THE PLANNING COLLECTIVE

Application for Subdivision and associated Land Use Resource Consent

To subdivide two existing Lots to create a total of 17 Lots (plus a Lot to vest for stormwater management and a Lot for vegetation protection) and associated earthworks and vegetation removal for the construction of the subdivision and access points at 47 Hihitahi Rise, Paihia.

Applicant Name: Heron Point Limited

Date: September 2024

This planning assessment has been prepared by The Planning Collective Limited and forms part of the application for resource consent on behalf of Heron Point Limited to subdivide two existing Lots to create a total of 17 Lots (plus a Lot to vest for Stormwater management and a Lot for vegetation protection) and associated earthworks and vegetation removal for the construction of the subdivision and access points at 47 Hihitahi Rise.
(TPC Reference: HER 084-23).

This report has been prepared by:

Claire Booth
Planner
The Planning Collective Limited

Dated: 2/09/2024

This report has been peer reviewed by:

Burnette O'Connor
Director/ Planner
The Planning Collective Limited

Dated: 2/09/2024

"The curves within the circle symbol of our logo are a depiction of the shape the Mahurangi River takes as it weaves its way through Warkworth. This was chosen to illustrate the whenua and landscape of the town that The Planning Collective works so closely with."

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1. Application Details

Applicant	:	Heron Point Limited
Site Address	:	47 Hihitahi Rise, Paihia and Lot 2 DP 200205
Legal Description	:	Lot 21 DP 181647 and Lot 2 DP 200205
Records of Title	:	NA112C/975 and NA126B/885
Area of Site	:	2393m^2 and 4.637ha
Type of Consent	:	Subdivision, Land Use, Stormwater Discharge Consent and S221(3)- change or cancel consent notices.
Consent Sought	:	To subdivide two existing Lots to create a total of 17 Lots (plus a Lot for Stormwater management) and associated earthworks and vegetation removal for the construction of the subdivision and access points at 47 Hihitahi Rise.
Zoning		
Far North District Plan	:	Zoning: *Residential* Overlays: *Flood Hazard Zone*
Northland Regional Plan		*Outstanding Natural Landscape* *Area of High Natural Character* *The coastal area within the site is identified as a site with Outstanding Natural Character.* *The site is within an area defined as the "Coastal Environment".*
Plan Changes / Review	:	Proposed Far North District Plan
Overall Activity Status	:	Non-Complying under the Operative FNDP.
Additional RMA Consents	:	Discretionary under the NORTHLAND REGIONAL PLAN Discretionary under the NES:FEW (2020) Discretionary under the NES:CS (2015).

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2. Background

Previous development approved on the Site (now lapsed).

A two stage 17 lot subdivision was approved for the land subject to this application in 2010. (Reference number RC2061183). The vegetation to implement this application was removed from the site in circa 2005, but the subdivision consent was not given effect to within the specified timeframes due to the economic recession and subsequently lapsed. The approved consent contained a number of conditions that are still of relevance to the proposed development today. Where appropriate, the consent notices and conditions that were approved in 2010 have been included within this application for the development of the Site.

The proposed scheme plan is quite different from the approved 2010 scheme plan and aims to avoid development within the wetland (which the approved scheme plan did not) and within the other areas on the site that have high environmental values.

The overall approach to the proposed development has been based around retaining the extent of vegetation that remained on site in 2010, and to have the smallest environmental footprint as possible, while providing for additional residential development within Paihia. Where relevant, the appropriate consent notice and covenants that were approved under RC2061183 have been proposed within this application.

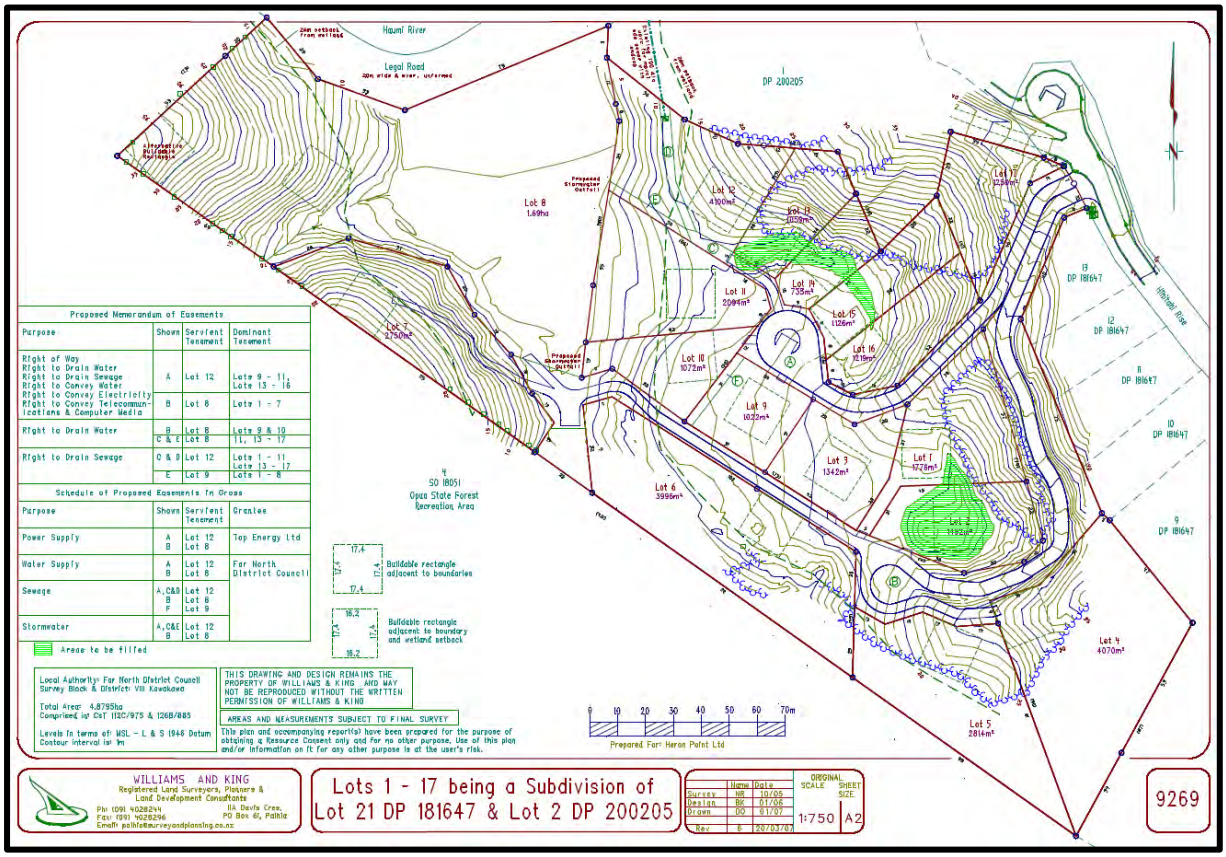


Figure 1- Previously approved scheme plan for 17 lots (RC2061183)

3. Description of Proposal

Heron Point Limited (The Applicant) is proposing to subdivide the land legally described as Lot 21 DP 181647 and Lot 2 DP 200205 at Hihitahi Rise, Paihia into 17 residential lots, with a jointly owned access lot and a lot to manage the discharge and treatment of stormwater from the site.

The associated land use consents are also applied for regarding earthworks and vegetation clearance. A Discharge Permit from Northland Regional Council s also applied for to manage the stormwater from the site.

The proposed development has been developed and comprehensively designed in collaboration with Wild Ecology to ensure that the development minimises and avoids where possible the potential adverse effects on indigenous habitats and species present within the site boundaries. While the site is zoned residential, there are many ecologically sensitive environments present on the site. The proposed titles and the design of the access road has been limited to areas of historically cleared vegetation, steering away from areas of high ecological value.

The design presented in this application has been designed to ensure that the maintenance of ecological values is at the forefront of the design philosophy.

3.1 Proposed Subdivision

Table 1- Proposed Subdivision

Proposed Lot Reference	Lot area m^2	Activity
1	1489	Residential
2	4662	Residential
3	1885	Residential
4	1256	Residential
5	1267	Residential
6	1234	Residential
7	1435	Residential
8	1397	Residential
9	1823	Residential
10	1872	Residential
11	1650	Residential
12	974	Residential
13	1090	Residential
14	848	Residential
15	1108	Residential
16	1121	Residential
17	1633	Residential
100	4870	Jointly owned access Lot (all)
101	???	Jointly owned access Lot (Lots 10, 11, 102)
102	1554	Stormwater Detention- to vest with Council
103	15590	Vest with the Crown under the Conservation Act OR amalgamate with Lot 8.

As noted in the table above and on the proposed Scheme Plan attached in **Appendix 5,** it is proposed to include an either/or option for Lot 103 to either vest the land under the Conservation Act 1977 or to amalgamate or link Lot 103 with Lot 8. A summary of the engagement with the Department of Conservation is outlined in Section 9. The Applicant is grateful for the support of the Department of Conservation. However, the Applicant is currently undertaking due diligence as to whether or not it is financially viable to go through the vesting process or to retain the Lot and amalgamate the land into Lot 8 and undertake the pest management privately. Regardless of public or private ownership, proposed Lot 103 will be subject to legal protection and no build covenants, ongoing pest management and no pets as detailed in the sections below.

Regarding Lot 102, it is proposed to vest this Lot with FNDC. This ownership will need to be discussed with Council through this consent process.

3.2 Earthworks

Earthworks are proposed across the Site to create the accessway to the site and the associated footpath as discussed in the following section and to create building platforms.

All earthworks are proposed to be set back 10m from the main wetland on the site and are outside of the flood hazard area. The works associated with the formation of the constructed wetland to manage the stormwater discharged from the site and the Lot 10 and 11 JOAL will encroach to within 10m of the identified intermittent stream on the site.

A summary of the proposed earthworks is outlined below:

Table 2- Proposed Earthworks Cut to fill volumes

Location	Area (m2)	Cut (m3)	Fill (m3)	Net Cut (m3)
Within 10m offset of the stream	477	275	44	N/A
Total Site	14,264	8,687	7,260	1,427

The maximum cut and fill depths across the site will vary but will not exceed 6 metres.

As noted in the Land Development report, prepared by Chesters Ltd:

> *"Considering a compaction factor of 1.2 being likely we anticipate that bulk earthworks will be balanced so clay removal or importation will not be required. There is also the ability to adjust lot finished levels site of the road slightly to achieve balance should it be required. However, some of the specifically engineered structures and roads will require importation of hardfill material. There will also be a requirement to import topsoil to finish the berm areas and stabilise lots. This is anticipated because the site was previously earth worked but never to a point where topsoil was re-spread. Until the site is re-cleared of vegetation the volume of topsoil that can be won on-site is unknown."*

The Table below provides an estimation of the imported clean fill material volumes.

Table 3- Imported material estimate (clean fill)

Imported Material	Area (m2)	Average Depth (m)	Volume (m3)
Topsoil	6,000	0.1	300
Roading Material	2,200	0.3	660
Hardfill	600	1.0	600
Total			1560

The Land Development Report contained in **Appendix 4** outlines the proposed construction methodology for developing the Site, including the installation and replacement of an existing culvert and measures to manage erosion and sediment during construction. It is proposed to undertake the earthworks in one stage.

The Geotechnical Report, prepared by Tera Tech Coffey Ltd notes that filling of the low points of the site will be up to 5m (Lot 16). Fills along the lower portion of the site adjoining the wetland are generally in order of 2m, but up to 5m in the localised gully area. A Mechanically Stabilised Earth Wall is proposed to support the fills within Lot 4 and 5. Cuts as deep as 3m are proposed within Lots 14 and 15 and along the ridgeline in the south-western corner of the Site.

3.3 Traffic and pedestrian access.

Because it is not practical to achieve full compliance with the FNDC engineering standards for a public road, the main access into the site is proposed as a private road. In a general sense, the road has been designed to a public road standard but where that is not practical, it has fallen back to complying with the Private Accessway standards. Section 5.1 of the Land Development Report provides a detailed assessment of the design of the Accessway against the relevant standards.

The proposed private road will slope downwards from the vehicle crossing at Hihitahi Rise to the lowest point at the eastern end which terminates as a cul-de-sac. The vertical configuration of the road has been designed to generally provide the gentlest slopes in the vicinity of property accesses and steeper slopes where there are less property accesses. On this basis, the eastern end of the road is generally steeper and then levels out towards the west. The first 10 metres of the private road is located within the Hihitahi Rise road reserve and has a maximum gradient of 12.5% (1:8). The first 5 metres of the road located within the property boundary is configured a vertical curve with a maximum gradient of 13.4% (1:7.5). This gradient is marginally steeper than the requirements of the FNDCES6 in this regard however this is considered to be a minor infringement that will not have any operational adverse effect. The steepest section of the remainder of the road is a relatively short section (19.68 metres) of 20% (1:5). This maximum gradient meets the requirements of the FNDCES for Private Accessways.

Lots 10 and 11 will be accessed via a private accessway (JOAL- Lot 101) from the proposed Cul-De-Sac. The accessway has been designed in full compliance with the FNDC Engineering requirements for a private accessway serving 2 household equivalents. The JOAL will be 5.5 metres wide for the first 15 metres and then narrow to 4 metres for the remainder of the access. The accessway also provides maintenance access to the proposed constructed wetland.

A walkway is proposed along the western/north side of the accessway for its entire length. It will be formed as a suspended timber walkway between chainages 60 and 160 due to the topography of the Site and the desire to retain the vegetation along this boundary. The walkway will provide separated pedestrian access for the future dwellings.

Access to each individual development lot will be considered when each lot is developed, with actual locations and configurations being based on the design of the individual dwellings and associated parking. However, the subdivision layout has considered access to each of the properties, with gentle slopes being provided on development lots adjacent to the road, which will accommodate compliant driveway gradients. The only exception to this is Lot 17, where the lot drops away for the road at a significant grade, however this gradient issue could potentially be overcome by providing a parking pad within the property at road level. To provide a practical alternative arrangement, two parking spaces will be provided on the private road adjacent to lot 17. These parking spaces will be legally allocated for the exclusive use of lot 17 and will allow the design of a dwelling that does not necessarily require an elevated parking pad. This arrangement is highlighted on the proposed scheme plan.

Lot 103 is not proposed for development and therefore does not have legal access to the Private Accessway. Due to the sensitive ecological values of this area, no public access is proposed or warranted.

3.4 Vegetation clearance and management

Wild Ecology has provided a detailed assessment of the existing terrestrial and freshwater environments that exist on site. Based on detailed on site surveys and aerial photography, it is proposed to clear 2.18ha of vegetation comprising of regenerating exotic-indigenous shrubland habitat and 114m2 of kanuka shrubland.

The 2.18ha of clearance proposed is consistent with the area of land that was cleared circa 2005. As noted above, the subdivision has been designed to retain as much of the good quality vegetation as possible to limit the environmental impact. All remaining vegetation on the site is proposed to be legally protected. Revegetation planting is also proposed to expand the vegetation cover on the site (0.65ha) and to provide for fire management.

No works are proposed within the wetland area. However, there will be earthworks within the 10m setback from the wetland edge. The building areas for Lots 3 to 10 are set back less than 30m from the wetland. However, the contour of the land in this location is relatively steep, meaning that the future buildings will be located well above the wetland.

As outlined in Section 7 of the Ecology Report, a number of Conditions are proposed to manage the vegetation clearance and the associated environmental effects, including no pet covenants and revegetation planting (0.65ha) of indigenous vegetation of low flammability (associated with the fire management for the site, which is further outlined in the next sections).

Following the removal of the identified vegetation and the replating of the 0.65ha, the proposed development will result in a residual quantum of approximately 1.3-1.6ha of permanent habitat loss.

This is to be offset by the protection in perpetuity of c. 2.8ha of regenerating podocarp forest (c.0.9ha), kānuka forest (c. 0.74ha) and raupo reedland (c. 1.13ha), which will either be vested to the Crown and managed alongside the Opua Forest or be retained in private ownership, subject to no built covenant, ongoing pest control and protected in perpetuity. Both options ensure that the remaining vegetation will be protected and managed on the site.

3.5 Fauna Management

A range of indigenous fauna are known to reside within Opua Forest (as detailed within the Ecology Report and within Section 4 of this AEE), several of which are classified as At Risk and Threatened. All indigenous lizards, bats, birds, and kauri snails are absolutely protected under the Wildlife Act (1953) which is administered by the Department of Conservation (DOC). The processes of significantly disturbing, catching, handling, and relocating (i.e., salvage) native wildlife requires a Wildlife Act Authority (WAA) permit from DOC before the work can be undertaken. Outside of the Resource Consent Process a WAA is being sought from DOC.

Attached in Appendix 9 is a draft Fauna Management Plan, prepared by Kukuwai Environmental which details how each of the identified species found, or likely to be found on site will be managed. The FMP provides a comprehensive overview of the management measures that need to be implemented prior to and during the construction phase of the project. It includes both measures to manage lizards, bats, avifauna and kauri snails.

The FMP sets out management protocol in respect to lizards, avifauna (including kiwi/kiwi-nui; Apteryx mantelli), protected invertebrates (including kauri snail; Paryphanta busbyi busbyi) and long-tailed bats (Chalinolobus tuberculatus). It presents a strategy to minimise the effects of the project on those values and presents mitigation measures to commensurately manage potential impacts on wildlife that may be using edge vegetation as habitat. It includes measures such as exclusion fencing around the clearance site so that species can be successfully relocated outside of the clearance footprint and protocol for managing felled trees.

The final version of the FMP as well as the Ecological Management Plan (EMP) will be required to be submitted to FNDC for certification prior to the commencement of the vegetation clearance on the Site. It is proposed to include conditions to manage this requirement.

3.6 Servicing

Water supply

Chester Consultants Ltd have had pre-application correspondence with the FNDC's Infrastructure team regarding this development and have received 'approval in principle' for this development to connect to the water supply network. The detail of this correspondence is attached to the Land Development Report.

As per the FNDC GIS data, there is a 100mmØ water main running down Hihitahi Rise. The main is fed from the reservoir at the top of the hill and ends at the fire hydrant in front of the development site. It is proposed to extend the public water supply network down the proposed commonly owned access

lot. Because the proposed access is private, easements in gross in favour of FNDC are proposed over the JOAL. The proposed layout provides each Lot with a metered connection to the public water supply network.

Wastewater

Chesters Ltd have had pre-application correspondence with the FNDC's Infrastructure team regarding this proposed development and have received 'approval in principle' for this development to connect to the wastewater network. Please refer to The Land Development Report for the relevant correspondence including a memo by Chester reporting on key wastewater matters.

As per the FNDC GIS data and the site topographical survey plan, there are two existing 100mmØ uPVC Effluent Disposal Sewer mains in the vicinity of the site. One is located at the base of the site with a capped stub within proposed Lot 10 and the other is at the site frontage within Hihitahi Rise. Both mains discharge to FNDC wastewater pumpstation SP3370.

Provision has been made for each lot to have a connection to the public reticulation network for sanitary sewage disposal with the final the option to be confirmed at Engineering Plan Approval. It is proposed to Reticulate the site with a Low-Pressure Sewer (LPS) network that discharges to the local network in Hihitahi Rise. This would result in a public LPS network in the proposed road with a boundary kit for each lot except for Lot 1 which could gravity flow direct to the local network. The LPS network would end in receiving chamber at the top of the site with a gravity connection to the mainline.

Given the proposed accessway is to be privately owned, easements in favour of FNDC are proposed over the JOAL.

All lots in the proposed subdivision will require primary treatment prior to either pumped discharge into the LPS or direct gravity discharge to the Effluent Disposal System (EDS). To ensure this is implemented we recommend the following consent notice or similar is included on the title of each Lot:

> *(Effluent Discharge Pre-Treatment) Each lot owner is required to install a primary treatment system to ensure solids are removed from the wastewater prior to discharge to the council's reticulation system.*

Stormwater

Other than a 300mm culvert within the intermittent stream, there is no stormwater infrastructure in the site. Hihitahi Rise is severed by a series of catchpits and public stormwater lines that all discharge east away from the site. The neighbouring properties on Hihitahi Rise above the site all have kerb discharges to Hihitahi Rise so therefore drain away from the site.

A constructed wetland is proposed to be located within the site to provide treatment of the stormwater prior to the discharge to the intermittent stream. The common accessway and Lots 10 and 11 will utilise a raingarden for stormwater quality treatment as it is not practical to drain that to the centralised wetland. The raingarden catchpit will discharge direct to the culvert line. Following treatment, the stormwater will eventually discharge into the wetland, via the intermittent stream.

It is proposed to replace the existing 300mmØ with a new 600mmØ culvert specifically designed in accordance with the FNDC Engineering Standards and allowing for fish passage. The culvert will receive reticulated stormwater from the entire development meaning its outlet will be the primary discharge point for collected stormwater run-off from all impervious areas. The outlet will be specifically designed with erosion and scour protection measures. The culvert is 24m long and will have 5m of riprap. Details of the proposed culvert are shown on Drawing 430 within Appendix 5.

Upstream of the culvert a Stormwater Network is proposed to provide a connection to all lots apart from Lot 1 which will utilise a kerb discharge to the proposed road. Its stormwater will enter the proposed reticulation network via the road catchpits.

Consents from Northland Regional Council will be applied for to authorise the proposed discharge (Controlled Activity C.6.43).

Full details of the proposed Stormwater Management Devices are contained in the Land Development Report- Section 8.

The Land Development report recommends that a consent notice is placed on the titles of Lots 10 and 11 as follows as there is design capacity within the proposed rain garden for Lots 10 and 11 to each have 110m2 of impervious area. Any additional impervious areas on each of these lots will require additional treatment measures:

Lots 10 & 11

(Stormwater Quality Treatment) In conjunction with the construction of any building on Lot 10 & 11 DP _____, the lot owner shall submit for the approval of Council a report prepared by a suitably qualified engineer, detailing the stormwater quality treatment for all impervious areas on the Lot.

Advice Note
The raingarden within the common accessway has a design capacity that allows for discharge from up to 110 m2 each (220 m2 total) from Lots 10 & 11

3.7 Firefighting water supply and risk management

Regarding firefighting water supply, the water supply classification is FW2 as per the Standard SNZ PAS 4509:2008. As a part of the proposed reticulation network into the site, three new fire hydrants are proposed such that all lots will be within the hose run distance requirements.

The Land Development Report outlines that the pressure within the current water mains in Hihitahi Rise do not meet the requirements of FW2. However, in the case of an emergency, FENZ will be able to access water from the constructed wetland proposed within the development to supplement the water supply should this be required in an emergency. Support for this option has been provided by FENZ. Please refer to the correspondence attached to the Land Development Report.

3.8 Landscaping

A detailed Landscape Assessment, prepared by Littorals Landscape Architects is attached in **Appendix 8**. This assessment provides a detailed assessment of the proposed landscaping of the site. This report contains visualisations via four cross section diagrams to illustrate how restoration and mitigation measures have been configured to limit the impacts of earthworks, road formation and related retaining.

The proposed landscaping includes

- a mix of low flammability native species planting (3,100m^2)
- low, native riparian species (400m^2).
- The proposed stormwater wetland includes 260m^2 of emergent riparian Planting and planting around the edge of the pond.
- The darker green areas are existing mixed native planting to be retained (2,730m^2)
- Specimen trees located along the access

As shown on the proposed scheme plan, the existing and the proposed vegetation will be legally protected via covenants.

The dwellings shown on the plan below are indicative and are not subject to this resource consent but show that a dwelling can located within each site.

Figure 2- Proposed Landscaping Plan- Littorals Landscape Architects

3.9 Retaining walls

As noted on the drawings provided by Chesters, the exact details of the retaining walls will be confirmed following detailed design. The final details and construction methodology will be included within the Construction Management Plan.

Cuts of up to 6m (at the highest point) will be required along the eastern edge of the proposed accessway. The cuts will either need to be supported by soil nails or pole retaining walls. This detail will be determined following further site investigations. There may be locations where soil nails are not appropriate due to the distance to the neighbouring legal boundary and a pole wall may be appropriate. The maximum height of the proposed retaining walls will be 5m. An engineered batter slope within the accessway and within proposed Lot 2 will be approximately 6m high.

An MSE wall is proposed to be included within Lots 4 and 5 to construct a building platform. This wall is set back 10m from the wetland boundary, but earthworks associated with its construction may encroach on this setback.

The proposed retaining wall adjacent to Lot 13 DP 181647 will not be set back 1.2m from the boundary. The retaining wall will be a standard design (either timber or cantilever) - designed to retained land for 100 years (as per the requirements of the Building Act). The maximum height of the retaining wall will be confirmed at detailed design stage but is likely to be around 4m. No works will be required outside of the site boundary.

Sections B-B' and C-C' of Attachment Six of the Landscape Assessment, in Appendix 8, and Figure 4 below provide a sense of the nature of the retained face. Regardless of the methodology adopted, the intention is to fully conceal the structure within vegetation. With a hard structure, this would be achieved by a combination of plantings at the crest and the toe. An anchoring method would allow for vegetation to also be established on the face. Finishes of any structural elements or exposed geotextile material used for retaining is intended to be dark and recessive to minimise any prominence prior to the establishment of vegetation.

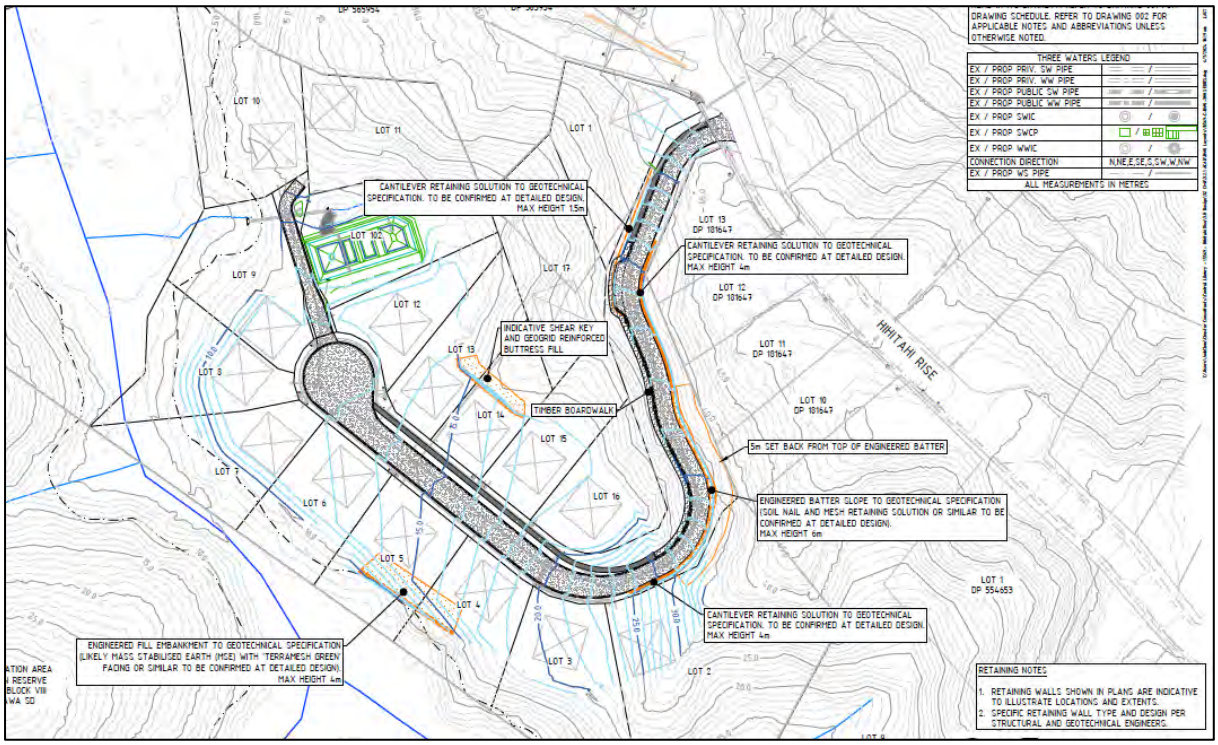


Figure 3- Indicative Location and design details of the proposed retaining walls- Refer to Appendix 5.

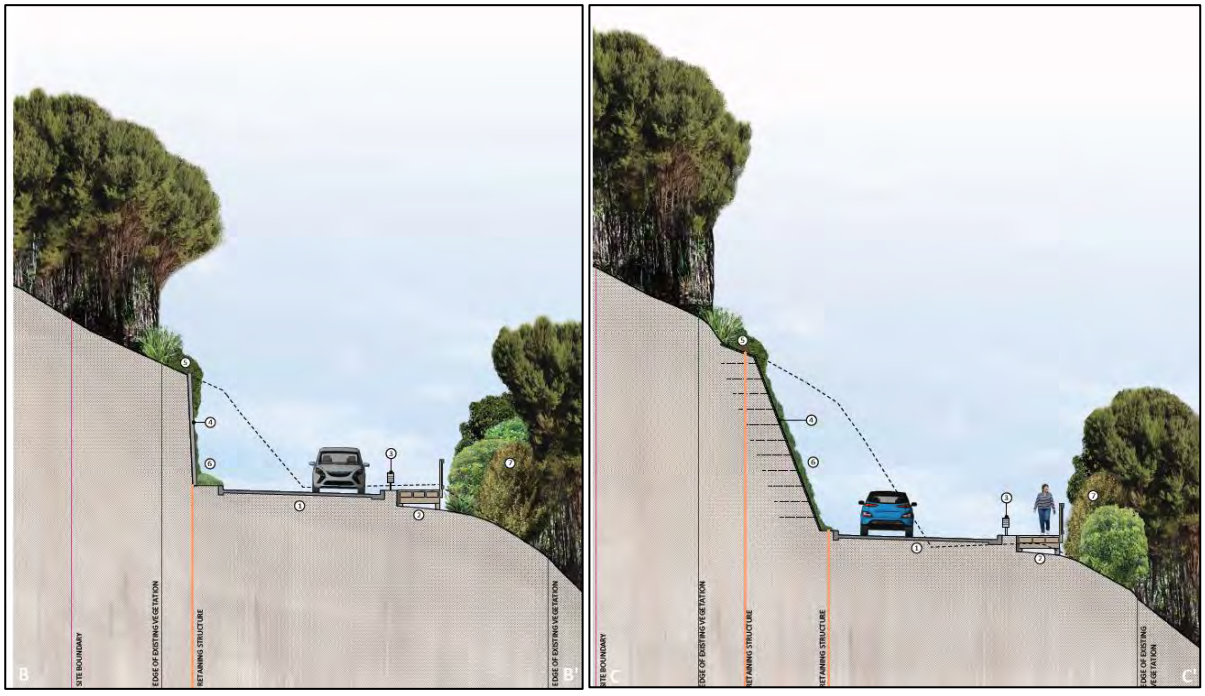


Figure 4- Indicative landscaping of the accessway. The pedestrian footpath is shown to the right of the proposed accessway. Refer to Landscape Assessment- Appendix 8.

3.10 Construction Management

A Construction Management Plan (CMP) and Construction Traffic Management Plan (CTMP) will be required to be submitted to FNDC for certification prior to the commencement of the works on the site.

As noted in the Land Development Report, within **Appendix 4**, the general works across the site will involve:

- Vegetation clearance (with ecologist oversight- as per the draft FMP and Ecological Management Plan)
- Installation of erosion and sediment controls
- Progressive stripping or organic layers and unsuitable materials
- Bulk earthworks and retaining
- Drainage services
- Roading
- Progressive stabilisation
- De-commissioning of erosion and sediment controls
- On-going mulching and establishment of vegetation

Within the works highlighted above a key works operation that will require specific consideration such to ensure construction effects are manage is the installation of the replacement of the existing culvert near the existing wetland. The final construction methodology to complete install will be determined with input from the contractor at pre-commencement stage. However, we provide the following general construction methodology:

- Works are to be completed during a period forecast dry weather.
- Spill response kit to be on-hand during works.
- Cut-off upstream catchment from work area (sandbag dam and pump around).
- Undercut as required and bring up to pipe bedding level.
- Confirm levels and progressively install pipe including backfill starting from the wingwall outlet.
- If in the event heavy rain is forecast prior to full pipe installation, any open excavation is to be stabilised with geo-cloth.

The Construction Traffic Management Plan (CTMP) will detail how the effects of traffic for the earthworks and other associated activities will be managed to ensure that the effects of the additional traffic through the existing residential environment can be suitably managed.

Best practice erosion and sediment control will be implemented to mitigate the effect of the earthworks to the surrounding environment. The sediment control devices will be constructed in general accordance with Auckland Council's Guidance Document 005 (GD05).

If required, following detailed design, the management of vibration will be included within the CMP should timber pole retaining walls be required following detailed design. This effect is considered to be a temporary effect and can be managed through the appropriate construction methodology.

The FMP sets out proposed sequencing of works due to the various timing constraints associated with fauna breeding seasons. It recommends that vegetation clearance is undertaken in the months of March and April. Section 13.7 of the FMP notes that:

> *"it is recommended that fauna management works for this project commence in the summer months of* ***January or February*** *with pre-salvage works, and that salvage be undertaken during the months of* ***March or April****. This will avoid and/or minimise risk to fauna by ensuring that forest birds chicks have fledged, that juvenile long-tailed bats are able to fly and that most kiwi chicks will have hatched. It ensures that the winter months are avoided (a requirement of any WAA permit and frequently specified in Consent Conditions) and that any lizards to be relocated will have sufficient lead-in times to re-orient themselves prior to the onset of the cooling season."*

3.11 Proposed Consent Notices on the future titles

The section below outlines conditions offered on an *augier* basis and proposed to be secured as consent notices to be placed on the future titles. The Applicant is willing to work with FNDC to finalise the wording of each of the proposed consent notices as there may be standard wording that FNDC prefers. There may also be additional consent notice that FNDC assess to be relevant to the proposed development.

All current consent notices are proposed to be **removed** with the exception of:

> (D490711.2) *Any application for a building consent shall be accompanied by a report from a suitably qualified registered engineer on the stability of the site and any works required in relation to stability issues including any specific design required for building foundations.*

The proposed Consent notices include (wording to be confirmed through the consent application process):

No build areas

- Area on Lots 1 to 17 that are not suitable for being built on, being subject to a no-build covenant (to be enforced by a consent notice)

Vegetation Management

- Areas of vegetation and wetland that are not suitable for development, to be retained and protected in perpetuity.
- The property owner an occupier shall preserve the indigenous forestry, shrubland and wetland areas subject to the vegetation protection covenant, and shall not, without prior written

consent of FNDC cut down, damage or destroy any area of vegetation protected by this covenant.

- The property owner and occupier shall not keep or allow the introduction of any animal, including cats, dogs and mustelids which have the potential to be kiwi predators. This prohibition includes the bringing of any such animals onto site by visitors.
- No pest plan species shall be introduced or kept on the property which comprise of pest plant species in the Northland Regional Council pest plant list.

Management of effects on bats (lighting)

- Any external lighting should be LED, narrow spectrum, with minimum ultraviolet spectrum. Should be warm spectrum avoiding white and blue light spectrum.
- Exterior lights should be cowled (shielded) and or low-level downward directional, to reduce
- Exterior lights are to be on a short (1min) timer, set to automatically switch off when not in use.
- No flood lights within areas facing forest vegetation.

Fire Management

- No outdoor fires are permitted on Lots 1- 17
- The fire-retardant vegetation on the Lots (proposed to be planted through the consent application) shall be protected in perpetuity.

Flood Risk- refer to Section 9.3 of the Land Development Report

- Lot 8 & 9 (Flooding) *Provide, at the time of lodging a building consent application written confirmation by a suitably qualified Engineer that the proposed works consider and do not compromise the secondary flow conveyance of the adjacent road and common accessway.*

Lots 10 & 11

- *In conjunction with the construction of any building on Lot 10 & 11 DP _____, the lot owner shall submit for the approval of Council a report prepared by a suitably qualified engineer, detailing the stormwater quality treatment for all impervious areas on the Lot.*

  Advice Note
- *The raingarden within the common accessway has a design capacity that allows for discharge from up to 110 m2 each (220 m2 total) from Lots 10 & 11.*

3.12 Proposed Conditions of consent

As noted throughout the supporting technical documents, there are a number of offered and recommended conditions of consent proposed to ensure the environmental effects arising from the proposed development are acceptable. The list below is by no means a complete list of conditions. The Applicant is willing to work with FNDC to finalise the wording of the proposed conditions as there may be standard wording that FNDC prefers. We also expect that we will be provided the opportunity to review draft conditions prior to any consent being granted.

Other conditions regarding Construction Management Plans etc. are expected conditions that will apply to this Application.

Ecology – refer to Section 7 of Ecology Report, prepared by Wild ecology

1. *That a site-specific Fauna Management Plan (FMP) is prepared for the site to ensure ecological avoidance, minimisation and mitigation strategies are implemented as part of the site's development proposal. The FMP should provide detail on how adverse effects to native fauna including 'Threatened' or 'At Risk' species will be avoided or minimised through vegetation clearance protocols, seasonal constraints on earthworks, salvaging and relocation and other management actions. Specific proposed management detail should include but not be limited to:*
    a) *Vegetation clearance management protocols (including seasonal restrictions to vegetation clearance) to provide detail on how adverse effects associated with vegetation clearance will be avoided or minimised through vegetation clearance protocols.*

    b) *Lizard management protocols to provide detail how lizard protection, salvage and relocation protocols will be implemented during site construction works with input as required from project engineers and other specialists. This Plan should cover any avoidance, remediation, mitigation and monitoring that may be carried out in association with the development of the site. Recommendations should follow the key principles to lizard salvage as described in DOC (2019).*

    Note: Relevant Wildlife Authority Permits will need to be obtained from DOC and a suitably qualified herpetologist will be required to implement the lizard management plan. Please note that at current date it takes approximately 12-18 months from the date of application to obtain such permits.

    c) *Avifauna management protocols (including for kiwi) clearly outlining methods that will be utilised to avoid or minimise potential adverse effects on avifauna.*

    d) *Terrestrial invertebrate management protocols setting out the methods that will be used to avoid or minimise potential adverse effects on invertebrates, including kauri snails.*

    e) *Bat fauna management protocols setting out methodology relating to vegetation pre-clearance surveys, accidental bat discovery or bat roost identification on site during active site development works.*

2. *The consent holder shall employ a suitably qualified and experienced ecologist holding appropriate Wildlife Act permits, to implement the Fauna Management Plan once approved by in-house Council Ecologists and DOC Permissions.*

3. *That a site-specific Ecological Management Plan (EMP) is prepared for the site (as a condition of consent) to ensure ecological enhancement areas illustrated and listed in Section 6 of this report deliver an ecological benefit. The EMP should as a minimum contain detail regarding site preparation for planting, eco-sourcing of plants, management of biosecurity and plant diseases, ongoing maintenance and monitoring, pest weed control, and pest animal control until 85 % canopy closure is achieved, or a minimum of 5 years of initial ecological works implementation, whichever comes first. The EMP should also include a finalised version of a clearly annotated covenant demarcation plan.*

4. *That keeping of pet animals (including a ban of pet cats, dogs, mustelids, exotic fish, birds, rodents and turtles) on site following subdivision is prohibited.*

5. *That stock are to be excluded from the entirety of the site in perpetuity through the provisions of a no-stock covenant.*

6. *The new lot owners will be required to comply with the Northland Plant Pest Management Strategy (NPPMS) and the National Pest Plant Accord (NPPA) and in so doing exclude, and where necessary, control all known plant pest species (in any category) that occur on the site. This includes avoiding planting any pest species on the property as part of the landscaping, which could become future threats to the covenant area as 'garden escapees'. Dumping of garden waste into the consent notice/covenant area is prohibited.*

7. *That the remainder of the existing on-site indigenous terrestrial and aquatic habitats outside the immediate development footprint are protected in perpetuity.*

8. *The consent holder shall implement the required ecological enhancement works as described in the site-specific Ecological Management Plan to be prepared as a condition of consent and provide an Ecological Works Completion Report from a suitably qualified ecologist following the implementation of physical ecological works completion (first round of pest weed and pest animal control implemented) to the Council, and the Council will undertake inspections as required to confirm compliance.*

9. *That regular ongoing maintenance and monitoring of the covenant area takes place a minimum annually for a total period of 5-years following the issue of 224(c). Monitoring should be carried out by a suitably qualified and experienced ecologist or Council's suitably qualified appointed representative. Monitoring reports should as a minimum include detail on the presence of any weedy species (including their location and density), pest animal presence and condition of the pest animal trap network, comments regarding other obvious breaches relating to ecological matter such as dumping of green waste into covenant/consent notice areas or breaches to domestic pet restrictions on site.*

<u>Themes for conditions to be met prior to the approval of the Section 224(c) certificate:</u>

- Identify which lots (if any) require private effluent pumps to dispose of effluent to the reticulated system and provide evidence that a maintenance contract has been entered into for a minimum period of 12 months

- Demarkation of the vegetation to be retained subject to the land protection covenants.
- Provide evidence to FNDC, that a discharge permit has been obtained from Northland Regional Council
- Provide evidence that the earthworks have been undertaken in accordance with the Engineering Report.
- Provide confirmation that Services (Telecoms and Electricity) are installed to the site boundaries
- Provide confirmation that Services (Wastewater and water) have been completed.
- In consultation with the Department of Conservation, submit a plan or report to the satisfaction of the Resource Consents Manager, FNDC, which identifies the measures taken to ensure that an adequate fire buffer is provided for around each house site. The plan or report shall be prepared by a suitably qualified landscape architect and should also include measures for the on-going maintenance of the fire buffer zone.

4. Site Description

4.1 Site Description

The Site is located within Te Haumai, Paihia, in the Bay of Islands and is accessed via an unformed driveway from Hihitahi Rise. The Site includes land at 47 Hihitahi Rise (Lot 21 DP 181647) and undeveloped land legally described as Lot 2 DP 200205. Together, these two properties are referred to as "the Site" within the AEE. The total Site area is approximately 4.87ha.

The Site is zoned for residential purposes within the Far North District Plan. 47 Hihitahi Rise is a small lot that is suitable for residential development. Lot 2 is a larger lot that is well suited to providing for additional residential development within Paihia, given its zoning and large site area.

The settlements of Paihia and Opua are the closest urban areas, providing a wide range of amenities to support the residential use of the site.

The nature of the existing environment adjoining the property to the north and east is characterised by the presence of residential housing and native vegetation cover, dispersed over the hills. The land adjoining the site to the south is characterised by the indigenous vegetation of the Opua Forest, which is managed by the Department of Conservation.

Land to the north-west backs on to the Te Haumi River, which is a part of the coastal environment. There is a large coastal wetland in the north-eastern corner of the site. A paper road exists between the Site and the Te Haumi Riverbed that provides for public access along the coastal environment.

The Site is clad in a mixture of indigenous and regenerating terrestrial and wetland vegetation, with a large pocket of mixed exotic-indigenous vegetation located in the centre of the Site. The Ecological Assessment attached in Appendix 6 provides a thorough description of the existing flora and fauna on the site and provides a summary of the vegetation clearance that has occurred on the Site historically. In summary, the site consists of the following vegetation types:

- Regenerating kānuka forest – c. 0.74ha
- Regenerating podocarp forest – *c.* 0.91ha
- Exotic – indigenous regenerating vegetation – *c.* 2.18ha
- Raupo reedland – *c.* 1.13ha

The Site is known to have a moderate diversity of Avifauna. The site is within a Kiwi Protection Zone and, given the site boarders the Opua Forest, the presence of Kiwi is likely. From a visual inspection via Wild Ecology, lizard habitat is identified on the site. In regard to bats, a brief, preliminary acoustic survey using the SongMeter Mini Bat Acoustic Sound Recorder was undertaken by Wild Ecology as detailed within their Ecology Assessment. No bats were identified or recorded on the site during the survey. However, given the proximity of known presence (<25km), the site context of Opua Forest, the presence of at least one good quality roost tree within the project footprint and the highly mobile and transient nature of bats, survey results should not be considered indicative of the presence or absence of bats. Kauri Snails are also identified to potentially be located within the Site.

The Site itself is of a relatively steep contour, with the highest point at Hihitahi Rise, rolling down to the coastal wetland to the north-east. There is an unformed vehicle track that provides access to the site that runs along site the boundaries of 33-43 Hihitahi Rise. The public viewing positions that afford views toward the application site are very limited due to the application site being located within a valley.

The existing sites are vacant, with access via Hihitahi Rise, accessed via Te Haumi Drive, from State Highway 11. Hihitahi Rise is 6 m wide carriageway, with a footpath on the northern side of road that provides connections with the residential area. The road terminated with a culdersac/turning circle. 47 Hihitahi Rise has a gated access point. At the boundary of Lot 2, but within the road reserve, is a transformer. Both Lots have formed access points, by the way of dropped curbs.

As noted in the Ecology Report, within **Appendix 6**, the water courses on the site are limited to the large wetland (located both in the coastal marine area and above the MHWS) and smaller intermittent streams, all which appear to be in tern aural form. One of the intermittent streams contains an existing culvert. The stream has been previously cleared.

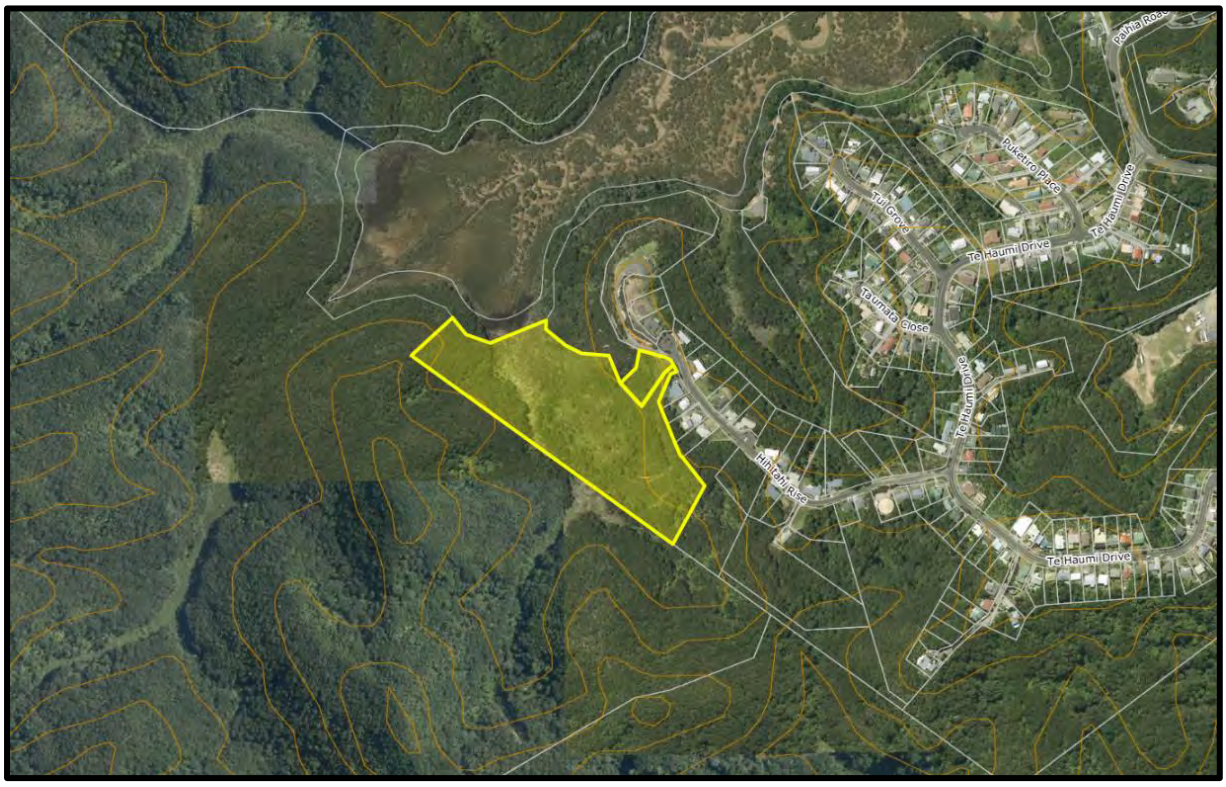


Figure 5- Aerial Photograph of the Site (Source GRIP 27/06/2024)

4.2 Records of Title

The site is held in two lots. Each of these lots and their easements/consent notices are described below and attached in **Appendix 1**:

Lot 2 DP 200205

- D180390.3 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm (affects DP 181647)
- D180390.4 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm (affects DP 181647)
- Subject to a sewer right (in gross) over part marked D on DP 200205 in favour of Far North District Council created by Transfer D180390.15 - 7.8.1997 at 2.43 pm
- The easements created by Transfer D180390.15 are subject to Section 243 (a) Resource Management Act 1991
- D490711.2 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 24.3.2000 at 2.06 pm (affects DP 200205)
- D490711.3 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 24.3.2000 at 2.06 pm (affects DP 200205)
- Subject to a right of way over part marked B on DP 200205 specified in Easement Certificate D490711.5 - 24.3.2000 at 2.06 pm
- The easements specified in Easement Certificate D490711.5 are subject to Section 243 (a) Resource Management Act 1991
- Land Covenant in Transfer 6127935.2 - 26.8.2004 at 9:00 am

Lot 21 DP 181647 (47 Hihitahi Rise)

- D180390.3 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm
- D180390.4 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm
- Appurtenant hereto is a right of way specified in Easement Certificate D490711.5 - 24.3.2000 at 2.06 pm
- The easements specified in Easement Certificate D490711.5 are subject to Section 243 (a) Resource Management Act 1991
- Land Covenant in Transfer 5872506.2 - 22.1.2004 at 9:00 am

Summary of the Consent Notices registered on both titles.

Full details of the consent notices registered on the title are attached in Appendix 1 to this application. A summary of the existing consent notices are provided below:

- Not to erect a dwelling less than 112 m^2, excluding decking
- Not to use second hand materials
- Not to use fibrolite or fibrocement exterior cladding
- Not to erect any fence higher than 0.8m within 7m of any road frontage and 1.8m elsewhere on the property
- Building consent needs to be submitted with a report to confirm the stability of the site.
- Requirement to maintain on-site wastewater system

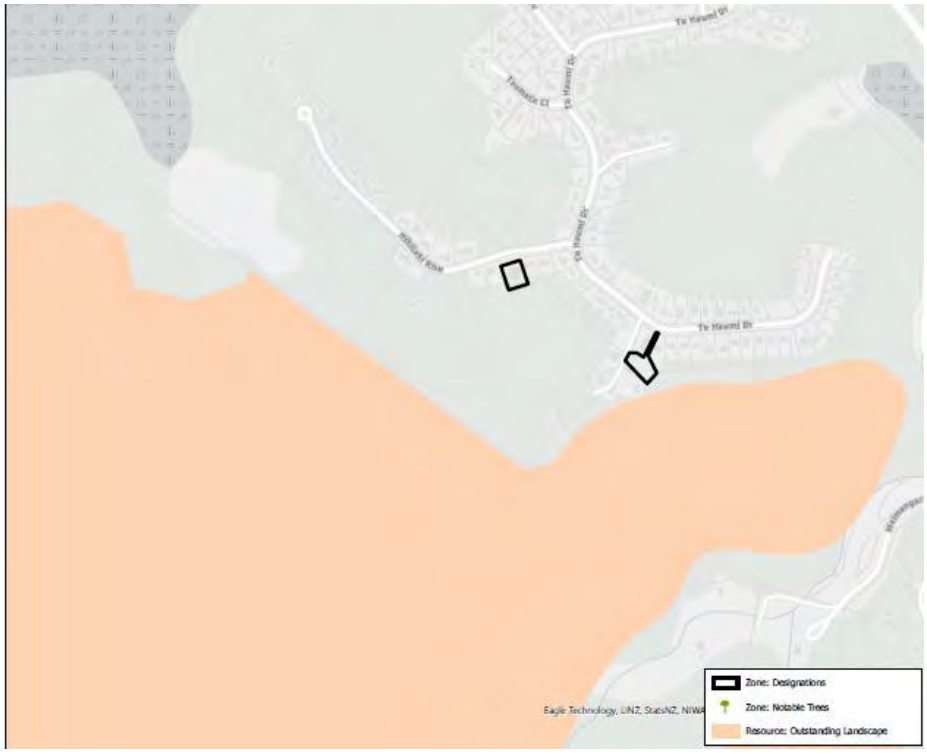
Details of the changes to the existing consent notices required to implement the proposed subdivision are detailed in the next Section. (In accordance with Section 221(3) of the Resource Management Act 1991).

4.3 Operative Far North District Plan Site Features

Using Far North District Plan Maps, the following non-statutory features are identified on the site. The site is not within an Outstanding Natural Landscape as identified on the Resources Maps.

Table 4: Far North District Plan Site Features (Operative Plan)

Site Feature	Description
Flooding and overland flow paths	Part of the site is within the modelled 2007 Flood Hazard Zone (1:10 year ARI, 1:5 Year ARI with Climate Change). There are identified overland flow paths within the site. 
Archaeological Sites	One identified Historic Site in the SE corner of the Site- being a midden (NZ AA reference P05/755) 
Biodiversity Layers	NA

	The land to the SW, the Opua Forest is zoned for Conservation purposes and is within an Outstanding Landscape. It is a protected area and managed under the Conservation Act.
Land Use Capacity Soils	NA
HAIL	Not identified- Although there is some historic fill located on the site. The fill placed on site was from the formation of Hihitahi Rise and Te Haumi Drive during the mid-1970's and again during the mid-1990's. It is assumed to be clean fill, but testing of the material will be able to confirm.
Resources Map	Not within an Outstanding Landscape under the Operative FNDP, but is within the Regional Policy Statement. No notable trees. 

4.4 Northland Regional Policy Statement Features (2016)

Using the northland Regional Policy Statement Maps, the following non-statutory features are identified on the site.

- Within an Outstanding Natural Landscape
- Within an area of High Natural Character
- The coastal area within the site is identified as a site with Outstanding Natural Character.
- The site is within an area defined as the "Coastal Environment".

4.5 Existing Environment

The ‘Environment’ includes the ‘Existing Environment’ which includes all lawfully established activities that exist – and the ‘Future Environment’ which includes the effects of activities enabled by an unimplemented consent where the consent is ‘live’ that have not lapsed and there are no reasons why the consent is not likely to be implemented.

It is noted that the existing environment is the yard stick against which the effects of any proposal must be assessed. There is no discretion in terms of the existing environment.

The site is described in Section 4.1 of this report and is zoned for residential development. This zoning and the anticipated activities permitted by the zone their constituent effects form part of the existing environment. The minimum lot size is 600m^2 within the Residential zone.

5. Planning Assessment

5.1 Far North District Plan – Operative 2009

The Council released the Operative Far North District Plan in August 2009.

The activity status of the application under the Operative Far North District Plan is determined in the assessment below. A detailed rules assessment is in Appendix 13.

It is acknowledged that the FNDC have notified a Proposed District Plan. Hearings have commenced but no decisions have yet been released. The Rules that have immediate legal effect and are of relevance to this application will be assessed in the next section, alongside the rules that are proposed, but do not have immediate legal effect.

The subject site is zoned Residential as shown on the portion of the P*lanning Map 92- Te Haumai Opua- Okiat*o below:

Figure 6- *Planning map 92- Te Haumai Opua- Okiato*

The Site is not located within an Outstanding Natural Landscape, as shown on the Resources Plans held with FNDC. However, it is identified as an ONL within the Northland Regional Policy Statement.

Figure 7- FNDC Resources Plan, showing the site is not located within an Outstanding Landscape (Orange colouring)

Consents required

In terms of the provisions of the Operative FNDC, Resource Consent is required and sought for the following reasons:

- **Rule 7.6.5.3** Buildings (retaining walls over 2m in height) within the residential zone that cannot comply with Standard 7.6.5.1.7- setbacks from boundaries- Restricted Discretionary Activity.
- **Rule 12.2.6.3.2** *Indigenous Vegetation Clearance Development Bonus- as* a Discretionary Activity.
- **Rule 12.3.6.3** *Earthworks, both cut and fill* as a Discretionary Activity.
- **Rule 12.4.6.3** *Fire Risk to Residential Units* as a given the residential units may be located within 20m dripline of naturally occurring trees (Rule 12.4.6.1.2) as a Discretionary Activity.
- **Rule 12.7.6.3** Building (retaining wall) or Impermeable surface within 30m of a wetland greater than 1ha in size as a Discretionary Activity.
- **Rule 13.11** Subdivision due to the non-compliance with the permitted standards in Chapter 15 of the Plan and that compliance with Rule 13.9 cannot be achieved. Non-complying Activity.

Permitted Activities

Rule 12.5.6.1.3 Registered Archaeological Sites.

The Site contains a possible midden. The proposed development has been designed to avoid excavation in this location. Given the risk of finding more archaeological sites, a general Authority will be applied

for across the site, from Heritage New Zealand, to set out a process should any site of significance be found during the earthworks phase. The accidental discovery protocol shall also apply.

In summary, the application requires assessment as a Non-Complying Activity under the Operative Far North District Plan.

5.2 Far North District Plan- Proposed (Proposed FNDP)

In 2022, the FNDC released a Proposed Version of the District Plan. In accordance with Section 104(1)(b), a consent authority may have regard to any relevant provisions of a proposed plan. The relevant provisions are summarised below. A full assessment of the Proposed FNDP is contained within **Appendix 15.**

Under the proposed FNDP, the site is zoned General Residential and is subject to the following overlays:

- Outstanding Natural Landscape (ref 55: Bush Clad hills west Opua and Paihia)
- High Natural Character (ref 499: Hill slopes around part of southern arm and between two main arms of the Haumi River Estuary. Kanuka dominant forest with some emergent native conifers (rimu, tanekaha) and some wilding pines. Localised small blocks of weeds (wattles, pampas, cherry).

Rules that have immediate legal effect of relevance to this application are addressed in the table below:

Chapter in Proposed Plan	Rules	Assessment
Historic Heritage	All Rules (HH-R1 to HH-R10) Schedule 2	Not relevant The site does not contain a listed heritage item or scheduled heritage resource that has been identified by the Proposed District Planning Maps
Sites and areas of significance to Maori	All Rules Schedule 3	Not relevant The site does not contain any sites that are listed within schedule 3.
Ecosystems and Indigenous Biodiversity	All Rules (IB-R1 to IB-R5)	The site has not been identified as an SNA, therefore Rule IB-R4 applies. The note in the proposed district Plan states that regarding Rule IB-R2, *This rule only has immediate legal effect for indigenous vegetation clearance where compliance is not achieved with PER-2 (i.e. in circumstances where a report confirming that the indigenous vegetation is not a Significant Natural Area has not been obtained).*

Chapter in Proposed Plan	Rules	Assessment
		Rule IB- R4-PER 1 does not have immediate legal effect where a report has been obtained to provide an assessment of the vegetation in regard to SNA quality. The Ecology Report Attached notes that the vegetation to be cleared is not of SNA quality, with the exception of 114m2 of kanuka shrubland that would meet the definition of SNA. However, the vegetation would not exceed 500m2 and can therefore be assessed as a Permitted Activity under the proposed District Plan.
Subdivision	The following rules have immediate legal effect: SUB-R6, SUB-R13, SUB-R14, SUB-R15, SUB-R17	The site does not contain a listed heritage item or scheduled heritage resource that has been identified by the Proposed District Planning Maps. However, there is an identified site of significance to tangata whenua, which triggers a Restricted Discretionary Rule of SUB-15 that has immediate legal effect. The proposed subdivision does not contain a scheduled SNA, therefore Rule SUB-17 is not relevant.
Earthworks	The following rules have immediate legal effect: EW-R12, EW-R13 The following standards have immediate legal effect: EW-S3, EW-S5	Rules EW-R12 and 13 are relevant to the site. Standard EW-S3 Accidental Discovery Protocol can be a condition of the land use consent for earthworks. Compliance with Standard EW-S5 regarding erosion and sediment control can be addressed through conditions of consent. Compliance with Standard EW-S5 will be achieved.

Other rules that are relevant for assessing the proposed development under the Proposed District Plan are contained and assessed within **Appendix 15**.

In summary, the following proposed rules are relevant to the proposed development:

- **Rule SUB-R18** Subdivision within an Outstanding Natural Landscape as a Discretionary Activity.

- **Rule SUB-R4** subdivision that provides for a private road serving more than 8 lots as a Discretionary Activity.
- **Rule EW-R6** earthworks for the construction of a private accessway that does not comply with the Permitted Standards- Restricted Discretionary Activity.
- **Rule EW-R8** earthworks for new infrastructure and repairs - Restricted Discretionary Activity
- **Rule EW-14** earthworks for activities not otherwise listed in this plan, being earthworks for the formation of building platforms associated with the subdivision of land that does not comply with the permitted standards- Discretionary Activity.
- **Rule NFL-R1** as the highest part of the retaining wall exceeds 5m- Discretionary Activity.
- **Rule NFL-R3** for vegetation clearance that does not comply with the permitted standard NFL-S3- non-complying activity.
- **Rule NATC-**RC for earthworks and indigenous vegetation clearance within the wetland margin (26m) that does not comply with PER-2- Non-complying Activity.
- **Rule TRAN-**R2 where compliance wit hPER1 is not achieved, being a private accessway serving more than 8 lots – Discretionary Activity

Therefore, the Activity Status under the Proposed Far North District Plan is **Non-Complying.**

5.3 Northland Regional Plan

Northland regional Council Released a Proposed Regional Plan in February 2024 that now has full legal effect and must be treated as operative (Section 86F of the RMA 1991). The Northland Regional Council website notes that "*As the process for developing the Proposed Regional Plan is near completion and all appeals have been resolved, objectives and policies in the Proposed Regional Plan should be given greater weight in decision-making than the objectives and policies in the operative regional plans.*"

Based on the comment above, and for the purposes of this assessment, an assessment against the Rules of the Proposed regional Plan is provided below, in lieu of an assessment against the previous version of the Regional Plan(s).

Matters of relevance to the site:

- Coastal area is identified as a significant bird area and a significant habitat for Australasian Bittern
- Coastal Area is identified as a significant ecological area.
- Coastal Area is identified as an area of Outstanding Natural Character
- Coastal Area is within the General Marine Zone.
- Coastal River Water Quality Management Unit

Chapter C sets out the Rules for Development.

Earthworks C.8.3.2

Rule C.8.3.4 states that earthworks outside of a bed of a river or lake, a wetland or the coastal marine area and the associated damming and diversion of stormwater and discharge of stormwater onto or into land where it may enter water that is not permitted or controlled is a **Discretionary Activity.**

The site is within an area identified as "Erosion Prone Land" as identified on the Northland Regional Plan GIS system. It is also proposed to undertake earthworks within 10m of an intermittent stream. No earthworks will take place within a flood prone area, high-risk flood hazard area or a coastal riparian area.

Structures in the bed of the intermittent stream C.2

Rule C.2.1.11 states that activities in the bed of lakes and rivers that are not subject to any other rules within the Plan are a Discretionary Activity. The proposed culvert that is to be replaced does not comply with the permitted standards as the culvert and associated riprap structure is 30m in length and the existing gradient of the stream means that the minimum of 25% of the culvert can not be burred below the stream level.

Stormwater device

The diversion and discharge of stormwater into water or onto or into land where it may enter water is a Controlled Activity under Rule C.6.4.3 as the proposed stormwater network and treatment device are proposed to be vested with FNDC. A full assessment of the relevant rules is provided within Appendix 16.

Vegetation Clearance

Rule C.8.4.2 manages the removal of vegetation within riparian areas over 200m2. The proposed activity does include some minor earthworks and vegetation clearance within 10m of the intermittent stream and natural wetland on the site, however, the area does not exceed 200m2 and all other standards within Rule C.8.4.2 can be complied with or managed via conditions of consent. Therefore, the proposed vegetation removal is a permitted activity.

5.4 Resource Management (National Environmental Standard for Assessing & Managing Contaminants in Soil to Protect Human Health) Regulations 2011

The Resource Management (National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health) Regulations 2011 (NES Contaminated Soils) were gazetted on 13th October 2011 and took effect on 1st January 2012. Council is required by law to implement this NES in accordance with the Resource Management Act 1991 (RMA). The standards are applicable if the land in question is, or has been, or is more likely than not to have been used for a hazardous activity or industry and the applicant proposes to subdivide or change the use of the land, or disturb the soil, or remove or replace a fuel storage system.

The applicant has undertaken a search of Council records which has not identified any current or previous activities undertaken in the area of the site that are included on the current version of the Hazardous Activities and Industries List (HAIL). However, based on historic imagery of the site, there is evidence of historic filling of the site, potentially with overburden from the development of the subdivision around Te Haumi Drive. As no Preliminary Site investigation or Detailed Site investigation

has been undertaken, there is no information to determine if the site contains contaminated material or not.

Due to the presence of a potential HAIL land use, it is considered that the site does constitute a 'piece of land' covered under Section 5(7) of the NES CS and its regulations apply to the piece of land where sources are identified and would be triggered by the proposed subdivision of the land.

As such, Consent is therefore triggered under the NES:CS as a **Discretionary Activity** (Section 11) Soil testing can be undertaken at the same time as the detailed geotechnical investigations. Conditions requiring the submission of a Detailed Site Investigation and an associated site remediation plan (if required) prior to the commencement of earthworks would address any environmental effects.

5.5 Resource Management (National Environmental Standards for Freshwater) Regulations 2020 (came into force on 3 September 2020)

The Resource Management (National Environmental Standard for Freshwater) Regulations 2020 (NES-FW) came into force on 3 September 2020. The NES-FW set out requirements for carrying out certain activities which pose risks to freshwater and freshwater ecosystems.

In particular, the NES-FW has standards for activities near to or within a wetland. A natural inland wetland is defined in the National Policy Statement for Freshwater Management under Section 3.21 of the Policy Statement as *"a wetland (as defined in the Act) that is not:*

> *"(a) in the coastal marine area; or*
> *(b) a deliberately constructed wetland, other than a wetland constructed to offset impacts on, or to restore, an existing or former natural inland wetland; or*
> *(c) a wetland that has developed in or around a deliberately constructed water body, since the construction of the water body; or*
> *(d) a geothermal wetland; or*
> *(e) a wetland that:*
> *(i) is within an area of pasture used for grazing; and*
> *(ii) has vegetation cover comprising more than 50% exotic pasture species (as identified in the National List of Exotic Pasture Species using the Pasture Exclusion Assessment Methodology (see clause 1.8)); unless*
> *(iii) the wetland is a location of a habitat of a threatened species identified under clause 3.8 of this National Policy Statement, in which case the exclusion in (e) does not apply"*

Please note that part of the wetland areas on site are located within Mean Water High Springs (MHWS) – these areas do not meet the definition of a natural inland wetland as defined under NPS-FM (2020). Where wetlands extend outside of the MHWS line they are considered to meet the definition of a natural inland wetland and NPS-FM and NES-FW policies and regulations apply.

In respect to NES-FW, it is considered that the proposal is a **Restricted Discretionary activity** under Regulation 45C 'Urban development' of NES-FW (2020). Having reviewed the proposed development Scheme Plan it is understood that no earthworks or vegetation clearance shall take place within a 10m

setback of an identified natural inland wetland area (apart from those carried out for restoration purposes). All indicative building platforms have been shown a minimum 10m from the identified natural inland wetland edges. However, given the scattered nature of the stream and wetland areas on site, it is inevitable that at least some minor earthworks and stormwater discharges may occur within a 10m setback from the identified wetland areas. Therefore, consent under the NEW:FW is sought as a precautionary measure, under Section 45C(2), (3) and (5). (refer to Figure 8 below).

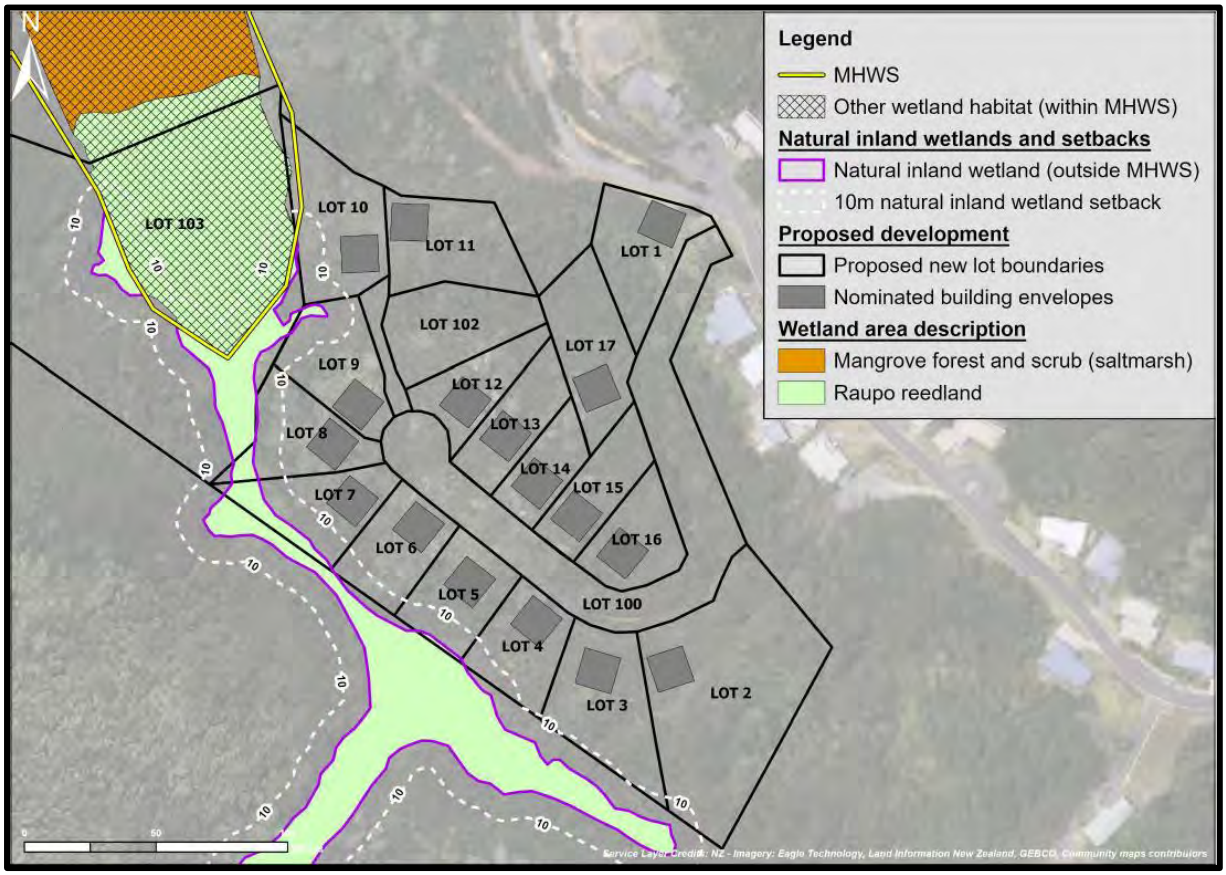


Figure 8- Showing the proposed development layout and nominated building envelopes to be sited full outside the 10m natural inland wetland setback.

Future property owners will be required to consider requirements under the NES-FW (2020) at the time of any future development taking place on the lot/s, and appropriate consents can be sought at the time of building consent application(s), if required.

Section 45C of the NES-FW notes that a resource consent must not be granted unless the Consent Authority has first

- Satisfied itself that the urban development will contribute to well-functioning urban environment and will provide for significant district benefits. And
- There are no practicable alternative locations for this activity or every other practical alternative location in the area of development would have equal or greater adverse effects. And
- Has applied the effects management hierarchy.

The Site is zoned for residential development. The proposed subdivision will contribute to a well-functioning urban environment, providing 17 new homes for the Far North Area, while ensuring that the environmental effects of this development have been avoided and mitigated where necessary.

There are no other practical alternative locations for this activity. The neighbouring sites are either already developed for residential purposes or held in Crown Ownership.

In accordance with Section 46C(11), the proposed layout of the subdivision has been designed to protect as much of the vegetation on the site with significant ecological value and to avoid all development within the wetland. Earthworks has been designed to be at least 10m from the wetland. The stormwater discharge will be to the intermittent stream, which will eventually flow to the wetland area (following treatment).

Please refer to the Ecology Report for the assessment regarding the effects hierarchy.

Section 70(2) of the NES:FW sets out the Permitted Standards for culverts within and river or connected area. Condition 70(2)(e) (*the culvert must be open-bottomed or its invert must be placed so that at least 25% of the culvert's diameter is below the level of the bed)* is not able to be complied with due to the gradient of the intermittent stream. The proposed culvert has been designed to be oversized with respect to capacity and fitted with baffles and spat rope to create an environment with debris that mimic the upstream environment as best as practical. The proposed solution will vastly improve the potential for fish passage above existing scenario.

Therefore, consent is required for the construction of the Culvert under Section 71 of the NES:FW as a Discretionary Activity.

5.6 National Policy Statement- Highly Productive Land

The Site is primarily classed as LUC-6 which is unsuitable for pastoral or cropping use and is zoned for residential use. Therefore, the NPS-HPL is not relevant to the proposed development.

5.7 Overall Activity Status

Overall, the activity status of the proposal

- is Non-complying under the OPERATIVE FAR NORTH DISTRICT PLAN.
- Is Discretionary under the NORTHLAND REGIONAL PLAN
- Is Discretionary under the NES:FEW (2020)
- Is Discretionary under the NES:CS (2015).

Overall, the activity status of the proposal is Non-complying.

We consider that all relevant resource consents have been applied for. However, please treat this as a full application to cover any other aspects of the proposal that Council consider requires resource consent.

5.8 Changes to the existing consent notices in accordance with Section 221(3) of the RMA

Attached in Appendix 1 are the covenants that are attached to the existing titles. These covenants are summarised below:

(NA126B/885)

1. *Not to erect on the land any dwelling or building which does not comply with the following provisions:*
    a. *Not to erect a single dwelling unit of not less than 112m2, excluding decks.*
    b. *In the case of more than one dwelling unit, each dwelling unit must have an area, excluding garage and external decks of 112m2.*
2. *Not to erect on the land any building which:*
    a. *Includes any second hand or renovated materials, or which comprises or includes any transportable dwelling*
    b. *Include fibrolite or fibrocement exterior cladding materials*
3. *Not to erect any fence:*
    a. *Higher than 0.8m on any part of the property whin 7m of the road frontage*
    b. *1.8m elsewhere on the property.*

(D490711.3)

The owner of each allotment shall be responsible for the installation and maintenance of a septic tank and end effluent polishing filter and to ensure that the effluent discharged to the effluent disposal system is free of solids.

It is proposed to remove the covenants from the title under Section 224(3) of the RMA as they are no longer relevant to the site, based on the proposed scheme plan and the associated new consent notices to be registered on the new titles.

Other consent notices that are of relevance to the site that are proposed to remain include:

- (D490711.2) *Any application for a building consent shall be accompanied by a report from a suitably qualified registered engineer on the stability of the site and any works required in relation to stability issues including any specific design required for building foundations.*

The new consent notices and covenants are proposed as outlined in Section 3 of this AEE.

6. Activity Status Assessment Framework

Overall, the proposal is a non-complying activity. The matters that require consideration in assessing this application are set out in section 104, section 104B and section 104D of the Resource Management Act 1991. These matters include the actual and potential effects of allowing activities on the environment, the relevant objectives and policies of the planning documents, and any other matter that is relevant and necessary to determine the application. The provisions of section 104 are subject to the matters set out in Part II of the Act.

Prior to assessing a proposal for non-complying activity under s104; an assessment under s104D must be completed. A non-complying activity may only be considered for approval through assessing the relevant s104 matters if it passes the 'Gateway Test' set out in s104D. This requires that the proposal must not generate adverse effects on the environment that are more than minor **or** that the proposal must not be contrary to the relevant objectives and policies of the relevant planning documents.

The following sections of this application will address the actual and potential effects of the activity on the environment, the relevant objectives and policies and the relevant provisions of Part II of the Resource Management Act 1991

7. Assessment of Effects on the Environment

An assessment of the actual and potential effects generated by the proposal is outlined below. In accordance with section 95D this assessment has disregarded any effects on persons who own or occupy the site and any land adjacent to the site, adverse effects of permitted activities, trade competition and the effects of trade competition and any effects on a person who has given written approval to the application. Consideration has been given to the relevant assessment criteria contained within the relevant planning documents and the existing environment.

7.1 Assessment Criteria

While Consent is sought for the development as a non-complying activity, The Standards outlined under Section 13.10 of the Operative District Plan form the basis of the assessment of environmental effects with regards to the land use and subdivision consents.

The environmental effects associated with the culvert and management/discharge of stormwater and earthworks under the Northland Regional Plan are also addressed below.

7.2 Assessment of Actual and Potential Effects

The effects of the proposal have been separated into the following categories for assessment:

7.2.1 Positive Effects

7.2.2 Subdivision Design and associated effects

7.2.3 Ecological Effects- Vegetation Removal

7.2.4 Ecological Effects- Fauna

7.2.5 Ecological Effects – fresh and coastal waters

7.2.6 Construction Effects

7.2.7 Three waters servicing Effects

7.2.8 Erosion Prone land and Geotechnical Effects

7.2.9 Transport Effects

7.2.10 Landscape Effects

7.2.11 Fire risk management

7.2.12 Climate Change- Coastal Inundation and Flooding

7.2.13 Archaeological Effects

7.2.14 Cultural Effects

7.2.1 Positive Effects

The proposed development will provide 17 new, high amenity sections for future dwellings within the Paihia area and will connect into the existing residential environment along Hihitahi Rise and Te Haumi Drive.

As noted in the sections above, the Site contains a large area of vegetation that has a high ecological value. The covenants on the sites do not legally provide for any protection of the vegetation, rather the resource consenting process is relied upon for protecting the vegetation and the wetland on the Site. The proposed development provides an added level of legal protection for the vegetation that has been identified to be retained on the Site and for the wetland (regardless of whether or not this title is amalgamated with Crown Land or Lot 8).

The design philosophy of protecting and enhancing the natural environment as much as possible, while facilitating a reasonable level of residential development, in accordance with the underlying zone has resulted in a comprehensive subdivision design that puts the environmental values at the forefront of the design process. The proposed covenants and conditions of consent are aimed to ensure that any environmental effects are mitigated as appropriate to facilitate the residential development of the site.

Overall, the proposed development will result in an environmentally focused development of the site which provides for additional legal protections and maintenance of the ecological assets present on the Site.

7.2.2 Subdivision Design and associated effects

The proposed subdivision has been designed to retain and protect as much of the existing vegetation of value on the site and the wetland area, while providing for an efficient subdivision layout that is consistent with the pattern and lot sizes of the adjoining subdivision. The proposed lot sizes have been designed to comply with the Residential Land Development Rules within the Operative District Plan. The Operative Plan allows for a minimum site size of 600m^2 within the Residential Zone. The proposed Lot sizes have been suitably designed to be much larger than the minimum requirements to ensure that as much vegetation as possible can be retained, while providing a suitable area of building a future dwelling.

The proposed development does not comply with the standards for Private Accessways, but as noted under the assessment of Transport Effects, the accessway has been designed to be appropriate for the proposed development whilst minimising environmental effects associated with the larger scale of earthworks that would be required to achieve complying public road standard for the access.

The building areas shown on the plans produced by Chesters show that a building can be accommodated within each of the proposed lots (14 X 14m building area). Some of these building areas, particularly on Lots 3 to 10 are within 30m of the wetland, however, due to the topography of the Site, the building areas are located well above the wetland.

Given that the development of each of the sites will likely be undertaken under the Proposed District Plan, given the time required to give effect to the subdivision, resource consents for the construction of a dwelling will likely be required given the proposed expansion to the Outstanding Natural Landscapes overlay onto this site. The design and the associated effects of each building will be assessed at this time.

In regard to the Assessment of Effects of either vesting proposed Lot 103 with the Crown or amalgamating the title with Lot 8, the environmental effects are considered to be the same. Regardless of public or private ownership, proposed Lot 103 will be subject to legal protection and no build covenants, ongoing pest management and no pets. Under the Operative FNDC District Plan, the following Policies are relevant:

> *13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration of areas and features which have particular value or may have been compromised by past land management practices.*
>
> *13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.*

Both options (keeping it with Lot 8 or 10 and vesting it to the Crown) would achieve these objectives/policies within the Operative Plan. The Ecological Assessment notes that subject to the various recommendations around management and covenants, the environmental effects can be managed to be no more than minor.

In summary, the proposed development has been designed in such a way to prioritise the ecological assets of the site, while allow for development in accordance with the zoning of the property under the Operative District Plan.

7.2.3 Ecological Effects- Vegetation Removal and Retention.

As noted within the description of development, the design philosophy of the proposed development has been to create a low impact design, that retains, protects and enhances where appropriate the ecological assets of the Site.

The Application is supported by an Ecological Assessment, prepared by Wild Ecology. The report contains a thorough assessment of the site and the vegetation that currently exists. The design of the proposed development has been directed with an ecological lens at the forefront, ensuring every design element minimised the area of vegetation to be cleared over and above the area that was previously cleared in 2005 and is now regenerating.

The proposed development will collectively protect 3.21 ha of vegetation that is not currently protected by way of covenants. This area includes the wetland area within proposed Lot 103, the riparian areas and the vegetation that has been identified to be protected by covenants on each lot.

The ecology report contains a number of recommendations regarding conditions and management (Section 6). These recommendations are included within the proposed covenants and consent conditions listed in Section 3.11 and 3.12 of this report. These recommendations, including on-going pest control, legal protection, demarcation of the protected areas and the no pets covenant (and others as listed in the ecological report) are key to the ongoing protection of the retained vegetation on the Site.

Following the recommendations listed within the Ecology Report, the environmental effects associated with the removal of 2.18ha of regenerating exotic-indigenous shrubland and 114m^2 of kanuka forest are expected to be less than minor and mitigated via the on-going legal protection and enhancement of the retaining vegetation.

The report recommends that an Ecological Management Plan (EMP) be prepared as a condition of consent to act as a practical management document which can be utilised by the landowner or their contractor to carry out the recommended ecological management actions. The EMP will outline specific management actions and detail species identification and control of the weeds, and ongoing maintenance and monitoring requirements that weedy species are controlled to a practicable minimal density, pest management over 5 years, and identify areas of vegetation that are to be protected.

The proposed development provides a well-balanced approach to environmental protection and developing land for its intended use as per the zoning within the District Plan.

On the basis of the Ecological Assessment provided by Wild Ecology and the mitigation and offsetting measures inherent in the application, including legal protection of significant vegetation and wetland areas as well as ongoing pest management, it is considered that any adverse effects on loss of vegetation within the residential zoned site will be less than minor.

7.2.4 Ecological Effects- Fauna

As highlighted in the Ecology Assessment prepared by Wild Ecology, there are various known species on the site that need to be managed. The species that are likely to be present on the site include (but are not limited to) lizards, avifauna (including kiwi/kiwi-nui; Apteryx mantelli), protected invertebrates (including kauri snail; Paryphanta busbyi busbyi) and long-tailed bats (Chalinolobus tuberculatus). It presents a strategy to minimise the effects of the project on those values and presents mitigation measures to commensurately manage potential impacts on wildlife that may be using edge vegetation as habitat.

As recommended by Wild Ecology, attached to this application is a Draft Fauna Management Plan, prepared by Kukuwai, in Appendix 9, which outlines the management measures that need to be considered during the proposed removal of vegetation, the construction period and following the completion of works on site. This Draft FMP will need to be updated and provided to FNDC for approval prior to works commencing on the site. It includes specific management protocol for lizards, bats, avifauna, including kiwi and kauri snails.

The FMP concludes noting that:

> *"The strategy focuses on the salvage of lizards and kauri snails as the main activity to mitigate adverse impacts to them. Mitigation protocols for bats focus on the avoidance of removing any occupied roost trees, while protocols for kiwi focus on the use of a certified detection dog. The main breeding season for all avifauna will be avoided, minimising the risk of disturbing active nests or non-volant juveniles.*
>
> *Provided that robust searches for indigenous fauna are undertaken in accordance with each of the management strategies proposed in this FMP, it is anticipated that the risk of injury or mortality that would otherwise occur during vegetation clearance and earthworks may be adequately avoided, minimised and/or mitigated. The implementation of a comprehensive EMP will support the FMP through the provision of habitat restoration and protection, pest plant and pest animal control."*

The mitigation measures proposed by the FMP can be managed thorough appropriate conditions of Consent.

On the basis of the Draft Fauna Management Plan provided by Kukuwai and the mitigation and offsetting measures inherent in the application as recommended in the Management Plan, it is considered that any adverse effects on fauna can be managed so that the effects of the proposed development will be less than minor.

7.2.5 Ecological Effects- fresh and coastal water

In regard to setbacks from wetland, there are activities that will occur within 10m of the wetland, being earthworks and the construction of a retaining wall as well as the construction of the nominated building areas. As noted in the Ecological Report, prepared by Wild Ecology, the following assessment has been made:

> *"From an ecological perspective, it is considered that subject to sufficient sediment, erosion and earthworks controls being imposed during construction the potential adverse effects on the identified wetlands areas will be minimal. The proposal also includes a complete domestic pet ban from the site, meaning that there is no additional threat to potential fauna present within the wetland areas from increased domestic pet presence on site."*

In regard to effect on the freshwater features of the site, the Ecological Assessment, prepared by Wild Ecology also makes the following conclusion:

> *"It is considered that the earthworks and construction of required infrastructure associated with the proposed development is not likely to change the water level range or hydrological function of the wetland areas and will not result, or is not likely to result, in the complete or partial drainage of all or part of a natural inland wetland. All natural inland wetland areas shall be protected and enhanced as part of the subdivision proposal."*

The proposed stormwater treatment network includes a full stormwater quality treatment device for all impervious areas, as detailed within the Land Development Report, with the stormwater from the access and Lots 10 and 11 being managed by a rain garden catch pit. The proposed management features will ensure that the stormwater generated from the site can be appropriately treated, prior to discharging to the intermittent stream, then the wetland.

As noted previously in this assessment, the proposed culvert is not able to be designed to have a minimum of 25% of the culvert diameter below the stream bed given the grade of the stream bed. However, the proposed culvert will be oversized with respect to capacity and is proposed to be fitted with baffles and spat rope to provide for fish passage to create an environment with debris that mimic the upstream environment as best as practical. The proposed solution will vastly improve the potential for fish passage above existing scenario.

On the basis of the proposed design and the associated mitigation measures inherent to this application, including the Stormwater wetland, the effects of the proposed development on freshwater resources is assessed to be less than minor and can be managed through the conditions suggested within this Application.

7.2.6 Construction Effects

The Construction of the proposed development will be managed by a Construction Management Plan (CMP) as per the recommended conditions of consent.

Compliance with the permitted Noise Standards (7.6.5.1.15) can be achieved. A detailed assessment of how these standards will be achieved will be contained within the CMP.

As noted in the Land Development Report, in **Appendix 4,** erosion and sediment controls will be designed in accordance with the Auckland Council's Guidance Document 005 (GD05). A Sediment Retention Pond (SRP) and a Decanting Earth Bund (DEB) will be used on site to manage sediment generated from the proposed earthworks. Following treatment, the discharges from the SRP will be to the intermittent stream. The proposed erosion and sediment control measures will ensure sediment is managed during the construction phase so that the effects on the freshwater habitats of the site are less than minor.

As noted under the Proposal Section of this report, 1,560m^3 of imported fill is required to complete the proposed development, which will equate to around 156 truck movements. This includes material for the road. In addition, deliveries will be required to the site for materials for the construction of the retaining walls etc. The traffic effects are considered to be temporary and can be managed via a Traffic Management Plan. This plan can be submitted to FNDC prior to the commencement of construction and will detail measures to manage any associated effects, including tracking, and timing of deliveries.

Overall, on the basis of providing a detailed CMP and CTMP being submit for approval prior to the commencement of works, the aim to comply with the appropriate erosion and sediment control

standards and the temporary nature of the construction activities, the overall effects on the environment are considered to be less than minor.

7.2.7 Three waters servicing effects

As noted in the Land Development Report, prepared by Chesters, there is the ability to connect the proposed development to both the reticulated water supply and wastewater networks, subject to conditions. There is capacity in the existing system to accommodate the additional 17 dwellings. Fire Fighting water supply will also be provided. Overall, the effects of the proposed development in regard to servicing are considered to be less than minor.

In regard to stormwater, the proposed development includes a Stormwater Detention Pond/Wetland and associated rain garden for Lots 10 and 11 to treat the stormwater from the development. The existing residential sites along Hihitahi Road all have kerb discharges to Hihitahi Road and drain away from the site. Given the topography of the site, being below the road, discharge to Hihitahi Road is not possible. As such, the proposed Stormwater Management Pond, upgrade of the existing culvert and discharge of the treated stormwater to the intermittent stream (which flows into the wetland) on the site is considered to be the most effective way to manage the environmental effects associated with Stormwater. A constructed wetland specifically designed in accordance GD01 is proposed to treat stormwater run-off from all impervious areas that can drain to it.

On the basis of the Land Development Report provided by Chesters and the mitigation and offsetting measures inherent in the application, including the conditions of consent and the management of impervious areas on Lots 10 and 11, it is considered that any adverse effects on three waters servicing will be less than minor.

7.2.8 Erosion Prone land and Geotechnical Effects

The Application is supported by a Geotechnical Investigation Report, prepared by Tetra Tech Coffey Ltd. The report provides an assessment of the existing geology of the site and provides recommendations to facilitate the development of the land as currently proposed. The report is based on field survey information from 2007 and notes that once the vegetation is cleared (following the granting of the consent) further geotechnical investigations will be possible. However, based on the information available in regard to the geological conditions on the site, it has been assessed as suitable for residential development (subject to conditions).

Section 13 of the Geotechnical Report sets out the recommendations for foundation design and further geotechnical investigations. The report notes that:

> *"Provided that all subdivisional earthworks, civil construction and drainage works are carried out in accordance with the advice presented herein and in accordance with NZS4404 Land Development and Subdivision, then we expect the completed land development should be suitable for conventional light timber framed dwellings. However, specific geotechnical limitations and designs will be required on some of the lots"*

Specific foundation requirements for each lot will be detailed within the Geotechnical Completion Report, following the completion of the earthworks phase. Appropriate consent notices can be registered on each title (as appropriate) to specify the geotechnical constraints associated with building a future dwelling. These details will be known once the earthworks are complete and can be addressed through the S224c process.

While there are no anticipated groundwater issues identified by Tetra Tech Coffey, the groundwater levels and settlement are proposed to be monitored during the earthworks phase and following the completion of the earthworks for a duration deemed appropriate by a suitably qualified geotechnical engineer. This is proposed to be a condition of consent and will appropriately manage an associated effects with the land being identified as "*Erosion Prone*." Piezometers will be installed where appropriate.

There is an existing consent notice on the titles of the Site that notes:

> (D490711.2) *Any application for a building consent shall be accompanied by a report from a suitably qualified registered engineer on the stability of the site and any works required in relation to stability issues including any specific design required for building foundations.*

It is proposed to retain this consent notice based on the findings of the Geotechnical Report.

On the basis of the Geotechnical Investigation Report provided by Tetra Tech Coffy and the mitigation and offsetting measures inherent in the application, including retaining the existing consent notice as detailed above, it is considered that any adverse effects of the proposed development on geotechnical matters and land instability will be less than minor so long as the recommended conditions are adhered to.

7.2.9 Transportation Effects

The Application is supported by a Transport Assessment, prepared by Team Traffic, attached as Appendix 11.

Given that the access road will provide access to 17 residential lots, the relevant road standard is a 'Low Volume Access Road' based on an estimated 177 daily vehicle movements. Due to the significant topographical and ecological constraints the provision of a dimensionally compliant 'Low Volume Access Road' is not possible. On this basis, the private road has the configuration of a 'Private Accessway' and has incorporated the configuration of a 'Low Volume Access' Road wherever possible.

However as noted in the Transport Assessment Report by Team Traffic, the cross-sections of the proposed Private Road are considered to be suitable for the intended use given that:

- The legal road width has no tangible traffic related effect, although a narrower corridor does provide visual 'side-friction' resulting in a lower speed environment.
- The carriageway width is suitable for simultaneous two-way traffic movements and will provide a relatively slow speed environment.

- The footpath is suitable for providing pedestrian access to the residential lots and will not have to accommodate any through pedestrian movements.

While compliance with the technical standards are not achieved, the design of the private accessway and associated JOAL will provide a suitable, safe and efficient access to the proposed Lots, given the topographical constraints of the site.

The Transport Assessment also makes the following conclusions:

- *"The proposed gradients of the private road are considered to be suitable for the intended use*
- *The proposed vehicle crossing location and configuration is considered to be suitable for the intended use and is expected to operate without issue.*
- *The configuration of the cul-de-sac is considered to be suitable for the intended use and meets the requirements of the FNDCES.*
- *The configuration of the common access is considered to be suitable for the intended use.*
- *The proposed access arrangements for individual lots are considered to be suitable for the provision of future dwellings.*
- *The number of estimated vehicle movements is considered to be low from a traffic engineering perspective and are not expected to result in any safety or operational issues at the site access, particularly due to the very low through traffic on Hihitahi Rise in the vicinity of the access.*
- *The anticipated number of additional vehicle trips is low from a traffic operational perspective and is not expected to have any adverse effects on the surrounding network."*

On the basis of the findings within the Transport Assessment provided by TEAM it is considered that any adverse effects of the proposed design of the subdivision on traffic/transport matters will be less than minor.

7.2.10 Landscape Effects

The Application is supported by an Assessment of Landscape, natural character and visual effects, prepared by Littoralis Architecture, attached in Appendix 8.

The assessment provides a detailed overview of the landscape characteristics of the site as well as the surrounding areas, including the Te Haumi residential development and the Opua Forest. Section D of the assessment provides a detailed assessment of the effects of the development.

With regard to travellers on Hihitahi Rise, the following conclusions are made:

- *Lot 2 DP200205 occupies a similar location to proposed Lot 1 and therefore provides for a house to be established in the position defined on proposed Lot 1 as a permitted activity. Arguably, the proposal provides for a superior outcome to the existing situation, insofar as it incorporates buffering planting at the roadside that has been described in a way that conventional development of proposed Lot 1 would not be compelled to achieve. It is to be noted that a dwelling on the balance of the Site could also be established as of right.*

- *After factoring the very small size of this viewing audience, the extremely limited extent of exposure of the proposal and the permitted baseline nature of a building on proposed Lot 1, the visual amenity effects of the proposal upon users of Hihitahi Rise are assessed as being very low and, potentially, superior to alternative, permitted, development of proposed Lot 1.*

Based on the assessment above, the environmental effects of the proposed development in regard to effects on Hihitahi Rise are less than minor and in some cases positive, with regard to development on proposed Lot 1.

With regard to the neighbouring residents on Hihitahi Rise (28, 42, 44, 46, and 57 Hihitahi Rise), the Section 7 of the Landscape assessment concludes that based on the robust assessment outlined within the assessment:

- *it is considered that the level of adverse visual amenity effect upon almost all neighbouring residents would be either non-existent or very low. Impacts upon the residents of 43 Hihitahi Rise, being the slight exception, are assessed as being low initially and very low (and therefore less than minor) once vegetation planned for alongside the uppermost portion of the proposed achieves a height to fully screen the road from within this neighbouring property (predicted to be within three years). Accordingly, it is my opinion that the occupants of 43 Hihitahi Rise are not an "affected party".*

With regard to the wider landscape effects of the development on the wider environment, the site and its setting is complex due to the presence of the Opua Forest and the fact that the site is on the edge of the Outstanding Natural Landscape (ONL) within the RPS. A copy of the worksheet for this ONL is contained in Appendix 1 of the Landscape Assessment in Appendix 8. Of particular relevance to the Site, and to the proposal, is the Worksheet's commentary under the heading of Coherence:

> *A consistency of indigenous vegetation species brings a relatively high level of unity. Some variability through remnant exotic species and weeds such as hakea and acacia. Margins around Paihia and Te Haumi influenced by scattered housing and related infrastructure (underlining added).*

As assessed in the Landscape Assessment, the site is considered to sit within the margins of the ONL and is connected to the residential environment of Te Haumi. This site is noted in the landscape assessment, to be located in a transition zone from the ONL to the residential area, rather than as the hard boundary to the ONL that is imposed by conventional landscape mapping practise. Littoralis consider that:

> *The Site is considered to lie within that 'zone of transition' for two reasons. The first is its spatial relatedness to the pattern of Te Haumi, with its fingers of housing and projection of homes onto the lower "nose' of the Hihitahi Rise spur. This part of the terrain. The other reason is that the Site's relatively recent history of clearance and earthworks, and subsequent widespread invasion by exotic weeds, has considerably compromised its intactness and association with the primary attributes that inform the existence of the ONL. Arguably, those portions of the Site that have remained untouched by clearance and excavation since 2000 may retain those characteristics (particularly the north western extent that straddles the wetland), but the area proposed for*

development holds the primary ONL attributes in much lesser measure. The valley floor acts as a topographic divide between the main body of the ONL and the modified part of the Site. (Page 14).

With regard to an effects assessment on of the proposed development on the site itself, taking into account the assessment above and the additional details within the Landscape Assessment,

After accounting for the proposal's provisions for weed management, ameliorating vegetation planting and likely controls over building characteristics imposed under consents under the PFNDP - once established in the context of Te Haumi and the matters outlined in the immediately preceding discussion - the magnitude of adverse landscape effects of the proposal upon the already compromised landscape values of the Site itself is considered to be ***moderate-low*** *and more than minor. It is important to emphasise that whilst this level of effect is assessed as being above the "minor" threshold, it is not dramatically elevated or reaching a "significant" level. It is also necessary to acknowledge that this finding does not suggest that the proposal will not result in a change to the landscape of the Site and its immediate setting but that its landscape effects will be relatively contained*.

The Landscape Assessment concludes noting that "*When balancing the impact of the proposed subdivision against initiatives for ecological management and restoration, landscape and natural character effects upon those values of the Site itself are assessed as ultimately being moderate-low, but more than minor. Those effects are predicted to be contained though, and not elevated enough to be considered significant. Adverse effects upon the wider ONL and Te Haumi area of HNC are assessed as being less than minor…. Visual amenity effects are assessed as being very low and less than minor, at most (Section F)."*

Based on the assessment above by Littoralis Architecture and the proposed mitigation factors including landscape planting and ongoing pest management etc as proposed by this development, the effects of the proposed development on the neighbouring Te Haumi Residents in terms of landscape effects is assessed to be less than minor.

The effects of the proposed development in terms of landscape have been assessed by Littoralis to be contained to the site itself (more than minor) and do not go beyond the boundaries of the site.

7.2.11 Fire Risk Management effects

As noted throughout this report, the proposed subdivision will enable development of houses within 20m of bush. This is technically a breach of rule 12.4.6.1.2. of the Operative Plan. The proposed mitigation factors include a 3m minimum buffer of "Fire retardant' Native Species planting between Lot building areas and bush. This planting will be completed as part of the subdivision and protected by bush covenants. Furthermore, it is noted that the priority bush of reverse sensitivity risk is the Opua forest. This forest is physically separated by at least 20m with fire-retardant planting and the existing natural wetland between them.

Fire and Emergency NZ has been engaged through the design process for the proposed subdivision. Correspondence with Fire and Emergency NZ is contained within the Land Development Report, including their approval of the proposed development from a fire risk perspective.

As noted in the Landscape Assessment, in **Appendix 8,** low flammability planting is proposed around the edges of the vegetation to be retained. This planting will reduce the risk of fire spreading into the Opua Forest, should a future dwelling catch on fire.

On the basis of the proposed mitigation factors including hydrants in the private accessway and the planting of fire-retardant species (with legal protection), it is considered that any adverse effects on of the proposed development in regard to fire risk will be less than minor.

7.2.12 Climate Change- Coastal Inundation and Flooding

An assessment of Flood Risk is outlined within the Land Development Report. This report notes that the lower wetland areas of the site are within a coastal flood hazard zone as shown NRC Natural Hazard Maps. However, the development areas of the site are elevated well above potential flood levels in the wetland such that they pose no flooding risk to future lots. For example, Lot 10 has a lowest developable area at RL 10.00m which is more than 6m higher than potential flood levels in the adjacent wetland area.

Other potential risks from flooding include those posed by secondary flow paths. As outlined in the Land Development Report, **(Section 9):**

> *" The proposed road, driveway and lot levels have been specifically designed so that secondary flow (i.e. flows in excess of the primary network capacity) will be captured and conveyed down the road, then the common accessway before discharging to the wetland below the site. The level of the vehicle crossing to the common accessway has been set lower than the ground levels of the lots adjacent to the cul-de-sac to ensure secondary flow spills down the driveway. This results in all secondary flow being confined to the road, driveway and stream."*

As noted in the previous sections of the AEE, a number of Building Controls are proposed to be included on the relevant lots to manage flooding risks. For example, it is proposed to include consent notices on Lots 8 and 9 to ensure that the future owners do not cut down their vehicle crossing and lot frontage towards the future building site. This will ensure that flood risk from secondary flows is adequately managed.

On the basis of the Assessment provided in the Land Development Report by Chesters Ltd, the mitigation and offsetting measures inherent in the application it is considered that any adverse effects from flooding and coastal inundation will be less than minor.

7.2.13 Archaeological Effects

The application is supported by a Desktop Archaeological Assessment, prepared by Origin Archaeology, which is attached in **Appendix 10**.

As noted earlier in the Application, there is an archaeology site within the Site Boundary. The site (Q05/1199) was recorded in 1996 after a lens of shell was identified in a test bore hole at a depth of 3m-4m below a thick layer of clay spoil. No further information is known about the site.

Based on the locational information that the Applicant has, the subdivision access road has been designed to avoid earthworks in this area. The archaeology site is not expected to be harmed as a result of the proposed development. However, given that the site has not been extensively earthworked in the past, there is a possibility that more unknown sites could be found as the earthworks progress. To mitigate and manage the effects of this risk, an Archaeology Authority will be applied for from Heritage New Zealand to ensure that the correct protocols are followed during earthworks and in the event of the discovery of an item of significance.

DoC and Mana Whenua will be engaged with though this process.

In any event, it is recommended that the Consent be granted subject to the standard Accidental Discovery Protocol Conditions during the earthworks phase. Prior to the commencement of earthworks on the site, the known archaeological site will need to be clearly marked to ensure that it is protected during the earthworks phase. Further site investigations will be required by the Archaeologist to determine the location of the site.

Based on the proposed mitigation measures outlined above, it is assessed that the proposed development is likely to have a less than minor impact on the identified site and with the appropriate measures and management triggers in place via consent conditions and through the Archaeology Authority, the effects of the proposed development on unknown archaeological sites will be appropriately mitigated.

On the basis of the Desk Top Archaeological Assessment provided by Origin Archaeology and the mitigation and offsetting measures inherent in the application it is considered that any adverse effects on both identified and non-identified archaeological site(s) will be less than minor.

7.2.14 Cultural Effects

An early email to the relevant iwi and hapu in the rohe was sent on 22/04/2024 following guidance from FNDC's iwi liaison team. Ngati Rahiri me Ngati Kawa responded noting that they have primary Hapu interests in the whenua. An email was sent on 30/05/2024 offering to meet to discuss the proposed development.

Ngāti Kawa Taituha, as a representative of the Te Tii Waitangi Marae and Ngati Rahiri me Ngati Kawa, has noted an interest in the proposed development. A meeting was offered, and a draft scheme plan was circulated on 11/07/2024 via email. An online meeting was held with Ngāti Kawa Taituha to provide an overview of the proposed development on 20/08/2024. The application documentation was circulated on 22/08/2024. The Applicant is willing to work with Ngati Kawa following the lodgement of this application, and notes that a hui will be organised on the site in due course.

The Applicant is willing to engage with Ngati Kawa to ensure that cultural effects and avoided, remedied and mitigated where appropriate, particularly through the construction phase.

The Applicant has endeavoured to deliver a subdivision that has been designed on the basis of ecological protection and enhancement, that protects the freshwater features of the site and retains the areas of significant vegetation within this residentially zoned site. As noted in the sections above, appropriate erosion and sediment controls will be in place to manage the effects of the earthworks on the freshwater resources.

The Applicant is willing to work with Ngati Rahiri me Ngati Kawa to ensure that the development manages any cultural effects as deemed necessary.

On the basis of the information at hand and using best practice environmental management methods and technics (particularly regarding vegetation management, erosion and sediment controls and treatment devices for stormwater, prior to discharge, it is considered that any adverse effects on the cultural elements of the development and the mauri of the waterbodies will be less than minor. Engagement with mana whenua through the consents process and through the Archaeological Process will determine if the assessment above is correct or if this assessment needs to be revised.

7.3 Summary of Effects

Overall, it is considered that any adverse effects relating to this proposal will be less than minor, subject to the mitigation measures and proposed conditions as outlined within this report. As noted in Section 7.2.10, the effects of the proposed development on the landscape values of the site itself are assessed to be minor and contained within the site boundaries.

Section 104D(1)(a) of the Resource Management Act refers to Section 104(3A), which notes that the consent authority must not have regard to any effect on a person who has given their written approval. As noted above, the effects are contained to the site and the boundaries of the land subject to this application, on land owned by the applicant.

8. Public Notification Assessment

Assessment of Steps 1 to 4 (Section 95A)

Section 95A specifies the steps the Council is to follow to determine whether an application is to be publicly notified. There steps are address in the statutory order below.

Step 1: Mandatory public notification in certain circumstances

No mandatory notification is required as:

- the applicant has not requested that the application is publicly notified (s95A(3)(a));
- the application does not involve any exchange of recreation reserve land under s15AA of the Reserves Act 1977 (s95A(3)(c)).

Step 2: If not required by step 1, public notification precluded in certain circumstances

Step 2 states that public notification of a resource consent application is precluded if the proposal is:

- for one or more activities and each activity is subject to a rule or national environmental standard that precludes public notification; or

- the application is a for a controlled activity, and no other activities; or a restricted discretionary, discretionary, or non-complying activity, but only if the activity is a boundary activity[1].

If any of the above applies you go to Step 4; otherwise the criteria of Step 3 must be considered.

There is no rule precluding public notification and there are other consenting requirements beyond a boundary activity. Therefore, the public notification of the application is not precluded by step 2, and the circumstances under step 3 need to be considered.

Step 3: If not precluded by step 2, public notification required in certain circumstances

The application is not for an activity that is subject to a rule or national environmental standard that requires public notification (s95A(8)(a)).

[1] An activity is a **boundary activity** if— (a) the activity requires a resource consent because of the application of 1 or more boundary rules, but no other district rules, to the activity; and (b) no infringed boundary is a public boundary.

In accordance with section 95D this assessment has disregarded any effects on persons who own or occupy the site and any land adjacent to the site, adverse effects of permitted activities, trade competition and the effects of trade competition and any effects on a person who has given written approval to the application. No persons have provided their written approval. The effects of the proposed development on the environment have been assessed as less than minor, with the exception of landscape effects on the site itself, which are assessed as minor.

Given the above, public notification is not required under step 3.

Step 4: Public notification in special circumstances

If an application has not been publicly notified as a result of any of the previous steps, then the Council is required to determine whether special circumstances exist that warrant it being publicly notified (s95A(9)). Special circumstances are those that are:

- exceptional or unusual, but something less than extraordinary;
- outside of the common run of applications of this nature; or
- circumstances which makes notification desirable.

There is nothing exceptional or unusual, or outside the common run of applications of this nature that warrant notification based on special circumstances.

Public notification conclusion

Having considered the section 95A public notification tests, the following conclusions are reached:

- Under step 1, public notification is not mandatory.
- Under step 2, public notification is not precluded.
- Under step 3, the application does not need to be publicly notified as the proposal will have adverse effects on the environment that are minor or less.
- Under step 4, there are no special circumstances that warrant the application being publicly notified.

The application can therefore be processed without public notification.

9. Consultation

Department of Conservation

The Applicant has engaged with the Department of Conservation as an adjacent landowner. There is an option of vesting proposed Lot 103 as part of the Conservation Estate under the Conservation Act as the area is contiguous with the Opua Forest. Following a meeting with Department of Conservation representatives.

A meeting was held online on 28/06/2024 with Lili Crossland and Lara McDonald from the Department of Conservation. Overall, DoC were relatively supportive of the approach to the development of the land including the legal protection of the vegetation and the proposed pest management regime.

In addition, an email was received on 20/06/2024 from the Department of Conservation noting that:

> *"Firstly, thank you for sending through the file. We have had a meeting with our Operations Manager here at the Bay of Islands office and she is in principle supportive of the acquisition of that parcel of land on a conditional basis. What this would require is:*
> - *a conservation value's report of the land to be gifted – I can try to find some examples of other reports for reference.*
> - *All costs associated with Title being issued, as well as Sale and Purchase legal fees, and transfer fees through LINZ to be covered by Applicant.*
> - *We would consider the wetland to be valuable also, and this could be included as one title, (wetland and land adjacent the forest)*
> - *Possibly some consideration of fencing however this may not be required/possible."*
>
> *If all things considered and you are able to meet those requirements, we would be happy to seek further approvals."*

The Applicant is grateful for the support of the Department of Conservation. However, the Applicant is currently undertaking due diligence as to whether or not it is financially viable to go though the vesting process or to retain the Lot and amalgamate the land into Lot 8 and undertake the pest management privately.

Iwi/Hapu Engagement.

Following advice from FNDC Kaiarahi Kaupapa Maori Te Hono team, the following Iwi and Hapu were contacted via email on 22/04/2024 regarding the proposed development.

- Ngāti Kawa and Ngāti Rāhiri hapū
- Ngāti Kawa Taituha
- Ngāti Hine iwi
- Te Roroa hapū
- Ngāti Rēhia hapū
- Te Uri Taniwha hapū

Te Roroa hapū Replied on 22/04/24 outlining that they had no Interest in the development- noting that proposed subdivision as this area is in the rohe of Nga uri o Pumuka (Te Roroa ki Opua).

Ngāti Kawa Taituha, as a representative of the Te Tii Waitangi Marae, has noted an interest in the proposed development. A meeting was offered, and a draft scheme plan was circulated on 11/07/2024 via email. An online meeting was held with Ngāti Kawa Taituha to provide an overview of the proposed development on 20/08/2024. The application documentation was circulated on 22/08/2024. The Applicant is willing to work with Ngati Kawa following the lodgement of this application, and notes that a hui will be organised on the site in due course.

No other responses were received.

No consultation under the Marine and Coastal Area (Takutai Moana) Act 2011 (MACAA) has been undertaken as it is not considered to be required given the consents sought. If FNDC/Northland Regional Council deems consultation to be necessary under this act, then the Applicant is willing to discuss this process.

Wider consultation

Given the effects of the proposed development are assessed to be less than minor, following mitigation, and the underlying zoning is residential, meaning that some form of residential development is anticipated on this site, no wider engagement has been undertaken as there are no identified affected parties.

No persons were considered to be adversely affected in the 2010 consent.

FNDC

Please refer to the Land Development Report which contains a summary of the engagement had to date with FNDC regarding connections to the reticulated water and wastewater systems.

Fire and Emergency NZ

Please refer to the Land Development Report which contains a summary of the engagement had to date with Fire and Emergency NZ regarding the proposal for hydrants in the private accessway, that are connected to the reticulated network. Jason Goffin, Advisor Risk Reduction from Fire and Emergency NZ has approved the proposed design (10/06/2024).

10. Limited Notification Assessment

Assessment of Steps 1 to 4 (Section 95B)

If the application is not publicly notified under s95A, the council must follow the steps set out in s95B to determine whether to limited notify the application. These steps are addressed in the statutory order below.

Step 1: Certain affected protected customary rights groups must be notified

Step 1 requires limited notification where there are any affected protected customary rights groups or customary marine title groups or affected persons under a statutory acknowledgement affecting the land (ss95B(2) and 95B(3)).

The above does not apply to this proposal as no protected customary rights groups, customary marine title groups or affected persons under a statutory acknowledgment are affected by the application.

Step 2: If not required by step 1, limited notification precluded in certain circumstances

Step 2 describes that limited notification is precluded where all applicable rules and NES preclude public notification; or the application is for a controlled activity (other than the subdivision of land).

The proposal does involve subdivision and is not a Controlled activity. There are no rules precluding notification. Therefore, limited notification is not precluded.

Step 3: If not precluded by step 2, certain other affected persons must be notified

Step 2 requires that where limited notification is not precluded under step 2 above, a determination must be made as to whether any of the following persons are affected persons:

- In the case of a boundary activity, an owner of an allotment with an infringed boundary; and
- In the case of any other activity, a person affected in accordance with s95E.

The application is not for a boundary activity. An assessment in accordance with s95E is required and is set out below.

Adjoining and adjacent land have been excluded from the assessment of wider environmental effects but are included for the purposes of assessing effects for Limited Notification.

Adjacent land is not defined in the RMA however the term “adjacent” has been defined in case law as meaning “lying near or close; adjoining; continuous; bordering’ not necessarily touching though this is by no means precluded”. For the purposes of the tests for limited notification for this application,

adjacent land is considered to be those sites directly adjoining the application site or located directly across the road – refer to the yellow highlighted properties in ***Figure 9*** below.

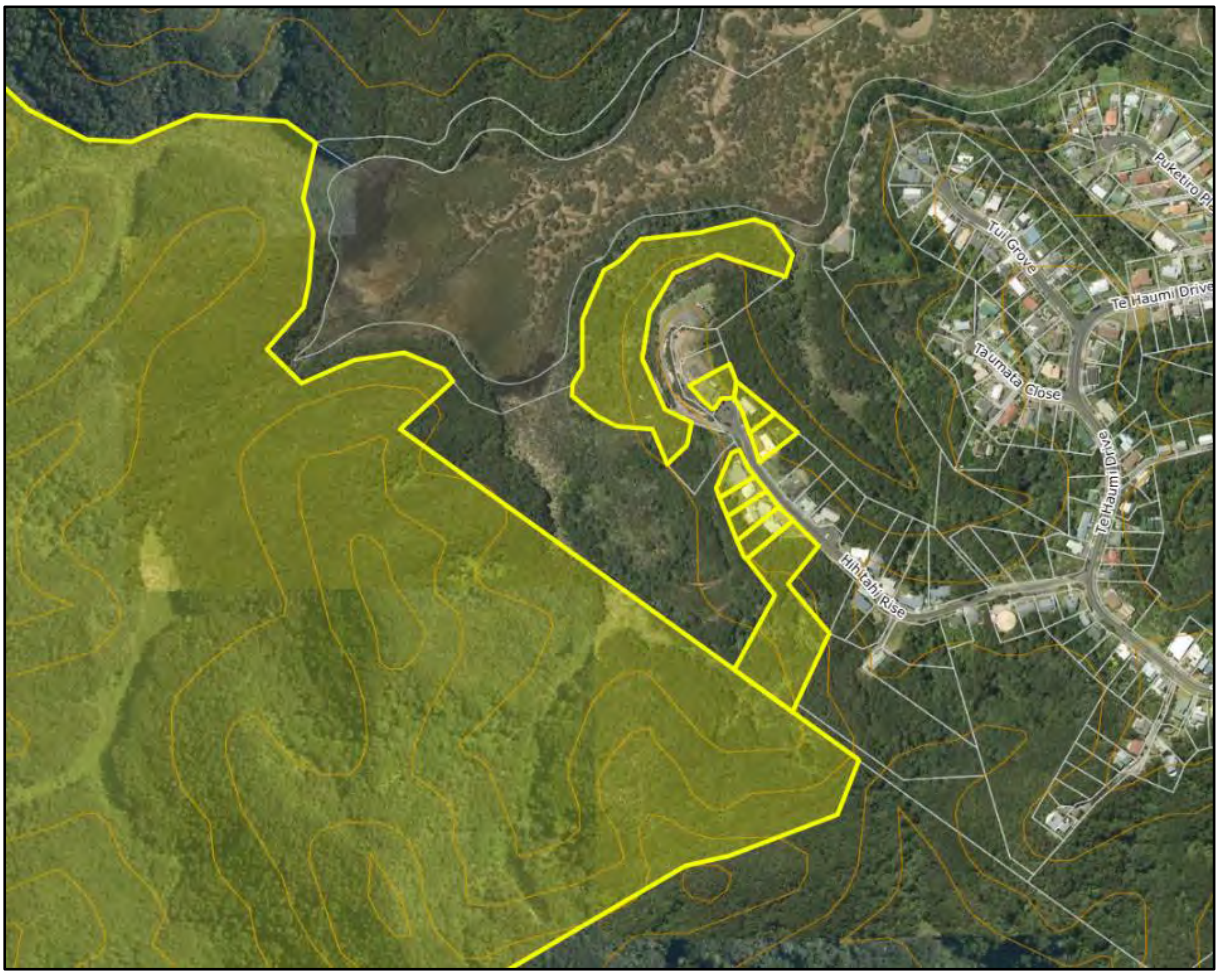


Figure 9- Identified adjacent Land Owners

No written approvals have been obtained or supplied with this application.

Assessment

No neighbouring landowners are considered to be adversely affected by this application (as the potential adverse effects will be less than minor) for the following reasons:

- The construction effects are considered to be temporary and can be managed through appropriate management plans throughout the duration of the construction period.
- Resource Consents will be required for the construction of future dwellings on each title.
- All construction works and retaining walls are located within the site boundary.
- Retaining structures will be required in close proximity to the boundary of 43 Hihitahi Rise, however, the earthworks and associated structures will not have a direct effect on the land parcel. The retaining wall will be designed to avoid undertaking works outside of the site boundary. The wall will not be visible from the property as the wall will sit below the existing ground level of 43 Hihitahi Rise. The retaining wall will be designed to have a 100 year life span as per the requirements of the Building Act.

- The development of the site will not be visible from Hihitahi Rise given the topography of the Site.
- The environmental effects of the proposed development are considered to be less than minor subject to the proposed conditions of consent and consent notices.
- Fire and Emergency NZ have provided there approval for the proposed design
- The Department of Conservation has been engaged as a landowner and the Applicant will continue to engage with DoC regarding the ownership of proposed Lot 103.
- Refer to the Landscape Assessment in Appendix 8 for detailed assessment of the landscape effects on 28, 42, 44, 46, and 57 Hihitahi Rise.

Accordingly, it is considered that the consent authority need not give notice of this proposal to any person.

However, based on the conclusions within the Landscape Assessment, when balancing the impact of the proposed subdivision against initiatives for ecological management and restoration, landscape and natural character effects upon those values of the Site itself are assessed as ultimately being moderate-low, but more than minor. Those effects are predicted to be contained though, and not elevated enough to be considered significant. Adverse effects upon the wider ONL and Te Haumi area of High Natural Character are assessed as being less than minor. Visual amenity effects are assessed as being very low and less than minor, at most.

Therefore, the proposed development does not need to give notice of this application to any persons based on the effects of the development, as they are contained to the site boundaries.

Step 4: Further notification in special circumstances

In addition to the findings of the previous steps, the council is also required to determine whether special circumstances exist in relation to the application that warrant notification of the application to any other persons not already determined as eligible for limited notification.

Step 4 does not apply as there are no special circumstances relating to the proposal which would warrant limited notification.

Limited Notification Conclusion

Having undertaken the s95B limited notification tests, the following conclusions are reached:

- Under step 1, limited notification is not mandatory;
- Under step 2, limited notification is not precluded;
- Under step 3, limited notification is not required as it is considered that the activity will not result in any adversely affected persons; and
- Under step 4, there are no special circumstances.

Therefore, it is recommended that this application be processed without limited notification.

11. Statutory and Policy Assessment

11.1 Section 104 Matters

Overall, the proposal is a non-complying activity. The matters that require consideration in assessing this application are set out in section 104, section 104B and section 104D of the Resource Management Act 1991. These matters include the actual and potential effects of allowing activities on the environment, the relevant objectives and policies of the planning documents, and any other matter that is relevant and necessary to determine the application. The provisions of section 104 are subject to the matters set out in Part II of the Act.

Prior to assessing a proposal for non-complying activity under s104; an assessment under s104D must be completed. A non-complying activity may only be considered for approval through assessing the relevant s104 matters if it passes the 'Gateway Test' set out in s104D. This requires that the proposal must not generate adverse effects on the environment that are more than minor **or** that the proposal must not be contrary to the relevant objectives and policies of the relevant planning documents.

The preceding sections of this report addressed the relevant assessment criteria and the actual and potential effects of the activity on the environment. An assessment of the relevant objectives and policies and the relevant provisions of Part II of the Resource Management Act 1991 is provided below.

11.2 Policy Assessment

In accordance with Section 104(1)(b) of the Resource Management Act 1991 ('RMA'), this part of the report addresses the following statutory documents which are relevant to the assessment of this proposal:

- New Zealand Coastal Policy Statement ('NZCPS')
- National Policy Statement- Indigenous Biodiversity (NPS:IB)
- National Policy Statement- Freshwater (NPS:FW)
- National Environmental Standard Freshwater (NES:FW)
- Northland Regional Policy Statement
- Northland Regional Plan 2024
- Far North Councl District Plan- Operative
- Far North District Plan- Proposed
- Part II of the RMA

11.2.1 New Zealand Coastal Policy Statement (2010) (NZCPS)

The NZCPS sets out policies in order to achieve the purpose of the Resource Management Act in relation to the coastal environment of New Zealand.

Policy 4 aims to manage activities within the coastal environment, noting that Policy 6.1C encourages the consolidation of existing coastal settlements in urban areas where this will contribute to the avoidance or mitigation of sprawling or sporadic patterns of settlement and urban growth. The proposed development, while in the coastal environment, is located on land zoned for residential purposes, on the edge of the existing development Te Haumi settlement. The proposed development avoids sprawling urban growth. The site is proposed to be developed for its intended purpose- residential development and connects into the existing urban infrastructure.

Policy 25 addresses subdivision, use and development in areas of coastal hazard risk. The proposed development has been designed to avoid locating dwellings in areas subject to coastal hazard risks within the next 100- years. The area of the site that is subject to coastal hazards will be held as one lot (Lot 103) and will have a no-build covenant on the title. This area is largely wetland (both coastal and natural inland wetland). No other building platform s subject to coastal hazards.

Policy 22 aims to manage sedimentation effects. As noted in the Land Development Report, attached in Appendix 4, appropriate erosion and sediment controls will be in place during the earthworks to ensure that the effects associated with the earthworks are managed appropriately. The proposed stormwater treatment device will also ensure that sediment is managed appropriately prior to being discharged to the intermittent stream, which does eventually discharge to the wetland.

The proposed development is consistent with Policy 23 regarding the discharge of contaminants. The discharge of wastewater will be to a reticulated network. Stormwater will be treated via the stormwater wetland/raingardens and discharged to the intermittent stream prior to entering the wetland.

Overall, the proposed development is consistent with the Policy Framework of the NZCPS.

11.2.2 National Policy Statement- Indigenous Biodiversity

The National Policy Statement for Indigenous Biodiversity (NPS-IB) came into force on 4th August 2023 and applies to indigenous biodiversity in the terrestrial environment across New Zealand. The objective of the NPS-IB is to maintain indigenous biodiversity so that there is no net loss after the commencement date.

The NPS-IB enables infrastructure that is needed to support planned for urban housing development. If it has a functional or operational need to locate in a Significant Natural Area (SNA) and there is no alternative location, any impacts on an SNA will be managed using the effects management hierarchy. Of the vegetation to be cleared, 114m^2 is identified as having SNA qualities. The removal of this area of vegetation is required for the construction of the accessway to the development. There is no Council identified SNA's on the site.

As outlined in the Ecology Assessment, it is deemed that the proposed development gives effect to the objectives and policies of the NPS-IB through:

a) Having been shaped by a careful design-led approach to development that integrates the necessary infrastructure of the proposal with the existing ecological and landscape context and demonstrates a strong commitment to sustainable development principles.
b) Applies the effects management hierarchy where adverse effects cannot be avoided in the first instance.
c) Maximising the environmental benefit that can be achieved from the subdivision works given that significant net area outside of the immediate development footprint is to serve as ecological or landscape enhancement areas.
d) Avoiding or mitigating potential adverse ecological effects through utilising existing structures or previously cleared areas of vegetation (i.e. existing farm tracks and exotic scrubland) to facilitate access and site development. Indigenous vegetation clearance is minimised as far as feasible and practicable. Where any earthworks are to take place near sensitive terrestrial or aquatic environments, earthworks controls have been put in place to ensure that the feature can be protected as part of the proposal.
e) Illustrates how urban development and growth can be balanced with ecological protection and restoration through complementing the existing ecological values of the site and wider area, while also ensuring that appropriate areas can be developed into high quality housing.
f) Presents a high standard subdivision proposal in relation to ecological matters, striking a balance between protecting and enhancing areas of higher existing or potential ecological values, while utilising existing degraded features (i.e. previously cleared land and farm tracks) for the provision of required services and concentrating the site's development on areas with low existing ecological values or functionality.

The proposal will ensure that potential adverse effects on indigenous biodiversity are avoided in the first instance, or where it is not feasible that potential adverse effects are appropriately mitigated.

A number of ecological management recommendations have been made for any proposed vegetation clearance to enable development to ensure that as far as practicable any potential adverse effects on fauna can be sufficiently addressed. The proposed development provides and promotes restoration of indigenous biodiversity through permanent legal and physical protection of habitats that are of moderate-high ecological significance.

11.2.3 National Policy Statement- Freshwater 2020 (NPS:FW) and National Environmental Standard Freshwater (2020) (NES:FW)

The NPS:FW and NES:FW set the national guidance and policy framework for the management of freshwater across New Zealand.

Part of the wetland areas on site are located within Mean Water High Springs (MHWS) – these areas do not meet the definition of a natural inland wetland as defined under NPS:FW. Where wetlands extend outside of the MHWS line they are considered to meet the definition of a natural inland wetland and NPS:FW and NES:FW policies and regulations apply.

As noted in this Report, in respect to NES:FW, it is considered that the proposal is a restricted discretionary activity under Regulation 45C 'Urban development' of NES:FW and, given the scattered nature of the stream and wetland areas on site, it is inevitable that at least some minor earthworks and stormwater discharges may occur within a 10m setback from the identified wetland areas.

The Proposed Development is consistent with the policy framework for the NPS:FW, including **Policy 5, 6 ,7, 8, and 9.** The proposed development aims to protect the natural inland wetland from modification in perpetuity. While the proposed development will have some works within 10m of the wetland boundary (earthworks), this activity can be managed through conditions and will be of a temporary nature. The stormwater from the site is proposed to be managed appropriately (subject to conditions) to ensure that the environmental effects are appropriately managed to ensure that the effect on the natural inland wetland are less than minor.

The overall, the proposed development is not inconsistent with the objectives and policies of the NPS:FW and aims to protect the natural inland wetland going forward. Works within the wetland have been avoided.

11.2.4 Northland Regional Policy Statement 2016 (NRPS)

The NRPS sets the framework for achieving integrated management of Northlands resources. The NRPS must give effect to National Policy Statements and the Resource Management Act 1991. District Plans must "given effect" to and must not "be inconsistent with" the NRPS.

As noted on the Planning Maps associated with the Regional Policy Statement, the site is within an Outstanding Natural Landscape, and within an area of High Natural Character, noted as "Bush Clad Hills West Opua and Paihia."

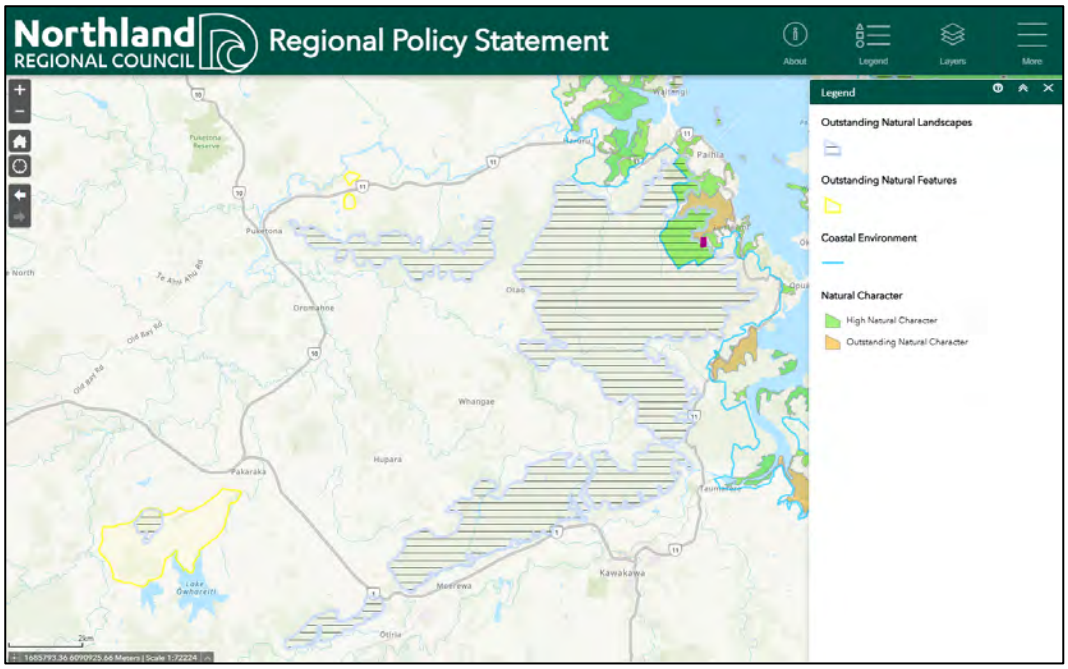


Figure 10- *Extent of Outstanding Natural Landscape as identified by the Northland Regional Policy Statement. The Site subject to this application is highlighted by the pink dot.*

Objective 3.14 addresses Natural Character, Outstanding Natural Features, Outstanding Natural Landscapes and historic heritage and is copied below:

> *Identify and protect from inappropriate subdivision, use and development;*
> *(a) The qualities and characteristics that make up the natural character of the coastal environment, and the natural character of freshwater bodies and their margins;*
> *(b) The qualities and characteristics that make up outstanding natural features and outstanding natural landscapes;*
> *(c) The integrity of historic heritage*

As noted in the NRPS, the objective does not seek absolute protection in all cases, as in many cases the land identified as being subject to these features can accommodate some degree of change.

As noted throughout the application and in the AEE section of this report, the proposed development is consistent with the above Objective and provides for a comprehensive design solution for the residential zoned site, to ensure that, where practical, the natural values of the site are retained and protected.

Policy 4.6.1 manages the effects on the characteristics and qualities of natural character, natural features and landscapes both in and out of the coastal environment. Policy 4.6.1 of the RPS is copied below. A full assessment against this policy is provided within the Landscape Assessment in Appendix 8. The site is within the Coastal Environment as defined by the RPS.

The Site is residentially zoned and that part of its eastern boundary that is associated with proposed development is integral with the existing Te Haumi settlement that runs along Hihitahi Rise. Almost all of those parts of the Site that are proposed to be modified have been compromised by past clearance and/or earthworks and subsequent weed infestation.

4.6.1 Policy – Managing effects on the characteristics and qualities natural character, natural features and landscapes

(1) In the coastal environment:

a) Avoid adverse effects of subdivision use, and development on the characteristics and qualities which make up the outstanding values of areas of outstanding natural character, outstanding natural features and outstanding natural landscapes.

b) Where (a) does not apply, avoid significant adverse effects and avoid, remedy or mitigate other adverse effects of subdivision, use and development on natural character, natural features and natural landscapes. Methods which may achieve this include:

(i) Ensuring the location, intensity, scale and form of subdivision and built development is appropriate having regard to natural elements, landforms and processes, including vegetation patterns, ridgelines, headlands, peninsulas, dune systems, reefs and freshwater bodies and their margins; and

(ii) In areas of high natural character, minimising to the extent practicable indigenous vegetation clearance and modification (including earthworks / disturbance, structures, discharges and extraction of water) to natural wetlands, the beds of lakes, rivers and the coastal marine area and their margins; and

(iii) Encouraging any new subdivision and built development to consolidate within and around existing settlements or where natural character and landscape has already been compromised.

(2) Outside the coastal environment avoid significant adverse effects and avoid, remedy or mitigate other adverse effects (including cumulative adverse effects) of subdivision, use and development on the characteristics and qualities of outstanding natural features and outstanding natural landscapes and the natural character of freshwater bodies. Methods which may achieve this include:

a) In outstanding natural landscapes, requiring that the location and intensity of subdivision, use and built development is appropriate having regard to, natural elements, landforms and processes, including vegetation patterns, ridgelines and freshwater bodies and their margins;

b) In outstanding natural features, requiring that the scale and intensity of earthworks and built development is appropriate taking into account the scale, form and vulnerability to modification of the feature;

c) Minimising, indigenous vegetation clearance and modification (including earthworks / disturbance and structures) to natural wetlands, the beds of lakes, rivers and their margins.

(3) When considering whether there are any adverse effects on the characteristics and qualities[9] of the natural character, natural features and landscape values in terms of (1)(a), whether there are any significant adverse effects and the scale of any adverse effects in terms of (1)(b) and (2), and in determining the character, intensity and scale of the adverse effects:

a) Recognise that a minor or transitory effect may not be an adverse effect;

b) Recognise that many areas contain ongoing use and development that:

(i) Were present when the area was identified as high or outstanding or have subsequently been lawfully established

(ii) May be dynamic, diverse or seasonal;

c) Recognise that there may be more than minor cumulative adverse effects from minor or transitory adverse effects; and

d) Have regard to any restoration and enhancement on the characteristics and qualities of that area of natural character, natural features and/or natural landscape.

Method 4.6.3 notes that

"Regional and district plans shall be amended to the extent necessary to include objectives, policies and methods (and rules where necessary) to give effect to Policy 4.6.1 and 4.6.2:

….

4) In implementing 4.6.1 district and regional plans shall:

(i) Permit the maintenance of existing authorised structures, buildings, accessways, infrastructure and production land; and

(ii) Not unduly restrict existing authorised use of land or render land incapable of reasonable use. (Emphasis added).

(iii) Recognise that there are urban development and/or specific use zonings and/or designations in plans existing at the time that the Regional Policy Statement was made operative that seek to achieve consolidated development and efficient use of land and infrastructure. Where such a zoning or designation does not give effect to Policy 4.6.1, and there are viable alternatives for giving effect to Policy 4.6.1, then existing provisions relating to subdivision, use and development will not need to change.*

**Urban development and/or specific uses include:*

- *District plan zones (that were operative when the Regional Policy Statement commenced) where the primary purpose is to provide for urban residential, commercial or industrial use and development. (Emphasis added)*
- *Operative designations where the primary purpose is to provide for social or utility network infrastructure.*
- *Areas in operative regional plans where the primary purpose is to provide for specific use and development, such as mixing zones, aquaculture, moorings and marinas, wharves and ports (including ski-lanes, shipping/navigation channels, pipelines and cables associated with utility network infrastructure).*

As noted throughout this report, the site is zoned for Residential development under both the Operative and Proposed FNDC District Plans. Policy 4.6.1 is not intended to unduly restrict the reasonable use of land. Given the size of the site, some degree of residential development is expected and anticipated n this location by the District Plan. The presence of the ONL should not unduly limit the ability for the proposed development to occur on the site. The design of the subdivision has been developed around maintaining the ecological and landscape vales of the site where possible and limiting clearance to those areas of vegetation that are of lower ecological value. The proposed development aims to legally protect the high ecological values of the site which are not currently subject to any sort of management requirements. The proposed development will have a positive effect in this regard.

The Northland Regional Landscapes Worksheet for "*Bush Clad Hills to West of Opua and Paihia, including Morewa Flank"* under aesthetic values, notes that the "*margins around Paihia and Te Haumi are influenced by scattered housing and related infrastructure*." Under naturalness, the worksheet notes that "*Buildings and other infrastructure typically confined to margins"* and that the "*landform is largely intact, but with some incursions by quarrying, roading and building developments around margins (and typically outside) of unit."* Some level of built development is acknowledged in the values of the Outstanding Natural Landscape.

The site is located on the fringe of the ONL, adjacent to the existing Te Haumi residential Area. Given the size and zoning of the site, some degree of residential development is expected and anticipated n this location by the District Plan. The proposed development of the site will maintain the integrity of the ONL as the development is on the fringe of the large ONL boundary, where some level of development is anticipated.

Policy 4.6.1(3) notes that when considering whether there are any adverse effects on the characteristics and qualities of the ONL (as identified on the worksheet) in terms of Policy 4.6.1(1), "*avoiding adverse effects of subdivision, use and development*" and (2) "*avoiding significant adverse effects*" on the ONL, and in determining the character, intensity and scale of the adverse effects, Policy 4.6.1(3a) recognises that a "*minor or transitory effect may not be an adverse effec*t." It is acknowledged that the proposed development, will result in a change to the existing environment. However, this change is in keeping with the zoning of the land and is proposed in a way that avoids long term adverse effects on the environment. Construction effects will be temporary effects.

As concluded within the Landscape Assessment, adverse effects upon the wider ONL and Te Haumi area of High Natural Character are assessed as being less than minor. The landscape effects of the development are constrained to the site itself and do not go beyond the property boundary. Therefore, the proposed development is consistent with Policy 4.6.1 as adverse effects are avoided.

Policy 4.6.1(3)(d) also notes that when considering whether there are any adverse effects on the ONL, regard must be given to any restoration or enhancement on the characteristics and qualities of that natural landscape. The proposed development aims to legally protect areas of vegetation that are of significance and that are of high ecological value. The wetland within the site, which is connected to the Te Haumi River will be legally protected in perpetuity from development. The site will also be subject to ongoing pest management and include areas identified for revegetation. All the proposed management measures will have a positive effect on the ONL and should be given weighting in the decision-making process, in balance with the effects on the ONL of the removal of the vegetation to facility the subdivision of the site.

Overall, the proposed development is not inconsistent with the NRPS.

11.2.5 Northland Regional Plan 2024 (NRP)

Northland Regional Council Released a Proposed Regional Plan in February 2024 that now has full legal effect and must be treated as operative (Section 86F of the RMA 1991). Regard must be had to all Objectives and Policies within the NRP when considering an application for Resource Consent.

The Proposed Development is consistent with the Objectives and Policies of the NRP, including but not limited to, D.4.23 Natural inland wetlands, D.4.26 freshwater structures, D.4.27 earthworks and vegetation clearance ad D.6.4 flood hazard management.

Overall, the proposed development is consistent with the NRP.

11.2.6 Far North District Plan 2009- Operative (FNDP)

Copies of the relevant objectives and policies from the above plan(s) are included with **Appendix 12**, including Chapter 7- Urban, Chapter 12- Natural and Physical Resources and Chapter 13- Subdivision. The most relevant objectives and policies are listed below:

Chapter 7- Urban Environment

> *Policy 7.4.5 That new urban development avoid:*
> *(a) adversely affecting the natural character of the coastal environment, lakes, rivers, wetlands or their margins;*
> *(b) adversely affecting areas of significant indigenous vegetation or significant habitats of indigenous fauna;*
> *(c) adversely affecting outstanding natural features, landscapes and heritage resources;*
> *(d) adversely affecting the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga;*
> *(e) areas where natural hazards could adversely affect the physical resources of urban development or pose risk to people's health and safety;*
> *(f) areas containing finite resources which can reasonably be expected to be valuable for future generations, where urban development would adversely affect their availability;*
> *(g) adversely affecting the safety and efficiency of the roading network;*
> *(h) the loss or permanent removal of highly productive and versatile soils from primary production due to subdivision and development for urban purposes.*

The Proposed Development is consistent with the Objectives and Policies of Chapter 7 of the FNDP. All matters listed above in Policy 7.4.5 have been considered and taken into account within the design of the proposed development. The lot sizes proposed are much larger than the minimum lot size allowed for by the residential zone. This is to ensure that the vegetation on the site and the wetland and the listed archaeological site can be protected, while still providing for a level of residential development expected by the zone.

Chapter 12- Natural and Physical Resources.

> *Objective 12.2.3.1 To maintain and enhance the life supporting capacity of ecosystems and the extent and representativeness of the District's indigenous biological diversity.*
>
> *Objective 12.2.3.2 To provide for the protection of, and to promote the active management of areas of significant indigenous vegetation and significant habitats of indigenous fauna.*
>
> *Policy 12.2.4.1 That areas of significant indigenous vegetation and significant habitats of indigenous fauna be protected for the purpose of promoting sustainable management with attention being given to:*
>
> *(a) maintaining ecological values;*
>
> *(b) maintaining quality and resilience;*
>
> *(c) maintaining the variety and range of indigenous species contributing to biodiversity;*
>
> *(d) maintaining ecological integrity; and*

(e) maintaining tikanga Maori in the context of the above.

Note: In determining whether a subdivision, use or development is appropriate in areas containing significant indigenous vegetation and significant habitats of indigenous fauna, Council shall consider each application on a case by case basis, giving due weight to Part II of the Act as well as those matters listed above.

Policy 12.2.4.4 That clearance of limited areas of indigenous vegetation is provided for.

Policy 12.2.4.10 In order to protect areas of significant indigenous fauna:
(a) that dogs (excluding working dogs), cats, possums, rats, mustelids and other pest species are not introduced into areas with populations of kiwi, dotterel and brown teal;
(b) in areas where dogs, cats, possums, rats, mustelids and other pest species are having adverse effects on indigenous fauna their removal is promoted.

Policy 12.2.4.11 That when considering resource consent applications in areas identified as known high density kiwi habitat, the Council may impose conditions, in order to protect kiwi and their habitat.

As noted by Policy 12.2.4.4, limited areas of indigenous vegetation s provided for within the FNDP. The clearance of indigenous vegetation is limited to a small area of kanuka forest as highlighted in the Ecological Assessment. Retaining the majority of the vegetation of significance has been the basis of the design philosophy for the proposed development. The proposed development is consistent with the Oher 12.2 Objectives and Policies regarding indigenous vegetation. Covenants are proposed to exclude pets and other animals and to ensure that pest management is undertaken within the areas of vegetation identified to be retained.

Objective 12.3.3.3 To avoid, remedy or mitigate adverse effects associated with soil excavation or filling.

Policy 12.3.4.4 That soil excavation and filling, and mineral extraction activities be designed, constructed and operated to avoid, remedy or mitigate adverse effects on people and the environment.

As noted in the Assessment of Environmental Effects, the proposed development will be consistent with the Objectives and Policies within Chapter 12.3 in regard to earthworks as appropriate erosion and sediment controls will be in place to avoid, remedy and mitigate the effects of the earthworks on the environment.

Objective 12.7.3.1 To avoid, remedy or mitigate the adverse effects of subdivision, use and development on riparian margins.

Objective 12.7.3.5 To avoid the adverse effects from inappropriate use and development of the margins of lakes, rivers, indigenous wetlands and the coastline.

Objective 12.7.3.6 To protect areas of indigenous riparian vegetation:
(a) physically, by fencing, planting and pest and weed control; and
(b) legally, as esplanade reserves/strips.

The proposed development has been designed to allow for future dwellings to be set back a least 10m from the edge of the wetland. The topography of the site means that, vertically, the setback is more

than 10m and sufficiently away from any natural hazard zone. The areas of vegetation within and adjacent to the wetland are proposed to be legally protected as per the Scheme Plan. The land will not be vested as an esplanade reserve as this would be inappropriate. There is an existing paper road than runs alongside the Te Haumi River which provides for public access. AS noted in the Ecological assessment, public access to Lot 103 through the proposed subdivision is not considered appropriate for ecological reasons. Due to the topography of the site, fencing of the vegetation is not considered to be appropriate, rather demarcation is proposed.

Overall, the proposed development is not inconsistent with the overall objectives and policies of Chapter 12.7 of the FNDC and aims to achieve similar environmental outcomes.

Chapter 13- Subdivision

Objective 13.3.1 To provide for the subdivision of land in such a way as will be consistent with the purpose of the various zones in the Plan, and will promote the sustainable management of the natural and physical resources of the District, including airports and roads and the social, economic and cultural well being of people and communities.

13.3.2 To ensure that subdivision of land is appropriate and is carried out in a manner that does not compromise the life-supporting capacity of air, water, soil or ecosystems, and that any actual or potential adverse effects on the environment which result directly from subdivision, including reverse sensitivity effects and the creation or acceleration of natural hazards, are avoided, remedied or mitigated.

Objective 13.3.3 To ensure that the subdivision of land does not jeopardise the protection of outstanding landscapes or natural features in the coastal environment.

Objective 13.3.4 To ensure that subdivision does not adversely affect scheduled heritage resources through alienation of the resource from its immediate setting/context.

Objective 13.3.5 To ensure that all new subdivisions provide a reticulated water supply and/or on-site water storage and include storm water management sufficient to meet the needs of the activities that will establish all year round.

Objective 13.3.6 To encourage innovative development and integrated management of effects between subdivision and land use which results in superior outcomes to more traditional forms of subdivision, use and development, for example the protection, enhancement and restoration of areas and features which have particular value or may have been compromised by past land management practices

Policy 13.4.6 That any subdivision proposal provides for the protection, restoration and enhancement of heritage resources, areas of significant indigenous vegetation and significant habitats of indigenous fauna, threatened species, the natural character of the coastal environment and riparian margins, and outstanding landscapes and natural features where appropriate.

Policy 13.4.13 Subdivision, use and development shall preserve and where possible enhance, restore and rehabilitate the character of the applicable zone in regards to s6 matters. In addition subdivision, use and development shall avoid adverse effects as far as practicable by using techniques including:

(a) clustering or grouping development within areas where there is the least impact on natural character and its elements such as indigenous vegetation, landforms, rivers, streams and wetlands, and coherent natural patterns;

(b) minimising the visual impact of buildings, development, and associated vegetation clearance and earthworks, particularly as seen from public land and the coastal marine area;

(c) providing for, through siting of buildings and development and design of subdivisions, legal public right of access to and use of the foreshore and any esplanade areas;

(d) through siting of buildings and development, design of subdivisions, and provision of access that recognise and provide for the relationship of Maori with their culture, traditions and taonga including concepts of mauri, tapu, mana, wehi and karakia and the important contribution Maori culture makes to the character of the District (refer Chapter 2 and in particular Section 2.5 and Council's "Tangata Whenua Values and Perspectives" (2004);

(e) providing planting of indigenous vegetation in a way that links existing habitats of indigenous fauna and provides the opportunity for the extension, enhancement or creation of habitats for indigenous fauna, including mechanisms to exclude pests;

(f) protecting historic heritage through the siting of buildings and development and design of subdivisions.

(g) achieving hydraulic neutrality and ensuring that natural hazards will not be exacerbated or induced through the siting and design of buildings and development.

The proposed development is entirely consistent with the Objectives and Policies listed within Chapter 13 of the FNDP, including the Objectives and Policies listed above. The proposed development has been designed to protect and enhance the natural values of the site, including ecological and landscape values, while providing for an appropriate level of residential development in accordance with the zoning of the land. Connections to reticulated services are provided for where appropriate and infrastructure will be provided to manage stormwater. There are no adverse environmental impacts on the riparian areas of the wetland or the stream and the existing vegetation of value is to be protected.

Covenants are proposed to manage the matters listed within Policy 13.4.13.

Overall, the proposed development is consistent with the Objectives and Policies of Chapter 13-Subdivision.

Chapter 15- Transport

Objective 15.1.3.1 To minimise the adverse effects of traffic on the natural and physical environment.

Objective 15.1.3.3 To ensure that appropriate provision is made for on-site car parking for all activities, while considering safe cycling and pedestrian access and use of the site.

Objective 15.1.3.5 To promote safe and efficient movement and circulation of vehicular, cycle and pedestrian traffic, including for those with disabilities.

Policy 15.1.4.1 That the traffic effects of activities be evaluated in making decisions on resource consent applications

While it is acknowledged that the proposed development includes a private accessway that does not comply with the standards of the FNDP, the accessway has been designed to meet the objectives and policies of Chapter 15 and is considered to be an appropriate design to service the subdivision of the land. The accessway will provide for safe and efficient two-way movement of vehicles and separated step-free space for pedestrians to use. The traffic effects of the proposed accessway have been assessed to be less than minor and have a positive effect on pedestrian connectivity. This conclusion needs to be taken into account when assessing the proposed development against Policy 15.1.4.1 of the FNDP.

Overall, the proposed development is consistent with the Objectives and Policies within Chapter 15 of the FNDP.

Given the above, it is considered that the proposal is consistent with the objectives and policies of the FNDP.

11.2.7 Far North District Plan- Proposed

In 2022, the FNDC released a Proposed Version of the District Plan. In accordance with Section 104(1)(b), a consent authority may have regard to any relevant provisions of a proposed plan.

The proposed development would be a Non-complying Activity under the Proposed Version of the District Plan as currently drafted. As none of the relevant rules have legal effect and the Hearings Process is underway for the Proposed Plan, a full and complete assessment of the relevant objectives and Policies is not provided for within this application.

Under the Proposed FNDC, the site is within an Outstanding Landscape. SUB-O2 notes that subdivision should provide for the protection and enhancement of outstanding natural landscapes. The site is zoned for residential development. The proposed development provides for a level of residential development that is suitable for the site while protecting the natural resources that make the site an "Outstanding Landscape."

As noted in the AEE, the effects of the proposed subdivision are assessed to be less than minor, following the mitigation measures set out in this application. As such, Policy NFL-P7 which prohibits land use that would result in any loss of and/or destruction of characteristics and qualities of ONL, does not apply. The proposed development is consistent with Policy NFL-P8 which sets out a framework for managing land use and subdivision. Under the Proposed Plan, resource consents will be required to put a dwelling on each of the future Lots given the ONL overlay. The matters in relation to the development of each individual lot will be addressed at resource consent stage.

Overall, the proposed development is not inconsistent with the Objectives and Policies of the Proposed FNDP.

12. Other Matters

12.1 Section 106 Matters

SUBDIVISION

Pursuant to Section 106 of the RMA, a consent authority may refuse subdivision consent in these certain circumstances below:

> *(1) A consent authority may refuse to grant a subdivision consent, or may grant a subdivision consent subject to conditions, if it considers that –*
>
> > *(a) there is a significant risk from natural hazards; or*
> >
> > *(b) sufficient provision has not been made for legal and physical access to each allotment to be created by the subdivision.*
>
> *(1A) For the purpose of subsection (1)(a), an assessment of the risk from natural hazards requires a combined assessment of –*
>
> > *(a) the likelihood of natural hazards occurring (whether individually or in combination); and*
> >
> > *(b) the material damage to land in respect of which the consent is sought, other land, or structures that would result from natural hazards; and*
> >
> > *(c) any likely subsequent use of the land in respect of which the consent is sought that would accelerate, worsen, or result in material damage of the kind referred to in paragraph (b).*
>
> *(2) Conditions under subsection (1) must be –*
>
> > *(a) For the purposes of avoiding, remedying, or mitigating the effects referred to in subsection (1); and*
> >
> > *(b) Of a type that could be imposed under section 108.*

It is considered that resource consent should be granted to the subdivision application as there are no risks associated with natural hazards and safe and efficient access is provided to all proposed lots, with the exception of Lot 103 which public access is not provided for due to the ecological sensitivities of the site. Public access to this lot can be obtained via the paper road along the Te Haumi River if necessary. The Resource consent application is supported by a Geotechnical Report which notes that the site is suitable for residential development.

In terms of s106 of the RMA, the proposal is not considered to give rise to a significant risk from natural hazards and sufficient provision has been made for legal and physical access to each lot to be created by the subdivision. The proposed development has less than minor adverse effects on the environment.

12.2 Section 105 and 107 Matters

DISCHARGE

It is also noted that section 105 and 107 of the RMA address discharge applications. In particular, Section 105 states that a discharge permit under section 15 of the RMA must have regard to:

a) *The nature of the discharge and the sensitivity of the receiving environment to adverse effects; and*
b) *The applicant's reasons for the proposed choice; and*
c) *Any possible alternative methods of discharge, including discharge into any other receiving environment.*

The proposed stormwater design is appropriate for the type and volume of discharge proposed and the sensitivity of the receiving environment.

Section 107 states that a discharge shall not generate the following effects:

(a) the discharge of a contaminant or water into water; or

(b) a discharge of a contaminant onto or into land in circumstances which may result in that contaminant (or any other contaminant emanating as a result of natural processes from that contaminant) entering water; or

(ba) the dumping in the coastal marine area from any ship, aircraft, or offshore installation of any waste or other matter that is a contaminant, —

if, after reasonable mixing, the contaminant or water discharged (either by itself or in combination with the same, similar, or other contaminants or water), is likely to give rise to all or any of the following effects in the receiving waters:

(c) the production of any conspicuous oil or grease films, scums or foams, or floatable or suspended materials:

(d) any conspicuous change in the colour or visual clarity:

(e) any emission of objectionable odour:

(f) the rendering of fresh water unsuitable for consumption by farm animals:

(g) any significant adverse effects on aquatic life.

The proposed discharge will not generate any of these types of effects on the receiving environment. Adequate stormwater treatment and attenuation will be provided.

Standard stormwater discharge conditions are considered suitable for ensuring that the stormwater infrastructure associated with the completed Project meets both of these statutory requirements.

12.3 Summary

There are no other matters considered relevant to determining this application. All relevant matters have been considered and there are no issues arising that would affect granting this consent.

13. Part II of the RMA

Part II of the Act sets out the Purpose and Principles. Section 5 of the Act sets out the overriding purpose, which is the sustainable management of natural and physical resources.

The Act states that sustainable management means:

"managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while –

(a) sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and

(b) safeguarding the life supporting capacity of air, water, soil and ecosystems; and

(c) Avoiding, remedying or mitigating any adverse effects of activities on the environment".

It is considered that the proposed development is not contrary with the Act's purpose to "*promote the sustainable management of natural and physical resources"* as it will provide for residential development in accordance with the zone provisions while protecting the existing ecological values of the site. As stated above any adverse environmental effects arising from the proposal are considered to be less than minor.

Section 6 of the Act sets out the Matters of National Importance:

(a) The preservation of the natural character of the coastal environment (including the coastal marine area), wetland, lakes and rivers and their margins, and the protection of them from inappropriate subdivision, use and development:

(b) The protection of outstanding natural features and landscapes from inappropriate subdivision, use and development:

(c) The protection of areas of significant indigenous vegetation and significant habitats of indigenous fauna:

(d) The maintenance and enhancement of public access to and along the coastal marine area, lakes and rivers:

(e) The relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waahi tapu, and other taonga.

(f) The protection of historic heritage from inappropriate subdivision, use and development.

(g) The protection of recognised customary activities

The proposed development is consistent with Section 6 of the Act. Areas of significant indigenous vegetation are identified for protection, including the wetland on the site. The natural character of the coastal wetland will be protected through covenants from inappropriate development. There is no change to the current public access arrangements to the wetland via the paper road along the Te Haumi River. The proposed subdivision provides for a suitable level of development that protects the existing ecological values of the site, while providing for additional residential capacity within Paihia.

Section 7 of the Act defines 'Other Matters' to which particular regard shall be had in decision making under the Act. Sub sections (b), (c) and (f) are considered to be relevant. They relate to the efficient use of natural and physical resources, the maintenance and enhancement of amenity values and the maintenance and enhancement of the quality of the environment. As discussed in the assessment of effects for this proposal, it is considered that any adverse environmental effects associated with the proposal will be less than minor. This includes effects in relation to ecological effects and landscape effects and maintaining the quality of the environment through the protection of the ecological values on the site.

There are no known relevant matters in terms of section 8 of the Act, which relate to the Treaty of Waitangi. While there is a known archaeological site within the Lo boundary, this site will be clearly marked on site and has been avoided through the proposed design of the subdivision. A subsequent Archaeology Authority will be obtained for the site under the Heritage New Zealand Pouhere Taonga Act 2014 to ensure that the appropriate protocols are in place in the case of an accidental discovery. The Applicant will work with Iwi through this application.

It is considered that this proposal satisfies the Purpose and the Principles of the Act.

14. Conclusion

Overall, it is concluded that the effects on the environment of the proposal will be less than minor subject to appropriate conditions of consent and consent notices/covenants referred to in this application.

The proposal is in keeping with the relevant objectives and policies of the FNDP (Operative), the NRP and the Northland Regional Policy Statement. The proposal is also in keeping with the relevant assessment criteria set out in the FNDP, particularly, Chapter 12 and 13.

No persons are considered to be adversely affected by the proposal to an extent which is minor or more than minor.

It is considered that the proposal is consistent with Part II of the Resource Management Act.

As noted in this application, Resource Consent is sought as a Non-complying Activity under s104. A non-complying activity may only be considered for approval through assessing the relevant s104 matters if it passes the 'Gateway Test' set out in s104D. As outlined in this application, the effects of the proposed activity on the environment have been assessed as less than minor, with the exception of the landscape effects, which are contained to the property boundaries of the land owned by the Applicant. Section 104D(1)(a) of the Resource Management Act refers to Section 104(3A), which notes that the consent authority must not have regard to any effect on a person who has given their written approval. As noted above, the effects are contained to the site and the boundaries of the land subject to this application, on land owned by the applicant.

The proposed activity has also been assessed not to be contrary to the relevant objectives and policies of the relevant planning documents. The proposed activity therefore passes both of the "gateway tests' under Section 104D of the RMA 1991.

It is therefore considered that the application may be processed on a non-notified basis and consent may be granted to the proposal subject to appropriate conditions.

Appendix 1:

Record of Title and Aerial Photograph

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NA112C/975**
Land Registration District	**North Auckland**
Date Issued	07 August 1997

Prior References
NA95C/572

Estate	Fee Simple
Area	2395 square metres more or less
Legal Description	Lot 21 Deposited Plan 181647
Registered Owners	

Heron Point Limited

Interests

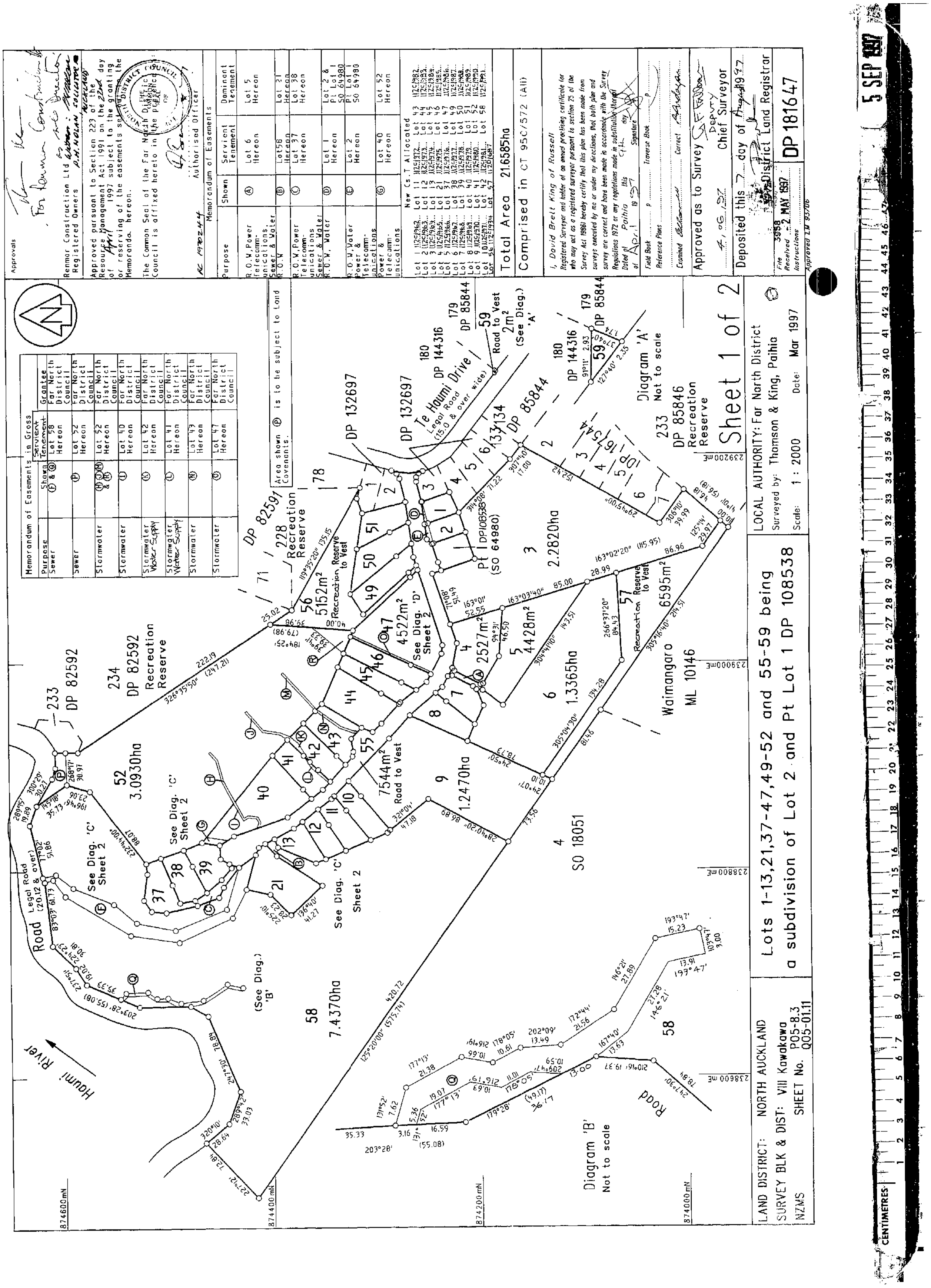
D180390.3 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm

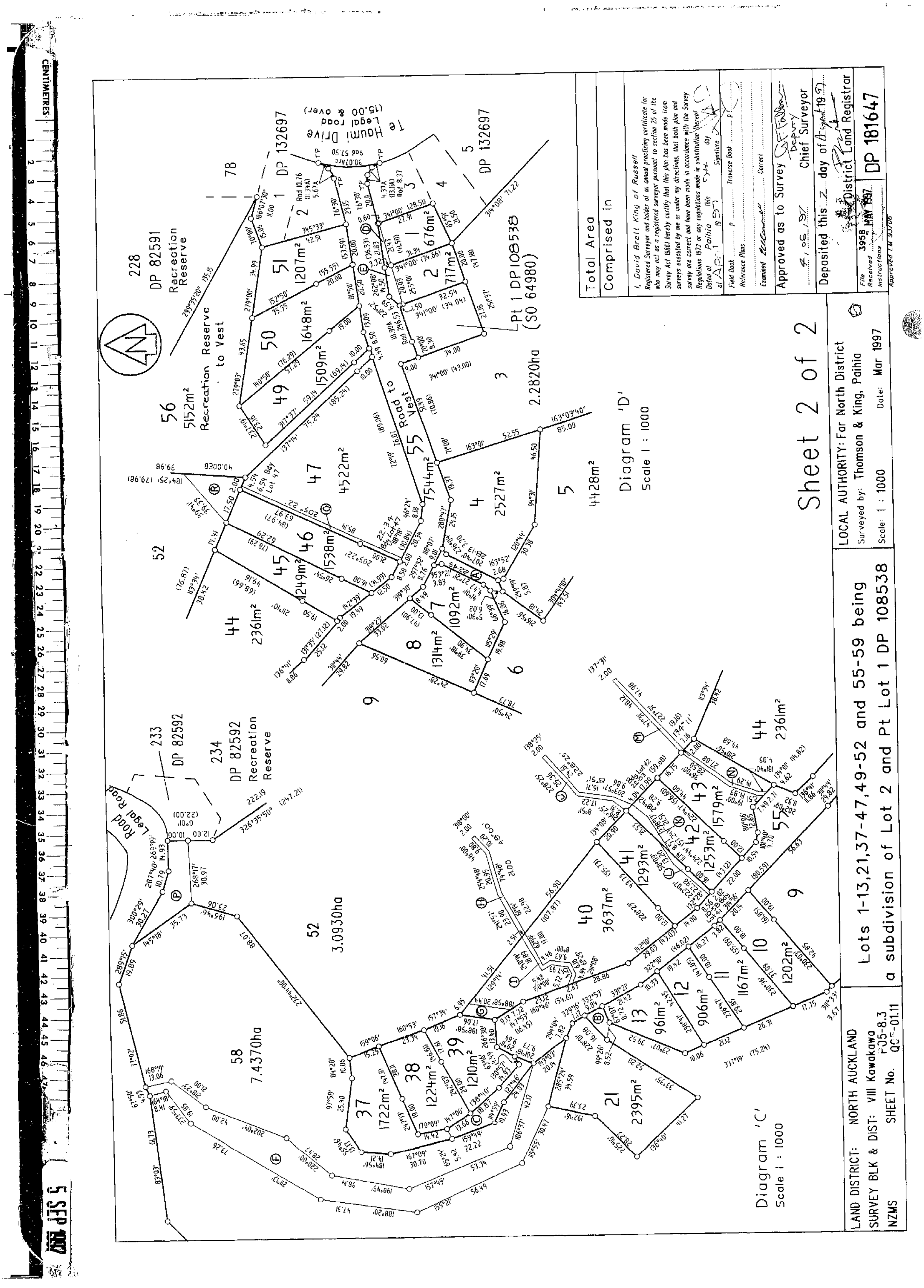
D180390.4 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm

Appurtenant hereto is a right of way specified in Easement Certificate D490711.5 - 24.3.2000 at 2.06 pm

The easements specified in Easement Certificate D490711.5 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Transfer 5872506.2 - 22.1.2004 at 9:00 am


Lots 1-13,21,37-47,49-52 and 55-59 being
a subdivision of Lot 2 and Pt Lot 1 DP 108538
Sheet 1 of 2
DP 181647
LOCAL AUTHORITY: Far North District
Surveyed by: Thomson & King, Paihia
Scale: 1 : 2000
Date: Mar 1997
LAND DISTRICT: NORTH AUCKLAND
Total Area 21.6585ha
Comprised in CT 95C/572 (All)
Memorandum of Easements
Memorandum of Easements in Gross
Haumi River
Te Haumi Drive
Diagram 'A' Not to scale
Diagram 'B' Not to scale
5 SEP 1997


Total Area
Comprised in
Sheet 2 of 2
LOCAL AUTHORITY: Far North District
Surveyed by: Thomson & King, Paihia
Scale 1 : 1000
Date: Mar 1997
Lots 1-13,21,37-47,49-52 and 55-59 being
a subdivision of Lot 2 and Pt Lot 1 DP 108538
LAND DISTRICT: NORTH AUCKLAND
SURVEY BLK & DIST: VIII Kawakawa
DP 181647
Diagram 'C'
Scale 1 : 1000
Diagram 'D'
Scale 1 : 1000
Te Haumi Drive
Legal Road
(15.00 & over)
Recreation Reserve
Recreation Reserve to Vest
Road to Vest
Pt 1 DP 108538
(SO 64980)
DP 132697
DP 82591
DP 82592
5 SEP 1997

Approved by Registrar-General of Land under No. 2002/1026

Transfer instrument

Section 90, Land Transfer Act 1952

Registrar-General of Land Approval 02/1026EF A.D.L.S.

T 5872506.2 Transfer

Cpy – 01/01, Pgs – 003, 22/01/04, 07:32

DocID 311243247

Land registration district

NORTH AUCKLAND

Unique identifier(s) or C/T(s)	All/part	Area/description of part or stratum
NA112C/975	All	

Transferor *Surname(s) must be underlined or in CAPITALS.*

RENMAR CONSTRUCTION LIMITED

Transferee *Surname(s) must be underlined or in CAPITALS.*

David Gordon CAMPBELL and Alison Patricia CAMPBELL

Estate or interest to be transferred, or easement(s) or *profit(s) à prendre* to be created
State if fencing covenant imposed.

Fee Simple (continued on Annexure Schedules)

Operative clause

The Transferor transfers to the Transferee the above estate or interest in the land in the above certificate(s) of title or computer register(s) and, if an easement or *profit à prendre* is described above, that easement or *profit à prendre* is granted or created.

Dated this 16th day of January **2003**

Attestation *(If the transferee or grantee is to execute this transfer, include the attestation in an Annexure Schedule).*

Tom Marren Sole Director	**Signed in my presence by the Transferor** *Signature of witness* *Witness to complete in BLOCK letters (unless legibly printed)* **Witness name** **Occupation** P H NOLAN SOLICITOR AUCKLAND **Address**
Signature [common seal] of Transferor	

Certified correct for the purposes of the Land Transfer Act 1952.

[Solicitor for] the Transferee

Approved by Registrar-General of Land under No. 2002/5032

Annexure Schedule

Registrar-General of Land Approval 02/5032EF A.D.L.S.

Insert type of instrument
"Mortgage", "Transfer", "Lease" etc

Transfer	Dated		Page 1 of 2 Pages

(Continue in additional Annexure Schedule, if required.)

Continuation of "Estate or Interest or Easement to be created"

Whereas the Transferor when registered proprietor of the land formerly contained in Certificate of Title 95C/572 subdivided the land into residential lots in the manner shown and defined on DP 181647 AND WHEREAS Lot 58 on DP 181647 was subsequently re-subdivided into Lots 1 and 2 on DP 200205 AND WHEREAS it is the Transferor's intention to create for the benefit of the land in the Certificates of Title set out in Schedule A ("the Dominant Lots") the land covenants set out in Schedule B over the land in Certificate of Title 112C/975 ("the Servient Lot") TO THE INTENT that the Servient Lot shall be bound by the stipulations and restrictions set out in Schedule B and that the owners and occupiers for the time being of the Dominant Lots may enforce the observance of such stipulations against the owners for the time being of the Servient Lot AND AS INCIDENTAL to the transfer of the fee simple as to bind the Servient Lot and for the benefit for the Dominant Lots the Transferee HEREBY COVENANTS AND AGREES in the manner set out in Schedule B so that covenants run with the Servient Lot for the benefit of the respective Dominant Lots.

Schedule A

Certificates of Title Nos. 112C/962 to 112C/974 inclusive, 112C/976 to 112C/990 inclusive, 126B/884 and 126B/885

Schedule B

1 Not to erect on the land any dwelling or building which does not comply with the following provisions:

a. In the case of a single dwelling unit, such dwelling must have an area, excluding external decks, of not less than 112 m^2.

b. In the case of more than one dwelling unit, each dwelling unit must have an area, excluding garage and external decks, of not less than 112 m^2.

2 Not to erect on the land any building which:

a. Includes any second hand or renovated materials, except where such materials are used for lintels, steps or verandah posts which are in keeping with the particular style of the building, or which comprises or includes any transportable or transported dwelling.

b. Includes fibrolite or fibrocement exterior cladding materials unless covered by a plaster finish provided that fibrocement roofing shingles may be used for roofing, fibrocement products may be used in the gable ends and soffits and fibrocement wood-grained horizontal weatherboards may be used for side cladding.

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

Approved by Registrar-General of Land under No. 2002/5032

Annexure Schedule

Registrar-General of Land Approval 02/5032EF A.D.L.S.

Insert type of instrument
"Mortgage", "Transfer", "Lease" etc

Transfer	Dated		Page 2 of 2 Pages

(Continue in additional Annexure Schedule, if required.)

3 Not to erect any fence, whether a boundary fence or otherwise, which is higher than the following heights measured above ground level:

a. 0.8 metres on any part of the property within 7 metres of any road frontage;

b. 1.8 metres elsewhere on the property.

Attestation continued

Signature of Transferee	Signed in my presence by the Transferee Signature of Witness **Witness to complete in BLOCK letters** (unless typewritten or legibly stamped) Witness name PIETER HILL Occupation MANAGER Address 29B. SELWYN RD PAIHIA 0252

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

D180390.4 CONO

THE RESOURCE MANAGEMENT ACT 1991

CONSENT NOTICE PURSUANT TO SECTION 221

IN THE MATTER of a plan to be deposited under number 181647 being a plan of subdivision of part Lot 1 and Lot 2 Deposited Plan108538

PURSUANT to Section 221 and for the purposes of Section 224 of Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that the conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and are to be registered against the titles to the following lots on the plan of subdivision, namely, Lots 3 to 13 inclusive, Lot 21, Lots 37 to 47 inclusive, Lot 52 and Lot 58.

DATED 6th August 1997

SCHEDULE

The owner of each allotment shall be responsible for the installation and maintenance of a septic tank and end effluent polishing filter and to ensure that the effluent discharged to the effluent disposal system is free of solids.

SIGNED on behalf of the **FAR NORTH DISTRICT COUNCIL** pursuant to Section 252 of the Local Government Act 1974:

THE FAR NORTH DISTRICT COUNCIL THE COMMON SEAL OF

GENERAL MANAGER

MAYOR

SIGNED on behalf of **RENMAR CONSTRUCTION LIMITED** as the subdividing owner by its sole director **THOMAS MARREN** in the presence of:

P H NOLAN
SOLICITOR
AUCKLAND

971560284

2.43 07.AUG97 D 180390.4

PATRICULARS ENTERED IN REGISTER
LAND REGISTRY NORTH AUCKLAND
ASST. LAND REGISTRAR...

DISTRICT LAND REGISTRAR
NORTH AUCKLAND NEW ZEALAND

Lots 21, 31-47
52056

D180390.3 CONO 032

THE RESOURCE MANAGEMENT ACT 1991

CONSENT NOTICE PURSUANT TO SECTION 221

IN THE MATTER of a plan to be deposited under number 181647 being a plan of subdivision of part Lot 1 and Lot 2 Deposited Plan108538

PURSUANT to Section 221 and for the purposes of Section 224 of Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that the conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and are to be registered against the titles to all the lots on the plan of subdivision.

DATED 6th August 1997

SCHEDULE

Any application for a building consent shall be accompanied by a report from a suitably qualified registered engineer on stability of the site and any works required in relation to stability issues including any specific design required for building foundations.

SIGNED on behalf of the **FAR NORTH DISTRICT COUNCIL** pursuant to Section 252 of the Local Government Act 1974:

GENERAL MANAGER

MAYOR

THE FAR NORTH DISTRICT COUNCIL THE COMMON SEAL OF

SIGNED on behalf of **RENMAR CONSTRUCTION LIMITED** as the subdividing owner by its sole director **THOMAS MARREN** in the presence of:

P H NOLAN
SOLICITOR
AUCKLAND

971560285

2.43 07.A0697 D 1[illegible]0390

PATRICULARS ENTERED IN REGISTER
LAND REGISTRY NORTH AUCKLAND
ASST. LAND REGISTRAR...

DISTRICT LAND REGISTRAR AUCKLAND NEW ZEALAND

av

all

RECORD OF TITLE
UNDER LAND TRANSFER ACT 2017
FREEHOLD

Search Copy

R.W. Muir
Registrar-General
of Land

Identifier	**NA126B/885**
Land Registration District	**North Auckland**
Date Issued	24 March 2000

Prior References
NA112C/991

Estate	Fee Simple
Area	4.6400 hectares more or less
Legal Description	Lot 2 Deposited Plan 200205
Registered Owners	
Heron Point Limited	

Interests

D180390.3 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm (affects DP 181647)

D180390.4 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 7.8.1997 at 2.43 pm (affects DP 181647)

Subject to a sewer right (in gross) over part marked D on DP 200205 in favour of Far North District Council created by Transfer D180390.15 - 7.8.1997 at 2.43 pm

The easements created by Transfer D180390.15 are subject to Section 243 (a) Resource Management Act 1991

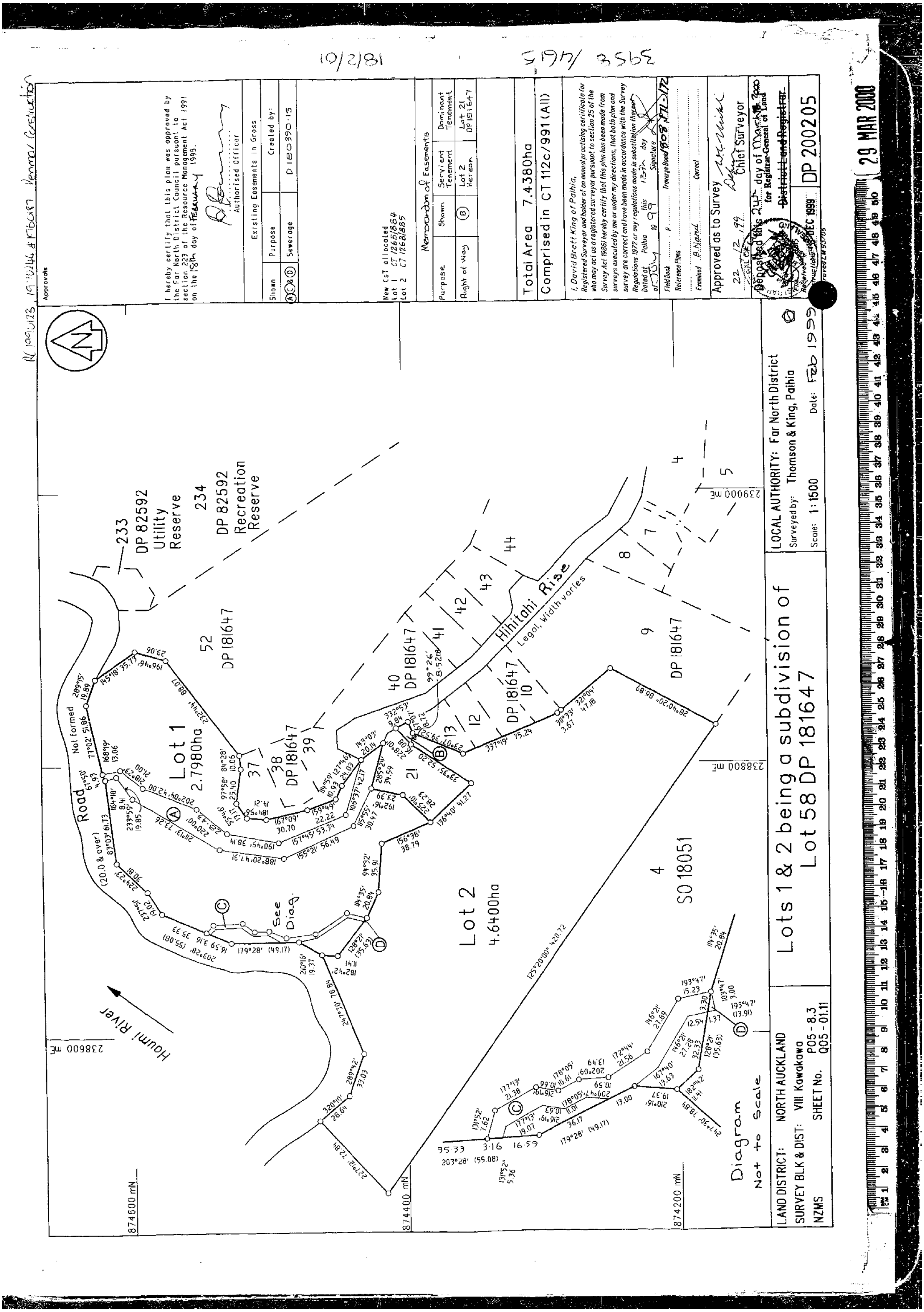
D490711.2 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 24.3.2000 at 2.06 pm (affects DP 200205)

D490711.3 Consent Notice pursuant to Section 221(1) Resource Management Act 1991 - 24.3.2000 at 2.06 pm (affects DP 200205)

Subject to a right of way over part marked B on DP 200205 specified in Easement Certificate D490711.5 - 24.3.2000 at 2.06 pm

The easements specified in Easement Certificate D490711.5 are subject to Section 243 (a) Resource Management Act 1991

Land Covenant in Transfer 6127935.2 - 26.8.2004 at 9:00 am


Lots 1 & 2 being a subdivision of Lot 58 DP 181647
DP 200205
29 MAR 2000
Total Area 7.4380ha
Comprised in CT 112c/991 (All)
New CsT allocated
Lot 1 CT 126B/884
Lot 2 CT 126B/885
Lot 1
2.7980ha
Lot 2
4.6400ha
Hihitahi Rise
Legal width varies
Haumi River
Road
Not formed
(20.0 & over)
52
DP 181647
233
DP 82592
Utility Reserve
234
DP 82592
Recreation Reserve
4
SO 18051
Diagram
Not to Scale
LOCAL AUTHORITY: Far North District
Surveyed by: Thomson & King, Paihia
Scale: 1:1500
LAND DISTRICT: NORTH AUCKLAND
SURVEY BLK & DIST: VIII Kawakawa
NZMS SHEET No. P05 - 8.3 Q05 - 01.11
Approved as to Survey
Chief Surveyor

Approved by Registrar-General of Land under No. 2002/1026

Transfer instrument

Section 90, Land Transfer Act 1952

Registrar-General of Land Approval 02/1026EF A.D.L.S.

T 6127935.2 Transfer
Cpy - 01/01, Pgs - 003, 26/08/04, 07:50
DocID: 811571283

Land registration district

NORTH AUCKLAND

Unique identifier(s) or C/T(s)	All/part	Area/description of part or stratum
NA126B/885	All	

Transferor

Surname(s) must be underlined or in CAPITALS.

RENMAR CONSTRUCTION LIMITED

Transferee

Surname(s) must be underlined or in CAPITALS.

LIVEWELL LIMITED

Estate or interest to be transferred, or easement(s) or *profit(s) à prendre* to be created
State if fencing covenant imposed.

Fee simple

Operative clause

The Transferor transfers to the Transferee the above estate or interest in the land in the above certificate(s) of title or computer register(s) and, if an easement or *profit à prendre* is described above, that easement or *profit à prendre* is granted or created.

Dated this 23rd day of August **2004**

Attestation *(If the transferee or grantee is to execute this transfer, include the attestation in an Annexure Schedule).*

	Signed in my presence by the Transferor
	Signature of witness
	Witness to complete in BLOCK letters (unless legibly printed) **Witness name**
	Occupation P H NOLAN SOLICITOR AUCKLAND
Signature [common seal] of Transferor	**Address**

Certified correct for the purposes of the Land Transfer Act 1952.

[Solicitor for] the Transferee

REF: 7002 – AUCKLAND DISTRICT LAW SOCIETY

Ref Code: transfer

Approved by Registrar-General of Land under No. 2002/5032

Annexure Schedule

Registrar-General of Land Approval 02/5032EF A.D.L.S.

Insert type of instrument
"Mortgage", "Transfer", "Lease" etc

Transfer	Dated	23 August 2004	Page	1	of	2	Pages

(Continue in additional Annexure Schedule, if required.)

Continuation of "Estate or Interest or Easement to be created"

Whereas the Transferor when registered proprietor of the land formerly contained in Certificate of Title 95C/572 subdivided the land into residential lots in the manner shown and defined on DP 181647 AND WHEREAS Lot 58 on DP 181647 was subsequently re-subdivided into Lots 1 and 2 on DP 200205 AND WHEREAS it is the Transferor's intention to create for the benefit of the land in the Certificates of Title set out in Schedule A ("the Dominant Lots") the land covenants set out in Schedule B over the land in Certificate of Title NA126B/885 ("the Servient Lot") TO THE INTENT that the Servient Lot shall be bound by the stipulations and restrictions set out in Schedule B and that the owners and occupiers for the time being of the Dominant Lots may enforce the observance of such stipulations against the owners for the time being of the Servient Lot AND AS INCIDENTAL to the transfer of the fee simple as to bind the Servient Lot and for the benefit for the Dominant Lots the Transferee HEREBY COVENANTS AND AGREES in the manner set out in Schedule B so that covenants run with the Servient Lot for the benefit of the respective Dominant Lots.

Schedule A

Certificates of Title Nos. 112C/962 to 112C/990 inclusive and 126B/884

Schedule B

1 Not to erect on the land any dwelling or building which does not comply with the following provisions:

a. In the case of a single dwelling unit, such dwelling must have an area, excluding external decks, of not less than 112 m^2.

b. In the case of more than one dwelling unit, each dwelling unit must have an area, excluding garage and external decks, of not less than 112 m^2.

2 Not to erect on the land any building which:

a. Includes any second hand or renovated materials, except where such materials are used for lintels, steps or verandah posts which are in keeping with the particular style of the building, or which comprises or includes any transportable or transported dwelling.

b. Includes fibrolite or fibrocement exterior cladding materials unless covered by a plaster finish provided that fibrocement roofing shingles may be used for roofing, fibrocement products may be used in the gable ends and soffits and fibrocement wood-grained horizontal weatherboards may be used for side cladding.

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

Approved by Registrar-General of Land under No. 2002/5032

Annexure Schedule

Registrar-General of Land Approval 02/5032EF A.D.L.S.

Insert type of instrument "Mortgage", "Transfer", "Lease" etc

Transfer Dated 23 August 2004 Page 2 of 2 Pages

(Continue in additional Annexure Schedule, if required.)

3 Not to erect any fence, whether a boundary fence or otherwise, which is higher than the following heights measured above ground level:

a. 0.8 metres on any part of the property within 7 metres of any road frontage;

b. 1.8 metres elsewhere on the property.

Attestation continued

B. Willoughby Director. Director	Signed in my presence by the Transferee Signature of Witness **Witness to complete in BLOCK letters** (unless typewritten or legibly stamped) Witness name Occupation Address
Signature of Transferee	

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or solicitors must sign or initial in this box.

REF: 7025 – AUCKLAND DISTRICT LAW SOCIETY

D180390.3 CONO 032

THE RESOURCE MANAGEMENT ACT 1991

CONSENT NOTICE PURSUANT TO SECTION 221

IN THE MATTER of a plan to be deposited under number 181647 being a plan of subdivision of part Lot 1 and Lot 2 Deposited Plan108538

PURSUANT to Section 221 and for the purposes of Section 224 of Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that the conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and are to be registered against the titles to all the lots on the plan of subdivision.

DATED 6th August 1997

SCHEDULE

Any application for a building consent shall be accompanied by a report from a suitably qualified registered engineer on stability of the site and any works required in relation to stability issues including any specific design required for building foundations.

SIGNED on behalf of the **FAR NORTH DISTRICT COUNCIL** pursuant to Section 252 of the Local Government Act 1974:

GENERAL MANAGER

MAYOR

THE FAR NORTH DISTRICT COUNCIL THE COMMON SEAL OF

SIGNED on behalf of **RENMAR CONSTRUCTION LIMITED** as the subdividing owner by its sole director **THOMAS MARREN** in the presence of:

P H NOLAN
SOLICITOR
AUCKLAND

971560285

2.43 07.A0697 D 1[illegible]0390

PATRICULARS ENTERED IN REGISTER
LAND REGISTRY NORTH AUCKLAND
ASST. LAND REGISTRAR...

DISTRICT LAND REGISTRAR AUCKLAND NEW ZEALAND

av

all

D180390.4 CONO

THE RESOURCE MANAGEMENT ACT 1991

CONSENT NOTICE PURSUANT TO SECTION 221

IN THE MATTER of a plan to be deposited under number 181647 being a plan of subdivision of part Lot 1 and Lot 2 Deposited Plan108538

PURSUANT to Section 221 and for the purposes of Section 224 of Resource Management Act 1991, this Consent Notice is issued by the **FAR NORTH DISTRICT COUNCIL** to the effect that the conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and are to be registered against the titles to the following lots on the plan of subdivision, namely, Lots 3 to 13 inclusive, Lot 21, Lots 37 to 47 inclusive, Lot 52 and Lot 58.

DATED 6th August 1997

SCHEDULE

The owner of each allotment shall be responsible for the installation and maintenance of a septic tank and end effluent polishing filter and to ensure that the effluent discharged to the effluent disposal system is free of solids.

SIGNED on behalf of the **FAR NORTH DISTRICT COUNCIL** pursuant to Section 252 of the Local Government Act 1974:

THE FAR NORTH DISTRICT COUNCIL THE COMMON SEAL OF

GENERAL MANAGER

MAYOR

SIGNED on behalf of **RENMAR CONSTRUCTION LIMITED** as the subdividing owner by its sole director **THOMAS MARREN** in the presence of:

P H NOLAN
SOLICITOR
AUCKLAND

971560284

2.43 07.AUG97 D 180390.4

PATRICULARS ENTERED IN REGISTER
LAND REGISTRY NORTH AUCKLAND
ASST. LAND REGISTRAR...

DISTRICT LAND REGISTRAR
NORTH AUCKLAND NEW ZEALAND

Lots 21, 31-47
52056

D180390.15 TE

TRANSFER

Land Transfer Act 1952

This page does not form part of the Transfer.

TRANSFER

Land Transfer Act 1952

If there is not enough space in any of the panels below, cross-reference to and use the approved Annexure Schedule: no other format will be received.

Land Registration District

NORTH AUCKLAND

Certificate of Title No.	All or Part?	Area and legal description — ***Insert only when part or Stratum, CT***
(a) 112C 991	ALL	
(b) 112C 990	ALL	

Transferor *Surnames must be underlined*

RENMAR CONSTRUCTION LIMITED at Auckland

Transferee *Surnames must be underlined*

THE FAR NORTH DISTRICT COUNCIL

Estate or Interest or Easement to be created: *Insert e.g. Fee simple; Leasehold in Lease No. .....; Right of way etc.*

Sewer easement in gross (continued on page 2 annexure schedule)

Consideration

$1.00 (ONE DOLLAR)

Operative Clause

For the above consideration (receipt of which is acknowledged) the TRANSFEROR TRANSFERS to the TRANSFEREE ~~all~~ the ~~transferor's estate and interest in the land in the above Certificate(s) of Title and if an~~ easement ~~is~~ described above and such is granted or created.

Dated this 6th **day of** August **19** 97

Attestation

Signed in my presence by the Transferor

Signature of Witness

Witness to complete in BLOCK letters
(unless typewritten or legibly stamped)

Witness name P. H. NOLAN

Occupation SOLICITOR

Address AUCKLAND

Signature, or common seal of Transferor

Certified correct for the purposes of the Land Transfer Act 1952

~~Certified that no conveyance duty is payable by virtue of Section 24(1) of the Stamp and Cheque Duties Act 1971~~
(DELETE INAPPLICABLE CERTIFICATE)

Solicitor for the Transferee

REF: 4135

Annexure Schedule

TRANSFER Dated 6th August 1997 Page 2 of 2 Pages

Continuation of "Estate or Interest or Easement to be created"

The Transferee shall have the right to drain sewage over those parts of the land in

(a) Certificate of Title 112C/991 marked "F" "Q"
(b) Certificate of Title 112C/990 marked "P"

on Deposited Plan 181647 together with the additional rights and powers incidental thereto set out in the following clause

1. Those rights and powers set out in clauses 4 and 5 of the Seventh Schedule to the Land Transfer Act 1952

If this Annexure Schedule is used as an expansion of an instrument, all signing parties and either their witnesses or their solicitors must put their signatures or initials here.

Approved by Registrar-General
of Land under No. 1995/1004

TRANSFER

Land Transfer Act 1952

Law Firm Acting
LAW NORTH PARTNERS SOLICITORS PRIVATE BAG KERIKERI

Auckland District Law Society
REF. 4135

PATRICULARS ENTERED IN REGISTER
LAND REGISTRY NORTH AUCKLAND
ASST. LAND REGISTRAR

2.43 07.AUG97 D 180390 15

This page is for Land Registry Office use only.
(except for "Law Firm Acting")

D490711.2 CONO

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221: CONSENT NOTICE

REGARDING:

a plan to be deposited under number 200205 being a plan of subdivision of Lot 58 Deposited Plan 181647.

PURSUANT to Section 221 and for the purposes of Section 224 of the Resource Management Act 1991, this Consent Notice is issued by the FAR NORTH DISTRICT COUNCIL to the effect that conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and is to be registered against the titles to both lots on the plan of subdivision.

SCHEDULE

Any application for a building consent shall be accompanied by a report from a suitably qualified registered engineer on stability of the site and any works required in relation to stability issues including any specific design required for building foundations.

SIGNED P.J. Killalea

By the FAR NORTH DISTRICT COUNCIL
Under delegated authority:
ENVIRONMENTAL SERVICES MANAGER

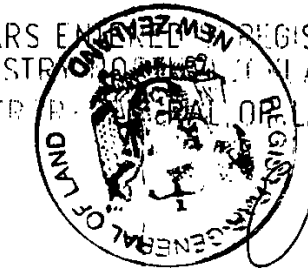
DATE 9th March 2000.

Ref:4615 RC 1970244

LINZ COPY

206 24.MAR00 D 490711.2

PARTICULARS ENTERED IN REGISTER
LAND REGISTRATION DISTRICT OF LAND
for REGISTRATION DISTRICT OF LAND



D490711.3CONO

THE RESOURCE MANAGEMENT ACT 1991

SECTION 221: CONSENT NOTICE

REGARDING:

a plan to be deposited under number 200205 being a plan of subdivision of Lot 58 Deposited Plan 181647.

PURSUANT to Section 221 and for the purposes of Section 224 of the Resource Management Act 1991, this Consent Notice is issued by the FAR NORTH DISTRICT COUNCIL to the effect that conditions described in the Schedule below are to be complied with on a continuing basis by the subdividing owner and the subsequent owners after the deposit of the survey plan, and is to be registered against the titles to both lots on the plan of subdivision.

SCHEDULE

- The owner of each allotment shall be responsible for the installation and maintenance of a septic tank and end effluent polishing filter and to ensure that the effluent discharged to the effluent disposal system is free of solids.

SIGNED P.J. Killalea

By the FAR NORTH DISTRICT COUNCIL
Under delegated authority:
p/p ENVIRONMENTAL SERVICES MANAGER

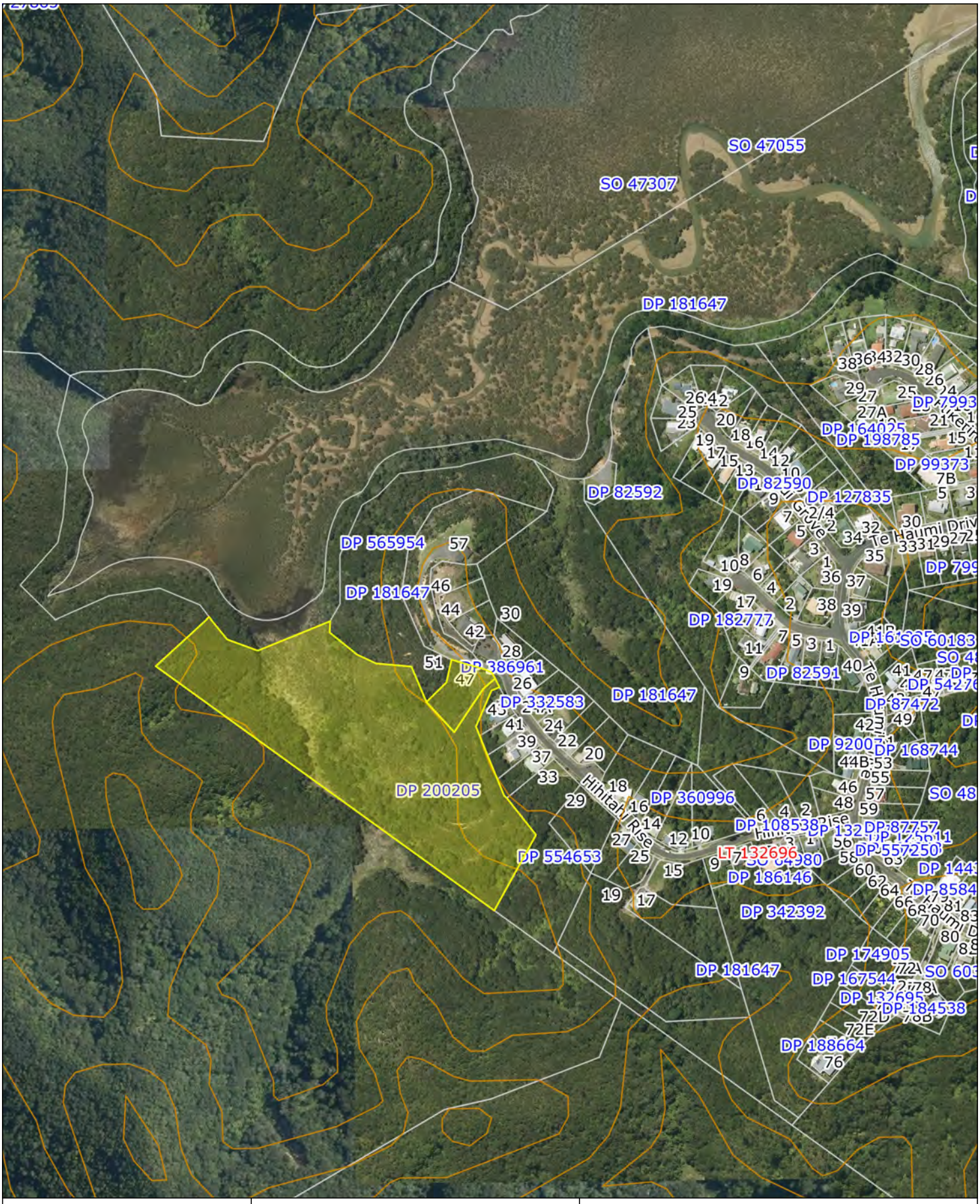
DATE 9th March 2000.

Ref:4615 RC 1970244

LINZ COPY

206 24.MAR00 D 490711.3

PARTICULARS ENTERED IN THE REGISTER
OF THE LAND REGISTRY OFFICE AT AUCKLAND
for REGISTRAR-GENERAL OF LAND



Map Prepared

The Planning Collective

47 Hihitahi Rise

DISCLAIMER: This map/plan is illustrative only and all information should be independently verified on site before taking any action. Whilst due care has been taken, Grip gives no warranty as to the accuracy and plan completeness of any information on this map/plan and accepts no liability for any error, omission or use of the information.

SOURCES: Property & Imagery: LINZ CC BY 4.0

1:5000 @ A4

15 July 2024

GRIP

Appendix 2:
Far North District Plan- Operative Maps

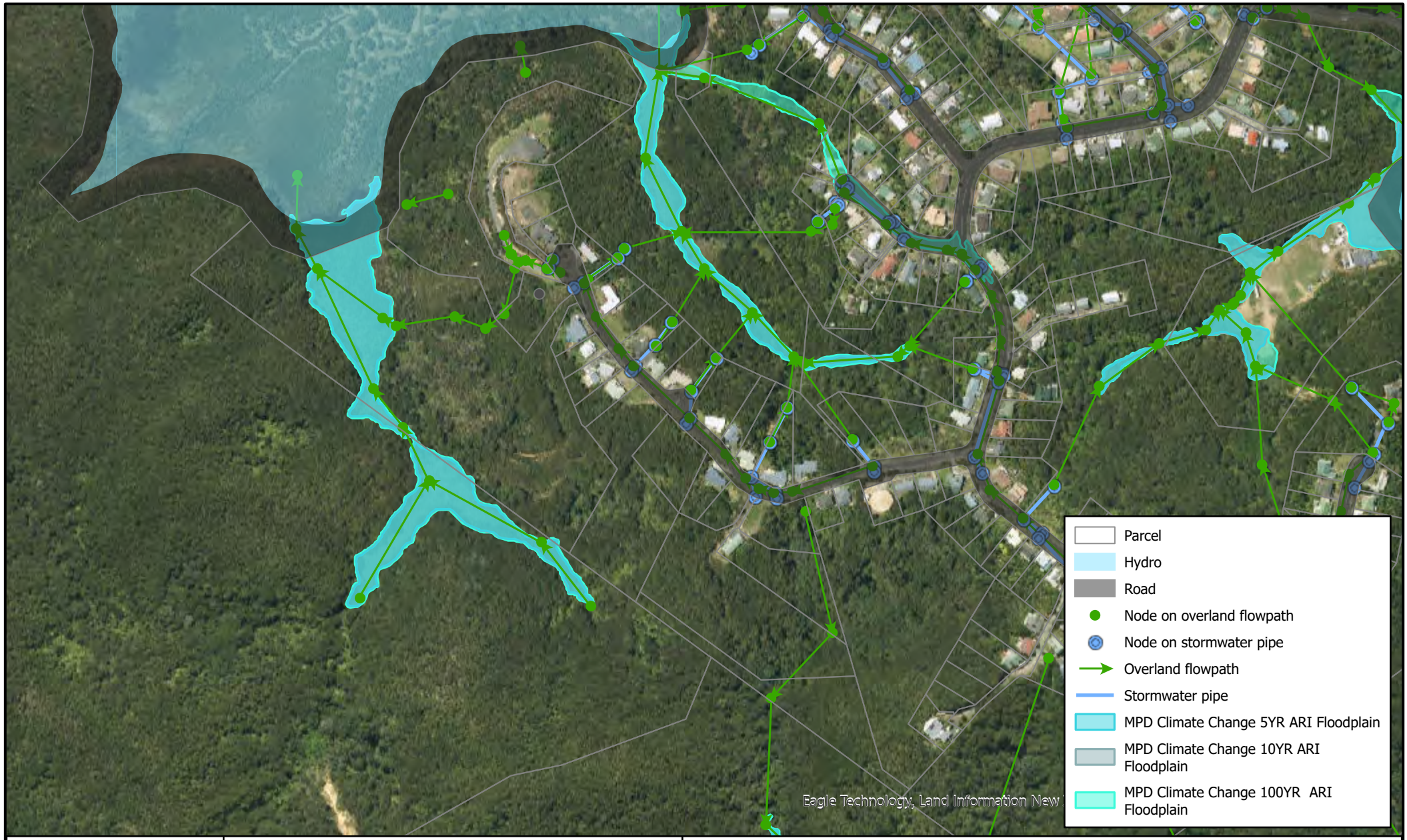
Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Archaeological Site

0 0 0 0 km

Projection NZTM2000. Datum NZGD2000. Scale:1:4,514

Created: 7/03/2024



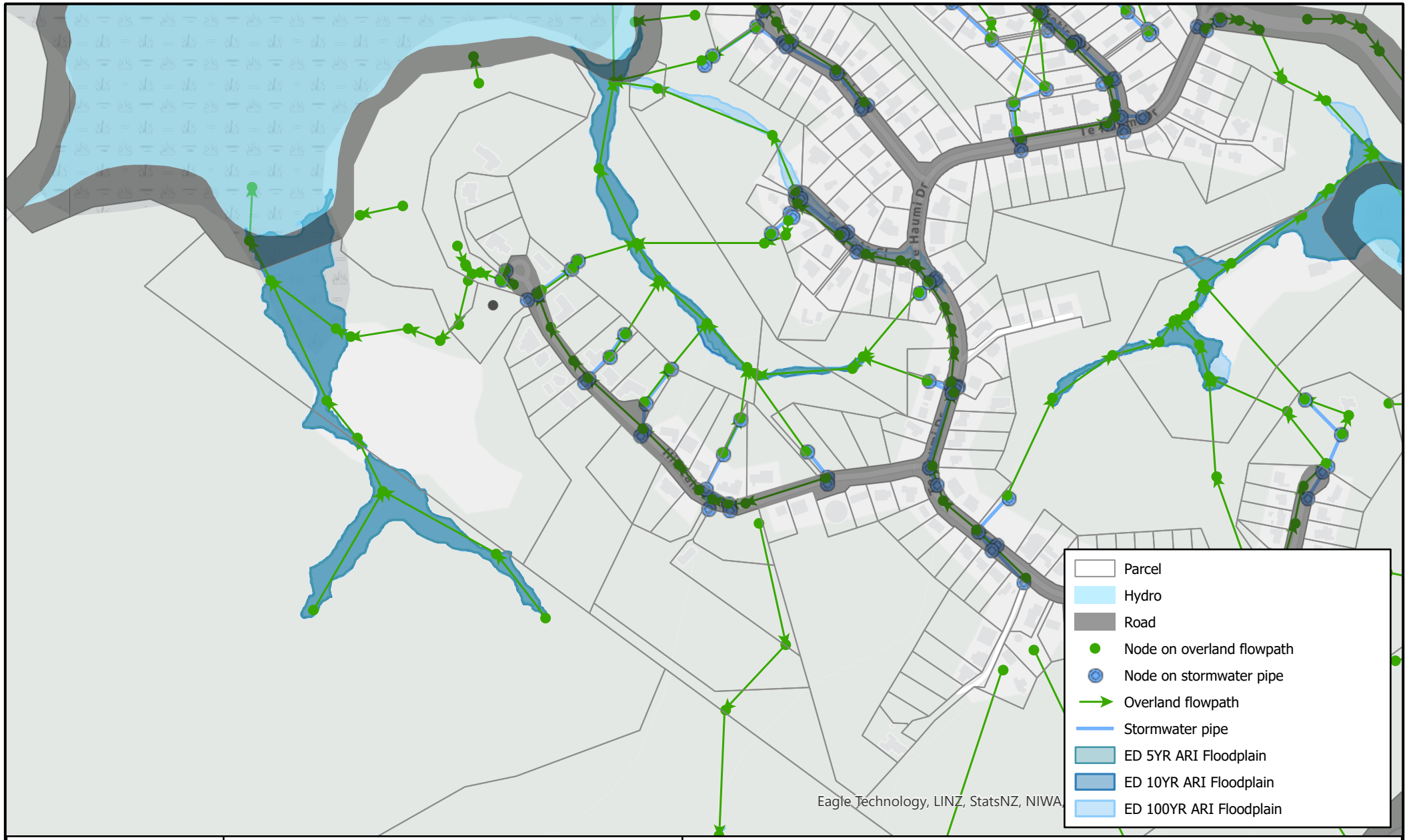
Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Far North Maps- Flood Hazard with Climate Change

0 0 0 0 km

Projection NZTM2000. Datum NZGD2000. Scale:1:4,514

Created: 7/03/2024



Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Far North Maps- Flood Hazard

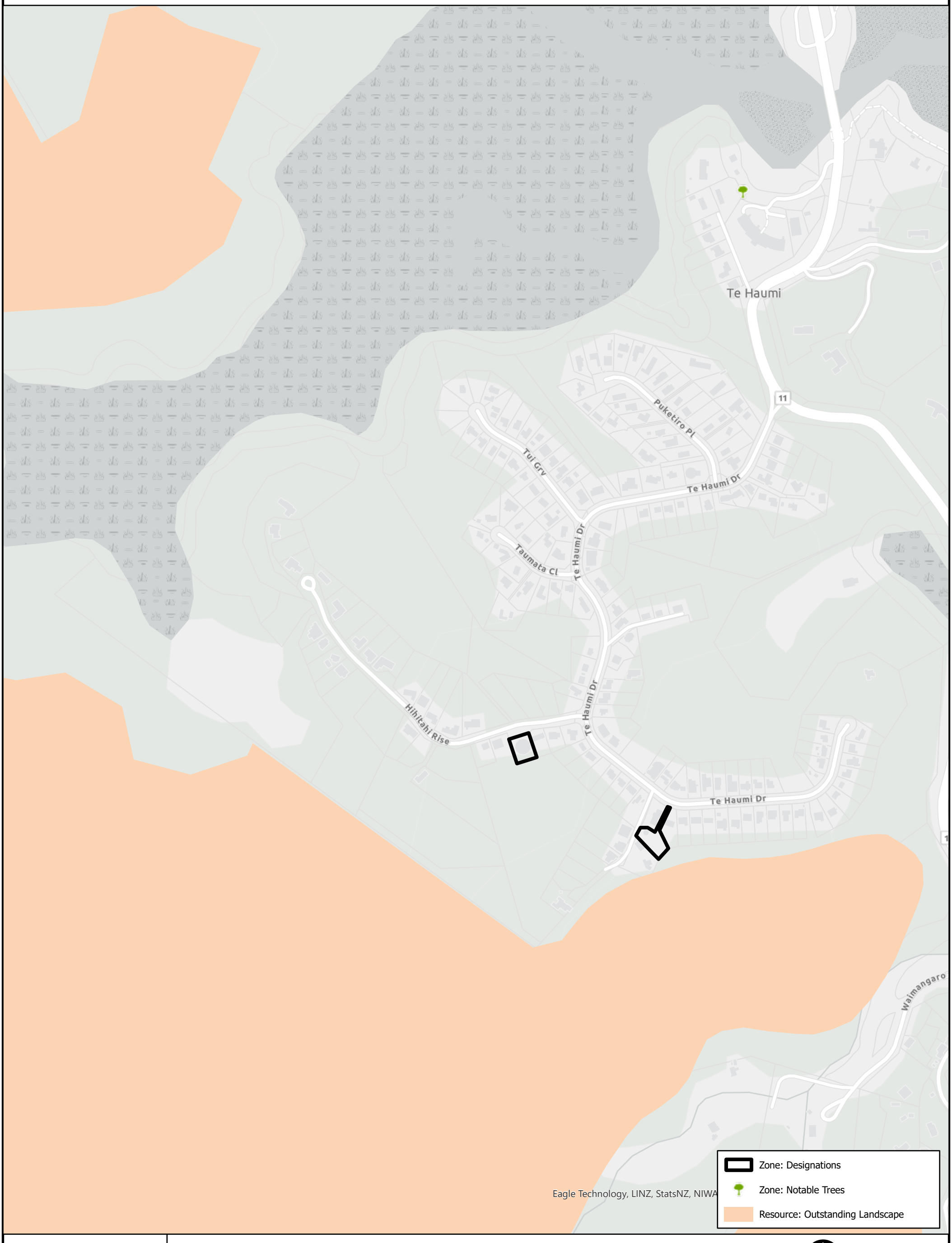
0 0 0 0 km

Projection NZTM2000. Datum NZGD2000. Scale:1:4,514

DISCLAIMER:
While the Far North District Council strives to keep the data in this service current, it may not be the most recent or most accurate data available. No reliance on the information contained on this map by any person is permitted. FNDC will not be liable for any omissions or errors of information contained on this map. FNDC recommends that persons seek specific advice on individual properties from FNDC and other specialist organisations which may hold more up to date or accurate information.

Created: 7/03/2024

Far North Maps



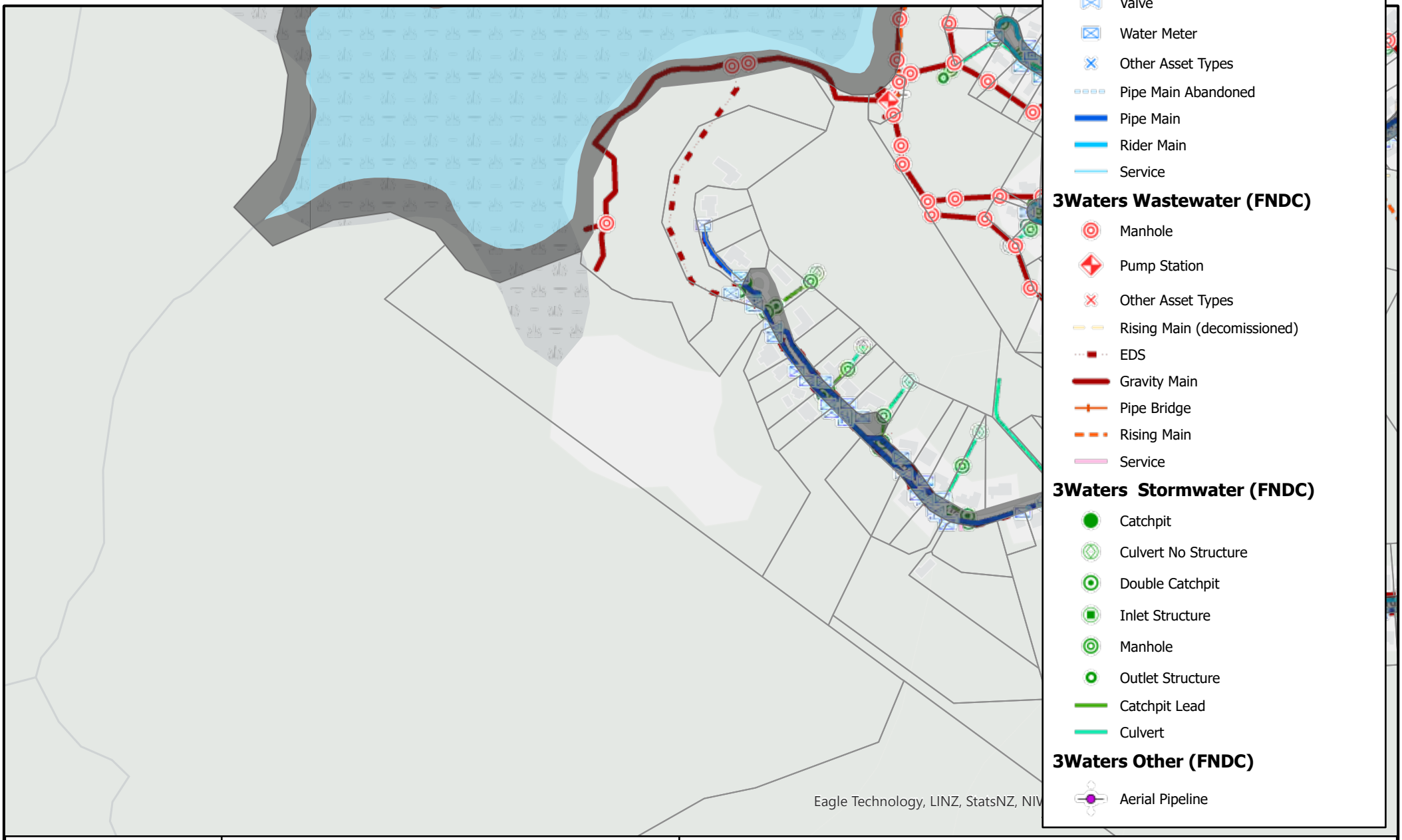
Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

0 0 0 0 km

Projection NZTM2000. Datum NZGD2000.
Scale:1:4,514

DISCLAIMER:
While the Far North District Council strives to keep the data in this service current, it may not be the most recent or most accurate data available. No reliance on the information contained on this map by any person is permitted. FNDC will not be liable for any omissions or errors of information contained on this map. FNDC recommends that persons seek specific advice on individual properties from FNDC and other specialist organisations which may hold more up to date or accurate information.

Created: 7/03/2024



Treated Water Reservoir
Valve
Water Meter
Other Asset Types
Pipe Main Abandoned
Pipe Main
Rider Main
Service

3Waters Wastewater (FNDC)

Manhole
Pump Station
Other Asset Types
Rising Main (decomissioned)
EDS
Gravity Main
Pipe Bridge
Rising Main
Service

3Waters Stormwater (FNDC)

Catchpit
Culvert No Structure
Double Catchpit
Inlet Structure
Manhole
Outlet Structure
Catchpit Lead
Culvert

3Waters Other (FNDC)

Aerial Pipeline

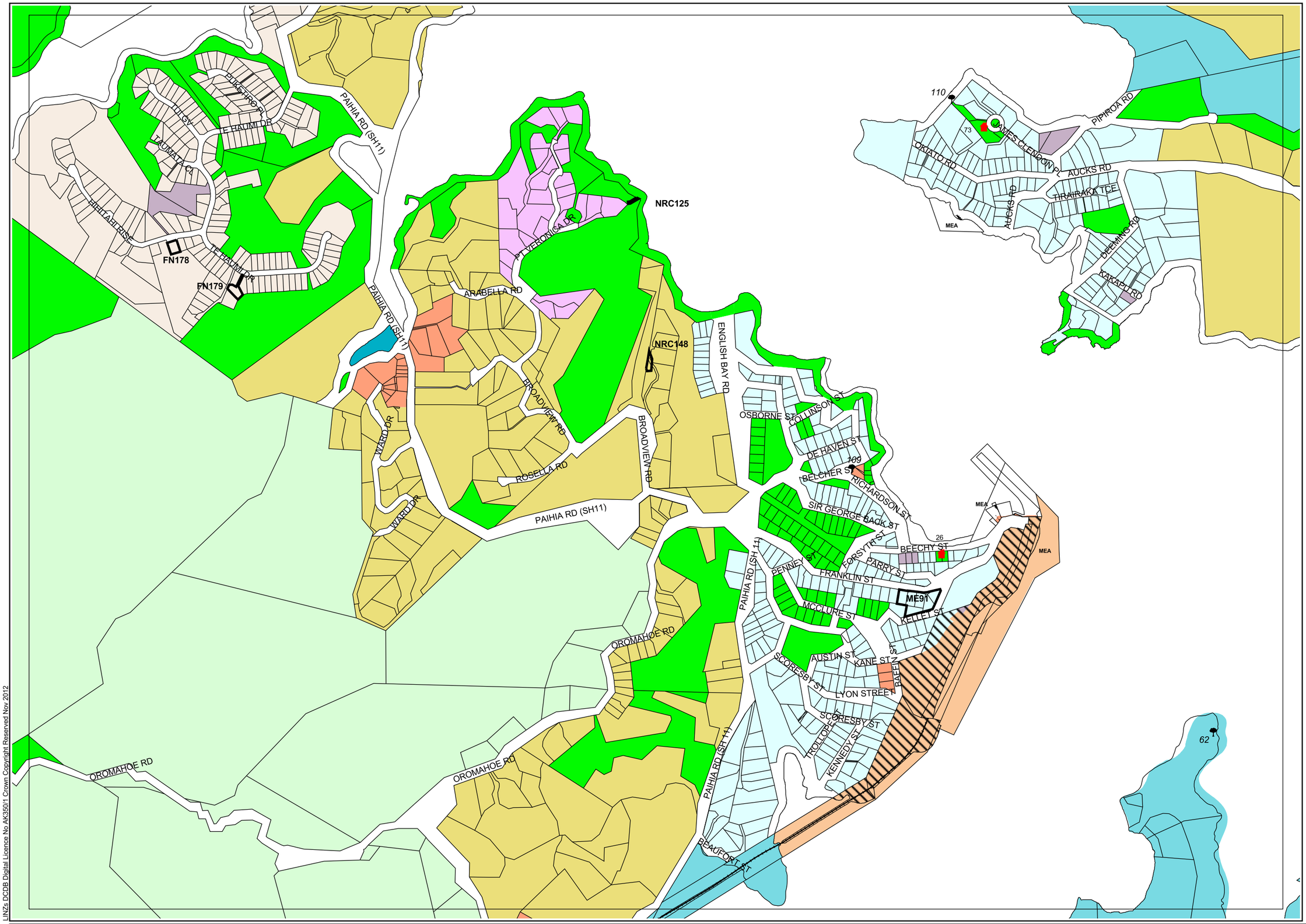
Far North District Council
Te Kaunihera o Tai Tokerau ki te Raki

Three waters infrastructure

0 0 0 0 km

Projection NZTM2000. Datum NZGD2000. Scale:1:4,514

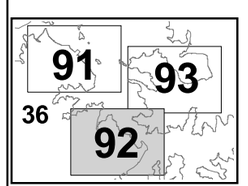
Created: 7/03/2024



Zone

- Conservation
- Coastal Living
- Commercial
- Coastal Residential
- General Coastal
- Industrial
- Lakes and Rivers
- Point Veronica
- Residential
- Recreational Activities
- Rural Production
- Road
- Coastal Marine
- Designations
- Maritme Exemption Area
- Historic Site
- Notable Tree
- New Zealand Railways Corporation Designation

Note :-
Roads carry the same zoning as the adjoining land. If a boundary between zones follows a road, the zone boundary is located on the centreline of the formed road, or where unformed, the centreline of the legal road



Map Index

Map 92

TE HAUMI

OPUA - OKIATO

Far North District Plan - Zone Maps

N

0 200 400 600 m

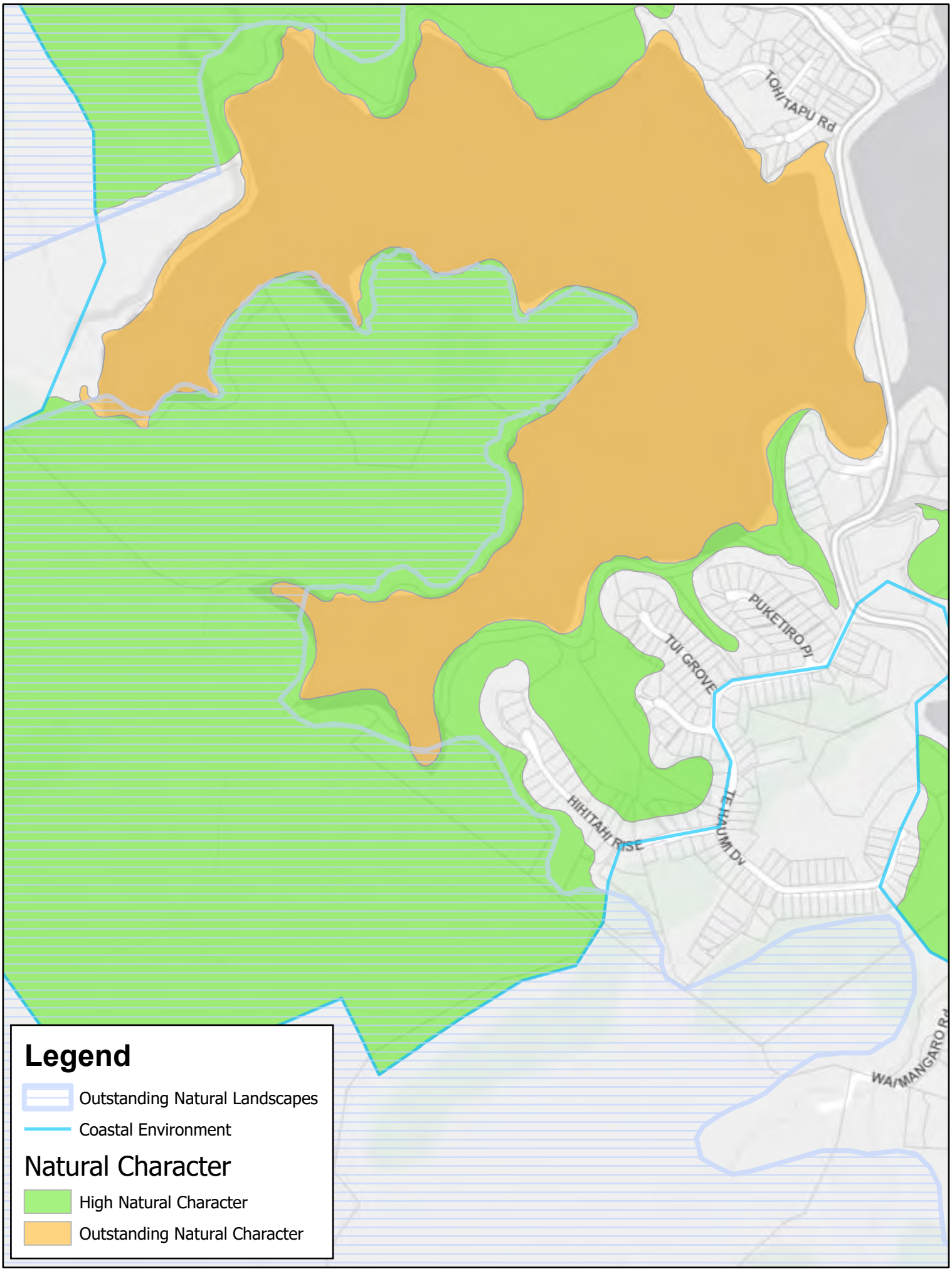
Scale 1:10,000

DISCLAIMER

Considerable care has been taken to avoid errors and omissions, and the latest information has been included in these District Plan maps. However, even with the greatest care inaccuracies may occur and therefore the Far North District Council cannot accept any responsibility for such errors and omissions.

Appendix 3:

Northland Regional Policy Statement and Northland Regional Plan- Operative Maps



Northland Regional Council

NRC Maps

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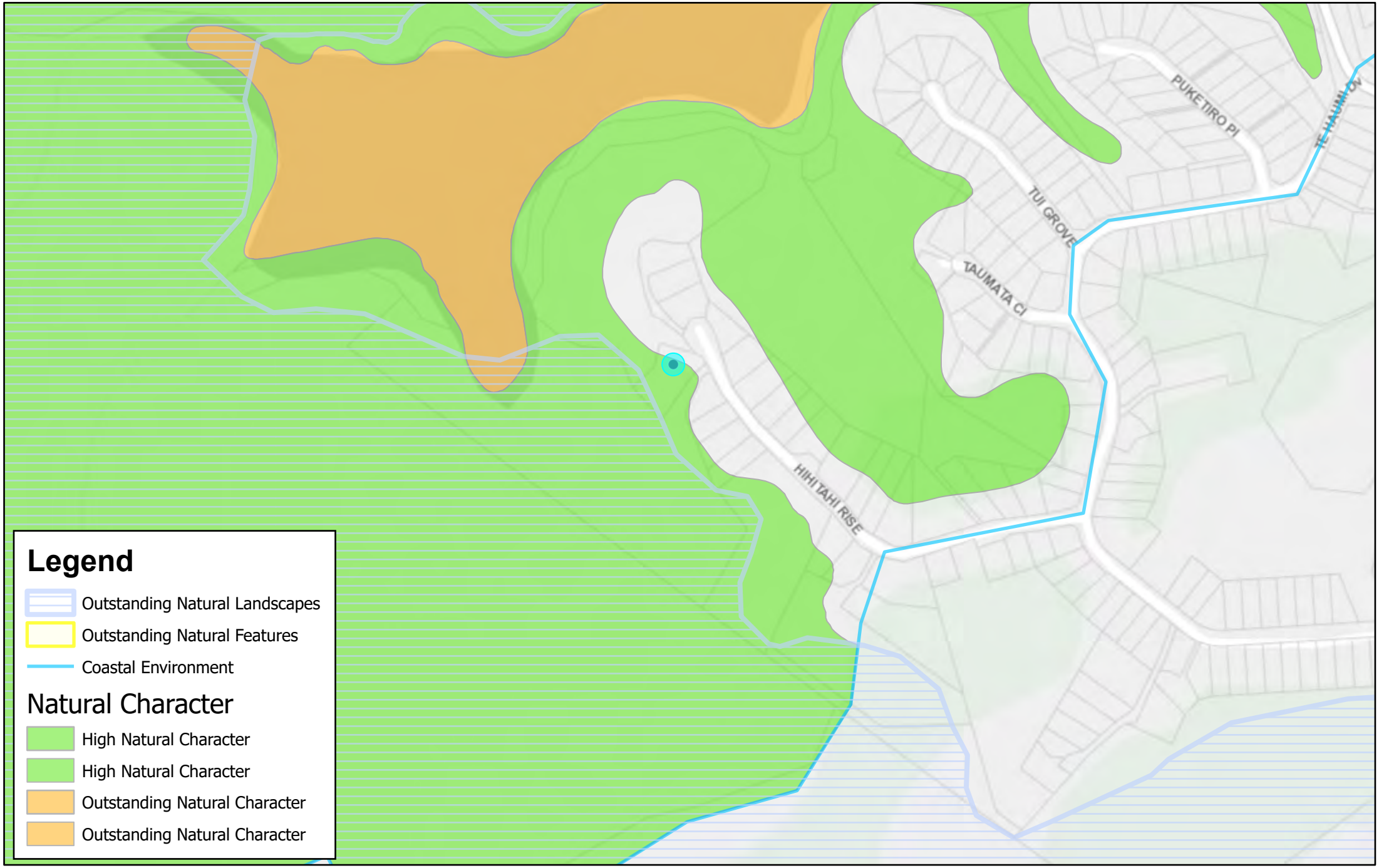
March 7 2024



Northland REGIONAL COUNCIL

NRC Maps

Projection NZTM. Datum NZTM2000.
DISCLAIMER:
The Northland Regional Council cannot guarantee that the information shown is accurate and should not be reused in any manner without proper consultation with its owner.

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0 0.02 0.04 0.09 0.14 0.18 0.22 Kilometers

June 17 2024

Appendix 4:

Land Development Report, prepared by Chester Limited, dated 07/06/2024

Land Development Report

45 & 47 Hihitahi Rise, Paihia
Proposed 17 Lot Subdivision

Prepared For:
Heron Point Limited

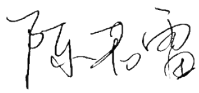
Job No.: 15569
Rev: 0
Date: 7 June 2024

CHESTER

Revision History

Revision No	Description/comments	Prepared By	Date
0	First Issue	N. Jull	07/06/2024

Document Control

Action	Name	Signed	Date
Prepared by	N. Jull		07/06/2024
Reviewed by	J. Chen		07/06/2024

Distribution

Business/company	Attention	Role
The Planning Collective	Claire Booth	Project Planner

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1 Introduction

Chester Consultants Ltd has been engaged by Heron Point Limited to provide a Land Development Report with respect to the proposed development at 45 & 47 Hihitahi Rise, Paihia.

This report has been prepared solely for the benefit of this specific project, and Far North District Council (FNDC). Chester Consultants Ltd accepts no liability for inaccuracies in third party information used as part of this report. The reliance by other parties on the information or opinions contained in the report shall, without our prior review and agreement in writing, be at such parties' sole risk.

This report is based on development data provided by the client, and data obtained from Far North District Council and Northland Regional Council maps current to the site at the time of this document's production. Should alterations be made which impact upon the development not otherwise authorised by this report then the design / comments / recommendations contained within this report may no longer be valid.

In the event of the above, the property owner should immediately notify Chester Consultants Ltd to enable the impact to be assessed and, if required, the design and or recommendations shall be amended accordingly and as necessary.

2 Existing Site Description

The development site is made up of two (2) parent lots at 45 & 47 Hihitahi Rise, Paihia. Legally described as Lot 2 DP 200205 and Lot 21 DP 181647 respectively. The total site area is 4.88 ha. The site is covered by regenerating forest, has complex topography and is adjacent to a significant wetland. The site is accessed from Hihitahi Rise and fronts a paper road to the north which runs adjacent to the Te Haumi River. Historical earthworks and minor drainage works have occurred on the site and remnants exist. The site is zoned as 'Residential' under the Far North District Council Operative Plan and 'General Residential' under the Far North District Council Proposed District Plan.

Figure 1 below shows the site extent and Figure 2 and Figure 3 on the following page shows the adjacent wetland and typical undergrowth.

Figure 1: Existing site aerial image (Far North Maps, Accessed: 08/05/2024)

Figure 2: Adjacent Wetland (Chester 18/04/2024)

Figure 3: Typical Undergrowth (Chester 18/04/2024)

3 Proposal

A subdivision is proposed on the site which will result in seventeen (17) vacant Lots, two (2) Commonly Owned Access Lots (JOAL), a drainage reserve and a residual Lot containing bush and wetland not to be developed. Figure 4 below is a snip of the proposed civil site plan.

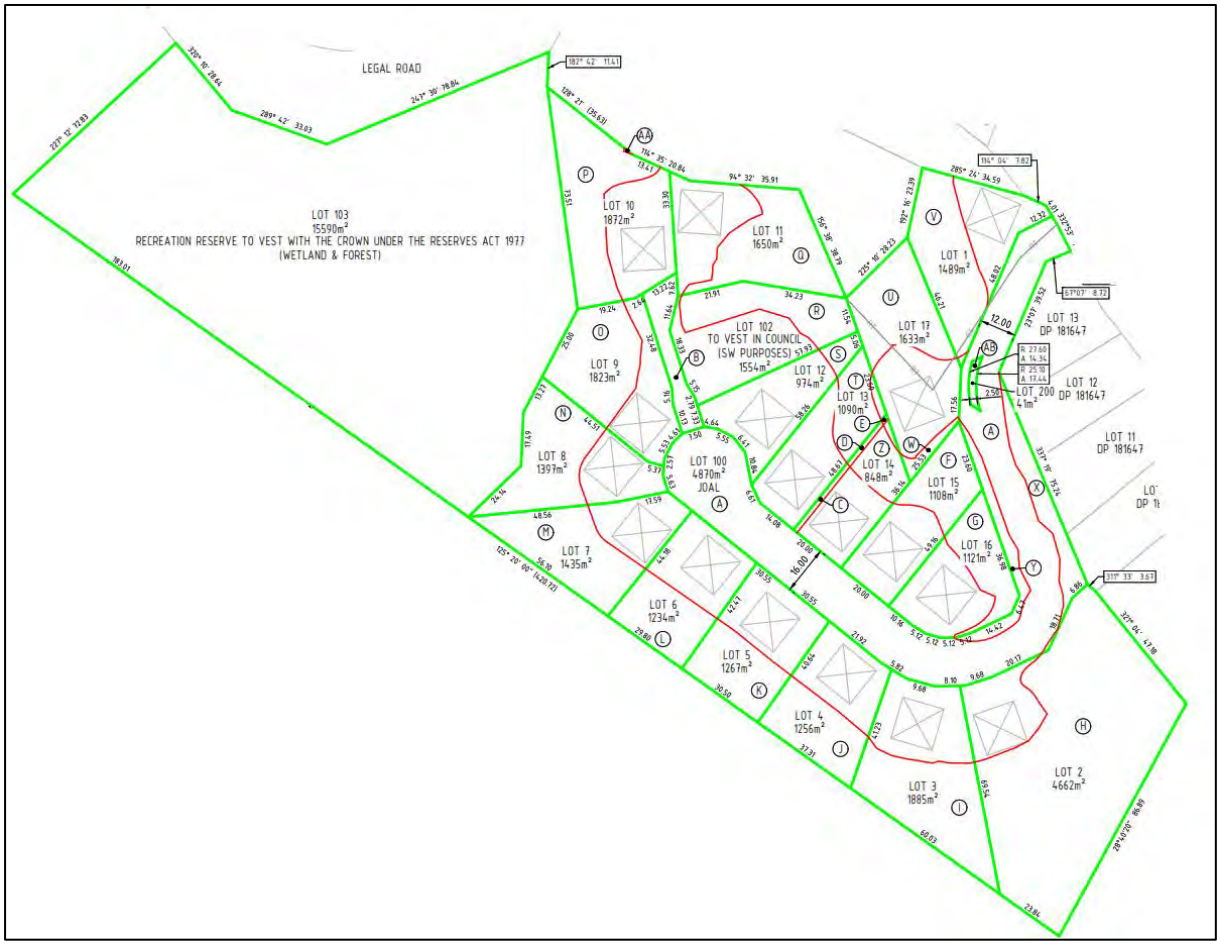

Figure 4: Proposed Subdivision Scheme (Chester Drawing 15569-120)

This report is intended to accommodate a Resource Consent application and will report on the following:

- Earthworks, Erosion & Sediment Control,
- Access,
- Water Supply,
- Wastewater,
- Stormwater,
- Flood Risk Assessment

This report is intended to be read in conjunction with the accompanying Chester drawings.

4 Earthworks, Erosion & Sediment Control

4.1 Earthworks

Earthworks are proposed across the site to create flat building areas, form access, and manage secondary flow. Given the complex topography of the site, specifically designed retaining structures and batter slopes will be required to achieve the proposed land formation. The proposed works are illustrated on the accompanying civil drawings and discussed in the Geotechnical Reporting prepared by Tetra Tech Coffey accompanying this application.

4.1.1 Earthworks Area and Volume

Table 1 below summarises the bulk earthwork volumes required in terms of existing ground versus proposed ground as shown on the civil drawings. All earthworks proposed are set back at least 10m from the main wetland and are not within a flood hazard area. The works associated with the formation of the constructed wetland and the Lot 10 & 11 driveway will encroach to within 10 m of the identified intermittent stream.

Table 1: Cut – Fill Volumes

Location	Area (m^2)	Cut (m^3)	Fill (m^3)	Net Cut (m^3)
Within 10m Offset of Stream	477	275	44	N/A
Total Site	14264	8687	7260	1427

Considering a compaction factor of 1.2 being likely we anticipate that bulk earthworks will be balanced so clay removal or importation will not be required. There is also the ability to adjust lot finished levels site of the road slightly to achieve balance should it be required. However, some of the specifically engineered structures and roads will require importation of hardfill material. There will also be a requirement to import topsoil to finish the berm areas and stabilise lots. This is anticipated because the site was previously earth worked but never to a point where topsoil was re-spread. Until the site is re-cleared of vegetation the volume of topsoil that can be won on-site is unknown. Table 2 below provides an estimation of the material importation volumes.

Table 2: Imported Material Estimate

Imported Material	Area (m^2)	Average Depth (m)	Volume (m^3)
Topsoil	6000	0.1	300
Roading Material	2200	0.3	660
Hardfill	600	1.0	600
Total			1560

Assuming 10 m^3 per truck load there would be approximately 156 construction traffic movements required to bring in material to complete the earthworks.

4.1.2 Cut/Fill Depths

Maximum cut and fill depths are anticipated to be approximately 6.00m cut and 6.00m fill across the site.

4.1.3 Construction Methodology

In general work operations across the site will involve:

- Vegetation clearance (with specialist ecological oversight).
- Installation of Erosion and Sediment Controls.
- Progressive stripping of organic layers and unsuitable material.
- Bulk earthworks and retaining.
- Drainage and services.
- Roading.
- Progressive Stabilization and Landscaping.

- Decommissioning of erosion and sediment controls.
- On-going mulching and establishment of vegetation.

Within the works highlighted above a key works operation that will require specific consideration such to ensure construction effects are manage is the installation of the replacement of the existing culvert near the existing wetland. The final construction methodology to complete install will be determined with input from the contractor at pre-commencement stage. However, we provide the following general construction methodology:

- Works are to be completed during a period forecast dry weather.
- Spill response kit to be on-hand during works.
- Cut-off upstream catchment from work area (sandbag dam and pump around).
- Undercut as required and bring up to pipe bedding level.
- Confirm levels and progressively install pipe including backfill starting from the wingwall outlet.
- If in the event heavy rain is forecast prior to full pipe installation, any open excavation is to be stabilised with geo-cloth.

4.2 Erosion and sediment control

Best practice erosion and sediment control will be implemented to mitigate the effect of the earthworks to the surrounding environment. The sediment control devices will be constructed in general accordance with Auckland Council's Guidance Document 005 (GD05) and may include, but not be limited to the following:

- Stabilised Construction Entranceway,
- Silt Fences / Super Silt Fences,
- Clean / Dirty water diversion bunds,
- Decanting earth bunds,
- Sediment retention ponds,
- Progressive site stabilisation.

The Contractor will be ultimately responsible for specific design, installation, maintenance, and removal of various protection measures in accordance with GD05 as necessary to align with actual construction operations and staging.

Refer to drawing 210 of the accompanying civil design drawings for more information and an indicative erosion and sediment control plan.

5 Access

To provide access to the proposed lots a "Best Practical Option" design approach has been adopted that responds to the specific site constraints, notably steep topography, and ecology. The sections below provide a summary of the key design features, for further details please refer to the accompanying civil design drawings and Traffic Report by TEAM.

5.1 Main Private Access Road

Because it is not practical to achieve full compliance with the FNDC engineering standards for a public road, the main access into the site is proposed as a private road. In a general sense, the road has been designed to a public road standard but where that is not practical, it has fallen back to complying with the Private Accessway standards. Table 3 outlines the key road design criteria and provides civil comment against each.

Table 3: Private Road Design Criteria

Design Criteria	Adopted	Civil Comment
Minimum Legal Width	12m for CH 0 to CH 60	There is nil requirement for wastewater and stormwater service conveyance through this section and the adjacent steep land is better as part of Lot 1 than the JOAL.
	16m for CH 60 to END	Provides sufficient width for proposed road cross section and services. Generally complaint with Public Road requirements.
Carriageway width	5.5m for CH 0 to CH 190	Provides for two-way traffic. Reduced width required along this length to assist with traversing steep slope.
	8.25m CH 190 to END	Provides sufficient width for parking on one side. Generally complaint with Public Road requirements.
Maximum Gradient	20% for CH 10 to CH 60	Design includes safety visibility platform at vehicle crossing then steepens to 20% to drop as much as practical to work with site topography. Compliant with private accessway requirements but not desirable for heavy vehicles. No stopping or manoeuvring will be required along this steepened section.
	16% for CH 60 to CH 200	Compliant with private accessway requirements and max desirable grade for heavy vehicles.
	12.5% for CH 200 to END	Compliant with public road requirements.
Crossfall	3%	Compliant with public road requirements. Mono crossfall is being utilised as the road traverses the steep slope then a crown is introduced for the widened road section.
Minimum Horizonal Curve Radius	> R20m	Compliant with private accessway requirements. Public Road radius requirement not practical. See traffic report for tracking details.
Cul-De-Sac	Off-Set Minimum R11	Compliant with public road requirements. Can turn 8m ridged truck in one and can accommodate 3-point turn for 11.5m ridged truck.
Intersection	Double width commercial vehicle crossing.	It is not practical to facilitate an urban road intersection with Hihitahi Rise. Instead, a double width commercial vehicle crossing is proposed. The width and flares have been specifically designed to accommodate a 11.5m ridged truck. Compliant sightlines up Hihitahi Rise can be achieved and a safety plat form is provided.
Footpath	1.5m wide single side	Some proposed as boardwalk with the remainder concrete both adjacent to kerb and offset. 1.5m width preferred to combat steep topography of site.
Utility Services Corridor	Within carriageway and berm	All services have been considered in the road design. Due to the site topography constraints, services will be required to be within the carriageway.

5.2 Lot 10 & 11 – Private Accessway

Access to Lots 10 & 11 will be provided via a private accessway off the end of the Cul-De-Sac. The accessway has been designed in full compliance with the FNDC Engineering requirements for a private accessway serving 2 household equivalents. The accessway also provides maintenance access to the proposed constructed wetland.

5.3 Lot 104 – Legal Access

It is not proposed to develop Lot 104. That Lot is envisaged for ecology / conservation purposes and is likely going to be gifted to doc (subject to consultation and consenting). With respect to legal access, the site has frontage to a 'paper' Road to the north like the neighbouring recreation reserve titles of the Opua forest. As such, no additional formal access is proposed nor required.

6 Water Supply

We have had pre-application correspondence with the FNDC's Infrastructure team regarding this development and have received 'approval in principle' for this development to connect to the water supply network. Please refer to Appendix B of this report for that correspondence including a memo by Chester reporting on key water supply matters. The sections below follow on from that correspondence and form the proposal for resource consent.

6.1 Existing Water Supply Network

As per the FNDC GIS data, there is a 100mmØ water main running down Hihitahi Rise. The main is fed from the reservoir at the top of the hill and ends at the fire hydrant in front of the development site.

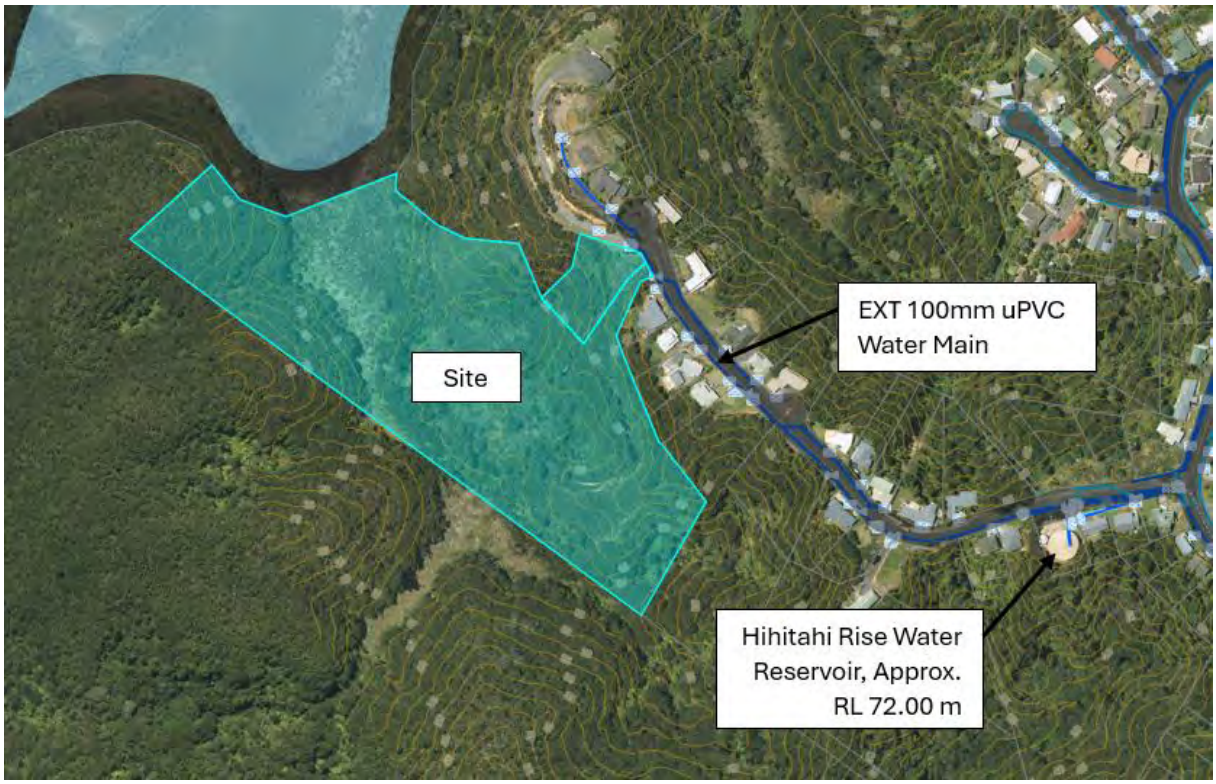

Figure 5: Existing Water Supply Network (FNDC Maps Accessed: 13/05/2024)

6.2 Proposed Potable Water Supply

For potable water supply it is proposed to extend the public water supply network down the proposed commonly owned access lot. Because the proposed access is private, easements in gross in favour of council are proposed over the JOAL. The proposed layout provides each Lot with a metered connection to the public water supply network.

Refer to drawing 600 of the accompanying civil design drawings for further details.

6.3 Fire Fighting Water Supply

The site's water supply classification for firefighting is FW2 as per the Engineering Standards and SNZ PAS 4509:2008. As highlighted Red in Table 4 below the requirement for FW2 is 750 L/min within 135m (hose run) and an additional 750 L/min within 270m (hose run) from a maximum of 2 hydrants.

Table 4: SNZPAS4509:2008 Firefighting Water Supply Recommendations

Fire Water Classification	Reticulated water supply			Non-reticulated water supply	
	Required water flow within a distance of 135 m	Additional water flow within a distance of 270 m	Maximum number of hydrants to provide flow	Minimum water storage (within 90m)	
				Time (firefighting) (min)	Volume (m^3)
FW1	450 L/min	-	1	15	7
FW2	750 L/min	750 L/min	2	30	45
FW3	1500 L/min	1500 L/min	3	60	180
FW4	3000 L/min	3000 L/min	4	90	540
FW5	4500 L/min	4500 L/min	6	120	1080
FW6	6000 L/min	6000 L/min	8	180	2160
FW7	*As per Appendix H of SNZPAS4509:2008*				

6.3.1 Hydrant Locations

As part of the proposed reticulation network, 3 new fire hydrants are proposed such that all lots will be within the hose run distance requirements of fire hydrants.

6.3.2 Flow Testing

Hydrant flow testing on the existing 100mm main in Hihitahi Rise was completed by Building & Fire Services (2008) Ltd on the 31/05/2024. Results from the testing can be found in Appendix D. The results indicate that 710 L/min with a residual pressure of 210 kPa is available during single hydrant flow but not improved upon with double hydrant flow. This does not meet the FW2 requirements of 1500 L/min from a maximum of two hydrants.

The results of the testing are unexpected given the elevation change and short distance from the reservoir to the Hydrants. Typically, one would expect this mainline to have low static pressure but maintain a relatively high flow with minimal head loss.

The static pressure was measured at 300 kPa, which is consistent with the reservoir being approximately 30 meters higher than the hydrant with the pressure gauge. Despite this, the residual pressure drops rapidly when a hydrant on the line is flowed. The test results show a significant pressure loss of 90 kPa to flow 710 L/min. In theory, a 100mm diameter main should only lose about 50 kPa over the distance between the flowed hydrant and the reservoir at this flow rate.

We believe the poor results may be due to a wound down valve or another restriction between the reservoir and the tested hydrants. The testing indicates a restriction in the line, which could potentially be resolved through investigation and minor remedial works or maintenance. This investigation should be carried out by the council's approved asset management contractor, as it pertains to councils' existing assets.

Recommendations

- Investigate to identify any restrictions in the mainline.
- Perform necessary remedial works or maintenance.

This investigation can be completed prior to Engineering Plan Approval.

6.3.3 Supplementary Firefighting Water Supplies

With respect to this subdivision and to mitigate the potential risk that the reticulated network cannot provide full FW2 firefighting water supplies, we have made provision for supplementary firefighting water supply to be available from the constructed wetland within the subdivision.

Support for this proposal has been provided by FENZ, see Appendix C for details.

Refer to drawing 600 of the accompanying civil design drawings for further details.

7 Wastewater

We have had pre-application correspondence with the FNDC's Infrastructure team regarding this development and have received 'approval in principle' for this development to connect to the wastewater network. Please refer to Appendix B of this report for that correspondence including a memo by Chester reporting on key wastewater matters. The sections below follow on from that correspondence and form the proposal for resource consent.

7.1 Existing Reticulation

As per the FNDC GIS data and the site topographical survey plan, there are two existing 100mmØ uPVC Effluent Disposal Sewer mains in the vicinity of the site. One is located at the base of the site with a capped stub within proposed Lot 10 and the other is at the site frontage within Hihitahi Rise. Both mains discharge to FNDC wastewater pumpstation SP3370.

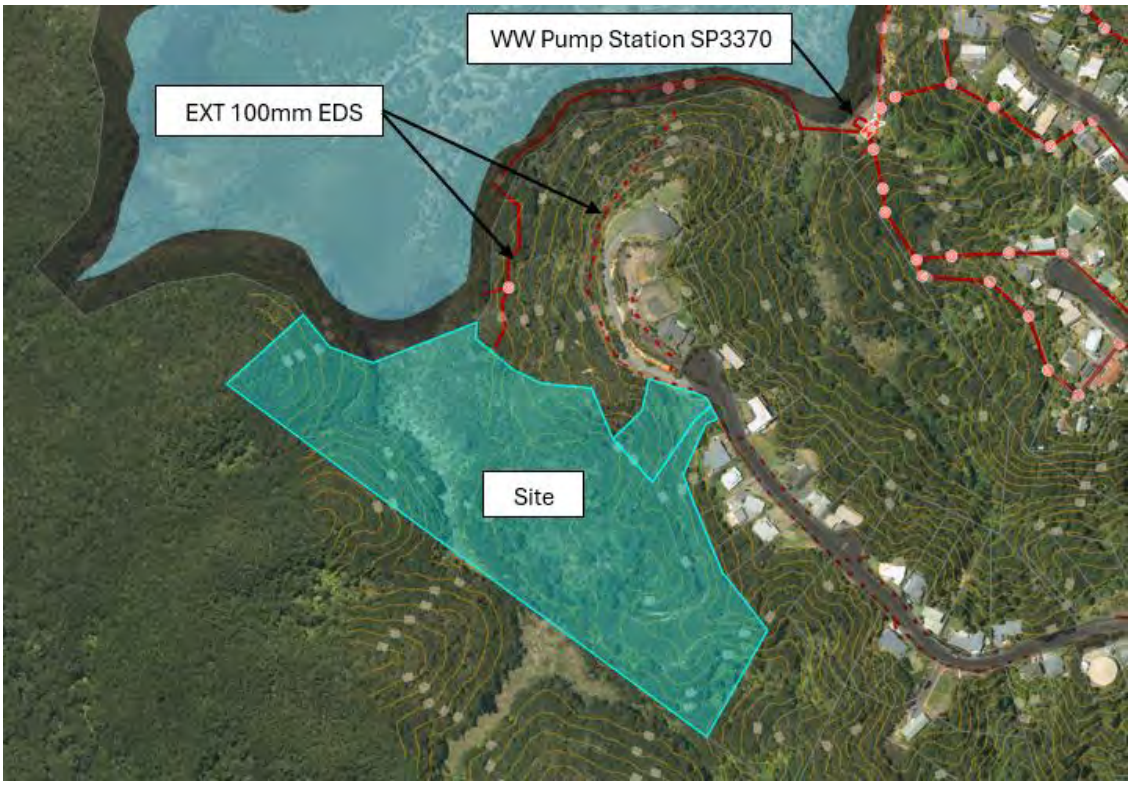

Figure 6: Existing wastewater reticulation (FNDC GIS maps, 31/05/23)

7.1.1 Existing Network Capacity

Please refer to the "Hihitahi Rise – Water and Wastewater Pre-Application Matters Memo" included in Appendix B of this report for the capacity assessment. The assessment concludes that the local EDS network has capacity for the development. The downstream wastewater pumpstation is known to have capacity constraints.

7.2 Proposed Wastewater Reticulation

As outlined in the "Hihitahi Rise – Water and Wastewater Pre-Application Matters Memo" included in Appendix B of this report, there are two primary options to connect this site to the reticulated wastewater network:

Option 1 – Extend from the Gravity Network at the base of the site.

Option 2 – Reticulate the site with a Low-Pressure Sewer (LPS) network that discharges to the EDS in Hihitahi Rise.

Following our pre-application correspondence, we have conducted further design work and investigations, and now recommend Option 2 as the preferred solution. This would result in a public LPS network in the proposed road with a boundary kit for each lot except for Lot 1 which could gravity flow direct to the EDS line. The LPS network would end in receiving chamber at the top of the site with a gravity connection to the EDS line.

The alternate option of extending a gravity pipe alignment from the existing network at the base of the site may not be feasible due to the elevation levels and the interaction with the stream crossing and Lot 10. It could necessitate the use of pumping regardless. Therefore, connecting to the EDS in Hihitahi Rise is a more robust solution, as this line is currently active and in use.

Nevertheless, provision has been made for each lot to have a connection to the public reticulation network for sanitary sewage disposal with the final the option to be confirmed at Engineering Plan Approval.

Refer to drawing 500 of the accompanying civil design drawings for further details.

7.2.1 Ownership and Easements

In accordance with the FNDC Engineering Standards, the proposed Low Pressure Sewer Network is proposed as Public to be vested. Because the proposed access is private, easements in gross in favour of council are proposed over the JOAL.

7.3 Effluent Discharge Pre-Treatment

Primary treatment is necessary before discharging to an Effluent Disposal System (EDS) to ensure the removal of large solids and debris from the effluent. This prevents clogging and damage to the downstream components of the EDS, ensuring the system operates efficiently.

As such all lots in the proposed subdivision will require primary treatment prior to either pumped discharge into the LPS or direct gravity discharge to the EDS. To ensure this is implemented we recommend the following consent notice or similar is included on the title of each Lot:

(Effluent Discharge Pre-Treatment) Each lot owner is required to install a primary treatment system to ensure solids are removed from the wastewater prior to discharge to the council's reticulation system.

The above can be achieved by a traditional septic tank with sedimentation chamber and screens in the case of a gravity connection, or in the case that the lot discharges to the LPS sewer, an on-lot pumped septic tank such as an 'Innoflow Prelos' system can be utilised.

7.4 Off Peak Pumping

As discussed in the 'Hihitahi Rise – Water and Wastewater Pre-Application Matters Memo' offset pumping can be utilised to minimise effects on the downstream infrastructure. LPS sewer networks as proposed inherently result in offset pumping due to the independent storage and operation of individual grinder pumps. This characteristic contributes to the efficiency and effectiveness of the LPS system by distributing flow more evenly over time and avoids coinciding peaks with gravity flows.

8 Stormwater

8.1 Existing Reticulation Network

Based on FNDC GIS data, site topographical survey and site inspection, there is an existing 300mmØ private concrete culvert conveying an intermittent stream through an embankment. Otherwise, there is no stormwater infrastructure in the site. Hihitahi Rise is severed by a series of catchpits and public stormwater lines that all discharge east away from the site. The neighbouring properties on Hihitahi Rise above the site all have kerb discharges to Hihitahi Rise so therefore drain away from the site.

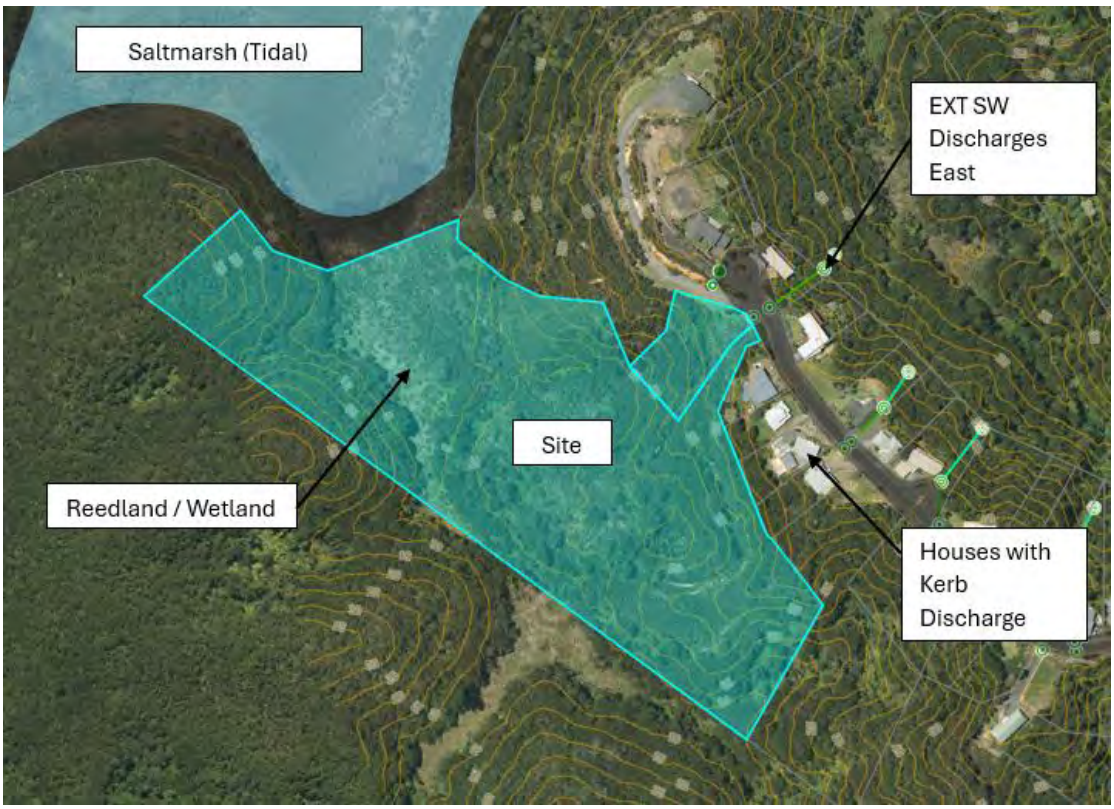

Figure 7: Existing stormwater reticulation (FNDC GIS maps, 31/05/23)

8.2 Proposed Network

It is proposed to replace the existing 300mmØ with a new culvert specifically designed in accordance with the FNDC Engineering Standards and allowing for fish passage. The culvert will receive reticulated stormwater from the entire development meaning its outlet will be the primary discharge point for collected stormwater run-off from all impervious areas. The outlet will be specifically designed with erosion and scour protection measures.

Upstream of the culvert a Public Stormwater Network is proposed to provide a connection to all lots apart from Lot 1 which will utilise a kerb discharge to the proposed road. Its stormwater will enter the proposed reticulation network via the road catchpits.

The proposed stormwater network includes full stormwater quality treatment (SWQT) for all impervious areas enabled by the subdivision via a specifically designed stormwater device. A low flow diversion is proposed in the main stormwater reticulation line to divert the upper catchment to a constructed wetland for SWQT. The wetland outlet will discharge treated stormwater to the adjacent intermittent stream. The outlet will be specifically designed with erosion and scour protection measures. The common accessway will utilise a raingarden for SWQT as it is not practical to drain that to the centralised wetland. The raingarden catchpit will discharge direct to the culvert line.

Refer to the 400 series of the accompanying civil design drawings for further details.

8.3 Stormwater Management

The site is in the lower catchment of a highly sensitive receiving environment i.e. the adjacent wetlands and coastal saltmarsh. Other than the short length of intermittent stream that the proposed wetland discharges to, all discharge is to the neighbouring wetland.

The following sections discuss the proposed stormwater management approach for the development in accordance with the key stormwater management criteria outlined in Table 4-1 of the FNDC Engineering Standards 2023. Our proposal considers the site-specific catchment and downstream receiving environment characteristics.

8.3.1 Stormwater Quality Treatment

Full Water quality treatment is proposed for the development. A constructed wetland specifically designed in accordance GD01 is proposed to treat stormwater run-off from all impervious areas that can drain to it.

The common accessway and Lots 10 & 11 cannot practically drain to the wetland so instead a raingarden is proposed at the low point in the common accessway. The raingarden has been sized for a catchment area of 442 m^2. The proposed common accessway impervious area is 222 m^2 so the raingarden has capacity for an additional 220 m^2. It is proposed that Lots 10 & 11 can utilise 110m^2 each of this design capacity to treat stormwater run-off from their future paved manoeuvring areas upslope of the raingarden. Any additional impervious areas will require stormwater quality treatment prior to discharge to the respective Lots stormwater connection. To ensure this design feature we recommend a consent notice like the following be put on Lots 10 & 11.

Lots 10 & 11

(SWQT) In conjunction with the construction of any building on Lot 10 & 11 DP _____, the lot owner shall submit for the approval of Council a report prepared by a suitably qualified engineer, detailing the stormwater quality treatment for all impervious areas on the Lot.

Advice Note
The raingarden within the common accessway has a design capacity that allows for discharge from up to 110 m^2 each (220 m^2 total) from Lots 10 & 11.

8.3.2 Volume (Stream Protection)

Volume management is only required when discharging directly into a natural stream or modified channel.

The proposed discharge is ultimately to the existing natural wetland which maintains a permanent water level and is not susceptible to stream channel erosion. It is acknowledged that the proposed constructed wetland does discharge to a short length of intermittent stream upstream of the new culvert. This discharge will be controlled, and erosion protection is proposed by way of an engineered outlet and riparian planting.

Given the above no further volume controls are proposed nor deemed required.

8.3.3 Flow Attenuation (50% and 20% AEP event)

Flow Attenuation is not required for this subdivision because it discharges direct to wetland then tidal zone which are not susceptible to increased peak flows worsening flooding risk. Both the proposed primary and secondary flow systems within the subdivision will be designed in accordance with the Engineering Standards allowing for climate change.

8.3.4 Flood Control (1% AEP event)

For reasons like Flow Attenuation, specific Flood Control Attenuation is not required.

8.4 Proposed Regional Plan for Northland

Stormwater from the proposed development is to be reticulated and discharged via a public stormwater network. Because the discharge is from an urban area it is a controlled activity. Table 5 below sets out the relevant matters of control under Section C.6.4.3 of the Proposed Regional Plan for Northland with engineering comment.

Table 5: Engineering comment against relevant regional plan stormwater rules

Matters of Control	Engineering Comment
1) The maximum concentration or load of contaminants in the discharge.	Stormwater quality treatment devices designed in accordance with the engineering guidelines are proposed for all impervious areas. As, such there will be little to no contaminants in the discharge.
2) The size of the zone of reasonable mixing.	We would consider 5m downstream of the culvert outlet to be the zone of reasonable mixing.
3) The adequacy of measures to minimise erosion.	All impervious areas will be reticulated and conveyed to the wetland and culvert. The outlets are specifically designed with scour and erosion protection measures to minimise erosion.
4) The adequacy of measures to minimise flooding caused by the stormwater network.	The stormwater network will be design in accordance with the engineering standards. No downstream flooding has been identified.
5) The design and operation of the stormwater system and any staging of works.	The design of the proposed stormwater works will be completed in accordance with the engineering standards. On-going maintenance of the wetland will be completed by FNDC if vested or a body Corp or similar if it is to remain private.

9 Flood Risk Assessment

9.1 Catchment Wide and Coastal Flooding

The site lower wetland areas of the site are within a coastal flood hazard zone as shown NRC Natural Hazard Maps and shown in Figure 8 below. The remaining wetland area not shown as affected by coastal inundation would by nature also be flood prone. It would not register on the NRC Region wide modelling because the contributing catchment is too small. Nevertheless, the development areas of the site are elevated well above potential flood levels in the wetland such that they pose no flooding risk to future lots. For example, Lot 10 has a lowest developable area at RL 10.00m which is more than 6m higher than potential flood levels in the adjacent wetland area.

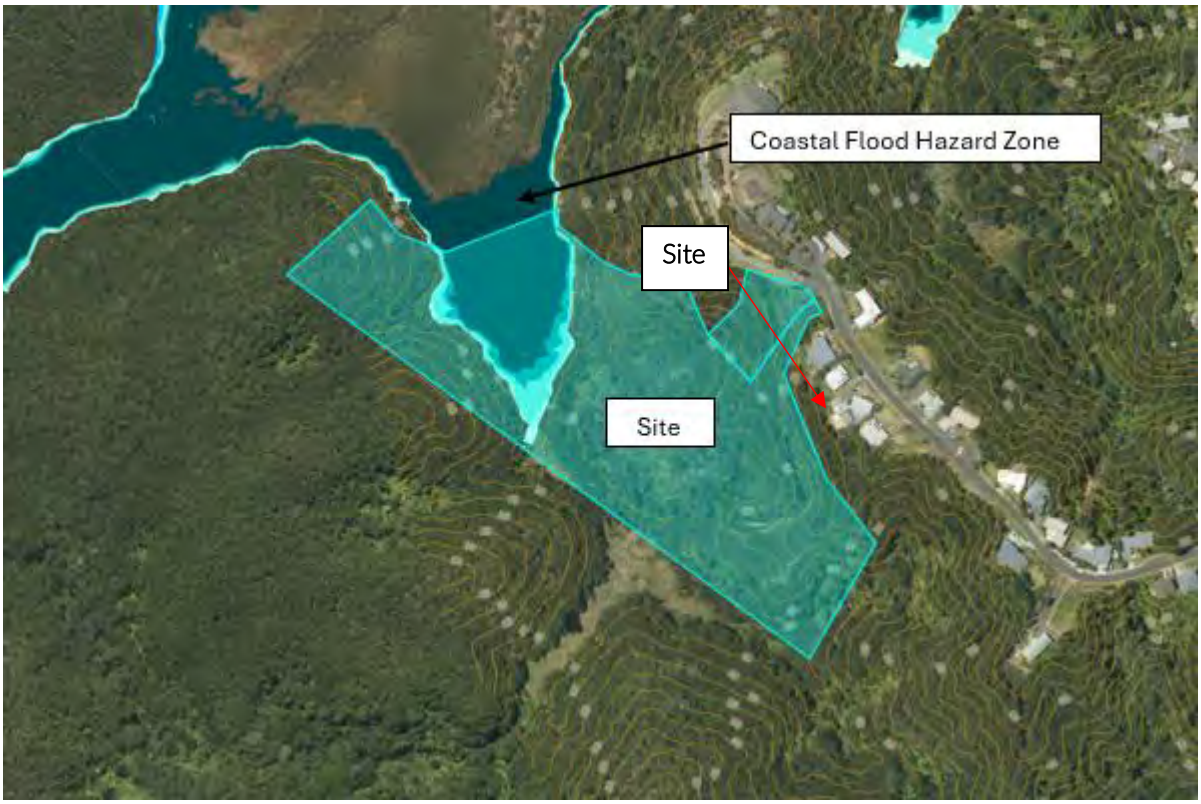

Figure 8: Aerial Map with indicated the flood plain (NRC GIS maps, 16/11/2023)

9.2 Local Site Catchment – Secondary Flow

Other potential flooding risks are those posed by secondary flow paths within the site. As part of the design specific consideration has been made to manage secondary flow. The proposed road, driveway and lot levels have been specifically designed so that secondary flow (i.e. flows in excess of the primary network capacity) will be captured and conveyed down the road, then the common accessway before discharging to the wetland below the site. The level of the vehicle crossing to the common accessway has been set lower than the ground levels of the lots adjacent to the cul-de-sac to ensure secondary flow spills down the driveway. This results in all secondary flow being confined to the road, driveway and stream.

For further details please refer to drawing 900 of the accompanying civil design drawings.

9.3 Building Controls

The key building control required is to ensure that Lots 8 & 9 do not cut down their vehicle crossings and lot frontages such that it could direct secondary flow towards future buildings. This should be addressed by default through the building consent process in compliance with clause E1 of the building code and the FNDC vehicle crossing requirements. However, it may be prudent to place a consent notice on the titles of Lots 8 & 9 like the following:

Lot 8 & 9

(Flooding) Provide, at the time of lodging a building consent application written confirmation by a suitably qualified Engineer that the proposed works consider and do not compromise the secondary flow conveyance of the adjacent road and common accessway.

9.3.1 Minimum Finished Floor Levels

No specific minimum flood levels are required for any of the Lots to manage flooding risk. However, they should all at a minimum comply with the requirements set out clause E1 of the building code. This can be achieved in accordance with Acceptable Solution E1/AS1 and depicted in Figure 9 and Figure 10 below.

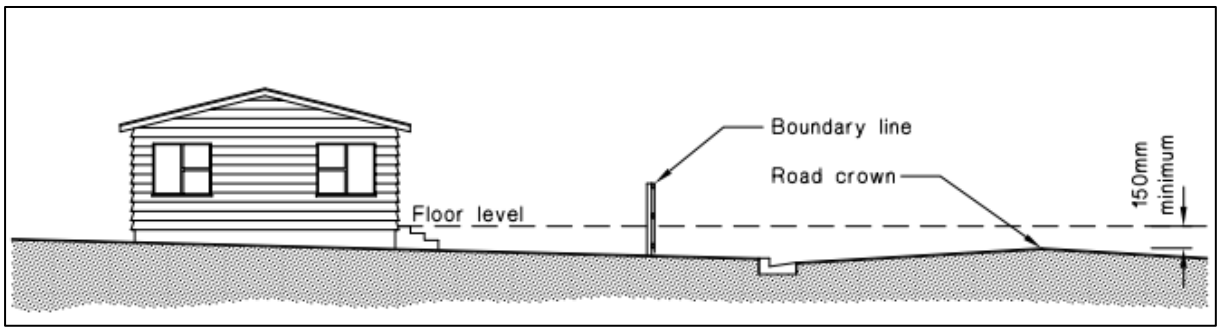

Figure 9: Minimum Floor Level for Site Above Road (Figure 1 Acceptable Solution E1/AS1)

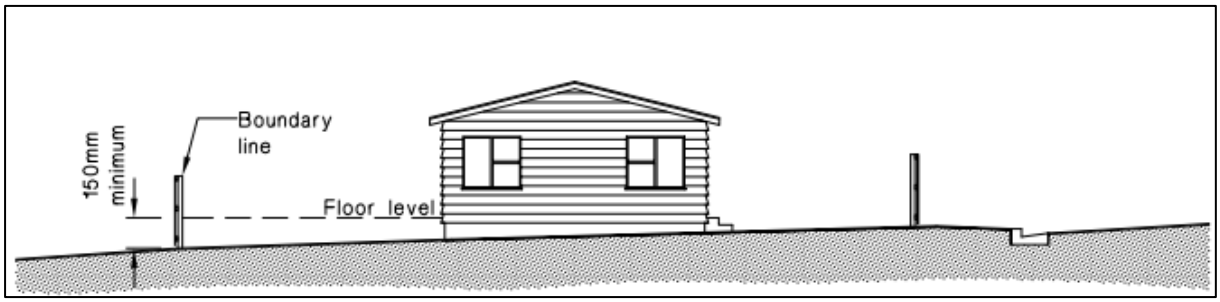

Figure 10: Minimum Floor Level for Site Below Road (Figure 2 Acceptable Solution E1/AS1)

10 Summary

In our opinion the site is suitable for the proposed development, subject to Far North District Council approval with regards to the matters addressed in this report and summarised below. The development can be undertaken in general accordance with the engineering standards with no specific area of non-compliance that in our opinion would have an actual or potential adverse effect on the environment or negatively affect any persons.

10.1 Earthworks, Erosion & Sediment Control

Bulk earthworks are proposed to enable the development. Best practice erosion and sediment control measures in accordance with GD05 are proposed to manage the potential effect on the environment.

10.2 Access

Provision for access to and within the subdivision has been made by way of a private road and common accessway.

10.3 Water Supply

The site is located within a reticulated water supply area and provision is made for each lot to have a public service connection. Firefighting water supplies will be supplied by extending the public water supply network as well as there being provision for supplementary supply from the constructed wetland.

10.4 Wastewater

The site is located within a reticulated wastewater area and provision is made for each lot to have a public connection. FNDC Infrastructure team have provided confirmation in principle the proposed 17 residential Lots can connect to the public wastewater network.

10.5 Stormwater

The site is located within a highly sensitive receiving environment. A reticulated stormwater network is proposed, and provision is made for each lot to have a connection. Best practice stormwater management is proposed in accordance with the relevant standards including stormwater quality treatment.

10.6 Flooding Risk

The site is not subject to wider flooding risk and local surface water / secondary flow has been considered in the design.

11 Limitations

- This assessment contains the professional opinion of Chester Consultants as to the matters set out herein, in light of the information available to it during the preparation, using its professional judgement and acting in accordance with the standard of care and skill normally exercised by professional engineers providing similar services in similar circumstances. No other express or implied warranty is made as to the professional advice contained in this report.
- We have prepared this report in accordance with the brief as provided and our terms of engagement. The information contained in this report has been prepared by Chester Consultants at the request of Heron Point Limited and is exclusively for its client use and reliance. It is not possible to make a proper assessment of this assessment without a clear understanding of the terms of engagement under which it has been prepared, including the scope of the instructions and directions given to and the assumptions made by Chester Consultants Ltd. The assessment will not address issues which would need to be considered for another party if that party's particular circumstances, requirements and experience were known and, further, may make assumptions about matters of which a third party is not aware. No responsibility or liability to any third party is accepted for any loss or damage whatsoever arising out of the use of or reliance on this assessment by any third party.
- The assessment is also based on information that has been provided to Chester Consultants Ltd from other sources or by other parties. The assessment has been prepared strictly on the basis that the information that has been provided is accurate, completed, and adequate. To the extent that any information is inaccurate, incomplete, or inadequate, Chester Consultants Ltd takes no responsibility and disclaims all liability whatsoever for any loss or damage that results from any conclusions based on information that has been provided to Chester Consultants Ltd.

12 Appendices

Appendix A – Civil Design Drawings (Bound Separately)

Appendix B – Hihitahi Rise – Water and Wastewater Pre-Application Matters Memo and Email Correspondence

Nat Jull

From: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Sent: Friday, 10 May 2024 8:53 am
To: Nat Jull
Subject: FW: Lot 2 Hihitahi Rise, Paihia

Morning Nat,
Based on the information in your memo, the 17 Lots can connect to the Council wastewater and water supply schemes in principle.
Happy to discuss further.

Cheers

Sujeet Tikaram
Development Engineer - Infrastructure Strategy
M 027 566 1191 | **P** 6494015376 | Sujeet.Tikaram@fndc.govt.nz
An alliance between Far North District Council and Ventia

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

From: Sujeet Tikaram
Sent: Wednesday, May 8, 2024 8:18 AM
To: Nat Jull <nat@chester.co.nz>
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Hi Nat,
Will discuss this again with my team leader and staff and provide a response by this Friday at the latest.

Cheers

Sujeet Tikaram
Development Engineer - Infrastructure Strategy
M 027 566 1191 | **P** 6494015376 | Sujeet.Tikaram@fndc.govt.nz
An alliance between Far North District Council and Ventia

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

From: Nat Jull <nat@chester.co.nz>
Sent: Wednesday, May 8, 2024 8:00 AM
To: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Cc: Claire Booth <claire@thepc.co.nz>
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Good Morning Sujeet,

Just checking in that this has been received and trying to get a feel for when we might expect a response?

I note that the 17th of May is a key deadline for us to have our reporting ready for RC lodgement. Is it possible that we will have something by then?

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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From: Nat Jull
Sent: Wednesday, May 1, 2024 1:14 PM
To: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Cc: Claire Booth <claire@thepc.co.nz>
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Hi Sujeet,

Thankyou for our meeting the other day.

As discussed, we are looking to lodge for RC by the end of May and are currently going through various other consultations and developing our resource consent application. Obviously, water and wastewater are significant project considerations, so we are wanting to resolve the connection issue ASAP.

See attached a memo including the info we discussed and hopefully what you require to provide written approval in principle.

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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From: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Sent: Tuesday, April 16, 2024 8:12 AM
To: Nat Jull <nat@chester.co.nz>
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Hi Nat,

Memo

Date: 29/04/2024

To:	Far North District Council	-	Consenting Authority
Prepared by:	Nat Jull	-	Applicants Civil Engineer
Reviewed by:	Jack Chen	-	Applicants Civil Engineer

Subject: Hihitahi Rise – Water and Wastewater Pre-Application Matters

1 Introduction

This memo outlines the engineering considerations with respect to wastewater and water supply for the proposed 17 Lot subdivision off Hihitahi Rise in Paihia. The purpose of this memo is to support pre-application discussions with the Far North District Council regarding the requirements for this development to connect to the public wastewater and water supply systems. We seek to reach an agreement in principle for this development to connect prior to a resource consent lodgement.

We note that a development for 17 Lots at this site was previously consented under RC 2061183 which has lapsed.

2 Proposed Development

The development is a 17 Lot vacant Lot subdivision. Figure 1 below is a snip of the concept scheme for the development and Tables 1 & 2 on the following page set out the developments estimated wastewater and water supply demand using the method set out in the FNDC Engineering Standards 2023.

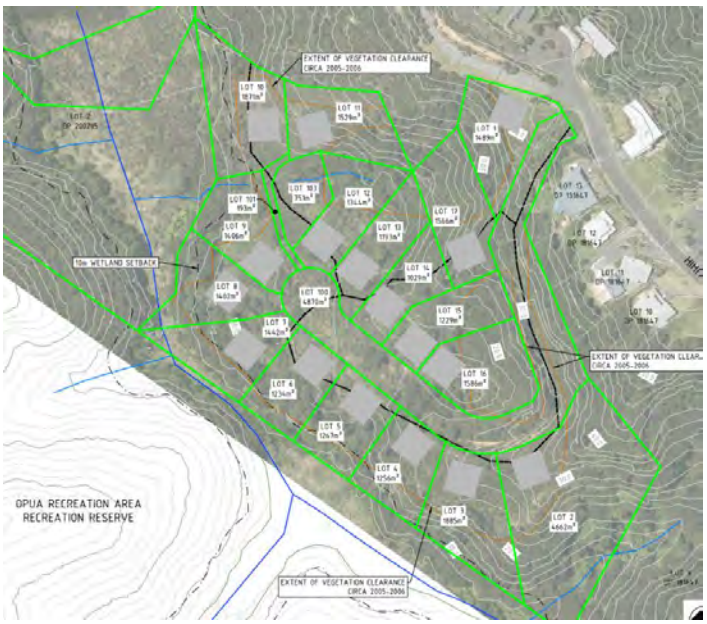


Figure 1: Draft Concept Scheme

Table 1: Development Wastewater Demand

Scenario	Number of House Units	Design Occupancy (i.e. Number of Persons per Typology)	Catchment Design Population	Average Dry Weather Flow Allowance (L/d/p)	Dry weather diurnal PF	Infiltration Factor	Average Dry Weather Flow (L/s)	Peak Dry Weather Flow (L/s)	Peak Wet Weather Flow (L/s)	Daily Design Volume (m3)
17 Lots	17	4	68	200	2.5	5	0.16	0.39	0.79	13.6
Total	**17**		**68**				**0.16**	**0.39**	**0.79**	**13.6**

Table 2: Development Water Supply Demand

Scenario	Number of House Units	Design Occupancy (i.e. Number of Persons per Typology)	Catchment Design Population	Domestic Demand (L/p/day)	Daily Peaking Factor	Hourly Peaking Factor	Average Daily Demand (m3/d)	Peak Day Demand (m3/d)	Average (Hourly) Demand (L/s)	Peak (Hourly) Demand (L/s)
17 Lots	17	4	68	300	2	5	20.40	40.80	0.47	2.36
Total	**17**		**68**				**20.40**	**40.80**	**0.47**	**2.36**

3 Area of Benefit

We acknowledge that the FNDC have a GIS layer which maps an 'area of 'benefit' with respect to its Wastewater and Water Supply Schemes. We understand the primary purpose of this tool is to identify what properties are serviced by the scheme to assist with decision making. We note that it has been indicated by Sujeet Tikaram (see email correspondence in Attachment C) that only lots within the area of benefit may be considered for connection. We challenge this assertion because the resolution of the mapping is such that it would be arbitrary to rely on it at an individual lot scale. With respect to the area of benefit mapping and this site we note the following:

- The 'Area of Benefit' for both water and wastewater intersect the development site. The area covers most of the sites proposed development area but not all of it.
- The site area covered by the wastewater 'Area of Benefit' is 16,971 m^2 which is equivalent to 28 Lots at 600 m^2 (minimum) each.

- The site area covered by the water 'Area of Benefit' is 12,870 m^2 which the equivalent to 21 Lots at 600 m^2 (minimum) each.
- The parent site has a connection to the wastewater network and frontage to the road reserve containing a water main.
- Review of previous reporting and subdivision plans for the area indicate that this site for circa 17 Lots was always intended to connect to the schemes.
- The site is zoned for residential development.
- Based on the above we believe it is reasonable to expect that this site be serviced by both the Wastewater and Water Supply Schemes.

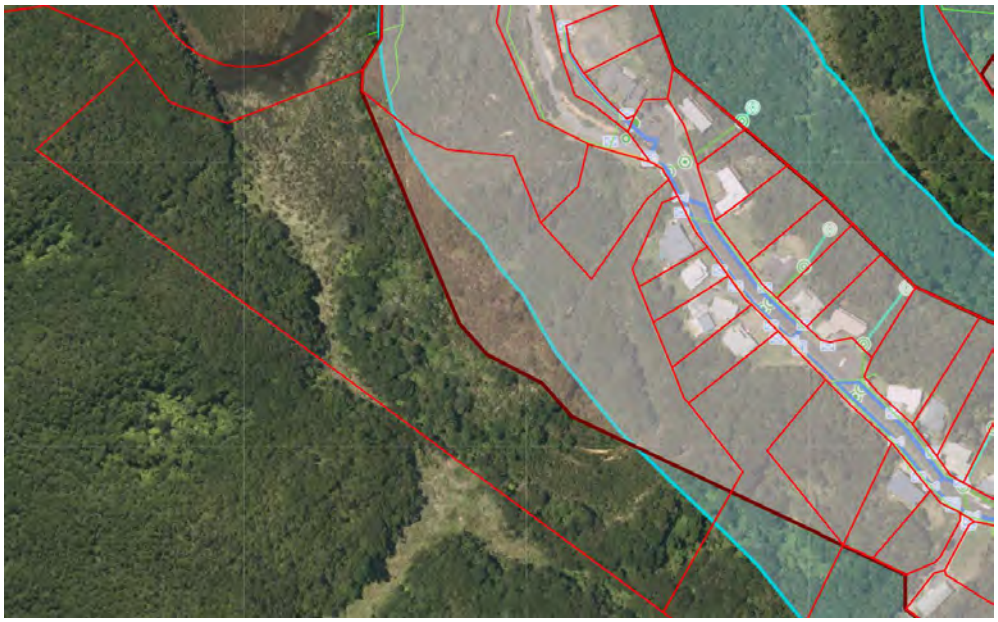


Figure 2: Water and Wastewater 'Area of Benefit' Map Snip

4 Wider Wastewater Network

This section summarises our key understanding of the wastewater network based upon desktop assessment, correspondence, meetings with council staff and a site visit.

- The site has connections to the Paihia Wastewater Scheme.
- Wastewater is reticulated to the Paihia Wastewater Treatment System in Haruru via a combination of gravity pipelines and pumpstations in series.
- The closest pumpstation being as identified on Far North Maps as - WW Pump Station: SP3370. Accessed from Puketiro Place.
- There are known capacity constraints in the downstream pumpstations.

5 Local Wastewater Reticulation

Information on the existing downstream wastewater line from the site to the WWPS is limited. In order gain an understanding of the downstream line we have reviewed council GIS, reviewed previous reporting for the lapsed consent and undertaken a site visit. At our site visit we did observe peg markers along the route of the downstream wastewater line generally as shown on GIS and as identified by easements on the neighbouring land title plans. This provides us with reasonable confidence that the wastewater line from the site to the WWPS does exist. We also

have received anecdotal evidence from our client that they witnessed this line exposed when the site was previously cleared. The conclusion from our assessment is that the local reticulation network is a 'EDS' wastewater system. This means that it has been designed to convey 'grey water' i.e. wastewater that has had primary treatment prior to discharge to the reticulated network. This accounts for the curved nature and generally smaller pipe diameters noted. The flowing outlines our assessment of the EDS lines capacity.

5.1 Reticulation Capacity

According to a Site Suitablity Report completed by Haigh Workman, reference number 07120, dated 24/05/2007:

The (subject) *site is served by the Paihia Sewerage Scheme with connection via the Hihitahi Rise EDS reticulation system. That system requires primary on-site treatment (septic tank and bio-filter) before discharge to the small diameter pipelines. The existing downstream system was designed by Enviro-Impac Group Ltd (Hugh Ward) in 1996, using small (generally 80 mm ID) polyethylene pipelines in curved alignments.*

Based on the design factors used by Enviro-Impac Group and referenced in the Haigh Workman Report, the design peak flow of the existing system is:

Peak Dry Weather Flow = 2.82 L/s
Peak Wet Weather Flow = 7.06 L/s

Based on the Water Services Layout from FNDC GIS Maps (Figure 3 Below), the Hihitahi Rise EDS reticulation is currently servicing 31 lots. In accordance with the FNDC engineering standards, the existing catchment design peak wet weather flow is 1.481L/s.

The proposed development will create 17 residential lots, as a result, the post development wastewater design peak wet weather flow will be 2.222L/s. This design peak flow is significantly less than the design peak flow used for the existing EDS system design. We have also checked that the post-development flow can be accommodated by an 80mm ID PVC pipe at 0.6% longitudinal grade. Assuming the line has fall along its entire length, 0.6% is the assumed minimum grade. To sense check the minimum grade assumption we have reviewed the fall along the alignment against the NRC 2018 Lidar. There is an 8m level difference across the approximately 400m pipeline between the upstream most manhole and the downstream pump station, equal to an average pipe grade of 2.0%.

Based on the information we have on hand; we conclude that the existing Hihitahi Rise EDS reticulation system has sufficient capacity to service the proposed 17 lot subdivision.

Table 3: Wastewater design flow and pipe capacity in different scenarios.

Scenario ID	Design Wastewater Flow Allowance (L/p/d)	Design Wastewater Peaking Factor	Design Occupancy	Number of Parcels	Catchment Population	Catchment PWWF / EPDWF (L/s)	Cumulative PWWF / EPDWF (L/s)	Pipe Diameter (mm)	Average Pipe Grade (%)	Pipe Manning's n	Pipe Full Flow Velocity (m/s)	Pipe Full Flow Capacity (L/s)	Pipe Reserve Capacity (L/s)	Capacity
Preivous Design Assumption	180	14	5.5	44	**242**	**7.060**	**7.060**							Yes
Existing WW Flow (As Per FNDC ES)	200	5	4	31	**124**	**1.435**	**1.435**	80	0.6%	0.011	**0.52**	**2.61**	**1.17**	Yes
Post Development Flow	200	5	4	48	**192**	**2.222**	**2.222**	80	0.6%	0.011	**0.52**	**2.61**	**0.39**	Yes

Figure 3: Screenshot of wastewater Layout from FNDC GIS 2024/04/18.

6 Wastewater Connection Options

There are two primary options for connecting the site to wastewater.

6.1 Option 1 – Gravity Connection

Option 1 is to extend the EDS gravity network from the base of the site (within proposed Lot 10) and provide a gravity connection for each site. Each Lot will be required to provide primary treatment (e.g. septic tank) prior to discharge to the line. Dependent on flow mitigation options to be employed, the primary treatment systems can rely solely on gravity or be controlled by pumping.

This is our preferred Option and would be subject to further investigation of the downstream lines condition at detailed design / engineering plan approval stage.

6.2 Option 2 – Pumped Connection

Option 2 is to install a common private rising main in the proposed private road and each Lot have a primary treatment system with a pump unit and boundary kit that connects to this line. The line would end in a receiving chamber and have a gravity connection to the 80-100mm EDS Line in Hihitahi Rise.

This is our secondary Option if further investigations discover that the lower EDS line is not in a condition suitable to receive discharge and remedial works are not feasible. There is more certainty that this line is in an acceptable condition because it is currently in use servicing Hihitahi Rise.

6.3 Off Peak Pumping

As noted in Section 4 above, council have indicated that the existing downstream wastewater pump stations have some capacity constraints. It was advised by Sujeet Tikaram that: "*The constraints are mainly related to the capacity of the 2 pump stations downstream of the site. According to our data, discharge rates from the pump stations are resulting in surcharge within the incoming reticulation.*

An option this development can employ to minimise the potential effect is off-peak pumping. This would be achieved by specifying (by consent notice) that discharge to the wastewater reticulation network can only occur during certain

hours. Practically this can be achieved using a variety of products that have primary treatment systems with discharge controlled by pumping (e.g. 'Prelos' by Innoflow Technologies Ltd).

In our opinion this option would act as sufficient mitigation in this situation and is what is proposed as mitigation.

7 Development Agreement

We note the following advice from Sujeet Tikaram in previous email correspondence, *"If the Lots are allowed to connect to the network, potentially a financial contribution towards upgrades will be required"*.

We understand that FNDC cannot currently take **Development Contributions** under the Local Government Act 2002 (LGA) and **Financial Contributions** under the Resource Management Act 1991 (RMA) are limited to esplanades and the cost to provide non-residential carparking. I.e. There is no mechanism for council to enforce financial contribution for three waters. However, there is ability for Development Agreements to be reached by voluntary negotiation to assist with managing demand created by development and assisting with options to address adverse effects.

To this end we confirm that the developer is open to negotiation and note that as a starting point contribution would be limited to providing a proportioned contribution to planned upgrades to the WW Pump Station: SP3370.

Contribution = (Budgeted Upgrade Cost) x (17 / (Total Lots Discharging to WWPS))

Total Lots being all those in Te Haumi and Opua that discharge to the scheme and have flows end up at WW Pump Station: SP3370.

8 Water Supply

This section includes discussion regarding water supply options for the development.

8.1 Option 1 – Public Extension

For Water Supply the preferred option is to extend the public water supply network down the proposed commonly owned access lot (COAL). An indicative sketch is included in Attachment B.

Because the proposed access cannot meet the public road vertical geometry requirements it is currently proposed to be a COAL. This means that the above option will require public water in private land. An easement in Gross will be granted in favour of council as necessary.

Two alternate Options are:

8.2 Option 2A – Connections

Install a private fire main down the private road and then separate private lines for each lot from water meter banks in Hihitahi Rise.

8.3 Option 2B – Private Network Extension

Install a network like Option 1 but have it private with a bulk meter at Hihitahi Rise. Then a body corporate or similar can be set up to manage distribution of costs across the Lots.

This is our lease preferred option.

8.4 Firefighting Water Supplies

All options above will ensure fire hydrants are located within the relevant hose run distances to each Lot. Our client has commissioned Building & Fire to complete hydrant flow tests on the line in Hihitahi Rise and we will provide the results upon receipt or as part of the resource consent application. Given the elevation change and relatively short length of pipe from the reservoir at the top of Hihitahi Rise to the site we are expecting compliant FW2 firefighting water supply flows.

We do note that we will be consulting with FENZ regarding access, positioning of Fire Hydrants and proximity to the Opua Forest.

9 Conclusion

To summarise the preferred options proposed are:

Wastewater

- We will extend the lower public EDS wastewater line through the site and provide each lot with a gravity connection. Except Lot 1 which will connect to the EDS line in Hihitahi Rise.
- Each lot will require primary on-site wastewater treatment before discharge.
- To mitigate the effects on the downstream wastewater pumpstation the development will either:
    - Condition off peak discharge, or,
    - Make a financial contribution by way of development agreement.

Water Supply

- Extend the public water supply network down the COAL.

We trust that the above assists with your understanding of the proposal and options available. We request that you consider the options and provide 'approval in principle' for the development to connect to public networks subject to any conditions. We appreciate that any such approval may be subject to further information being submitted with the resource consent application.

Yours Sincerely,
Nat Jull

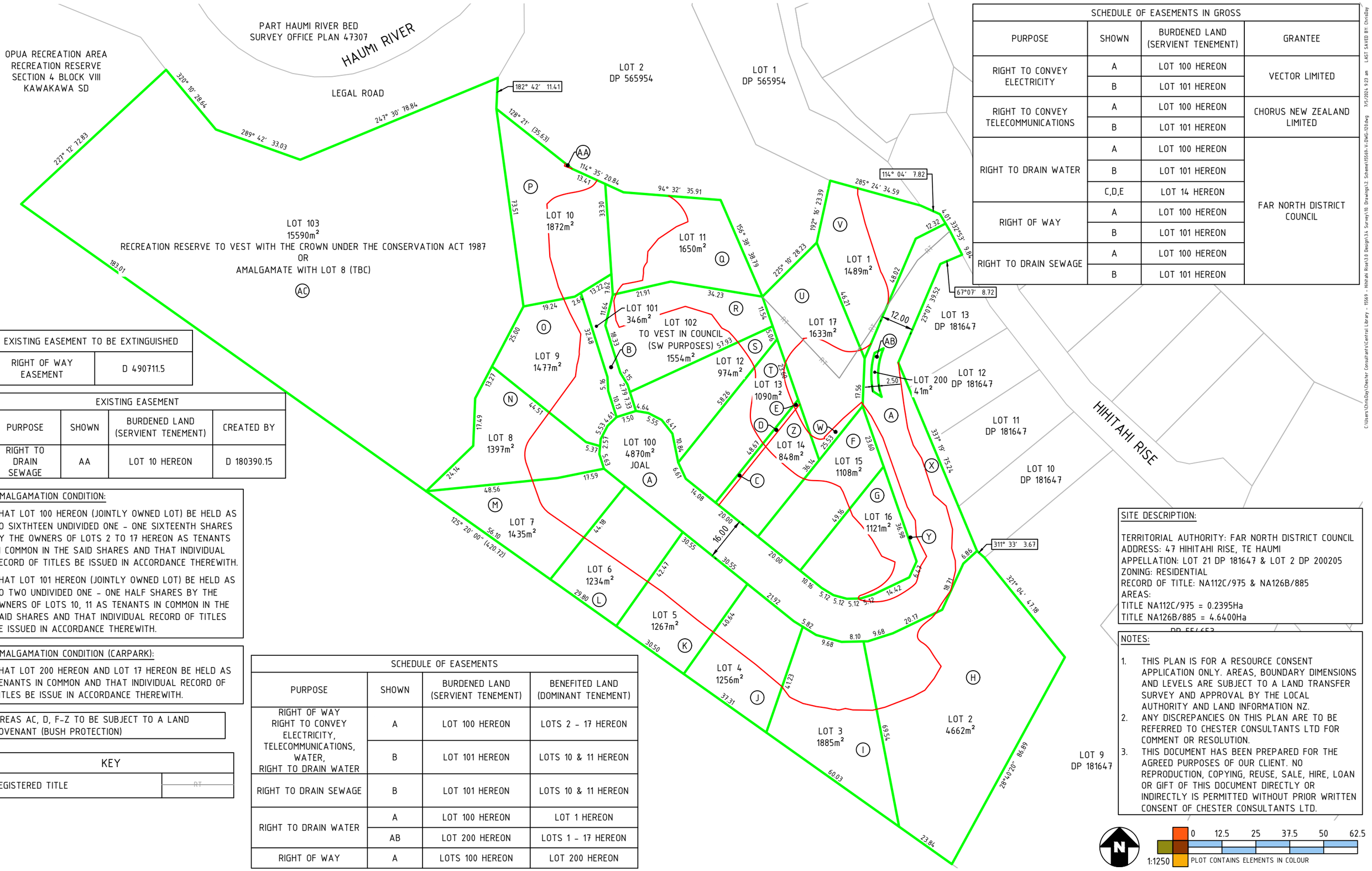
Civil Engineer
BEngTech (Civil), MEngNZ
M +64 (0) 21 826 375
nat@chester.co.nz

Attachments

A. Concept Scheme Plan
B. Concept 3-Waters Sketch
C. Email Correspondence
D. 'Prelos' by Innoflow Technologies Ltd product Sheet

Attachment A

Concept Scheme Plan



EXISTING EASEMENT TO BE EXTINGUISHED	
RIGHT OF WAY EASEMENT	D 490711.5

EXISTING EASEMENT			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	CREATED BY
RIGHT TO DRAIN SEWAGE	AA	LOT 10 HEREON	D 180390.15

AMALGAMATION CONDITION:

THAT LOT 100 HEREON (JOINTLY OWNED LOT) BE HELD AS TO SIXTHTEEN UNDIVIDED ONE - ONE SIXTEENTH SHARES BY THE OWNERS OF LOTS 2 TO 17 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

THAT LOT 101 HEREON (JOINTLY OWNED LOT) BE HELD AS TO TWO UNDIVIDED ONE - ONE HALF SHARES BY THE OWNERS OF LOTS 10, 11 AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

AMALGAMATION CONDITION (CARPARK):

THAT LOT 200 HEREON AND LOT 17 HEREON BE HELD AS TENANTS IN COMMON AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUE IN ACCORDANCE THEREWITH.

AREAS AC, D, F-Z TO BE SUBJECT TO A LAND COVENANT (BUSH PROTECTION)

KEY	
REGISTERED TITLE	RT

SCHEDULE OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITED LAND (DOMINANT TENEMENT)
RIGHT OF WAY RIGHT TO CONVEY ELECTRICITY, TELECOMMUNICATIONS, WATER, RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOTS 2 - 17 HEREON
	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN SEWAGE	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOT 1 HEREON
	AB	LOT 200 HEREON	LOTS 1 - 17 HEREON
RIGHT OF WAY	A	LOTS 100 HEREON	LOT 200 HEREON

SCHEDULE OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY	A	LOT 100 HEREON	VECTOR LIMITED
	B	LOT 101 HEREON	
RIGHT TO CONVEY TELECOMMUNICATIONS	A	LOT 100 HEREON	CHORUS NEW ZEALAND LIMITED
	B	LOT 101 HEREON	
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	FAR NORTH DISTRICT COUNCIL
	B	LOT 101 HEREON	
	C,D,E	LOT 14 HEREON	
RIGHT OF WAY	A	LOT 100 HEREON	
	B	LOT 101 HEREON	
RIGHT TO DRAIN SEWAGE	A	LOT 100 HEREON	
	B	LOT 101 HEREON	

SITE DESCRIPTION:

TERRITORIAL AUTHORITY: FAR NORTH DISTRICT COUNCIL
ADDRESS: 47 HIHITAHI RISE, TE HAUMI
APPELLATION: LOT 21 DP 181647 & LOT 2 DP 200205
ZONING: RESIDENTIAL
RECORD OF TITLE: NA112C/975 & NA126B/885
AREAS:
TITLE NA112C/975 = 0.2395Ha
TITLE NA126B/885 = 4.6400Ha

NOTES:

1. THIS PLAN IS FOR A RESOURCE CONSENT APPLICATION ONLY. AREAS, BOUNDARY DIMENSIONS AND LEVELS ARE SUBJECT TO A LAND TRANSFER SURVEY AND APPROVAL BY THE LOCAL AUTHORITY AND LAND INFORMATION NZ.
2. ANY DISCREPANCIES ON THIS PLAN ARE TO BE REFERRED TO CHESTER CONSULTANTS LTD FOR COMMENT OR RESOLUTION.
3. THIS DOCUMENT HAS BEIN PREPARED FOR THE AGREED PURPOSES OF OUR CLIENT. NO REPRODUCTION, COPYING, REUSE, SALE, HIRE, LOAN OR GIFT OF THIS DOCUMENT DIRECTLY OR INDIRECTLY IS PERMITTED WITHOUT PRIOR WRITTEN CONSENT OF CHESTER CONSULTANTS LTD.

0 12.5 25 37.5 50 62.5
1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By

Drafter:	V.RIVIER	Job Title:	LOTS 1-17, 100-103 BEING A SUBDIVISION OF LOT 21 DP181647 & LOT 2 DP200205
Designer:	C. DAY	Client:	HERON POINT LIMITED
Checker:	C. DAY	Address:	45 & 47 HIHITAHI RISE, PAIHIA, FAR NORTH DISTRICT.
Date:	05/07/2024	Drawing Title:	PROPOSED SCHEME PLAN

Drawing:	120	Rev:	0
Scale:	1:1250 @ A3		
Project:	15569		
Issue:	CONSENT		

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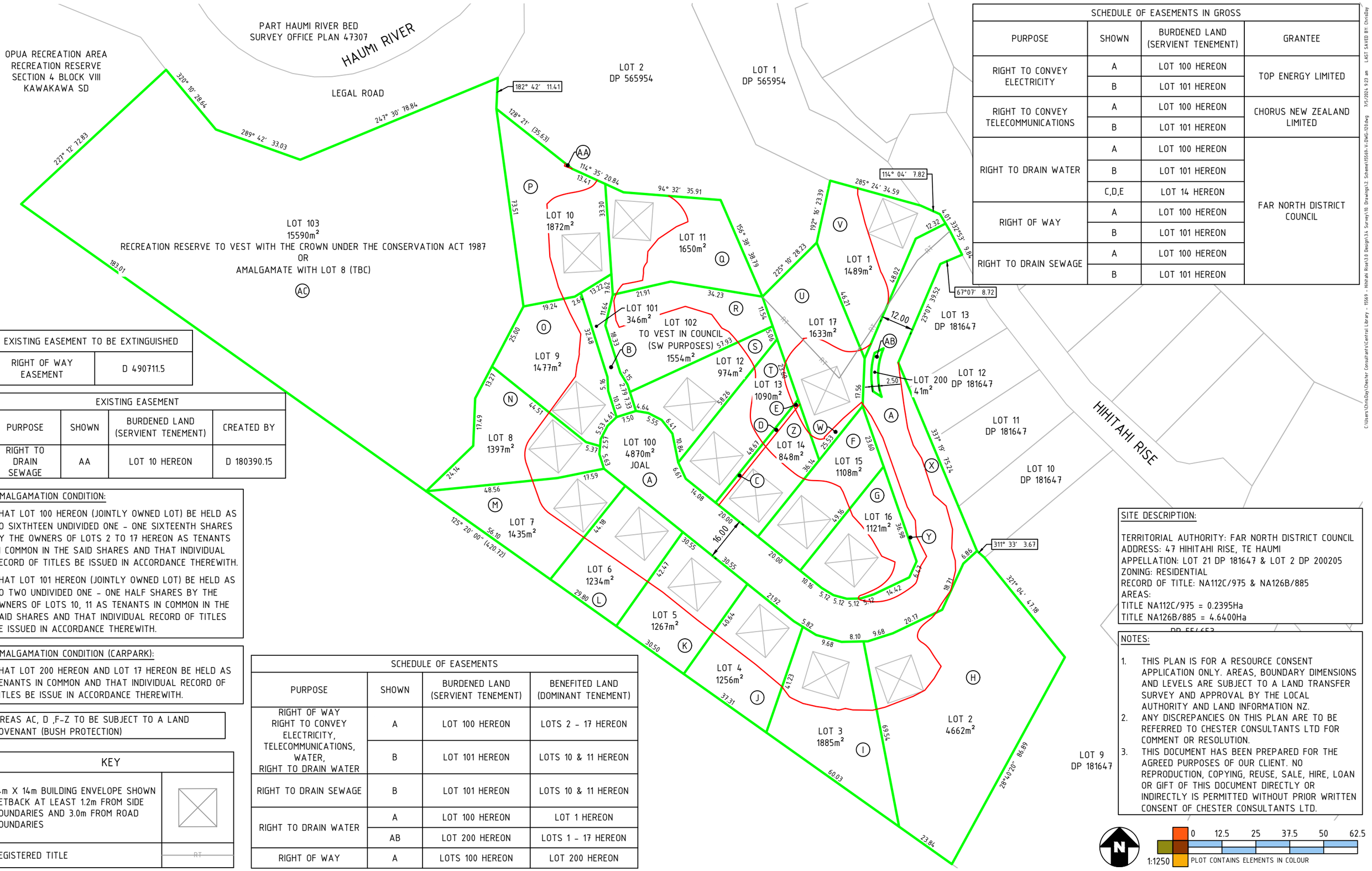

SCHEDULE OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY	A	LOT 100 HEREON	TOP ENERGY LIMITED
	B	LOT 101 HEREON	
RIGHT TO CONVEY TELECOMMUNICATIONS	A	LOT 100 HEREON	CHORUS NEW ZEALAND LIMITED
	B	LOT 101 HEREON	
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	FAR NORTH DISTRICT COUNCIL
	B	LOT 101 HEREON	
	C,D,E	LOT 14 HEREON	
RIGHT OF WAY	A	LOT 100 HEREON	
	B	LOT 101 HEREON	
RIGHT TO DRAIN SEWAGE	A	LOT 100 HEREON	
	B	LOT 101 HEREON	

EXISTING EASEMENT TO BE EXTINGUISHED	
RIGHT OF WAY EASEMENT	D 490711.5

EXISTING EASEMENT			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	CREATED BY
RIGHT TO DRAIN SEWAGE	AA	LOT 10 HEREON	D 180390.15

AMALGAMATION CONDITION:

THAT LOT 100 HEREON (JOINTLY OWNED LOT) BE HELD AS TO SIXTHTEEN UNDIVIDED ONE - ONE SIXTEENTH SHARES BY THE OWNERS OF LOTS 2 TO 17 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

THAT LOT 101 HEREON (JOINTLY OWNED LOT) BE HELD AS TO TWO UNDIVIDED ONE - ONE HALF SHARES BY THE OWNERS OF LOTS 10, 11 AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

AMALGAMATION CONDITION (CARPARK):

THAT LOT 200 HEREON AND LOT 17 HEREON BE HELD AS TENANTS IN COMMON AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUE IN ACCORDANCE THEREWITH.

AREAS AC, D ,F-Z TO BE SUBJECT TO A LAND COVENANT (BUSH PROTECTION)

KEY	
14m X 14m BUILDING ENVELOPE SHOWN SETBACK AT LEAST 1.2m FROM SIDE BOUNDARIES AND 3.0m FROM ROAD BOUNDARIES	
REGISTERED TITLE	RT

SCHEDULE OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITED LAND (DOMINANT TENEMENT)
RIGHT OF WAY RIGHT TO CONVEY ELECTRICITY, TELECOMMUNICATIONS, WATER, RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOTS 2 - 17 HEREON
	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN SEWAGE	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOT 1 HEREON
	AB	LOT 200 HEREON	LOTS 1 - 17 HEREON
RIGHT OF WAY	A	LOTS 100 HEREON	LOT 200 HEREON

SITE DESCRIPTION:

TERRITORIAL AUTHORITY: FAR NORTH DISTRICT COUNCIL
ADDRESS: 47 HIHITAHI RISE, TE HAUMI
APPELLATION: LOT 21 DP 181647 & LOT 2 DP 200205
ZONING: RESIDENTIAL
RECORD OF TITLE: NA112C/975 & NA126B/885
AREAS:
TITLE NA112C/975 = 0.2395Ha
TITLE NA126B/885 = 4.6400Ha

NOTES:

1. THIS PLAN IS FOR A RESOURCE CONSENT APPLICATION ONLY. AREAS, BOUNDARY DIMENSIONS AND LEVELS ARE SUBJECT TO A LAND TRANSFER SURVEY AND APPROVAL BY THE LOCAL AUTHORITY AND LAND INFORMATION NZ.
2. ANY DISCREPANCIES ON THIS PLAN ARE TO BE REFERRED TO CHESTER CONSULTANTS LTD FOR COMMENT OR RESOLUTION.
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0 12.5 25 37.5 50 62.5
1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By

Drafter:	V.RIVIER	Job Title:	LOTS 1-17, 100-103 BEING A SUBDIVISION OF LOT 21 DP181647 & LOT 2 DP200205
Designer:	C. DAY	Client:	HERON POINT LIMITED
Checker:	C. DAY	Address:	45 & 47 HIHITAHI RISE, PAIHIA, FAR NORTH DISTRICT.
Date:	05/07/2024	Drawing Title:	OPERATIVE FNDC BUILDING ENVELOPE ASSESSMENT - RULE 13.7.2.2 AND RULE 7.6.5.1.7

Drawing:	121	Rev:	0
Scale:	1:1250 @ A3		
Project:	15569		
Issue:	CONSENT		

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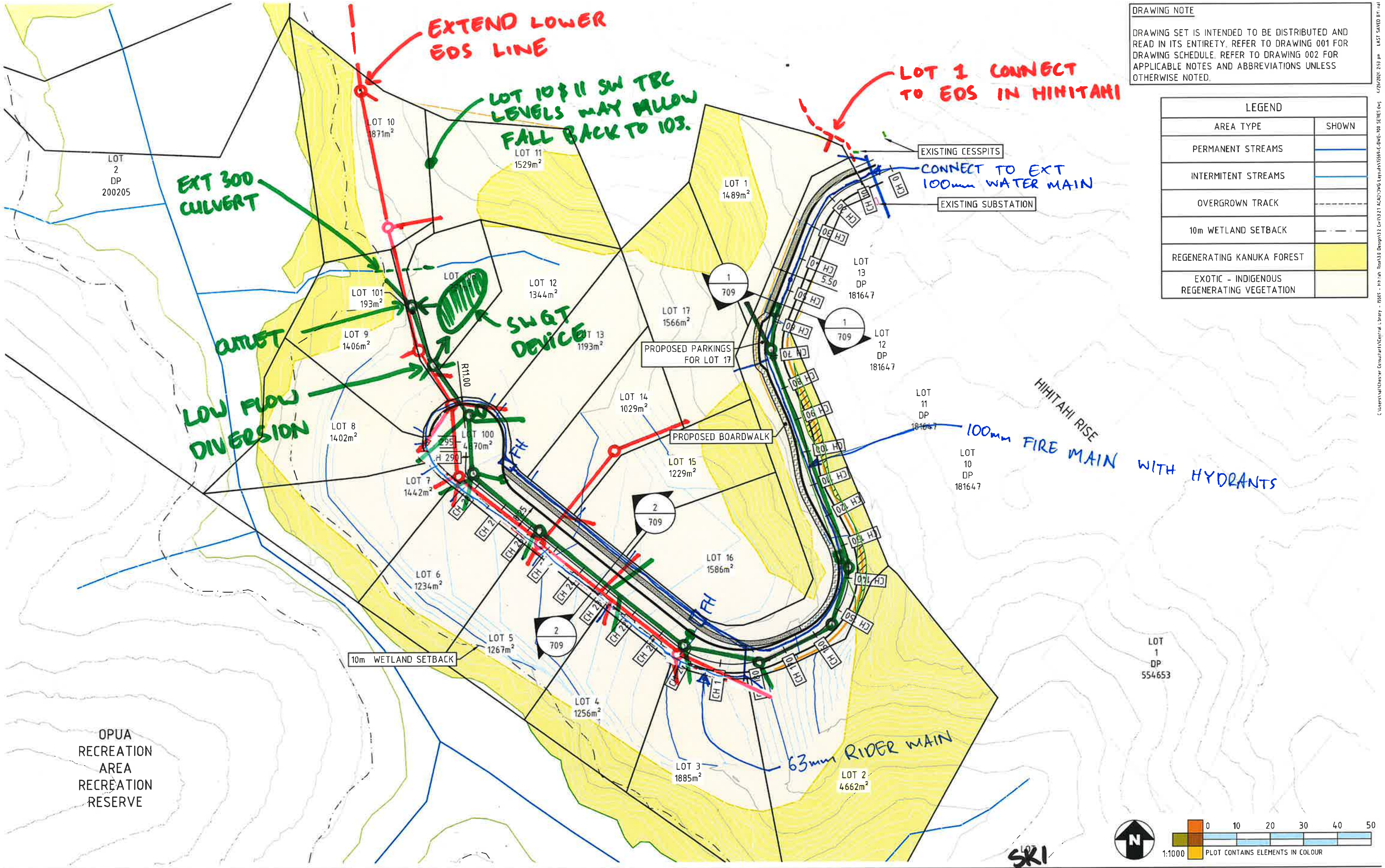
Attachment B

Concept 3-Waters Sketch



DRAWING NOTE
DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.
LEGEND
AREA TYPE
SHOWN
PERMANENT STREAMS
INTERMITENT STREAMS
OVERGROWN TRACK
10m WETLAND SETBACK
REGENERATING KANUKA FOREST
EXOTIC - INDIGENOUS REGENERATING VEGETATION
EXTEND LOWER EDS LINE
LOT 10 & 11 SW TBC LEVELS MAY ALLOW FALL BACK TO 103.
LOT 1 CONNECT TO EDS IN HIHITAHI
EXISTING CESSPITS
CONNECT TO EXT 100mm WATER MAIN
EXISTING SUBSTATION
EXT 300 CULVERT
OUTLET
SWQT DEVICE
LOW FLOW DIVERSION
100mm FIRE MAIN WITH HYDRANTS
63mm RIDER MAIN
HIHITAHI RISE
PROPOSED PARKINGS FOR LOT 17
PROPOSED BOARDWALK
10m WETLAND SETBACK
LOT 2 DP 200205
LOT 10 1871m²
LOT 11 1529m²
LOT 1 1489m²
LOT 101 193m²
LOT 12 1344m²
LOT 17 1566m²
LOT 9 1406m²
LOT 13 1193m²
LOT 14 1029m²
LOT 8 1402m²
LOT 100 4470m²
LOT 15 1229m²
LOT 7 1442m²
LOT 16 1586m²
LOT 6 1234m²
LOT 5 1267m²
LOT 4 1256m²
LOT 3 1885m²
LOT 2 4662m²
LOT 13 DP 181647
LOT 12 DP 181647
LOT 11 DP 181647
LOT 10 DP 181647
LOT 1 DP 554653
OPUA RECREATION AREA RECREATION RESERVE
1:1000
PLOT CONTAINS ELEMENTS IN COLOUR
0 10 20 30 40 50

Drafter: V. RIVIER	Job Title:	PROPOSED SUBDIVISION OF LOT 21 DP 181647 & LOT 2 DP 200205	Drawing: ~~700~~ SK1	Rev: 0	
Designer: N. JULL	Client:	HERON POINT LIMITED	Scale: 1:1000 @ A3		
Checker: N. JULL	Address:	47 HIHITAHI LANE, TE HAUMI, NORTHLAND	Project: 15569		
Date: 29/04/24	Drawing Title:	~~ROADING PLAN~~ HIGH LEVEL 3-WATERS	Issue: CONCEPT		

Rev Date Amendments By

DRAFT FOR COMMENT ONLY

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Attachment C

Email Correspondence

Nat Jull

From: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Sent: Thursday, 4 April 2024 10:22 am
To: Nat Jull
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Morning Nat,
Please see responses to your queries in red below.
As per my email dated 8 March 24 below, these responses will only apply to the new Lots within the areas of benefit for water supply and wastewater.
I have discussed the proposed subdivision with FNW staff, and the main concern is over the capacity of the sewer network to accommodate the additional loading as summarised below. Any overflows will discharge into the CMA and will be a risk to Council.
Happy to discuss further – maybe a Teams catch up at some stage?

Cheers
Sujeet

Sujeet Tikaram
Development Engineer - Infrastructure Strategy
M 027 566 1191 | **P** 6494015376 | Sujeet.Tikaram@fndc.govt.nz
An alliance between Far North District Council and Ventia

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

From: Nat Jull <nat@chester.co.nz>
Sent: Thursday, April 4, 2024 9:00 AM
To: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Cc: Chris Day <Chris.D@chester.co.nz>; Burnette O'Connor <burnette@thepc.co.nz>; Tanya Proctor <Tanya.Proctor@fndc.govt.nz>
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Kia ora Sujeet,

Have you managed to talk about this with the other Far North Waters staff yet?

Here are the questions again.

For 17 Lots – Updated Concept Scheme Attached [CONFIDENTIAL]

Wastewater

1. *Does the downstream network (i.e. reticulation and pumpstations) have capacity for this development? If not, what are the known constraints? (See attached, in section 8 of the Haigh Workman report completed in 2007 previous reporting on the matter).* The constraints are mainly

related to the capacity of the 2 pump stations downstream of the site. According to our data, discharge rates from the pump stations are resulting in surcharge within the incoming reticulation.

2. *We note that the downstream reticulation is / was a 'EDS reticulation system' which we understand means all sites must have pre-treatment. Is this still the case given the Paihia WWTP upgrades in recent times? As an alternative to EDS could we:* Given the proximity of the site and downstream network to the CMA, pre-treatment (EDS) is preferred.
   a. *Connect directly with no pre-treatment? Or,* Yes, in principle
   b. *Utilise low pressure sewer within the development so all WW goes through a grinder pump but is not treated?* Yes, in principle
3. *Advise of any other WW considerations for the site? (e.g. Council Development Contribution Expectations).* If the Lots are allowed to connect to the network, potentially a financial contribution towards upgrades will be required.
4. Does Council have on file the downstream EDS design report by Envriro-Impac Group Ltd (Hugh Ward) done in 1996 and referenced in the Haigh Workman report? Could not find the file on the system but will check again.

Water

1. *Does council foresee any issues with extending from the 100mm main in Hihitahi Rise to service the site for both potable and firefighting water supplies?* Hydrant testing will need to be undertaken to confirm compliant firefighting water supplies. Alternative firefighting supplies will be needed if pressures and flows from the retic are non-compliant. A booster pump may be required. FENZ approval will be required.
2. *Advise of any other WS considerations for the site?* Consideration to be given to on-site water tanks for supplementary water supplies.

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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From: Nat Jull
Sent: Monday, March 11, 2024 9:24 AM
To: 'Sujeet Tikaram' <Sujeet.Tikaram@fndc.govt.nz>
Cc: Chris Day <Chris.D@chester.co.nz>; Burnette O'Connor <burnette@thepc.co.nz>
Subject: RE: Lot 2 Hihitahi Rise, Paihia

Morning Sujeet,

Thankyou for your response and comment. I look forward to receiving further input once you have spoken to the asset team.

Note – all lots will **NEED** to connect, i.e. at this stage on-site disposal is not a feasible option so we will be seeking connection of circa 10-17 Lots.

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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From: Sujeet Tikaram <Sujeet.Tikaram@fndc.govt.nz>
Sent: Friday, March 8, 2024 1:42 PM
To: Nat Jull <nat@chester.co.nz>
Subject: Lot 2 Hihitahi Rise, Paihia

Hi Nat,
I received your RFS today regarding the proposed subdivision at this property.
As per snip below, the site is partially within the areas of benefit for sewer (red) and water supply (blue).
The new Lots created by the proposed subdivision that will be located within the AOBs will be allowed to connect to Council WW and WS services, and the other Lots will need on-site servicing.
I will discuss your RFS queries regarding sewer and water supplies further with other Far North Waters staff on Monday.
Happy to discuss further, please give me a call when available.

Cheers

Sujeet Tikaram
Development Engineer - Infrastructure Strategy
M 027 566 1191 | **P** 6494015376 | Sujeet.Tikaram@fndc.govt.nz
An alliance between Far North District Council and Ventia

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From: Chris Day
Sent: Friday, March 8, 2024 8:27 AM
To: Ask Us Team ask.us@fndc.govt.nz
Cc: 'Tanya.Proctor@fndc.govt.nz' Tanya.Proctor@fndc.govt.nz; Nat Jull nat@chester.co.nz; 'Burnette O'Connor' burnette@thepc.co.nz
Subject: FW: Hihitahi Rise - Wastewater & Water Supply

Hello,

Please see below request for service relating to wastewater and water supply at Hihitahi Rise, Te Haumi.

Ngā mihi / Kind Regards
Chris Day
Civil Engineer/Surveyor
M 020 452 2200
66 Gillies St, Kawakawa, Northland

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From: Tanya Proctor <Tanya.Proctor@fndc.govt.nz>
Sent: Friday, March 8, 2024 8:06 AM
To: Nat Jull <nat@chester.co.nz>
Cc: Burnette O'Connor <burnette@thepc.co.nz>; Chris Day <Chris.D@chester.co.nz>
Subject: RE: Hihitahi Rise - Wastewater & Water Supply

Kia ora Nat

Can I please ask you to raise a Request for Service (RFS) through ask.us@fndc.govt.nz so that the request can be lodged, tracked and allocated to the correct person through our system. It will then be allocated to one of our two Development Engineers.

Ngā mihi
Tanya

Tanya Proctor
Head of Infrastructure Strategy - Infrastructure Strategy
M 021 705-327 | **P** 6494015228 | Tanya.Proctor@fndc.govt.nz
Te Kaunihera o Te Hiku o te Ika | Far North District Council

Pokapū Kōrero 24-hāora | 24-hour Contact Centre 0800 920 029
fndc.govt.nz

From: Nat Jull <nat@chester.co.nz>
Sent: Wednesday, March 6, 2024 2:30 PM
To: Tanya Proctor <Tanya.Proctor@fndc.govt.nz>
Cc: Burnette O'Connor <burnette@thepc.co.nz>; Chris Day <Chris.D@chester.co.nz>
Subject: Hihitahi Rise - Wastewater & Water Supply

Good Afternoon Tanya,

I am hoping you can confirm receipt of this email and forward to the appropriate people/person in your team?

We have been engaged by our client (Heron Point Limited) to assist with 're-consenting' a development off Hihitahi Rise in Te Haumi, Paihia (Lot 2 DP 200205).

We are currently in the concept design phase but are looking to rapidly move into the developed design and resource consent lodgement phase over the next month or two. (This email can be considered early engagement with councils Infrastructure Team on Water and Wastewater. (Please advise if there is any better way to approach FNDC on this matter).

I have attached the previous scheme for 17 Lots of which consent has expired. The new scheme will be different as the development responds to the ecological features of the site in line with new environmental policy. i.e. don't read too much into the scheme, it will change but for the purpose of this inquiry, please assume a potential demand of up to/equivalent to the 17 Lots previously consented.

Please see below my questions for your consideration,

Wastewater

1. Does the downstream network (i.e. reticulation and pumpstations) have capacity for this development? If not, what are the known constraints? (See attached, in section 8 of the Haigh Workman report completed in 2007 previous reporting on the matter).
2. We note that the downstream reticulation is / was a 'EDS reticulation system' which we understand means all sites must have pre-treatment. Is this still the case given the Paihia WWTP upgrades in recent times? As an alternative to EDS could we:
    a. Connect directly with no pre-treatment? Or,
    b. Utilise low pressure sewer within the development so all WW goes through a grinder pump but is not treated?
3. Advise of any other WW considerations for the site? (e.g. Council Development Contribution Expectations).

Water

1. Does council foresee any issues with extending from the 100mm main in Hihitahi Rise to service the site for both potable and firefighting water supplies?
2. Advise of any other WS considerations for the site?

Thank you for your valuable time.

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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Appendix C – FENZ Consultation

Nat Jull

From: Goffin, Jason <Jason.Goffin@fireandemergency.nz>
Sent: Monday, 10 June 2024 9:12 am
To: Nat Jull
Subject: RE: 45 & 47 Hihitahi Rise, Paihia - FENZ Consultation
Attachments: 15569-C-COR-2024.05.31-FFWS Form.pdf

Good morning,

Attached approval.

Regards

Jason Goffin
Advisor Risk Reduction – Kaitohutohu Matua Whakaheke Moorea
Specialist Fire Investigator – Kaititiro Ahi Maatanga
Te Tai Tokerau
Te Hiku Region 1
9 Homestead Road Kerikeri

Mobile: 027 7066467
Email: jason.goffin@fireandemergency.nz
Fire Fact "A House Fire Can Become Fatal within 5 Minutes"

From: Nat Jull <nat@chester.co.nz>
Sent: Thursday, June 6, 2024 11:58 AM
To: Goffin, Jason <Jason.Goffin@fireandemergency.nz>
Subject: RE: 45 & 47 Hihitahi Rise, Paihia - FENZ Consultation

Hi Jason,

Please see attached.

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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From: Goffin, Jason <Jason.Goffin@fireandemergency.nz>
Sent: Thursday, June 6, 2024 11:06 AM
To: Nat Jull <nat@chester.co.nz>
Subject: RE: 45 & 47 Hihitahi Rise, Paihia - FENZ Consultation

Hi Nat,

Thankyou for the email, can you attach the FENZ form.
Your assistance is appreciated.

Regards

Jason Goffin
Advisor Risk Reduction – Kaitohutohu Matua Whakaheke Moorea
Specialist Fire Investigator – Kaititiro Ahi Maatanga
Te Tai Tokerau
Te Hiku Region 1
9 Homestead Road Kerikeri

Mobile: 027 7066467
Email: jason.goffin@fireandemergency.nz
Fire Fact "A House Fire Can Become Fatal within 5 Minutes"

From: Nat Jull <nat@chester.co.nz>
Sent: Friday, May 31, 2024 11:34 AM
To: Goffin, Jason <Jason.Goffin@fireandemergency.nz>
Subject: 45 & 47 Hihitahi Rise, Paihia - FENZ Consultation

Kia Ora Jason,

Hope you are well.

We are preparing a subdivision consent application for 17 Lots at the subject site. The subdivision is to be reticulated as per FNDC Engineering Design requirements. This email is a request for FENZ comment/conditions to support the resource consent application.

Please see attached:
- Draft Scheme
- Draft Civil Drawings (Mainly drawing 600 that concerns FENZ)
- Draft Landscape Plan
- Hydrant Flow Test Report
- FENZ Form

Key points to note:

Fire Fighting Water Supplies – Hydrant Flow

As seems to be the case all over FNDC the Hydrants on the existing line didn't test to FW2. It is providing 710 L/min, so half. In this instance we believe it may be due to a wound down valve or some other restriction between the reservoir and the hydrants tested. This is because it tested at 300 kPa static which makes sense because the reservoir is approximately 30m higher than the Hydrant with the pressure gauge. But then the residual pressure drops away rapidly when a hydrant on the line is flowed. As shown in the test results, they are experiencing 90 kPa of pressure loss to flow 710 L/min. In theory, a 100mm diameter main should only lose 50 kPa over the length between the Hydrant Flowed and Reservoir at this flow. As such, we conclude that the testing indicates a restriction in the line. Some investigation and potentially minor remedial works or maintenance could result in higher flows being achieved. This investigation should be carried out by council's asset team as it is an existing situation. With respect to this subdivision and to mitigate the potential that the reticulated network cannot provide full FW2 firefighting water supplies, we have made provision for supplementary firefighting water supply to be available from the constructed wetland within the subdivision.

Access Gradient

Due to the topography of the site a small section of the main access way is proposed at a grade > 16% (i.e. 20% max between CH 10 and CH 60). This is a relatively short length and is along a 5.5m wide section of the access. There should be no reason that a vehicle or fire appliance would need to stop or maneuverer along this length.

Bush Offset

Given the nature of the site, a 20m offset from the driplines of the naturally occurring forest on the periphery of the site to future house sites is not achievable. To mitigate this "Low flammability native species" planting buffers are proposed along with the urban reticulated firefighting water supplies as above. This is discussed further in the FENZ form.

Please feel free to give me a call if you wish to discuss any matters.

Ngā mihi mahana,
Nat Jull
Regional Manager (Northland NZ) BEngTech(Civil) MEngNZ
M +64 (0) 21 826 375

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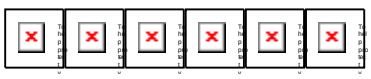

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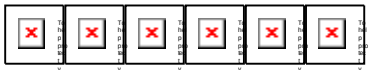

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Non-Reticulated Firefighting Water Supplies, Vehicular Access & Vegetation Risk Reduction Application for New and Existing Residential Dwellings and Sub-Divisions

Applicant Information

Applicants Information	
Name:	Heron Point Limited c/o Chester
Address:	Gillies Street, Kawakawa
Contact Details:	Nat Jull | Chester | 021 826 375
Return Email Address:	nat@chester.co.nz

Property Details

Property Details	
Address of Property:	45 & 47 Hihitahi Rise, Paihia
Lot Number/s:	Lot 2 DP 200205 and Lot 21 DP 181647
Dwelling Size: (Area = Length & Width)	N/A
Number of levels: (Single / Multiple)	N/A

Contents

Firefighting Water Supplies and Vegetation Risk Reduction Waiver

"Fire and Emergency New Zealand strongly recommends the installation of automatic fire detection system devices such as smoke alarms for early warning of a fire and fire suppression systems such as sprinklers in buildings (irrespective of the water supply) to provide maximum protection to life and property".

Waiver Explanation Intent

Fire and Emergency New Zealand [FENZ] use the New Zealand Fire Service [NZFS] Code of Practice for firefighting water supplies (SNZ PAS 5409:2008) (The Code) as a tool to establish the quantity of water required for firefighting purposes in relation to a specific hazard (Dwelling, Building) based on its fire hazard classification regardless if they are located within urban fire districts with a reticulated water supply or a non-reticulated water supply in rural areas. The code has been adopted by the Territorial Authorities and Water Supply Authorities. The code can be used by developers and property owners to assess the adequacy of the firefighting water supply for new or existing buildings.

The Community Risk Manager under the delegated authority of the Fire Region Manager and District Manager is responsible for approving applications in relation to firefighting water supplies. The Community Risk Manager may accept a variation or reduction in the amount of water required for firefighting for example; a single level dwelling measuring 200^{m2} requires 45,000L of firefighter water under the code, however the Community Risk Manager in Northland will except a reduction to 10,000L.

This application form is used for the assessment of proposed water supplies for firefighting in non-reticulated areas only and is referenced from (Appendix B – Alternative Firefighting Water Sources) of the code. This application also provides fire risk reduction guidance in relation to vegetation and the 20-metre dripline rule under the Territorial Authority's District Plan. Fire and Emergency New Zealand are not a consenting authority and the final determination rests with the Territorial Authority.

For more information in relation to the code of practice for Firefighting Water supplies, Emergency Vehicle Access requirements, Home Fire Safety advice and Vegetation Risk Reduction Strategies visit www.fireandemergency.nz

1. Fire Appliance Access to alternative firefighting water sources - Expected Parking Place & Turning circle

Fire and Emergency have specific requirements for fire appliance access to buildings and the firefighting water supply. This area is termed the hard stand. The roading gradient should not exceed 16%. The roading surface should be sealed, able to take the weight of a 14 to 20-tonne truck and trafficable at all times. The minimum roading width should not be less than 4 m and the property entrance no less 3.5 metres wide. The height clearance along access ways must exceed 4 metres with no obstructions for example; trees, hanging cables, and overhanging eaves.

1 (a) Fire Appliance Access / Right of Way	
Is there at least 4 metres clearance overhead free from obstructions?	☒YES ☐NO
Is the access at least 4 metres wide?	☒YES ☐NO
Is the surface designed to support a 20-tonne truck?	☒YES ☐NO
Are the gradients less than 16%	☐YES ☒NO
Fire Appliance parking distance from the proposed water supply is 1.8 metres	

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

If access to the proposed firefighting water supply is not achievable using a fire appliance, firefighters will need to use portable fire pumps. Firefighters will require at least a one-metre wide clear path / walkway to carry equipment to the water supply, and a working area of two metres by two metres for firefighting equipment to be set up and operated.

1 (b) Restricted access to firefighting water supply, portable pumps required
Has suitable access been provided? ☒YES ☐ NO
Comments: Complaint Hydrants are proposed and a Hardstand area adjacent to the supplementary static water supply volume is proposed.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2. Firefighting Water Supplies (FFWS)

What are you proposing to use as your firefighting water supply?

2 (a) Water Supply Single Dwelling	
Tank	☐ Concrete Tank ☐ Plastic Tank ☐ Above Ground (Fire Service coupling is required - 100mm screw thread suction coupling) ☐ Part Buried (max exposed 1.500 mm above ground) ☐ Fully Buried (access through filler spout) Volume of dedicated firefighting water Click or tap here to enter text.litres

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2 (b) Water Supply Multi-Title Subdivision Lots / Communal Supply	
Tank Farm	☐ Concrete Tank ☐ Plastic Tank ☐ Above Ground (Fire Service coupling is required - 100mm screw thread suction coupling) ☐ Part Buried (max exposed 1.500mm above ground) ☐ Fully Buried (access through filler spout) Number of tanks provided Click or tap here to enter text. Number of Tank Farms provided Click or tap here to enter text. Water volume at each Tank Farm Click or tap here to enter text. Litres Volume of dedicated firefighting water Click or tap here to enter text. litres

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

2 (c) Alternative Water Supply	
Pond:	Volume of water: 150 m3
Pool:	Volume of water: Click or tap here to enter text.
Other:	Specify: Fire Hydrants
	Volume of water: 21.3m3 in 30min

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3. Water Supply Location

The code requires the available water supply to be at least 6 metres from a building for firefighter safety, with a maximum distance of 90 metres from any building. This is the same for a single dwelling or a Multi-Lot residential subdivision. Is the proposed water supply within these requirements?

3 (a) Water Supply Location	
Minimum Distance:	*Is your water supply at least 6 metres from the building?* ☒YES ☐ NO
Maximum Distance	*Is your water supply no more than 90 metres from the building?* ☒YES ☐ NO

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3 (b) Visibility
How will the water supply be readily identifiable to responding firefighters? E.g.: tank is visible to arriving firefighters or, there are signs / markers posts visible from the parking place directing them to the tank etc.
Comments: Hydrant Markers and obvious pond adjacent to a driveway.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

3 (c) Security
How will the FFWS be reasonably protected from tampering? E.g.: light chain and padlock or, cable tie on the valve etc.
Explain how this will be achieved: N/A

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

4. Adequacy of Supply

The volume of storage that is reserved for firefighting purposes must not be used for normal operational requirements. Additional storage must be provided to balance diurnal peak demand, seasonal peak demand and normal system failures, for instance power outages. The intent is that there should always be sufficient volumes of water available for firefighting, except during Civil Défense emergencies or by prior arrangement with the Fire Region Manager.

4 (a) Adequacy of Water supply
Note: *The owner must maintain the firefighting water supply all year round. How will the usable capacity proposed be reliably maintained? E.g. automatically keep the tank topped up, drip feed, rain water, ballcock system, or manual refilling after use etc.*
Comments: Hydrants will be publicly maintained assets. The wetland is feed be the reticulated stormwater network.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

5. Alternative Method using Appendix's H & J

If Table 1 + 2 from the Code of Practice is not being used for the calculation of the Firefighting Water Supply, a competent person using appendix H and J from the Code of Practice can propose an alternative method to determine firefighting water supply adequacy.

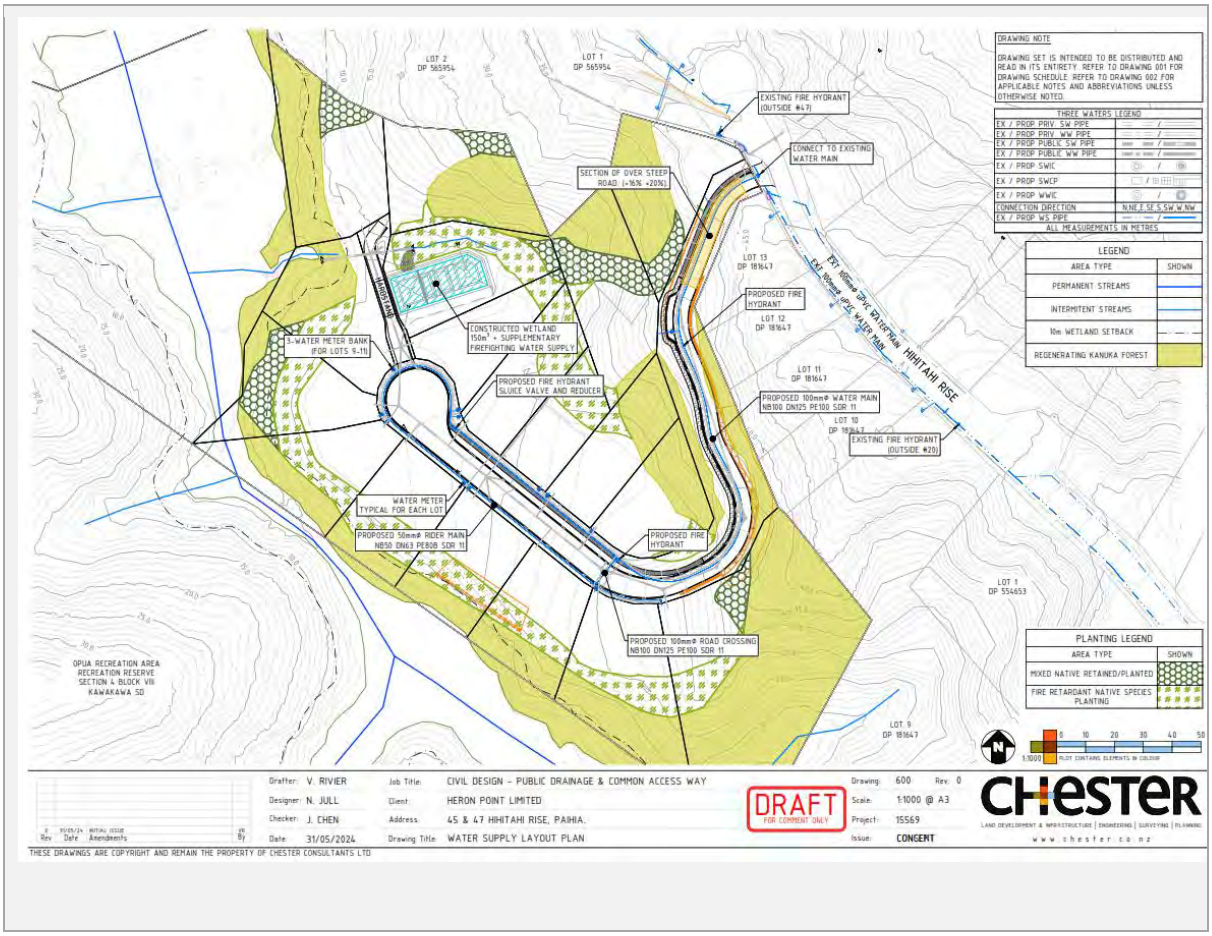
Appendix H describes a method for determining the maximum fire size in a structure. Appendix J describes a method for assessing the adequacy of the firefighting water supply to the premises.

5 (a) Alternative Method Appendix H & J	
If an alternative method of determining the FFWS has been proposed, who proposed it? Name: Click or tap here to enter text.	
Contact Details: Click or tap here to enter text.	
Proposed volume of storage?	Litres: Click or tap here to enter text.
Comments: Click or tap here to enter text. ** Please provide a copy of the calculations for consideration.*	

Internal FENZ Risk Reduction comments only: Click or tap here to enter text.

6. Diagram

Please provide a diagram identifying the location of the dwelling/s, the proposed firefighting water supply and the attendance point of the fire appliance to support your application.



Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

7. Vegetation Risk Reduction - Fire + Fuel = Why Homes Burn

Properties that are residential, industrial or agricultural, are on the urban–rural interface if they are next to vegetation, whether it is forest, scrubland, or in a rural setting. Properties in these areas are at greater risk of wildfire due to the increased presence of nearby vegetation.

In order to mitigate the risk of fire spread from surrounding vegetation to the proposed building and vice-versa, Fire Emergency New Zealand recommends the following;

I. *Fire safe construction*

Spouting and gutters – Clear regularly and consider screening with metal mesh. Embers can easily ignite dry material that collects in gutters.

Roof – Use fire resistant material such as steel or tile. Avoid butanol and rubber compounds.

Cladding – Stucco, metal sidings, brick, concrete, and fibre cement cladding are more fire resistant than wood or vinyl cladding.

II. *Establish Safety Zones around your home.*

Safety Zone 1 is your most import line of defence and requires the most consideration. Safety Zone 1 extends to 10 metres from your home, you should;

a) *Mow lawn and plant low-growing fire-resistant plants; and*
b) *Thin and prune trees and shrubs; and*
c) *Avoid tall trees close to the house; and*
d) *Use gravel or decorative crushed rock instead of bark or wood chip mulch; and*
e) *Remove flammable debris like twigs, pine needles and dead leaves from the roof and around and under the house and decks; and*
f) *Remove dead plant material along the fence lines and keep the grass short; and*
g) *Remove over hanging branches near powerlines in both Zone 1 and 2.*

III. *Safety Zone 2 extends from 10 – 30 metres of your home.*

a) *Remove scrub and dead or dying plants and trees; and*
b) *Thin excess trees; and*
c) *Evenly space remaining trees so the crowns are separated by 3-6 metres; and*
d) *Avoid planting clusters of highly flammable trees and shrubs*
e) *Prune tree branches to a height of 2 metres from the ground.*

IV. *Choose Fire Resistant Plants*

Fire resistant plants aren't fire proof, but they do not readily ignite. Most deciduous trees and shrubs are fire resistant. Some of these include: poplar, maple, ash, birch and willow. Install domestic sprinklers on the exterior of the sides of the building that are less 20 metres from the vegetation. Examples of highly flammable plants are: pine, cypress, cedar, fir, larch, redwood, spruce, kanuka, manuka.

For more information please go to https://www.fireandemergency.nz/at-home/the-threat-of-rural-fire/

If your building or dwelling is next to vegetation, whether it is forest, scrubland, or in a rural setting, please detail below what Risk Reduction measures you will take to mitigate the risk of fire development and spread involving vegetation?

7 (a) Vegetation Risk Reduction Strategy
The proposed subdivision will enable development of houses within 20m of bush. This is technically a breach of rule 12.4.6.1.2. Mitigation factors are: a 3m minimum buffer of "Fire retardant' Native Species planting is proposed between Lot building areas and bush. This planting will be completed as part of the subdivision and protected by bush covenants. Furthermore, it is noted that the priority bush of reverse sensitivity risk is the Opua forest. This forest is physically separated by at least 20m with fire-retardant planting and the existing natural wetland between them.

Internal FENZ Risk Reduction comments only:

Click or tap here to enter text.

8. Applicant

Checklist	
☒	Site plan (scale drawing) – including; where to park a fire appliance, water supply, any other relevant information.
☒	Any other supporting documentation (diagrams, consent).

I submit this proposal for assessment.

Name: Nat Jull Dated: 31/05/2024

Contact No.: 021 826 375

Email: nat@chester.co.nz

Signature: Click or tap here to enter text.

9. Approval

In reviewing the information that you have provided in relation to your application being approximately a Click or tap here to enter text. *square metre,* Choose an item. *dwelling/sub division, and non-sprinkler protected.*

The Community Risk Manager of Fire and Emergency New Zealand under delegated authority from the Fire Region Manager, Te Hiku, and the District Manager has assessed the proposal in relation to firefighting water supplies and the vegetation risk strategy. The Community Risk Manager Choose an item. *agree with the proposed alternate method of Fire Fighting Water Supplies. Furthermore, the Community Risk Manager agrees with the Vegetation Risk Reduction strategies proposed by the applicant.*

Name: Click or tap here to enter text.

Signature: Click or tap here to enter t

P.P on behalf of the Community Risk

Fire and Emergency New Zealand
Te Tai Tokerau / Northland District

APPROVED
By GoffinJ at 9:10 am, Jun 10, 2024

Jason Goffin- Advisor Risk Reduction

Appendix D – Hydrant Flow Testing

FIRE & SAFETY DESIGN NZ LIMITED

FIRE HYDRANT FLOW TEST REPORT

ADDRESS

Hihitahi Rise,

Paihia, Northland

CLIENT

Heron Point Limited

CONDUCTED BY

Colin Thomson & Mike Lindsay

DATE

01st of May 2024

09 430 0498
info@fsd.nz
fsd.nz

FIRE & SAFETY DESIGN NZ LTD

01st May 2024

Dear Conal,

We have pleasure in submitting our findings from the flow test that we carried out on the 01st of May 2024 for your project; Hihitahi Rise, Paihia.

We have given the results of a single hydrant flowed. These results are shown on a graph in this report. This will show the flow rate in litres per minute (L/Min) and the residual pressure (kPa) at that flow.

DEFECTS/NOTES:

We attempted flowing 2 hydrants simultaneously to FW2 requirements however due to the substantial drop in residual pressure when opening a second hydrant we were unable to achieve any results beyond what was achieved from a single hydrant.

Hydrant outside 47 (end of the cul-de-sac) is leaking – FENZ have been notified of this. The leaking hydrant had no impact on the results of the flow test.

The supply pipework and sizing for the site underground supply has not been confirmed.

We note that in the region seasonal fluctuations occur in town mains supply pressure and flows. We suggest this be factored into your calculations. It is the client's responsibility to consult with Fire and Emergency NZ and local council authorities to ensure that the available firefighting water will meet any consent requirements of SNZS4509:2008.

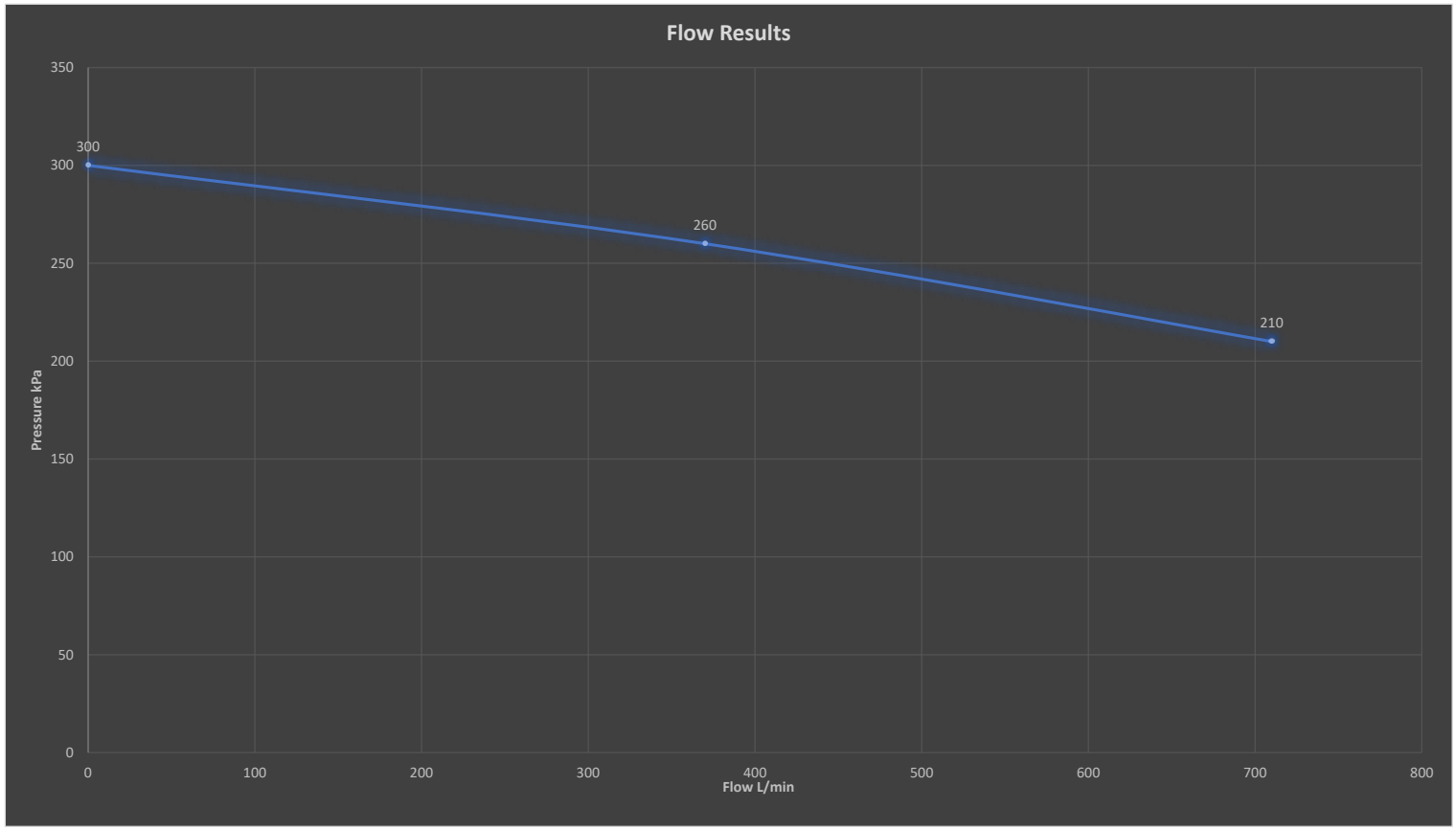
Kindest Regards,

Mike Lindsay
Fire & Safety Design NZ Ltd

FIRE HYDRANT FLOW TEST

Site:	Hihitahi Rise, Paihi	Date:	1/05/2024
Client:	Heron Point Ltd	Time:	10.30 am
Conducted By:	Colin Thomson & Mike Lindsay		
Hydrant Flowed Location:	1x Hydrants Flowed - Hihitahi Rise(See attached map for specific locations)		
Hydrant Asset ID:	Hydrant outside #20 - Flowed		
	Hydrant outside #47 - Pressure Read		

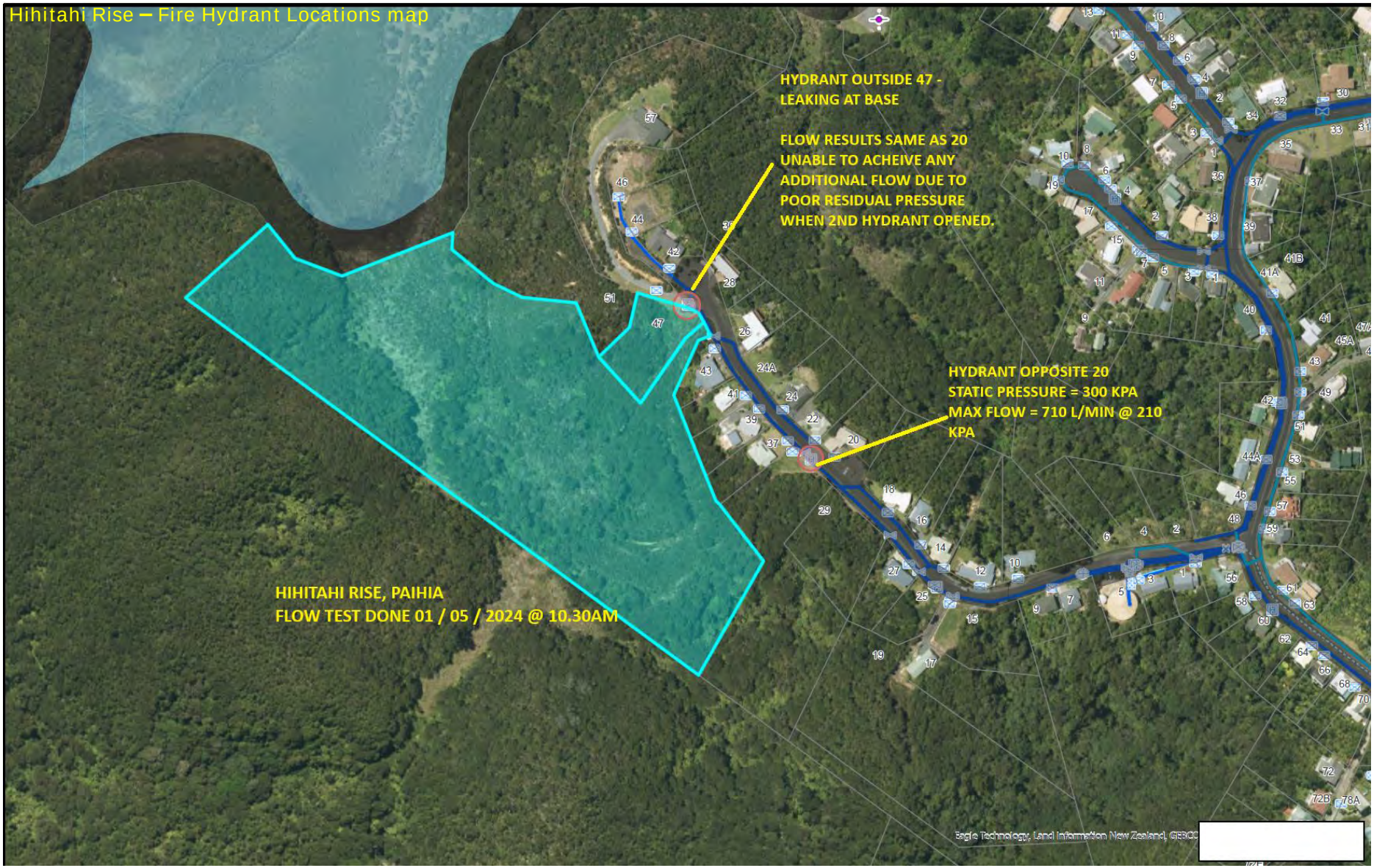
FIRE & SAFETY DESIGN NZ LTD



Key	
Single Hydrant Flowed	
Hydrant outside #20	
L/Min	KPA
0	300
370	260
710	210

Static Pressure taken from Hydrant outside #20

Hihitahi Rise – Fire Hydrant Locations map



Appendix 5:

Scheme Plan and Engineering Drawings, prepared by Chesters Limited

CIVIL ENGINEERING DRAWING SCHEDULE

REVISION DATE	31/05/2024									

SHEET	TITLE	REVISION									
001	DRAWING SCHEDULE	0									
100	EXISTING SITE PLAN	0									
110	PROPOSED SITE PLAN	0									
200	EARTHWORKS PLAN	0									
201	BULK EARTHWORKS LS 01	0									
202	BULK EARTHWORKS LS 02	0									
203	BULK EARTHWORKS LS 03	0									
210	EROSION AND SEDIMENT CONTROL PLAN	0									
300	RETAINING WALL PLAN	0									
400	STORMWATER LAYOUT PLAN	0									
420	STORMWATER - WETLAND DETAILS	0									
421	WETLAND CROSS SECTION	0									
430	PROPOSED CULVERT LONG SECTION	0									
500	WASTEWATER LAYOUT PLAN	0									
600	WATER SUPPLY LAYOUT PLAN	0									
700	ROADING PLAN	0									
701	ROAD LONG SECTION	0									
702	ROAD XS 01	0									
703	ROAD XS 02	0									
704	ROAD XS 03	0									
705	ROAD XS 04	0									
706	ROAD XS 05	0									
707	ROAD XS 06	0									
708	TYPICAL CROSS SECTIONS	0									
800	COMMON ACCESS WAY PLAN AND LONG SECTION	0									
801	COMMON ACCESS WAY DETAILS	0									
900	SECONDARY FLOW PLAN	0									

SCHEDULE LEGEND	
ORIGINAL ISSUE	0
NOT REVISED	
REVISED	1
NOT INCLUDED IN SET	-
DELETED FROM SET	~~TITLE~~

CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
HERON POINT LIMITED
45 & 47 HIHITAHI RISE, PAIHIA

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: DRAWING SCHEDULE

Drawing: 001 Rev: 0
Scale: NTS
Project: 15569
Issue: CONSENT

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ROAD

LOT 2
DP 565954

LOT 1
DP 565954

LOT 21
DP 181647

LOT 13
DP 181647

LOT 12
DP 181647

LOT 11
DP 181647

LOT 10
DP 181647

LOT 2
DP 200205

LOT 1
DP 554653

LOT 9
DP 181647

OPUA RECREATION AREA
RECREATION RESERVE
SECTION 4 BLOCK VIII
KAWAKAWA SD

HIHITAHI RISE

EXISTING SERVICES TO BE RELOCATED

EXISTING DOUBLE CP

EXISTING SUB STATION

EXISTING CULVERT

10.0
20.0
30.0
40.0
50.0

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX. SW PIPE	
EX. SW PIPE ABANDON	
EX. WW PIPE	
EX. WW PIPE ABANDON	
EX. SWIC / CP	/
EX. WWIC	
EX. IC ABANDON / DEMO	
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX. WS PIPE	
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
OVERGROWN TRACK	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	
EXOTIC - INDIGENOUS REGENERATING VEGETATION	

1:1000 — 0 10 20 30 40 50 — PLOT CONTAINS ELEMENTS IN COLOUR

C:\Users\JackChen\Chester Consultants\Central Library - 15569 - Hihitahi Rise\3.0 Design\3.2 Civil\3.2.1 ACAD\DWG Layouts\15569-C-DWG-001-002-100.dwg 6/7/2024 10:18 am LAST SAVED BY: JackChen

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	EXISTING SITE PLAN

Drawing:	100	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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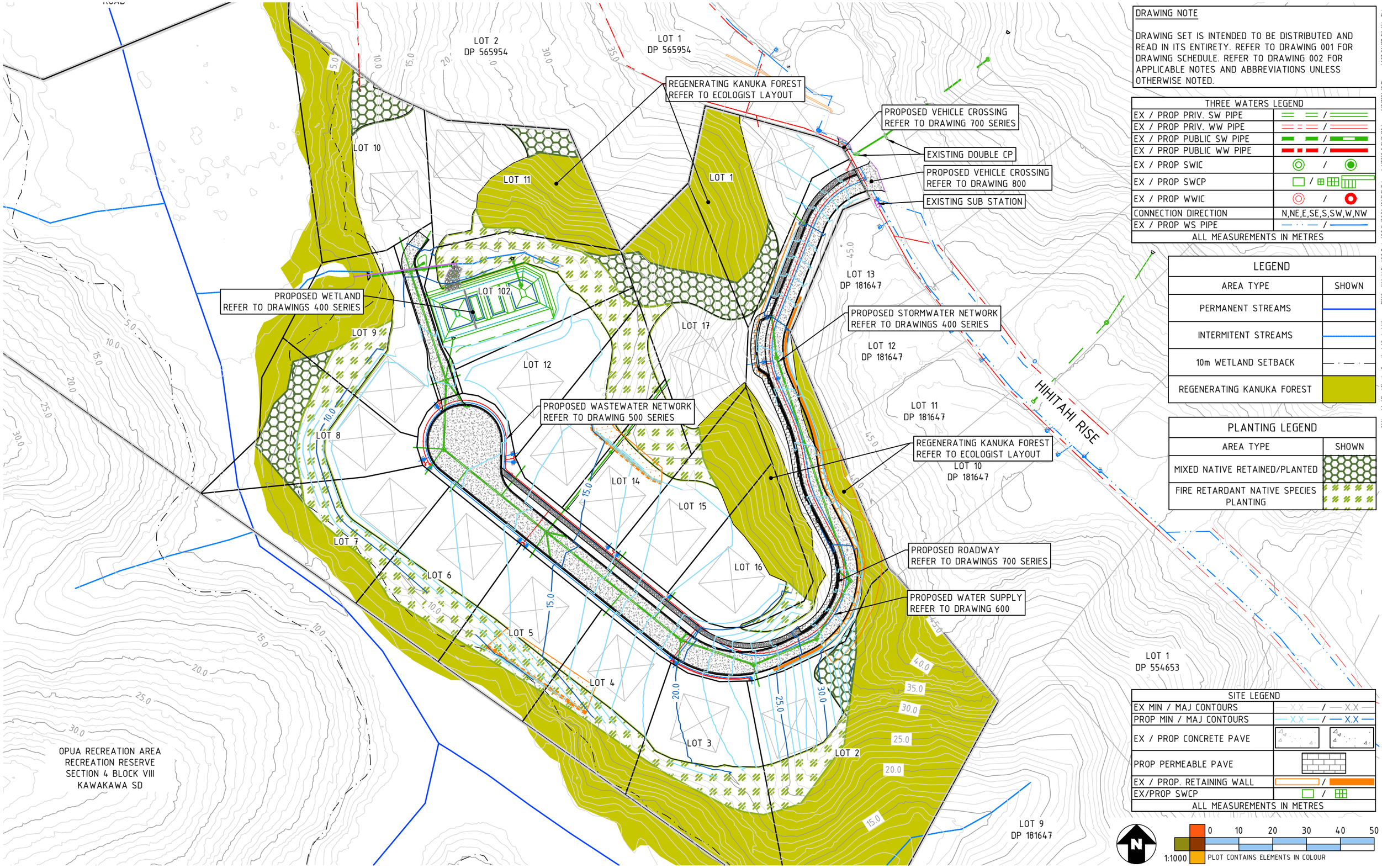

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	/
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	/
EX/PROP SWCP	/
ALL MEASUREMENTS IN METRES	

N

0 10 20 30 40 50

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: PROPOSED SITE PLAN

Drawing: 110 Rev: 0
Scale: 1:1000 @ A3
Project: 15569
Issue: CONSENT

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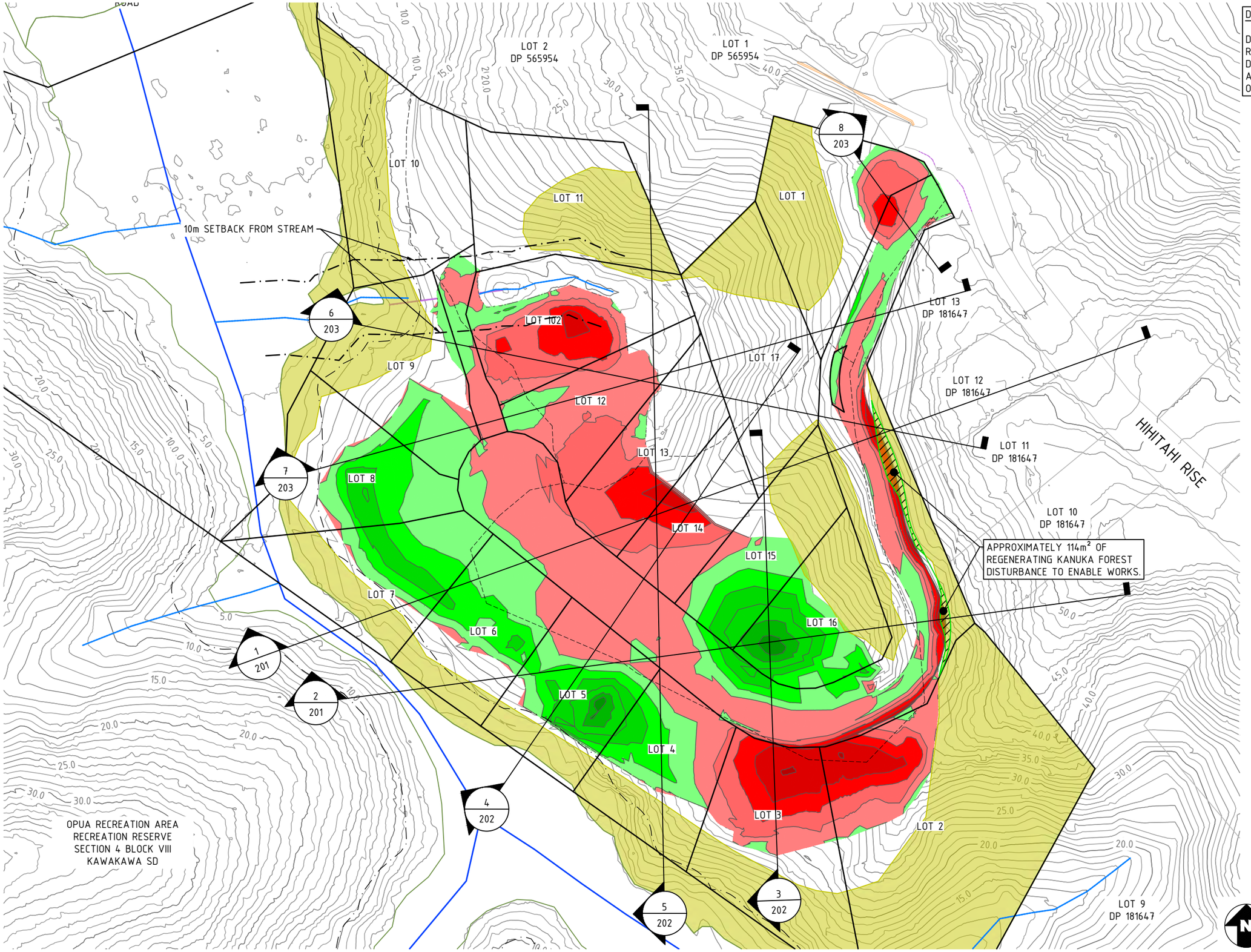

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LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
OVERGROWN TRACK	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	
EXOTIC - INDIGENOUS REGENERATING VEGETATION	

CUT/FILL DEPTHS TABLE

LOWER RANGE (m)	UPPER RANGE (m)	COLOUR
-6.00	-5.00	
-5.00	-4.00	
-4.00	-3.00	
-3.00	-2.00	
-2.00	-1.00	
-1.00	0.00	
0.00	1.00	
1.00	2.00	
2.00	3.00	
3.00	4.00	
4.00	5.00	
5.00	6.00	

AREA OF EARTHWORKS: 14124m²

EARTHWORK VOLUMES (m³)		
CUT	FILL	NET (CUT)
8687	7260	1427
EARTHWORKS VOLUMES WITHIN 10m STREAM SET BACK		
275	44	

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: EARTHWORKS PLAN

Drawing: 200 Rev: 0
Scale: 1:1000 @ A3
Project: 15569
Issue: CONSENT

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LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

DRAWING NOTE

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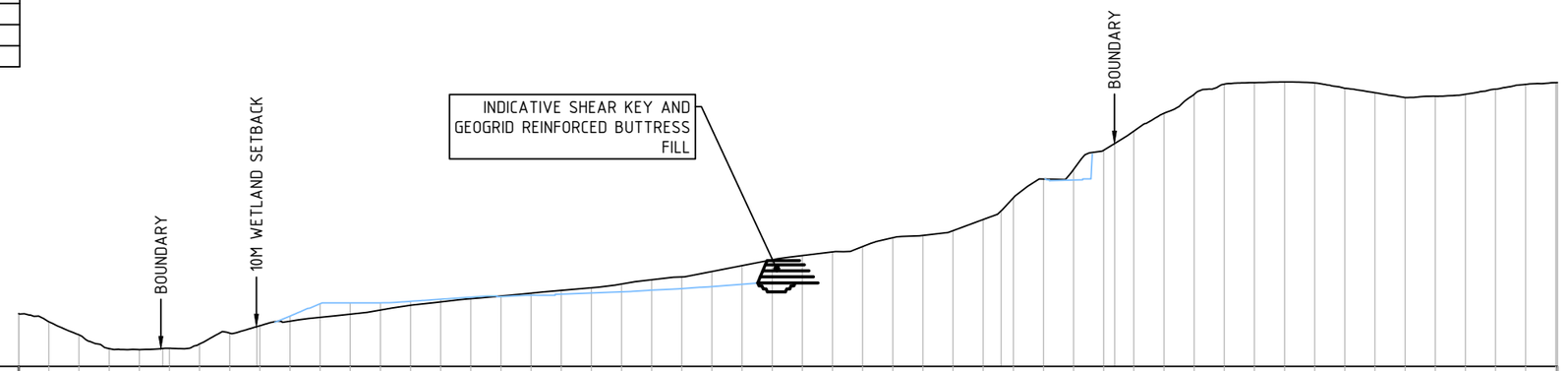
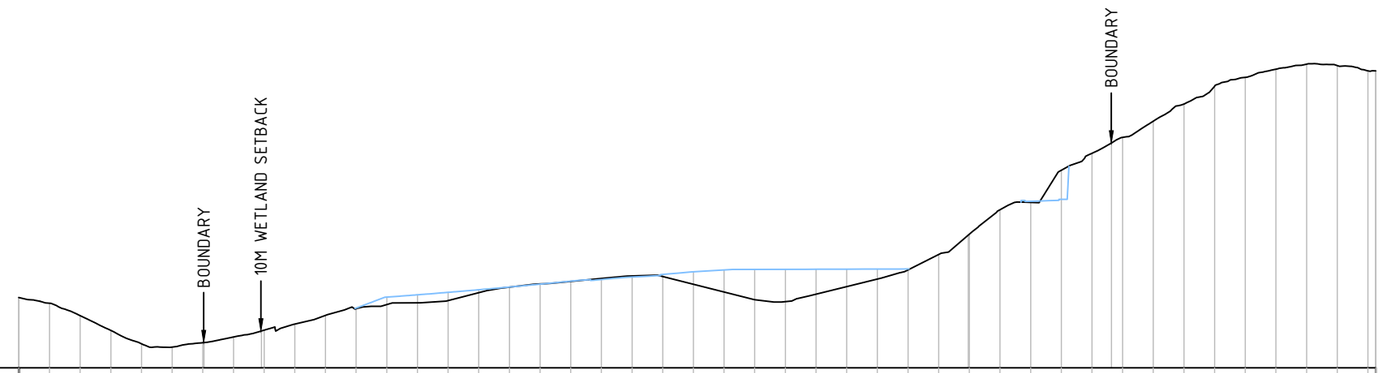


1
DATUM: 2.00
VERT. EXAGGERATION 1:1

CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	**255**
EXISTING LEVELS	10.71	9.38	7.21	4.91	4.75	4.97	5.68	7.50	8.71	9.46	10.10	10.62	11.31	12.10	12.65	13.19	13.63	14.10	14.56	15.00	15.61	16.33	16.80	17.70	18.67	19.58	20.33	20.94	21.82	23.29	23.67	24.44	26.30	29.88	33.01	34.59	37.77	40.96	43.91	47.04	48.72	48.99	49.09	48.93	48.06	47.32	46.50	46.73	47.05	47.91	48.69	**49.00**
DESIGN LEVELS										10.26	12.30	12.47	12.48	12.72	13.07	13.41	13.51	13.73	13.91	14.09	14.29	14.57	14.82	15.16	15.54											32.81																				
CUT/FILL DEPTHS										0.80	2.20	1.85	1.18	0.62	0.42	0.23	-0.12	-0.37	-0.65	-0.90	-1.32	-1.75	-1.98	-2.53	-3.12											-1.78																				



2
DATUM: 2.00
VERT. EXAGGERATION 1:1

CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	221
EXISTING LEVELS	13.44	12.51	10.50	8.10	5.91	5.36	6.07	7.00	8.11	9.11	10.52	11.60	12.27	12.58	12.93	14.23	15.12	15.66	16.06	16.54	16.95	16.86	15.59	14.33	13.07	12.77	13.97	15.20	16.43	17.93	20.44	23.76	27.74	28.94	34.18	36.94	39.53	42.18	44.96	47.87	49.32	50.65	51.47	51.24	50.38	50.39
DESIGN LEVELS												11.71	13.50	13.88	14.28	14.70	15.15	15.62	16.11	16.36	16.78	17.21	17.63	17.93	18.02	18.03	18.05	18.06	18.08	18.10				29.13	29.44												
CUT/FILL DEPTHS												0.11	1.22	1.30	1.35	0.48	0.03	-0.05	0.05	-0.18	-0.17	0.35	2.04	3.59	4.95	5.26	4.07	2.86	1.64	0.17				0.19	-4.74												

1:1000 0 10 20 30 40 50 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	BULK EARTHWORKS LS 01

Drawing:	201	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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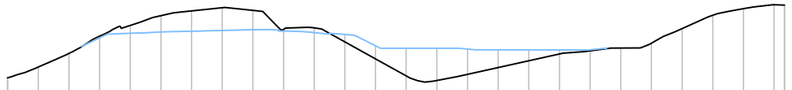

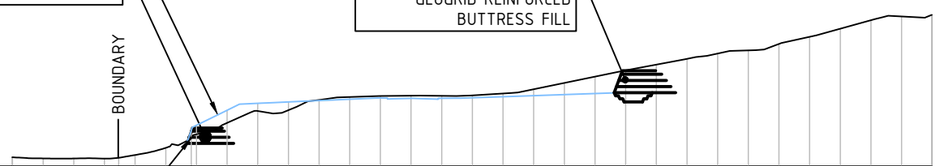

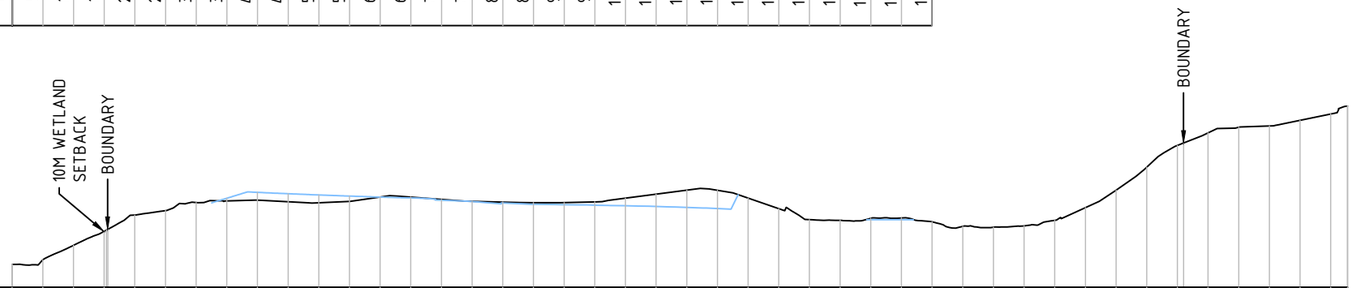

3
DATUM: 10.00
VERT. EXAGGERATION 1:1

CUT/FILL DEPTHS				-0.33	-1.32	-2.70	-3.35	-3.75	-3.20	-0.29	-0.81	1.18	2.13	4.46	5.24	4.10	2.86	1.74	0.63	0.13							
DESIGN LEVELS				19.70	20.46	20.66	20.80	20.92	21.04	20.83	20.57	20.29	18.45	18.03	18.03	17.90	17.77	17.76	17.75	17.77							
EXISTING LEVELS	13.23	14.99	17.21	20.03	21.78	23.37	24.15	24.67	24.24	21.12	21.39	19.11	16.33	13.57	12.79	13.80	14.91	16.01	17.12	17.63	18.10	18.88	21.26	23.43	24.52	25.15	25.10
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	127

4
DATUM: 4.00
VERT. EXAGGERATION 1:1

CUT/FILL DEPTHS							1.45	2.07	1.26	1.35	-0.10	-0.36	-0.32	-0.43	-0.40	-0.39	-0.53	-1.04	-1.90	-2.76											
DESIGN LEVELS							10.63	13.09	14.23	14.45	14.68	14.90	15.11	15.04	15.05	15.13	15.31	15.48	15.66	15.83											
EXISTING LEVELS	5.44	5.25	5.24	5.22	5.81	6.97	9.18	11.02	12.98	13.11	14.78	15.26	15.43	15.47	15.45	15.52	15.83	16.52	17.55	18.58	19.61	20.53	21.47	22.34	22.86	23.89	25.07	26.39	27.77	28.39	28.66
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150

5
DATUM: 2.00
VERT. EXAGGERATION 1:1

CUT/FILL DEPTHS								0.43	1.27	1.31	1.28	0.86	0.00	-0.13	-0.13	-0.04	-0.15	-0.26	-0.34	-0.54	-1.23	-2.01
DESIGN LEVELS								16.51	17.47	17.24	17.04	16.86	16.70	16.55	16.18	15.97	15.73	15.52	15.45	15.37	15.29	15.16
EXISTING LEVELS	5.70	6.45	8.83	11.12	13.76	14.49	15.80	16.08	16.19	15.93	15.76	16.00	16.70	16.68	16.31	16.00	15.88	15.79	15.79	15.92	16.52	17.17
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105

CUT/FILL DEPTHS	-2.82	-2.97					-0.24	-0.29															
DESIGN LEVELS	15.00	14.82					13.00	13.00															
EXISTING LEVELS	17.83	17.79	16.52	14.80	13.01	12.90	13.24	13.29	12.65	11.93	11.79	11.98	12.90	14.97	17.82	21.58	25.12	27.16	28.07	28.29	29.20	30.23	31.52
CHAINAGE	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	218

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

LONGSECTION LEGEND	
EXISTING GROUND	▬
PROPOSED GROUND	▬
ALL MEASUREMENTS IN METRES	

C:\Users\JackChen\Chester Consultants\Central Library - 15569 - Hihitahi Rise\3.0 Design\3.2 Civil\3.2.1 ACAD\DWG Layouts\15569-C-DWG-200 SERIES.dwg 6/7/2024 10:19 am LAST SAVED BY: nat

PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: BULK EARTHWORKS LS 02

Drawing: 202 Rev: 0
Scale: 1:1000 @ A3
Project: 15569
Issue: CONSENT

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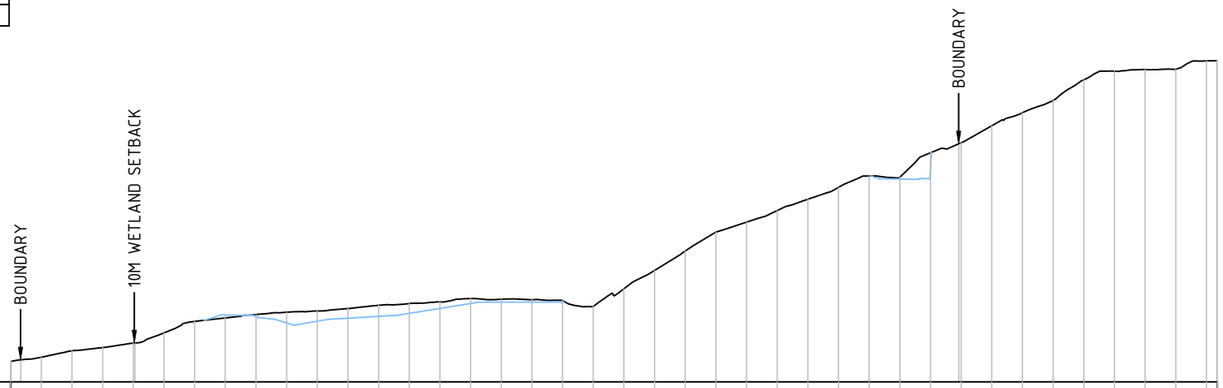
LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

DRAWING NOTE

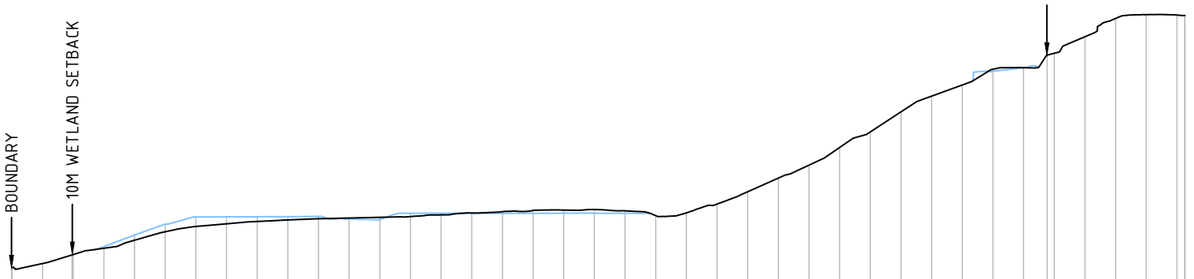
DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

6
DATUM: 0.00
VERT. EXAGGERATION 1:1



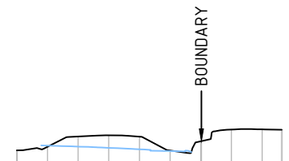
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	195	197
EXISTING LEVELS	3.34	4.03	5.07	5.61	6.32	7.99	9.86	10.43	10.98	11.36	11.57	11.95	12.49	12.77	13.04	13.59	13.48	13.40	13.25	12.32	15.18	18.17	21.34	24.41	26.05	27.93	29.79	31.72	33.58	33.38	37.36	38.99	41.77	43.89	45.90	49.25	50.64	50.91	50.98	52.33	52.35
DESIGN LEVELS								10.92	10.65	9.62	9.90	10.39	10.69	11.18	11.98	12.79	13.00	13.00	13.00											33.06	34.88										
CUT/FILL DEPTHS								0.49	-0.33	-1.74	-1.66	-1.57	-1.80	-1.59	-1.06	-0.80	-0.48	-0.40	-0.25											-0.32	-2.47										

7
DATUM: 0.00
VERT. EXAGGERATION 1:1



CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150	155	160	165	170	175	180	185	190	191
EXISTING LEVELS	4.15	4.81	6.28	7.29	8.61	9.99	10.86	11.28	11.67	11.92	12.10	12.22	12.35	12.46	12.74	13.04	13.26	13.46	13.53	13.61	13.42	12.62	13.07	14.49	16.49	18.73	20.85	23.73	26.25	29.52	32.09	33.90	36.48	36.74	39.08	41.77	44.74	45.38	45.32	45.25
DESIGN LEVELS				7.56	9.46	11.22	12.40	12.42	12.44	12.46	12.49	12.06	11.98	13.00	13.00	13.00	13.00	13.00	13.02	13.00	13.00													36.14	36.73							
CUT/FILL DEPTHS				0.27	0.85	1.22	1.54	1.14	0.77	0.55	0.39	-0.16	-0.37	0.54	0.26	-0.04	-0.26	-0.46	-0.51	-0.61	-0.42													-0.34	-0.01							

8
DATUM: 38.00
VERT. EXAGGERATION 1:1



CHAINAGE	0	5	10	15	20	25	30	35	40	43
EXISTING LEVELS	4.166	42.25	43.93	44.11	43.90	41.64	43.14	45.06	45.09	45.04
DESIGN LEVELS		42.45	42.28	42.07	41.84	41.55				
CUT/FILL DEPTHS		0.20	-1.65	-2.04	-2.06	-0.09				

1:1000 0 10 20 30 40 50
PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: BULK EARTHWORKS LS 03

Drawing: 203 Rev: 0
Scale: 1:1000 @ A3
Project: 15569
Issue: CONSENT

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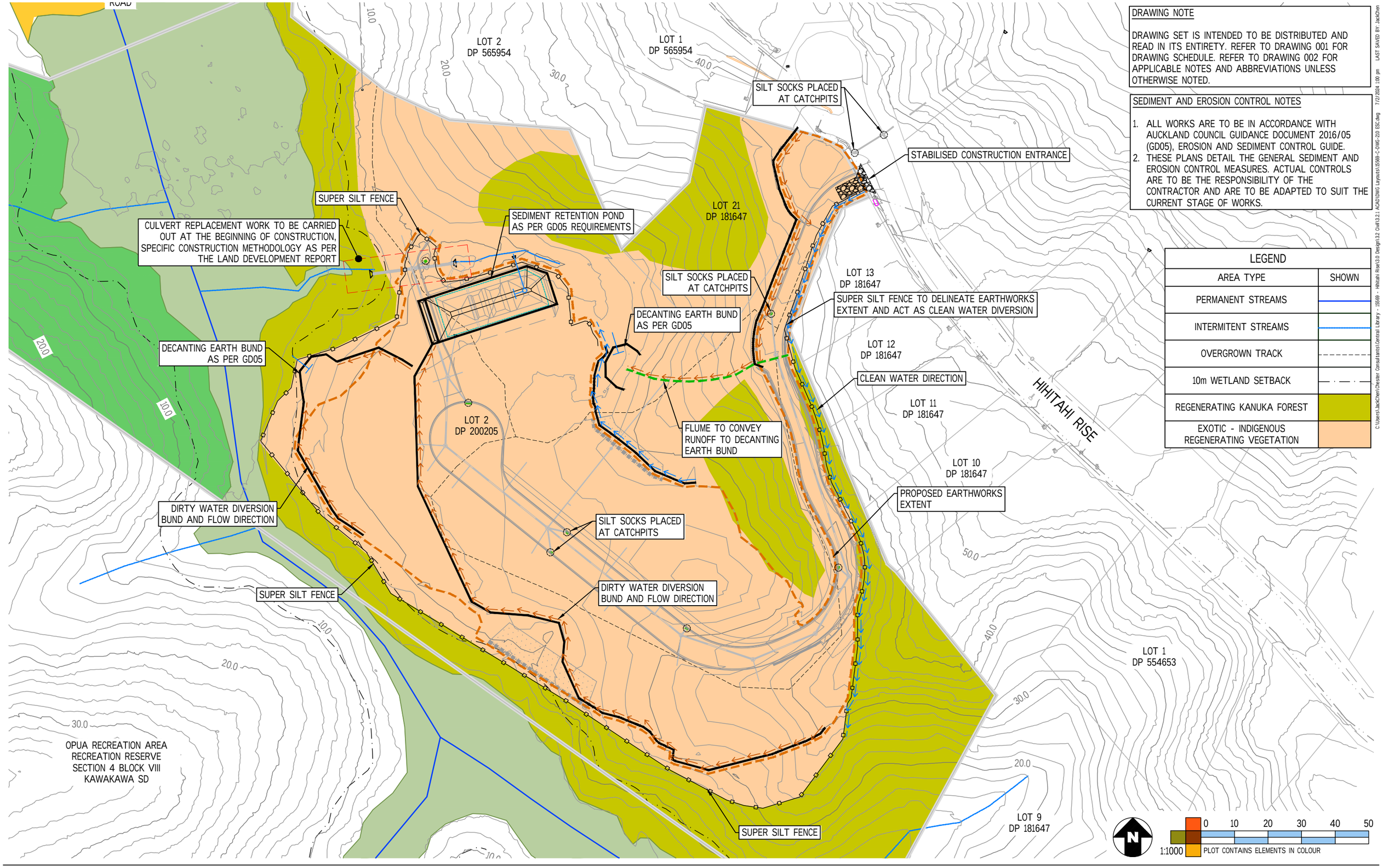

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

SEDIMENT AND EROSION CONTROL NOTES

1. ALL WORKS ARE TO BE IN ACCORDANCE WITH AUCKLAND COUNCIL GUIDANCE DOCUMENT 2016/05 (GD05), EROSION AND SEDIMENT CONTROL GUIDE.
2. THESE PLANS DETAIL THE GENERAL SEDIMENT AND EROSION CONTROL MEASURES. ACTUAL CONTROLS ARE TO BE THE RESPONSIBILITY OF THE CONTRACTOR AND ARE TO BE ADAPTED TO SUIT THE CURRENT STAGE OF WORKS.

LEGEND

AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
OVERGROWN TRACK	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	
EXOTIC - INDIGENOUS REGENERATING VEGETATION	

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Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	EROSION AND SEDIMENT CONTROL PLAN

Drawing:	210	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

CANTILEVER RETAINING SOLUTION TO GEOTECHNICAL SPECIFICATION. TO BE CONFIRMED AT DETAILED DESIGN. MAX HEIGHT 1.5m

CANTILEVER RETAINING SOLUTION TO GEOTECHNICAL SPECIFICATION. TO BE CONFIRMED AT DETAILED DESIGN. MAX HEIGHT 4m

INDICATIVE SHEAR KEY AND GEOGRID REINFORCED BUTTRESS FILL

TIMBER BOARDWALK

5m SET BACK FROM TOP OF ENGINEERED BATTER

ENGINEERED BATTER SLOPE TO GEOTECHNICAL SPECIFICATION (SOIL NAIL AND MESH RETAINING SOLUTION OR SIMILAR TO BE CONFIRMED AT DETAILED DESIGN). MAX HEIGHT 6m

CANTILEVER RETAINING SOLUTION TO GEOTECHNICAL SPECIFICATION. TO BE CONFIRMED AT DETAILED DESIGN. MAX HEIGHT 4m

ENGINEERED FILL EMBANKMENT TO GEOTECHNICAL SPECIFICATION (LIKELY MASS STABILISED EARTH (MSE) WITH 'TERRAMESH GREEN' FACING OR SIMILAR TO BE CONFIRMED AT DETAILED DESIGN). MAX HEIGHT 4m

LOT 1 DP 565954
LOT 2 DP 565954
LOT 1
LOT 10
LOT 11
LOT 102
LOT 9
LOT 12
LOT 17
LOT 13
LOT 8
LOT 14
LOT 15
LOT 7
LOT 6
LOT 16
LOT 5
LOT 4
LOT 3
LOT 2
LOT 13 DP 181647
LOT 12 DP 181647
LOT 11 DP 181647
LOT 10 DP 181647
LOT 1 DP 554653
LOT 9 DP 181647
HIHITAHI RISE
OPUA RECREATION AREA
RECREATION RESERVE
SECTION 4 BLOCK VIII
KAWAKAWA SD

RETAINING NOTES

1. RETAINING WALLS SHOWN IN PLANS ARE INDICATIVE TO ILLUSTRATE LOCATIONS AND EXTENTS.
2. SPECIFIC RETAINING WALL TYPE AND DESIGN PER STRUCTURAL AND GEOTECHNICAL ENGINEERS.

1:1000 0 10 20 30 40 50 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: RETAINING WALL PLAN

Drawing: 300 Rev: 0
Scale: 1:1000 @ A3
Project: 15569
Issue: CONSENT

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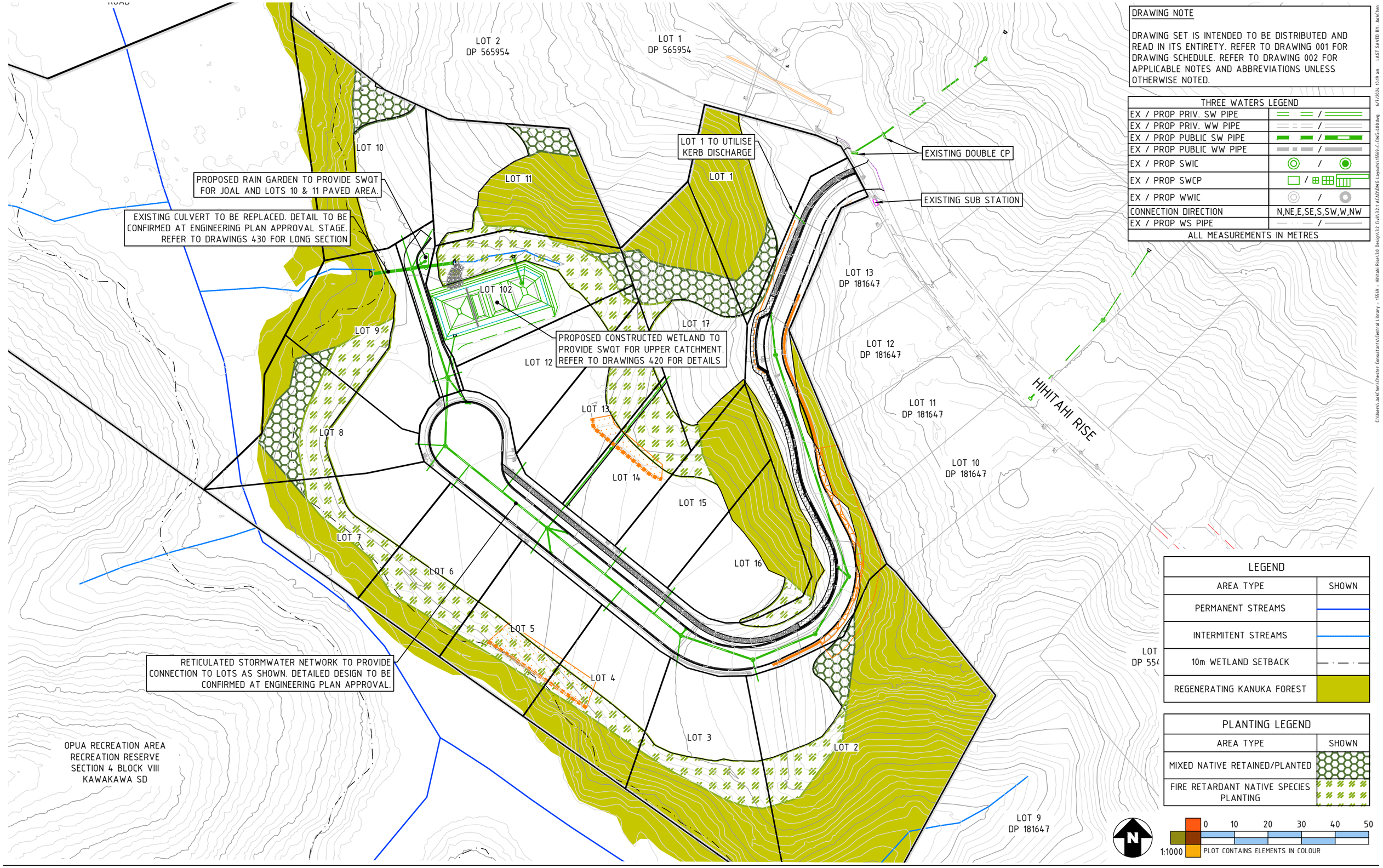

DRAWING NOTE

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THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	
EX / PROP PRIV. WW PIPE	
EX / PROP PUBLIC SW PIPE	
EX / PROP PUBLIC WW PIPE	
EX / PROP SWIC	
EX / PROP SWCP	
EX / PROP WWIC	
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

N

0 10 20 30 40 50

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	STORMWATER LAYOUT PLAN

Drawing:	400	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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PROPOSED RAIN GARDEN TO PROVIDE SWQT FOR JOAL AND LOTS 10 & 11 PAVED AREA.
DESIGN CATCHMENT:
JOAL = 222 m^2
LOT 10 = 110 m^2
LOT 11 = 110 m^2
TOTAL = 442 m^2
RAIN GARDEN SIZE = 442 x 2% = 8.8 m^2 MINIMUM

EXISTING CULVERT TO BE REPLACED.

EMERGENCY SPILLWAY

SHALLOW MARSH

WETLAND OUTLET STRUCTURE

LOT 102

DEEP POOL

DEEP MARSH

PERMANENT WATER LEVEL

PERMEABLE FOREBAY BUND

LOT 9

SEDIMENT FOREBAY

MAINTENANCE ACCESS

LOT 12

SEDIMENT DRYING AREA

PROPOSED BYPASS TO CONVEY LARGER STORMWATER EVENT RUNOFF EXCEEDING WATER QUALITY FLOW

PROPOSED WETLAND INLET TO CONVEY WATER QUALITY RAINFALL RUNOFF

PROPOSED SW INSPECTION CHAMBER WITH LOW FLOW DIVERSION

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

N

0 2.5 5 7.5 10 12.5

1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: PROPOSED WETLAND PLAN

Drawing: 420 Rev: 0
Scale: 1:250 @ A3
Project: 15569
Issue: CONSENT

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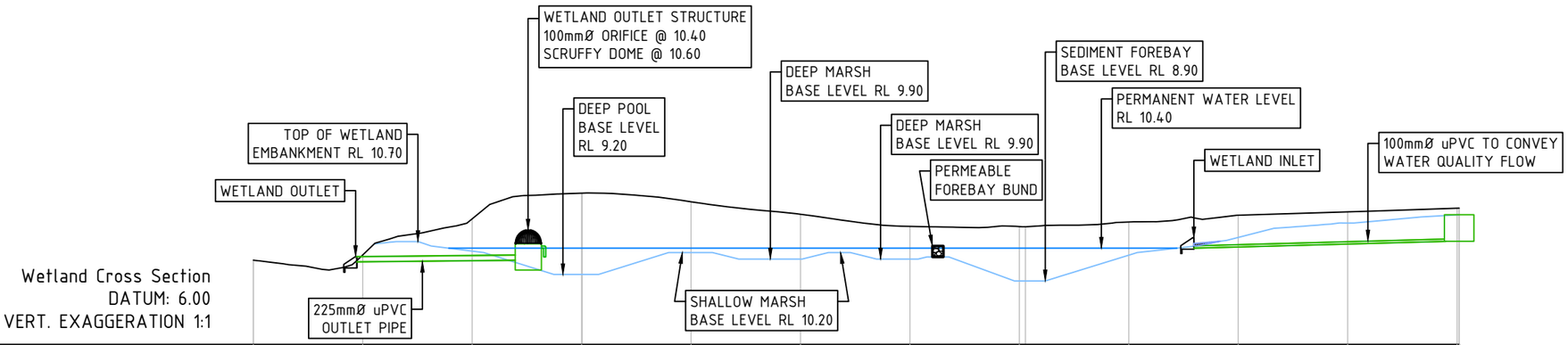
DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	



Wetland Cross Section
DATUM: 6.00
VERT. EXAGGERATION 1:1

DESIGN LEVELS		10.27	9.20	10.20	9.90	9.90	8.90	10.08	10.89	11.55	11.93
EXISTING LEVELS	9.85	10.09	11.74	12.92	12.52	11.95	11.40	11.39	11.60	11.91	12.06	12.23
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55

0 2.5 5 7.5 10 12.5
1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	WETLAND CROSS SECTION

Drawing:	421	Rev:	0
Scale:	1:250 @ A3		
Project:	15569		
Issue:	CONSENT		

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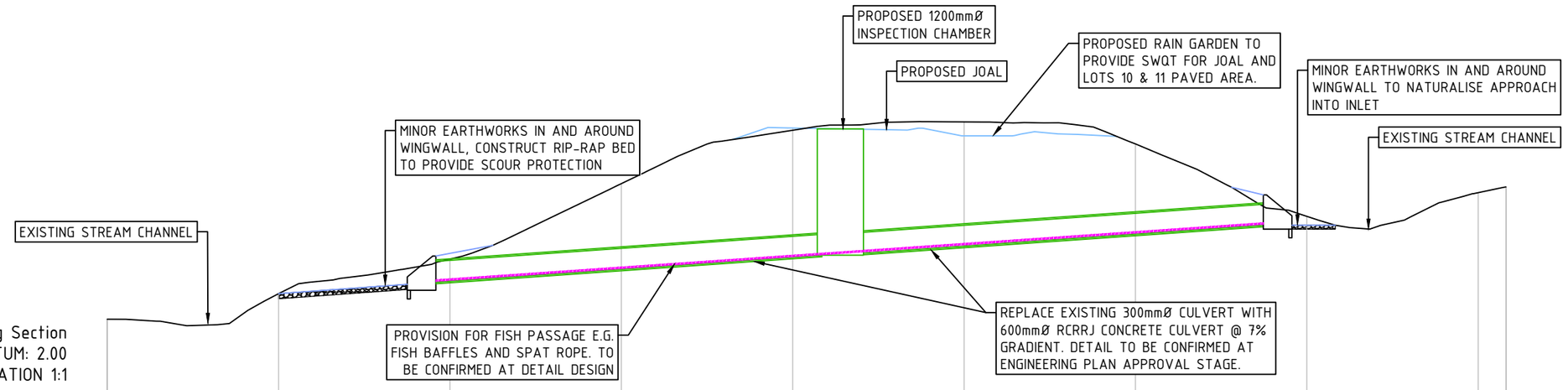
DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	



Culvert Long Section
DATUM: 2.00
VERT. EXAGGERATION 1:1

DESIGN LEVELS					9.83	9.60				
EXISTING LEVELS	4.25	5.00	6.01	8.21	9.76	10.01	9.36	7.25	7.94	8.11
CHAINAGE	0	5	10	15	20	25	30	35	4.0	4.1

1:150 0 1.5 3 4.5 6 7.5 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: CULVERT LONG SECTION

Drawing: 430 Rev: 0
Scale: 1:150 @ A3
Project: 15569
Issue: CONSENT

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DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

ALTERNATE POTENTIAL CONNECTION POINT FOR SITE TO PUBLIC 'EDS' SYSTEM. TO BE INVESTIGATED AT DETAILED DESIGN FOLLOWING TREE CLEARANCE, TOPOGRAPHIC AND CCTV SURVEY.

EXT 100mmØ uPVC 'EDS' SEWER

LOT 2 DP 565954

LOT 1 DP 565954

EXT 100mmØ uPVC 'EDS' SEWER

UPGRADE 35m OF 65mmØ 'EDS' TO 100mmØ.

NON-ACCESS RECEIVING CHAMBER. TO RECEIVE PUMPED PRIMARY TREATED WASTEWATER FROM SITES WITH GRAVITY CONNECTION TO 'EDS'

LOT 1 GRAVITY CONNECTION TO 'EDS'

LOT 10

LOT 11

LOT 1

LOT 102

LOT 9

LOT 17

LOT 12

LOT 13 DP 181647

EXT 65MMØ uPVC 'EDS' SEWER

EXT 65mmØ uPVC 'EDS' SEWER

LOT 12 DP 181647

HIHITAHI RISE

3-WAY BOUNDARY KIT (FOR LOTS 9-11)

LOT 13

LOT 11 DP 181647

LOT 8

LOT 14

LOT 10 DP 181647

LOT 15

LOT CONNECTION (TYP)

LOT 7

LOT 16

LOT 6

LOW PRESSURE SEWER RETICULATION NETWORK WITH BOUNDARY KIT CONNECTION TO EACH LOT AS SHOWN

LOT 5

LOT 4

LOT 3

LOT 2

OPUA RECREATION AREA
RECREATION RESERVE
SECTION 4 BLOCK VIII
KAWAKAWA SD

LOT 9 DP 181647

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

N

0 10 20 30 40 50

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	WASTEWATER LAYOUT PLAN

Drawing:	500	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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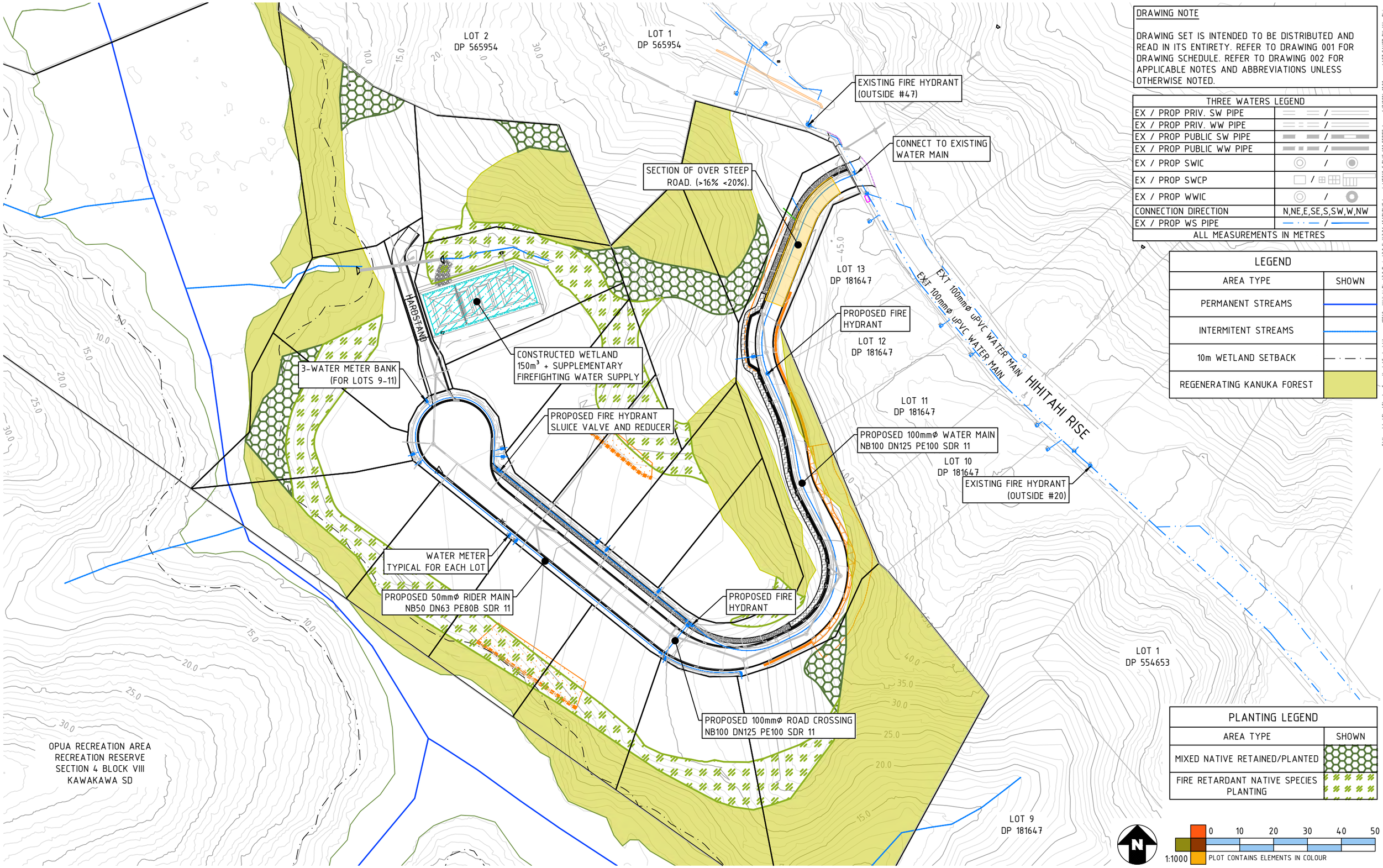

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

N

0 10 20 30 40 50

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	WATER SUPPLY LAYOUT PLAN

Drawing:	600	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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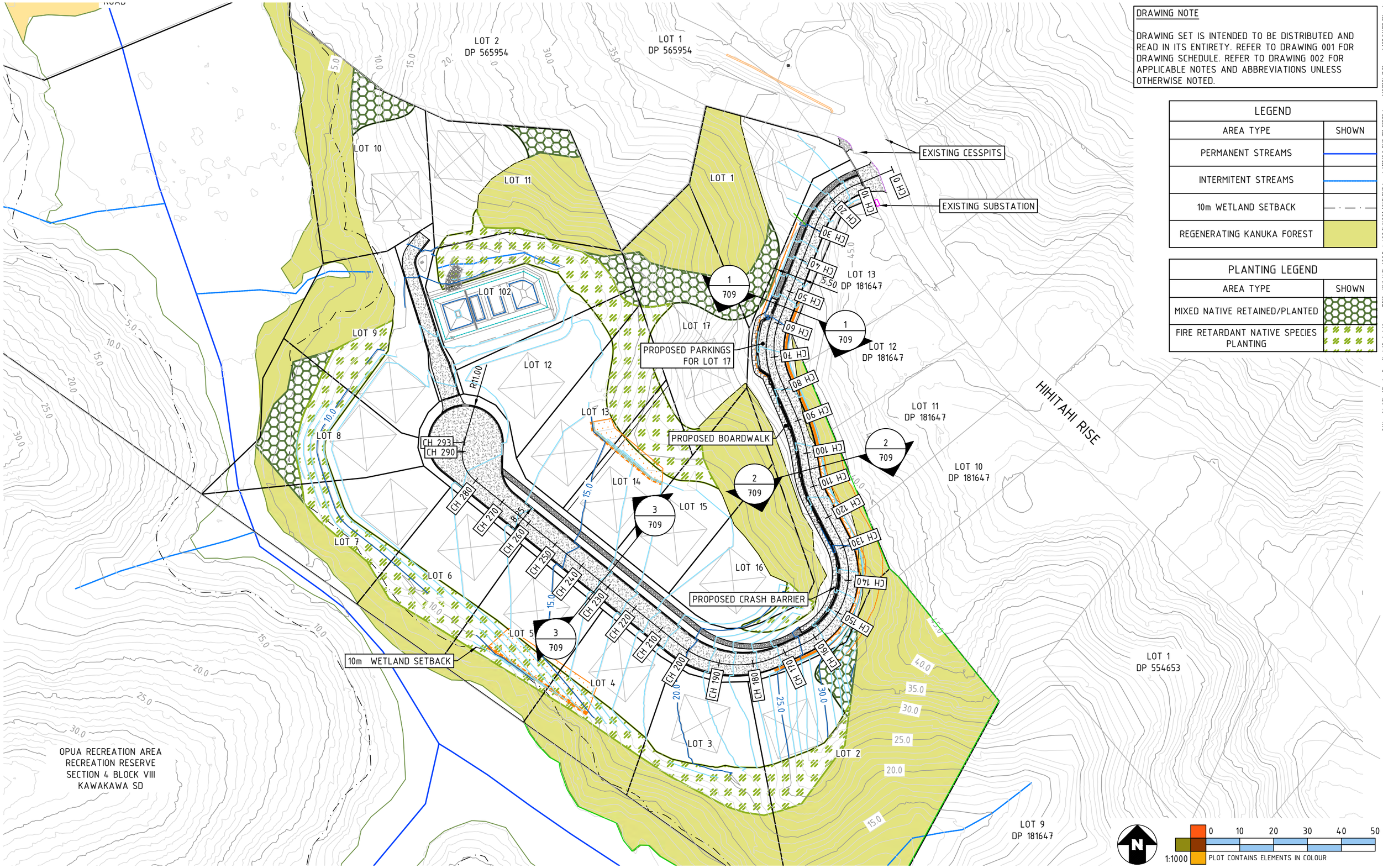

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	ROADING PLAN

Drawing:	700	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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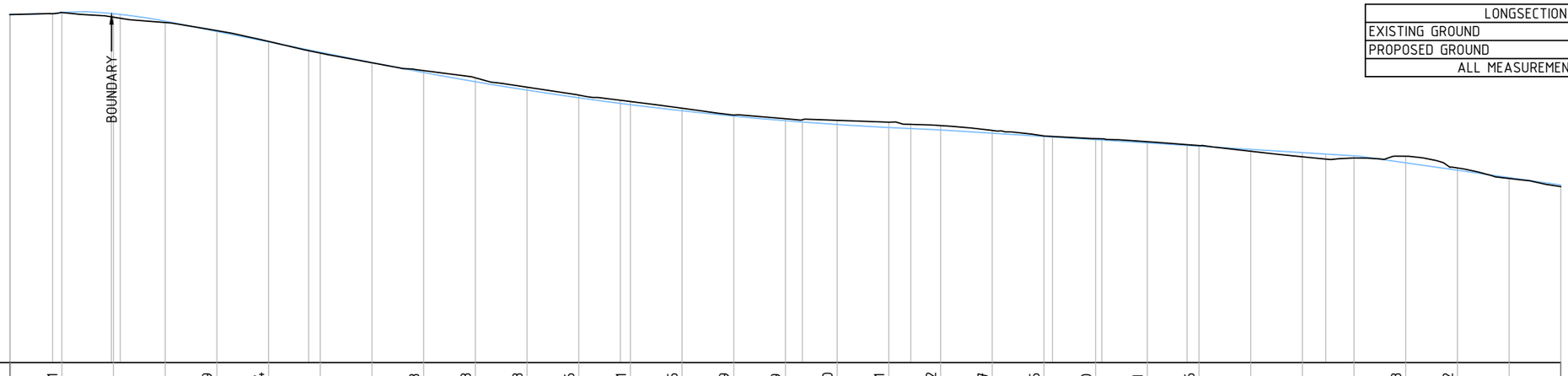
LONGSECTION LEGEND	
EXISTING GROUND	──
PROPOSED GROUND	──
ALL MEASUREMENTS IN METRES	

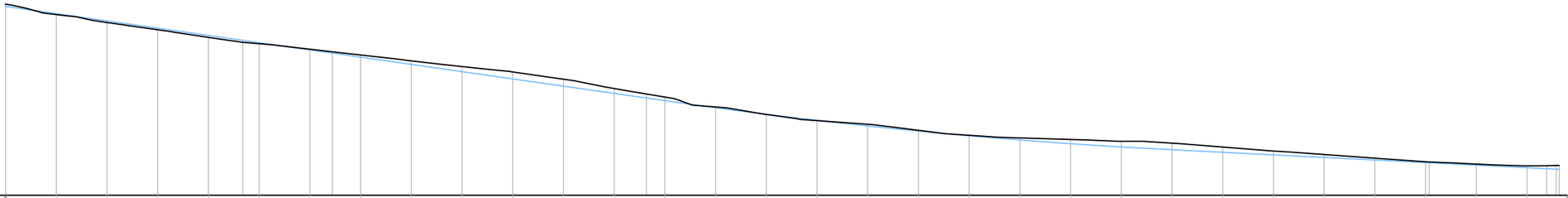


CL-ROAD
DATUM: 10.00
VERT. EXAGGERATION 1:1

CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	105	110	115	120	125	130	135	140	145	150
CUT/FILL DEPTHS	0.00	-0.01	0.33	0.13	-0.09	-0.04	0.08	0.02	-0.18	-0.38	-0.28	-0.26	-0.31	-0.25	-0.09	-0.19	-0.40	-0.51	-0.42	-0.27	-0.05	-0.10	-0.11	-0.06	0.18	0.40	0.21	-0.63	-0.22	0.09	0.15
DESIGN LEVELS	43.61	43.80	43.70	42.98	41.98	40.98	39.98	38.98	38.02	37.13	36.32	35.58	34.91	34.32	33.80	33.36	32.99	32.70	32.46	32.15	31.84	31.52	31.21	30.90	30.59	30.27	29.96	29.29	28.57	27.86	27.15
EXISTING LEVELS	43.61	43.81	43.37	42.85	42.07	41.03	39.90	38.96	38.20	37.51	36.60	35.84	35.22	34.57	33.90	33.55	33.39	33.21	32.89	32.42	31.88	31.62	31.33	30.96	30.40	29.87	29.75	29.92	28.79	27.77	26.99

VERTICAL GEOMETRY
1.20m 12.5%
2.00m 3.0%
VC 6.69, A.D. -13.4% IP CH 11.95/RL 43.59
19.68m -20.0%
1.30m -6.6%
VC 52.19, A.D. 15.5% IP CH 61.08/RL 33.77
2.71m -4.5%
40.60m -6.3%
74.58m -14.3%

HORIZONTAL GEOMETRY
4.11m 247°06'11"
5.69m 247°06'11"
R 21.00 A 18.23
30.15m 201°12'53"
R 22.50 A 17.60
10.50m 156°23'46"
R 54.13 A 13.70
4.77m 170°53'37"
R 25.69 A 8.25
13.42m 152°29'47"
R 22.50 A 36.12



CL-ROAD
DATUM: 10.00
VERT. EXAGGERATION 1:1

CHAINAGE	140	145	150	155	160	165	170	175	180	185	190	195	200	205	210	215	220	225	230	235	240	245	250	255	260	265	270	275	280	285	290	294
CUT/FILL DEPTHS	-0.22	0.09	0.15	0.16	0.19	0.10	-0.07	-0.21	-0.35	-0.50	-0.69	-0.69	-0.48	-0.36	-0.07	0.02	0.03	-0.16	-0.08	-0.04	-0.20	-0.41	-0.55	-0.65	-0.51	-0.38	-0.29	-0.18	-0.08	-0.11	-0.19	
DESIGN LEVELS	28.57	27.86	27.15	26.43	25.72	25.00	24.29	23.58	22.86	22.15	21.44	20.72	20.01	19.30	18.61	17.96	17.36	16.81	16.31	15.85	15.43	15.07	14.75	14.47	14.22	13.97	13.71	13.46	13.21	12.95	12.70	
EXISTING LEVELS	28.79	27.77	26.99	26.27	25.52	24.91	24.36	23.79	23.21	22.66	22.13	21.41	20.49	19.66	18.68	17.94	17.34	16.98	16.38	15.89	15.63	15.48	15.30	15.12	14.74	14.34	14.00	13.64	13.29	13.06	12.89	

VERTICAL GEOMETRY
74.58m -14.3%
VC 49.62, A.D. 9.2% IP CH 229.88/RL 15.75
38.49m -5.1%

HORIZONTAL GEOMETRY
R 22.50 A 36.12
8.82m 244°29'53"
R 27.60 A 30.96
77.19m 308°46'03"
R 10.01 A 11.57
0.94m 14°59'03"
R 0.05 A 0.31

1:500 0 5 10 15 20 25
PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: ROAD LONG SECTION

Drawing: 701 Rev: 0
Scale: 1:500 @ A3
Project: 15569
Issue: CONSENT

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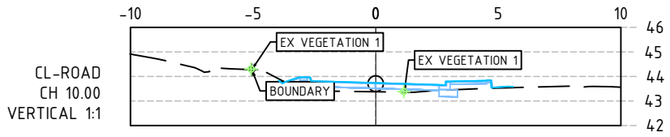
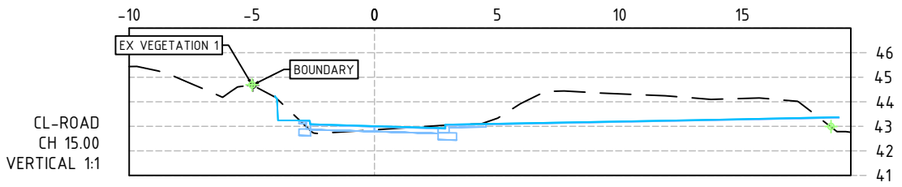
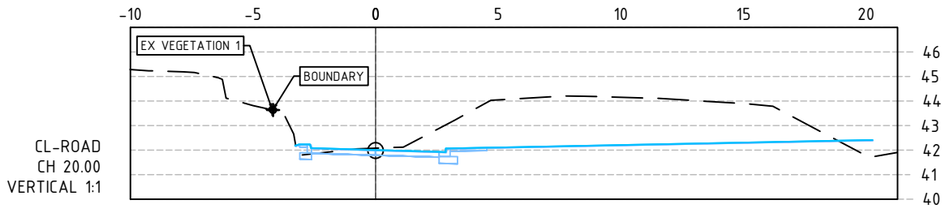
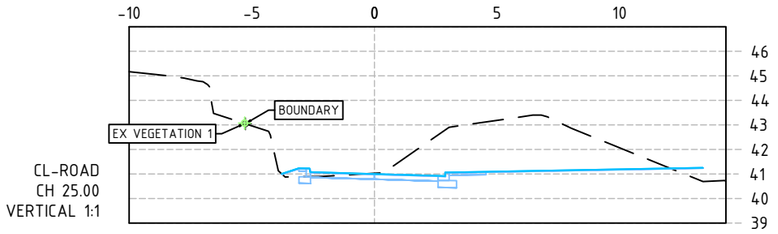
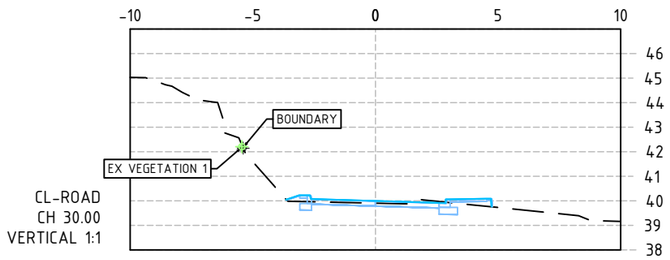
LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

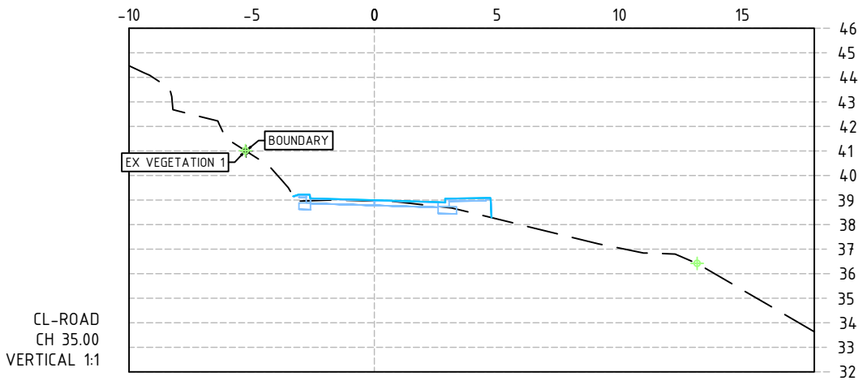


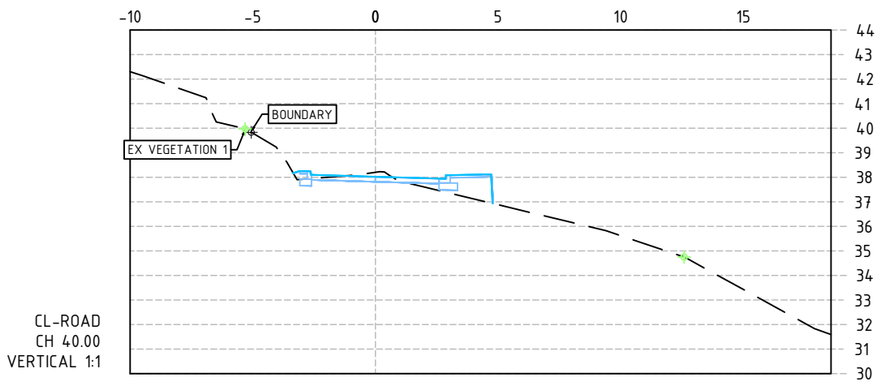


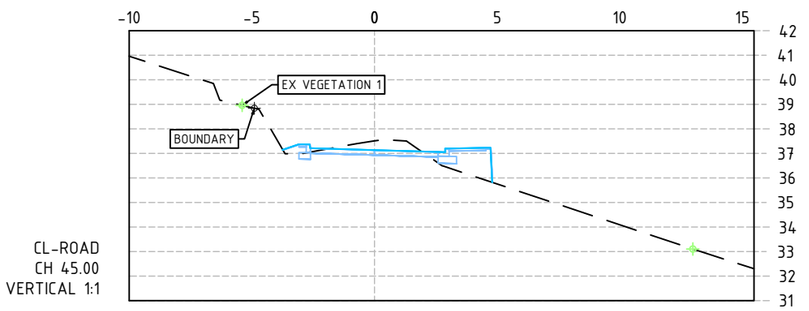












0 2.5 5 7.5 10 12.5
1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER
Designer:	N. JULL
Checker:	J. CHEN
Date:	31/05/2024

Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client:	HERON POINT LIMITED
Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title:	ROAD XS 01

Drawing:	702 Rev: 0
Scale:	1:250 @ A3
Project:	15569
Issue:	CONSENT

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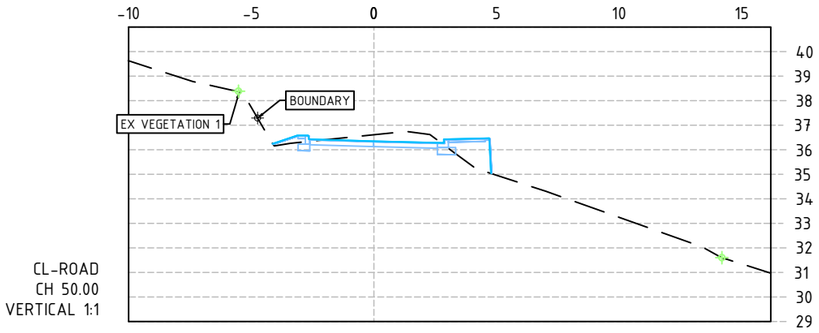
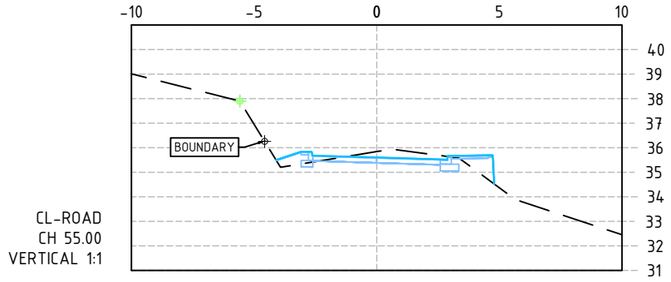
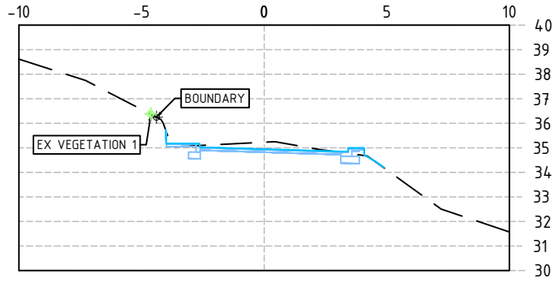
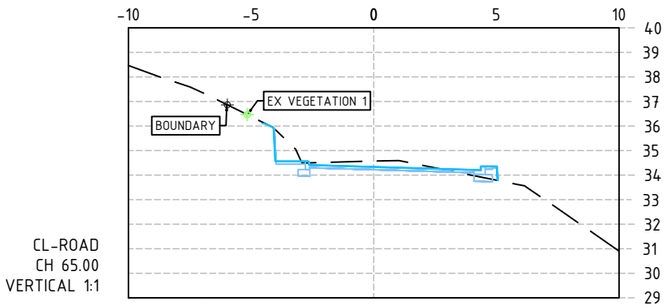
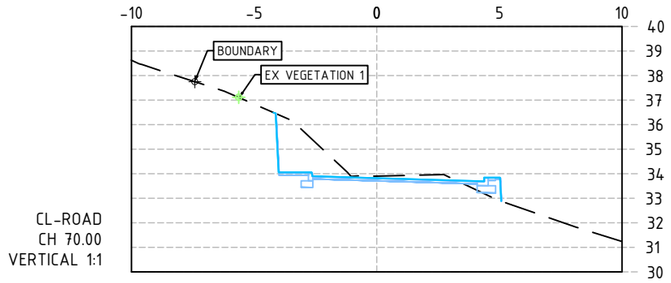
LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

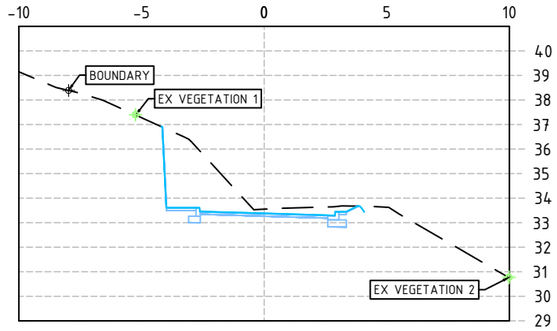


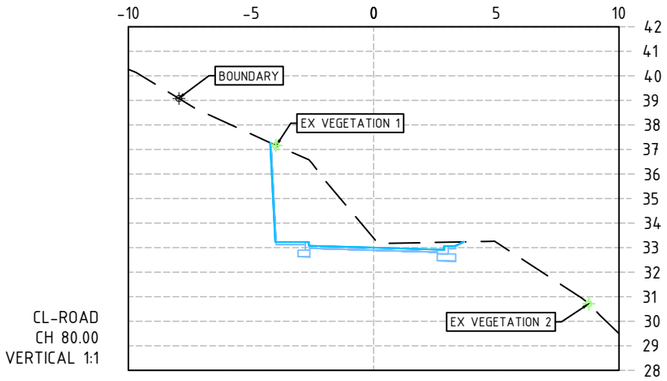


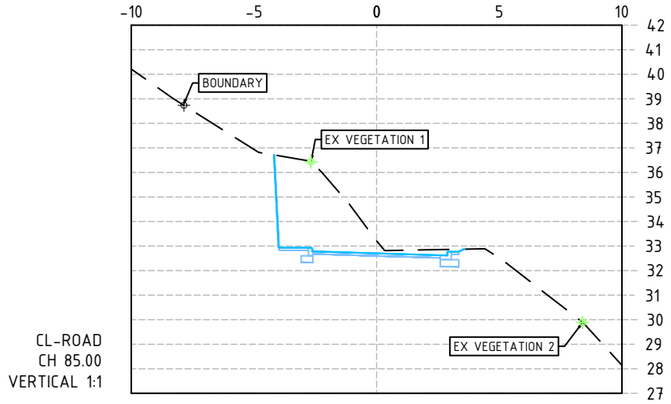


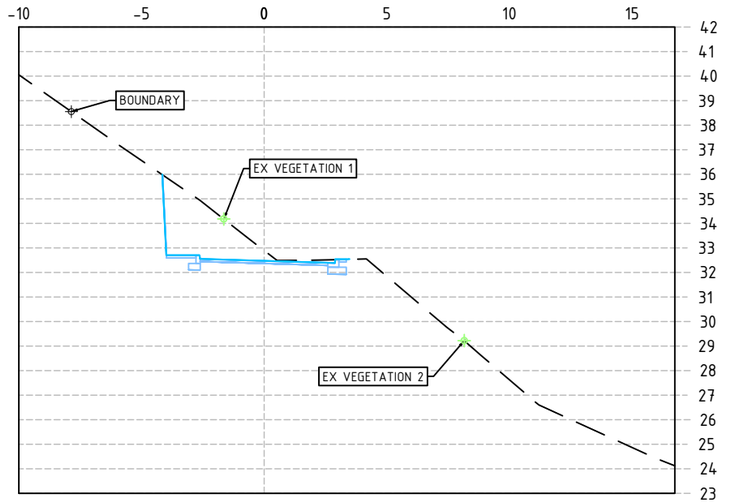


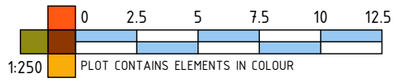












Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	ROAD XS 02

Drawing:	703	Rev:	0
Scale:	1:250 @ A3		
Project:	15569		
Issue:	CONSENT		

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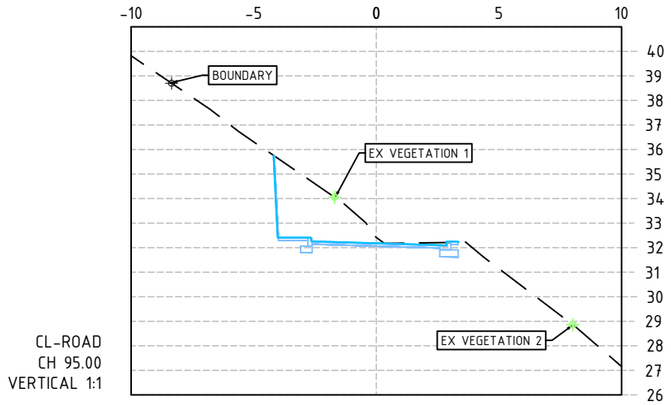
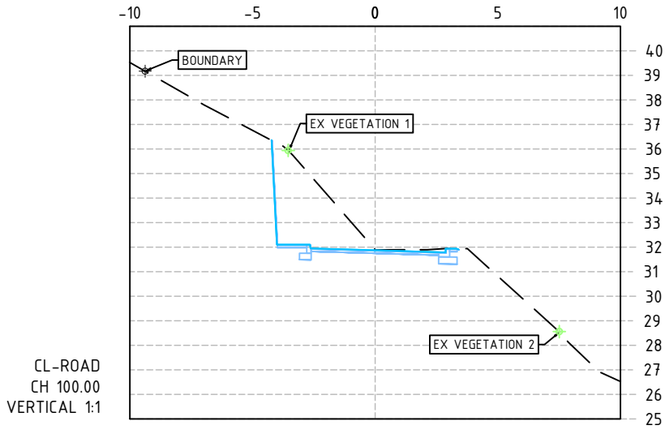
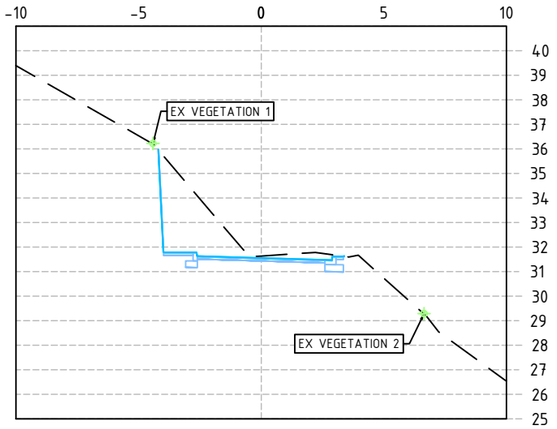


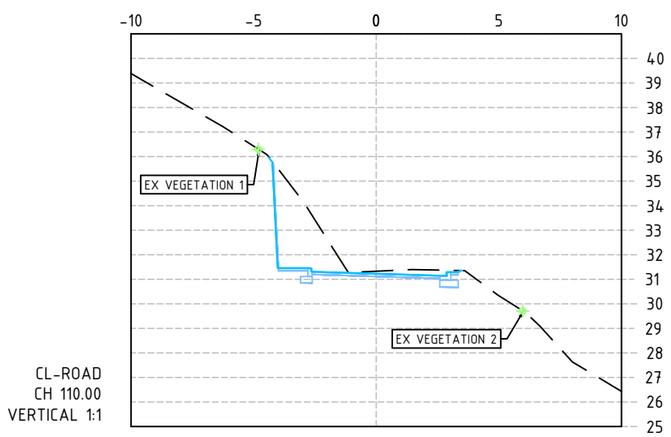
CL-ROAD
CH 95.00
VERTICAL 1:1



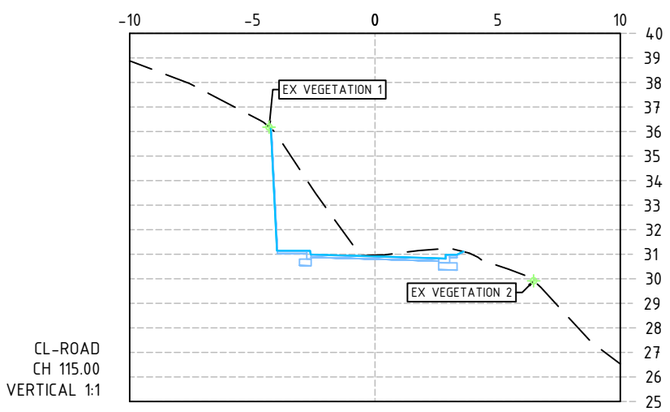
CL-ROAD
CH 100.00
VERTICAL 1:1



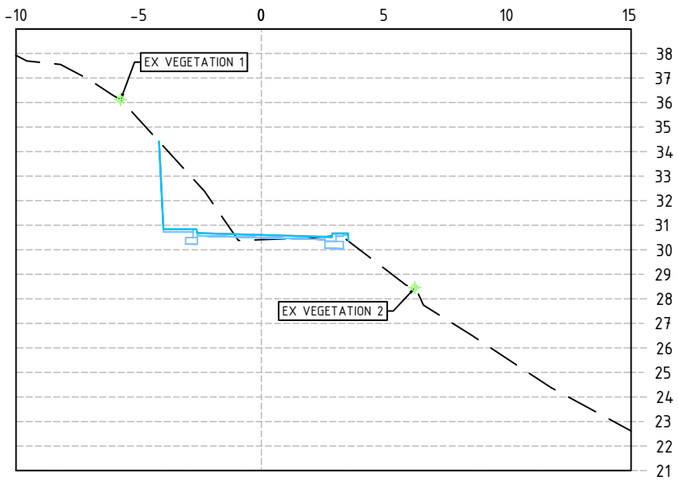
CL-ROAD
CH 105.00
VERTICAL 1:1



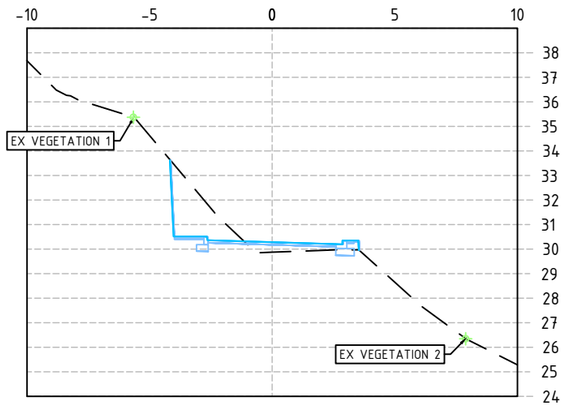
CL-ROAD
CH 110.00
VERTICAL 1:1



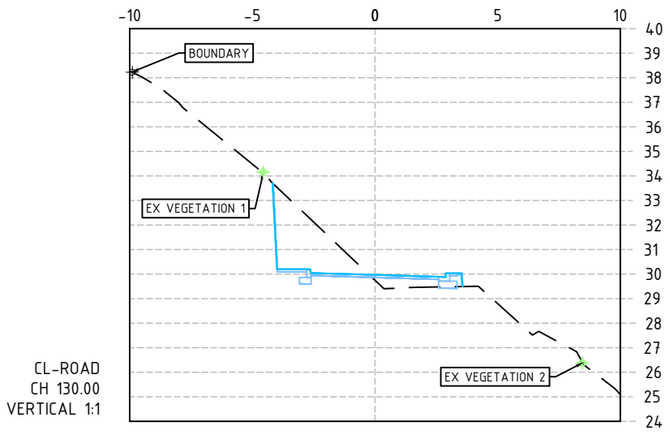
CL-ROAD
CH 115.00
VERTICAL 1:1



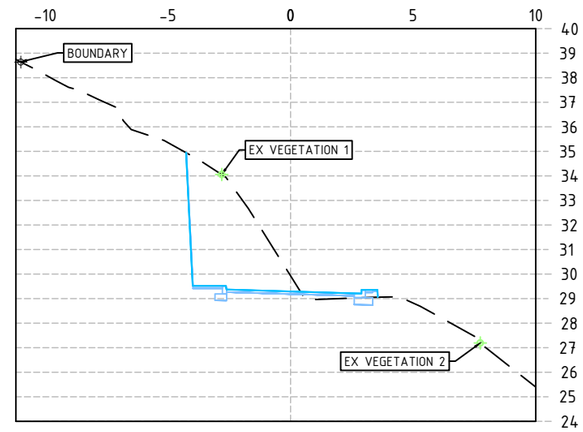
CL-ROAD
CH 120.00
VERTICAL 1:1



CL-ROAD
CH 125.00
VERTICAL 1:1

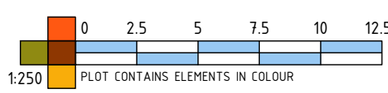


CL-ROAD
CH 130.00
VERTICAL 1:1



CL-ROAD
CH 135.00
VERTICAL 1:1

LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	



Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: ROAD XS 03

Drawing: 704 Rev: 0
Scale: 1:250 @ A3
Project: 15569
Issue: CONSENT

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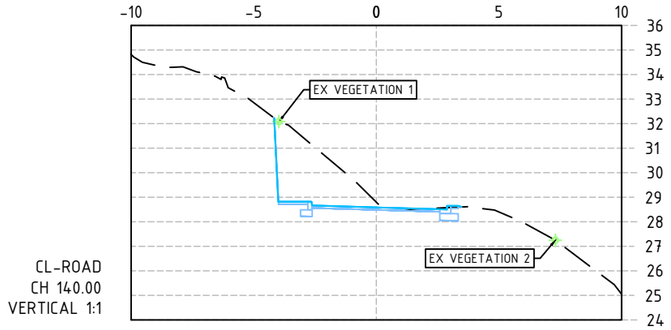

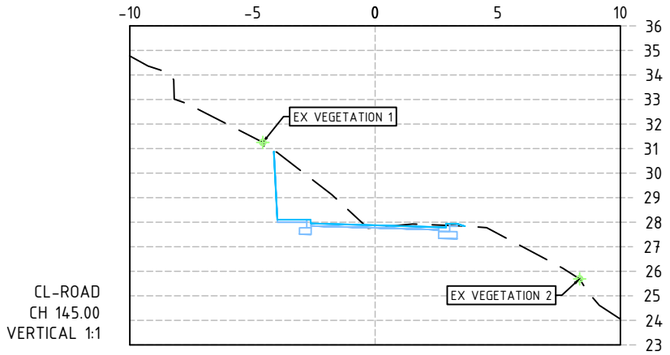

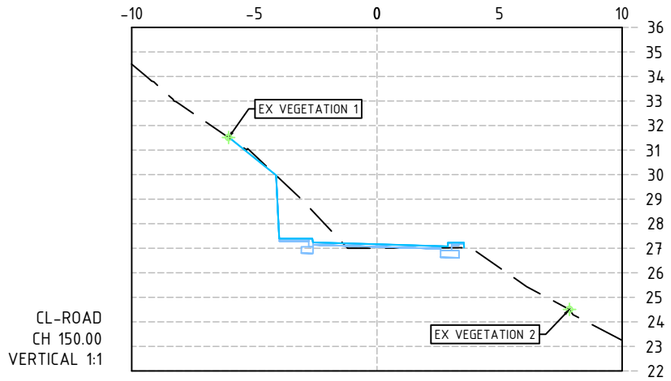

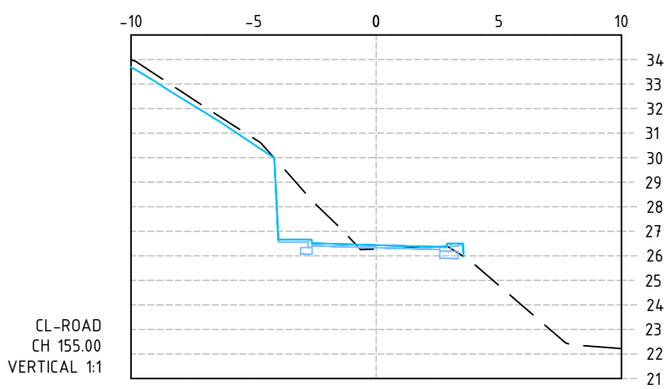

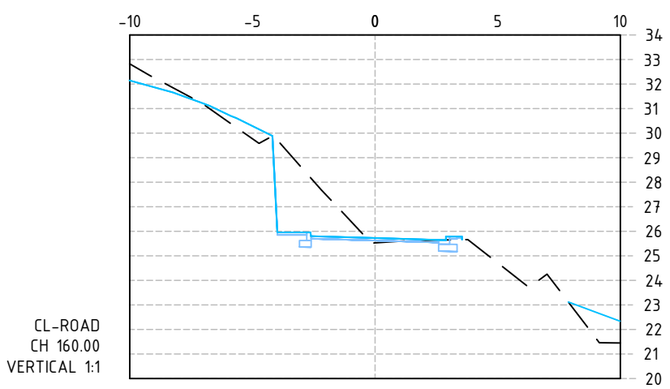

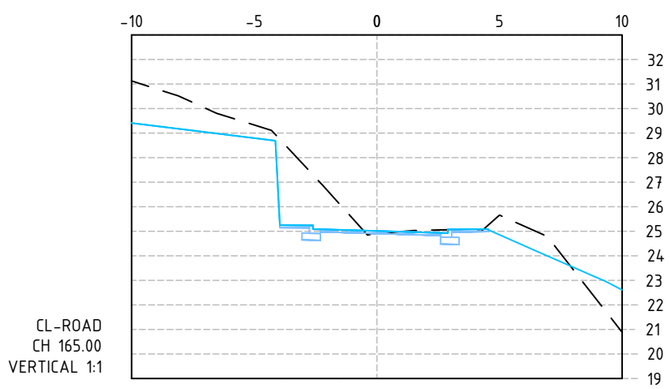

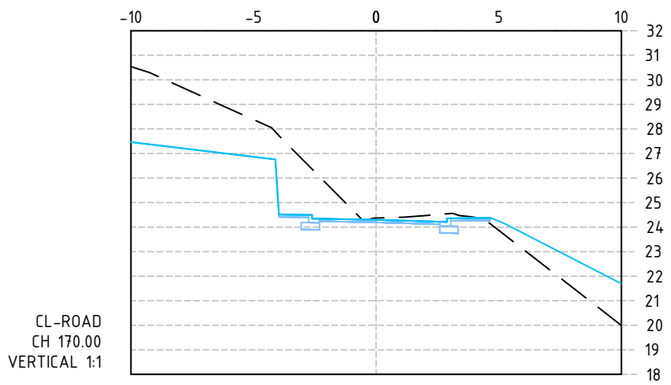

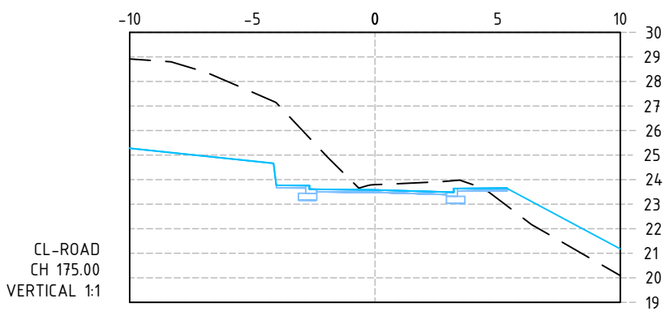

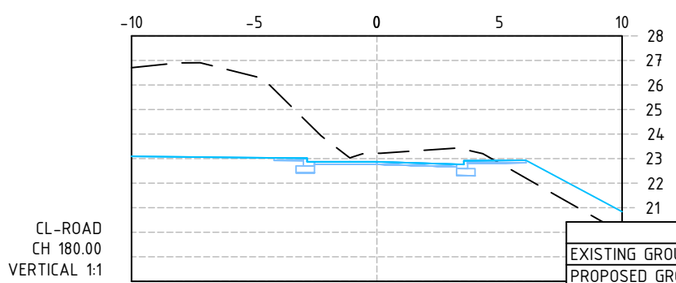

LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

0 2.5 5 7.5 10 12.5

1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: ROAD XS 04

Drawing: 705 Rev: 0
Scale: 1:250 @ A3
Project: 15569
Issue: CONSENT

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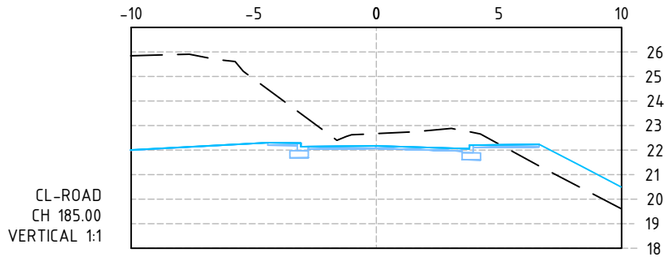

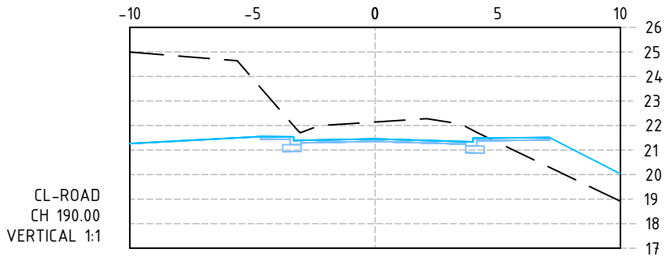

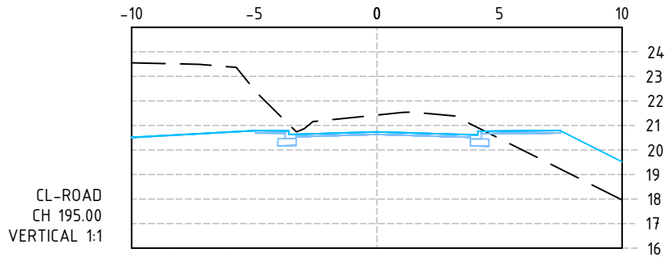

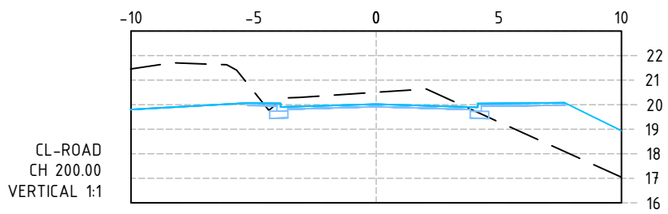

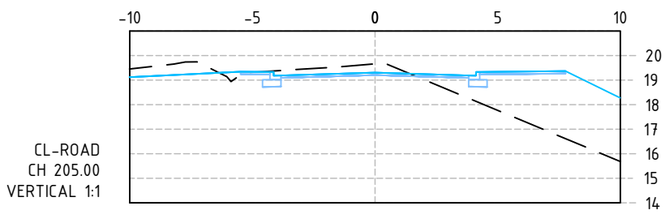

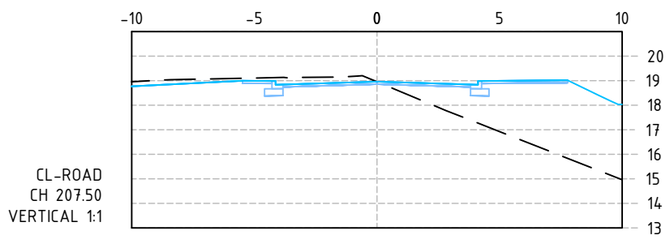

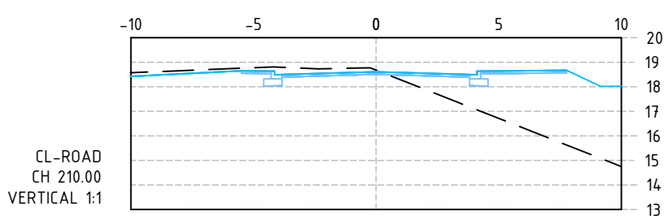

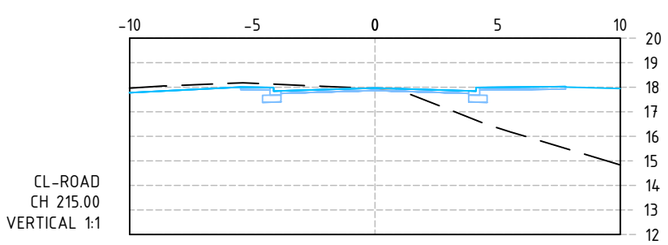

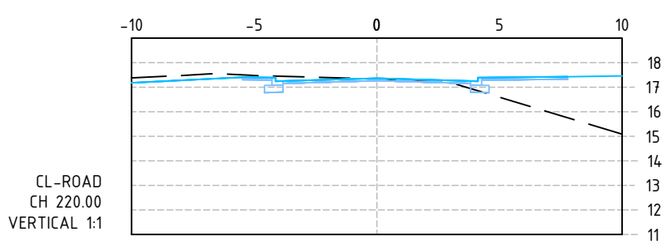

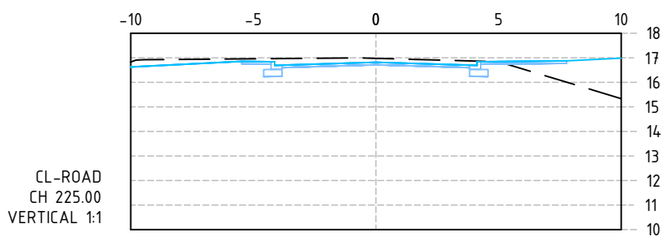

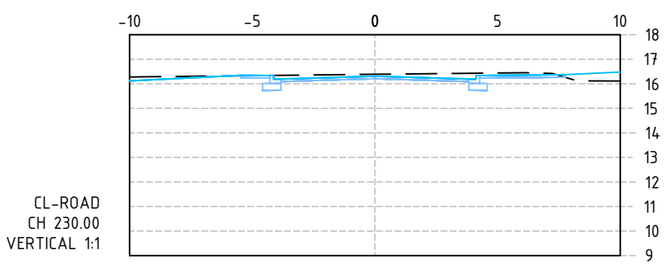

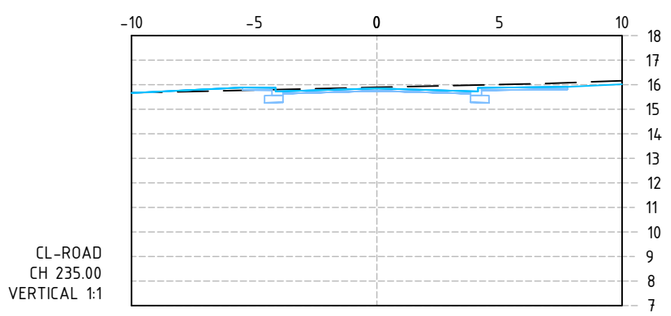

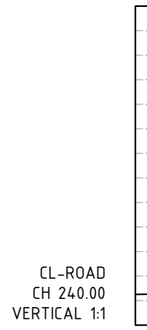

LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

0 2.5 5 7.5 10 12.5

1:250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: ROAD XS 05

Drawing: 706 Rev: 0
Scale: 1:250 @ A3
Project: 15569
Issue: CONSENT

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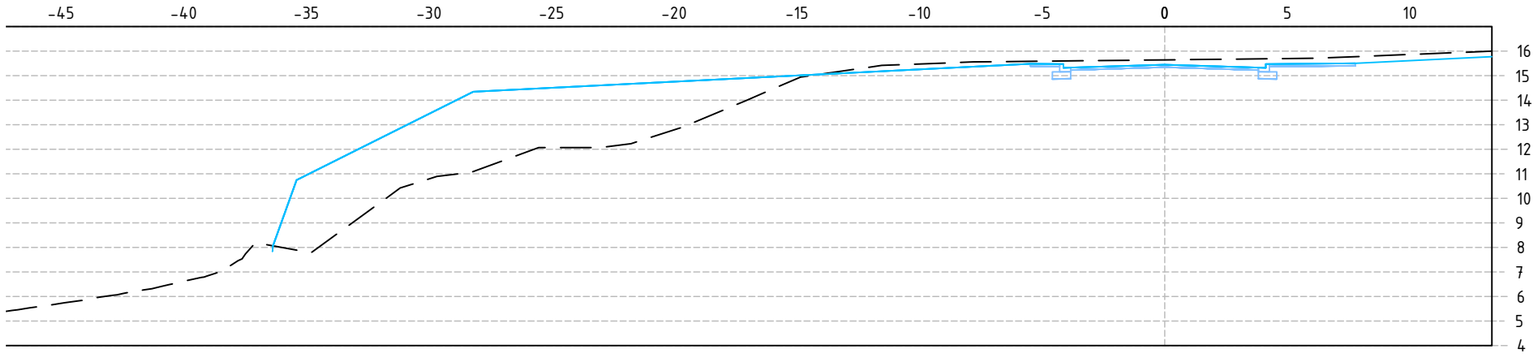

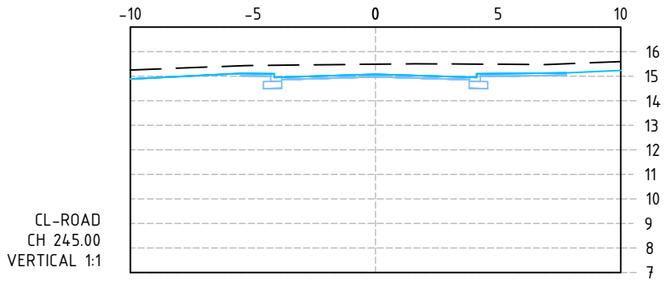

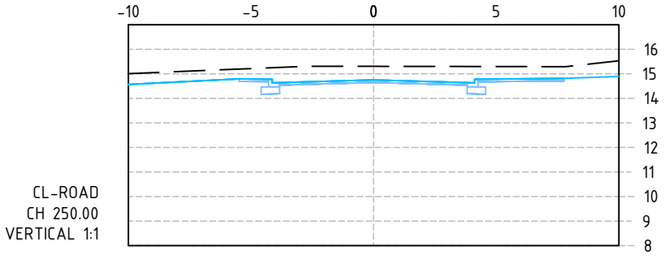

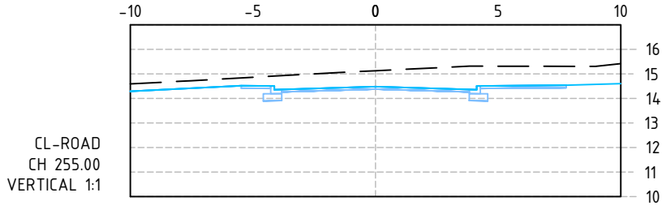

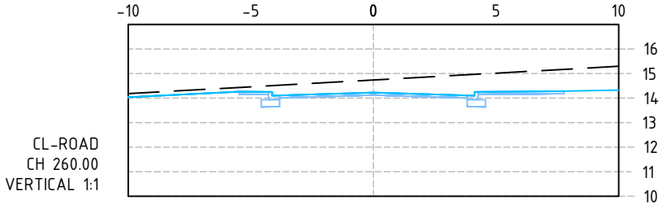

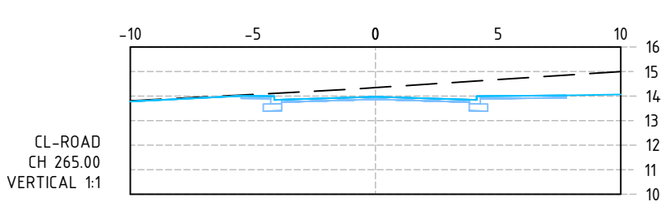

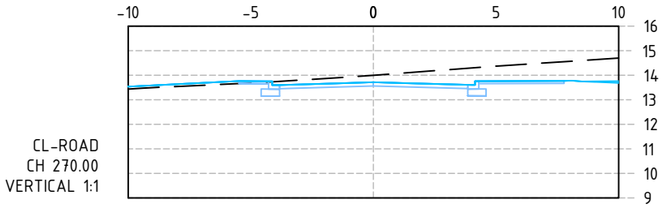

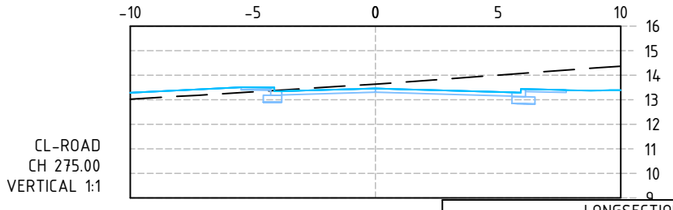

LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

1:250 0 2.5 5 7.5 10 12.5 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: ROAD XS 06

Drawing: 707 Rev: 0
Scale: 1:250 @ A3
Project: 15569
Issue: CONSENT

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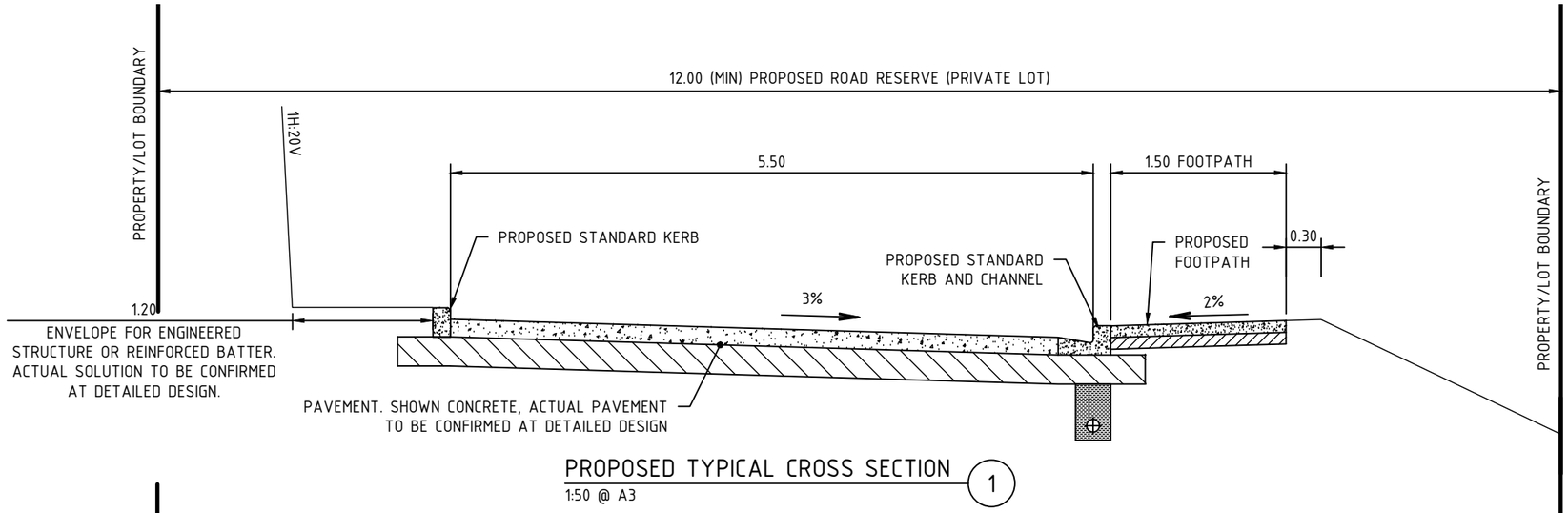
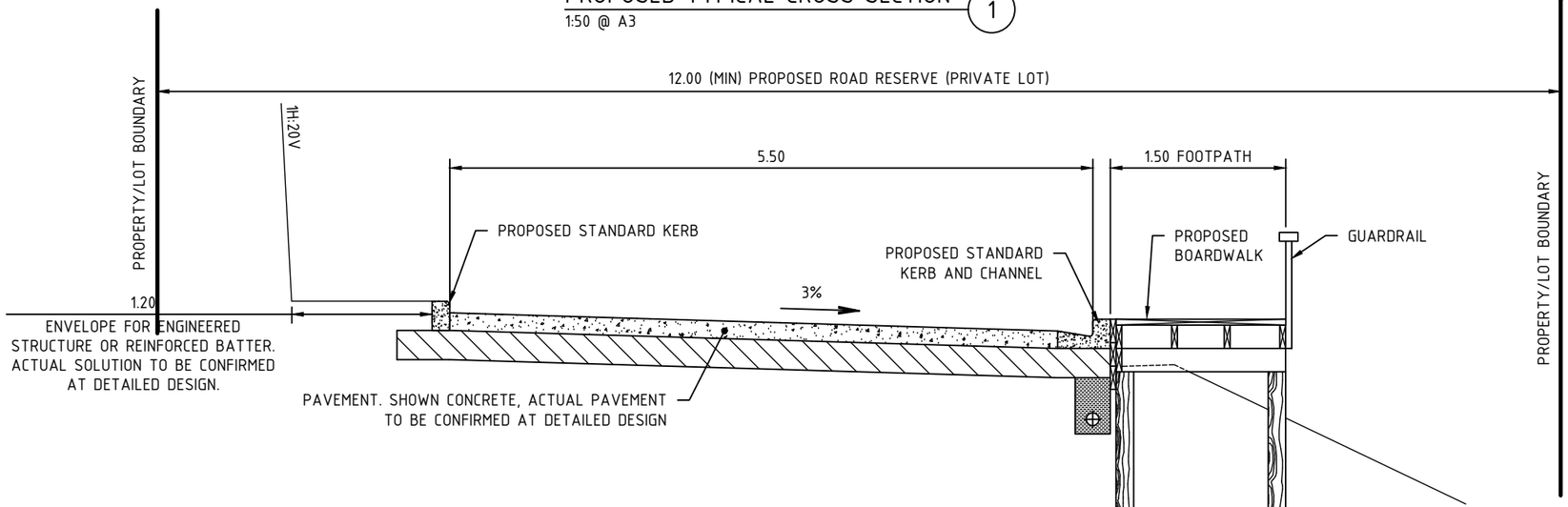


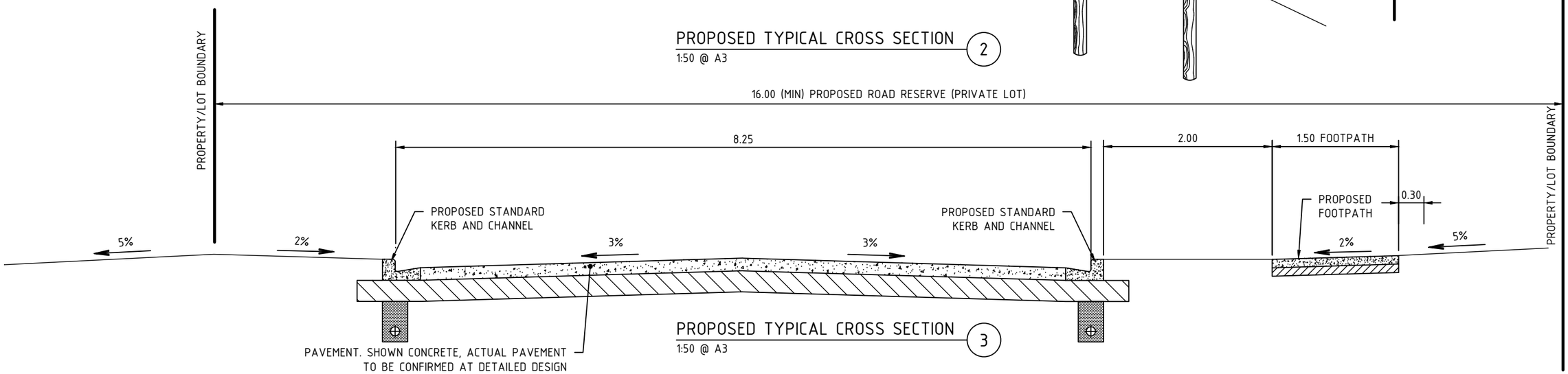
PROPOSED TYPICAL CROSS SECTION 1

1:50 @ A3



PROPOSED TYPICAL CROSS SECTION 2

1:50 @ A3



PROPOSED TYPICAL CROSS SECTION 3

1:50 @ A3

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	TYPICAL CROSS SECTIONS

Drawing:	708	Rev:	0
Scale:	1:50 @ A3		
Project:	15569		
Issue:	CONSENT		

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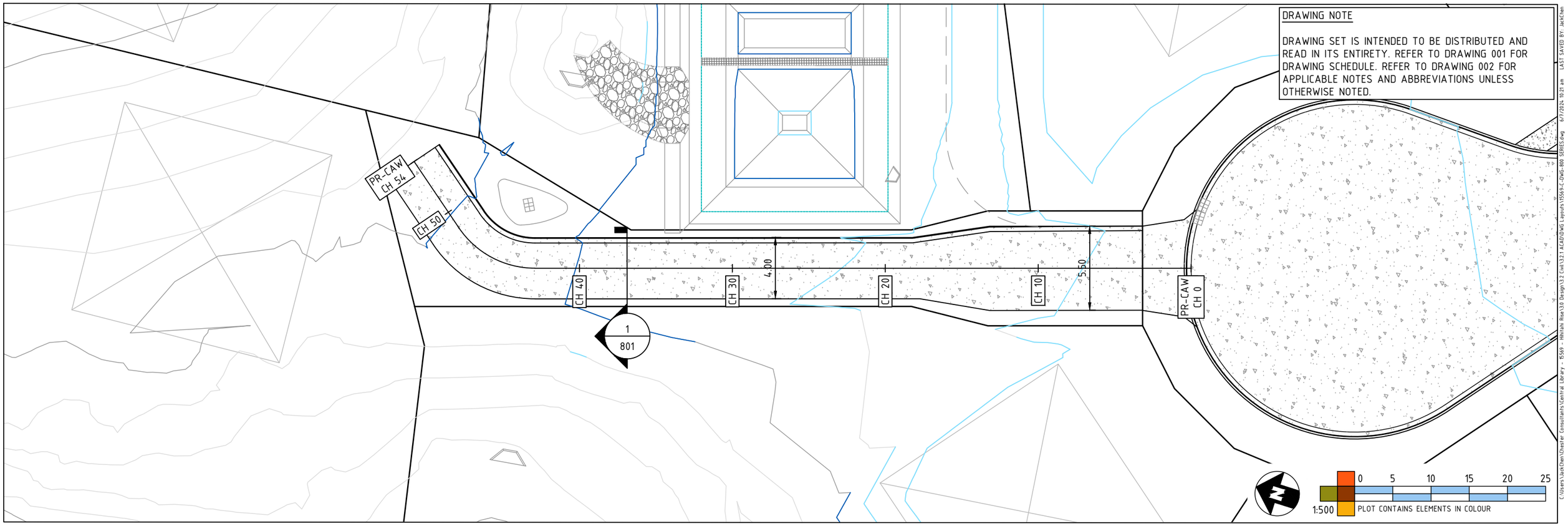
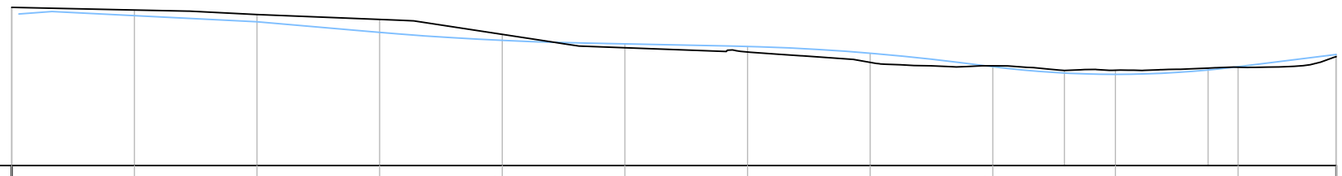


LONGSECTION LEGEND	
EXISTING GROUND	
PROPOSED GROUND	
ALL MEASUREMENTS IN METRES	

PR-CAW
DATUM: 6.00
VERT. EXAGGERATION 1:1



CUT/FILL DEPTHS		-0.23	-0.30	-0.53	-0.24	0.16	0.23	0.37	-0.04	-0.17	0.02	
DESIGN LEVELS		12.10	11.85	11.42	11.10	10.95	10.85	10.57	10.02	9.71	10.02	10.52
EXISTING LEVELS	12.45	12.33	12.15	11.95	11.34	10.80	10.62	10.20	10.06	9.88	10.01	
VERTICAL GEOMETRY		1.35m 7.4%	8.36m -5.0%	4.64m -8.7%	VC 8.75, A.D. 6.7% IP CH 19.02/RL 11.07	5.95m -2.0%	VC 9.31, A.D. -10.5% IP CH 34.00/RL 10.77	1.35m -12.5%	VC 10.00, A.D. 25.0% IP CH 45.00/RL 9.40		4.00m 12.5%	
HORIZONTAL GEOMETRY		42.92m 342°27'06"								R 6.00 A 5.86	5.22m 38°23'05"	
CHAINAGE	0	5	10	15	20	25	30	35	40	45	50	54

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	COMMON ACCESS WAY PLAN

Drawing:	800	Rev:	0
Scale:	1:500 @ A3		
Project:	15569		
Issue:	CONSENT		

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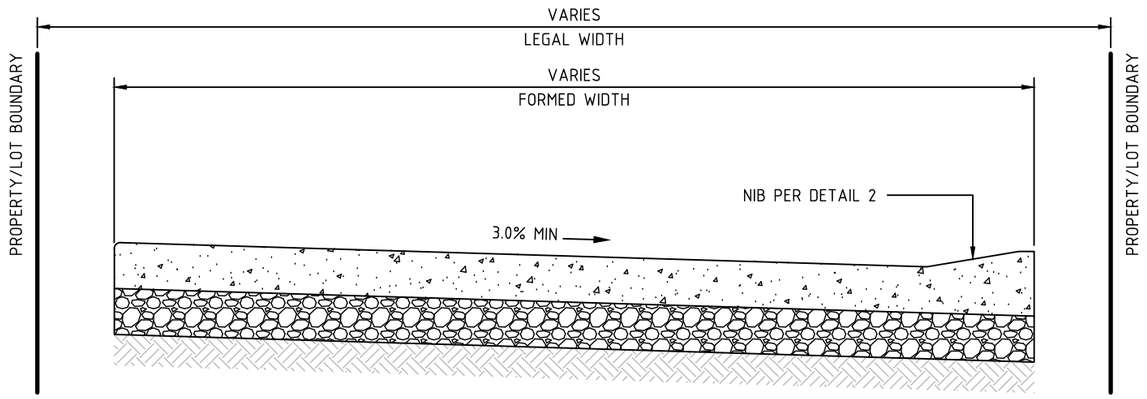
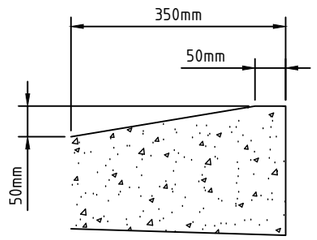


1 TYPICAL DRIVEWAY SECTION (2-5 REAR SITES SERVED)

SCALE: 1:50



2 CONCRETE NIB

SCALE: NTS

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: COMMON ACCESSWAY TYPICAL SECTION

Drawing: 801 Rev: 0
Scale: 1:500 @ A3
Project: 15569
Issue: CONSENT

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WORST CASE PONDING ASSUMING 100% BLOCKED PRIMARY NETWORK
SHOWN PONDING 150mm DEEP ABOVE DRIVEWAY SPILL POINT.
SPILL CAPACITY AT 150mm DEEP (USING MANNINGS): 1.241 m^3/s
1%AEP PEAK CATCHMENT RUN-OFF USING RATIONAL METHOD
CATCHMENT COEFFICIENT (C) = 0.65
RAINFALL INTENSITY (I) = 198 mm/hr (INC +20% FOR CC)
CONTRIBUTING CATCHMENT (A) = 3.0 ha
DESIGN FLOW = 1.073 m^3/s
BECAUSE SPILL CAPACITY > DESIGN FLOW ACTUAL 1%AEP FLOODING
WILL BE LESS THAN SHOWN

WORST CASE PONDING ASSUMING 100% BLOCKED PRIMARY NETWORK
SHOWN PONDING 150mm DEEP ABOVE VEHICLE CROSSING SPILL POINT.
SPILL CAPACITY AT 150mm DEEP (USING MANNINGS): 1.143 m^3/s
1%AEP PEAK CATCHMENT RUN-OFF USING RATIONAL METHOD
CATCHMENT COEFFICIENT (C) = 0.65
RAINFALL INTENSITY (I) = 198 mm/hr (INC +20% FOR CC)
CONTRIBUTING CATCHMENT (A) = 2.5 ha
DESIGN FLOW = 0.894 m^3/s
BECAUSE SPILL CAPACITY > DESIGN FLOW ACTUAL 1%AEP FLOODING
WILL BE LESS THAN SHOWN

VEHICLE CROSSING SET AT RL 12.20

FINISHED GROUND FOR LOT 9 TO ROLL OVER AT RL 12.50

RL 9.77

RL 13.00

LOT 1 DP 565954

LOT 2 DP 565954

LOT 1

LOT 2

LOT 3

LOT 4

LOT 5

LOT 6

LOT 7

LOT 8

LOT 9

LOT 10

LOT 11

LOT 12

LOT 13

LOT 14

LOT 15

LOT 16

LOT 17

LOT 102

LOT 13 DP 181647

LOT 12 DP 181647

LOT 11 DP 181647

LOT 10 DP 181647

LOT 1 DP 554653

LOT 9 DP 181647

HIHITAHI RISE

OPUA RECREATION AREA
RECREATION RESERVE
SECTION 4 BLOCK VIII
KAWAKAWA SD

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	/
EX/PROP SWCP	/
ALL MEASUREMENTS IN METRES	

N

0 10 20 30 40 50

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

C:\Users\JackChen\Chester Consultants\Central Library - 15569 - Hihitahi Rise\3.0 Design\3.2 Civil\3.2.1 ACAD\DWG Layouts\15569-C-DWG-900.dwg 6/7/2024 10:21 am LAST SAVED BY: JackChen

Rev	Date	Amendments	By
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Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	SECONDARY FLOW PLAN

Drawing:	900	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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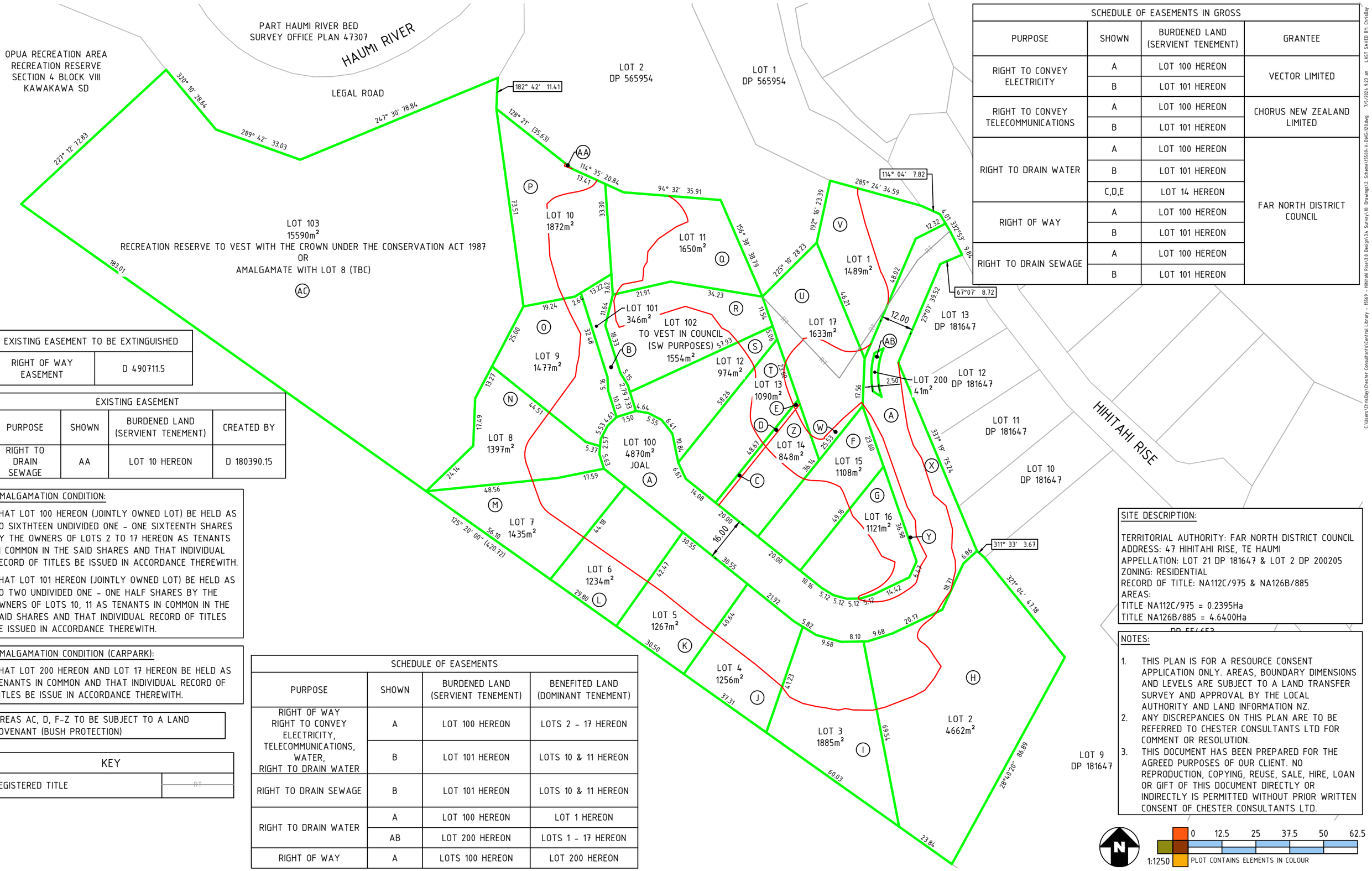

EXISTING EASEMENT TO BE EXTINGUISHED	
RIGHT OF WAY EASEMENT	D 490711.5

EXISTING EASEMENT			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	CREATED BY
RIGHT TO DRAIN SEWAGE	AA	LOT 10 HEREON	D 180390.15

AMALGAMATION CONDITION:

THAT LOT 100 HEREON (JOINTLY OWNED LOT) BE HELD AS TO SIXTHTEEN UNDIVIDED ONE - ONE SIXTEENTH SHARES BY THE OWNERS OF LOTS 2 TO 17 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

THAT LOT 101 HEREON (JOINTLY OWNED LOT) BE HELD AS TO TWO UNDIVIDED ONE - ONE HALF SHARES BY THE OWNERS OF LOTS 10, 11 AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

AMALGAMATION CONDITION (CARPARK):

THAT LOT 200 HEREON AND LOT 17 HEREON BE HELD AS TENANTS IN COMMON AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUE IN ACCORDANCE THEREWITH.

AREAS AC, D, F-Z TO BE SUBJECT TO A LAND COVENANT (BUSH PROTECTION)

KEY	
REGISTERED TITLE	RT

SCHEDULE OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITED LAND (DOMINANT TENEMENT)
RIGHT OF WAY RIGHT TO CONVEY ELECTRICITY, TELECOMMUNICATIONS, WATER, RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOTS 2 - 17 HEREON
	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN SEWAGE	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOT 1 HEREON
	AB	LOT 200 HEREON	LOTS 1 - 17 HEREON
RIGHT OF WAY	A	LOTS 100 HEREON	LOT 200 HEREON

SCHEDULE OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY	A	LOT 100 HEREON	VECTOR LIMITED
	B	LOT 101 HEREON	
RIGHT TO CONVEY TELECOMMUNICATIONS	A	LOT 100 HEREON	CHORUS NEW ZEALAND LIMITED
	B	LOT 101 HEREON	
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	FAR NORTH DISTRICT COUNCIL
	B	LOT 101 HEREON	
	C,D,E	LOT 14 HEREON	
RIGHT OF WAY	A	LOT 100 HEREON	
	B	LOT 101 HEREON	
RIGHT TO DRAIN SEWAGE	A	LOT 100 HEREON	
	B	LOT 101 HEREON	

SITE DESCRIPTION:

TERRITORIAL AUTHORITY: FAR NORTH DISTRICT COUNCIL
ADDRESS: 47 HIHITAHI RISE, TE HAUMI
APPELLATION: LOT 21 DP 181647 & LOT 2 DP 200205
ZONING: RESIDENTIAL
RECORD OF TITLE: NA112C/975 & NA126B/885
AREAS:
TITLE NA112C/975 = 0.2395Ha
TITLE NA126B/885 = 4.6400Ha

NOTES:

1. THIS PLAN IS FOR A RESOURCE CONSENT APPLICATION ONLY. AREAS, BOUNDARY DIMENSIONS AND LEVELS ARE SUBJECT TO A LAND TRANSFER SURVEY AND APPROVAL BY THE LOCAL AUTHORITY AND LAND INFORMATION NZ.
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0 12.5 25 37.5 50 62.5
1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By

Drafter:	V.RIVIER	Job Title:	LOTS 1-17, 100-103 BEING A SUBDIVISION OF LOT 21 DP181647 & LOT 2 DP200205
Designer:	C. DAY	Client:	HERON POINT LIMITED
Checker:	C. DAY	Address:	45 & 47 HIHITAHI RISE, PAIHIA, FAR NORTH DISTRICT.
Date:	05/07/2024	Drawing Title:	PROPOSED SCHEME PLAN

Drawing:	120	Rev:	0
Scale:	1:1250 @ A3		
Project:	15569		
Issue:	CONSENT		

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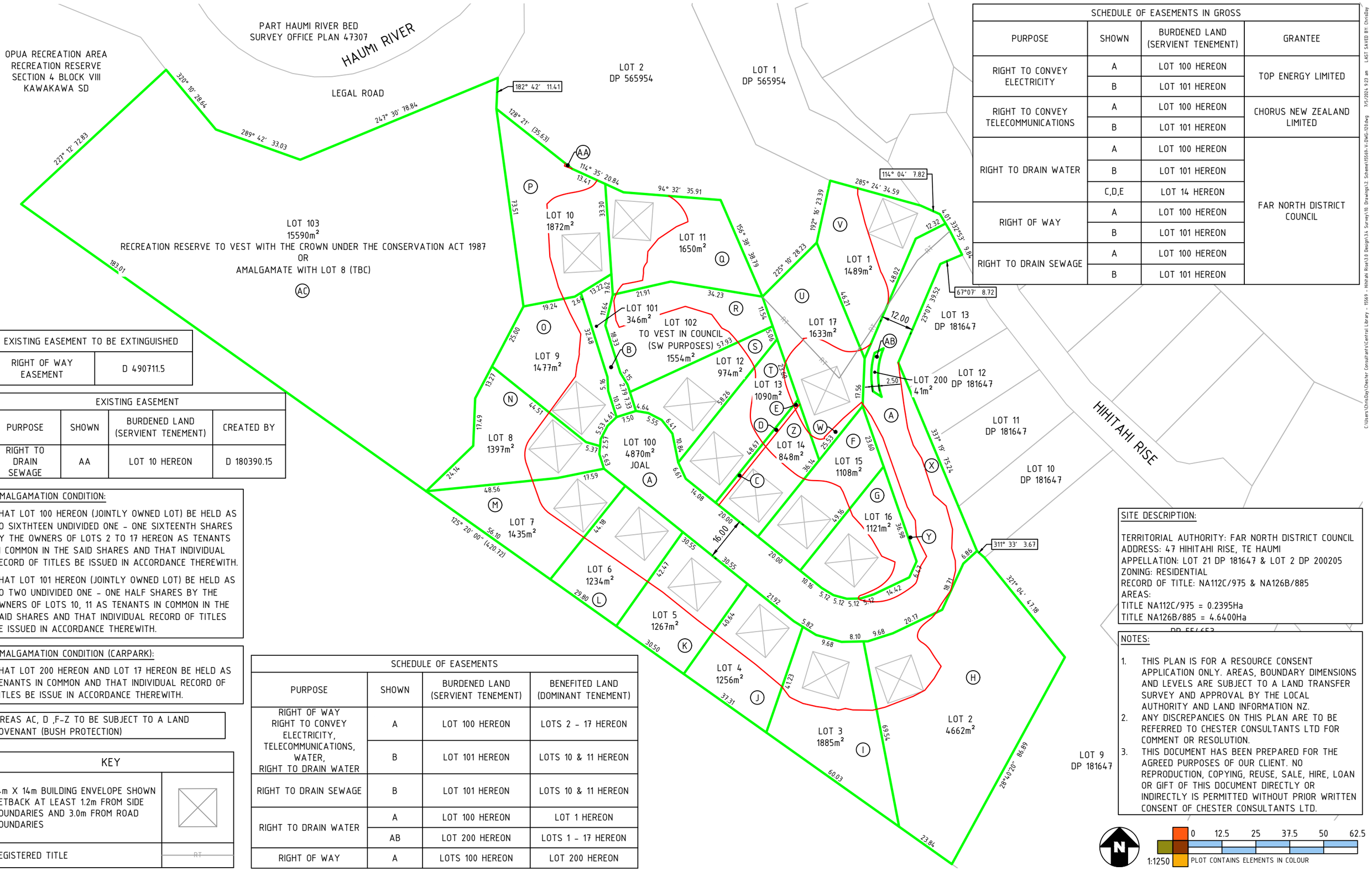

SCHEDULE OF EASEMENTS IN GROSS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	GRANTEE
RIGHT TO CONVEY ELECTRICITY	A	LOT 100 HEREON	TOP ENERGY LIMITED
	B	LOT 101 HEREON	
RIGHT TO CONVEY TELECOMMUNICATIONS	A	LOT 100 HEREON	CHORUS NEW ZEALAND LIMITED
	B	LOT 101 HEREON	
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	FAR NORTH DISTRICT COUNCIL
	B	LOT 101 HEREON	
	C,D,E	LOT 14 HEREON	
RIGHT OF WAY	A	LOT 100 HEREON	
	B	LOT 101 HEREON	
RIGHT TO DRAIN SEWAGE	A	LOT 100 HEREON	
	B	LOT 101 HEREON	

EXISTING EASEMENT TO BE EXTINGUISHED	
RIGHT OF WAY EASEMENT	D 490711.5

EXISTING EASEMENT			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	CREATED BY
RIGHT TO DRAIN SEWAGE	AA	LOT 10 HEREON	D 180390.15

AMALGAMATION CONDITION:

THAT LOT 100 HEREON (JOINTLY OWNED LOT) BE HELD AS TO SIXTHTEEN UNDIVIDED ONE - ONE SIXTEENTH SHARES BY THE OWNERS OF LOTS 2 TO 17 HEREON AS TENANTS IN COMMON IN THE SAID SHARES AND THAT INDIVIDUAL RECORD OF TITLES BE ISSUED IN ACCORDANCE THEREWITH.

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AREAS AC, D ,F-Z TO BE SUBJECT TO A LAND COVENANT (BUSH PROTECTION)

KEY	
14m X 14m BUILDING ENVELOPE SHOWN SETBACK AT LEAST 1.2m FROM SIDE BOUNDARIES AND 3.0m FROM ROAD BOUNDARIES	
REGISTERED TITLE	RT

SCHEDULE OF EASEMENTS			
PURPOSE	SHOWN	BURDENED LAND (SERVIENT TENEMENT)	BENEFITED LAND (DOMINANT TENEMENT)
RIGHT OF WAY RIGHT TO CONVEY ELECTRICITY, TELECOMMUNICATIONS, WATER, RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOTS 2 - 17 HEREON
	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN SEWAGE	B	LOT 101 HEREON	LOTS 10 & 11 HEREON
RIGHT TO DRAIN WATER	A	LOT 100 HEREON	LOT 1 HEREON
	AB	LOT 200 HEREON	LOTS 1 - 17 HEREON
RIGHT OF WAY	A	LOTS 100 HEREON	LOT 200 HEREON

SITE DESCRIPTION:

TERRITORIAL AUTHORITY: FAR NORTH DISTRICT COUNCIL
ADDRESS: 47 HIHITAHI RISE, TE HAUMI
APPELLATION: LOT 21 DP 181647 & LOT 2 DP 200205
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1:1250 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By

Drafter:	V.RIVIER	Job Title:	LOTS 1-17, 100-103 BEING A SUBDIVISION OF LOT 21 DP181647 & LOT 2 DP200205
Designer:	C. DAY	Client:	HERON POINT LIMITED
Checker:	C. DAY	Address:	45 & 47 HIHITAHI RISE, PAIHIA, FAR NORTH DISTRICT.
Date:	05/07/2024	Drawing Title:	OPERATIVE FNDC BUILDING ENVELOPE ASSESSMENT - RULE 13.7.2.2 AND RULE 7.6.5.1.7

Drawing:	121	Rev:	0
Scale:	1:1250 @ A3		
Project:	15569		
Issue:	CONSENT		

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Appendix 6:

Ecology Assessment, prepared by Wild Ecology, dated August 2024.

WILD ECOLOGY

Ecology Report

Proposed subdivision of
47 Hihitahi Rise,
Paihia

Lot 21 DP 181647 and
Lot 2 DP 200205

August 2024

DOCUMENT QUALITY ASSURANCE

Bibliographic reference for citation: Wild Ecology (2024). *Ecology Report prepared for proposed subdivision of 47 Hihitahi Rise, Paihia (Lot 21 DP 181647 & Lot 2 DP 200205).* Report prepared by Wild Ecology for Heron Point Ltd.		
Prepared for:	Heron Point Ltd	
Version:	FINAL	
Date:	07/08/2024	
Author:	Madara Vilde Principal Ecologist Wild Ecology	
Technical Advice and Peer Review (Terrestrial Fauna only)	Jacqui Wairepo Principal Fauna Ecologist Kūkūwai Consulting	
Revision History	FINAL	Issue date: 07/08/2024
	FINAL DRAFT	Issue date: 13/06/2024
Status:	1st DRAFT	Issue date: 04/06/2024
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CONTENTS

1.0 INTRODUCTION

1.1 Project overview

Heron Point Ltd ('the Applicant') engaged Wild Ecology to prepare an Ecological Report for a proposed subdivision of a site located at 47 Hihitahi Rise, Paihia (Lot 21 DP 181647 and Lot 2 DP 200205) ('the subject site'). The Applicant proposes to lodge an application for a subdivision consent based on provisions of Far North District Plan (Operative).

The layout of the proposed development has been comprehensively designed in consultation with Wild Ecology to ensure that the development minimises potential adverse effects on the indigenous habitats and species present within the site boundaries and wider surrounds. This design also aims to achieve ecological enhancement as part of the subdivision proposal. This is accomplished through sensitive development design, utilizing historically cleared areas and steering development away from mature indigenous trees and other high ecological value areas. The remainder of the indigenous vegetation on site, apart from the immediate building platforms and associated servicing, will be enhanced through revegetation planting, pest weed and pest animal control, and protected in perpetuity through conservation covenant provisions.

1.2 Purpose and Scope

The purpose of this Report is to provide a baseline assessment of the ecological features contained within the site boundaries and immediate surrounds, and outline opportunities for ecological enhancement. This report also considers whether the future intensified development of the site can occur in a manner consistent with the relevant ecological provisions in relation to local, regional and national plans, policy statements and regulations associated with the preservation of indigenous habitats.

This report identifies the potential adverse effects of the proposed development on ecological values and the degree to which significant adverse effects can be avoided, remedied, mitigated or offset. Both constraints and opportunities relating to the site's ecological values are identified and discussed.

2.0 METHODOLOGY

2.1 Desktop review

The desktop investigation included a review of scientific literature (published and unpublished), the Far North District Plan (Operative) and associated ecological site information, and relevant websites. Ecological databases were also accessed. These included:

- Retrolens historic aerial imagery
- DOC Bio-web Herpetofauna database;
- DOC Bat database;
- iNaturalist New Zealand;
- LENZ Threatened Environments Classification;

- Land Use Classification;
- Baseline Highly Productive Land – Manaaki Whenua;
- Wilderlab eDNA dababase;
- Oblique photography of the site;
- New Zealand Freshwater Fish Database (NZFFD).

2.2 Site investigation

The site and surrounding areas were visited on March 21st, 22nd, and 28th, 2024 and a site walkover was conducted over the entire site with terrestrial and aquatic features identified. The natural features were surveyed and recorded using a GPS unit (Trimble DA2).

Vegetation was recorded and classified in general accordance with Singers *et al.* (2017).

The following fauna surveys were conducted:

- Opportunistic bird surveys were conducted at various parts of the site to record avifauna (bird) present on site.
- A 7-day survey with an acoustic bat survey was undertaken using Acoustic Bat Monitor (SongMeter SM4).
- Basic visual observations and qualitative assessment of habitat values for native lizards (skinks and geckos) was undertaken during site visits.
- eDNA survey was undertaken to assess in-stream fauna presence/absence.
- An acoustic recorder (SongMeter SM4) was left on site for 7 days to obtain avifauna and herpetofauna records.

2.3 Watercourse classification

Watercourses on site were classified in accordance with criteria outlined in the Proposed Regional Plan for Northland (February 2024). There were multiple minor rainfall events with a collective cumulative rainfall of 5.2mm within the 48 hours prior to the March 22nd, 2024 survey (NRC Environmental Data Hub).

2.4 Wetland delineation

For wetland delineation protocols in the field the NPS-FM refers to the Ministry for the Environment (MfE) Wetland delineation protocols (2022) which are generally based on following the four main steps outlined in Figure 1. The primary step is based on the Vegetation tool for wetland delineation in New Zealand (Clarkson 2013) to determine the status of wetlands. This step relies on the presence or absence of hydrophytic vegetation as being the dominant vegetation type. The list of hydrophytes used in this assessment are as per the most recently revised list (Clarkson *et al.* 2021). The results from the vegetation tool provided conclusive results and therefore dominance - prevalence hydrophytic vegetation test (Step 2) and hydric soils tool (Step 3) and wetland hydrology tools (Step 4) were not utilised for this site.

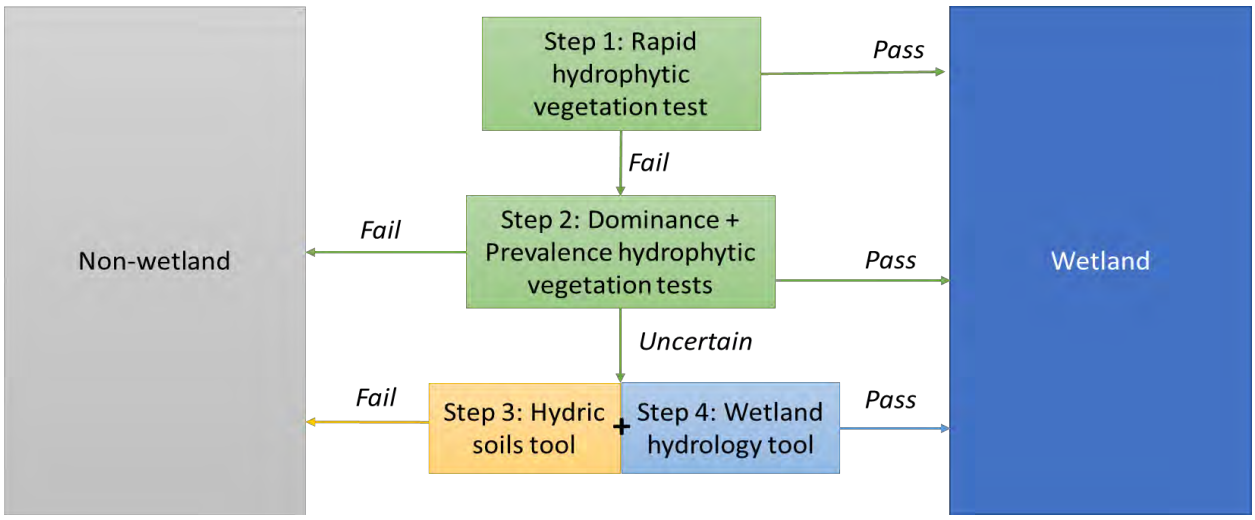

Figure 1: Four steps for delineating wetlands using the hydrophytic vegetation, hydric soils and wetland hydrology tools

2.5 Evaluation of Ecological Value (NRPS)

Rule 12.2.5.6 of the Far North District Plan (Operative) requires that significance of indigenous vegetation and habitats is assessed by reference to policy 4.4.1 and the significance criteria as outlined under Appendix 5 of the Northland Regional Policy Statement (NRPS (2016)).

2.6 Evaluation of Ecological Effects

As a part of the ecological assessment, potential ecological effects associated with the subdivision consent and subsequent site development on both terrestrial and aquatic values on site were described and appropriately assessed. Where necessary, mitigation measures have been outlined to ensure that the site's active development does not result in adverse effects on the environment.

3.0 ECOLOGICAL CONTEXT

3.1 Site location

The site is located approximately 4 km north from Paihia township and is zoned 'Residential' under the Far North District Plan (Operative) (Figure 2). The total site is comprised of two parcels being Lot 21 DP 181647 and Lot 2 DP 200205 with a total site area of approximately 4.87 ha. The site at current day is clad in a mixture of indigenous regenerating terrestrial and wetland vegetation and a large pocket of mixed exotic-indigenous vegetation located at the central aspect of the site. The site is located within the Haumi River catchment, being bisected by a tidal permanent river encompassed by an indigenous wetland feature.

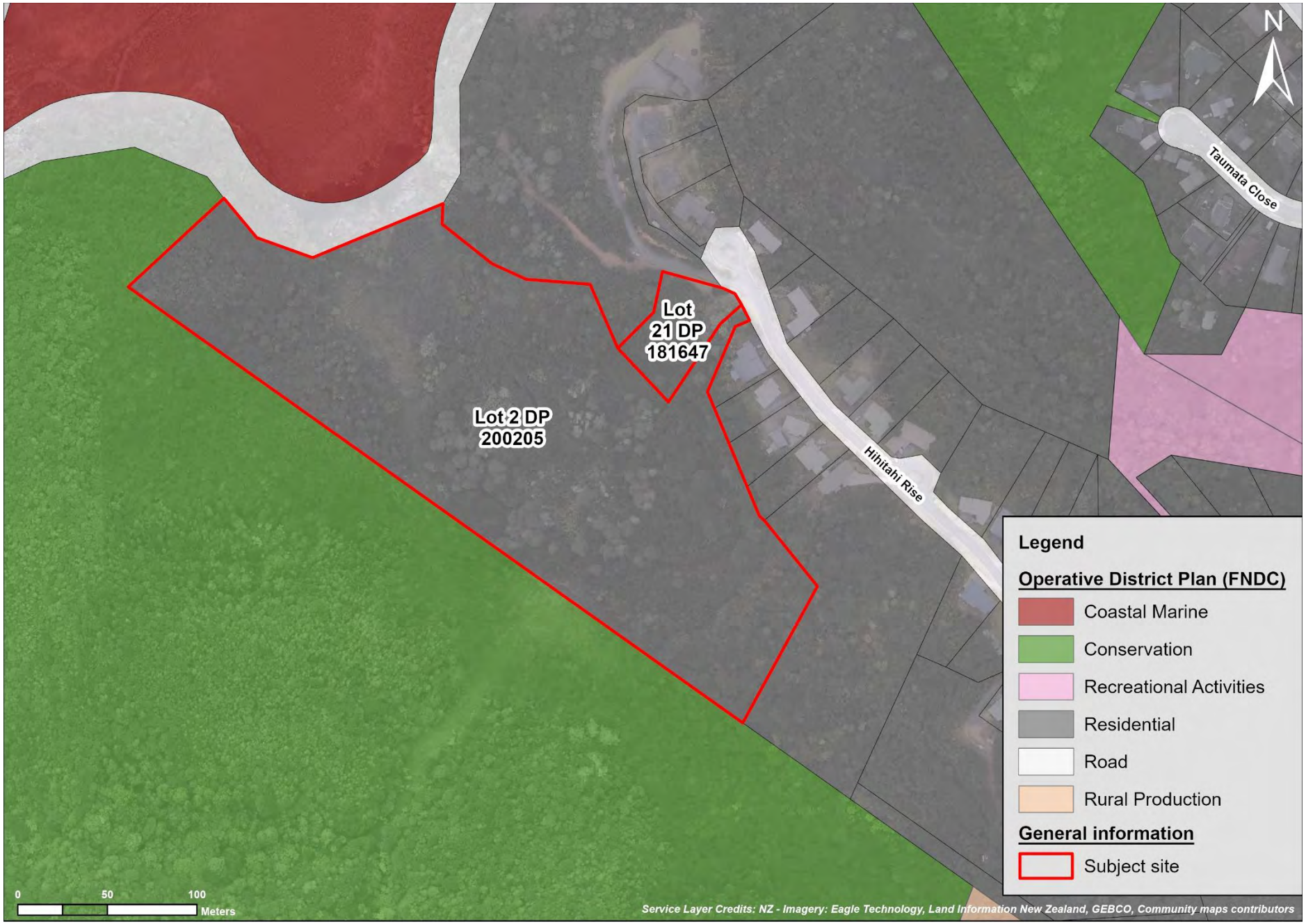

Figure 2: Showing the subject site with oFNDP zoning overlay

3.2 Historic land use

Originally the vegetation cover on site and the surrounding area would have been a continuation of the Haumi River ecotone transitional area between estuarine and terrestrial environments.

While the site at current day is clad in a mixture of indigenous and exotic vegetation, the sites vegetation cover historically would have been best represented by Kauri, podocarp, broadleaved forest (WF11) along the sites more elevated southern aspect grading into swamp mosaic (WL) and Mangrove forest and scrub (SA1) immediately west to the site (Singers (2018)) (Figure 3). Anthropogenic land use activities have significantly modified and reduced the extent and quality of the original ecosystem types that would have once extended over the area, with only small pockets of WF11 and swamp mosaic habitats present, largely limited to the less accessible western aspect of the site.

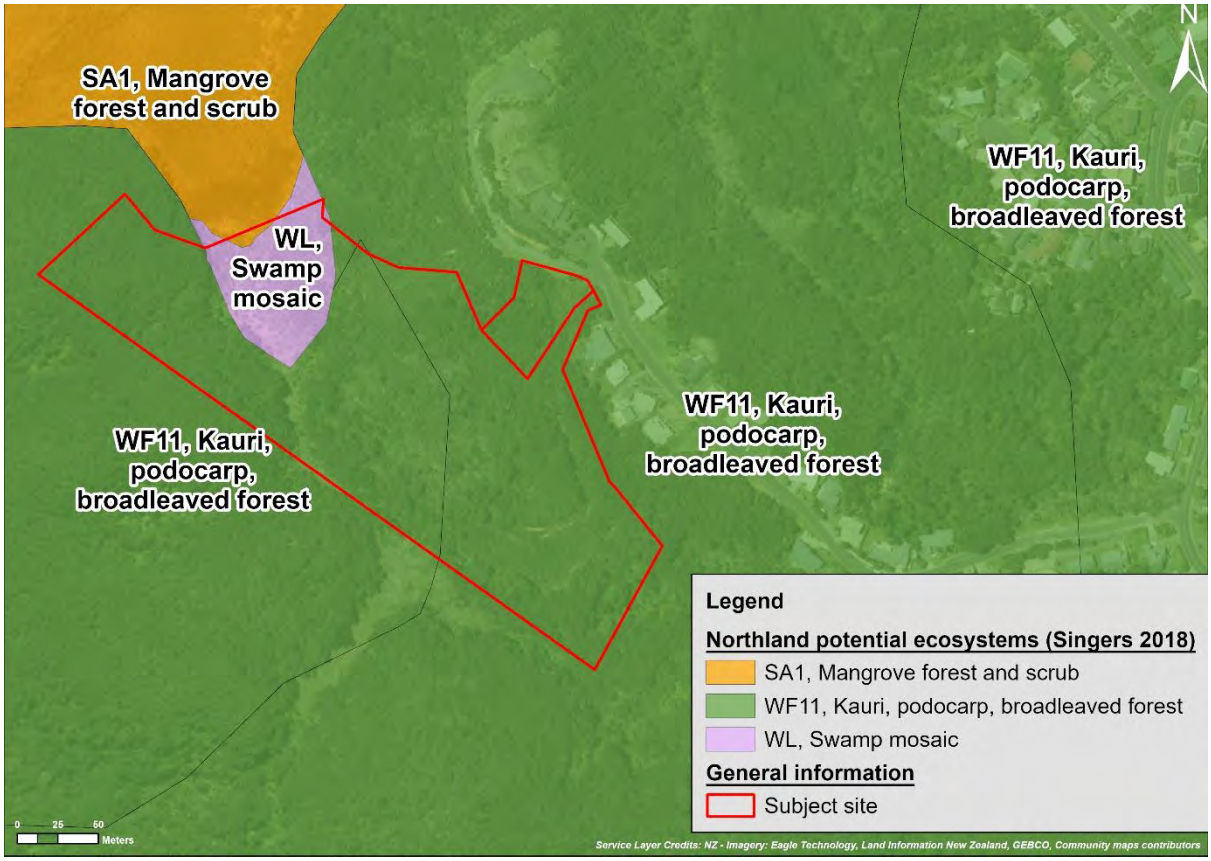

Figure 3: Northland potential ecosystem classification (Singers 2018)

In the earliest available historic aerial imagery (Retrolens) from 1953 (Figure 4), large tracts of vegetation appear to cover the subject site. Based on aerial photography it appears that the area is likely to have been dominated by a secondary type of forest such as kanuka scrub, given the lack of identifiable large primary forest trees. Distinctive drainage patterns can be observed draining the site through its central aspect in a north-westerly direction towards Haumi River.

Between 1953 and 1981, it is likely that the site remained disused, and the vegetation cover was maintained. However, in the aerial photography from 1981 it appears that the site's central aspect had been cleared of vegetation. Anecdotal evidence suggests that the site may have been used as a disposal ground of fill – it is apparent that the nearby areas have become increasingly developed for residential dwellings (Figure 5).

Between 1981 and 2005 (Figure 6) it appears that the central aspect of the site was maintained free of vegetation. It is apparent that sometime between 2005 and 2020 the central aspect had stopped to be routinely cleared (Figure 7) and at current date is dominated by a mixture of regenerating exotic and indigenous scrubland, estimated to be approximately 10-17 years of age.

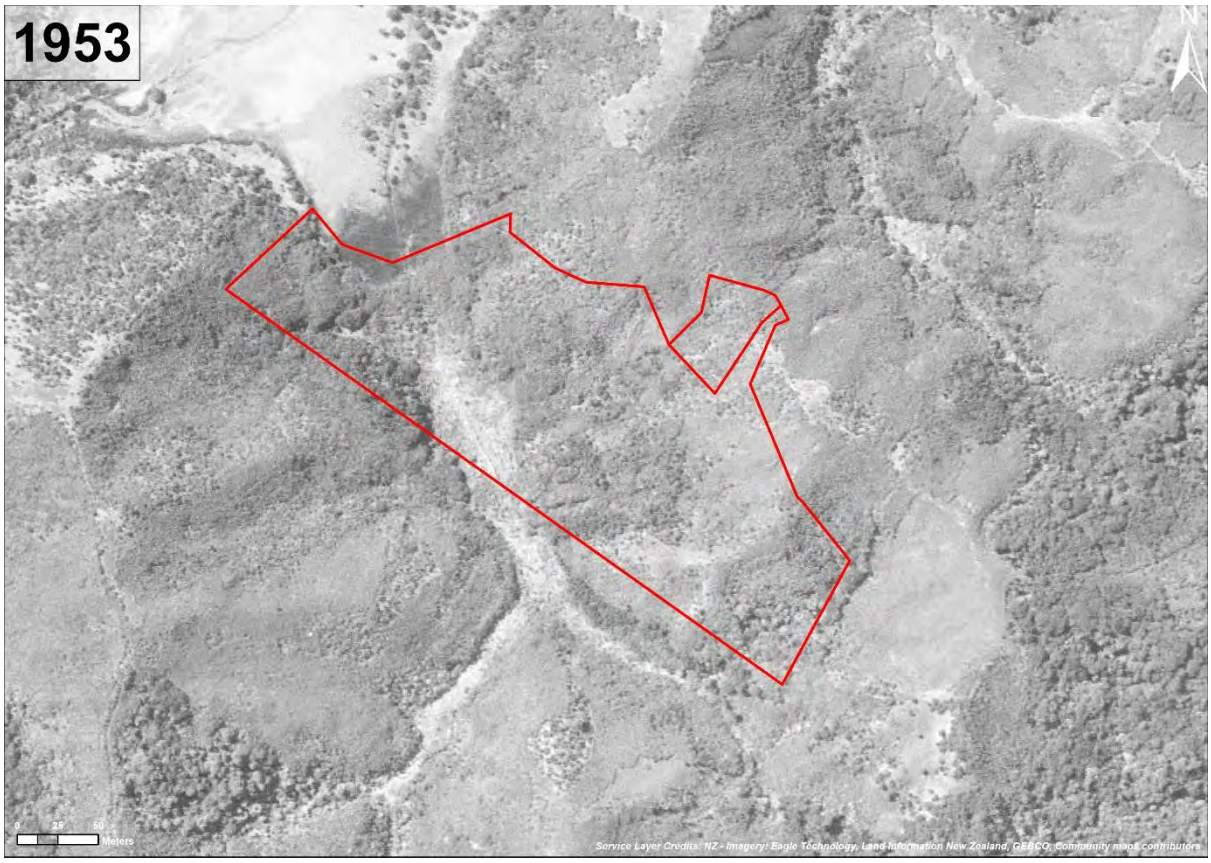

Figure 4: Showing the site and surrounds in 1953 (Source: Retrolens)

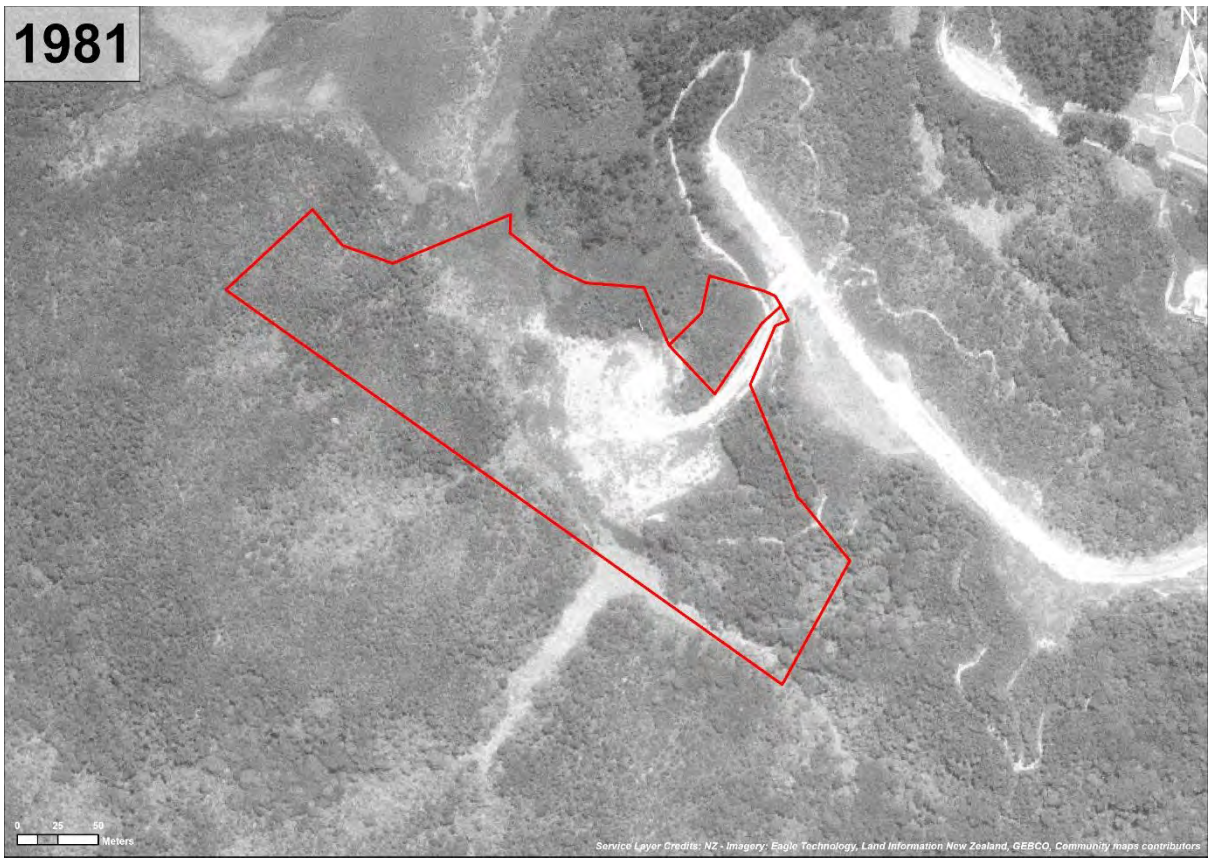

Figure 5: Showing the site and surrounds in 1981 (Source: Retrolens)

Figure 6: Showing the site and surrounds in 2005 (Source: LINZ)

Figure 7: Showing the site and surrounds in the most recent aerial imagery for Northland 2020 (Source: LIDAR)

3.3 Site characteristics

The site generally has a steeply falling topography and falls roughly in a south-westerly direction from the sites north-eastern aspect towards Haumi River estuarine environment. The eastern and western flanks of the site are separated by a large wetland-saltmarsh ecotone transitional area. The geology of the site is characterised by Waipapa Group sandstone and siltstone comprised of massive to thin bedded, lithic volcaniclastic metasandstone and argillite, with tectonically enclosed basalt, chert and siliceous (GNS 2024).

A mixture of Marua clay loam (MRH) and Rangiora clay, clay loam & silty clay loam (RAH) soils extend over the site (Figure 8). These soils are typically found on rolling to steep hill country along Northland's eastern edge, from Mangonui south to Bream Tail. They are both marua suite soils which are prone to landslide erosion during high rainfall events (Landcare Research 2024).

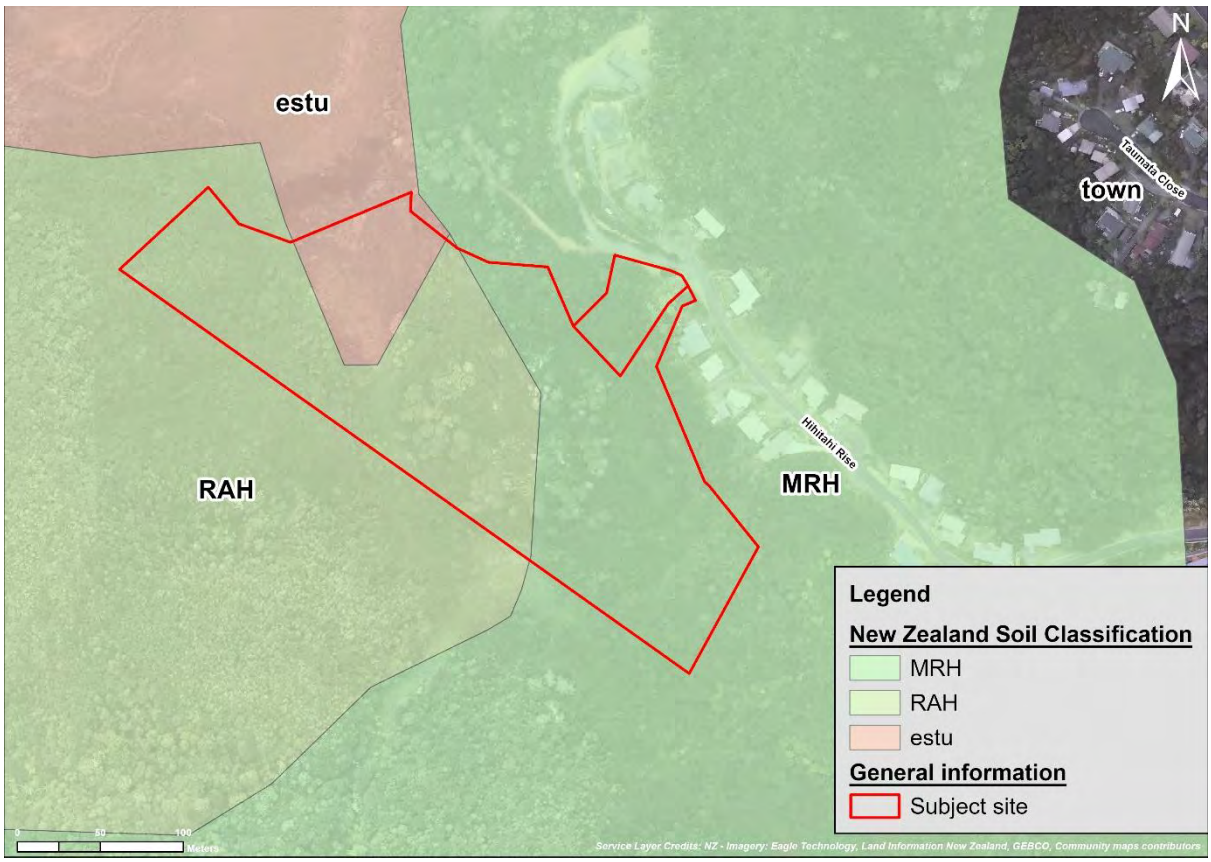

Figure 8: The site generally consists of clay loam soils that are typically prone to erosion

Land Use Capability (LUC) inventory was analysed to assess whether the site contains any soils classified as highly productive land (defined as LUC Class 1-3 soils within the National Policy Statement for Highly Productive Land 2022 (NPS-HPL)). The site is primarily classified as LUC Class 6 land which is unsuitable for pastoral and cropping use (Figure 9). No soils on the site have been identified as highly productive land as defined under NPS-HPL (2022).

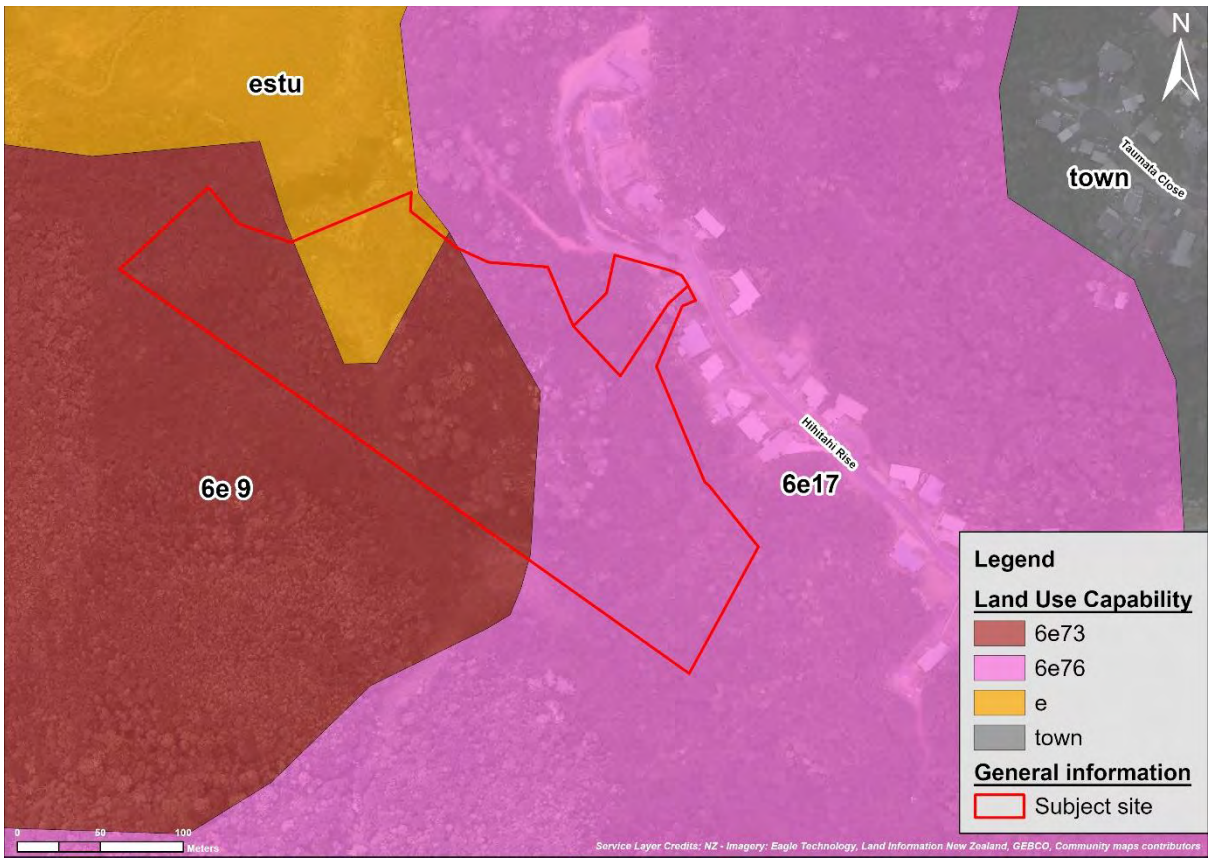

Figure 9: Showing the LUC classification for the site

One primary permanent watercourse encompassed by a large indigenous wetland system flows through the site's central aspect in a north-westerly direction (Figure 10). A number of smaller intermittent streams feed into it from the north and south. The main permanent stream system discharges into the Haumi River estuarine environment. The permanent stream margins have been identified as NRC as a Coastal Flood Hazard Zone 0 (current), 50 and 100-year extent.

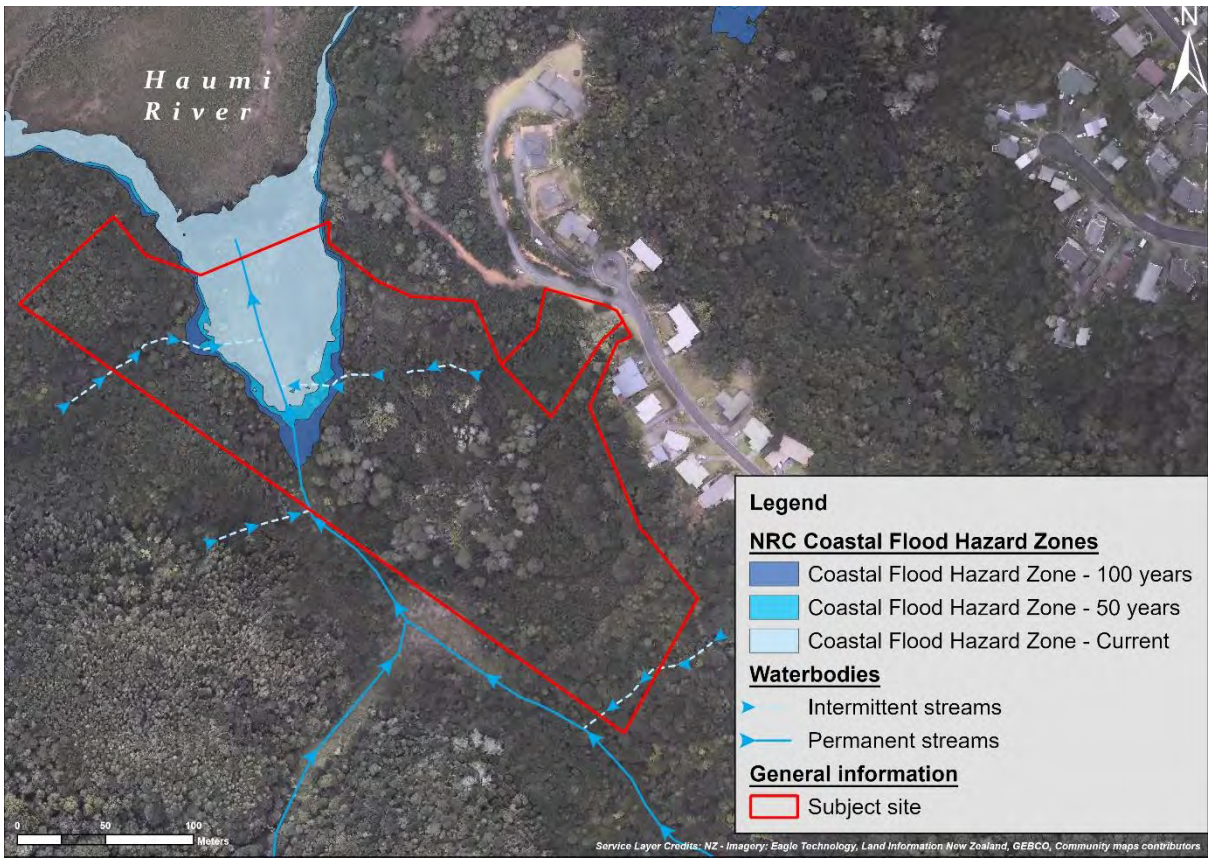

Figure 10: Showing the general hydrological patterns and NRC Coastal Flood Hazard Overlay for the site

The site is situated on the boundary between Kerikeri and Whangaruru Ecological Districts (ED). The entirety of the site has been mapped as a Protected Natural Area (PNA) with the majority of the site being classified as Opua Forest (P05/058) (Kerikeri ED) and a smaller portion primarily encompassing the wetland/saltmarsh area on site being mapped as Eastern Bay of Islands Estuary (Q05/001) (Whangaruru ED) (Figure 11). P05/058 is described by Booth (2005) as having a large size, coastal influences and mosaic of vegetation types including freshwater and saltwater ecotones and sequential gradients from sea level to over 230 m asl. It is a representative site for all vegetation types present. P05/058 is known to support a number of 'At Risk' flora and fauna including, but not limited to NI brown kiwi, pateke, NI weka, grey duck, NI fernbird, Northland green gecko, long-fin eel, banded kokopu, inanga, giant bully and others. This description by Booth is reflective of the characteristics of some of the lesser modified habitats recorded on site and extending primarily to the west and south of the site.

Eastern Bay of Islands Estuary (Q05/001) forms an extensive estuarine habitat and has been renowned for its importance to indigenous shorebirds. This site contains the most extensive examples of saltmarsh/mangrove within the Bay, with the least modified riparian margin. Over 90 km (or 88%) of riparian margin within these two inlets adjoins significant terrestrial and/or estuarine vegetation. In many instances, freshwater wetlands adjoin their saline counterpart. Q05/001 features one of the best examples of unbroken gradients, from old–growth hill forest to tidal flats, found anywhere in Northland, with extensive riparian cover sometimes adjoining freshwater/brackish wetlands (Booth 2005).

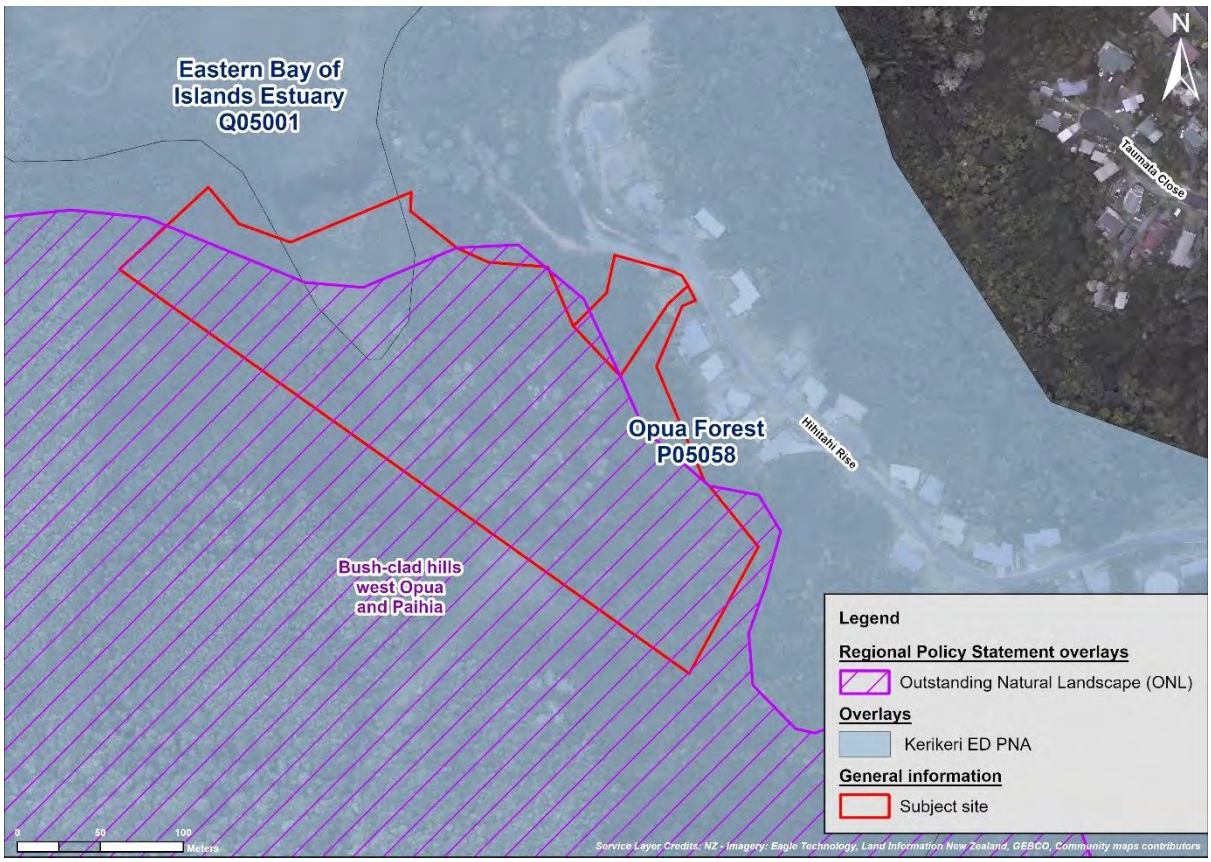

Figure 11: Showing the PNA P05/058 and Q05/001 extending over the subject site and surrounds – note part of the site has also been mapped as an ONL

The vegetation cover on site (Figure 12) is primarily limited to regenerating kanuka forest along the sites more accessible northern and eastern portions, regenerating podocarp forest along the sites less accessible western aspect, separated by a large indigenous freshwater-saltmarsh wetland system. The central 'bowl' of the site is comprised of exotic-indigenous regenerating vegetation which has been cleared systematically since at least 1982 (according to historic aerial imagery of the site). Each respective vegetation type is described in further detail under Section 4.1 below.

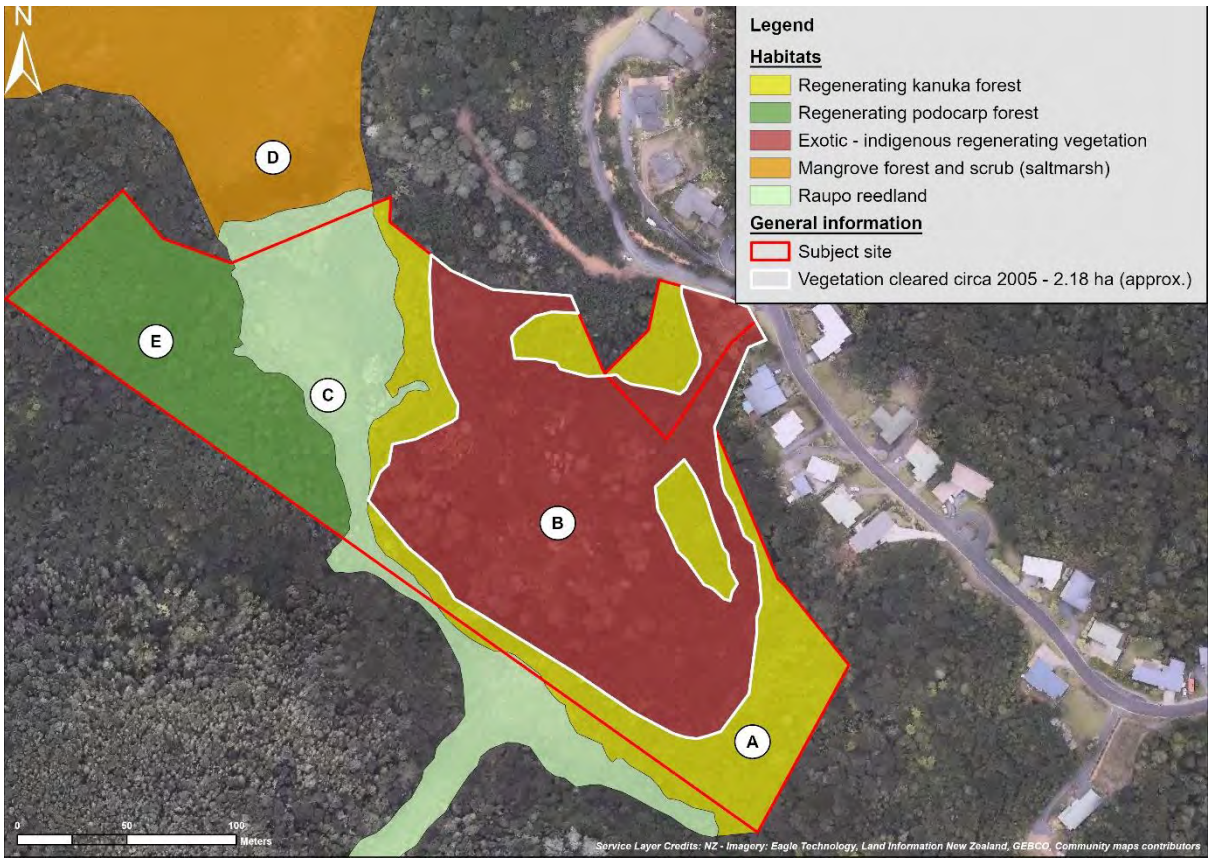

Figure 12: Showing the habitat classification on site at current day

Under Land Environments of New Zealand (LENZ) the majority of the site and immediate surrounds is contained within the 'Category 2 and 3 Threatened Land Environment', where there is 20%-30% indigenous cover left, but much of it is not under legal protection (Figure 13). Indigenous biodiversity in these 'At Risk' environments is under-protected, and thus are more at risk of loss and decline if little of the environment has formal protection.

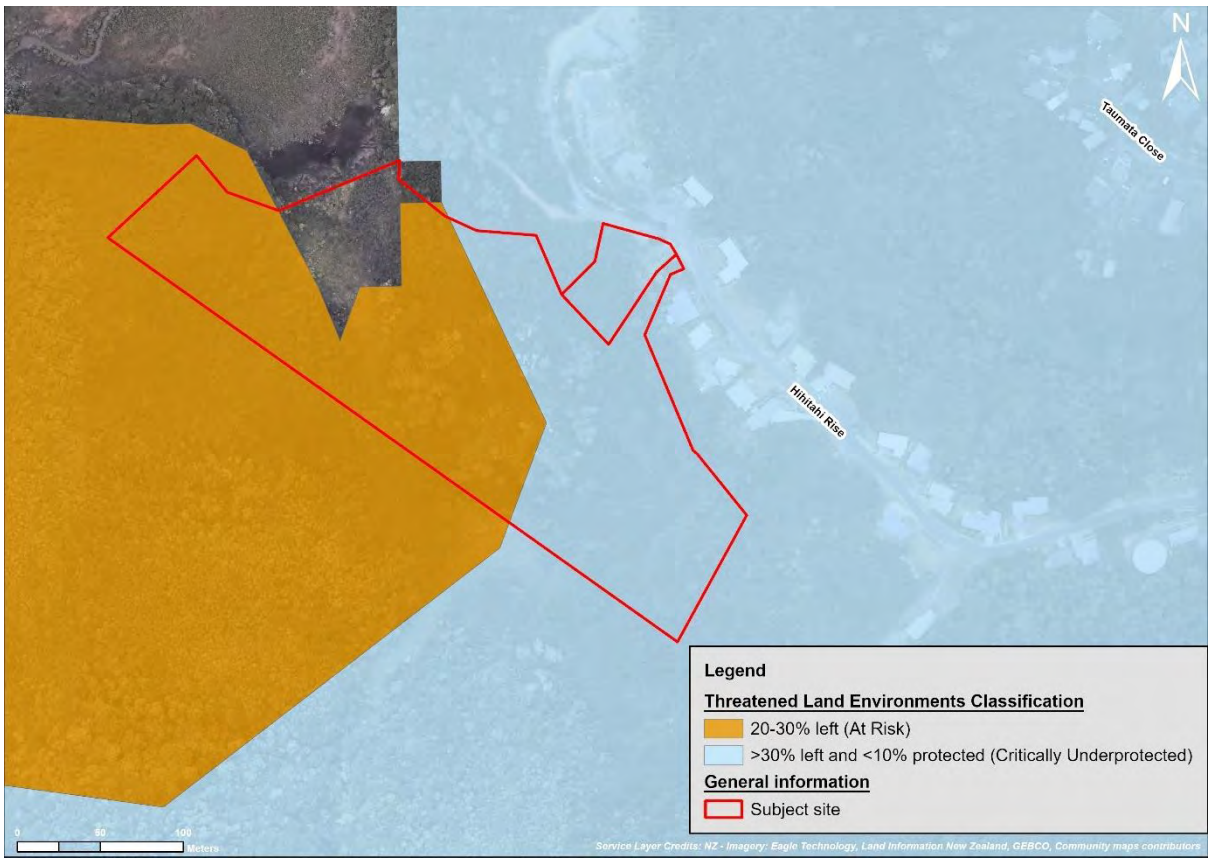

Figure 13: Showing the site and Threatened Environment Classification for New Zealand (2012)

From the analysis conducted above, it is recognised that both the ecological structure and functionality of the site has been historically reduced. The sites' location abounding Opua Forest and the inner Haumi River presents an opportunity to enhance and protect this sensitive ecotone transitional area as part of this subdivision proposal. Imposing development controls coupled with permanent protection of indigenous vegetation contained on site will deliver catchment-wide improvements in stream and river ecosystem health of Haumi River and the wider Bay of Islands estuarine environment.

4.0 ECOLOGICAL SURVEY RESULTS

4.1. Terrestrial

Field surveys were undertaken during March 2024, and the onsite vegetation and vegetation cover directly adjacent to the east, west and south of the site has been described. Habitats identified on site and adjacent can be seen under Figure 14 as depicted in below, each described through a lettering system for ease of identification and description. A general description of species present within these areas is outlined in the following sections.

Please note that part of the wetland areas on site are located within Mean Water High Springs (MHWS) – these areas do not meet the definition of a natural inland wetland as defined under NPS-FM (2020). Where wetlands extend outside of the MHWS line they are considered to meet the definition of a natural inland wetland and NPS-FM and NES-FW policies and regulations apply.

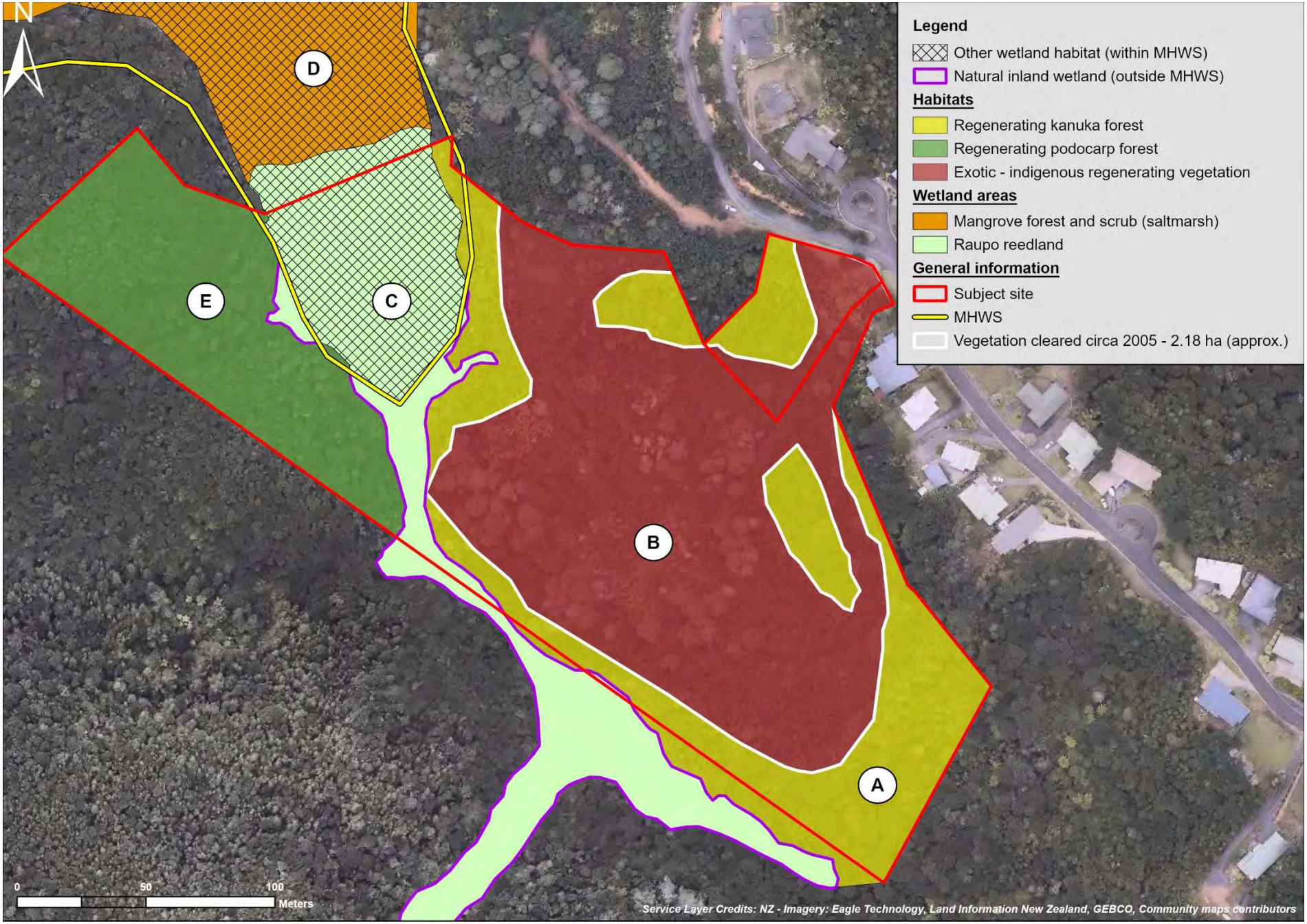

Figure 14: Showing general habitat types noted during field surveys in March 2024

4.1.1. Regenerating kanuka forest (A)

Area A is comprised of secondary regenerating kanuka forest (Figure 15) characterised by kanuka (*Kunzea robusta*) with emergent tanekaha (*Phyllocldus trichomanoides)* and scattered towai (*Weinmannia silvicola*). A thick understory and shrub layer was developing, dominated by species such as ponga (*Cyathea dealbata*), twiggy coprosma (*Coprosma rhamnoides*), hangehange (*Geniostoma ligustrifolium*), mahoe (*Melicytus ramiflorus*), mapou (*Myrsine australis*), putaputaweta (*Carpodetus serratus*), ti kouka (*Cordyline australis*), soft mingimingi (*Leucopogon fasciculatus*) and lancewood (*Pseudopanax crassifolius*) (Figure 15). While likely historically cleared, it is considered that his habitat type is representative of a regenerating forest ecosystem with a trajectory to reach kauri, podocarp forest (WF11) ecosystem type in the future should it be protected in perpetuity.

Figure 15: Showing general composition of regenerating kanuka forest on site

4.1.2. Exotic-indigenous regenerating vegetation (B)

Area B is located within the 'central bowl' of the site and has been routinely cleared at least since 1982. It is likely that prior to vegetation clearance in 1982 it would have been representative of the wider regenerating kanuka shrubland ecosystem type. Based on aerial imagery analysis it was deemed that the area was most recently cleared circa 2005-2006 and at current date comprises of a mixture of exotic shrubs and trees and regenerating indigenous pioneer species associated with exposed historically cleared areas. This habitat type is dominated (Figure 16) by a high number of weedy species (>50%) such as gorse (*Ulex europaeus*), pampas (*Cortaderia selloana*), Chinese and tree privet (*Ligustrum* sp.), woolly nightshade (*Solanum mauritianum*), willow leaved hakea (*Hakea salicifolia*), Taiwan cherry (*Prunus campanulata*) and wilding pine (*Pinus* sp.). These areas contain some regenerating natives such as hangehange, kanuka, mahoe,

and some isolated patches of kumarahou, cabbage trees and totara, but exotic species remain dominant.

Figure 16: Showing general composition of the exotic-indigenous regenerating within the 'central bowl' of the site

4.1.3. Raupo reedland (C)

The raupo reedland wetland area (C) (Figure 17) is dominated by raupo (*Typha orientalis*) dispersed with species including but not limited to swamp millet (*Isachne globosa*), purei (*Carex secta*), rautahi (*Carex lessoniana*), orange nut sedge (*Machaerina rubignosa*), giant umbrella sedge (*Cyperus ustulatus*), sharp spike sedge (*Eleocharis acuta*), kuawa (*Schoenoplectus tabernaemontani*), harakeke (*Phormium tenax*), manuka (*Leptospermum scoparium*), *tangle fern* (Gleichenia dicarpa), ti kouka (*Cordyline australis*), wheki (*Dicksonia squarrosa*) and kiokio (*Parablechnum novae-zelandiae*). Bindweed (*Calystegia sepium subsp. roseata*) was common climbing on raupo.

Along its northernmost terminus the wetland merges into a saltmarsh wetland dominated oioi (*Apodasmia similis*) interspersed saltmarsh ribbon wood (*Plagianthus divaricatus*), merging with manawa (*Avicennia marina* subsp. *australasica*).

Figure 17: Showing the raupo reedland ecosystem extending over and directly adjoining the site

Given that part of the wetland area on site meets the definition of a 'natural inland wetland' (where it is located outside MHWS) as defined under NPSFM (2020) and the proposed site's development will occur within a 100m setback from the identified wetland features, consideration will have to be given to applicable NES-FW (2020) regulations in relation to earthworks and stormwater diversions to land within a 100m setback from the identified 'natural inland wetland' area on site.

4.1.4. Mangrove, forest and scrub saltmarsh (D)

The raupo wetland area merges into an ecotone transitional area of the Haumi River and is best described as mangrove forest and scrub (SA1). The upper areas of the saltmarsh were dominated by oioi (*Apodasmia similis*) interspersed with swards of sea rush (*Juncus krausii* subsp. *australiensis*) and saltmarsh ribbon wood (*Plagianthus divaricatus*), merging with manawa (*Avicennia marina* subsp. *australasica*) (Figure 18).

Figure 18: Showing the saltmarsh area extending to the north of the terminus of the raupo wetland sequence

4.1.5. Regenerating podocarp forest (E)

The regenerating podocarp forest area extending along the less accessible western extent of the site is typical that of the wider Opua Forest Complex. The canopy on the drier ridges is generally dominated by emergent totara (*Podocarpus totara*), tanekaha (*Phyllocldus trichomanoides*), rimu (*Dacrydium cupressinum*), kahikatea (*Dacrycarpus dacrydioides*), and rewarewa (*Knightia excelsa*). The sub-canopy level is dominated by kanuka and tanekaha rickers. Kauri (*Agathis australis*) rickers are sparsely dotted throughout. The gully surrounding the streams were dominated by emergent puriri (*Vitex lucens*) along with other broadleaf species such as kohekohe (*Dysoxylum spectabile*), taraire (*Beilschmiedia tarairi*) and titoki (*Alectryon excelsus*) (Figure 19).

Figure 19: Showing regenerating podocarp ecosystem extending along the less accessible western extent of the site

4.2. Aquatic

4.2.1. Freshwater habitats

The watercourses on site (Figure 20) are generally limited to the permanent stream flowing through the site forming a large freshwater-marine ecotone transitional area and a number of smaller intermittent streams flowing through the existing bush areas. In general, all watercourses on site appear to follow their natural stream course, albeit some modification of one of the intermittent streams present within the central bowl of the site which has been previously cleared was noted, where an existing crossing has been built over the stream underlain by a small culvert crossing. This is proposed to be remedied as part of the site development work and an appropriate stream crossing is to be established in this area that facilitates unrestricted fish passage.

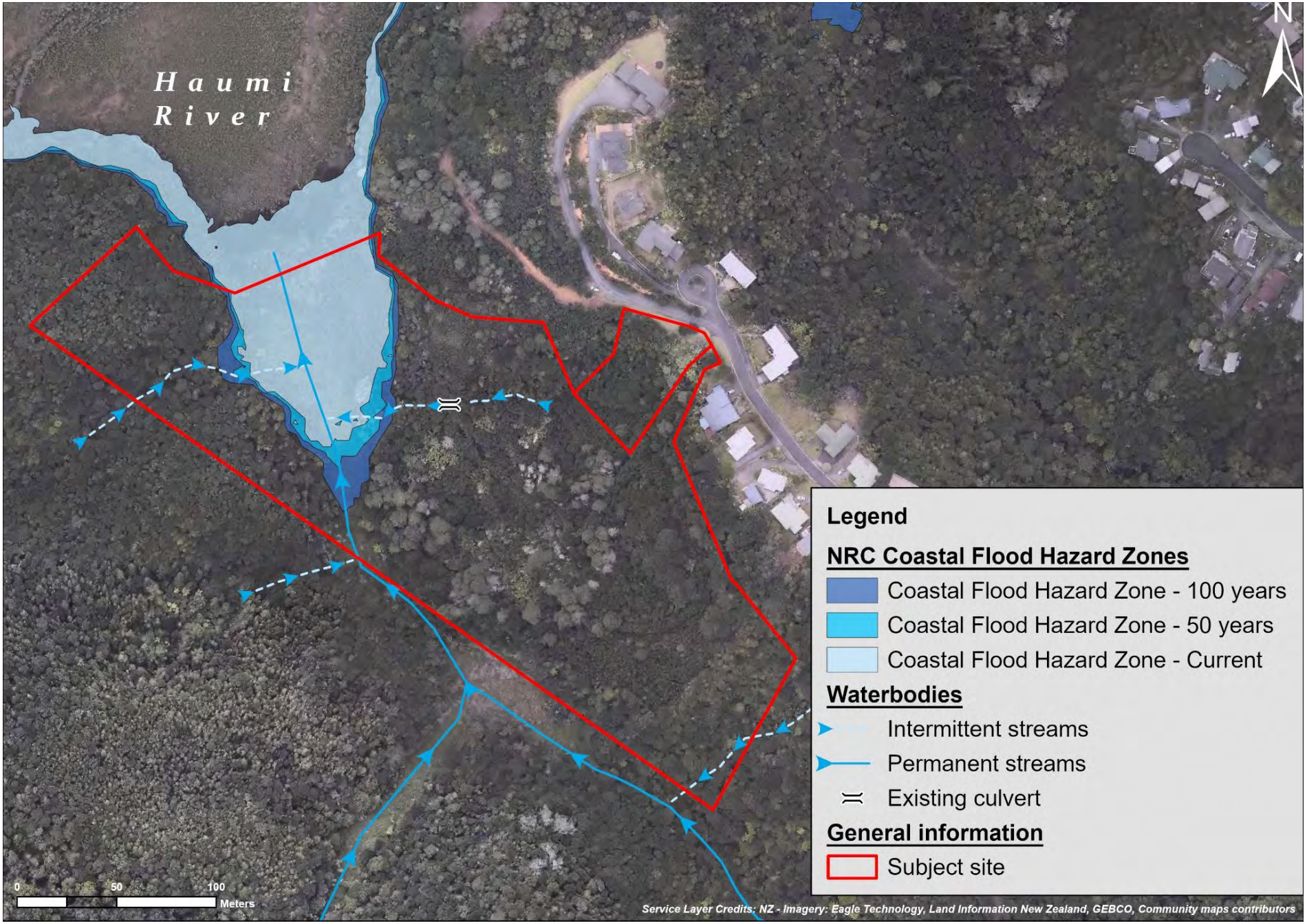

Figure 20: Showing the hydrological patterns of the site and immediate surrounds

4.2.2. Aquatic diversity

An aquatic diversity survey was undertaken utilising eDNA surveys utilising WilderLab test kit for multi-species analysis by DNA metabarcoding (WilderLab 2024) during a site visit in March 2024. The full eDNA sampling and analysis methodology can be found at wilderlab.co.nz. The results of the aquatic diversity survey can be found in Table 1.

In addition, a quantitative search of the New Zealand Freshwater Fish Database (NZFFD, accessed March 2024, revealed records of six fish and three native invertebrate species (Table 1) as being present within the wider Haumi River catchment.

Table 1: Freshwater fish and invertebrate species recorded within the wider Haumi River catchment (results from eDNA surveys and NZFFD accessed March 2024)

Scientific name	Common name	Conservation status	Recorded via
Anguilla australis	Shortfin eel	Endemic and Not Threatened	eDNA & NZFFD
Anguilla dieffenbachii	Longfin eel	Native & Declining (At risk)	eDNA & NZFFD
Galaxias fasciatus	Banded kokopu	Endemic and Not Threatened	eDNA & NZFFD
Galaxias maculatus	Inanga	At Risk - Declining	eDNA & NZFFD
Gambusia affinis	Gambusia	Exotic pest fish species	NZFFD
Gobiomorphus basalis	Cran's bully	Native and Not Threatened	NZFFD
Gobiomorphus cotidianus	Common bully	Native and Not Threatened	NZFFD
Gobiomorphus huttoni	Redfin bully	Native and Not Threatened	NZFFD
Paranephrops spp.	Koura	Native & Declining (At risk)	NZFFD

Of significance, the survey results indicate that the lower sections of the permanent tributary stream of the Haumi River flowing through and along the subject site provide habitat banded kokopu (*Galaxias fasciatus*), 'At Risk-Declining' long-fin eel (*Anguilla dieffenbachii*) and inanga (*Galaxias maculatus*).

4.3. Avifauna

Avifauna species were observed on the site via opportunistic observations during site visits on March 22nd, 2024, and deployment of a passive acoustic recorder (SongMeter SM4) for 7 days between March 21st and 28th 2024 with a comprehensive bird species list outlined in Table 4. Overall, the diversity of birds observed/recorded was moderate, with 12 native/endemic and 4 introduced species.

The birds observed on site are representative of the modified estuarine ecotone transitional area with some common bird species such as New Zealand fantail (*Rhipidura fuliginosa*), sacred kingfisher (*Todiramphus sanctus*), pukeko (*Porphyrio melanotus*), paradise shelduck (*Tadorna variegata*) observed on site. Mallard (*Anas platyrhynchos*) and their young were observed within the wetland area on site. Red billed gulls (*Chroicocephalus novaehollandiae*) and swamp harrier (*Circus approximans*) were observed flying overhead. NI Tomtit (*Petroica macrocephala toitoi*) was observed foraging within the onsite bush areas. NI fern-bird (*Poodytes punctatus vealeae*) were recorded and observed within the on-site wetland area.

Table 2: Bird species recorded on the site during site visits in March 2024

Scientific name	Common name	Conservation status

Acridotheres tristis	Myna	Introduced & Naturalised
Anas platyrhynchos	Mallard	Introduced & Naturalised
Bowdleria punctata subsp. vealeae	Fernbird	Native & At Risk-Declining
Carduelis carduelis	European goldfinch	Introduced & Naturalised
Chrysococcyx lucidus	Shinning cuckoo	Native & Not Threatened
Circus approximans	Swamp harrier	Native & Not Threatened
Chroicocephalus novaehollandiae	Red billed gull	Native and Declining
Gerygone igata	Grey warbler	Endemic & Not Threatened
Hirundo neoxena	Welcome swallow	Native & Not Threatened
Passer domesticus	House sparrow	Introduced & Naturalised
Petroica macrocephala toitoi	NI tomtit	Native & Not Threatened
Porphyrio melanotus	Pukeko	Native & Not threatened
Rhipidura fuliginosa	New Zealand fantail	Endemic & Not Threatened
Tadorna variegata	Paradise shelduck	Endemic & Not Threatened
Todiramphus sanctus	Sacred kingfisher	Native & Not Threatened
Vanellus miles	Spur-winged plover	Native & Not Threatened
Zosterops lateralis	Silvereye	Native & Not Threatened

Figure 21: NI fern bird were recorded within the onsite wetland area

The site occurs within a designated kiwi zone, and North Island brown kiwi (*Apteryx mantelli*) have been previously recorded in the wider area. Kiwi use of the bush area and riparian corridors

within the immediate surrounds of the subject property is likely. Opua Forest and wider Bay of Islands area is a known to be a stronghold of the Northland kiwi population due to the extensive forest habitat present in the area, with kiwi regularly being observed within adjacent residential areas. The majority of avifauna recorded on site is deemed as common, however the presence of NI fernbird indicates that the on-site wetland area is utilised by at least one 'At Risk' avifauna species. While not recorded during site visits, given that the site abounds extensive saltmarsh and estuarine ecotone transitional area, it is possible that banded rail (*Gallirallus philippensis),* Australasian bittern (*Botaurus poiciloptilus*) may periodically be present within the on-site wetland area and adjoining saltmarsh.

Concentrating the proposed development in an area that has been historically cleared, utilising avifauna management protocol for the proposed vegetation clearance, banning domestic pets from the site, limiting further vegetation clearance of mature terrestrial and aquatic habitats on site, and protecting these through conservation covenant provisions will ensure that the habitats inhabited by these species are permanently protected. The proposed pest animal control to be established within the proposed ecological protection areas will positively support their potential utilisation of the on-site habitats and the wider Opua Forest and Bay of Islands estuarine habitats the site abounds.

Figure 22: Australasian bittern may periodically be present within the wider inner Haumi River estuarine environment the site abounds

Figure 23: Banded rail is likely present nearby the site within the wider inner Haumi River estuarine environment the site abounds

4.4. Lizards

A visual inspection and habitat suitability assessment of areas likely to be utilized by native lizards for sheltering or foraging (e.g., beneath logs, boulders, and manmade objects) was conducted during site visits in March 2024. Good quality habitat for indigenous lizards is present on site, and opportunistic observations during a site walkover revealed the presence of either elegant gecko (*Naultinus elegans*) or Northland green gecko (*N. greyii*) (i.e, unidentified *Naultinus* species) and copper skink (*Oligosoma aeneum*) on site.

Figure 24 and Table 3 below outline the species likely to occur within the wider area and their corresponding conservation status. The current ecological value of on-site habitats for native lizards is considered to be moderate-high due presence the quality and quantity of suitable habitat and the number of 'At-Risk' species that are confirmed or potentially present.

The proposal requires for approximately 2.18 ha of regenerating exotic – indigenous vegetation and 114 m^2 of kanuka shrubland to be cleared to facilitate the construction of practicable building platforms and associated infrastructure. As indigenous lizards have been observed on-site, a dedicated Lizard Management Plan will be required to ensure that suitable lizard management protocols are employed to avoid, minimise and mitigate adverse effects associated with habitat removal and residential development.

Table 3: Herpetofauna likely to be present with the surrounding area, inbuilding latest Threat Status (Hitchmough et al. 2021)

Common name	Latin name	Threat status	Suitable habitat on site or adjacent?
Pacific gecko	*Dactylocnemis pacificus*	Not threatened	Suitable habitat in the adjacent Eastern Bay of Islands Estuary Q05/001

Rainbow/plague skink	*Lampropholis delicata*	Unwanted organism	Likely present on site and surrounds.
Yellow-lipped Sea krait	*Laticauda colubrina*	Vagrant	Suitable habitat in the adjacent Eastern Bay of Islands Estuary Q05/001
Green and golden bell frog	*Ranoidea aurea*	Exotic species	Likely present on site and surrounds
Forest gecko	*Mokopirirakau granulatus*	At Risk - Declining	Suitable habitat in the onsite and adjacent Opua Forest (P05/058)
Elegant gecko	*Naultinus elegans*	At Risk - Declining	Possibly confirmed on site. Suitable habitat in the onsite and adjacent Opua Forest (P05/058)
Northland green gecko	*Naultinus greyii*	At Risk - Declining	Possibly confirmed on site - suitable habitat in the onsite and adjacent Opua Forest (P05/058)
Copper skink	*Oligosoma aeneum*	At Risk - Declining	Confirmed on site - suitable habitat in the onsite and adjacent Opua Forest (P05/058)
Ornate skink	*Oligosoma ornatum*	At Risk - Declining	Suitable habitat in the onsite and adjacent Opua Forest (P05/058)
Moko skink	*Oligosoma moco*	At Risk - Relict	N/A – unlikely to be present on site and surrounds
Shore skink	*Oligosoma smithi*	At Risk - Declining	Suitable habitat in the adjacent Eastern Bay of Islands Estuary Q05/001
Raukawa gecko	*Woodworthia maculata*	Not threatened	Suitable habitat in the onsite and adjacent Opua Forest (P05/058)

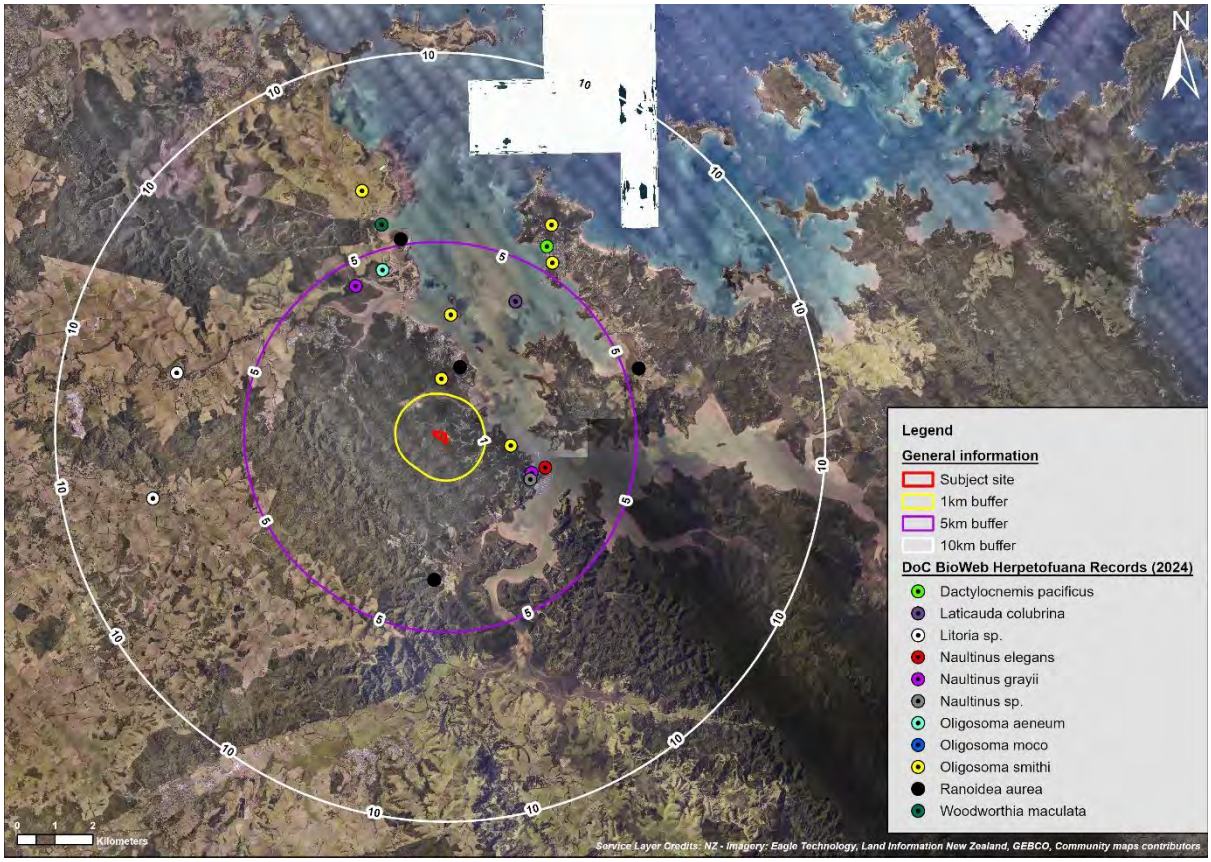

Figure 24: Showing DoC BioWeb database records for herpetofauna within 10-km radius from the subject site

4.5. Bats

New Zealand has two native bat species, being the long-tailed bat (*Chalinolobus tuberculatus*: Threatened-Nationally Critical) and the lesser short-tailed bat (*Mystacina tuberculata*: Threatened-Nationally Vulnerable). Native bats are 'absolutely protected' under the Wildlife Act (1953).

A search of DOC BioWeb (2024) database shows that the closest confirmed long-tailed and short-tailed bat records are located approximately 24.5 km at a site near Oheawai, with a known population stronghold throughout nearby Puketi Forest (Figure 25). Bats are highly-mobile fauna and can travel up to 20km or more in a single night. They have large territories and are listed on the NPSIB's highly mobile fauna list. It should be noted that anecdotal evidence from Bay Bush Action in 2019 suggests that long tailed bats have been recorded in Opua Forest nearby Paihia, however no formal records of long-tailed bat presence in Opua Forest are available at the time of writing of this report.

During the site visit in March 2024, a visual assessment for potential roost sites was undertaken. Trees on site were assessed for their potential to support bat roosts, which comprised of a ground based visual inspection using binoculars to identify any features potentially suitable for roosting bats. Such features may include holes, frost cracks, deadwood, knot holes and limb wounds.

A brief, preliminary acoustic survey using the SongMeter Mini Bat Acoustic Sound Recorder was undertaken. The Acoustic Sound Recorder was set on the subject site between March 21st and 28th 2024. The sound recorder was set up to record bats with a sampling time of 12 hours, set to start 15 minutes before dusk. The overnight weather was cool (minimum 10°C).

The results of the survey did not record any long-tailed bat activity during the survey period. However, given the proximity of known presence (<25km), the site context of Opua Forest, the presence of at least one good quality roost tree within the project footprint and the highly mobile and transient nature of bats, survey results should not be considered indicative of the presence or absence of bats. A Bat Management Plan by a specialised bat-ecologist shall be prepared within the overarching FMP to ensure that any potential adverse impacts to bats are avoided and any indirect effects associated with a new development are appropriately mitigated.

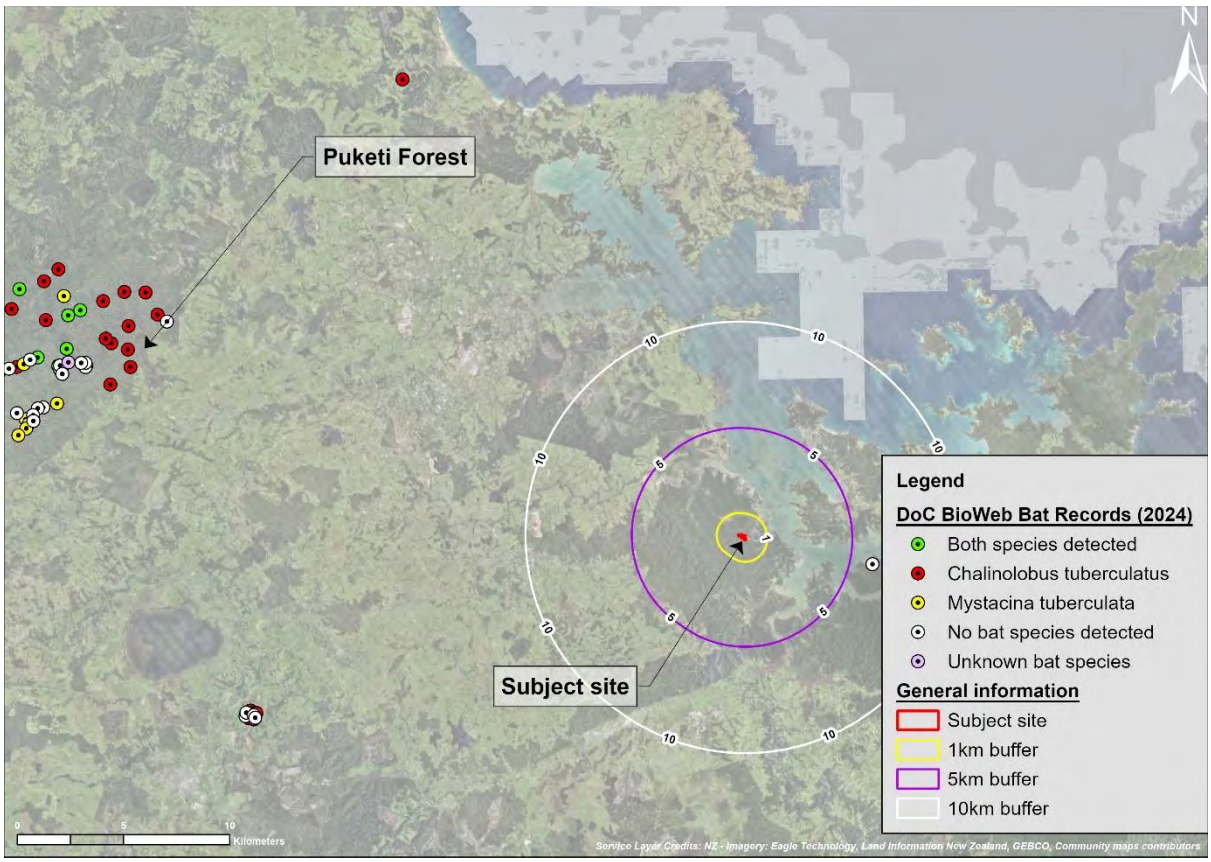

Figure 25: Showing DoC BioWeb database records for long tailed and short-tailed bat(s) within 30-km radius from the subject site

4.6. Terrestrial invertebrates

A survey of terrestrial invertebrates was beyond the scope of this assessment. However, the site contains suitable habitat for the Nationally Threatened 'At Risk' kauri snail (*Paryphanta busbyi*) and therefore their potential presence within the proposed vegetation clearance footprint cannot be discounted.

Following the pre-cautionary approach, it is recommended that the vegetation clearance protocols contain terrestrial invertebrate management protocols to ensure that potential adverse effects associated with the development of the site does not result in adverse effects on potential 'At Risk' and 'Threatened' indigenous terrestrial invertebrates which may be present.

4.7. Summary of values

Method 12.2.5.6 of FNDP requires that in assigning ecological significance to habitats and species noted on site, the ecological matters of Representativeness, Rarity/Distinctiveness, Diversity and Pattern, and Ecological Context have to be considered. This is based on criteria outlined under Appendix 5 of Regional Policy Statement for Northland. Table 4 below outlines the ecological values assigned to the identified ecological features on site.

The overall existing ecological significance of the site is generally as 'moderate' for the lesser disturbed habitats on site being the regenerating kanuka forest, 'moderate-high' for raupo reedland, regenerating podocarp forest and mangrove saltmarsh environments, and 'low' for the historically cleared exotic-indigenous habitat present within the central bowl aspect of the site.

The lower ecological values and condition of the 'central bowl' are associated with long history of indigenous vegetation clearance and utilising this area at part as an informal disposal site for imported fill (anecdotal evidence). While the ecological significance and condition of the regeneration exotic-indigenous habitat is deemed as limited, the potential adverse effects associated with the proposed vegetation clearance will have to be managed through appropriate ecological management controls, including lizard, terrestrial invertebrate, bat, avifauna and overall vegetation clearance protocols to ensure that adverse effects can be minimised as far as practicable.

Table 4: Assessment of significance of habitats contained within the site boundaries based on Appendix 5 of RPS for Northland

Criteria	Regenerating kanuka shrubland	Regenerating podocarp forest	Raupo wetland and mangrove saltmarsh	Exotic-indigenous regenerating scrub
(a) whether the area contains critical, endangered, vulnerable or rare taxa, or taxa of indeterminate threatened status (in the context of this clause, taxa means species and subspecies);	Observed to support at least 2 'At Risk' species being Northland green gecko/elegant gecko and copper skink.	Area contains 'Threatened' kauri (*Agathis australis*) and likely supports a range of 'At Risk' herpetofauna and avifauna with the potential to support long-tailed bats 'Threatened – Nationally Critical'.	Confirmed records of 'At Risk' NI fernbird, and likely supports a range of other 'Threatened' avifauna including Australasian bittern and banded rail. Supports a number of 'At Risk' fish species including long-fin eel and inanga.	Proposed development area exclusively dominated by exotic-indigenous regenerating scrub which has no conservation or threat status (Singers *et al.* 2017). No critical, endangered, vulnerable or rare taxa, or taxa of indeterminate threatened status were noted within this habitat type during site visits in February and March 2024 (although it is noted that targeted surveys for a range of indigenous fauna were not undertaken and therefore their presence cannot be ruled out).
(b) whether the area contains indigenous or endemic taxa that are threatened or rare in Northland;	No endemic flora or fauna was noted within this habitat type.	Contains kauri (*Agathis australis*) which is considered 'endemic' to Northland.	No endemic flora or fauna was noted within this habitat type.	No endemic flora or fauna was noted within this habitat type.
(c) whether the area contains representative examples in an ecological district of a particular habitat type;	Representative of its habitat type.	Representative of its habitat type.	Representative of its habitat type.	Habitat has been heavily impacted by previous land clearance activities and does not contain any habitats that could be considered as one of the best representative examples of its particular habitat type.

(d) whether the area has a high diversity of taxa or habitat types for the ecological district;	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.	The site supports the expected habitat types and faunal diversity associated with the range of habitat types present on site.
(e) whether the area forms an ecological buffer, linkage or corridor to other areas of significant vegetation or significant habitats of indigenous fauna;	This habitat type forms part of the Opua Forest (P05/058) (Kerikeri ED).	This habitat type forms part of the Opua Forest (P05/058) (Kerikeri ED).	This habitat type forms part of the Opua Forest (P05/058) (Kerikeri ED) and a smaller portion primarily encompassing the wetland/saltmarsh area on site being mapped as Eastern Bay of Islands Estuary (Q05/001) (Whangaruru ED	This habitat type has been included in the P05/058 overlay, however it has been historically cleared through removal of vegetation, and therefore at current day generally consists of low-quality exotic-regenerating indigenous scrubland habitat type.
(f) whether the area contains types that are rare in the ecological district;	This habitat type is common in the ecological district.	This habitat type is common in the ecological district; however, kauri is classified as 'Threatened' and therefore considered to be of high ecological significance.	This habitat type is not classified as rare in the ecological district, however freshwater wetlands are considered nationally important.	This habitat type is common in the ecological district.
(g) whether the area supports good populations of taxa which are endemic to the Northland or Northland-Auckland regions;	No endemic flora was noted within this habitat type on site. Potential observation of Northland green gecko.	Contains kauri (*Agathis australis*) which is considered 'endemic' to Northland.	No endemic flora was noted within this habitat type on site. North Island fernbird was recorded within this habitat type.	No endemic flora or fauna was noted within this habitat type on site.

(h) whether the area is important for indigenous or endemic migratory taxa;	No indigenous migratory taxa were recorded within this habitat type.	No indigenous migratory taxa were recorded within this habitat type.	Long-fin eel and inanga recorded within the stream system flowing through the site. Possibly utilised by Australasian bittern.	No indigenous migratory taxa were recorded within this habitat type.
(i) whether the area supports viable populations of species, which are typical of that type of habitat within an ecological district and retain a high degree of naturalness	The site was observed to support taxa which are typical of regenerating kanuka shrubland however it does not retain a high degree of naturalness due to historic vegetation clearance. Elegant and Northland green geckos favour this habitat type.	Supports viable population of flora and fauna typical of its habitat type and assessed as maintaining moderate degree of naturalness.	Supports viable population of flora and fauna typical of its habitat type and assessed as maintaining moderate degree of naturalness.	This habitat type was observed to support taxa which are typical of regenerating exotic-indigenous shrubland however it does not retain a high degree of naturalness due to historic vegetation clearance and land use practices.
Overall	Moderate (Significant)	Moderate-High (Significant)	Moderate-High (Significant)	Low (Not significant)

5.0 POTENTIAL ECOLOGICAL EFFECTS AND MITIGATION

5.1 Rule 12.2.6.2 – Vegetation Clearance

The majority of the land owned by the Applicant is dominated by either indigenous vegetation or a mixture of exotic-indigenous vegetation, and therefore vegetation clearance to facilitate the proposed development is inevitable. It is deemed that the most practical approach to reduce potential adverse effects is through condensing the potential new development to a single area so that the overall requirement for vegetation clearance is limited to a single localised area rather than creating multiple pockets of vegetation clearance to enable scattered single site development. This area was selected to be the central bowl which has been previously routinely cleared of vegetation at least since 1982, and at current day is of low existing ecological condition or value due to the dominance by exotic species.

It is unknown when the vegetation within the proposed development area was last cleared, albeit evidence from historic aerial imagery suggests that it was likely cleared circa 2005-2006, making the vegetation approximately 15-17 years old. The proposal therefore is not able to comply with the permitted activity standards under Rule 12.2.6.1.1 Indigenous Vegetation Clearance Permitted Throughout the District and therefore is a restricted discretionary activity. The total proposed vegetation clearance required for proposed development is approximately 2.18 ha comprising of regenerating exotic-indigenous shrubland habitat and 114 m^2 of kanuka shrubland. As outlined under Table 4 above, the exotic-indigenous shrubland (2.18 ha) does not meet any relevant significance criteria under Appendix 5 of RPS and therefore is considered as 'not significant', however the portion of kanuka shrubland (114 m^2) would likely meet a minimum of one of the criteria for ecological significance in Appendix 5 of the RPS and therefore is considered 'significant' and is considered to be of SNA quality/meeting SNA criteria.

FNDP requires that any vegetation clearance exceeding the permitted activity standards is a restricted discretionary activity, and Council has restricted discretion over the matters outlined under Table 5 when considering and determining an application for resource consent.

It is noted that following the initial vegetation clearance, parts of the vegetation clearance footprint will be revegetated with appropriate indigenous species. Revegetation planting is proposed to be carried out to connect and expand the existing indigenous vegetation cover on site. Please refer to the Landscape Integration Concept prepared for the proposal by Littoralis Landscape Architecture for details associated with the proposed plantings.

Potential effects associated with habitat clearance to indigenous fauna includes but is not limited to the following:

- Injury and/or mortality
- Competitive displacement
- Increased competition for resources
- Habitat fragmentation and increased exposure to edge effects
- Increased vulnerability to predation
- Potential disruption to breeding cycles and juvenile recruitment
- Indirect effects associated with increased noise, artificial lighting and artificial structures

Table 5: Relevant FNDP Matters for Discretion (Section 12.2.6.2) and Ecological Comment

FNDP Matter for Discretion	Comment
(a) the significance of the area assessed using the criteria listed in Method 12.2.5.6;	Overall, this habitat type is deemed to be of low ecological significance (see section 4.5 above for full assessment) in reference to the criteria listed in Method 12.2.5.6.
(b) the location and scale of any activity and its potential to adversely affect the natural functioning of the ecosystem	The majority of the area to be cleared forms part of historically routinely cleared habitat type, with the expected last clearance having occurred circa 2005-2006, and therefore is approximately 15-17 years old, having regenerated after the vegetation clearance has ceased. Only a very minor area (114 m^2 approx.) of regenerating kanuka shrubland habitat is required to be cleared to enable safe and practicable accessway to service the new lots. The location of the proposed development was carefully selected following initial ecological surveys and input to ensure that appropriate sites were selected which would minimise potential adverse effects on the wider vegetation sequences which are of high ecological significance.
(c) the potential effects on the biodiversity and life supporting capacity of the area;	Please note that almost the entirety of the land owned by the Applicant is clad in either indigenous or exotic vegetation, and therefore vegetation clearance to facilitate a new development is inevitable. The central bowl area was selected to avoid development in other areas which were deemed to be of distinctively higher ecological significance and value. It is deemed that by limiting vegetation clearance to a single area (rather than multiple scattered areas) the potential adverse effects on biodiversity are limited and acceptable in the context of the wider site.
(f) the extent to which adverse effects on areas of significant indigenous vegetation and significant habitats of indigenous fauna are avoided, remedied or mitigated;	Overall, the primary potential ecological adverse effects associated with the proposal relate to vegetation clearance. Given that almost all of the site is dominated by either indigenous or exotic vegetation, vegetation clearance is inevitable. The final development location has been selected through comprehensive ecological mapping and is mindful of the overall sensitivity and ecological significance of the wider site and it is recommended that all built development on site is designed in an eco-conscious manner. A number of recommendations have been made within this report to ensure that any adverse ecological effects can be avoided or reduced to a practicable minimum. It is acknowledged that a range of 'At Risk' fauna or 'Threatened' indigenous bats may be present within the wider area of the site, however any actual and potential adverse effects to be managed via the preparation and implementation of a dedicated Fauna Management Plan (see Table 6 below).

(g) the extent to which any proposed measures will result in the permanent protection of the area, and the long-term sustainability of revegetation and enhancement proposals;	Permanent covenant protection is proposed for all indigenous habitats outside the immediate development footprint. Please note that the proposed vegetation clearance footprint will be partly revegetated following the initial clearance with appropriate indigenous species suited to the locality. Species selection will be that of suitable low-flammability species which will have dual purpose of establishing a green fire break as well as providing for appropriate species selection.
(h) whether a voluntary agreement by a landowner to protect indigenous vegetation and/or habitats is registered with the Council;	Permanent covenant protection is proposed for all indigenous habitats outside the immediate development footprint.
(i) whether dogs, cats or mustelids will be excluded;	Complete ban of pet animals proposed due to highly susceptible avifauna likelihood noted on site and immediate surrounds.
(j) proposals for the re-establishment of populations of threatened species, either in areas where the species previously inhabited or other suitable habitat, and/or replanting or restoration of habitats and indigenous vegetation;	The proposed development will have to abide by strict vegetation clearance protocols to ensure that adverse effects on bats if they are present will be avoided, and adverse effects on avifauna and herpetofauna can be minimised or mitigated. These are to be guided by the FMP and will be conditions of consent. Mitigating activities may include but not be limited to the salvage of any lizards or protected invertebrates (e.g., kauri snail) encountered during vegetation clearance to be translocated to alternative suitable habitat outside the immediate vegetation clearance footprint. Suitable habitat is plentiful within the wider site area.
(k) the environmental effect of the increase in residential intensity and/or extra lots in relation to the benefits of achieving permanent legal protection of areas of significant indigenous vegetation and/or significant habitats of indigenous fauna;	As discussed above, following initial discussions it was deemed that creation of a single development area was ecologically more sensitive than scattering development along multiple smaller isolated areas. Permanent legal protection for the remainder of the on-site terrestrial and aquatic habitats are proposed as part of this development. A ban on pet cats and dogs which are known to be significant predators of indigenous wildlife (including kiwi) will also help to offset potential effects associated with increased residential intensity.
(l) the value of vegetation in protecting the life supporting capacity of soil, maintaining or improving water quality and reducing the potential for downstream siltation and flooding;	Appropriate sediment and erosion controls will need to be employed during active site development works to ensure that vegetation clearance and subsequent site development do not result in any potential adverse effects on aquatic habitats.
(m) the extent to which the activity may adversely affect areas of known high density kiwi habitat;	Opua Forest is classified as having high-density kiwi populations, with high-density being classified as >5calls/hour. Despite this, the proposed development is not anticipated to have direct impacts

	on kiwi by way of injury or mortality associated with clearance (due to appropriate kiwi avoidance methods), and the reduction of poor-quality habitat is unlikely to yield any meaningful indirect effects given the ban on pet dogs and the scale of Opua Forest's surrounding landscape.
(n) the environmental effects of a proposed development in relation to the benefits of achieving permanent protection and/or management of areas of significant indigenous vegetation or significant habitats of indigenous fauna;	Please see comment under subclause (k).
(o) the extent to which there are reasonable alternatives to provide for sustainable management;	As part of the initial engagement Wild Ecology provided preliminary input which firmly excluded areas of high ecological significance for the subdivision and development proposal. The final development footprint was considered one of most suitable areas given that this area has been historically modified through routine vegetation clearance and utilised for disposal of imported fill. Development in this area would allow to clean up what has historically apparently being utilised as an informal fill disposal site and develop an area that was deemed of lower ecological value into high quality housing development for the local community.
(p) the extent to which the habitat policies of any national policy statement, the Regional Policy Statement for Northland and the District Plan are implemented;	Please see comment under subclause (k).
(q) the extent to which other animals or plants that will be introduced as a result of the application and may have a significant adverse effect on indigenous ecosystems are excluded or controlled;	None proposed.
(r) the effectiveness of any proposed pest control programme.	An integrated pest weed, and pest animal management plan is to be implemented on site as part of conditions of consent.

5.2 Rule 12.7.6.1.2 – Setbacks from Wetlands

Rule 12.2.6.1.1 requires that any building and any impermeable surface must be set back 30m for any wetland of 1 ha or more in area. It is acknowledged that the Application will not be able to comply this rule, as the nominated building platforms on Lots 3-10 will be located <30m away from the identified raupo wetland area which is > 1ha in size.

From an ecological perspective, it is considered that subject to sufficient sediment, erosion and earthworks controls being imposed during construction the potential adverse effects on the identified wetlands areas will be minimal. The proposal also includes a complete domestic pet ban from the site, meaning that there is no additional threat to potential fauna present within the wetland areas from increased domestic pet presence on site.

Provided that these controls are abided by, adverse effects associated with the non-compliance with the required wetland setbacks on the identified wetland area would be less than minor and acceptable.

5.3 NES-FW Considerations

Please note that part of the wetland areas on site are located within Mean Water High Springs (MHWS) – these areas do not meet the definition of a natural inland wetland as defined under NPS-FM (2020). Where wetlands extend outside of the MHWS line they are considered to meet the definition of a natural inland wetland and NPS-FM and NES-FW policies and regulations apply.

The proposed development (please refer to Chester Scheme Plan and Engineering Drawings) has been designed with the input of the results of the watercourse and wetland classification and delineation provided by Wild Ecology, with the proposed built development to be placed as far as practicable from the sensitive receiving environments. In respect to NES-FW, it is considered that the proposal is a restricted discretionary activity under Regulation 45C 'Urban development' of NES-FW (2020). Having reviewed the proposed development Scheme Plan it is understood that no earthworks or vegetation clearance shall take place within a 10m setback of an identified natural inland wetland area (apart from those carried out for restoration purposes). All indicative building platforms (Figure 26) have been shown a minimum 10m from the identified natural inland wetland edges. However, given the scattered nature of the stream and wetland areas on site, it is inevitable that at least some minor earthworks and stormwater discharges may occur within a 10m setback from the identified wetland areas.

It is considered that the earthworks and construction of required infrastructure associated with the proposed development is not likely to change the water level range or hydrological function of the wetland areas and will not result, or is not likely to result, in the complete or partial drainage of all or part of a natural inland wetland. All natural inland wetland areas shall be protected and enhanced as part of the subdivision proposal.

Future property owners will be required to consider requirements under the NES-FW (2020) at the time of any future development taking place on the lot/s, and appropriate consents can be sought at the time of building consent application(s), if required.

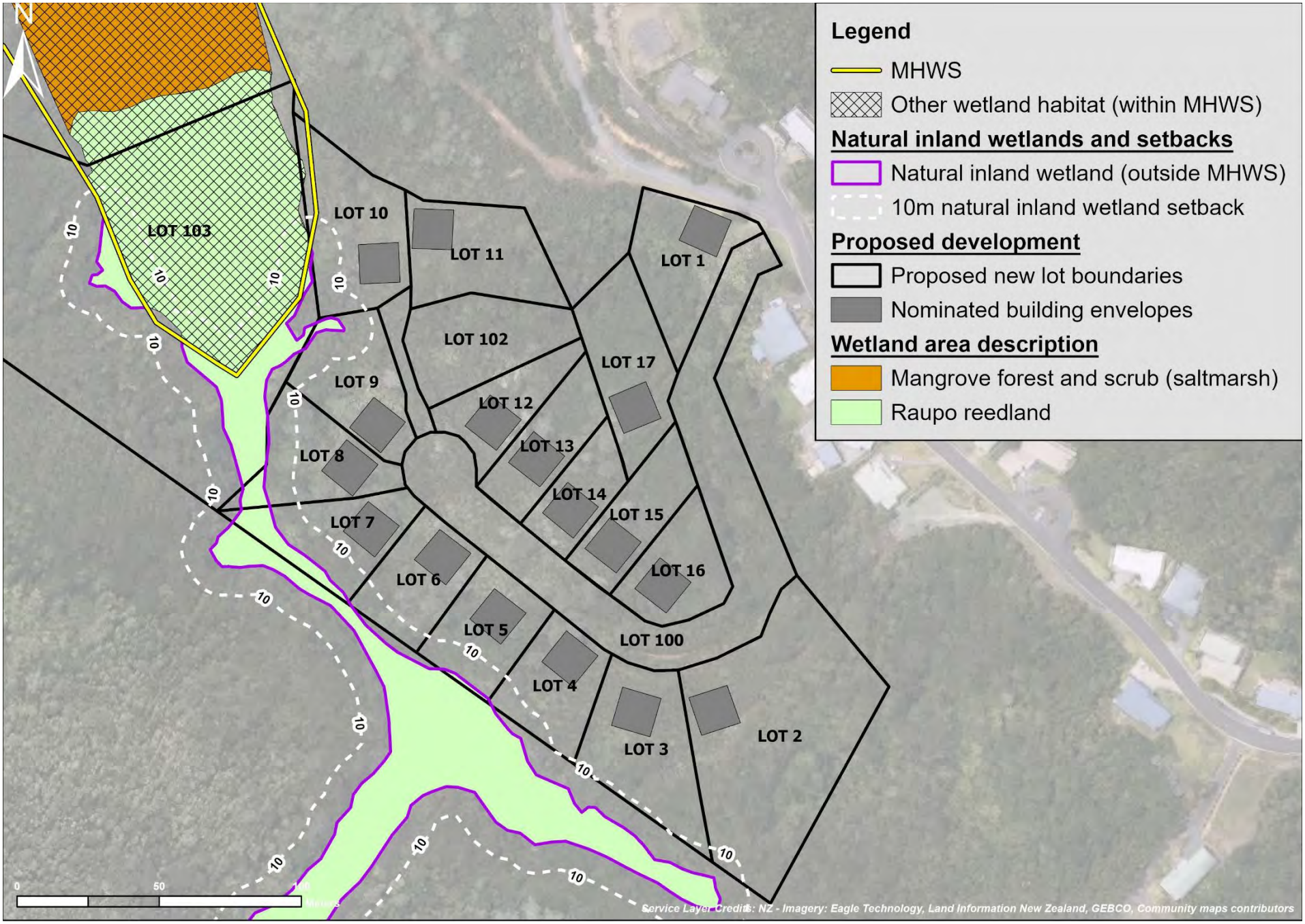

Figure 26: Showing the proposed development layout and nominated building envelopes to be sited fully outside the 10m natural inland wetland setback

5.4 NPS-IB Considerations

National Policy Statement for Indigenous Biodiversity (NPS-IB) came into force on August 4th, 2023 (commencement date) and applies to indigenous biodiversity in the terrestrial environment throughout Aotearoa New Zealand. The objective of NPS-IB is to maintain indigenous biodiversity across Aotearoa New Zealand so that there is at least no overall loss in indigenous biodiversity after the commencement date. NPS-IB aims to achieves this through recognising people and communities, including landowners and mana of tangata whenua as kaitiaki of indigenous biodiversity; and by protecting and restoring indigenous biodiversity as necessary to achieve the overall maintenance of indigenous biodiversity, while providing for the social, economic, and cultural wellbeing of people and communities now and in the future.

The NPS-IB enables infrastructure that is needed to support planned for urban housing development. If it has a functional or operational need to locate in a Significant Natural Area (SNA) and there is no alternative location, any impacts on an SNA will be managed using the effects management hierarchy.

It is deemed that the proposal gives effect to the objectives and policies of NPS-IB through

(a) Having been shaped by a careful design-led approach to development that integrates the necessary infrastructure of the proposal with the existing ecological and landscape context and demonstrates a strong commitment to sustainable development principles.
(b) Applies the effects management hierarchy where adverse effects cannot be avoided in the first instance.
(c) Maximising the environmental benefit that can be achieved from the subdivision works given that significant net area outside of the immediate development footprint is to serve as ecological or landscape enhancement areas.
(d) Avoiding or mitigating potential adverse ecological effects through utilising existing structures or previously cleared areas of vegetation (i.e. existing farm tracks and exotic scrubland) to facilitate access and site development. Indigenous vegetation clearance is minimised as far as feasible and practicable. Where any earthworks are to take place near sensitive terrestrial or aquatic environments, earthworks controls have been put in place to ensure that the feature can be protected as part of the proposal.
(e) Illustrates how urban development and growth can be balanced with ecological protection and restoration through complementing the existing ecological values of the site and wider area, while also ensuring that appropriate areas can be developed into high quality housing.
(f) Presents a high standard subdivision proposal in relation to ecological matters, striking a balance between protecting and enhancing areas of higher existing or potential ecological values, while utilising existing degraded features (i.e. previously cleared land and farm tracks) for the provision of required services and concentrating the site's development on areas with low existing ecological values or functionality.

The proposal will ensure that potential adverse effects on indigenous biodiversity are avoided in the first instance, or where it is not feasible that potential adverse effects are appropriately

mitigated. A number of ecological management recommendations have been made for any proposed vegetation clearance to enable development to ensure that as far as practicable any potential adverse effects on fauna can be sufficiently addressed. The proposal provides and promotes restoration of indigenous biodiversity through permanent legal and physical protection of habitats that are of moderate-high ecological significance.

5.5 Summary of effects

The following sections describe potential ecological effects based on the general layout and location plan and associated services as shown within the proposed Scheme Plan and Engineering Plans prepared by Chester. The proposed development area has been selected in consultation with Wild Ecology to ensure that development footprint is contained as far as practicable within areas of lower ecological significance with minimal effect on the surrounding higher quality terrestrial indigenous species dominated bush and wetland habitats. While vegetation clearance of approximately 2.18 ha of exclusively exotic-indigenous species dominated shrubland and 114 m^2 of kanuka shrubland is required to ensure that adequate areas for the proposed new dwellings and associated services can be provided for, the potential adverse effects associated with the vegetation clearance can be sufficiently minimised and mitigated.

It is noted that Far North District do not have mapped (Significant Natural Areas) SNAs, and the exotic-indigenous species dominated shrubland is not deemed to meet any relevant significance criteria under Appendix 5 of the Regional Policy Statement for Northland 2016. It is however considered that the kanuka shrubland habitat (of which 114 m^2 will be required to be cleared) on site does meet a minimum of 1 significance criteria under Appendix 5 of the RPS. In instances where vegetation clearance within the kanuka shrubland is unavoidable, efforts have been made to limit the extent of clearance to the absolute minimum necessary to retain as much native vegetation as possible while still allowing for essential services such as access.

Generally, the potential adverse effects associated with the site development on ecological values are:

- Loss of indigenous vegetation;
- Increasing edge effects through vegetation clearance;
- Habitat fragmentation and reduced connectivity between adjacent Lots (i.e., land to the immediate north of the development footprint will become semi-isolated from the contiguous landscape)
- Potential loss of habitat for indigenous fauna;
- Potential for injury / mortality to indigenous fauna;
- Potential introduction of plant pathogens;
- Increased presence of pet animals on site;
- Change in flow regime due to increased site imperviousness.

Any site development should consider the above potential effects and ensure that measures are put in place to avoid, remedy, mitigate, offset or compensate actions that are to be taken to ensure that the site development does not result in adverse ecological effects or a net loss of ecological value. A brief assessment of potential ecological effects and mitigation measures is provided under Table 6.

Table 6: Magnitude and level of impact for proposed development before and after mitigation

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
Vegetation clearance	Exotic-indigenous regenerating shrubland	Low	Moderate	Approximately 2.18 ha of mixed exotic-indigenous regenerating vegetation and 114 m^2 of kanuka shrubland is to be cleared from the immediate development footprint to allow for the provision of new dwellings and associated infrastructure. Vegetation communities within the proposed development footprint is that of predominately exotic vegetation with scattered indigenous pioneer species and have been historically routinely cleared from 1980s onwards.	Sensitive development design, utilising areas that have been cleared historically, guiding development away from mature indigenous trees and other areas of high ecological value. Vegetation clearance protocols should be prepared as a condition of consent, including procedures for minimising the area and duration of soil exposure from vegetation clearance, minimising the volume of vegetation to be mulched, locating wood residue piles with an appropriate separation distance from any waterways, and minimising potential leachate from the machinery used. Large indigenous forest trees are not present within the proposed vegetation clearance footprint and will not be affected. A dedicated FMP will also provide guidance and requirements around habitat removal protocols to minimise adverse effects to indigenous fauna. Implementation of appropriate sediment, earthworks controls during vegetation clearance to avoid potential sedimentation of nearby watercourses. Use GPS-enabled machinery, string lines, or other appropriate strategies to contain vegetation clearance and construction effects to only the area within the final footprint extent, to avoid any further encroachment on bush area.	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
					Vegetation removal to take place outside of the peak bird breeding and long-tailed bat breeding season (October to February, inclusive), where feasible and practicable. Implementation of an approved FMP that prescribes any pre-vegetation clearance surveys and mitigation activities to ensure that development footprint is clear of species with small home ranges and low-mobility (i.e., lizards, kauri snails). Implementation of appropriate ecological supervision (and species relocation, where necessary) during vegetation clearance to ensure that no indigenous fauna is killed during the clearance process.	
Sedimentation from earthworks	Stream habitats	High	High	Earthworks will be required to construct access road(s), building platforms and install required services.	To mitigate the risk of sediment entering the streams and wetland areas present outside the immediate development footprint boundaries during site development works, and contaminating the downstream catchment, erosion and sediment control plans should be prepared in accordance with Northland Regional Council's Erosion and Sediment Control Guidelines and Auckland Council's Guidance Document 005 (GD05).	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
Impacts on aquatic habitats	Aquatic habitats	Moderate	High	No wetlands are to be impacted on as part of subdivision proposal. Some minor earthworks will be required to be carried out to replace the existing culvert/pipe structure.	Existing culvert located within intermittent stream (Lot 101) is to be replaced with a structure meeting relevant specifications outlined under Regulation 70 of NES-FW (2020). This will result in a positive effect through enhancing fish passage through the site. Earthworks associated with the culvert replacement should take place during extended dry periods when the intermittent stream is naturally dry, and no fish species are present. The stream will need to be inspected by a suitably qualified freshwater ecologist prior to the commencement of the works. Confirmation of the stream being dry must be provided by a suitably qualified freshwater ecologist to the Council prior to the start of the works. Alternatively, a Native Fish Capture and Relocation plan will be required to be prepared to ensure that the earthworks associated with the culvert replacement do not adversely affect any potential fish fauna that may be present within the stream.	Low
Stormwater and wastewater management	Stream habitats	High	High	All stormwater and wastewater management are to be low impact systems designed in accordance with relevant reporting prepared by Chester.	Wastewater for this development will connect to the existing wastewater network, therefore no adverse ecological effect associated with the proposed wastewater management is anticipated. It is understood that all stormwater management is to be offline utilising a specifically designed stormwater device. A low flow diversion is proposed in the main stormwater reticulation line to divert the upper	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
					catchment to a constructed wetland for SWQT. The wetland outlet will discharge treated stormwater to the adjacent intermittent stream. The outlet will be specifically designed with erosion and scour protection measures. This has been described in more detail in the reporting prepared by Chester. It is understood that the proposed stormwater management will be appropriately integrated within the wider landscaping proposal. The proposed landscape plantings on site will provide further reduction in the total runoff from the site entering the onsite intermittent watercourse and eventually the Haumi River. Any works near the existing intermittent stream or its margins will have to abide by strict sediment controls to ensure that the release of fine sediment into the stream during construction phase is minimised.	
Potential introduction of pathogens and pest plants and organisms	Terrestrial and aquatic habitats	Moderate	High	Potential risk associated with primarily development stage of works using dirty earthmoving machinery introducing potential risk of spreading spores and plant material.	All machinery entering the site will have to be appropriately disinfected and cleaned regularly (if taken offsite). A hygiene protocol should be drawn up to address regular disinfection of tools brought to site.	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
Injury/mortality/disturbance of wildlife	Bush and wetland habitat	High	High	Acute effects associated with initial site development and ongoing effects associated with human disturbance and introduction of pet animals.	Fauna management to be guided by the FMP and implemented by a suitably qualified and experienced fauna specialist. All works on site to be carried outside the breeding season for susceptible animals (e.g., outside bird and long tailed bat breeding season). No domestic pet animals allowed on the newly created sites to protect vulnerable wildlife present on site and immediate surrounds.	Low
Fire risk	Bush habitat	Moderate	High	Introduction of new buildings near/in the bush area has the potential for increasing fire risk	Sensitive building design suggested – using low flammability materials for building design and utilising external sprinkler systems. All landscape planting is to be native low-flammability species only to from a buffer between the dwellings and the existing more flammable kanuka dominated habitats. Ongoing flammable weed management (e.g. gorse) to ensure fire risk is minimized. Fire prevention protocols should be considered during the building phase (e.g. building during the wetter, winter season) and therein afterwards (e.g. no open pit outdoor fires) in accordance with Northland Regional Council (NRC) fire restrictions, rules and bylaws.	Low
Light	Terrestrial habitat	Moderate-high	High	The potential adverse effects from artificial light on the surrounding habitats	The potential impacts of the effects of artificial lighting can be significantly minimised through the following:	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
				and species using these areas pose some low-level risk to the fauna species moving through the site. Artificial lights are known to play a role in influencing bat behaviour, with activity negatively correlated with street-light density. Many New Zealand avifauna, herpetofauna and insects are fully or partially nocturnal.	• Exterior lights should be cowled (shielded) and or low-level downward directional, to reduce light spill and direct lighting only where required. • Exterior lights are to be on a short (1min) timer, set to automatically switch off when not in use. • No flood lights within areas facing forest vegetation. Any external lighting should be LED, narrow spectrum, with minimum ultraviolet spectrum. Should be warm spectrum avoiding white and blue light spectrum.	
Avifauna (excluding kiwi)	Exotic-indigenous regenerating scrubland	Low	High	No 'At Risk' of 'Threatened' avifauna noted within the immediate development footprint, however works should be minimized to reduce disturbance.	Vegetation removal to take place outside of the peak bird breeding season (October to February, inclusive), as far as practicable, to avoid disturbance to active native bird nests or mortality of eggs/chicks. The consent holder shall employ a suitably qualified and experienced ecologist, who must be carry out vegetation pre-clearance surveys, which are to be carried out a maximum 7 days prior to the proposed vegetation clearance works beginning. Should any active bird nests be identified during the pre-vegetation clearance survey, appropriate exclusion areas (≥10m) should be demarcated, nests monitored for fledging and vegetation clearance postponed until chicks have fledged.	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
Kiwi	Exotic-indigenous regenerating scrubland / wetland	Low	Moderate	Not observed	Prepare kiwi management protocols within the FMP that strategizes appropriate measures to avoid adverse impacts to kiwi if they are present. Avoidance of kiwi breeding season (June – February) when males are at significant risk of injury/mortality if they are incubating eggs. These may include the use of kiwi-detection dogs, manual searches and staged vegetation removal protocols.	Low
Lizards	Exotic-indigenous regenerating scrubland	Low	High	Previous records of indigenous lizards recorded on site and immediate surrounds. Suitable habitat present on site.	Prepare herpetofauna management protocols (as part of the Ecological Management Plan for the site) to address protocols that ensure avoidance, remediation, mitigation and monitoring. All vegetation clearance works to be supervised by an appropriately qualified herpetologist holding a site-specific Wildlife Act permit for salvage and relocation of herpetofauna. Conduct vegetation clearance activities during warmer months, when lizards are active (October – April).	Low

Effect/activity	Habitat potentially impacted	Ecological value of impacted habitat	Magnitude of effect (no mitigation)	Comment	Proposed mitigation measures	Level of effect (with mitigation)
Bats	Exotic-indigenous regenerating scrubland	Low	High	Long-tailed bat presence recorded within 25km of the site, potential roost trees observed within the development footprint (aka vegetation clearance footprint)	Preparation of bat management protocols as part of the FMP. Implementation of avoidance protocols must be implemented by a qualified bat-ecologist containing DOC Level 3 bat certifications.	Low
Terrestrial invertebrates	Exotic-indigenous regenerating scrubland	Low	High	Suitable habitat for indigenous terrestrial invertebrates present on site.	Prepare a Fauna Management Plan (FMP) that sets out the methods that will be used to avoid or minimise potential adverse effects on invertebrates. Implementation of pre-vegetation clearance ecological surveys to ensure that development footprint is clear of 'At Risk' or 'Threatened' terrestrial invertebrates (including *Paryphanta busbyi* snails), where these are discovered they are to be relocated outside of the immediate development footprint by a suitably qualified ecologist holding appropriate wildlife authority licences.	Low
Overall assessment						Low

6.0 ECOLOGICAL COVENANT AREAS PROPOSAL

6.1 Ecological enhancement

It is proposed that as a part of the site development works, the natural features of the site that lie outside the immediate nominated building platforms are enhanced and protected. Collectively it is proposed to protect and enhance an area totalling approximately 3.21 ha within the site boundaries (Figure 27). This will encompass existing regenerating bush, wetland and riparian areas and associated revegetation planting to be carried out on site.

It is recommended that Lot 103 containing the majority of the higher ecological value features including the extensive raupo wetland and regenerating podocarp forest making up the western portion of the site is gifted to DoC to be amalgamated within the Opua Recreation Area which extends to the west of the site. It is deemed that this area requires minimal ecological management, apart from some minor weed control and pest animal control and would benefit from the inclusion within the Opua Recreation Reserve. Alternatively, this area could be amalgamated within one or several of the private lots to be created as part of the subdivision and the resulting management of the area is to be made the responsibility of the respective lot owner(s).

As for the portion of indigenous vegetation contained within each respective new lot boundary to be created as part of the subdivision consent, it is deemed that these habitats and associated pest weed and pest animal control would be best fit to be carried out by the new lot owners or collectively managed through a body corporation. It is recommended that this vegetation is made subject to conservation covenant protection.

The following sections provide general guidance on how to successfully manage the proposed new ecological covenant areas in the future. Integral components of this will include stock exclusion, pest animal and plant control, biosecurity and disease management, covenant delineation and ongoing monitoring. A more in-depth description is to be provided within the associated Ecological Management Plan, which is to be prepared as a condition of consent.

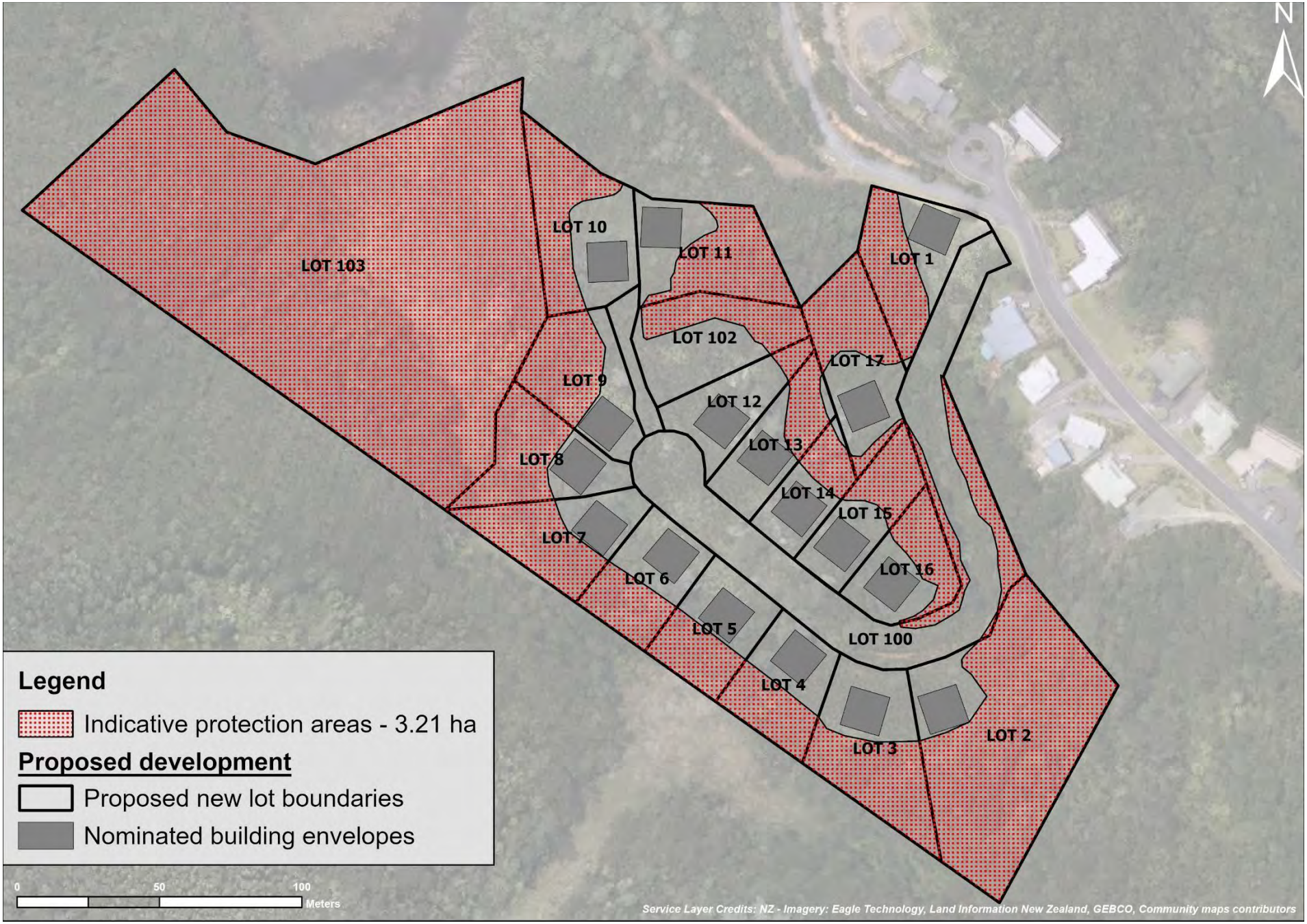

Figure 27: Indicative protection and enhancement areas

6.1.1 Pest plant management

The indigenous vegetation contained within the proposed ecological covenant area contains a minimal density of pest plant species or weedy species that will be required to be controlled. Of note were the smaller infestation of black wattle, ginger, pampas, willow-leaved hakea, needle-leaved hakea, Taiwan cherry, Woolley nightshade and gorse. Management efforts to control these species within the existing bush areas to participable minimum density is required. Pest plants and weedy species observed within the proposed covenant are briefly summarized under Table 7 below. Some of the pest plants noted on site have been designated as Sustained Control Plants as classified within Northland Regional Pest and Marine Pathway Management Plan (NRPMPMP) (2017-2027).

An Ecological Management Plan (EMP) is to be prepared as a condition of consent to act as a practical management document which can be utilised by the landowner or their contractor to carry out the recommended ecological management actions. The EMP will outline specific management actions and detail species identification and control of the weeds, and ongoing maintenance and monitoring requirements that weedy species are controlled to a practicable minimal density.

Table 7: Pest plants and weedy species recorded within the proposed ecological covenant area, their designation and abundance (A = Abundant, C = Common, O = Occasional, S = Sparse)

Latin name	Common name	Designation within NRPMPMP	Abundance/location
Acacia mearnsii	Black wattle	Not listed	O
Cortaderia selloana	Pampas	Not listed	O
Hakea sp.	Willow leaved hakea and needle-leaved hakea	Sustained Control Plants	O
Hedychium flavescens	Wild ginger	Sustained Control Plants	O
Ligustrum sp.	Tree privet and Chinese privet	Sustained Control Plants	O
Prunus campulata	Taiwan cherry	Sustained Control Plants	
Rubus fructicosus agg.)	Blackberry	Not listed	O
Solanum mauritianum	Woolly nightshade	Sustained Control Plants	O
Ulex europaeus	Gorse	Sustained Control Plants	O
Zantedeschia aetoipica	Arum lily	Not listed	S

6.1.2 Pest animal management

While not directly observed during site visits, the site likely supports a full suite of exotic mammalian pest animal species, including possum (*Trichosurus vulpecula*), rats (*Rattus rattus* and *R. norvegicus*), stoats (*Mustela erminea*), and hedgehogs (*Erinaceus europaeus*). The adverse ecological effects of exotic mammals on native flora and fauna are well documented, and their ability to interfere with revegetation plantings through active browsing can be detrimental to overall plant health and survival.

A comprehensive control and monitoring program is to be developed within the body of an Ecological Management Plan (EMP).

6.1.3 Revegetation Planting

Revegetation planting is proposed to be carried out to connect and expand the existing indigenous vegetation cover on site. Please refer to the Landscape Integration Concept prepared for the proposal by Littoralis Landscape Architecture for details associated with the covenant area and proposed plantings. All plants to be utilised within revegetation planting are to be eco-sourced and inspected for disease, pest organism presence and pest weeds prior to planting.

6.1.4 Covenant demarcation

To ensure that the ecological covenant area within the site is physically demarcated from the wider future development area on site it is proposed that physical delineation of the internal boundary of the covenant where it abounds the built environment interface is established. Given that no stock or domestic pets will be kept on site following subdivision, this may be in the form of establishment of evenly spaced demarcation posts along the internal boundary of the ecological covenant area which would fit in with the wider amenity of residential subdivisions located within the vicinity of the site.

The final covenant area demarcation layout and typology are to be confirmed within the body of an Ecological Management Plan (EMP).

6.1.5 Maintenance

Ongoing maintenance including weed control and pest animal control within the proposed ecological covenant areas is to take place for minimum of 5 years following the completion of round of pest weed control and establishment of a pest animal control network. Maintenance should be carried out bi-annually during Years 1-3 and annually during Years 4 & 5 for a minimum period of five years in spring and late summer.

Ongoing maintenance and monitoring will be described in more detail under an Ecological Management Plan (EMP) which is to be prepared as a condition of consent.

6.1.6 Monitoring

For this ecological enhancement proposal to be successful, keeping up to date records of pest plant and animal control efforts are key to determine the success of restoration efforts.

It is proposed that at the time of physical ecological works completion the consent holder shall provide an Ecological Works Completion Report from a suitably qualified ecologist following the implementation of physical ecological works completion (first round of pest weed, and pest animal control implemented, covenant demarcation established) to be submitted to Council, and the Council will undertake inspections as required to confirm compliance. All works shall be demonstrated to the satisfaction of the Compliance Monitoring Officer or similar position.

Example monitoring forms are to be provided within the body of the Ecological Management Plan which can be used by the Applicant or their engaged suitably qualified contractor to keep up to date maintenance/monitoring records for any pest weed, pest animal control works carried out on site during the 5-year maintenance and monitoring period.

7.0 CONCLUSION AND RECOMMENDATIONS

It is considered that the proposed development has been designed through comprehensive preliminary opportunities and constraints mapping process which has guided the proposed development to areas within the site boundaries which are of lower ecological value and significance. The proposed development footprint has been historically routinely cleared and utilised for informal disposal area for imported fill. Development in this area would enable high quality housing development vitally required for the local community while limiting the potential adverse ecological effects which can be addressed through comprehensive ecological management and mitigation principles.

The proposed management actions described within the body of this report will minimise potential adverse ecological effects associated with the development proposal on the habitats and species likely present on site and immediate surrounds. It is acknowledged that a range of 'At Risk' fauna or even 'Threatened' long-tailed bats may be present within site and immediate surrounds, however any actual and potential adverse effects to be managed through proposed mitigation measures in a separate Fauna Management Plan and as outlined under Table 6 above. Provided that they are implemented successfully, adverse effects on the environment would be less than minor and acceptable, and would, in fact, allow for the enhancement and protection of terrestrial and aquatic ecological values within the site boundaries.

The following recommendations are made to ensure that potential adverse effects associated with the development proposal can be avoided, minimised or mitigated to the extent practicably feasible.

1. That a site-specific Fauna Management Plan (FMP) is prepared for the site to ensure ecological avoidance, minimisation and mitigation strategies are implemented as part of the site's development proposal. The FMP should provide detail on how adverse effects

to native fauna including 'Threatened' or 'At Risk' species will be avoided or minimised through vegetation clearance protocols, seasonal constraints on earthworks, salvaging and relocation and other management actions. Specific proposed management detail should include but not be limited to:

a. Vegetation clearance management protocols (including seasonal restrictions to vegetation clearance) to provide detail on how adverse effects associated with vegetation clearance will be avoided or minimised through vegetation clearance protocols.

b. Lizard management protocols to provide detail how lizard protection, salvage and relocation protocols will be implemented during site construction works with input as required from project engineers and other specialists. This Plan should cover any avoidance, remediation, mitigation and monitoring that may be carried out in association with the development of the site. Recommendations should follow the key principles to lizard salvage as described in DOC (2019).

   Note: Relevant Wildlife Authority Permits will need to be obtained from DOC and a suitably qualified herpetologist will be required to implement the lizard management plan. Please note that at current date it takes approximately 12-18 months from the date of application to obtain such permits.

c. Avifauna management protocols (including for kiwi) clearly outlining methods that will be utilised to avoid or minimise potential adverse effects on avifauna.

d. Terrestrial invertebrate management protocols setting out the methods that will be used to avoid or minimise potential adverse effects on invertebrates, including kauri snails.

e. Bat fauna management protocols setting out methodology relating to vegetation pre-clearance surveys, accidental bat discovery or bat roost identification on site during active site development works.

2. The consent holder shall employ a suitably qualified and experienced ecologist holding appropriate Wildlife Act permits, to implement the Fauna Management Plan once approved by in-house Council Ecologists and DOC Permissions.

3. That a site-specific Ecological Management Plan (EMP) is prepared for the site (as a condition of consent) to ensure ecological enhancement areas illustrated and listed in Section 6 of this report deliver an ecological benefit. The EMP should as a minimum contain detail regarding site preparation for planting, eco-sourcing of plants, management of biosecurity and plant diseases, ongoing maintenance and monitoring, pest weed control, and pest animal control until 85 % canopy closure is achieved, or a minimum of 5 years of initial ecological works implementation, whichever comes first.

The EMP should also include a finalised version of a clearly annotated covenant demarcation plan.

4. That keeping of pet animals (including a ban of pet cats, dogs, mustelids, exotic fish, birds, rodents and turtles) on site following subdivision is prohibited.

5. That stock are to be excluded from the entirety of the site in perpetuity through the provisions of a no-stock covenant.

6. The new lot owners will be required to comply with the Northland Plant Pest Management Strategy (NPPMS) and the National Pest Plant Accord (NPPA) and in so doing exclude, and where necessary, control all known plant pest species (in any category) that occur on the site. This includes avoiding planting any pest species on the property as part of the landscaping, which could become future threats to the covenant area as 'garden escapees'. Dumping of garden waste into the consent notice/covenant area is prohibited.

7. That the remainder of the existing on-site indigenous terrestrial and aquatic habitats outside the immediate development footprint are protected in perpetuity.

8. The consent holder shall implement the required ecological enhancement works as described in the site-specific Ecological Management Plan to be prepared as a condition of consent and provide an Ecological Works Completion Report from a suitably qualified ecologist following the implementation of physical ecological works completion (first round of pest weed and pest animal control implemented) to the Council, and the Council will undertake inspections as required to confirm compliance.

9. That regular ongoing maintenance and monitoring of the covenant area takes place a minimum annually for a total period of 5-years following the issue of 224(c). Monitoring should be carried out by a suitably qualified and experienced ecologist or Council's suitably qualified appointed representative. Monitoring reports should as a minimum include detail on the presence of any weedy species (including their location and density), pest animal presence and condition of the pest animal trap network, comments regarding other obvious breaches relating to ecological matter such as dumping of green waste into covenant/consent notice areas or breaches to domestic pet restrictions on site.

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Appendix 7:

Geotechnical Investigation Report, prepared by Tetra Tech Coffey, dated 26/07/2024.

Proposed Residential Subdivision at 45 and 47 Hihitahi Rise, Te Haumi, Paihia

Geotechnical Investigation Report

Heron Point Limited

Reference: GENZAUCK13073AB

26 July 2024

REDIDENTIAL SUBDIVISION AT 47 HIHITAHI RISE, PAIHIA

Geotechnical Investigation Report

Report reference number: GENZAUCK13073AB
26 July 2024

PREPARED FOR

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1. INTRODUCTION

This Geotechnical Investigation Report has been prepared for Heron Point Limited in support of an application to the Far North District Council for Resource Consent to develop a 17-lot residential subdivision at 45 and 47 Hihitahi Riase, Te Haumi, Paihia. It has been prepared in accordance with the requirements of the Resource Management Act 1991. Where appropriate, it is in accordance with the recommendations of NZS 4404, Land Development and Subdivision Engineering.

2. SCOPE AND OBJECTIVES

The scope of this report covers an assessment of the geotechnical suitability and stability of the land having regard for the proposed subdivisional earthworks and civil works as depicted on the Chester Consultants Limited civil drawings in Appendix A.

This report utilises the results of previous investigation work completed by this consultancy in 2007 for a previous subdivisional proposal which did not proceed.

The principal objectives of our work for this report were to:

- Assess the existing geomorphological features and their effects on existing site stability;
- Assess the stability of the existing and proposed slopes;
- Characterise bearing qualities and compressibility of the subsoils likely to be affected by proposed land development works and future residential building loads;
- Provide geotechnical recommendations to facilitate the development of the land for the currently proposed subdivision.

3. SITE DESCRIPTION

The subject site (legal description Lot 21 DP181647 and Lot 2 DP 200205) is an irregular shaped block (4.8795 hectares) located off the north-western end of Hihitahi Rise, Paihia. It is of rolling to steep terrain and is bounded by the Opua State Forest to the north-west and south-west, by the Te Haumi River to the north, and by developed residential properties off Hihitahi Rise to the east.

Land gradients generally slope towards the west from the ridge crest containing Hihitahi Rise and range from gentle to very steep. Gradients initially drop very steeply down from the Hihitahi Rise before reducing onto the valley floor.

Towards the west is a natural valley and a wetland which forms the southern fringe of the Te Haumi tidal inlet.

There are several stands of native bush in the central, southern and north-western portions of the block plus a large amount of gorse and scrub present on the eastern bank of the wetland. The remainder of the site has previously been cleared (early 2000's) but has since grown back.

The site contains an existing loop access track from Hihitahi Rise which was formed as part of the earthworks operations associated with the formation of Te Haumi Drive and Hihitahi Rise to the east. Spoil from these cuts was placed on the lower portions of the block during the mid-1970's and again during the mid-1990's.

Two low points are present at the base of the steep slopes in the south-eastern and northern part of the site.

4. GEOLOGY

The 1:250,000 GNS geological map depicts that the site is underlain by greywacke of the Waipapa Group which is described as massive to thin bedded sandstone and siltstone, lithic volcaniclastic metasandstone and argillite.

5. GEOMORPHOLOGY

The geomorphology of the site was mapped as part of our 2007 field investigation and the resulting plan overlain on the historic development proposal is presented in Appendix B.

Hihitahi Rise is situated on a dominant northwards trending ridge with tributary ridges extending to the west to the valley floor. In between these ridges there are several visible headscarps, some with minor slump mound material still present.

Apart from this it is considered that the steep slopes below the headscarps represent the basal failure planes. The lack of significant slump material being present on the steep slopes below the headscarps is further evidence of this.

At the base of these slopes there are two depressions containing swampy alluvial deposits in the bases. This would typically represent the pull-away zone usually found just above slump debris. However, in this instance any previous goemorphological features are obscured by the significant amount of fill that was placed during the mid-1970's and again during the mid-1990's (discussed above).

The site is bounded to the west and south by a swampy area that extends towards the north to the Haumi River, to the east by residential dwellings and to the north by Hihitahi Rise.

6. RELATED REPORTS

6.1. Foundation Engineering GIR

This consultancy (then trading as Foundation Engineering Limited) prepared a Geotechnical Investigation Report on this site dated 31 October 2007 (reference 13073AA).

The field investigation for that report involved a series of hand auger boreholes and test pits, this is discussed further in following sections.

The key findings of the 2007 report are summarised below:

- The subject block is generally suitable for the future residential subdivision;
- The central portion of the block has extensive uncertified fill deposits to depths of between 2.5 and 4+ metres, and there is evidence of slip scarps associated with historic instability;
- Most 'worst case scenario' fully saturated perched ground water conditions produced factors of safety against instability of less than 1.2, in some cases just greater than unity. These are the temporary extreme conditions under which overburden failures occur from time to time as part of the natural erosional process;
- It is recommended that groundwater levels are strategically controlled by careful attention to surface drainage, including a series of cut off bunds to intercept overland flow before reaching the steep slopes and preventing saturation of the upper layers;

- On the steeper lots, piling of leading-edge foundations will likely be required and in some instances inground pile (palisade) retaining walls may be needed to be installed just downslope edge of the dwellings to ensure the long-term integrity of the building platform and adjoining amenity areas;
- Preliminary assessment of the AS 2870 expansive Site Class for the subdivision is S (slight) and the characteristic surface ground movement is up to 30mm.

6.2. LDE Landslide Assessment

LDE prepared the following reports on the slow moving landslip that has affected approximately 95m length of the eastern end of Hihitahi Rise (approximately 400m from the site).

- Geotechnical Investigation of Land Movement Affecting Hihitahi Rise (reference 10284, dated 2 July 2013).
- Monitoring Report for Hihitahi Rise Landslide (reference 10284, dated 5 September 2014).

Key features of the slip that may be relevant to the subject site include:

- Deep weathering and residual soil profiles were observed.
- The landslip is very deep-seated with inclinometers indicating a shear surface at depths of between 11m and 25.3m (up to 37mm of displacement observed in the September 2014 monitoring report).
- The placement of fill at the head of the slip adversely affected the stability.
- The landslide appears to only mobilise during significant rainfall events.

7. SUBDIVISION PROPOSAL

The Chester Consultants civil drawings in Appendix A depict a residential subdivision comprising 17 residential lots, a stormwater reserve (Lot 103) and an accessway of approximately 300m length from Hihitahi Rise. The accessway will cut into the slope in the east of the site (in the approximate location of the now overgrown access track) and then down the to the lower lying western portion of the site.

Filling of the low point within Lot 16 are proposed to depths of up to approximately 5 metres. Fills along the lower (south-western) portion of the site adjoining the wetland are generally of the order of 2 metres but up to 5 metres in a localised gully area. A mechanically stabilised earth (MSE) slope is proposed to support the fills along the southern boundary of the site within part of Lots 4 and 5.

Cuts as deep as approximately 3m are proposed within Lots 14 and 15 at the base of the steep northern slopes. Cuts of approximately 3.5 metres are proposed along the ridgeline in the south-west of the site.

Waste water and stormwater lines will run beneath the accessway. The stormwater line connects to a stormwater quality/detention pond in Lot 102, while the wastewater line will exit the site through Lot 10.

A suspended timber boardwalk/walkway is proposed along the western/northern side of the accessway between chainages 60 metres and 160 metres.

8. FIELDWORK

The fieldwork completed in February 2007 involved the drilling of twenty-eight hand auger boreholes to depths of up to 4 metres and the supervision of the excavation of twelve trial pits to depths of up to 4.5 metres in the positions which have been overlain on the Cut and Fill plan in Appendix C.

In addition, a series of Penetration Resistance Tests (Scalas) were performed along the alignment of the accessways proposed in 2007 to provide preliminary subgrade information for pavement design purposes. Although not along the alignment of the currently proposed accessway these test results still provide useful indication of the likely subgrade CBRs.

Results of all insitu soil tests and groundwater monitoring, together with detailed descriptions and depths of strata encountered during the drilling of the boreholes, and during the excavation of the trial pits are attached in Appendix C. A tabulated summary of shear strengths is presented later in this report.

9. LABORATORY TESTING

Two sets of Expansive soil tests were carried out on samples taken from around the site, generally within the zone of likely influence of shallow building foundations.

These tests were in accordance with NZS 4402, "Methods of Testing Soils for Civil Engineering Purposes" test section 2 and were primarily intended to assess the Expansive Classes of the site materials.

A single water content profile was also undertaken to assess the variation in natural moisture content with depth.

Laboratory tests results are presented in Appendix D.

10. SUMMARY OF GROUND CONDITIONS

The ground model is depicted on the stability cross-sections in Appendix E. The investigations findings are summarised below.

10.1. Investigation Findings

10.1.1. Topsoil

Topsoil was encountered in boreholes 1 to 3, 7, 9 to 11, 14 to 20, 23, 25 to 28, trial pits 2 to 9 and 12, to depths ranging from 0.1 to 0.4 metres, the average depth being approximately 0.3 metres.

10.1.2. Filling

Filling was encountered in boreholes 12, 23 to 25 and 27, trial pits 1, 4 to 6, 10 and 11 to depths ranging from 2.5 to greater than 4 metres. It generally comprised inorganic, firm to predominantly stiff, orange / grey / pink / cream clayey silts and silty clays placed during the previously mentioned road construction works.

A thin lense of mullock / topsoil was encountered in trial pit 11 at a depth of 3 metres. It was approximately 0.2 metres thick.

10.1.3. Natural Ground

The surficial natural soils generally comprised a layer of stiff, red / brown clayey silts and silty clays to typical depths of 2 to 3 metres. Soil instability is usually limited to surficial circular failures within this layer.

Beneath this layer the soils became very stiff, orange, pink and cream clayey silts with varying concentrations of weathered greywacke gravel inclusions.

In boreholes 21 and 22 drilled on the edge of the wetland, mullock was encountered to approximately 3 metres depth. This was underlain by stiff, dark grey clayey silt with some weathered greywacke gravel inclusions. The mullock should have no influence on any of the designated building platforms but will need to be undercut and replaced with compacted hardfill in order to create suitable founding conditions for the culvert crossing through Lots 5 and 6.

Table 1: Summary of Shear Vane Tests

Borehole Number	Depth Drilled (m)	Vane Dial Range(uncorrected)	Depth to Minimum Strength (m)	Minimum Strength Soil Type
1	4.0	98 to >140	2.0	Natural
2	2.2	96 to >140	1.2	Natural
3	4.0	All >140	-	Natural
4	4.0	110 to >140	0.8	Natural
5	2.2	80 to 100	0.4	Natural
6	4.0	100 to >140	0.8	Natural
7	2.0	90 to >140	0.4	Natural
8	2.3	70 to >140	1.6	Natural
9	4.0	All >140	-	Natural
10	1.3	All >140	-	Natural
11	4.0	122 to >140	3.2	Natural
12	3.6	60 to >140	0.4	Fill
13	3.0	All >140	-	Natural
14	2.7	All >140	-	Natural
15	4.0	110 to >140	0.4	Natural
16	2.4	80 to >140	0.4	Natural
17	3.6	100 to >140	0.4	Natural
18	2.3	40 to 90	1.2	Natural
19	4.0	60 to >140	0.8	Natural
20	4.0	132 to >140	0.4	Natural
21	3.2	14 to 92	1.6	Natural
22	2.9	14 to 82	1.6	Natural
23	3.0	45 to 120	2.0	Fill
24	2.2	All >140	-	Fill
25	3.0	45 to >140	0.4	Fill
26	3.0	126 to >140	1.6	Natural
27	0.9	102 to >140	0.4	Fill
28	3.6	60 to >140	1.6	Slump Debris

1	4.5	70 to >140	3.0	Natural
2	4.0	All >140	-	Natural
3	4.0	118 to >140	3.0	Natural
4	4.0	48 to 92	3.5	Natural
5	4.0	38 to >140	1.5	Fill
6	4.0	46 to 112	0.5	Fill
7	4.0	104 to >140	3.0	Natural
8	4.0	117 to >140	3.0	Natural
9	4.0	100 to >140	0.5	Natural
10	4.0	50 to >140	3.5	Fill
11	4.0	50 to 106	1.0	Fill
12	4.0	106 to >140	0.5	Slump Debris

10.1.4. Groundwater

The majority of the boreholes and test pits were dry when measured. However, the water table was encountered in boreholes 18, 21 and 22 at depths ranging from the ground surface to 1 metre below ground level. Groundwater seepage was only identified in trial pit 4 excavated in the lower southern portion of the site (within Lot 16).

10.2. Laboratory Testing

10.2.1. Liquid Limit and Linear Shrinkage Testing

The tests carried out on this site produced an average Cone Penetration Limit of 69 and an average Linear Shrinkage of 12%.

10.2.2. Standard Compaction Tests

The Standard Compaction Test samples, which were derived from a selection of representative borrow materials from within trial pits 2 and 3 in the southern part of the site, produced maximum dry densities of 1.41 and 1.45 tonnes per cubic metre at optimum water contents of 31% and 29%.

10.2.3. Water Content Profile

The water content profile as undertaken using samples from borehole 26, returned moisture contents ranging from 31.4% to 38.4% with a general trend of reducing moisture content with depth.

11. STABILITY ANALYSES

Cross-sections have been cut through the site and are depicted on the plan in Appendix E. We have analysed cross-sections 1, 2 and 9 using the Roc Science software Slide2, the GLE Morgenstern price method of analysis was adopted. Stability analysis is presented in appendix E.

The below parameters were adopted for the slide model.

Table 2: Slide Analysis Parameters

Unit	Unit Weigt (kN/m^3)	c' (kPa)	Ø' (degrees)	Undrained Shear Strength (kPa)[1]	Ru Value[2]
Stiff to Very Stiff Silts and Clays	18	7	32	80	0.15
Very Stiff to Hard Silts and Clays	18.5	10	34	150	N/A
Existing Fill	18	4	28	50	0.15
Certified Fill	19	7	30	80	0.15
Bedrock	20	50	35	N/A	N/A

1. Used in Seismic assessment

2. Ru for use for near ground level material above the water table

Three scenarios were modelled:

- Prevailing groundwater conditions requiring factors of safety above 1.5
- Elevated groundwater conditions requiring factors of safety above 1.3
- Seismic conditions (using a PGA of 0.19 determined in accordance with MBIE/NZGS Module 1) requiring factors of safety above 1.0.

Initially the existing ground profile was modelled to calibrate the soil properties and groundwater levels. Following this the proposed landform was modelled and where required geotechnical treatment (e.g. soil nails, bored drains etc.) were modelled to achieve acceptable factors of safety.

11.1. Stability Analysis Results

The results of our stability assessment are presented below in Table 3.

Table 3: Slide Results

Cross Section	Scenario	Factor of Safety	Factor of Safety Acceptable (Y/N)	Comment
1	Existing – Prevailing GW	1.40	No	
	Existing – Elevated GW	1.12	No	
	Proposed – Prevailing GW	1.50	Yes	A retaining wall is required to support the accessway cuts. A shear key has been modelled to support the cuts in Lots 13 and 14.
	Proposed – Elevated GW	1.30	Yes	
	Proposed - Seismic	1.1	Yes	
2	Existing – Prevailing GW	1.31	No	
	Existing – Elevated GW	1.09	No	
	Proposed – Prevailing GW	1.52	Yes	The cut for the accessway is supported by soil nails and an in-ground pile wall. Bored subsoil drainage was modelled in the slopes below the road.
	Proposed – Elevated GW	1.31	Yes	
	Proposed - Seismic	1.47	Yes	
9	Existing – Prevailing GW	1.46	No	
	Existing – Elevated GW	1.23	No	
	Proposed – Prevailing GW	1.51	Yes	

	Proposed – Elevated GW	1.27	No	Factors of safety are slightly lower than the required minimum for the elevated groundwater case, with slip circles encroaching within Lot 1. Restrictions will therefore apply within Lot 1 (e.g. requirement for specific investigation and design of geotechnical treatment such as in-ground pile walls). Factors of safety in the vicinity of the stormwater pond are acceptable.
	Proposed - Seismic	1.45	Yes	

11.2. Discussion on Stability Results

The above results indicate that the slopes, in their existing state, have factors of safety that are lower than the required minimum.

However, the stability analysis shows that following development acceptable factors of safety can be achieved but this does require geotechnical treatment in some areas.

Specific recommendations follow:

- Proposed cuts in Lots 13 and 14 could have a negative impact on slope stability. A shear key and geogrid reinforced buttress fill has been modelled at the base of the cut to replace some of the toe support to the base of slope.
- The proposal to fill the 'hole' in Lot 16 will have a positive impact on buttressing the steep bush clad slope above up to the accessway.
- A series of bored subsoil drains were modelled to maintain groundwater below critical levels in order to demonstrate adequate factors of safety against slope instability. At this stage these will likely be required within Lots 1, 11, 12, 15, 16, 17.
- We have modelled the cuts to form the accessway being supported partly by pole retaining walls and partly by soil nails and inground pile walls. These are required to support the cut and are also required to demonstrate adequate factors of safety against global slope stability.

The locations of the above items are indicated on the annotated plan in Appendix F and will need to be incorporated into a future Geotechnical Design Report (GDR) for Engineering Approval that addresses the specific design of the geotechnical items as well as global stability.

Furthermore, our analysis has relied upon the findings of our 2007 geotechnical investigation. Due to the shallow investigation depth some conservative assumptions were made around the ground model. While the investigation data is adequate for the purposes of this report, it will need to be supplemented with deeper machine borehole investigations as part of preparation of the future GDR.

12. GEOTECHNICAL HAZARD ASSESSMENT

Our site geotechnical hazard assessment is summarised below in Table 4.

Table 4: Geotechnical Hazard Assessment

	Assessment
Expansive (reactive) soils	A preliminary expansive site class of 'S' (slight) will apply, this will be re-assessed in our Geotechnical Completion Report.

	Assessment
Liquefaction and lateral spreading hazard	Low risk, the soils are typically cohesive in nature and no sands were encountered within the boreholes and trial pits.
Uncertified fills	Present across the lower and central portions of the site, specific foundation assessment and design will be required for affected lots. Limits to fills and/or settlement monitoring will also be required as part of subdivisional earthworks.
Compressible soils/ Static Settlement	The natural residual soils are generally not compressible. Some alluvial deposits were encountered, these may be compressible. The uncertified fills may be compressible. Limitations and/or monitoring of fills placed on the uncertified fills and alluvial soils will be applicable. Specific foundation assessment and design will also be required for affected lots.
Slope instability and soil creep	A number of pre-existing slip features are present on site and the stability of the site has been modelled using the Slide slope stability software package. Proposed cuts will need to be supported by retaining walls and other geotechnical treatment as discussed above in Section 11.2 (e.g. bored subsoil drainage, shear keys) will be required to improve stability. Specific assessment and design may also be required on lots identified in the GCR as not having achieved adequate factors of safety.
Geomorphological issues/erosion	Two low lying ‘holes’ are present in the south-east of the site. High groundwater tables and soft ground is likely present here. These will require mucking out and draining before being backfilled.

13. PROJECT EVALUATION AND RECOMMENDATIONS

13.1. General

Notwithstanding the geotechnical hazards described above in Section 12, based on our recent site observations, geological appraisal, and the results of our 2007 field investigation as described herein, we consider that the subject site is generally suitable for the proposed residential subdivision and associated earthworks as depicted on the Chester Consultants Limited drawings in Appendix A.

Provided that all subdivisional earthworks, civil construction and drainage works are carried out in accordance with the advice presented herein and in accordance with NZS4404 “Land Development and Subdivision” then we expect the completed land development should be suitable for conventional light timber framed dwellings, however, specific geotechnical limitations, investigations and designs will be required on some lots.

The geotechnical treatment indicated on the plan in Appendix F will need to be addressed in a future Geotechnical Design Report prior to Engineering Approval, it is expected that a deep machine borehole investigation will also be required.

13.2. Building Foundations

13.2.1. Bearing Capacity and Foundation Requirements

Following development of the land a geotechnical ultimate bearing capacity of 300 kPa (as required by NZS3604) should generally be available for shallow foundations supporting timber framed NZS3604 type structures constructed on Engineer certified fill and/or natural residual soils.

Where building footprints are situated over existing uncertified fill or alluvium in the south-west portion of the site, or in the vicinity of steep slopes, specific geotechnical investigation and design will be required, with the likely outcome that the dwellings will need to be supported on piled foundations that penetrate any soft/low strength material and found on the underlying competent natural residual soils.

The specific foundation requirements for each lot will be detailed in our Geotechnical Completion Report issued following subdivisional development works.

13.2.2. Under slab fills

Under slab fills relative to post development levels should be limited to depths of 0.3 metres where lots are situated over uncertified fill or alluvium in the south-west portion of the site, or in the vicinity of steep slopes. Where fills exceed this amount the building plans should be reviewed by a Chartered Geotechnical Engineer and specific investigation and/or design may be required.

The limits on the heights of underslab fills for each lot will be detailed in our Geotechnical Completion Report.

13.2.3. Expansive Site Class

A series of laboratory linear shrinkage and liquid limit soil tests which were carried out on samples selected from around the site.

These limit tests were carried out in accordance with NZS 4402, "Methods of Testing Soils for Civil Engineering Purposes" test section 2 and were primarily intended to assess the Expansive Classes of the site materials as defined in AS 2870, "Residential Slabs and Footings – Construction".

The tests carried out indicate that the natural soils are slightly expansive.

This preliminary assessment will need to be reassessed and confirmed in our Geotechnical Completion Report.

13.3. Settlement Monitoring

Given that fills are to be placed over the area of uncertified fill a settlement monitoring plan will need to be developed to ensure settlements induced under the weight of the fills have adequately attenuated prior to civil or building works commencing.

This will involve the installation of fill settlement plates, constructed of 500 x 500 x 5mm thick steel plates and 1 metre threaded lengths of 20mm BSP galvanised water pipe as designated by Tetra Tech Coffey following topsoil stripping and placing of underfill drainage.

The positions of the indicators are best determined after site stripping and subgrade inspection. We envisage the use of approximately 8no. of these items. Surface settlement markers will likely also be required after the placement of the fill has been completed.

The Contractor should protect all indicators from damage by plant and ensure that we have access to them for monitoring and extension purposes at all times during and after completion of the bulk earthworks.

Initially on a fortnightly basis, then on a monthly basis, or as otherwise considered appropriate, records of settlements versus time for each indicator should be plotted in a graphical format so that rates and degrees of consolidation settlement can be ascertained and projected to provide a date after which the affected areas can be recommended for the commencement of civil works and/or for release for building purposes.

13.4. Support for Proposed Cuts and Retaining Walls

Cuts into the slope of up to approximately 5 metres are proposed along the upslope (eastern) edge of the accessway.

These cuts will need to be supported by either soil nails or pole/steel UB retaining walls. This will be determined based on the height of the cut and the distance of the cut to the boundary (i.e. if there is sufficient width between the cut and the boundary for soil nails or not).

The soil nails and/or retaining walls will need to be specifically designed by Tetra Tech Coffey and will need to have regard for the overall (global) stability of the slope as well as the local stability of the cut.

13.5. Suspended Timber Walkway

Where the walkway traverses the steep slopes along the lower (western) edge of the accessway the timber piles will need to be deepened and designed to resist long term soil creep effects. Pile design parameters and soil creep loads will be provided as part of detailed design.

13.6. Stabilised Earth Slope and Shear Key

The proposed fill embankment over the width of the existing gully in Lots 4 and 5 to create a level building platform will need to be specifically designed.

The embankment could be constructed as steep as 70-degrees with the use of geogrid reinforcement and a proprietary facing product such as Terramesh Green. The face of this embankment should then be able to be vegetated in grass and native creepers.

The Shear Key in Lots 13 and 14 will likely be approximately 4 metres in depth and 6 metres wide and will need to be backfilled with Engineered fill. Specific details of the shear key will be confirmed as part of detailed design.

13.7. Bored Subsoil Drains

As discussed above in Section 11, we recommend that a series of bored subsoil drains are installed in the approximate locations shown on the plan in Appendix F. These will need to be installed to maintain groundwater below critical levels in order to demonstrate adequate factors of safety against slope instability. At this stage these will likely be required within Lots 11, 12, 13, 15, 16, 17.

13.8. Accessway, Services and Subgrades

13.8.1. Subgrade CBRs

Following trimming of the accessway subgrade the 2007 DCP tests indicate that a CBR of at least 4% is available within the natural soils. A CBR of at least 4% should also be available for road subgrades formed in at least 0.6m depth of Engineer certified fill.

In the lower section of the accessway from approx. ch210m onwards we anticipate that historic fill will be encountered in the accessway subgrade and therefore there could be variable CBRs and possible voids in the

fill etc. We therefore recommend undercutting the subgrade here by 600mm and replacing it with Engineered clay fill following which we would expect consistent subgrade CBRs of least 5% should be available.

We recommend that a programme of Scala Penetrometers is carried out when the accessway subgrade is being formed to final levels to confirm actual CBR values.

13.8.2. Groundwater Issues

Groundwater was encountered close to the surface in the south-western portion of the site adjacent to the wetland, elsewhere the boreholes were all dry. Based on the concept services plan we do not expect that there should be any unusual issues relating to groundwater during the installation of the service lines.

14. EARTHWORKS OPERATIONS

14.1. Site Preparation

Within areas of the subdivision affected by earthworks, all vegetation should be cleared. Outside the extent of the earthworks, vegetation cover should be disturbed as little as possible and reinstated wherever practical.

Topsoil should be stripped from all cut and fill areas, stripping operations being planned to extend well beyond cut and fill lines to avoid peripheral fill contamination. Stockpiles of topsoil and unsuitable materials should be sited well clear of the works on suitable areas of natural ground.

14.2. Compaction Acceptance Testing

We propose that fill compaction control is principally in terms of the minimum shear strength and maximum air voids criteria.

Based on the requirements of NZS4431:2022 we recommend the below fill control criteria:

Table 5: Minimum Shear Strength and Maximum Air Voids Method

(a)	Air Voids Percentage (as defined in NZS 4402)	
	General Fill	
	Maximum single value	10%
	Within 500mm of carriage way subgrade	
	Average value less than	8%
	Maximum single value	10%
(b)	Undrained Shear Strength (Measured by Pilcon shear vane - calibrated using NZGS 2001 method)	
	General Fill and within 500mm of carriage way subgrade	
	Minimum single value	**150 kPa**

15. Note: The average value shall be determined over any ten consecutive tests

14.3 Underfill/Subsoil Drainage

Underfill drainage will be required within the low areas/'holes' in the southern portion of the site. The exact locations and extent of these drains will need to be confirmed on site by Tetra Tech Coffey following site clearing and topsoil stripping.

The drains will likely comprise 160mm diameter, socked, Hiway grade, perforated Nexus drains. The drains should be placed in a trench with a minimum width and depth of 600mm. The trenches should be backfilled with clean/washed drainage metal which is fully wrapped in Bidim A24 geotextile or approved equivalent.

14.4 Stormwater Detention Pond

The Chester Consultants Limited plans in Appendix A show that a new stormwater quality/detention pond is to be constructed within Lot 102 in the western portion of the site.

We expect that the area to contain the stormwater pond is in historic fill which will likely be of a variable quality and possibly contain voids etc. To assist in ensuring a permanent water level in the pond we propose that the sides and base of the pond are undercut by 0.6m and replaced with suitable plastic clay fill placed and compacted to an Engineer certified standard.

Initial indications are that suitable clayey soils can be sourced from across the site. Indicatively, we would anticipate that a clay liner would need to be of the order of 600mm thick and a compaction specification should be developed following confirmation of the material suitability by laboratory testing.

15 PLAN REVIEW AND FURTHER WORK

If significant changes are proposed to be made to the earthworks and drainage plans presented on the Chester Consultants Limited drawings in Appendix A, we reserve the right to revisit our evaluations and recommendations when they come to hand.

Further work that will need to be undertaken include:

- Preparation of a Geotechnical Design Report(s) to cover specific design of the retaining walls/soil nails, bored horizontal drains, pole foundations to support the boardwalk along the edge of the accessway, and the shear keys and the fill embankment in Lots 4 and 5.
- Preparation of a Geotechnical Monitoring Plan for the monitoring of fill induced settlement of the existing uncertified fills.

It should be noted that it was not possible to cover all proposed building lots during the site investigation work carried out for this report. Accordingly, it will be necessary at the time of preparation of our Geotechnical Completion Report to undertake specific site investigation work on any previously un-investigated lots that have either been cut or not affected by the earthworks.

16 SITE OBSERVATIONS

The opinions, recommendations and comments given in this report result from the application of normal methods of site investigation. As factual evidence has been obtained solely from hand auger boreholes and test pits which by their nature only provide information about a relatively small volume of subsoils, there may be special conditions pertaining to this site which have not been disclosed by the investigation and which have not been taken into account in our report.

Therefore, it is important that Tetra Tech Coffey are given the opportunity of observing the topsoil stripping, site clearing, underfill drainage installation, earthworks operations, and retaining wall construction to ensure that the ground conditions encountered are as anticipated from the findings of this report. If they are not, we would be on hand to recommend the most appropriate advice.

We require at least 24 hours' notice for site inspections.

17 LIMITATIONS

This report has been prepared solely for the use of our client, Heron Point Limited, their professional advisors, and the relevant Territorial Authorities in relation to the specific project described herein. No liability is accepted in respect of its use for any other purpose or by any other person or entity. All future owners of this property should seek professional geotechnical advice to satisfy themselves as to its ongoing suitability for their intended use.

The opinions, recommendations and comments given in this report result from the application of normal methods of site investigation. As factual evidence has been obtained solely from boreholes and trial pits which by their nature only provide information about a relatively small volume of subsoils, there may be special conditions pertaining to this site which have not been disclosed by the investigation and which have not been taken into account in the report.

If variations in the subsoils occur from those described or assumed to exist then the matter should be referred back to us immediately.

For and on behalf of Tetra Tech Coffey

Prepared By:

James Livingston
Associate Geotechnical Engineer

Reviewed and Authorised By:

Peter Bosselmann
Senior Principal

APPENDIX A: CHESTER LIMITED CIVIL DRAWINGS

CIVIL ENGINEERING DRAWING SCHEDULE

REVISION DATE	31/05/2024									

SHEET	TITLE	REVISION									
001	DRAWING SCHEDULE	0									
100	EXISTING SITE PLAN	0									
110	PROPOSED SITE PLAN	0									
200	EARTHWORKS PLAN	0									
201	BULK EARTHWORKS LS 01	0									
202	BULK EARTHWORKS LS 02	0									
203	BULK EARTHWORKS LS 03	0									
210	EROSION AND SEDIMENT CONTROL PLAN	0									
300	RETAINING WALL PLAN	0									
400	STORMWATER LAYOUT PLAN	0									
420	STORMWATER - WETLAND DETAILS	0									
421	WETLAND CROSS SECTION	0									
430	PROPOSED CULVERT LONG SECTION	0									
500	WASTEWATER LAYOUT PLAN	0									
600	WATER SUPPLY LAYOUT PLAN	0									
700	ROADING PLAN	0									
701	ROAD LONG SECTION	0									
702	ROAD XS 01	0									
703	ROAD XS 02	0									
704	ROAD XS 03	0									
705	ROAD XS 04	0									
706	ROAD XS 05	0									
707	ROAD XS 06	0									
708	TYPICAL CROSS SECTIONS	0									
800	COMMON ACCESS WAY PLAN AND LONG SECTION	0									
801	COMMON ACCESS WAY DETAILS	0									
900	SECONDARY FLOW PLAN	0									

SCHEDULE LEGEND	
ORIGINAL ISSUE	0
NOT REVISED	
REVISED	1
NOT INCLUDED IN SET	-
DELETED FROM SET	~~TITLE~~

CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
HERON POINT LIMITED
45 & 47 HIHITAHI RISE, PAIHIA

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: DRAWING SCHEDULE

Drawing: 001 Rev: 0
Scale: NTS
Project: 15569
Issue: CONSENT

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ROAD

LOT 2
DP 565954

LOT 1
DP 565954

LOT 21
DP 181647

LOT 13
DP 181647

LOT 12
DP 181647

LOT 11
DP 181647

LOT 10
DP 181647

LOT 2
DP 200205

LOT 1
DP 554653

LOT 9
DP 181647

OPUA RECREATION AREA
RECREATION RESERVE
SECTION 4 BLOCK VIII
KAWAKAWA SD

HIHITAHI RISE

EXISTING SERVICES TO BE RELOCATED

EXISTING DOUBLE CP

EXISTING SUB STATION

EXISTING CULVERT

10.0
20.0
30.0
40.0
50.0

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX. SW PIPE	
EX. SW PIPE ABANDON	
EX. WW PIPE	
EX. WW PIPE ABANDON	
EX. SWIC / CP	/
EX. WWIC	
EX. IC ABANDON / DEMO	
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX. WS PIPE	
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
OVERGROWN TRACK	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	
EXOTIC - INDIGENOUS REGENERATING VEGETATION	

1:1000 — 0 10 20 30 40 50 — PLOT CONTAINS ELEMENTS IN COLOUR

C:\Users\JackChen\Chester Consultants\Central Library - 15569 - Hihitahi Rise\3.0 Design\3.2 Civil\3.2.1 ACAD\DWG Layouts\15569-C-DWG-001-002-100.dwg 6/7/2024 10:18 am LAST SAVED BY: JackChen

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter:	V. RIVIER	Job Title:	CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Designer:	N. JULL	Client:	HERON POINT LIMITED
Checker:	J. CHEN	Address:	45 & 47 HIHITAHI RISE, PAIHIA.
Date:	31/05/2024	Drawing Title:	EXISTING SITE PLAN

Drawing:	100	Rev:	0
Scale:	1:1000 @ A3		
Project:	15569		
Issue:	CONSENT		

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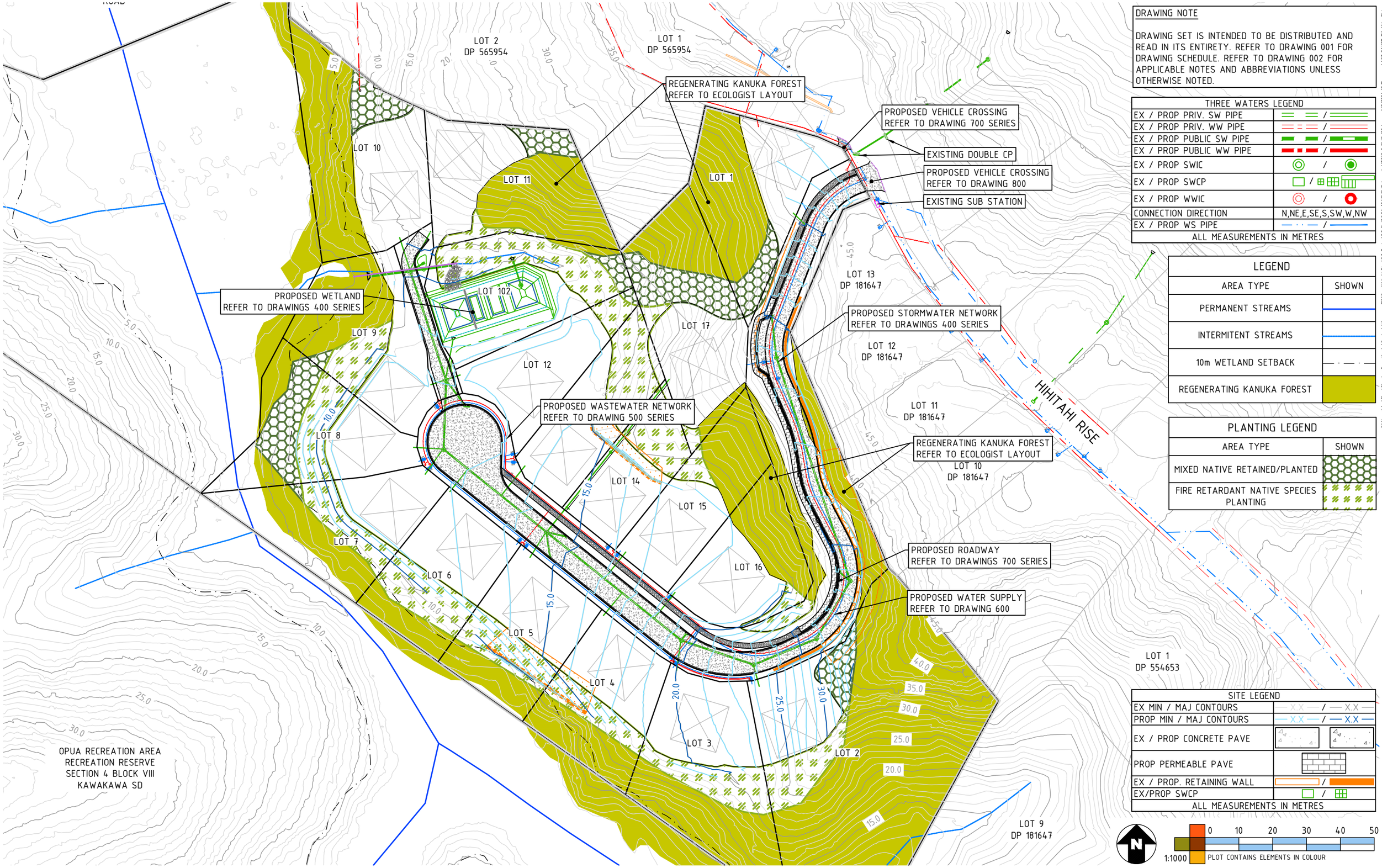

DRAWING NOTE

DRAWING SET IS INTENDED TO BE DISTRIBUTED AND READ IN ITS ENTIRETY. REFER TO DRAWING 001 FOR DRAWING SCHEDULE. REFER TO DRAWING 002 FOR APPLICABLE NOTES AND ABBREVIATIONS UNLESS OTHERWISE NOTED.

THREE WATERS LEGEND	
EX / PROP PRIV. SW PIPE	/
EX / PROP PRIV. WW PIPE	/
EX / PROP PUBLIC SW PIPE	/
EX / PROP PUBLIC WW PIPE	/
EX / PROP SWIC	/
EX / PROP SWCP	/
EX / PROP WWIC	/
CONNECTION DIRECTION	N,NE,E,SE,S,SW,W,NW
EX / PROP WS PIPE	/
ALL MEASUREMENTS IN METRES	

LEGEND	
AREA TYPE	SHOWN
PERMANENT STREAMS	
INTERMITENT STREAMS	
10m WETLAND SETBACK	
REGENERATING KANUKA FOREST	

PLANTING LEGEND	
AREA TYPE	SHOWN
MIXED NATIVE RETAINED/PLANTED	
FIRE RETARDANT NATIVE SPECIES PLANTING	

SITE LEGEND	
EX MIN / MAJ CONTOURS	X.X / X.X
PROP MIN / MAJ CONTOURS	X.X / X.X
EX / PROP CONCRETE PAVE	/
PROP PERMEABLE PAVE	
EX / PROP. RETAINING WALL	/
EX/PROP SWCP	/
ALL MEASUREMENTS IN METRES	

N

0 10 20 30 40 50

1:1000 PLOT CONTAINS ELEMENTS IN COLOUR

Rev	Date	Amendments	By
0	31/05/24	INITIAL ISSUE	VR

Drafter: V. RIVIER
Designer: N. JULL
Checker: J. CHEN
Date: 31/05/2024

Job Title: CIVIL DESIGN - PROPOSED 17 LOT SUBDIVISION
Client: HERON POINT LIMITED
Address: 45 & 47 HIHITAHI RISE, PAIHIA.
Drawing Title: PROPOSED SITE PLAN

Drawing: 110 Rev: 0
Scale: 1:1000 @ A3
Project: 15569
Issue: CONSENT

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