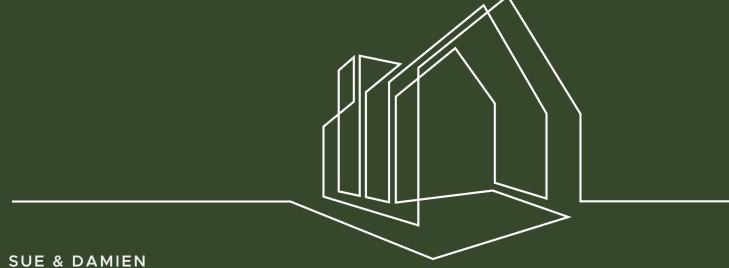
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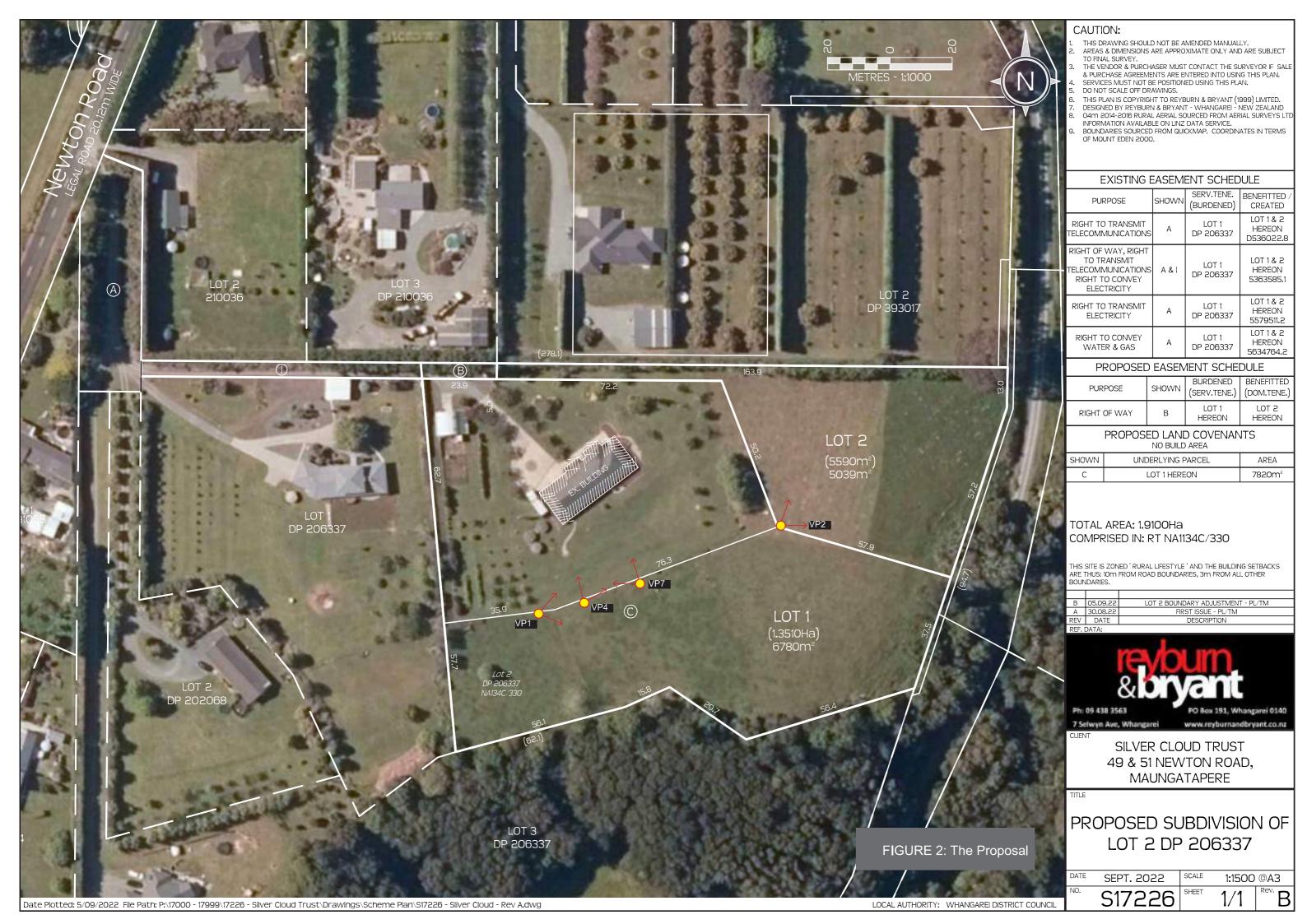


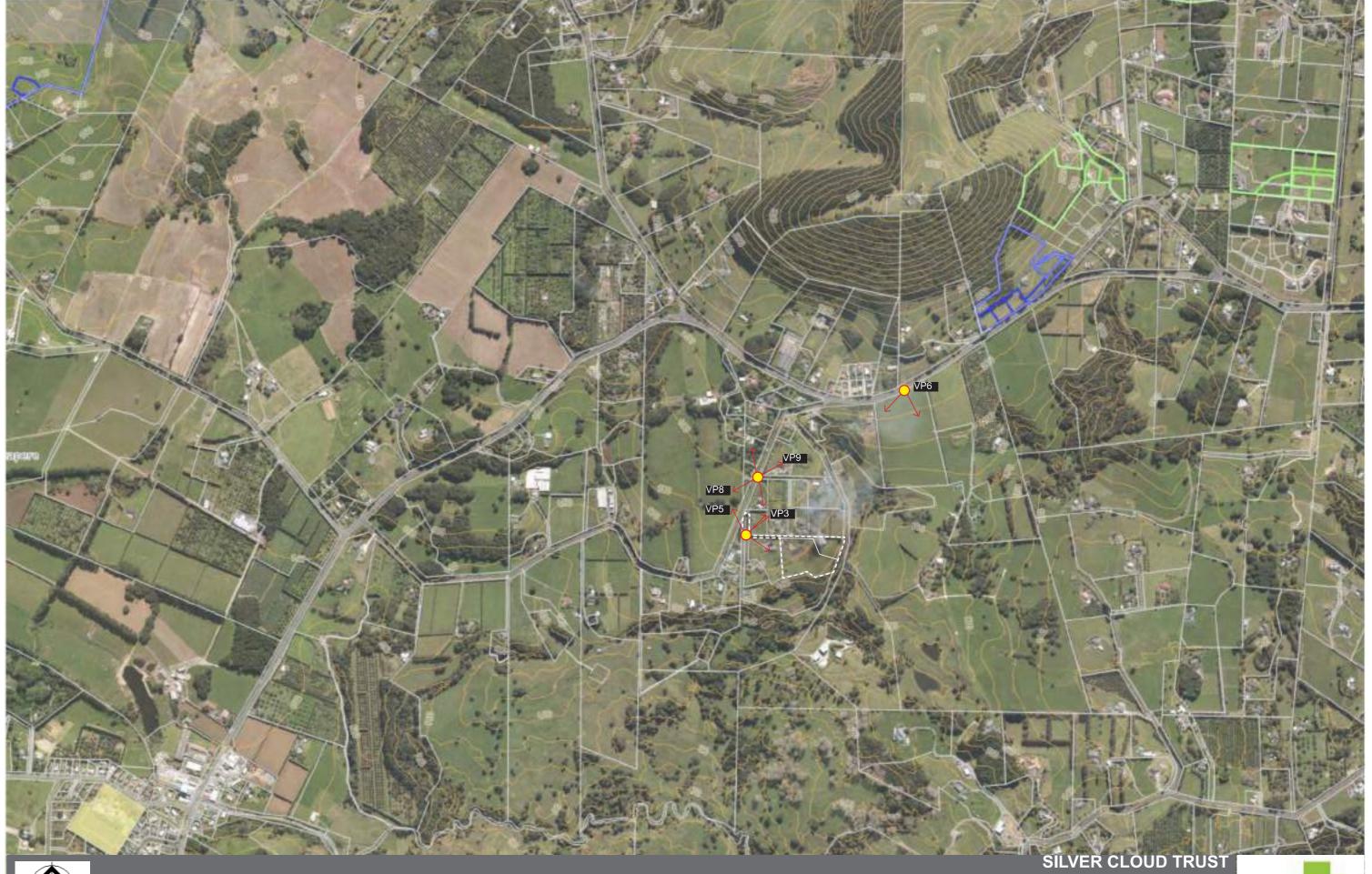
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49 & 51 Newton Road, Maungatapere
Landscape Assessment
FIGURE 3: Site context





49 & 51 Newton Road, Maungatapere Landscape Assessment FIGURE 4: The Site and its immediate context





Photo 1: View north east towards proposed Lot 2





Photo 2: View to north east across proposed Lot 2



Photo 3: View to east along RoW along northern boundary of the Site





Photo 4: View of existing dwelling within proposed Lot 1



Photo 5: View along RoW to Newton Road



Photo 6: View towards Site from State Highway 14



Photo 7: View to west proposed Lot 1



Photo 8: View to south west along Newton Road





Photo 9: View north east along Newton Road

APPENDIX 2: Landscape and Visual Effects Assessment Methodology

Email: simon@scla.nz

Landscape and Visual Effects Assessment Methodology

Introduction

The landscape and visual effects assessment process provides a framework for assessing and identifying the nature and level of likely effects that may result from a proposed development. Such effects can occur in relation to changes to physical elements, the existing character of the landscape and the experience of it. In addition, the landscape assessment method may include an iterative design development processes which includes stakeholder involvement. The outcome of any assessment approach should seek to avoid, remedy or mitigate adverse effects. A separate assessment is required to assess changes in natural character in coastal areas and other waterbodies.

When undertaking landscape and visual effects assessments, it is important that a structured and consistent approach is used to ensure that findings are clear and objective. Judgement should always be based on skills and experience, and be supported by explicit evidence and reasoned argument.

While landscape and visual effects assessments are closely related, they form separate procedures. The assessment of the potential effect on the landscape forms the first step in this process and is carried out as an effect on an environmental resource (i.e. landscape elements, features and character). The assessment of visual effects considers how changes to the physical landscape affect the viewing audience. The types of effects can be summarised as follows:

Landscape effects:

Change in the physical landscape, which may change its characteristics or qualities.

Visual effects:

Change to views which may change the visual amenity experienced by people.

The policy context, existing landscape resource and locations from which a development or change is visible all inform the 'baseline' for landscape and visual effects assessments. To assess effects, the landscape must first be described, including an understanding of the key landscape characteristics and qualities. This process, known as landscape characterisation, is the basic tool for understanding landscape character and may involve subdividing the landscape into character areas or types. The condition of the landscape (i.e. the state of an individual area of landscape or landscape feature) should also be described alongside a judgement made on the value or importance of the potentially affected landscape.

This outline of the landscape and visual effects assessment methodology has been undertaken with reference to the Quality Planning Landscape Guidance Note1¹ and its signposts to examples of best practice which include the UK guidelines for landscape and visual impact assessment² and the New Zealand Landscape Institute Guidelines for Landscape Assessment³.

Assessing landscape effects requires an understanding of the nature of the landscape resource and the magnitude of change which results from a proposed development to determine the overall level of landscape effects.

Nature of the landscape resource

Assessing the nature of the landscape resource considers both the susceptibility of an area of landscape to change and the value of the landscape. This will vary upon the following factors:

- Physical elements such as topography / hydrology / soils / vegetation;
- Existing land use;
- The pattern and scale of the landscape;

 $^{^1\} http://www.qualityplanning.org.nz/index.php/planning-tools/land/landscape$

² Landscape Institute and Institute of Environmental Management and Assessment (2013) Guidelines for Landscape and Visual Impact Assessment, 3rd Edition (GLVIA3)

³ Best Practice Note Landscape Assessment and Sustainable Management 10.1, NZILA

- Visual enclosure / openness of views and distribution of the viewing audience;
- The zoning of the land and its associated anticipated level of development;
- · The value or importance placed on the landscape, particularly those confirmed in statutory
- documents; and
- The scope for mitigation, appropriate to the existing landscape.

The susceptibility to change takes account of both the attributes of the receiving environment and the characteristics of the proposed development. It considers the ability of a specific type of change occurring without generating adverse effects and/or achievement of landscape planning policies and strategies.

Landscape value derives from the importance that people and communities, including tangata whenua, attach to particular landscapes and landscape attributes. This may include the classification of

Outstanding Natural Landscape (RMA s.6(b)) based on important biophysical, sensory/ aesthetic and associative landscape attributes, which have potential to be affected by a proposed development.

Magnitude of Landscape Change

The magnitude of landscape change judges the amount of change that is likely to occur to existing areas of landscape, landscape features, or key landscape attributes. In undertaking this assessment, it is important that the size or scale of the change is considered within the geographical extent of the area influenced and the duration of change, including whether the change is reversible. In some situations, the loss /change or enhancement to existing landscape elements such as vegetation or earthworks should also be quantified.

When assessing the level of landscape effects, it is important to be clear about what factors have been considered when making professional judgements. This can include consideration of any benefits which result from a proposed development. Table 1 below helps to explain this process. The tabulating of effects is only intended to inform overall judgements.

Contributing factors		Higher	Lower
Nature of Landscape Resource	Susceptibility to change	The landscape context has limited existing landscape detractors which make it highly vulnerable to the type of change which would result from the proposed development.	The landscape context has many detractors and can easily accommodate the proposed development without undue consequences to landscape character.
	The value of the landscape	The landscape includes important biophysical, sensory and associative attributes. The landscape requires protection as a matter of national importance (ONF/L).	The landscape lacks any important biophysical, sensory or associative attributes. The landscape is of low or local importance.
Magnitude of Size or scale Change		Total loss or addition of key features or elements. Major changes in the key characteristics of the landscape, including significant aesthetic or perceptual elements.	The majority of key features or elements are retained. Key characteristics of the landscape remain intact with limited aesthetic or perceptual change apparent.
	Geographical extent	Wider landscape scale.	Site scale, immediate setting.
	Duration and reversibility	Permanent. Long term (over 10 years).	Reversible. Short Term (0-5 years).

Table 1: Determining the level of landscape effects

Visual Effects

To assess the visual effects of a proposed development on a landscape, a visual baseline must first be defined. The visual 'baseline' forms a technical exercise which identifies the area where the development may be visible, the potential viewing audience, and the key representative public viewpoints from which visual effects are assessed.

The viewing audience comprises the individuals or groups of people occupying or using the properties, roads, footpaths and public open spaces that lie within the visual envelope or 'zone of visual influence' of the site and proposal. Where possible, computer modelling can assist to determine the theoretical extent of visibility together with field work undertaken to confirm this. Where appropriate, key representative viewpoints should be agreed with the relevant local authority.

Nature of the viewing audience

The nature of the viewing audience is assessed in terms of the susceptibility of the viewing audience to change and the value attached to views. The susceptibility of the viewing audience is determined by assessing the occupation or activity of people experiencing the view at particular locations and the extent to which their interest or activity may be focused on views of the surrounding landscape. This relies on a landscape architect's judgement in respect of visual amenity and reaction of people who may be affected by a proposal. This should also recognise that people more susceptible to change generally include: residents at home, people engaged in outdoor recreation whose attention or interest is likely to be focused on the landscape and on particular views; visitors to heritage assets or other important visitor attractions; and communities where views contribute to the landscape setting.

The value or importance attached to particular views may be determined with respect to its popularity or numbers of people affected or reference to planning instruments such as viewshafts or view corridors.

Important viewpoints are also likely to appear in guide books or tourist maps and may include facilities provided for its enjoyment. There may also be references to this in literature or art, which also acknowledge a level of recognition and importance.

Magnitude of Visual Change

The assessment of visual effects also considers the potential magnitude of change which will result from views of a proposed development. This takes account of the size or scale of the effect, the geographical extent of views and the duration of visual change which may distinguish between temporary (often associated with construction) and permanent effects where relevant. Preparation of any simulations of visual change to assist this process should be guided by best practice as identified by the NZILA⁴.

When determining the overall level of visual effect, the nature of the viewing audience is considered together with the magnitude of change resulting from the proposed development. Table 2 has been prepared to help guide this process:

Contributing factors		Higher Lower	
Nature of Susceptibility Landscape to change Resource		Views from dwellings and recreation areas where attention is typically focussed on the landscape	Views from places of employment and other places where the focus is typically incidental to its landscape context. Views from transport corridors.
	The value of the landscape	Viewpoint is recognised by the community such as an important view shaft, identification on tourist maps or in art and literature. High visitor numbers.	Viewpoint is not typically recognised or valued by the community. Infrequent visitor numbers
Magnitude of Size or scale Change		Loss or addition of key features in the view. High degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture). Full view of the proposed development	Most key features of view retained. Low degree of contrast with existing landscape elements (i.e. in terms of form scale, mass, line, height, colour and texture. Glimpse / no view of the proposed development.
	Geographical extent	Front on views. Near distance views; Change visible across a wide area.	Oblique views. Long distance views. Small portion of change visible.
	Duration and reversibility	Permanent. Long term (over 15 years).	Transient / temporary. Short Term (0-5 years).

⁴ Best Practice Guide: Visual Simulations BPG 10.2, NZILA

Nature of Effects

In combination with assessing the level of effects, the landscape and visual effects assessment also considers the nature of effects in terms of whether this will be positive (beneficial) or negative (adverse) in the context within which it occurs. Neutral effects can also occur where landscape or visual change is benign.

It should also be noted that a change in a landscape does not, of itself, necessarily constitute an adverse landscape or visual effect. Landscape is dynamic and is constantly changing over time in both subtle and more dramatic transformational ways, these changes are both natural and human induced. What is important in managing landscape change is that adverse effects are avoided or sufficiently mitigated to ameliorate the effects of the change in land use. The aim is to provide a high amenity environment through appropriate design outcomes.

This assessment of the nature effects can be further guided by Table 3 set out below:

Nature of effect	Use and definition
Adverse (negative):	The proposed development would be out of scale with the landscape or at odds with the local pattern
	and landform which results in a reduction in landscape and / or visual amenity values
Neutral (benign):	The proposed development would complement (or blend in with) the scale, landform and pattern of the
	landscape maintaining existing landscape and / or visual amenity values
Beneficial (positive):	The proposed development would enhance the landscape and / or visual amenity through removal of
	restoration of existing degraded landscapes uses and / or addition of positive elements or features

Table 3: Determining the Nature of Effects

Cumulative Effects

During the scoping of an assessment, where appropriate, agreement should be reached with the relevant local authority as to the nature of cumulative effects to be assessed. This can include effects of the same type of development (e.g. wind farms) or the combined effect of all past, present and approved future development⁵ of varying types, taking account of both the permitted baseline and receiving environment. Cumulative effects can also be positive, negative or benign.

Cumulative Landscape Effects

Cumulative landscape effects can include additional or combined changes in components of the landscape and changes in the overall landscape character. The extent within which cumulative landscape effects are assessed can cover the entire landscape character area within which the proposal is located, or alternatively, the zone of visual influence from which the proposal can be observed.

Cumulative Visual Effects

Cumulative visual effects can occur in combination (seen together in the same view), in succession (where the observer needs to turn their head) or sequentially (with a time lapse between instances where proposals are visible when moving through a landscape). Further visualisations may be required to indicate the change in view compared with the appearance of the project on its own.

Determining the nature and level of cumulative landscape and visual effects should adopt the same approach as the project assessment in describing both the nature of the viewing audience and magnitude of change leading to a final judgement. Mitigation may require broader consideration which may extend beyond the geographical extent of the project being assessed.

Determining the Overall Level of Effects

⁵ The life of the statutory planning document or unimplemented resource consents

The landscape and visual effects assessment concludes with an overall assessment of the likely level of landscape and visual effects. This step also takes account of the nature of effects and the effectiveness of any proposed mitigation.

This step informs an overall judgement identifying what level of effects are likely to be generated as indicated in Table 4 below. This table which can be used to guide the level of landscape and visual effects uses an adapted seven-point scale derived from NZILA's Best Practice Note.

	Effect rating	Use and definition
More Very high than		Total loss of key elements / features / characteristics, i.e. amounts to a complete change of landscape character
minor	High	Major modification or loss of most key elements / features / characteristics, i.e. little of the pre-development landscape character remains. Concise Oxford English Dictionary Definition High: adjective- Great in amount, value, size, or intensity
· .	Moderate to high	Modifications of several key elements / features / characteristics of the baseline, i.e. the pre-development landscape character remains evident but materially changed.
	Moderate	Partial loss of or modification to key elements / features / characteristics of the baseline, i.e. new elements may be prominent but not necessarily uncharacteristic within the receiving landscape. Concise Oxford English Dictionary Definition Moderate: adjective- average in amount, intensity, quality or degree
Minor .	Moderate to low	Minor loss of or modification to one or more key elements / features / characteristics, i.e. new elements are not prominent or uncharacteristic within the receiving landscape.
	Low	No material loss of or modification to key elements / features / characteristics. i.e. modification or change is not uncharacteristic and absorbed within the receiving landscape. Concise Oxford English Dictionary Definition Low: adjective- 1. Below average in amount, extent, or intensity
Less than minor	Very low	Little or no loss of or modification to key elements/ features/ characteristics of the baseline, i.e. approximating a 'no change' situation.

Table 4: Determining the overall level of landscape and visual effects

Determination of "minor"

Decision makers determining whether a resource consent application should be notified must also assess whether the effect on a person is less than minor⁶ or an adverse effect on the environment is no more than minor⁷. Likewise, when assessing a non-complying activity, consent can only be granted if the s104D 'gateway test' is satisfied. This test requires the decision maker to be assured that the adverse effects of the activity on the environment will be 'minor' or not be contrary to the objectives and policies of the relevant planning documents.

These assessments will generally involve a broader consideration of the effects of the activity, beyond the landscape and visual effects. Through this broader consideration, guidance may be sought on whether the likely effects on the landscape resource or effects on a person are considered in relation to 'minor'. It must also be stressed that more than minor effects on individual elements or viewpoints does not necessarily equate to more than minor effects on the wider landscape resource. In relation to this assessment, moderate-low level effects would generally equate to 'minor'.

⁶ RMA, Section 95E

⁷ RMA Section 95D

APPENDIX 3: Worksheet for the Maunu ONL

Email: simon@scla.nz

Northland Regional Landscape Assessment Worksheet		
	Unit name – MAUNU	
DESCRIPTION AND CHA	RACTERISATION	
Component	Comment	
Land Types Volcanic cones land type	One of a sequence of volcanic cones, which form a family of features and characterise the landscape to the west of Whangarei.	
Geology (including geopreservation sites) Kerikeri volcanics basaltic scoria cone	The three large scoria cones of Maunu, Maungatapere and Maungakaramea, were produced as part of a second period of basalt eruptions between 300 000 to 500 000 years ago at a similar time to the four cones to the west of Kamo, and three to the east. More precisely, Mangatapere was formed 0.29 ± 0.05 my.	
	The site is listed as being of regional geopreservation importance (Kenny and Hayward. 1993), although modified by farming, minor quarrying and roading. A crater was destroyed as a result of the construction of a television transmitter. Kenny and Hayward report that the cone rises 150 m above the surrounding plateau, whilst lava flows associated with the feature extend approximately 6.0 km east almost as far as Whangarei City.	
Soil Types	The entirety of the unit is overlain by Papakauri clay loam.	
Ecology (including protected vegetation / features, PNAP Level 1 and 2 sites)	The site is identified in the PNAP survey is a Level 1 site and is identified as Q06/026. It comprises three areas of forest with the largest being located on the southern slopes of the cone nearest, and visible from the State Highway. These southern slopes are covered with taraire dominant forest with frequently occurring tawa. Broadleaf volcanic forest is a nationally rare forest type which supports the kukupa and regionally uncommon ornate skink. The forest is a representative site for taraire forest, taraire-tawa forest and taraire-rewarewa forest.	
Archaeological sites	None known.	
Heritage Landscapes	None known.	

Landscape characterisation

(including the identification of any specific characteristics)

The feature lies some 5.0 km to the west of Whangarei and appears as an 'extension' to the hills associated with the Pukenui Forest. This said, Maunu forms a recognizably individual feature and is clearly volcanic in origin with a defined cone shape. It forms one of the 'family' of highly group of volcanic cones, and is particularly evident when travelling along State Highway 14. From this road the cone forms a focus along the State Highway when travelling both from the west and the east.

The cone is some 1.0 - 2.0 km in diameter and stands some 395 m asl. It is breached from the west and is very steep sided particularly on its southern face, which is encircled by the State Highway.

The west side, the north trending ridge, and the lower slopes on the eastern side of the feature are farmed, however the eastern and southern slopes are vegetated with pines and native forest.

A number of telecommunications structures are located on the summit of the cone. These are accessed by an extension of Millington Road.

EVALUATION			
EVALUATION Criteria Rank Comment			
Natural Science Factors	Hank	Sommen	
Representativeness Natural landscapes are clearly characteristic of the area, district or region. The key components of the landscape will be present in a way that defines the character of the place and distills its character and essence. Endemic associations.	5	The cone is highly representative of the Whangarei volcanic field and forms one of a family of cones that are intervisible and characterise the landscape of the area. Viewed from the south and south west the cone presents a strongly endemic and natural character, although from other directions the pine plantations, pasture and telecommunications masts reduce its natural character.	
Rarity Natural features are unique or rare in the region or nationally, and few comparable examples exist.	5	Although there are a number of similar volcanic features in the area, in the wider context of the region similar features only occur in small numbers in defined clusters.	
Aesthetic Values			
Coherence The patterns of land cover and land use are largely in harmony with the underlying natural pattern of the landform of the area and there are no significant discordant elements of land cover or land use.	3	The powerful shape of the cone enables the retention of a measure of coherence. Furthermore, the presence of vegetation on the steeper southern, and south eastern faces provides coherence when viewed from the western, southern and eastern quadrants. The geometric form of the pine plantation detracts to some extent from the levels of coherence, and built development and vegetative patterns on the lower slopes tend to be more discordant and only reflect the underlying natural pattern to a limited degree.	
Diversity & Complexity The elements contributing to overall landscape character are diverse and complex (particularly in ecological terms) without creating disharmony.	2	Vegetation on the southern steep slope displays a moderate to high level of complexity and diversity. The remainder of the feature displays limited levels of complexity and diversity.	
Vividness Natural features and landscape are widely recognised across the community and beyond the local area and remain clearly in the memory; striking landscapes are symbolic of an area due to their recognisable and memorable qualities.	4	The volcanic origins of Maunu are clearly evident and as such the feature presents a striking form which is visible and distinct over a wide visual catchment. Like many of the other cones, Maunu is used as an orientating feature, as well as a waymarker for travelers on their way to Dargaville, or travelling in the other direction to Whangarei. Whilst not as 'natural' as Maungatapere, the distinctive form, visibility and level of recognition result in the cone displaying a high level of vividness.	
Naturalness How affected by human activity is the landscape? Does human activity intrude on the landscape? Eg. Presence of buildings and associated built development. Presence of infrastructure services. Extent of indigenous forest cover. Homogeneity of exotic vegetation. Presence / extent of modified agricultural land use. Strength of natural processes / ecological patterns. Unmodified and legible physical relief and landform. Presence of water.	2	As described above, Maunu has been modified in a number of ways such that the level of naturalness has been eroded. This includes the clearance of native vegetation for pasture, the construction of telecommunications masts, the planting of non-native tree species and the construction of buildings on the lower slopes. Viewed from the south and south west however, the feature retains an appearance of naturalness since from these directions, including along the line of the State Highway to the south west, the slopes are vegetated with native forest.	

Intactness Natural systems are intact and aesthetically coherent and do not display significant visual signs of human modification, intervention or manipulation, visually intact and highly aesthetic natural landscapes.	3	As described above, only portions of the feature retain a coverage of native forest. The slopes clad with this vegetation, are both aesthetically coherent and retain a moderate level of intactness with respect to the natural systems and processes.
Experiential Values		
Expressiveness The 'legibility' of the landscape. Natural features clearly demonstrate the natural processes that formed them.	5	The feature clearly displays its volcanic origins and therefore possesses a high level of expressiveness.
Sensory qualities (These are landscape phenomena as directly perceived and experienced by humans, such as the view of a scenic landscape, or the distinctive smell and sound of the foreshore).	3	Climbing Maunu, the visitor experiences rapid gain in height over a limited distance, and a striking contrast between the height at the top of the feature compared to the surrounding landscape. The views from the summit are therefore extensive and impressive, and the visitor can experience the wind exposure associated with an elevated position.
Transient Values The consistent and repeated occurrence of transient features that contributes to the character, qualities and values of the landscape; landscapes are widely recognised for their transient features and the contribution that these make to the landscape.	2	Limited to the play of light and climatic conditions on the feature.
Remoteness / Wildness Does the landscape display a wilderness character, remote from and untouched by human presence? Eg. Sense of remoteness Accessibility Distance from built development	1	The modified character of the feature and its proximity of built development limits the sense of remoteness experienced by the visitor.
Shared and recognised		Maunu is a readily recognised feature which characterised
Values Natural features and landscape are widely known and valued by the immediate and wider community for their contribution to a sense of place leading to a strong community association with, or high public esteem for the place.	5	both the immediate area – the nearby suburb shared its name with the feature – and the wider region. As one of a family cluster of similar volcanic features, Maunu enjoys a strong community association.
Spiritual, cultural and historical associations Natural features and landscapes can be clearly and widely known and influenced by their connection to the spiritual, cultural and historical valued in the place and includes associative meanings and associative activities valued by the community. These can include both activities and meanings associative meanings are spiritual, cultural or social associative meanings are spiritual, cultural or social associatives, or areas, whilst associative activities are patterns of social activity that occur in particular parts of a landscape, for example, popular walking routes or fishing spots.		Consultation was initiated during the mapping process, but has not led to any feedback within the required period.

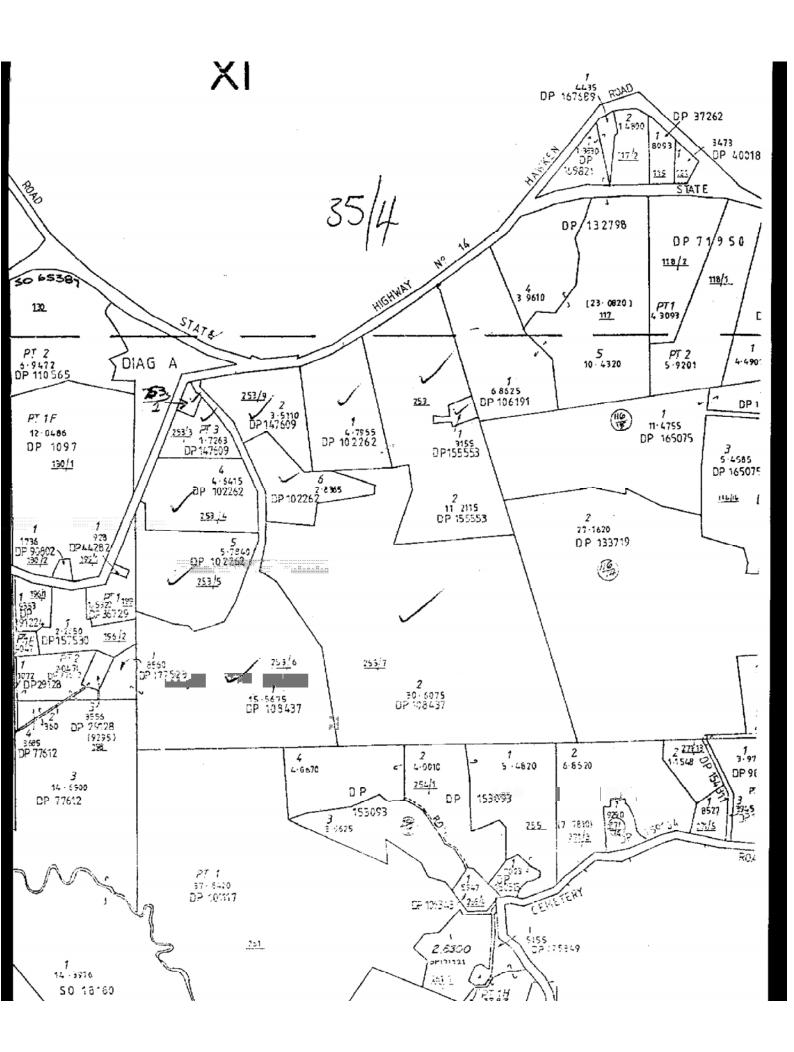
Rank scale between 1 (low) and 5 (high)

Land Types
Coastal cliffs / escarpment
Low escarpment
Bays and headlands
Beach
Dune complex
Reefs and islands
Estuarine / inlet
Open harbour
Coastal plain
Rolling hills
Steep hills: moderate to high relief

Ranges; high relief
Strongly rolling land
Low rolling land
Valley floors and flats
Plains
Volcanic cones
River mouth
Wetland
Watercourses
Lakes and water bodies

Photograph of unit







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2 921 75 GGG/slf

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Please reply to:

Date:

G.G. Grocott 26 August, 1983

Mr Martin Peters, Maunu, R.D.9, WHANGAREI.

Dear Sir.

PROPOSED STORAGE RESERVOIR: LOT 6: DP 1572

This letter is to inform you of the results of a vist to the site of a proposed storage reservoir on your property on Monday 15 August 1983 by our Mr G.G.

BACKGROUND

It is our understanding that you are presently seeking planning permission for the subdivision of part of DP 1572 into horticultural blocks. Prior to planning approval, you have been requested by the Northland Catchment Commission and Regional Water Board to prove the feasibility of establishing a storage reservoir on Lot 6 to satisfy irrigation demands.

A limestone quarry occurs some 140m downstream of the proposed reservoir site. Concern has been expressed by the Catchment Commission that should limestone underlie the reservoir site, the ground conditions are such that significant seepage from the reservoir into the area of quarry operations by way of the limestone could occur. This concern is expressed in a letter from the Catchment Commission to Reyburn and Bryant, Registered Surveyors dated 5 August, 1983.

2. INVESTIGATIONS

The present investigation comprised a walk over survey of the reservoir and quarry site and the immediate environs. This was undertaken to determine the nature and variability of the ground materials forming the local area, including a visual appraisal of their likely engineering characteristics.

3. SITE DESCRIPTION

It is intended that up to 12m of water will be impounded by the construction of an embankment across a small southerly-flowing stream, located toward the lower (south) boundary of Lot 6. In the region of the proposed embankment site, slopes are moderately inclined (20-25°), rising some 20m above stream level to flatter ground.

According to Thompson* (1961), the reservoir site is formed of basalt, formally known as the Takahe Basalt. Surface exposures indicate the near to surface materials are predominantly brown silty clays, judged to be the result of degradation of the basalt due to weathering. There is also evidence to suggest that some materials forming the site are of air fall (volcanic ash) origin, including thinly layered dark brown silty clays possibly indicative of a buried top soil. The limited amount of exposure in the local area indicates however that the distribution of all materials of volcanic origin is likely to be highly variable.

South of the proposed reservoir area, limestone forms the existing quarry, which is presently won for agricultural purposes. This light coloured rock dips at shallow angles to the north and comprises part of the Opahi Formation, according to Thompson (1961). Limestone can be traced in the bed of the stream above the quarry for a distance of some 70m. In these places it appears to contain an appreciable percentage of fines, and may be described as "muddy limestone".

4. ENGINEERING GEOLOGY

Surface evidence indicates that materials of volcanic origin including weathered basalt and ash form a blanket of variable thickness over the entire reservoir area. It is believed that the presently no subsurface information to confirm this.

The nearest limestone outcrop to the reservoir area occurs in the stream bed, some 70m downstream. At this locality, the rock may be described as a muddy limestone. It contains several distinct sets of defects, including bedding stratification and joints. Bedding planes dip to the north at gentle angles, while joints are in the main steeply inclined. The defects which were observed were tight, though persistent. Any movement of groundwater through this rock at depth would be principally along the joints and bedding planes, rather than through the intact material. Judging by the tight condition of the defects however, the transmissivity (permeability) of the limestone here is likely to be low.

*Thompson, B.N., 1961. Sheet 2A Whangarei (1st Ed.). 'Geological Map of New Zealand 1:250 000', DSIR, Wellington. N.Z.

Based on the stratification in the rock, and interpolating using a constant angle of dip, it is likely that any limestone underlying the proposed reservoir area at depth will be of a similar lithological type and structural configuration to that forming outcrops some 70m downstream, described above. Judging by the tight condition of the rock defects in the outcrop, the likelihood of significant seepage beneath the proposed reservoir by way of the underlying limestone is therefore considered to be low.

Exposures within the working area of the present quarry operations were not considered suitable for assessing the condition of defects, as blasting has naturally disturbed the ground there.

Of more significance to the feasibility of impounding water at this site, in our opinion, are the permeability characteristics of the nearer to surface materials including weathered basalt and volcanic ash. Given the variable ground conditions which these materials result in, their permeability will also vary accordingly, posing possible constraints on development. A discussion of the likely effect of these materials on reservoir impounding falls outside the scope of this brief.

5. IMPLICATIONS FOR FURTHER INVESTIGATIONS

The likelihood of significant groundwater seepage through limestone beneath the proposed reservoir is considered to be low (Section 4). Given this, we would not recommend proceeding with any further investigation at this time.

We wish to point out however, that in order to establish conclusive evidence it may be required to undertake subsurface investigations including in situ testing. This could require either trenching or drilling to locate the limestone at depth and field permeability testing.

6. CONCLUSIONS AND RECOMMENDATIONS

Based on the evidence of a walk over survey of the proposed reservoir area and local environs, we conclude that the possible presence of limestone at depth does not represent a significant hazard to the feasibility of the intended development. This conclusion is reached after a visual appraisal of natural exposures in the stream bed downstream of the proposed reservoir, which leads us to believe that at this locality the permeability of the limestone is low. By interpolation and extrapoloation of geological data, similar rocks are believed to occur at depth beneath the reservoir site.

While it is our belief that the evidence presented is an adequate basis on which to judge the likely seepage characteristics of the limestone, it is however indirect. We wish to point out that in order to derive conclusive evidence, subsurface investigations including field testing may be required. We would not recommend proceeding with these investigations at this time. Likely to be of more significance is leakage through the surficial volcanic deposits.

Thank you for the opportunity of being able to assist with these investigations. Should any part of our results require clarification, please do not hesitate to contact the undersigned, or our Mr G.G. Grocott.

Yours faithfully, WORLEY CONSULTANTS LTD

I.M. PARTON.

PRINCIPAL, GEOTECHNICAL ENGINEER.

Report prepared by: G.G. Grocott.

cc: Mr Jack Bradstock Worley Consultants Ltd, P.O. Box 783, WHANGAREI.



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Our Ref:

2 921 75 GGG/s1f



Please reply to: G.G. Grocott 2 December 1983

Mr Martin Peters, Maunu, R.D.9, WHANGAREI



Dear Sir.

PROPOSED STORAGE RESERVOIR: LOT 6, DP 1572.

Subsequent to our earlier letter of 26 August 1983, detailing the results of investigations at the site of a proposed storage reservoir on your property, the Northland Catchment Commission have maintained their concern as to the feasibility of the proposed development. This continued concern, we understand, artses not so much as a result of the potential for reservoir leakage through possible underlying limestone, but due to leakage from the reservoir basin in general.

As a result of this continued concern, our Dr I.M. Parton, geotechnical engineer and Mr G.G. Grocott, engineering geologist revisited the proposed reservoir site on 2 November 1983. The purpose of this visit was to recover disturbed samples of potential earth borrow materials which could be utilized as both an impervious blanket within the reservoir and as an impervious upstream shoulder of the dam. We report our findings below.

SAMPLING

Three samples of earth materials were recovered from the local area of the proposed reservoir. These were designated:

Sample 1: Right bank, 100m upstream of proposed dam. Sample 2: Right bank, upstream face of proposed dam. Sample 3: Left bank, upstream face of proposed dam.

2/...





Samples 1 and 2 are dark brown and dark yellow brown clayey silts, judged to be the weathered products of materials of volcanic origin which are widely distributed particularly on the right (western) flank of the stream course. Sample 3 is a yellowish brown silty clay and this is considered to be a weathered sedimentary lithology of the Opahi Formation*. Inspection of the reservoir area indicates that similar yellowish brown silty clays to sample 3 form a wide area on the left flank of the stream valley upstream and downstream of the proposed centreline.

2. RESULTS

Disturbed samples were submitted to our associated materials testing company, Ground Technology Ltd, for determination of the following laboratory properties:

- Atterburg limits
- . Permeability
- . Solid density
- . Natural water content

A summery of the laboratory testing is included as an attached appendix to this letter, from which the following results have been drawn. Samples 1 and 2 (volcanic origin soils) have coefficients of permeability (k) in the range 1.4 to 6.9 x 10⁻⁴mm/s, and based on these coefficients they may be classified according to published criteria provided by Terzaghi and Peck** (Table 47.2) as "very low" permeability. Similarly, based on the coefficient of permeability for Sample 3 (k = 3.6 x 10⁻⁶mm/s), this material classifies as "practically impermeable" according to Terzaghi and Peck.

3. CONCLUSIONS

Laboratory testing on selected earth samples from the proposed reservoir area indicates that the materials tested, placed as a blanket in the basin and as an impervious upstream shoulder on the dam structure, are of adequate impermeability to inhibit significant seepage. Clayey silts derived by weathering of sedimentary rocks are less permeable by comparison to the soils of

^{*}Thompson, B.N., 1961. Sheet 2A Whangarei (1st Ed.). "Geological Map of New Zealand 1:250 000", DSIR, Wellington, N.Z.

^{**} Terzaghi, K and Peck, R.B., 1967. Soil Mechanics in Engineering Practice. Second Edition, John Wiley and Sons, Inc.



volcanic origin which were tested, and these materials would be used in preference as a blanket and impervious upstream shoulder. We therefore conclude that there are natural materials of suitable quality which are available to provide an effective seal against reservoir leakage.

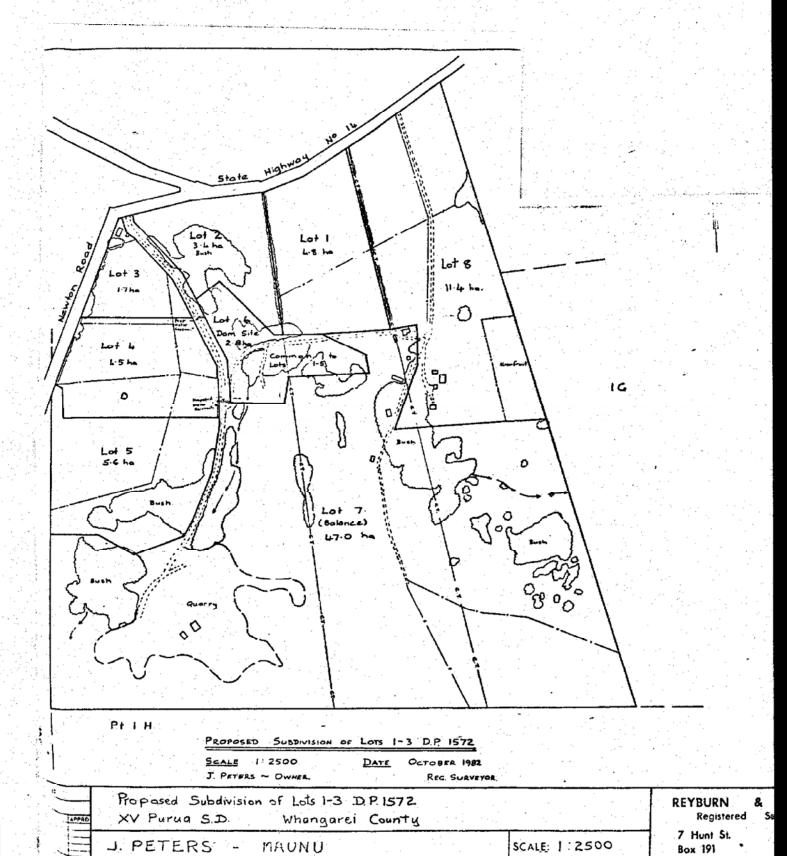
Preliminary estimates based on the walkover survey of the site indicates there is a sufficient volume of the preferred impervious borrow material which is available locally, though this would need to be confirmed as part of any detailed dam investigation and design. Similarly, the need for either a partial or complete impervious blanket over the reservoir, the blanket thickness, and placement requirements, would need to be determined as part of later, detailed investigations.

Should there be any aspect of our report that requires clarification, please do not hesitate to contact us. Thank you for the opportunity to advise on this matter.

Yours faithfully, WORLEY CONSULTANTS LTD

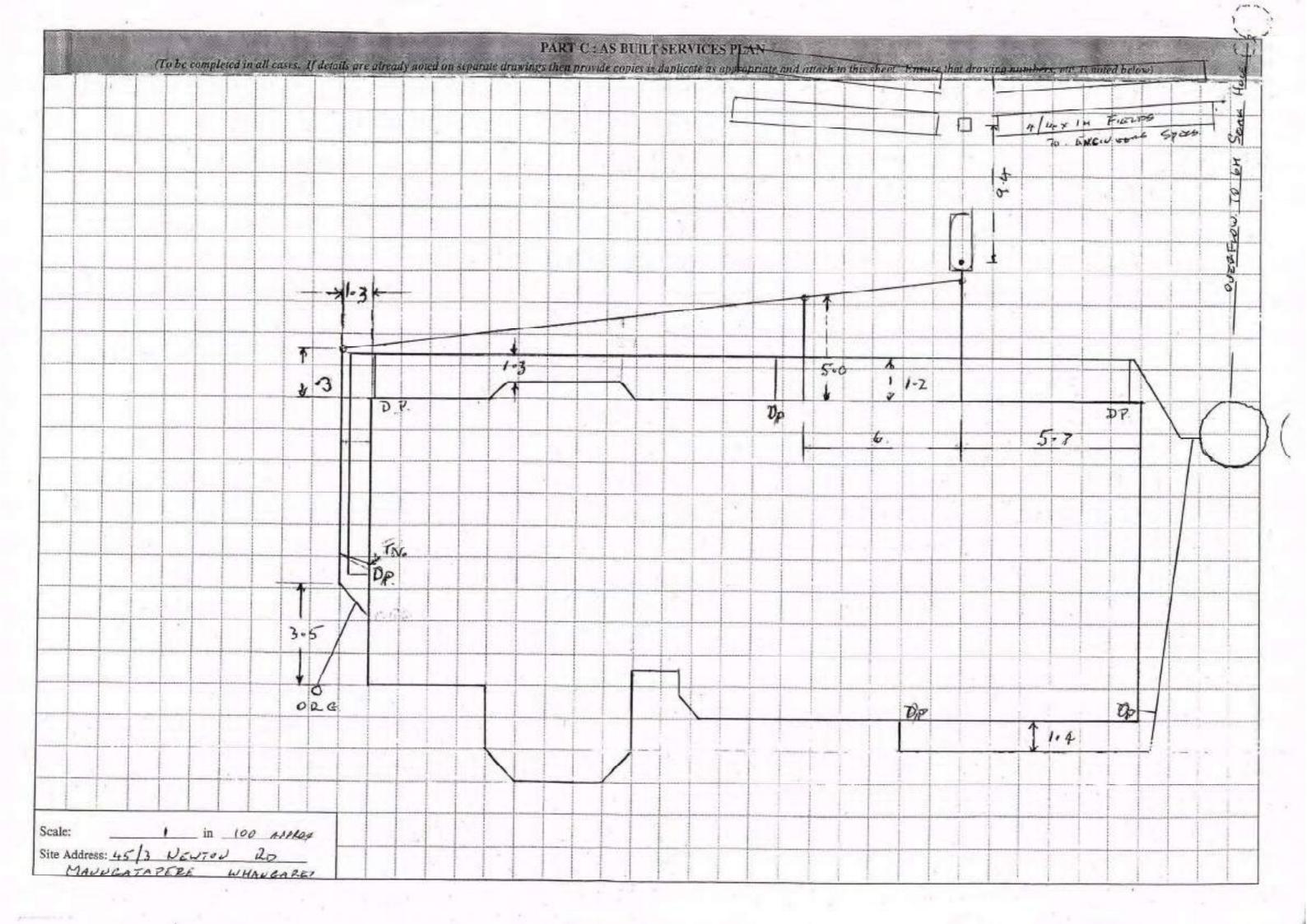
I.M. PARTON

cc: Mr J.W. Bradstock Worley Consultants Ltd P.O. Box 783, Whangarei Mr D. Reyburn, Reyburn and Bryant, P.O. Box 191, Whangarei.



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Whangarei District Council Private Bag 9023, Te Mai Whangarei 0143 Ph:0-9-430 4200

Email: mailroom@wdc.govt.nz

Rates LIM Report

As at: Thursday, 30 October, 2025

Property Number 175491

Legal Description LOT 1 DP 597020 - HAVING 1/20SH IN LOT 6 DP 102262 BEING 2.8365HA

Assessment Number 0035025327

Address 49 Newton Road Whangarei 0170

Record of Title(s) -,1157021 Land Value \$460,000 Capital Value \$1,335,000 Date of Valuation 01-July-2024

Effective Date (used for rating purposes) 01-July-2025

Meter Location

Rates Breakdown (up to 30 June 2026)

Rates Charge	Charge Total
General Residential - Lifestyle	\$1,341.96
Stormwater	\$79.00
Uniform Annual General Charge	\$901.00
Regional Council Services	\$229.89
Regional Economic Development	\$13.98
Regional Emergency & Hazard Management	\$67.31
Regional Flood Infrastructure	\$41.66
Regional Land and Freshwater Management	\$139.20
Regional Pest Management	\$109.47
Regional Rescue Services	\$8.87
Regional Sporting Facilities	\$16.09
Regional Transport Rate	\$30.40
Annual Charge Total	\$2,978.83

Opening Balance as at 01/07/2025

\$0.00

Rates Instalments	Total
20/07/2025 Instalment	\$746.83
20/10/2025 Instalment	\$744.00
20/01/2026 Instalment	\$744.00
20/04/2026 Instalment	\$744.00
Rates Total	\$2,978.83

Balance to Clear \$2,232.00

WHANGAREI DISTRICT COUNCIL

FORUM NORTH . PRIVATE BAG 9023, WHANGAREI, NEW ZEALAND, TELEPHONE 09 430 4200, FAX 09 438 7632

Issue Document

BUILDING CONSENT No:67241

Section 35, Building Act 1991

Issued: 05Aug03

Project Information Memorandum No: 67129



Applicant

P B COVAVICH 17 NAD PL HOWICK AUCKLAND

Agent

P B COVAVICH 17 NAD PL HOWICK AUCKLAND

Site Information

PROPERTY ID: 100151

STREET ADDRESS: 45--3 NEWTON RD, R D 10, WHANGAREI 0121

LEGAL DESCRIPTION: LOT 2 DP 206337

Project Information

PROJECT IS FOR: New Building

INTENDED USE(S): STG 1- RESITE EXISTING 1/2ROUND BARN STG 2- NEW DWELL

INTENDED LIFE: Indefinite but not less than 50 years

VALUE OF WORK: \$275,000.00

NUMBER OF STAGES: 2

Fees

COUNCIL'S TOTAL CHARGES FOR THIS BUILDING CONSENT ARE: \$1,353.75

PAYMENTS RECEIVED TO DATE:

Receipt number: 2493382 Date: 01Aug03 Amount: \$1,353.75

Building Consent: 67241 See attached page(s) for any other conditions.

Page : 1

This Consent is issued subject to the following conditions:

1:

STAGE ONE - 5TH AUGUST 2003 - FOR BARN RELOCATION ONLY.

2: General

No Requirements.

3: Dust Nuisance

The applicant must control dust nuisance created by any site or building works.

4: Toilet Facilities

Toilet facilities must be provided within reasonable distance of the construction site. Ground discharge is no longer acceptable.

5: Smoke Alarms

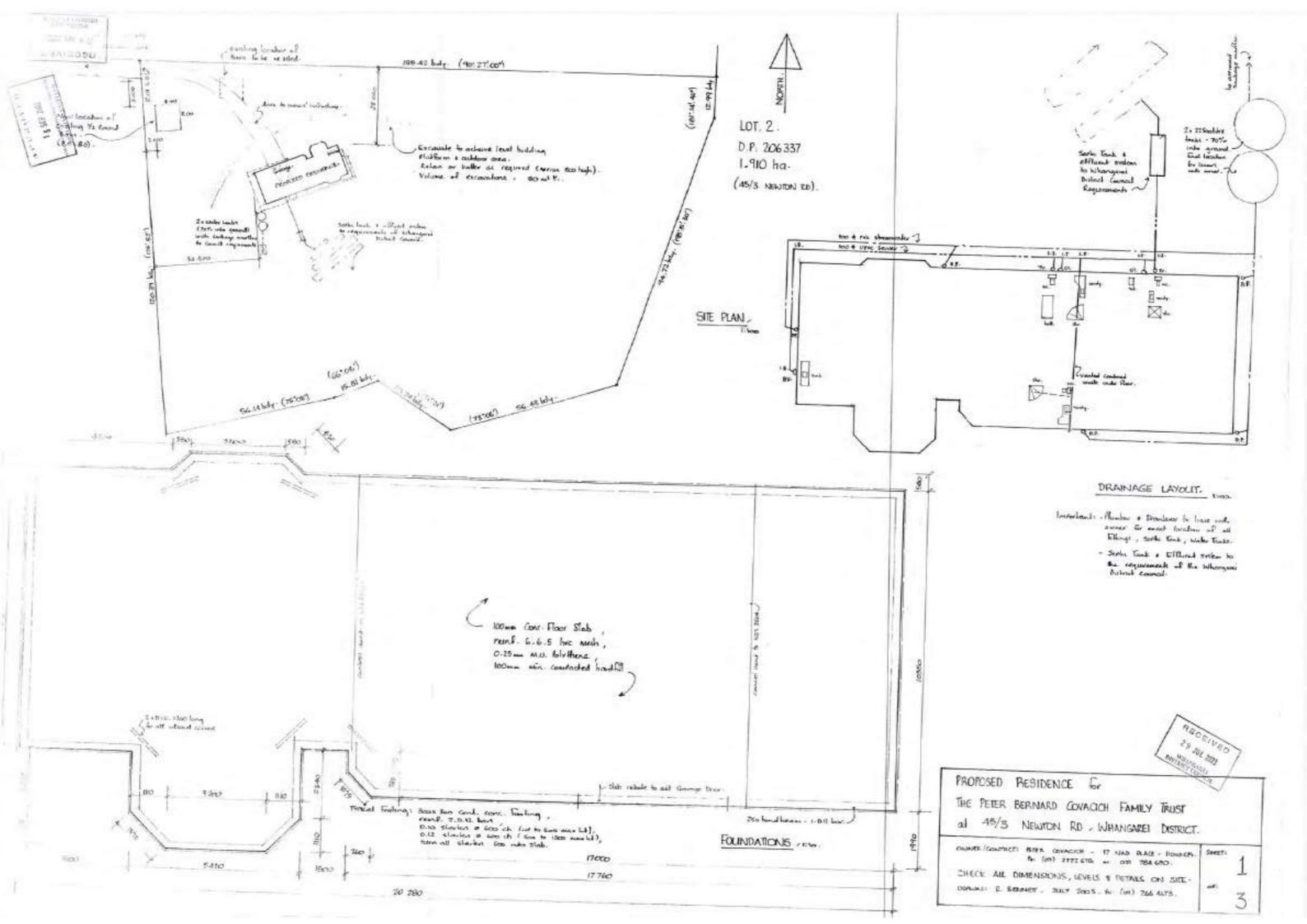
Smoke alarms are to be installed in compliance with the building code.

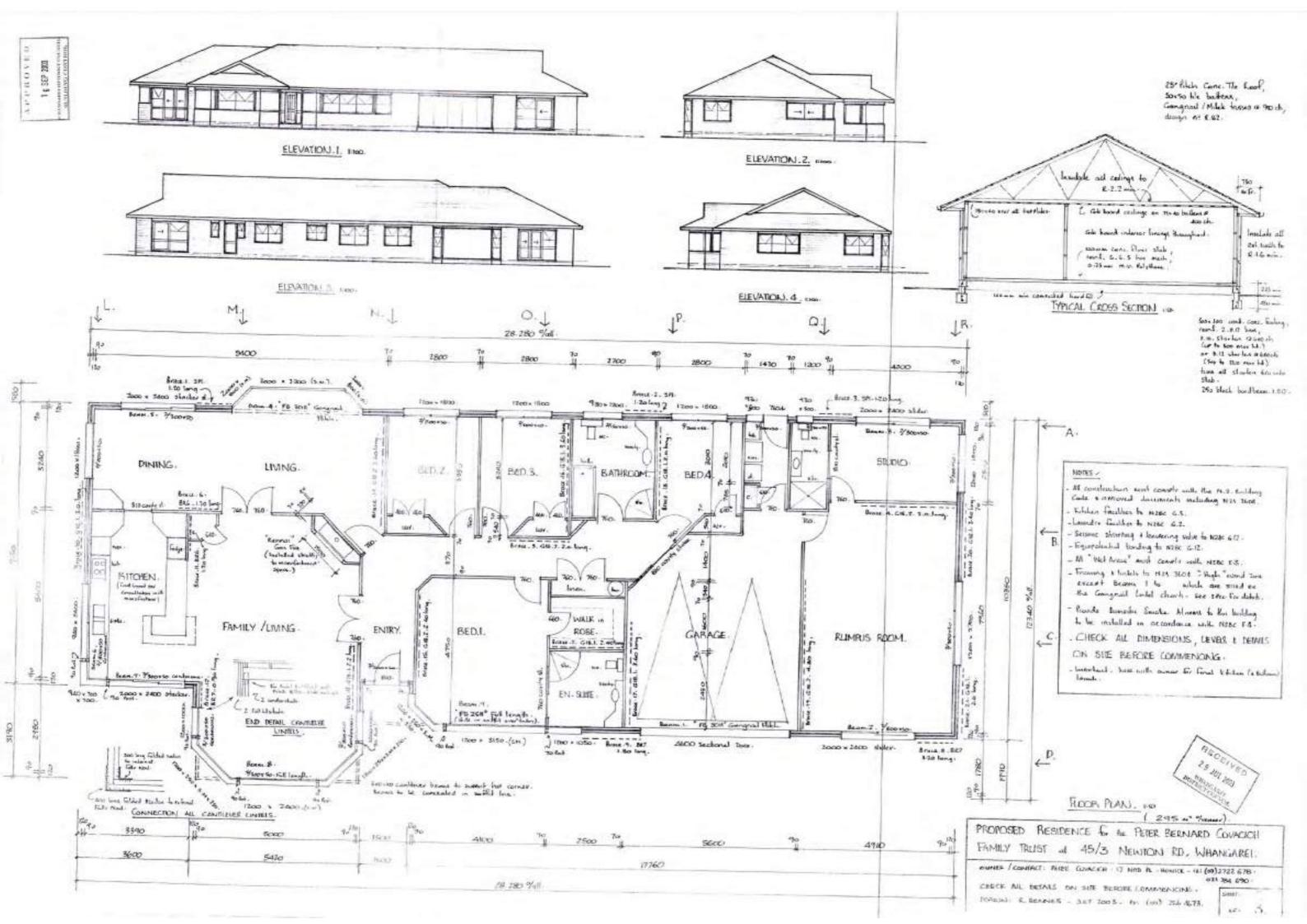
Signed for and on behalf of the Council

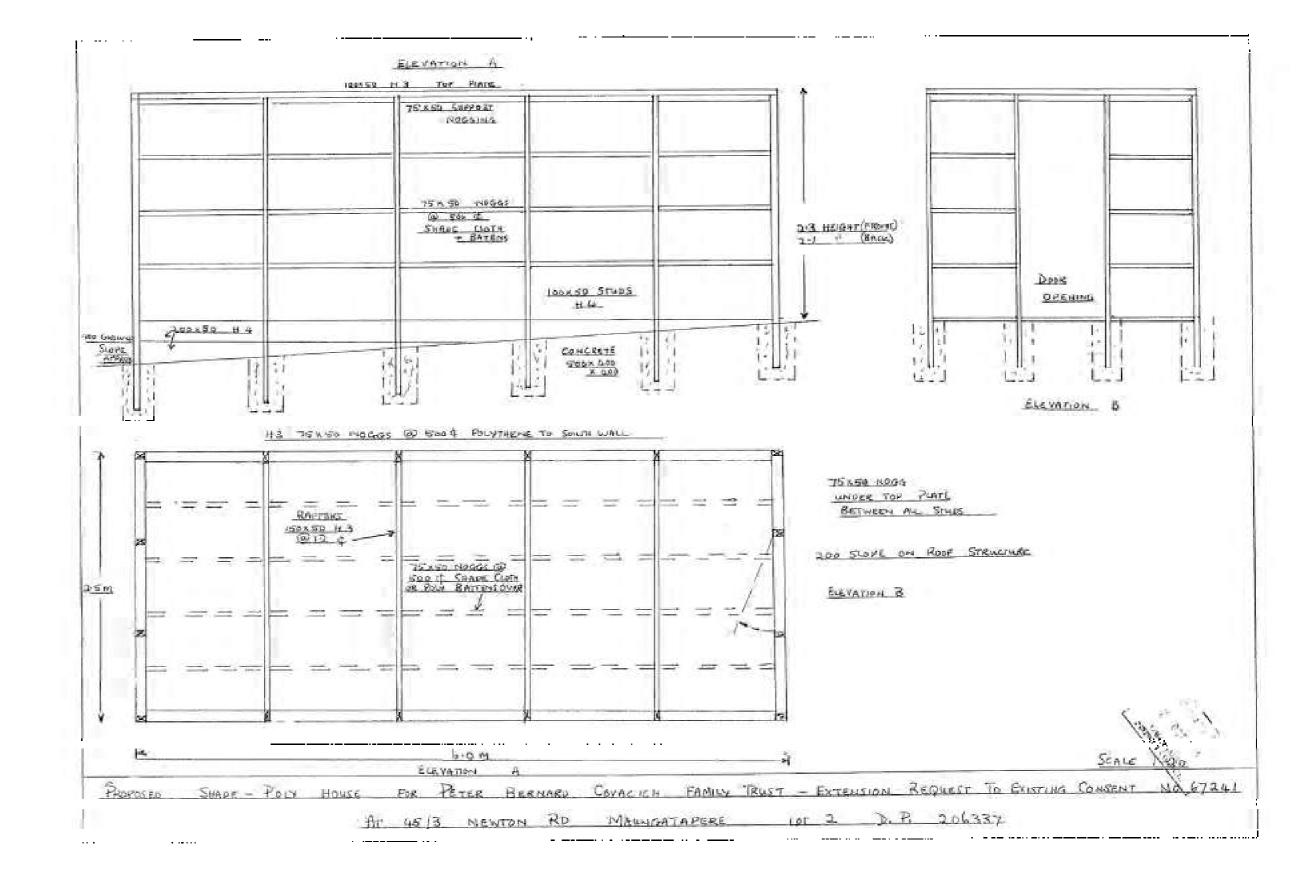
Name:

Signature:

Date: 0508 PS









WHANGAREI DISTRICT COUNCIL



FORUM NORTH + PRIVATE BAG 9023, WHANGAREI, NEW ZEALAND, TELEPHONE 05 430 4200, FAX 09 438 7632

Issue Document

CODE COMPLIANCE CERTIFICATE NOTO/241

Section 43(3), Building Act 1991

Issued: 05/08/2003 Building Consent No: 67241

Applicant

P B COVAVICH 17 NAD PL HOWICK AUCKLAND

Agent

P B COVAVICH 17 NAD PL HOWICK AUCKLAND

Site Information

PROPERTY ID: 100151

ASSESSMENT NO:

STREET ADDRESS: 45--3 NEWTON RD, R D 10, WHANGAREI 0121

LEGAL DESCRIPT: LOT 2 DP 206337

Project Information

PROJECT IS FOR: New Building

INTENDED USE(S): STG 1- RESITE EXISTING 1/2ROUND BARN STG 2- NEW DWELL

INTENDED LIFE: Indefinite but not less than 50 years

NUMBER OF STAGES: 2

Fees

There are no outstanding fees.

FINAL CODE COMPLIANCE CERTIFICATE: 67241 See attached page(s) for any other conditions.

Page : 1

This is a final code compliance certificate issued in respect of all of the building work under the above building consent.

Signed for and on behalf of the Council

Name: Kavin Ryskards

Operative District Plan - Area Specific Matters





The information displayed is schematic only and serves as a guide, it has been compiled from Whangarei District Council records and is made available in good faith but its accuracy or completeness is not guaranteed.

30 October 2025 Scale 1:10,000



Operative District Plan - Map Legend



Area Specific Matters

District-Wide Matters

Energy, Infrastructure and Historical and Cultural Designation Transport Precinct Airport Runway Notable Tree Overlay Development Area --- Indicative Road Heritage Item Overlay Heritage Area Overlay National Road Sites of Significance Regional Road Residential Zones Industrial Zones to Maori Arterial Road Areas of Significance Large Lot Light Industrial Primary Collector to Maori Residential Zone Road Low Density Heavy Industrial Secondary Collector Residential Zone Zone Road Natural Environment General Residential Low Volume Road Access Road Esplanada Priority Medium Density Residential Zone Open Space and Strategic Road Coastal Marine Area Recreation Zones Protection Area (CMA) boundary Strategic Railway Natural Open Space Goat Control Areas Protection Line Rural Zones Outstanding Natural National Grid Tower Open Space Zone Rural Production Northpower Tower Sport and Active **Outstanding Natural** Zone CEL-Cat1 Recreation Zone Landscape Rural Lifestyle Zone National Grid Line Settlement Zone Northpower Overhead Residential Sub-General District-Wide Critical Line Cel-Cat1 Zone Special Purpose Zones Northpower Critical Settlement Zone Overhead Lines CEL ····· Air Noise Boundary Airport Zone Centre Sub-Zone Northpower Critical Outer Control Settlement Zone Future Urban Zone Underground Lines Boundary Industry Sub-Zone CEL Fonterra Kauri Milk Helicopter Hovering Processing SRIZ -Ancillary Irrigation Noise Control Commercial and Farms: Boundary Overlay Mixed Use Zones Hospital Zone Rail noise alert area Hazards and Risks Port Zone Local Centre Zone Rail vibration alert Coastal Erosion Neighbourhood Ruakaka Equine Hazard 1 Centre Zone Zone **QRA Quarrying** Coastal Erosion Resource Area Shopping Centre Commercial Zone Hazard 2 **QRA Mining Area** Mixed Use Zone Flood Susceptible Strategic Rural Areas QRA Buffer Area Town Centre Zone Industries Zone Mining Hazard Area 1 QRA 500m Indicative City Centre Zone Waterfront Zone Setback Mining Hazard Area 2 Coastal Environment Mining Hazard Area 3 Overlay Outstanding Natural Character Area High Natural Character Area

The information displayed is schematic only and serves as a guide.

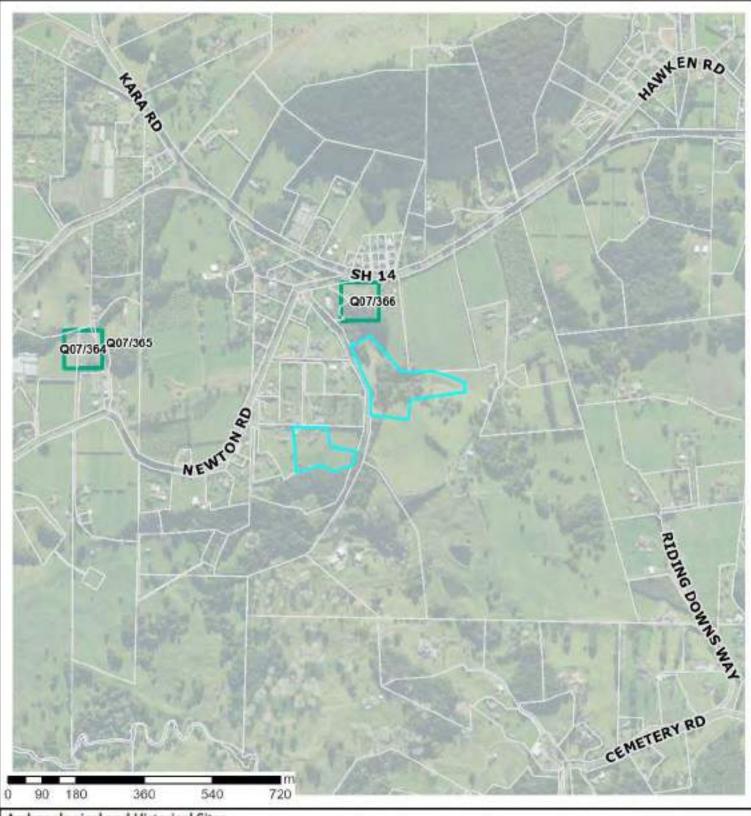
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The Whangarei District Council district plan GIS data was created at a specific point in time.

Land parcel Information is sourced from the Land Information New Zealand (LINZ) Data Service. The LINZ land parcel information may be updated by LINZ at any time from that time, which may result in misalignments with Whangarei District Council information.

Archaeological and Historical Sites





Archaeological and Historical Sites

Heritage New Zealand Pouhere Taonga

The historic places data is sourced from Hentage New Zealand Pouhere Tacinga. https://www.hentage.org.nz/ 30 October 2025 Scale 1.10,000



NZAA Sites

NZAA sites is sourced from the New Zealand Archaeological Association ArchSite.



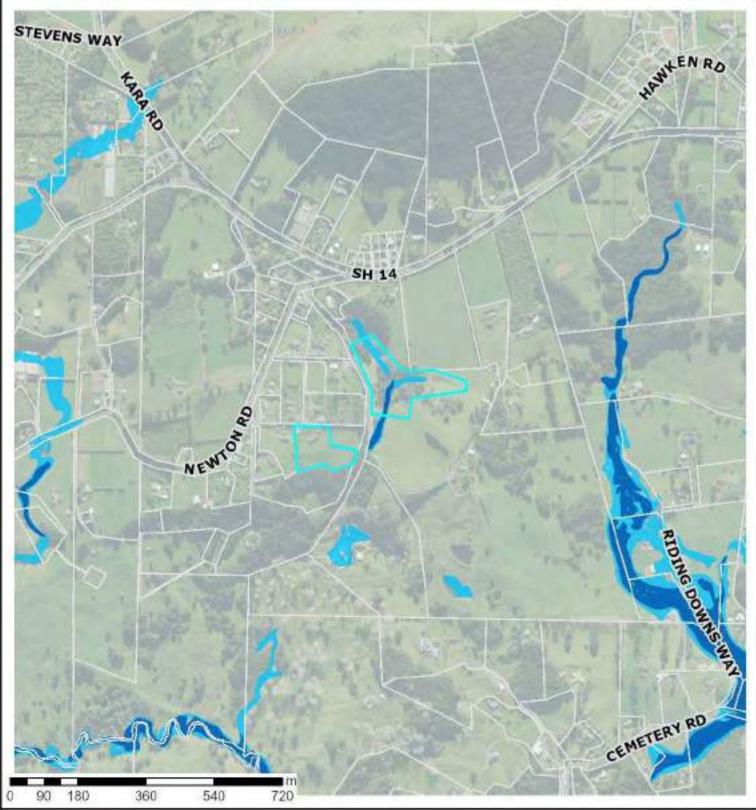
Approved Pending - Edit Terms of use refer https://nzaa-archsite.hub.arcgis.com/pages/terms-use

To interpret the data refer https://rxxae.archsite.hub.arcgis.com/pages/help# - text-Interpreting%20ArchSite%20data

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District Plan Change 1 - Natural Hazards Flooding





PC1 - Natural Hazards

Flood Hazard Area

10 Year Flood Hazard Area

100 Year Flood Hazard Area

Information provided on this map forms part of Plan Change 1 – Natural Hazards.

To view the maps and see how the changes may affect the property please visit.

https://www.wdc.govt.nz/Sarvices/Planning/District-Plan-changes/Current-plan-changes.

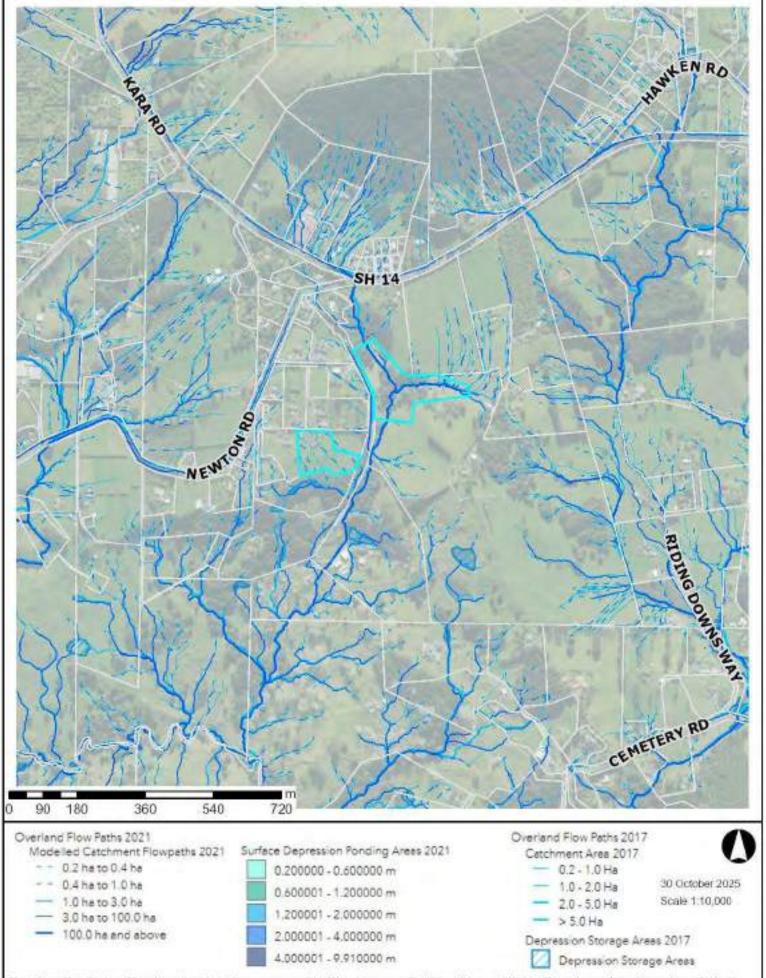
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36 October 2025 Scale 1:10,000



Stormwater Catchment and Flood Management





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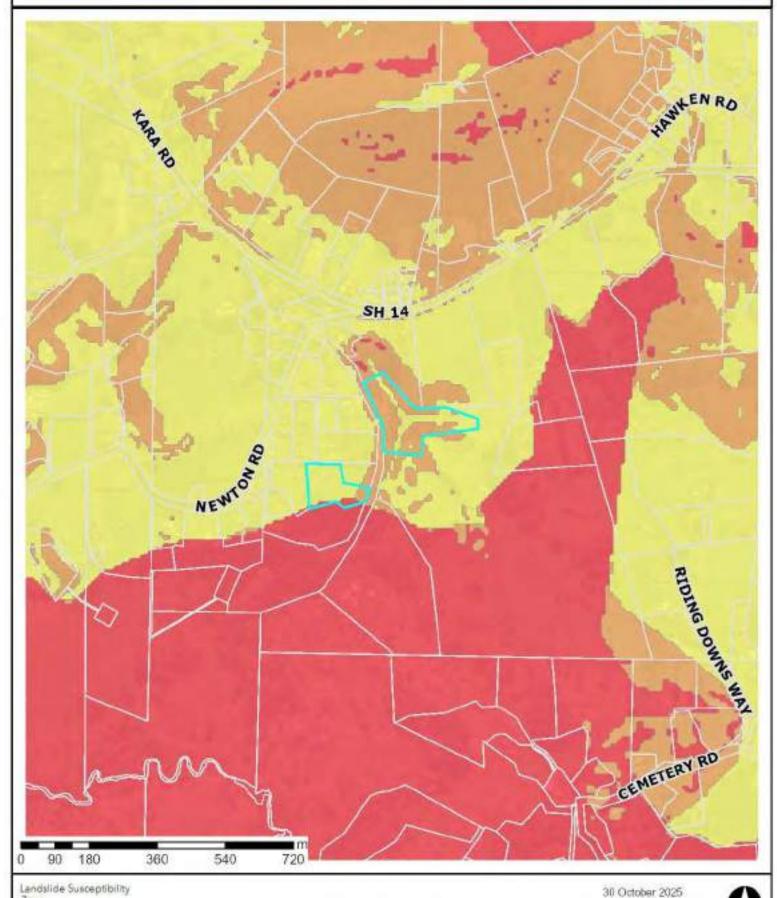
Land Instability

High

Moderate



Scale 1:10,000



Tonkin + Taylor Ltd Landslide Susceptibility assessment report. https://www.wdc.govt.nz/files/assets/public/v/2/documents/council/ reports/hazard-reports/land-stability/landslide-susceptibility-technical-report.pdf

he information displayed is scriematic only and serves as a guide. It has been compiled from Whangarei District Council records and is made available in

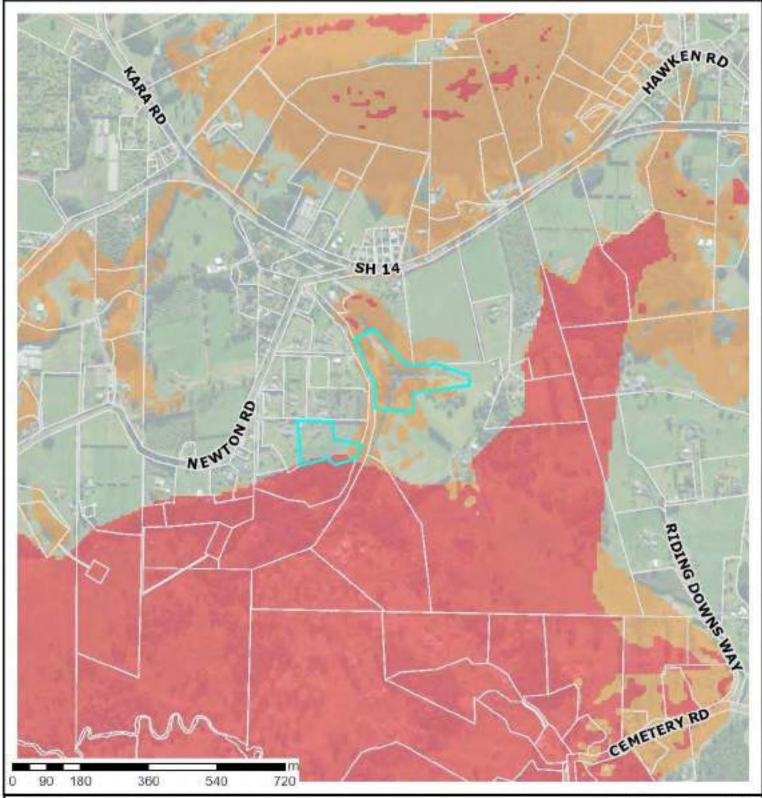
subdivision or building consent for the property, depending on the level of stability risk of the area the property is in

Whangarei District Council holds indicative information on land stability hazard for Whangarei,

The Whangarei District Council may require site-specific investigations before granting future

District Plan Change 1 - Natural Hazards Land Instability





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PC1 - Natural Hazards

Land Instability

High Susceptibility to Land Instability



Moderate Susceptibility to Land Instability

Information provided on this map forms part of Plan Change 1 - Natural Hazards.

To view the maps and see how the changes may affect the property please visit. https://www.wdo.govt.nz/Services/Planning/District-Plan-changes/Current-plan-changes

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