebbies Pass Road facilities or other strategic infrastructure.
h. In an outline development plan area, integration and connection to and within the site and whether the subdivision would preclude or discourage development in another part of the outline development plan area.
i. The extent to which conditions are appropriate on a subdivision consent in a Residential New Neighbourhood Zone in order to give effect to the development requirements specified in the relevant outline development plan.
j. The extent to which the subdivision in a Residential New Neighbourhood Zone is designed in accordance with the principles in 8.8.9 Residential New Neighbourhood Zone.
k. In zones other than the Residential New Neighbourhood Zone, the extent to which a development needs to comply with any flexible element of an outline development plan, including for phasing or location of infrastructure or other internal elements; and consideration of the effects of the movement of any elements on other landowners of land located within or adjacent to the outline development plan area, or on the safe, efficient or effective operation of infrastructure.
l. Outside the Central City, whether the application provides allotments of a size and dimension that promotes building typologies with a high level of visual interaction with the street and other public spaces, while providing for a cohesive street scene and neighbourhood.

m. Outside the Central City, whether the subdivision meets the required household density target, the housing typologies proposed to meet that target and location and mix of typologies within the subdivision, including whether the typologies cater for all life stages, physical abilities, and opportunities for socio-economic diversity.
n. In the Residential New Neighbourhood Zone, the means of achieving overall outline development plan densities as required by Policy 8.2.2.8, including the adequacy of any legal mechanism proposed to give effect to a density transfer or density staging proposal.
o. Outside the Central City, where the allotment is to be used for residential purposes, whether the application supports the provision of residential allotments which would allow garaging and parking, where provided, to be secondary to habitable spaces both with respect to size and expression of form, and which are able to be incorporated into the overall building design especially when accessed directly from the street.
p. Whether fire safety requirements are met in relation to the conversion of existing residential units into multiple residential units.
q. Outside the Central City, the extent to which the subdivision design and construction allows for earthworks, buildings and structures to comply with the New Zealand Electrical Code of Practice for Electrical Safe Distances (NZECP 34:2001).
r. Where the subdivision is of land which includes a Site of Ngāi Tahu Cultural Significance identified in Appendix 9.5.6, the matters set out in Rule 9.5.5 as relevant to the site classification:
    i. Rule 9.5.5.1 - Wāhi Tapu / Wāhi Taonga, Mahaanui Iwi Management Plan Silent Files and Kaitōrete Spit;
    ii. Rule 9.5.5.2 - Ngā Tūranga Tūpuna; and
    iii. Rule 9.5.5.3 - Ngā Wai.

8.7.4.3 Servicing and infrastructure

a. Whether each allotment has appropriate servicing and connections to water supply, wastewater disposal, stormwater management systems and other services; whether it is necessary to provide or upgrade services or utilities to enable the allotment to be serviced, and whether the design, location, capacity, type and construction of services and infrastructure, including the suitability of the proposed water supply for fire-fighting purposes, and any required infrastructure upgrades, are acceptable to the Council.
b. Whether the electricity and telecommunications supply and connection to any new allotment(s) are appropriate and provide adequate capacity, including whether it is appropriate to require additional space for future connections or technology and whether any ducting or easements are required to achieve connection.
c. Whether appropriate provision is made for onsite storm water treatment or connection to a catchment based treatment network.
d. Outside the Central City, the contribution of proposals towards the development of an integrated naturalised surface water network of soil absorption,

sedimentation and detention basins, wet-ponds, swales and/or wetlands to treat and manage surface water and avoid (where practicable) a proliferation of smaller facilities.

e. Outside the Central City, the extent to which the construction or erection of utilities for servicing a site incorporate and/or plant appropriate indigenous vegetation.
f. Outside the Central City, whether any proposed ponding area will be attractive to birdlife that might pose a birdstrike risk to the operation of Christchurch International Airport Limited.
g. Outside the Central City, where wastewater capacity is close to reaching a limit, whether to reduce the lapsing period of the subdivision consent below five years to enable that capacity to be utilised by others if the development opportunity that is the subject of the consent is not implemented.
h. The ability for maintenance, inspection and upgrade of utilities and infrastructure to occur, including ensuring continued access for the same.
i. The extent to which the design will minimise risk or injury and/or property damage from utilities or infrastructure.
j. The extent to which potential adverse effects of electricity lines, including visual impacts, are mitigated, for example through the location of building platforms and landscape design.
k. The suitability of the proposed water supply for fire-fighting purposes (the Council may obtain a report from the Chief Fire Officer), including the extent of compliance with SNZ PAS:4509:2008 in respect of the health and safety of the community, including neighbouring properties.
l. The extent to which conditions are appropriate on a subdivision consent in a Residential New Neighbourhood Zone in order to give effect to the development requirements specified in the relevant outline development plan.
m. In zones other than the Residential New Neighbourhood Zone, the extent to which a development needs to comply with any flexible element of an outline development plan, including for phasing or location of infrastructure; and consideration of the effects of the movement of any elements on other landowners of land located within or adjacent to the outline development plan area, or on the safe, efficient or effective operation of infrastructure.
n. Within the Lyttelton Port Influences Overlay, the imposition of an appropriate, volunteered condition prohibiting noise sensitive activities on the allotments, to be complied with on a continuing basis, for the purpose of incorporation into a consent notice to be issued by the Council.
o. Whether wastewater disposal and stormwater management systems recognise the cultural significance of Ngā Wai sites of Ngāi Tahu cultural significance identified in Schedule 9.5.6.4, and do not create additional demand to discharge directly to Ngā Wai.

8.7.4.5 Open space, reserves and recreation (including esplanade reserves, strips or additional land)

a. Outside the Central City:

i. The need, type, location and layout of any land to be provided for reserves for open space and recreation purposes, including whether an active frontage is provided and any requirements for the formation of that land prior to it vesting in the Council, where applicable.
ii. The degree to which the subdivision encourages active frontages to reserves for open space and recreation purposes.
iii. The provision and / or width of an esplanade reserve or esplanade strip.
iv. The manner in which the subdivision responds, in particular, to the place making and context, block layout, and relationship to street and public open spaces.
v. Any impact of subdivision works on land for open space and recreation, on sites or areas of cultural value to tangata whenua, or on waterways, springs, sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6, indigenous biodiversity, mahinga kai and the coastline.
vi. The need for land to be set aside and vested in the Council as a reserve for open space and/or recreation where it will provide for one or more of the following:
    A. land for a local neighbourhood park, accessible to the user population and of a size adequate to accommodate children's play equipment, substantial tree plantings and open space;
    B. a linkage or potential linkage along or to significant natural features, or between other areas of public open space and community facilities;
    C. protection and enhancement of significant mature trees, significant areas of indigenous vegetation, margins of waterways or other significant natural features;
    D. protection or enhancement of historic or cultural features of significance to the population;
    E. a usable area of open space for planting as visual relief from a built or highly developed environment;
    F. a flat usable area of land for district sports fields, accessible with full road frontage, and of a size adequate to accommodate at least two rugby-sized sports fields and associated user facilities and training field, tree planting, a playground and open space required for other recreation activities;
    G. recognition of Ngāi Tahu cultural values, and historic and contemporary identity associated with sites of Ngāi Tahu cultural significance identified in Appendix 9.5.6; and
    H. smaller sized public spaces that allow for community interaction, including seating and planted areas.
vii. Whether appropriate mechanisms are in place to ensure the maintenance of open space areas and reserves not being vested in Council.
viii. The extent to which conditions are appropriate on a subdivision in a Residential New Neighbourhood Zone in order to give effect to the

development requirements specified in the relevant outline development plan.

ix. In zones other than the Residential New Neighbourhood Zone, the extent to which a development needs to comply with any flexible element of an outline development plan, including for phasing or location of internal elements; and consideration of the effects of the movement of any elements on other landowners of land located within or adjacent to the outline development plan area, or on the safe, efficient or effective operation of open space and reserves.

8.7.4.6 Natural and cultural values

a. The extent to which springs are protected, maintained and enhanced, including in relation to ecological, cultural and amenity values and the extent to which the development provides for pathways, for the water to flow from the spring head, that have regard to the existing natural flow path.
b. Any adverse effects of the proposal on the quality of surface and ground water, mahinga kai, including within waterways, on drainage to, or from, adjoining land, existing drains, waterways, and/or ponding areas
c. The extent to which the proposal would protect and provide for the flood storage and conveyance capacity of waterways, or on drainage to, or from, adjoining land, existing drains, waterways, and/or ponding areas.
d. The extent to which the proposal manages erosion and sediment discharge to waterways.
e. Recognition of Ngāi Tahu's history and identity and cultural values.
f. The extent to which Ngāi Tahu cultural values associated with waterways, springs, indigenous biodiversity and mahinga kai are protected.
g. The extent to which the subdivision enables the retention of archaeological sites.
h. The manner in which the subdivision responds to values provided for in Chapter 9 (Natural and Cultural Heritage), including any requirement for a consent notice where a condition is to be complied with on a continuing basis.
i. In relation to the removal of consent notices created through subdivision to protect trees whether the effect on amenity values can be offset by other trees on or surrounding the site or the replacement of the tree or trees with appropriate species on-site or other appropriate locations. The appropriateness of species will include consideration of the time required for any new trees to reach a size where the negative impact of tree removal would be offset.
j. In relation to the Industrial General Zone (North Belfast) only, whether a protocol has been agreed with Te Ngāi Tūāhuriri Rūnanga for managing any accidental discovery. This may include a cultural monitor, who shall be a representative approved by Te Ngāi Tūāhuriri Rūnanga and contracted by the applicant to be on site if deemed necessary by the Rūnanga.
k. Where the subdivision is of land which includes a Site of Ngāi Tahu Cultural Significance identified in Appendix 9.5.6, the matters set out in Rule 9.5.5 as relevant to the site classification:

i. Rule 9.5.5.1 - Wāhi Tapu / Wāhi Taonga, Mahaanui Iwi Management Plan Silent Files and Kāitorete Spit;
ii. Rule 9.5.5.2 - Ngā Tūranga Tūpuna; and
iii. Rule 9.5.5.3 - Ngā Wai.

8.7.4.7 Consent notices

a. The requirement for any consent notice where a condition is to be complied with on a continuing basis.

8.8.7 Flood Management Area

a. Whether the subdivision includes measures that will reduce susceptibility to flooding.
b. Whether the subdivision would have an impact on adjoining land in terms of flooding, and any measures to mitigate that impact.
c. The extent to which flood hazard areas will impinge on the intended activities on any allotment.

Chapter 8 Earthworks - Rule 8.9.2.3 (RD1)

8.9.4.1 Nuisance

a. The extent to which any potential dust nuisance, sedimentation and water or wind erosion effects can be avoided or mitigated.
b. The extent to which effects on neighbouring properties, and on the road network, of heavy vehicle and other vehicular traffic generated as a result of earthworks can be avoided or mitigated.
c. The extent to which any potential changes to the patterns of surface drainage or subsoil drains can be avoided or mitigated if those changes would put the site or adjoining land at higher risk of drainage problems, inundation run-off, flooding, or raise that site's or adjoining land's water table.
d. Whether any change in ground level would be likely to impact on trees in terms of access to water and drainage.
e. The extent of any potential adverse effects on the quality of groundwater and whether any such can be avoided or mitigated.
f. The extent to which any adverse effects from noise and vibration associated with earthworks and land improvement can be avoided or mitigated, and the effectiveness of any methods to mitigate such effects.
g. The extent to which earthworks in the Open Space Avon River Precinct (Te Papa Ōtākaro) Zone have an adverse effect on the Avon River and its margins.

8.9.4.2 Resources and assets

h. Whether versatile soils would be lost to production, or have their physical and biochemical qualities compromised.
i. In relation to National grid transmission lines and electricity distribution lines
    i. the risk to the structural integrity of the National grid or electricity distribution lines;
    ii. compliance with NZECP 34:2001;

iii. any implications arising from technical advice provided by the utility operator;
iv. the effects on the ability of the utility operator to operate and upgrade and develop the National grid and/or electricity distribution lines, including on-going safe and direct access; and
v. the effects on the ability of the utility operator to operate, upgrade and develop its utility, including on-going safe and direct access.

8.9.4.3 Land stability

a. Whether the earthworks affect the stability of adjoining land and its susceptibility to subsidence or erosion upon excavation taking place.
b. The extent of any alteration to natural ground levels in the vicinity and, consequently, to the height and bulk of buildings that may be erected on the site.
c. Whether the earthworks affect the future development potential of land for permitted activities, taking account of the nature of filling material proposed and the degree of compaction.

8.9.4.6 Amenity

a. The level of alteration to existing ground levels and the degree to which the resultant levels are consistent with the surrounding environment.
b. The resultant effects that result from the earthworks in terms of visual amenity, landscape context and character, views, outlook, overlooking and privacy.

8.9.4.7 Indigenous biodiversity, natural character, and landscape features

a. The relevant matters of discretion in Rules 9.1.5.2, 9.2.8.1, 9.2.8.3 and 6.6.7.

8.9.4.9 Sites of Ngāi Tahu Cultural Significance

a. Where the earthworks are within a Site of Ngāi Tahu Cultural Significance identified in Appendix 9.5.6, the matters set out in Rule 9.5.5 as relevant to the site classification:
    i. Rule 9.5.5.1 - Wāhi Tapu / Wāhi Taonga, Mahaanui Iwi Management Plan Silent Files and Kaitōrete Spit;
    ii. Rule 9.5.5.2 - Ngā Tūranga Tūpuna; and
    iii. Rule 9.5.5.3 - Ngā Wai.

Chapter 16 – Industrial General Zone (Portlink Industrial Park) – Rule 16.4.4.1.3 (RD1)

16.7.1.1 Maximum height of buildings and fencing or screening structure

a. Building height:
    i. The distance the building is setback from any residential zone and the extent to which this mitigates any adverse effects of the increased height.
    ii. The extent to which the additional building height may enable the more efficient use of the reminder of the site or the long-term protection of sites of Ngāi Tahu cultural significance identified in Schedule 9.5.6.1,

significant trees listed in Appendix 9.4.7.1, or natural features on the site.

iii. The design and appearance of the building in mitigating the visual impact of exceeding the height limit.

iv. The extent to which the building may visually dominate the area it is located in, having regard to the scale and form of buildings in the surrounding area.

v. The extent to which the location of the building on the site and its visibility minimises visual effects on the surrounding area.

vi. The extent to which the increase in height reflects functional requirements of the activity.

16.7.3.2.2 Landscaping in Portlink Industrial Park Development Plan

a. The extent to which landscaping, planting and stormwater treatment ponds maintain or enhance the visual amenity and ecological values of the margins of the Heathcote River.

b. The extent to which landscaping of the Heathcote River margin can contribute to the enhancement of Ngāi Tahu/ mana whenua cultural values.

c. The extent to which planting and the location of pedestrian/cycle ways protect and enhance the habitat of birds.

16.7.3.2.3 Cycle and pedestrian links - Industrial General Zone (Portlink Industrial Park)

a. The extent to which the development provides safe and efficient linkages within the development plan area and connections to the wider transport network for walking and cycling.

Appendix 8

Geotechnical Report

ENGEO

Expect Excellence

Geotechnical Earthworks and Dynamic Compaction Specification

Portlink Industrial Park

Waltham

Christchurch

Submitted to:

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07.03.2020
17065.000.000_02

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ENGEO Document Control:

Report Title	Geotechnical Earthworks and Dynamic Compaction Specification - Portlink Industrial Park, Waltham			
Project No.	17065.000.000	Doc ID	02	
Client	Peebles Group	Client Contact	Richard Peebles	
Distribution (PDF)	Richard Peebles			
Date	Revision Details/Status	WP	Author	Reviewer
30/01/2020	Draft issued to Client	BK	JRW	DEB
07/03/2020	Final issued to Client	BK	JRW	DEB

1 Introduction

ENGEO Ltd was requested by Peebles Group to provide a geotechnical earthworks and dynamic compaction specification summarising laboratory testing, general fill, and dynamic compaction requirements for Stages 6 to 8 at Portlink Industrial Park, Waltham, Christchurch.

Our recommendations are limited to the geotechnical aspects for the placement and compaction of fill, as well as guidance for geotechnical site visits and testing regime. The earthworks shall be carried out as detailed on the earthworks cut to fill plan provided by Woods dated 5 December 2019 (attached to this document), and in accordance with NZS 4404:2010 Land Development and Subdivision Infrastructure and NZS 4431:1989 Code of Practice for Earth Fill for Residential Development.

Unless varied on site by the geotechnical professional, the following specification requirements must be met in order for ENGEO to provide a Geotechnical Completion Report for the works.

This work has been carried out in accordance with our agreement dated 22 November 2019.

2 Technical Specification

2.1 Scope of Works

This specification is applicable to the following work and activities:

- Site clearance.
- Stripping, stockpiling and separating topsoil from subsoil materials to the nominated stockpiling locations (to be determined) as required.
- Excavation of all cuts and areas of over-excavation.
- Dynamic Compaction of existing subsurface material.
- Construction of the engineered fills and subgrade preparation including shaping, trimming, grassing, and maintaining of the works.

2.2 Earthworks Specifications

The following works are to be carried out in accordance with the technical specifications listed below. Electronic copies of these specifications can be provided upon request.

Any site specific requirements and amendments to the standards and specifications are as listed in the following sections.

Table 1: Technical standards and specifications

Standard / Specification	Title
NZS 4404-2010	Standard for land development and subdivision infrastructure.
NZS 4431-1989	Code of practice for earth fill for residential development.
NZS 4407-2015	Methods of sampling and testing road aggregates.
NZS 4402-1986	Methods of testing soils for civil engineering purposes.

ENGEO (previously Geoscience) has previously provided the following reports that also include information and recommendations relevant to this specification and should be read in conjunction with this specification:

- Geotechnical Aspects for Subdivision of Stages 5 and 6 at Portlink Industrial Estate dated 8 July 2014.
- Portlink Northern Area – Existing Fill Remediation Proposals dated 23 March 2015.
- Portlink Stage 6 – Geogrid Reinforcement Recommendations for Lots 25 and 26.
- Portlink Northern Area – Dynamic Compaction Specifications dated 6 October 2015.
- Geotechnical Comments for Stages 5 to 8, Portlink Industrial Park dated 21 July 2016 (ref. 09627.000.000_19).

2.3 Definition of Terms

Key terms referred to in this document are defined below:

- **Contractor**: Construction Contracting Limited (CCL)
- **Engineer to Contract**: Woods
- **Surveyor**: Woods
- **Geotechnical Engineer**: ENGEO Limited
- **Civil Engineer**: Woods
- **NDM:** Nuclear Density Meter
- **Client**: Peebles Group

3 Dynamic Compaction

In 6 October 2015, ENGEO provided a Dynamic Compaction Specification document that provided recommendations for the northern end of the development (Stages 6 and 8). Our recommendations from this report are presented in italics in the sections below. These recommendations should be utilised for dynamic compaction within Stages 6 through 8.

Dynamic compaction is to be carried out within the northern area at Portlink, in all areas containing existing fill where new structures, paved surfaces and underground services are to be installed.

As a minimum, we expect that the area will include future lots numbered 31 to 34, as depicted on the attached Scheme Plan (Revision 8) prepared by Woods Consultants Ltd (WOODS). Image is presented in Figure 1 below and indicates that dynamic compaction will be required in the much of this stage of earthworks.

Figure 1: Previously provided Scheme Plan by Woods (Revision 8)

Image sourced from Woods plans, Revision 8 dated 16 May 2014 (ref 400046).

3.1 Dynamic Compaction Equipment

Dynamic compaction should be carried out using impact rolling machinery approved by ENGEO.

The Broons model BH-1300 square roller meets the minimum requirements for this project. Any substitute rollers should be equivalent to or better than the BH-1300.

3.2 Site Preparation Works for Dynamic Compaction

ENGEO understands that the extent of dynamic compaction works to be undertaken at a given time is dependent on the quantities of imported fill available at the site and that no more than 1.5 ha may be topsoil stripped at a time as stipulated by the earthworks consent conditions.

The following should be carried out prior to dynamic compaction being commenced on any part of the site:

- *The existing vegetation and surficial topsoil is to be removed and stockpiled elsewhere.*
- *The edges of the stripped area should be graded back gently to the existing ground level so that there is a smooth transition between the vegetated and stripped area.*
- *There is no requirement to place a layer of gravel on the ground surface as the stripped ground is anticipated to be firm.*

3.3 Dynamic Compaction Activities

A minimum of 15 passes is required to be carried out by the impact roller.

In areas where greater than expected deformations and settlements occur (for example, greater than 250 mm), additional passes may be required and this will be directed by ENGEO.

If there are areas which indicate that further settlement is possible under building loads (for example, areas demonstrating plastic deformation or continuing settlement under additional passes of the roller), then it may be necessary to preload these areas, however this will be assessed on a case by case basis and will be dependent on the proposed structures and lot layout for that area.

Dynamic compaction should be carried out when the ground conditions are dry to achieve optimal results.

3.4 Survey Monitoring Specification

WOODS should carry out a level survey of the stripped ground before dynamic compaction commences.

Survey monitoring should be carried out again upon completion of a minimum of 15 passes. The results should be submitted to ENGEO for review and comment, prior to earth filling commencing.

If additional passes of the impact roller are required, then the area should be surveyed again upon completion of the additional passes.

4 Placement of Geogrid

During prior reporting and earthworks, geogrid has been recommended and installed in Lots 32 and 33 (was previously referred to as 25 and 26). Previous reporting by ENGEO and Geotech Consulting Ltd (GCL) indicates that there were ground cracks and ejecta material in the northern areas of the site (Stages 7 and 8). Based on the previous reporting, the lateral spreading appeared to extend approximately 60 m from the river bank on the western side (Stage 6) and approximately 100 m on the northern bend (Stage 7 and 8).

The following geogrid recommendations were provided in our 3 July 2015 report: *"The geogrid should comprise at least one layer of Tensar RE510 (or similar performing product), incorporated between the native subgrade and the new fill. Triaxial geogrid may also be considered. The geogrid should be placed in accordance with manufacturers specifications, and should be aligned so that the long axis is perpendicular to the river bank."* We understand that the preferred geogrid to be used is Duragrid 20/20. We consider that Duragrid 20/20 is a similar performing product to a triaxial geogrid and appropriate to be used. Based on the geology of this area, performance in the Canterbury Earthquake Sequence (CES), and previous reporting, we provide the following recommendations for geogrid reinforcement in the proposed fills.

- Geogrid should extend approximately 60 m from the river bank in Stage 6 and transition to 100 m from the river bank through Stages 7 and 8 as indicated on the plan attached to this document.
- Following topsoil stripping and dynamic compaction, approximately 200 mm of fill should be placed on the prepared subgrade to create a level platform. This thickness should be sufficient such that the layer of geogrid will be flat across the proposed footprint.
- Geogrid should then be placed flat on the fill as per the manufacturer's recommendations.
- General fill material should then be placed in accordance with the recommendations provided in this document.

Following filling, the recommendations provided in the GCL interpretative reports will also need to be adhered to when designing foundations and buildings. Buildings constructed within 100 m of the river bank should be designed to accommodate up to 200 mm of lateral stretch based on the performance of the site during the CES.

5 Geotechnical Observation Requirements

5.1 Geotechnical Observation / Testing Hold Points

The following items form hold points in the construction works that require observation, testing and approval by the Geotechnical Engineer or their representative (ENGEO):

- Observation of site clearing operations, approval of the suitability of the subgrade prior to any dynamic compaction or the placement of any fill material or topsoil.
- Observation of dynamic compaction completed in accordance with Section 3 of this report.

- General fill assessment, compaction methodology review, and testing prior to placement of general fill with the Contractor on site. This may include, but not limited to, on site soil plateau testing and additional soil sampling for lab testing (if the soil types vary significantly). We understand that the Contractor will coordinate the laboratory testing for this project.
- Compaction testing of each lift of fill which should be placed in lifts no greater than 200 mm thick.
- Observation of the geogrid layers placed as recommended in Section 4 of this report.
- Observation of the fill surface following the placement of each 1 m of fill material.
- Observation of the base existing stormwater retention basin location once the basin has been cleared.
- Any unforeseen ground conditions that may impact on the construction works or future land use. This may include, but is not limited to, additional environmental and geotechnical testing.
- Review of completed earthworks, and placed fill prior to placement of topsoil or foundation hardfill.

5.2 Observation and Testing Schedule

The observation and testing schedule, defined from the hold points stated in Section 3.1, includes general observations of the earthworks including cutting, filling, subgrade preparation, drainage channels, shear key construction (if applicable), fill certification etc., and shall be undertaken by a geotechnical professional from ENGEO. For your programme, we recommend to allow not less than one full day (or up to two half days) per week during the bulk of the earthworks of this project. This site time will likely vary subject to Contractor process, methodology and expectation during the project.

Additional site visits or meetings outside this scope may be requested as necessary by the Contractor, subject to their (or the Engineer to Contract) approval.

6 Earthworks Materials and Clearance

6.1 Site Clearance

The extent of the working area on the proposed construction drawings (proposed construction drawings to be provided) shall be set out by the Surveyor (or Contractor) and fenced by the Contractor. This area should be confirmed prior to commencing the clearing works.

Appropriate silt control measures must be installed prior to clearing commencing.

The Contractor shall clear all trees, stumps, roots (down to 25 mm diameter roots), shrubs, grass, and other vegetation, and all rubbish, fences and other superficial obstructions (or such material which, on the opinion of the geotechnical professional, is unsuitable) from within the confines of the earthwork and site clearance areas prior to commencing earthwork operations in these areas. This rubbish material shall be removed to the Contractor's dump site.

6.2 Removal of Topsoil

All surface vegetation and topsoil (as defined by the geotechnical professional) shall be removed and stockpiled (or removed off site) in a planned manner in select areas within the site boundaries under the observation of the geotechnical professional. It is not acceptable to use topsoil as engineered fill without the prior written approval of the Geotechnical Engineer.

6.3 Unsuitable Material

The geotechnical professional shall determine which materials will be classified as “unsuitable” for use as engineered earth fills, or topsoil. All unsuitable material within areas to be filled shall be removed as directed by the geotechnical professional prior to filling works commencing. It is at the discretion of the Engineer to Contract and/or the client as to whether unsuitable material is stockpiled for alternative use or removed off site.

Care shall be taken such that unsuitable material and material suitable for filling are not mixed during excavation, transportation or stockpiling.

6.4 Removal of Redundant Infrastructure

All redundant infrastructure, manholes, pipes, effluent treatment, and disposal materials (or such material which, on the opinion of the geotechnical professional, is unsuitable) shall be removed to the Contractor’s dump.

6.5 Stockpiling

Temporary stockpile sites shall be the responsibility of the Contractor. Any such stockpile shall be developed to provide stability of the stockpiled material and underlying soils. Stockpiles must be located in such a way that they do not interfere with drainage lines and watercourses. Dust nuisance must be mitigated by either wetting the material or by covering the material.

We recommend that stockpiles be placed in a manner to minimise unnecessary vegetation growth. It is the Contractor’s responsibility to remove and dispose of all unusable material or excess organic material that accumulates on stockpiles.

7 General Fill Properties and Laboratory Testing Results

7.1 General Fill Properties

Based on our discussions, we understand that the proposed fill for the site comprises of site-won fill, material sourced from the Lyttelton Port (LPC) stockpile of loess, and imported recycled crushed concrete (RCC).

7.1.1 Site-won fill

Based on the cut to fill plan provided by Woods, we understand that there is approximately 4,500 m^3 of cut proposed for these stages that will be out of the stormwater basin. We recommend that at least one maximum dry density (MDD) and moisture content test be performed for each material type proposed to be used as site-won fill and a minimum of two MDD tests total. Based on our review of the testing completed in the proposed stormwater basin area, it appears that the subsurface material in this location will likely consist of interbedded silt and sand overlain by topsoil. It should be noted that one of the hand augers in this area encountered topsoil up to 1.3 m depth which may impact the expected fill volumes (hand augers attached to this report).

7.1.2 Imported Fill

The Contractor should supply representative MDD curves for any material that will be imported to site. We understand that a large stockpile of loess currently at LPC will be used and the Contractor has obtained a representative sample of material that has been tested to obtain an MDD and Optimum Water Content.

The soil sample was taken to a registered soil mechanics laboratory for MDD and PSD analysis in accordance with the testing procedure defined in NZS 4402:1986 Test 4.1.1 (MDD) and NZS 4407:2015 Test 3.8.2 (PSD). The sample was tested as described below:

Silt Sample 1:

- MDD of 1750 kg/m³
- Optimum water content of 16.0%
- Assumed solid density of 2.68 t/m³

Laboratory test results are attached to this document in Appendix 5. If the material type significantly changes as the project progresses, we recommend additional MDD tests are completed.

8 General Fill Recommendations

8.1 General

It is intended that all materials, other than those classed as unsuitable by the geotechnical professional, be moisture conditioned as necessary and compacted to the specifications in this document.

No filling operation shall be undertaken until observation and approval of the subgrade by the geotechnical professional is received.

We anticipate that moisture conditioning of the general fill will likely be required in order to achieve satisfactory compaction results. However, the water content after compaction should not be so high as to allow the fill to weave or cause seepage of excess water under the weight of compaction equipment. Surface weaving is described in NZS4431:1989 as the pronounced elastic compression of the surface of the fill, and an immediate rebound during the passage of heavy wheeled plant. Areas where weaving occurs shall be removed and the material allowed to dry prior to re-compaction. Detailed review of construction methodology and fill placement monitoring should be completed prior to fill placement.

8.2 Fill Foundation Surfaces

Foundation surfaces for engineered fill may require proof rolling but this is to be determined during subgrade observations completed by the geotechnical professional prior to filling.

Proposed fill surfaces shall not be wet or saturated prior to filling. Additional grading may be required to drain the foundation surfaces; this shall be specified by the geotechnical professional as necessary based on our observations of the foundation surfaces.

8.3 Over-Excavation

The Contractor shall direct his operation to avoid excavating beyond the designated profiles set out in the earthworks plan. Any over-excavation shall be remedied under the guidance of the geotechnical professional, and at the Contractor's cost, with the compacted fill meeting the requirements provided in this specification.

8.4 Compaction Specification for Engineered Fill

The standard of compaction and method of determination shall be as set out in NZS4431 and NZS4402. Laboratory proctor testing is required on newly sourced fill to determine the optimum moisture content and Maximum Dry Density characteristics for compaction verification.

The Contractor is responsible for arranging the compaction certification as works progress allowing at least five working days to complete the laboratory testing.

The proposed general fill should be spread uniformly in layers having a loose thickness no greater than 200 mm maximum, and compacted to a minimum of 95% Maximum Dry Density. The degree of compaction for each lift should be tested in accordance with NZS4407:2015 using a nuclear density meter (NDM).

If compaction testing is not to be completed by ENGEO, we may organise random spot checks of the compacted general fill to validate the Contractor's NDM testing.

- The moisture content of the placed general fill should be within two percentage points either side of the optimum moisture content.
- If ENGEO does not complete NDM testing, we must be provided with an up to date Calibration Certificate and a Certificate of Competency (Training) from the NDM technician.

8.5 Compaction Machinery Recommendations

For cohesive soils (site-won silts or imported loess proposed) we recommend that a sheepsfoot roller be used for compaction. If any granular fill is to be placed as general fill (RCC proposed), we recommend that a steel drum vibratory roller be used for compaction.

8.6 Fill Batter Gradients and the use of Geogrid (if required)

Geogrid is to be installed under the guidance of the Geotechnical Engineer where permanent proposed slopes are steeper than the following criteria for a given soil type:

- Topsoil (planted): 1V:3H (18°)
- Existing Fill (cohesive): 1V:2.5H (22°)
- Existing Fill (granular): 1V:2H (26°)
- Engineered Fill (unreinforced): 1V:2H (26°)

Geogrid specification to be determined dependent on the site requirement and placement shall be under the design and guidance of the geotechnical professional.

8.7 Finalised Lot Fill Verification

Completed lots shall be assessed by the geotechnical professional following the completion of placed general fill and prior to placement of topsoil.

ENGEO will have assessed the subgrade following removal of topsoil and prior to placement of general fill. ENGEO will also have to review the compaction testing results in order to provide a Geotechnical Completion Report (GCR).

Additional subsoil testing may be required to assess the compacted general fill. The number of tests to be undertaken on the completed earthworks shall be determined by the geotechnical professional.

If an area is deemed not suitable, the geotechnical professional shall instruct the Contractor to undertake remedial works, as required. Alternatively, a condition may be placed on the Lot Title stating that 'specific engineering design' is required for building foundations.

IMPORTANT: It should be noted that any geotechnical testing of the finished earthworks does not constitute suitability for site specific Building Consent purposes, and the Builder (and their Engineer) will be responsible for completing appropriate soils' testing, and site specific geotechnical investigation at the location of the proposed dwelling.

8.8 Placement of Topsoil

On completion of earthworks to the satisfaction of the Geotechnical Engineer, topsoil can be spread evenly where required. We understand that it is likely topsoil will not be spread on the lots and the final surface will be the responsibility of the lot purchasers.

Topsoil shall not be placed on soil slopes greater than 1V:3H without approval from the Geotechnical Engineer.

8.9 Grass Seed Recommendations

Grass seed shall be either undertaken by hydro-seeding or broadcasting, and overlap with natural grass area to provide a uniform distribution of seed over the full extent of the topsoiled area. The seed shall be applied and cultivated to 20 mm depth so that the minimum of seed is exposed. The seeded ground shall be levelled and lightly compacted to create good soil to seed contact.

Slow release fertiliser shall be applied either before or during sowing and at the rate as specified by the manufacturer. Fertiliser shall not be applied in waterway areas (refer to CCC CSS Part 7, 13.3). The following sections summarise the rates and specified seed mixture for various applications.

8.9.1 Commercial Sections

The seed mix shall be CCC "Pasture Mix", refer to CCC CSS Part 1, 34.3, with a minimum seed distribution rate of 50kg / hectare (5 grams per square metre).

8.9.2 Berms

The seed mix shall be CCC "Berm Mix", refer to CCC CSS Part 1, 34.2, with a minimum seed distribution rate of 300kg / hectare (30 grams per square metre).

8.9.3 Swales and Stormwater Basins

The seed mix shall be CCC “Berm Mix”, refer to CCC CSS Part 1, 34.2, with a minimum seed distribution rate of 250kg / hectare (25 grams per square metre).

8.9.4 Hydroseeding

The hydroseeding mulch shall be a mix of the specified seed, wood fibre based mulch, fertiliser and a binding agent. The percentage of wood fibre in the mulch shall be no less than 75%. The mulch shall be applied to a minimum depth of 5 mm with an application rate of no less than 200kg / 1000m² for berms, swales and high profile amenity areas.

A suitable low-pressure pumping system shall be used to avoid surface erosion or riling of the topsoil. The system will have mixing abilities to prevent settling of the mulch between each application (refer CCC CSS Part 7, 13.4).

9 Generalised Sequencing

We anticipate the following generalised sequencing:

Fill Areas

1. Site set out, surveying and arrangement of erosion protection measures, temporary fencing and health and safety measures implemented.

2. Strip topsoil (minimum 200 mm – depth to be determined on site) from the initial earthwork areas of the site, to be stockpiled for later use as topsoil in landscape areas, or removed from site. Remove isolated root bulbs, tree stumps and unsuitable material as encountered following stripping.

3. Any uncontrolled fill should be removed from the base of the cut excavation prior to backfilling using general fill.

4. A geotechnical professional should assess the native subgrade prior to dynamic compaction or placement of general fill.

5. Complete dynamic compaction in accordance with Section 3 of this report. As per our October 2015 report “*If there are areas which indicate that further settlement is possible under building loads (for example, areas demonstrating plastic deformation or continuing settlement under additional passes of the roller), then it may be necessary to preload these areas, however this will be assessed on a case by case basis and will be dependent on the proposed structures and lot layout for that area.”*

6. Once sufficient dynamic compaction has been achieved, placement of general fill can commence. This should be placed in maximum 200 mm lifts with NDM testing to be completed on every lift in accordance with Section 6.4 of this earthworks guidance letter. Raw NDM results to be reviewed by the geotechnical professional at the end of each day’s earthworks.

7. Geotechnical professional to complete periodic site visits to assess general fill, soil placement and procedures, and complete review of compaction testing results during the cut / fill process. As ENGEO will not be completing the NDM testing, we will need to observe the fill surface following the placement of each 1 m of fill material to validate compaction and placement.

8. Geotechnical professional to provide completion report summarising compaction test data and a document stating the suitability for earth fill prior to residential and commercial development.

9. Begin construction of utilities, roads, etc. Geotechnical site information and guidance to be made available to the Civil Engineer, as required.

9.1 Bulking / Shrinkage Factors

We recommend the following factors be applied to assess haulage and placed fill requirements (if required for on site / site-won soils; imported material may have different factors).

- To assess haulage requirements, we recommend applying a bulking factor of 1.2 to the *in situ* volumes to calculate loose volumes.
- To assess as-placed, compacted volumes from *in situ* volumes we recommend using a shrinkage factor of 0.95 (compared to borrow volume).

10 References

Standards Association of New Zealand (1986). Methods of Testing Soils for Civil Engineering Purposes, NZS 4402:1986.

Standards Association of New Zealand (1989). Code of Practice for Earth Fill for Residential Development, NZS 4431:1989.

Standards Association of New Zealand (2010). NZS 4404:2010 Land Development and Subdivision Infrastructure

Standards Association of New Zealand (2015). Methods of sampling and testing road aggregates, NZS 4407:2015.

11 Limitations

i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Peebles Group, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.

ii. The recommendations in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.

iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

iv. This Limitation should be read in conjunction with the Engineering NZ / ACENZ Standard Terms of Engagement.

v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (03) 328 9012 if you require any further information.

Report prepared by

Jed Watts

Engineering Geologist

Report reviewed by

Don Bruggers, CMEngNZ (CPEng)

Principal Engineer

APPENDIX 1:

Woods Cut to Fill Plan and Earthworks Plan

WOODS
EST.1970

LEGEND

STAGE 6 BOUNDARY	
PROPOSED BOUNDARIES	
EXISTING BOUNDARIES	
CUT/FILL DEPTH CONTOURS BETWEEN STRIPPED SURFACE AND FINISHED SURFACE (0.5m INTERVALS)	--0.5-
CUT HATCH	0.5 to 1.0m 0.0 to 0.5m
FILL HATCH	0.0 to 0.5m 0.5 to 1.0m 1.0 to 1.5m 1.5 to 2.0m

NOTES

1. ALL WORKS AND MATERIALS TO COMPLY WITH THE CCC ENGINEERING STANDARDS AND POLICIES. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.
2. AVERAGE DEPTH OF TOPSOIL ESTIMATED AT 200mm and 100mm OF DINAMIC COMPACTION (TOTAL 300mm).
3. CUT / FILL VOLUMES ARE CALCULATED BETWEEN THE FINISHED SURFACE AND THE EXISTING STRIPPED SURFACE.
4. CUT / FILL VOLUMES ARE SOLID MEASURES ONLY. NO ALLOWANCE FOR BULKING OR COMPACTION FACTORS MADE.

EARTHWORKS VOLUMES	
CUT	4500m³
FILL	100000m³
BALANCE	95500m³

SCALEBAR (m)

0 15.0 30.0 75.0

REVISION DETAILS		BY	DATE
1	ISSUED FOR INFORMATION	JLS	5/12/19

SURVEYED	RH	KENNAWAY ROAD WOOLSTON CHRISTCHURCH 8023
DESIGNED	RH	
DRAWN	JLS	
CHECKED	MC	
APPROVED	MC	WOODS.CO.NZ

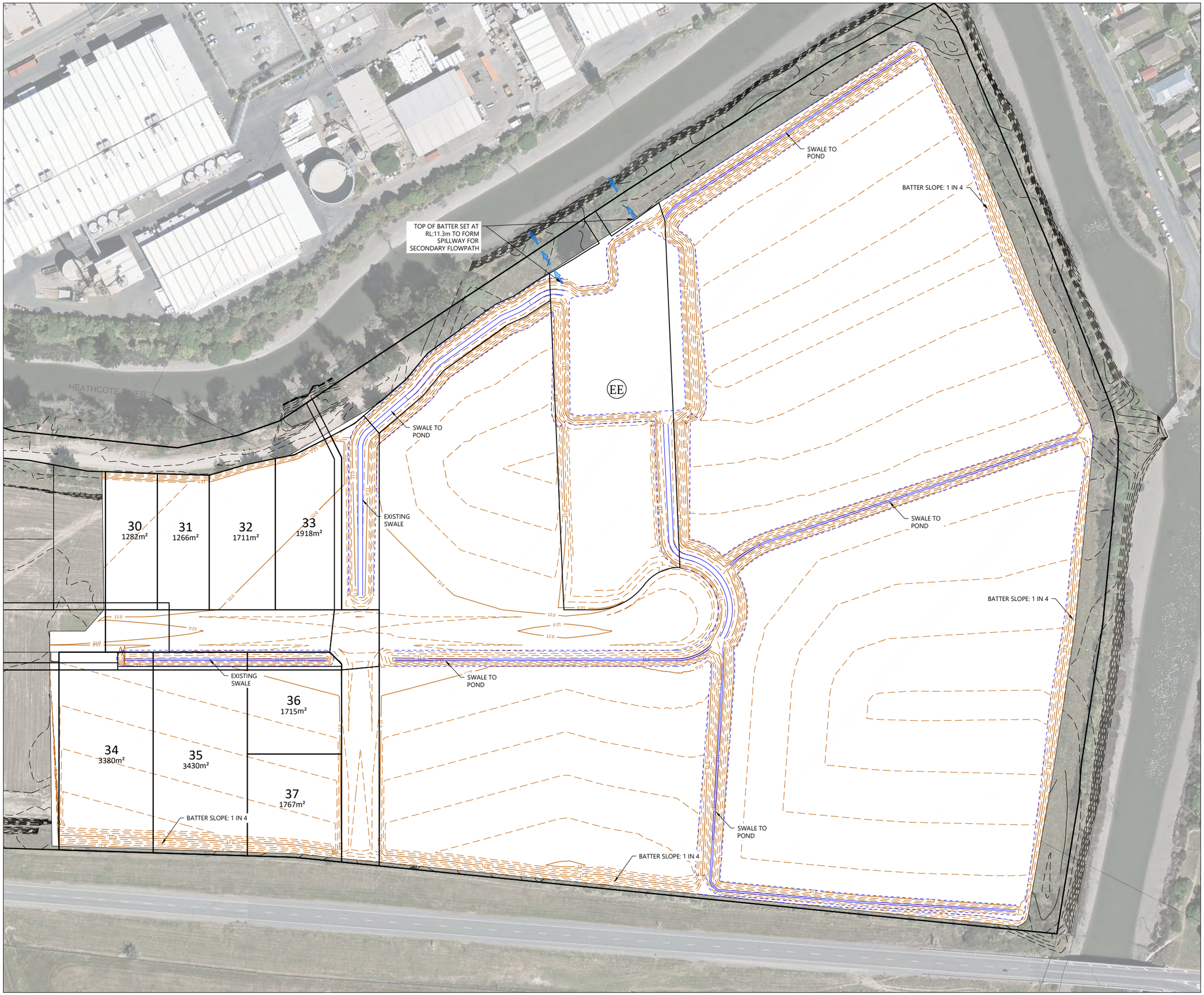
portlink INDUSTRIAL PARK

PORTLINK INDUSTRIAL ESTATE
STAGE 5

DEPTH CUT/FILL CONTOUR PLAN

STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:1500 @ A3	1
COUNCIL	CHRISTCHURCH CITY	
DWG NO	P19-321-06-120-EW	

Document No. L:\P19-321 - PORTLINK STAGE 6,7 & 8\CAD\ENGVP19-321-06-120-EW_CUT FILL.DWG 17/12/2019 4:03 PM



WOODS
EST.1970

LEGEND

- STAGE 5 BOUNDARY
- PROPOSED BOUNDARIES
- EXISTING BOUNDARIES
- EXISTING CONTOURS MAJOR (0.5m INTERVAL) — 8.0
- EXISTING CONTOURS MINOR (0.1m INTERVAL)
- PROPOSED CONTOURS MAJOR (0.5m INTERVAL) — 8.0
- PROPOSED CONTOURS MINOR (0.1m INTERVAL)
- SECONDARY FLOW PATH

NOTES

1. ALL WORKS AND MATERIALS TO COMPLY WITH THE CCC ENGINEERING STANDARDS AND POLICIES. ANY AMBIGUITY BETWEEN DRAWINGS AND COUNCIL STANDARDS TO BE REPORTED TO THE ENGINEER FOR CLARIFICATION.

DATUM

1. LEVELS ARE IN TERMS OF CHRISTCHURCH DRAINAGE DATUM.
2. COORDINATES ARE IN TERMS OF LOCAL CIRCUIT MOUNT PLEASANT 2000.

SCALEBAR (m)
0 15.0 30.0 75.0

REVISION DETAILS		BY	DATE
1	ISSUED FOR INFORMATION	JLS	5/12/19

SURVEYED	RH	KENNAWAY ROAD WOOLSTON CHRISTCHURCH 8023
DESIGNED	RH	
DRAWN	JLS	
CHECKED	MC	
APPROVED	MC	WOODS.CO.NZ

portlink INDUSTRIAL PARK

PORTLINK INDUSTRIAL ESTATE
STAGE 5

PROPOSED CONTOUR PLAN

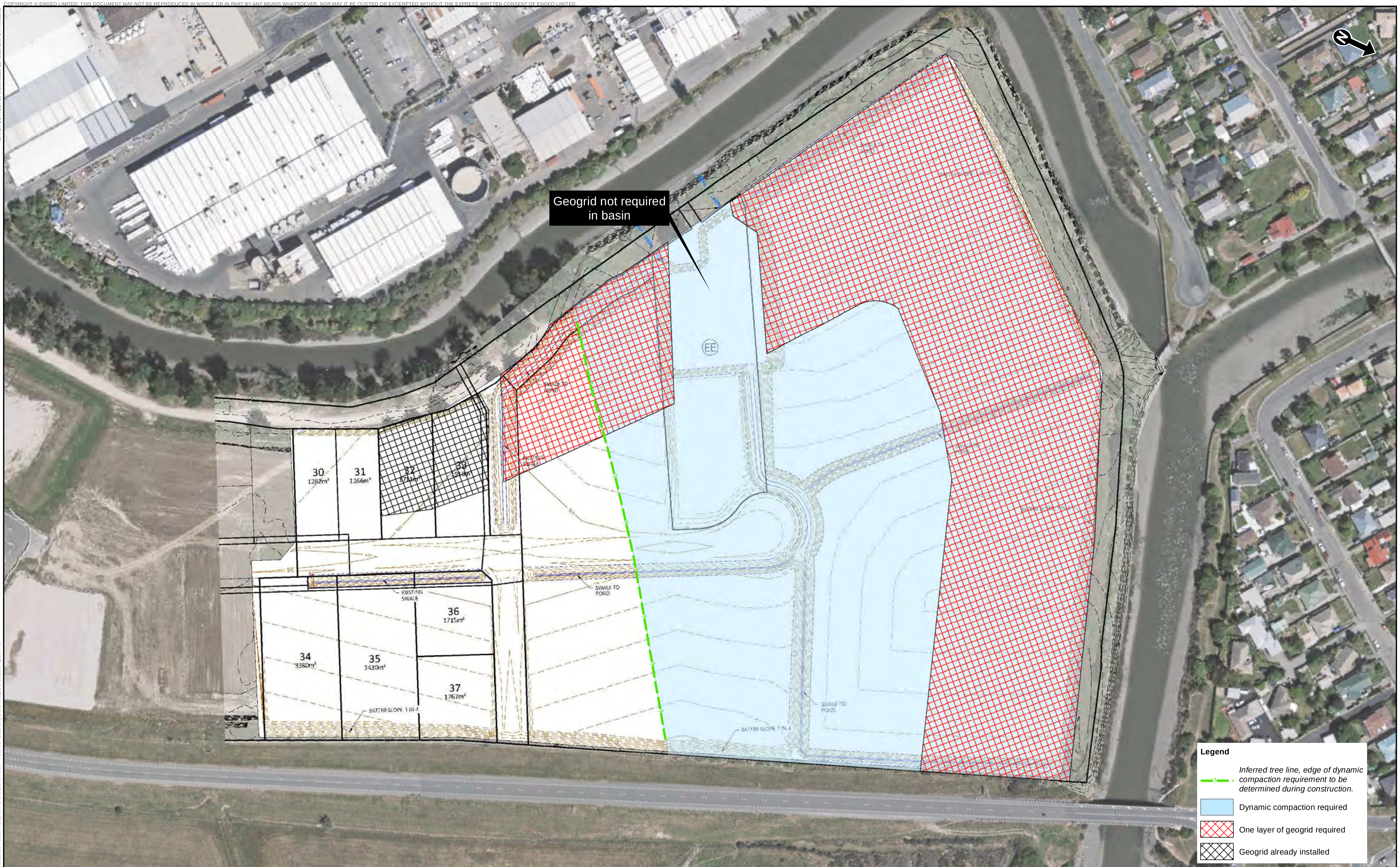
STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:1500 @ A3	1
COUNCIL	CHRISTCHURCH CITY	
DWG NO	P19-321-06-110-EW	

Document No. L:\P19-321 - PORTLINK STAGE 6,7 & 8\CAD\ENG\P19-321-06-110-EW_PROPOSED CONTOURS.DWG 17/12/2019 4:02 PM

APPENDIX 2:

Proposed Construction Plan

DATE PLOTTED: 03 March 2020 11:43:59 a.m. BY: rwilliams



ENGEO

Christchurch Office
124 Montreal Street
Sydenham, Christchurch 8023
Tel: 03 328 9012
www.engeo.co.nz

Title:

Earthworks specification and dynamic compaction

Aerial: LINZ and Eagle Technology, CC BY 4.0.
Map image: Eagle Technology.

0 50 100 Metres

PROJECTION: NZGD 2000 New Zealand Transverse Mercator

Client: Peebles Group

Project: Portlink Industrial Park

Proj No: 11055.000.000

Designed:	JW
Drawn:	DK
Checked:	DRAFT
Date:	Mar 20
Scale:	1:1,800

Figure No: 1

Size: A3

Revision: A

ORIGINAL FIGURE PRINTED IN COLOUR

APPENDIX 3:

ENGEO Reports

8 July 2014

Mr M Cochran
Kennaway Park Joint Venture C/- Woods
48 Fitzgerald Avenue
Christchurch

Dear Mark

RE: Geotechnical Aspects for Subdivision of Stages 5 and 6 at Portlink Industrial Estate, Woolston

Our Reference: 09627

1 Introduction

Geoscience Consulting (NZ) Ltd (Geoscience) has been retained as geotechnical consultant for the Portlink Industrial Estate (herein referred to as "the site"), and are responsible for geotechnical monitoring of the earthworks and site development activities.

This letter presents our comments relating to the proposed development and subdivision of the Stage 5 and 6 areas of the site.

2 Proposed Development

A scheme plan prepared by Woods is attached to this letter, and it depicts the locations of Stages 5 and 6. The stages are within the northern half of the site and portions of both stages are adjacent to the Heathcote River. Six and five new commercial lots are proposed for Stages 5 and 6 respectively.

The existing ground level is proposed to be increased by the placement of engineered fill, to a height of approximately 1 m to 2 m. The fill materials are anticipated to comprise mixtures of imported silt, sand and gravel, similar to what has been used on Stages 1, 3 and 4 of the development. A 20 m wide landscaping zone is proposed for the site boundary adjacent to the Heathcote River, and this zone is not proposed to be filled.

3 Geotechnical Considerations

Geotech Consulting Ltd (Geotech) have undertaken a Geotechnical Investigation for the northern portion of the site, and prepared a Factual Report dated 14 August 2013 and Interpretive Report dated 15 August 2013, numbered 3883. The Interpretive Report discusses the liquefaction susceptibility of the site and makes general recommendations for foundations for new industrial and commercial buildings. The report does not make specific recommendations for earthfilling or ground improvement strategies.

The subsurface conditions reported for the Stage 5 and 6 area is generally similar to those for the southern half of the site. This is generally natural alluvium, comprising loose to medium dense

interlayered sand, silt and silty sand to at least 15 m depth. This area experienced isolated liquefaction and minor lateral spreading along the Heathcote River.

Ground cracks associated with lateral spreading were observed up to 60 m from the river bank, following the February 2011 earthquake, at the north-western end of the Stage 6 area. The attached scheme plan indicates the portion of Stage 6 which demonstrated lateral spreading and remedial measures are recommended within this portion to reduce the likelihood of future lateral spreading.

Stage 5 did not demonstrate evidence of lateral spreading, however isolated sand boils were observed.

4 Recommended Remedial Measures

The placement of additional fill above the existing site levels provides some measure of protection against surface expression of liquefaction (sand boils) by thickening the non-liquefiable surface "crust" (Ishihara 1985). Therefore, we anticipate that the site filling activities should reduce the potential for sand boils as well as reduce potential liquefaction related differential settlement beneath future buildings.

In addition, Geoscience recommends that a compaction trial is carried out within the boundaries of Stage 6 (as indicated by "Area 4" on the attached scheme plan) to densify the near surface layers prior to the placement of fill. The compaction should be observed by Geoscience and carried out by impact or dynamic rolling. Depending on the outcome of the trial and the degree of densification that can be practically achieved, the use of geogrid reinforcement within the fill is also be recommended.

Further, the foundations for new buildings located within 100 m of the river bank are recommended to be specifically designed for the predicted lateral displacements, as per the Geotech Interpretive Report.

Additional measures to mitigate lateral spreading damage include the formation of low friction sliding interfaces (such as double layers of DPM), strategic planning of building and service locations, as well as limiting building shapes and sizes.

5 Limitations

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We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned if you require any further information.

Report prepared by

Jana Kruyshaar, CPEng

Senior Geotechnical Engineer

Reviewed by

Matt Wiley, CPEng

Principal Geotechnical Engineer

Attachments: Stages 5 and 6 Scheme Plan – Land Mitigation Areas

SCHEDULE OF AREAS			
Lot #	Purpose	Area	
19	Business	2769	m²
20	Business	1935	m²
21	Business	2048	m²
22	Business	5026	m²
23	Business	3597	m²
24	Business	3328	m²
25	Business	2146	m²
26	Business	2662	m²
27	Business	3380	m²
28	Business	3431	m²
29	Business	3483	m²
104	Road to vest	903	m²
105	Road to vest	1063	m²
106	Road to vest	3880	m²
62	Local purpose (recreation) reserve	1913	m²
303	Balance lot	98746	m²
	Total	140310	m²

STAGE 5
LOTS 19-24, 62, 104, 105, 303

STAGE 6
LOTS 25-29 & 106

PROPOSED EASEMENT

PROPOSED EASEMENTS IN GROSS			
PURPOSE	SHOWN	SERVIENT TENEMENT	GRANTEE
RIGHT TO DRAIN WATER	A	LOT 19	CCC
	B	LOT 20	CCC
	C	LOT 21	CCC
	D	LOT 22	CCC
	E	LOT 23	CCC
	F	LOT 24	CCC
	G	LOT 25	CCC
	H	LOT 26	CCC
	I	LOT 27	CCC
	J	LOT 28	CCC
	K	LOT 29	CCC
	L	LOT 303	CCC
	N	LOT 22	CCC
	O	LOT 23	CCC
	P	LOT 24	CCC
	Q	LOT 27	CCC
	R	LOT 28	CCC
	S	LOT 29	CCC
RIGHT TO DRAIN & STORE WATER	M	LOT 303	CCC

PROPOSED EASEMENTS			
PURPOSE	SHOWN	SERVIENT TENEMENT	DOMINANT TENEMENT
RIGHT TO DRAIN WATER	BB	LOT 20	LOT 19
	CC	LOT 21	LOTS 19 & 20
	EE	LOT 23	LOT 22
	FF	LOT 24	LOTS 22 & 23
	GG	LOT 25	LOTS 19 - 21
	HH	LOT 26	LOTS 19 - 21, 25
	II	LOT 27	LOTS 22 - 24
	JJ	LOT 28	LOTS 22 - 24, 27
	KK	LOT 29	LOTS 22 - 24, 27-28
	TT	LOT 62	LOTS 19-29
	LL	LOT 303	LOTS 19-29

STAGE 5 & 6 LAND MITIGATION AREAS

- Area 4 - Within Business Lots
- Area 4 - Within Reserves

REVISION DETAILS	NAME	DATE
1. ISSUED FOR CONSENT	RH	7/07/14

CLIENT:

portlink INDUSTRIAL PARK

PORTLINK INDUSTRIAL ESTATE - STAGES 5 & 6

SCHEME PLAN
LAND MITIGATION AREAS

CHRISTCHURCH CITY COUNCIL

WOODS
Engineers. Surveyors. Planners.

DESIGNED:	ISSUED FOR CONSENTING
CHECKED:	DRAWN: RH
APPROVED:	SURVEYED: WOODS
JOB NUMBER: 40237	SCALE: 1:750 @ A1, 1:1500 @ A3
ISSUED: 30.04.2014	
DWG. NO. 40237-01-GE-012	REV. 1

23 March 2015

Matt Currie
Kennaway Park Joint Venture
PO Box 4398
Shortland Street
Auckland 1140

Dear Matt

Re: Portlink Northern Area – Existing Fill Remediation Proposals

1 Introduction and Background

Further to our correspondences and meeting on 18 February 2015, this letter provides a discussion on the implications of the existing non-engineered fill present within the northern area of Portlink which is yet to be developed. At this time, the area comprises future Stages 7 and 8 of the development. We are unsure of when the fill was placed, however a review of aerial photographs available from (http://canterburymaps.govt.nz/WebApps/tourofchch/#map) suggests that the majority of fill was placed during the 1970s and 1980s, although placement of fill at the north-western side could have occurred as early as 1950.

Geotech Consulting Ltd (GCL) and ENGEO have completed limited subsurface investigations in this area. The fill is briefly discussed in the Geotech Consulting Ltd Report dated 15 August 2013. ENGEO conducted a subsequent investigation in April 2014, comprised of test pits, to assess the composition and quality of the fill. Our reports dated 14 April 2014 and 28 May 2014 discuss our findings. Subsequent supplementary investigations completed by ENGEO in August 2014 indicate that the fill is more variable in composition over the area than indicated in our previous reports. Further, buried topsoil and plant matter was identified in several locations beneath the fill layer. Our investigations to date indicate that the average depth of the fill is less than 1.5 m.

The presence of the variable fill results in the following two geotechnical issues for the future development of the land, which are in addition to the liquefaction hazards which are detailed in the GCL report.

1. Potential differential settlement beneath future buildings due to the variable nature of the existing fill; and

2. Potential for consolidation settlement of the topsoil and organic material below the fill as it decomposes.

Both of these issues require mitigation if the area is to be developed for future buildings.

Two mitigation methods are proposed:

- Dynamic compaction/impact rolling using either an octagonal or Broons roller to compact to the existing fill layer which currently covers the site; and
- Preloading to address potential settlements that may occur within the organic and topsoil layer.

2 Dynamic Compaction

We recommend that dynamic compaction is carried out over the entire future Stage 7 and Stage 8 area where existing fill is identified to be present, with the exception of the proposed wetland (Lot 61)..

The recommended procedure is as follows:

- A trial is recommended to be carried out over a smaller area to assess the overall effectiveness of this method and the likely settlements that could be expected, as well as develop a performance specification prior to completing the full program of compaction;
- Subject to the completion of a successful trial, the full area for compaction should be stripped of surficial topsoil and a thin layer (150 mm) of well graded sandy gravel should be placed. This is to provide a uniform, firm surface for the roller;
- A survey of the pre-compaction ground surface levels should be carried out;
- The compaction should be carried out so that the target number of passes and / or quantity of settlement has been achieved; and
- A post-compaction ground surface survey should be carried out. This will allow verification of the effectiveness of compaction.

The dynamic compaction should be carried out prior to winter, as dry conditions are expected to respond more effectively than wet.

3 Preloading

We recommend that the proposed development area containing existing fill be preloaded, as our investigations to date indicate that the organic matter and topsoil beneath the fill is present in most areas tested. The extent of the preload area may be revised once further investigations are completed. The preload program should also provide additional confidence that the existing fill has been adequately prepared for the construction of new buildings, as timber has been found to be present in the fill.

Preloading should be carried out after the dynamic compaction program has been completed. We recommend that the site development earthworks are carried out prior to preloading, i.e. once the program of dynamic compaction is completed bulk filling works are carried out as necessary to form the new building platforms (including the use of geogrid as necessary within the new fill). Once the bulk filling is completed, then the preload fill may be placed. Any type of soil material (e.g. topsoil) may be used for the preload fill.

We estimate that the height of preload be approximately 2 m, and that it should remain in place for a period of between 3 to 6 months. A ‘rolling’ preload program may be followed, where individual lots are preloaded at a time, with the preload fill being reused multiple times. We do not expect weather conditions to influence the preloading program significantly, and therefore preloading may be carried out during winter.

Quality assurance measures should comprise settlement monitoring during the preload period for every area being loaded. A simple method of doing this involves the installation of settlement plates within the preload area and conducting regular level surveys. The frequency of survey would be weekly the first month and bi-weekly thereafter. Electronic methods are also available and can be investigated if required.

4 Quality Assurance Monitoring

Dynamic compaction, site preparation, bulk filling and settlement monitoring should be carried out under the observation of ENGEO and WOODS are expected to undertake site survey activities.

A geotechnical report will be prepared upon the completion of the mitigation and site development works.

5 Expected Outcomes

Subject to the outcome of a dynamic compaction trial, the mitigation works described herein are expected to reduce the likelihood of differential settlement beneath future buildings constructed in Stages 7 and 8. Therefore, we do not expect significant foundation constraints for typical industrial buildings with normal building code requirements (e.g. in relation to settlement) in this area once the mitigation works are completed. We anticipate that the recommendations for shallow foundations in the Geotech Consulting Ltd report to generally apply, however foundation recommendations specific to each building/lot would likely need to be refined following ground remediation works.

Buildings with very specific performance requirements are likely to require more stringent design and alternative foundation options may need to be considered.

6 Limitations

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Report prepared by

Jana Kruyshaar, CPEng

Senior Geotechnical Engineer

Reviewed by

Donald Bruggers, CPEng

Principal Geotechnical Engineer

3 July 2015

Matt Currie
Kennaway Park Joint Venture
PO Box 4398
Shortland Street
Auckland 1140

Dear Matt

Re: Portlink Stage 6 – Geogrid Reinforcement Recommendations for Lots 25 and 26

We understand that filling of Lots 25 and 26 of Stage 6 of the Portlink Industrial development is proposed to be completed in spring of 2015. These lots are identified as being potentially subject to lateral spreading in future significant earthquakes, based on the site's performance during the 2010/2011 Canterbury Earthquake Sequence (CES) and as described in our report dated 28 May 2014 (reference 09627_7).

We estimate that lateral displacement may occur within approximately 60 m of the Heathcote River bank at the northern end of Stage 6. The observed ground cracks and spreading during the CES did not extend past the southern boundary of Lot 25, as indicated by the attached Scheme Plan prepared by WOODS.

The land is proposed to be filled with at least 1 m of imported fill materials. The fill is expected to comprise silty, sandy gravel mixtures from various sources around the greater Christchurch area.

ENGEO recommends that uniaxial geogrid is incorporated into the fill platform on Lots 25 and 26 to provide additional resistance against lateral displacement in the event of a future significant earthquake. The minimum extents of the geogrid are indicated on the attached Scheme Plan. Geogrid is not required to be used in landscaping areas.

The geogrid should comprise at least one layer of Tensar RE510 (or similar performing product), incorporated between the native subgrade and the new fill. Triaxial geogrid may also be considered. The geogrid should be placed in accordance with manufacturers specifications, and should be aligned so that the long axis is perpendicular to the river bank.

Any buildings straddling over into the lateral displacement 'zones' as indicated, should be designed to accommodate the potential for lateral stretch as recommended in the Geotech Consulting Ltd Interpretive Report dated 15 August 2013 (e.g. incorporate appropriate reinforcement and building alignment, additional geogrid below foundations and / or low friction sliding surfaces such as double layers of DPM). ENGEO recommends designing for 200 mm of lateral stretch on Lots 25 and 26, based on the performance of the site during the Canterbury earthquake sequence.

For Lot 25, if no structures are proposed to be constructed in the north-eastern portion of the site which is within the lateral displacement zone, and if the risk to pavements and services can be tolerated, then the geogrid reinforcement in the fill may be excluded. We recommend that geogrid is incorporated into Lot 26 regardless of whether structures are proposed within the lateral displacement zone or not.

Limitations

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We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned if you require any further information.

Report prepared by

Jana Kruyshaar, CPEng

Senior Geotechnical Engineer

Reviewed by

Don Bruggers, CPEng, IntPE (NZ); PE, GE (USA)

Principal Engineer

6 October 2015

Matt Currie
Kennaway Park Joint Venture
PO Box 4398
Shortland Street
Auckland 1140

Dear Matt

Re: Portlink Northern Area – Dynamic Compaction Specifications

This letter presents our specifications for dynamic compaction which is to be undertaken within the northern area of Portlink Industrial Park.

1 Dynamic Compaction Locations

Dynamic compaction is to be carried out within the northern area at Portlink, in all areas containing existing fill where new structures, paved surfaces and underground services are to be installed.

As a minimum, we expect that the area will include future lots numbered 31 to 34, as depicted on the attached Scheme Plan (Revision 8) prepared by Woods Consultants Ltd (WOODS).

Landscaping areas, the proposed wetland and the esplanade reserve around the external boundary of the northern area do not require dynamic compaction.

2 Dynamic Compaction Equipment

Dynamic compaction should be carried out using impact rolling machinery approved by ENGEO.

The Broons model BH-1300 square roller meets the minimum requirements for this project. Any substitute rollers should be equivalent to or better than the BH-1300.

3 Site Preparation Works for Dynamic Compaction

ENGEO understands that the extent of dynamic compaction works to be undertaken at a given time is dependent on the quantities of imported fill available at the site and that no more than 1.5 ha may be topsoil stripped at a time as stipulated by the earthworks consent conditions.

The following should be carried out prior to dynamic compaction being commenced on any part of the site:

- The existing vegetation and surficial topsoil is to be removed and stockpiled elsewhere.

- The edges of the stripped area should be graded back gently to the existing ground level so that there is a smooth transition between the vegetated and stripped area.
- There is no requirement to place a layer of gravel on the ground surface as the stripped ground is anticipated to be firm.

4 Dynamic Compaction Activities

A minimum of 15 passes is required to be carried out by the impact roller.

In areas where greater than expected deformations and settlements occur (for example, greater than 250 mm), additional passes may be required and this will be directed by ENGEO.

If there are areas which indicate that further settlement is possible under building loads (for example, areas demonstrating plastic deformation or continuing settlement under additional passes of the roller), then it may be necessary to preload these areas, however this will be assessed on a case by case basis and will be dependent on the proposed structures and lot layout for that area.

Dynamic compaction should be carried out when the ground conditions are dry to achieve optimal results.

5 Survey Monitoring Specification

WOODS should carry out a level survey of the stripped ground before dynamic compaction commences.

Survey monitoring should be carried out again upon completion of a minimum of 15 passes. The results should be submitted to ENGEO for review and comment, prior to earth filling commencing.

If additional passes of the impact roller are required, then the area should be surveyed again upon completion of the additional passes.

6 Limitations

i. We have prepared this report in accordance with the brief as provided. This report has been prepared for the use of our client, Kennaway Park Joint Venture, their professional advisers and the relevant Territorial Authorities in relation to the specified project brief described in this report. No liability is accepted for the use of any part of the report for any other purpose or by any other person or entity.

ii. The recommendations in this report are based on the ground conditions indicated from published sources, site inspections and subsurface investigations described in this report based on accepted normal methods of site investigations. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the Client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it must be appreciated that actual conditions could vary from the assumed model.

iii. Subsurface conditions relevant to construction works should be assessed by contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes.

iv. This Limitation should be read in conjunction with the IPENZ/ACENZ Standard Terms of Engagement.

v. This report is not to be reproduced either wholly or in part without our prior written permission.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned if you require any further information.

Report prepared by

Jana Kruyshaar, CPEng
Senior Geotechnical Engineer

Reviewed by

Don Bruggers, CPEng
Principal Engineer

21 July 2016

Kennaway Park Joint Venture
C/- Woods
48 Fitzgerald Avenue
Christchurch Central
Christchurch 8011

RE: Geotechnical Comments for Stages 5 to 8, Portlink Industrial Park, Woolston, Christchurch

(Our Reference: 09627.000.000_19)

1 Introduction

At your request, this letter provides a summary of the geotechnical and earthwork activities documented by ENGEO Ltd for the Portlink development.

ENGEO (formerly trading as Geoscience Consulting (NZ) Ltd) has been retained by Kennaway Park Joint Venture C/- Woods to provide geotechnical consultation and earthworks monitoring services for the Portlink Industrial Park development. Earthworks for Stages 1 to 4 at the southern end of the development were completed in 2014 and Stages 5 and 6 have been recently completed. Future Stages 7 and 8, located at the northern end of the development, have not yet commenced.

2 Geotechnical and Earthworks Activities

Portlink aims to provide building platforms that are suitable for future industrial and commercial buildings. Elements of the earthworks' activities being undertaken at Portlink have been monitored by ENGEO to verify that the land is suitable for construction and to provide geotechnical advice for the specific design of foundations. Reference is made to the previous reports provided by ENGEO during design and earthworks associated with the development.

2.1 Earthfilling

The majority of the land within Portlink's boundaries is to be or has been raised by the placement of engineered fill. Fill heights are typically ranging between 1 m to 2 m. The fill materials comprise mixtures of imported silt, sand and gravel from a variety of sources in and around Christchurch. ENGEO has monitored the fill composition, placement, compaction and testing, and our observations are summarised in Geotechnical Completion Reports which are prepared for each stage of the development.

The main purpose of the fill is to comply with Christchurch City Council's (CCC) minimum floor level requirements for construction of the buildings and other site improvements.

2.2 Ground Improvement

In addition to earthfilling, Stages 7 and 8 of the development will incorporate a programme of ground improvement due to the ground conditions in this area differing from the remainder of the site.

Ground improvement is to be achieved by means of Dynamic Compaction, which is a common method used to densify granular soils and utilises a large offset roller. These works will be carried out before the engineered fill is placed.

3 Future Building Foundations

Following satisfactory dynamic compaction and placement of engineered fill, typical industrial building foundations with normal building code requirements should be suitable at this site, as has been the case with the recently constructed buildings at Portlink.

4 References

Geotech Consulting Ltd (2011). Portlink Industrial Park Stage 1 Interpretive Geotechnical Report, dated 30 June 2011, Reference 3883.

Geoscience Consulting (NZ) Ltd (2012). Geotechnical Completion Report for Lot 1, Stage 1, Portlink Industrial Subdivision, Christchurch, dated 2 May 2012, Reference 11005_15.

Geoscience Consulting (NZ) Ltd (2013). Geotechnical Completion Report for Lot 8, Stage 2, Portlink Industrial Subdivision, Christchurch, dated 20 March 2013, Reference 11005_34.

Geoscience Consulting (NZ) Ltd (2013). Geotechnical Completion Report for Stage 1 and 2, Portlink Industrial Subdivision, Christchurch, dated 1 May 2013, Reference 11005_36.

Geotech Consulting Ltd (2011). Portlink Industrial Park Stage 2 Interpretive Geotechnical Report, dated 15 August 2013, Reference 3883.

Geoscience Consulting (NZ) Ltd (2014). Geotechnical Completion Report for Stage 3 and 4, Portlink Industrial Subdivision, Christchurch, dated 11 April 2014, Reference 09627_2.

5 Limitations

i. The conclusions and representations provided in this report are based on the ground conditions indicated from published sources, site assessments and subsurface investigations described in this and the referenced reports. Only a limited amount of information has been collected to meet the specific financial and technical requirements of the client's brief and this report does not purport to completely describe all the site characteristics and properties. The nature and continuity of the ground between test locations has been inferred using experience and judgement and it should be appreciated that actual conditions could vary from the assumed model.

ii. Subsurface conditions relevant to the design and construction works should be assessed by Engineers and Contractors who can make their own interpretation of the factual data provided. They should perform any additional tests as necessary for their own purposes and to meet their specific design requirements.

We trust that this information meets your current requirements. Please do not hesitate to contact the undersigned on (03) 328 9012 if you require any further information.

Report prepared by

Jana Kruyshaar, MIPENZ, CPEng

Senior Geotechnical Engineer

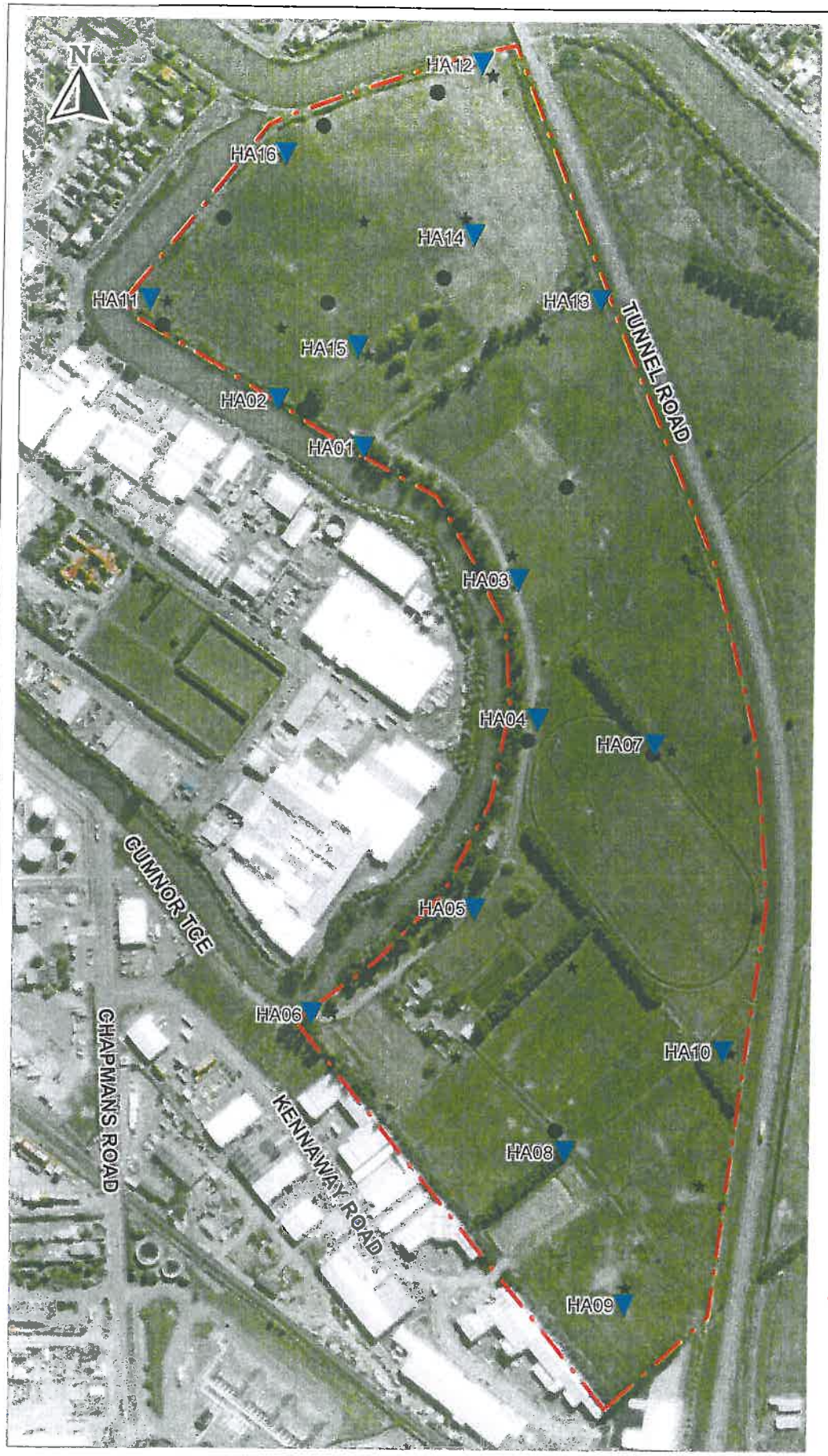
Report reviewed by

Donald Bruggers, CPEng

Principal Geotechnical Engineer

APPENDIX 4:

Hand Augers completed by Coffey



PSD SAMPLES:

HA01	3
HA12	2

LEGEND

- CPT - Historic
- CPT - Coffey 2009
- HA - Coffey 2009
- DCP - Coffey 2009
- Site Boundary

50 0 50 100
metres

Drawn:	MAG
Approved:	GMM
Date:	Mar 2009
Scale:	1 : 5 000
Original size:	A4P

coffey geotechnics
SPECIALISTS MANAGING THE EARTH

Client:	Kennaway Joint Venture C/- Eliot Sinclair and Partners Limited
Project:	Geotechnical services at Kennaway Farm Ferrymead Christchurch
Title:	SITE INVESTIGATIONS - Hand Auger
Project #:	GENZCHRI13873
Figure #:	3

coffey geotechnics

Engineering Log - Hand Auger

Hand Auger No. HA01

Sheet 1 of 1

Project No: GENZCHRI13873

Client: ELIOT SINCLAIR AND PARTNERS LTD

Date started: 18.2.2009

Principal:

Date completed: 18.2.2009

Project: KENNAWAY JOINT VENTURE

Logged by: MH

Hand Auger Location:

Checked by:

Vane No: Easting: 2484937 m Slope: -90° R.L. Surface: m

Hole diameter: mm Northing: 5738788 m Bearing: Datum:

drilling information					material substance						
stratigraphy	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material Soil type; colour, structure. Grading; bedding; plasticity, sensitivity. Secondary and minor components, additional information.	moisture condition	consistency/ density index	vane shear (remoulded /peak) kPa 25 50 75 100 125 150 175	structure and additional observations
							SAND with some gravel, brown. Rootlets; sand is fine grained, sub-angular gravel (TOPSOIL).	D	VSt		
				0.5			Sandy SILT, dark to light brown. Sand is very fine grained.		St		CHRISTCHURCH FORMATION
		S01-01					SAND with some silt, light brown. Sand is medium grained.		D		
		S01-02					SAND, light brown. Local rootlets; sand is fine to medium grained.				... PSD test of S01-01
				1.0			Silty SAND, light brown. Sand is fine grained.				
							Sandy SILT with minor gravel, yellowish brown with local iron staining. Gravel is fine grained, sub-rounded.		St		
		S01-03									
		S01-04		1.5			SAND, light brown. Sand is fine to medium grained.	M	D		... PSD tests of S01-03 and S01-04
		S01-05					SAND with minor silt, brown with local iron staining.				
	▼			2.0							
		S01-06					SAND with trace of silt, bluish grey with local iron staining. Sand is fine to medium grained; no recovery from 3 m.	W			
		S01-07		2.5				S			
		S01-08									... PSD tests of S01-08 and S01-09
		S01-09		3.0			Borehole HA01 terminated at 3 metres.				
				3.5							

HAND AUGER 13873 - KENNAWAY JOINT VENTURE.GPJ COFFEY.GDT 19.3.09

Form GEO 5.1 Rev.6

classification symbols and soil description based on Field Description of Soil and Rock, New Zealand Geotechnical Society Inc 2005

vane shear (kPa)
- ● remoulded
- X peak
- >>X peak greater than 200kPa
- UTP unable to penetrate

water
- ▼ 10/1/98 water level on date shown
- ► water inflow
- ◄ water outflow

moisture
- D dry
- M moist
- W wet
- S saturated

consistency/ density index

VS	very soft	VL	very loose
S	soft	L	loose
F	firm	MD	medium dense
St	stiff	D	dense
VSt	very stiff	VD	very dense
H	hard		

coffey geotechnics

Engineering Log - Hand Auger

Hand Auger No: HA02
Sheet: 1 of 1
Project No: GENZCHRI13873
Date started: 18.2.2009
Date completed: 18.2.2009
Logged by: MH
Checked by:

Client: ELIOT SINCLAIR AND PARTNERS LTD
Principal:
Project: KENNAWAY JOINT VENTURE
Hand Auger Location:

Vane No:
Easting: 2484861 m
Slope: -90°
R.L. Surface: m
Hole diameter: mm
Northing: 5738830 m
Bearing:
Datum:

drilling information					material substance						
stratigraphy	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material Soil type; colour, structure. Grading; bedding; plasticity, sensitivity. Secondary and minor components, additional information.	moisture condition	consistency/ density index	vane shear (remoulded /peak) kPa 25 50 75 100 125 150 175	structure and additional observations
				0.5			SILT, light brown to grey with local iron staining (TOPSOIL).	D	VSt		
				1.0							
				1.5			SILT with trace of gravel and organics, dark brown paleosoil. Gravel is fine; sub-rounded.		St		CHRISTCHURCH FORMATION
		S02-01					SILT, bluish grey.	M			
							SAND. Sand is fine grained.		D		
	▼	S02-02		2.0			SILT with minor clay, bluish grey with local iron staining. Locally recovered as clayey SILT; no recovery from 2.8 m.	W	St		
		S02-03		2.5				S			
				3.0			Borehole HA02 terminated at 2.8 metres.				
				3.5							

HAND AUGER 13873 - KENNAWAY JOINT VENTURE.GPJ COFFEY.GDT 19.3.09

Form GEO 5.1 Rev.6

classification symbols and soil description
based on Field Description of Soil and Rock, New Zealand Geotechnical Society Inc 2005

vane shear (kPa)
● remoulded
X peak
>>X peak greater than 200kPa
UTP unable to penetrate

water
▼ 10/1/98 water level on date shown
► water inflow
◄ water outflow

moisture
D dry
M moist
W wet
S saturated

consistency/ density index

VS	very soft	VL	very loose
S	soft	L	loose
F	firm	MD	medium dense
St	stiff	D	dense
VSt	very stiff	VD	very dense
H	hard		

coffey geotechnics

Engineering Log - Hand Auger

Hand Auger No. **HA15**

Sheet 1 of 1

Project No: **GENZCHRI13873**

Client: **ELIOT SINCLAIR AND PARTNERS LTD**

Date started: **26.2.2009**

Principal:

Date completed: **26.2.2009**

Project: **KENNAWAY JOINT VENTURE**

Logged by: **GM/MH**

Hand Auger Location:

Checked by:

Vane No: | Easting: 2484929 m | Slope: -90° | R.L. Surface: m

Hole diameter: mm | Northing: 5738875 m | Bearing: | Datum:

drilling information					material substance						
stratigraphy	water	notes samples, tests, etc	RL	depth metres	graphic log	classification symbol	material Soil type; colour, structure. Grading; bedding; plasticity, sensitivity. Secondary and minor components, additional information.	moisture condition	consistency/ density index	vane shear (remoulded /peak) kPa 25 50 75 100 125 150 175	structure and additional observations
				0.0			SILT with trace of fine gravel, light brown with local iron staining. Local rootlets (TOPSOIL).	D	VSt		
				0.5			SILT, light greyish brown with orange mottles. Silt becomes bluish grey and sticky at 1.5 m; no recovery from 2.5 m.	M	St		CHRISTCHURCH FORMATION
	▼			1.0							
				1.5				W/S			
				2.0							
				2.5			Borehole HA15 terminated at 2.5 metres.				
				3.0							
				3.5							

classification symbols and soil description based on Field Description of Soil and Rock, New Zealand Geotechnical Society Inc 2005

vane shear (kPa)
- ● remouldded
- X peak
- >>X peak greater than 200kPa
- UTP unable to penetrate

water
- ▼ 10/1/98 water level on date shown
- ► water inflow
- ◄ water outflow

moisture
- D dry
- M moist
- W wet
- S saturated

consistency/ density index

VS	very soft	VL	very loose
S	soft	L	loose
F	firm	MD	medium dense
St	stiff	D	dense
VSt	very stiff	VD	very dense
H	hard		

HAND AUGER 13873 - KENNAWAY JOINT VENTURE.GPJ COFFEY.GDT 19.3.09

Form GEO 5.1 Rev.6

APPENDIX 5:

CityCare MDD Test Results

Citycare Civil

Citycare Ltd Laboratory, 205 Springs Road, Christchurch 8042
P 03 941 7616 F 03 941 7618 citycarecivil.co.nz

Dry Density / Water Content Relationship

New Zealand Standard Compaction Test

Lab Reference: *0035 / 20*

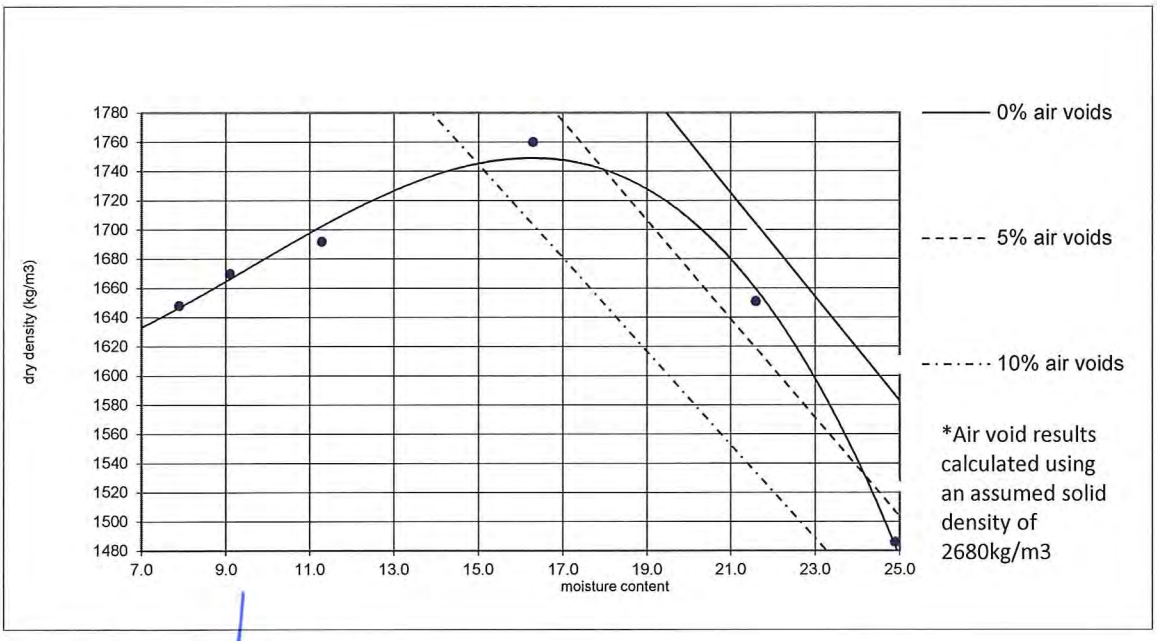
Client: CCL Construction Contracting Limited
Contact Name: Mr C. Scott

Sample Type: Silt - Sample 1
Sample Source: Portlink Fill. Job No. 4032

Date Sampled: 15 January 2020 **Sampled By:** C. Scott
Date of Test: 20 January 2020 **Tested By:** F. Bright

Sample Method: Sampling method unknown, sampled by client (Method is not IANZ Accredited).
Test Method: NZS 4402:1986 Test 4.1.1 (Standard Compaction)
Results:

Moisture Content (% by dry mass)	Wet Density (kg/m3)	Dry Density (kg/m3)
7.9	1780	1650
9.1	1820	1670
11.3	1880	1690
16.3	2050	1760
21.6	2010	1650
24.9	1860	1490
Maximum Dry Density = 1750 kg/m3 Optimum Water Content = 16 %		
Sample History: Natural. Test performed on fraction <19.0mm		



Date of Issue: 27 January 2020

Approved Signatory: _____
(T. O'Regan, Laboratory Manager)

Checked By: _____

This report relates only to the sample tested and may only be reproduced in full.

IANZ ACCREDITED LABORATORY
All tests reported herein have been performed in accordance with the laboratory's scope of accreditation

Appendix 9

Herpetologist Comment

LizardExpertNZ

0272489363 Cell
mtocher@lizardexpertnz.co.nz Email
www.lizardexpertnz.co.nz Web
P.O. Box 54 Port Chalmers, 9050 Address

Peebles Group
PO Box 1026,
Christchurch 8140

Attn: Ben Owen, Development Manager

23rd November 2022

LIZARD MANAGEMENT: 320A CUMNOR TERRACE, WOOLSTON (PORTLINK)

Dear Ben,

Thank you for letting me know that lizards have been found at 320A Cumnor Terrace, Woolston (the 'site'; **Figure 1**). I have conducted lizard surveys in the vicinity of the site, at other locations around the Avon-Heathcote Estuary, and have detected southern grass skinks with relative ease. For this reason, along with the rank grass habitat present, I am very certain that the lizard species at the site is southern grass skink, a species currently classified by the Department of Conservation as 'At Risk – Declining'[1]. Further to this, and again based on other surveys across similar habitats nearby, I suspect there is a sizable population of southern grass skinks present at the site.[2]

Now that you are aware there are lizards on site, I recommend you cease all work across their habitat until agreement is reached with Christchurch City Council (CCC) on the way forward. Below I provide a recommendation on how best to progress with works on site to benefit lizards, that I hope can assist you in discussions with CCC.

[1] Hitchmough *et al.* 2021. Conservation status of New Zealand reptiles, 2021. New Zealand Threat Classification Series 35. Department of Conservation, Wellington. 15 p.
[2] The presence of southern grass skinks triggers fauna habitat 'significance' under criteria within Appendix 3 of the Canterbury Regional Policy Statement.

Figure 1: Location of 320A Cumnor Terrace, Woolston (red polygons). Aerial photo from Canterbury maps that was taken before development of the site commenced.

Extent of Lizard Habitat over 320A Cumnor Terrace

I understand that lizards are not widespread over the site being restricted to northern areas of the site that have not yet been disturbed by development works, e.g., Figure 2. Lizards are present (have been sighted) in the area from the bottom of the bund to the edge of the Avon River (see Figure 2). Here, undisturbed, and unshaded rank grass is the dominant vegetation present, and this habitat is favoured by southern grass skinks of the Avon-Heathcote area.

Figure 2: Recent aerial photograph of the northern part of 320A Cumnor Terrace showing the area where lizards now persist (red arrow).

Landscape Concept Plan and Indigenous Plantings

The landscape concept plan details indigenous plantings over the site, including throughout what is now known to be lizard habitat (see **Appendix 1**). The purpose of the plantings, a requirement of the operative CCC Plan (ODP), is to screen the development from residents of Long Street, Barton Street and Gould Crescent; to improve the amenity of the area for walkers and bikers, and to maintain an ecological corridor.

Now that lizards are known to be present at the site, there is an obvious conflict between the need to carry out indigenous plantings, and the need to protect and maintain 'significant' fauna habitat occupied by southern grass skink.

Recommendations

The most pragmatic course of action, and therefore my recommendation is to leave lizard habitat between the bottom of the bund to the edge of the Heathcote River, undisturbed and unplanted. Plantings of indigenous vegetation that will screen the development from nearby residential areas should be restricted to the sides and top of the bund leaving areas from the base of the bund to the river's edge to resort to/remain as rank grass.

Should this recommendation be adopted, some areas of lizard habitat adjacent to screening plants on the bund will eventually be shaded at some times of the day, as the screening vegetation grows to maturity[3]. Given the northern aspect of the area inhabited by southern grass skinks, I expect this shading to have minimal effect on the undisturbed lizard habitat and lizard populations within. Notwithstanding this assessment, I recommend the removal of all non-indigenous woody weeds from the existing rank grassland habitat over the northern part of the site. This action will improve the quality and extent of rank grass habitat on the site, and in my view, will adequately compensate for any future shading effect on lizard habitat.

Dr Mandy Tocher, Herpetologist, LizardExpertNZ

[3] Shading of lizard habitat is an effect that falls outside the Wildlife Act (1953) meaning no permit is required from the Department of Conservation to shade habitat.

Appendix 1: Landscape Concept Plan (Peebles Group)

LEGEND

PLANTING MIXES

- Mix A - Wetland Mix (3293m²)
- Mix B - Swale Mix (3459m²)
- Mix C - Esplanade Reserve and Tunnel Road Boundary Mix (7319m²)
- Mix D - Roadside Swale Mix (742m²)
- Grass
- Feature Tree
- Existing access track to become pedestrian/cycle only
- Approximate Top of Bank
- Existing Track

Note: Refer to Survey Plan L105 for full extent of site boundary

A. LANDSCAPE CONCEPT PLAN (1:2000)