UNDER the Resource Management Act 1991 ("RMA")

AND

IN THE MATTER of a Notice of Requirement ("NoR") for a

designation by KiwiRail Holdings Limited ("KiwiRail") for the Palmerston North Regional Freight Hub ("Freight Hub") under section 168

of the RMA

STATEMENT OF EVIDENCE OF LISA RIMMER ON BEHALF OF KIWIRAIL HOLDINGS LIMITED

LANDSCAPE AND VISUAL

1. SUMMARY

- 1.1 The existing environment and baseline landscape of the proposed site for the Freight Hub ("Site") includes:
 - (a) streams and tributaries of low natural character;
 - (b) natural landscape characteristics that have been shaped by the Mangaone Stream including rolling landforms dissected by numerous tributaries and flood events; and
 - (c) urban (built) landscape characteristics that reflect the area's continuing role as a transport and infrastructure 'node' and which show the combined transition of this landscape through, (likely) early use by Māori, clearance for rail and productive farms to small rural holdings and recent rural residential and industrial activities.
- 1.2 Together these natural character, natural and urban landscape and visual amenity characteristics combine to create an intricate landscape with physical (natural science), sensory (perceptual) and shared and recognised (associative) factors.
- 1.3 Context photographs showing representative views of the Site and the surrounding landscape are included in **Appendix A**.

- 1.4 Comprehensive mitigation planting, using indigenous species once typical of the area, has been incorporated into the design of the Freight Hub to manage the potential adverse visual and landscape effects, as shown in the concept Landscape Plan, illustrated in **Appendix B**. Cross sections through the Landscape Plan, are illustrated in **Appendix C** and a draft planting palette is included in **Appendix D**.
- 1.5 Even with the proposed mitigation planting and preferred layout, to locate larger structures closer to the existing North East Industrial Zone ("NEIZ"), the potential adverse landscape effects range from low-moderate to high (on a 7 point scale) due to the nature and scale of the project. There will also be a range of positive effects provided in terms of natural character, overall, compared to the existing environment and for urban (built) landscape and visual amenity, in some locations.
- 1.6 I have made a number of recommendations to further mitigate the potential adverse landscape effects as detailed design is advanced, in order to further integrate the Freight Hub into the surrounding environment. This includes a Landscape and Design Plan which has been incorporated into the proposed conditions for the Freight Hub attached to Ms Bell's evidence as Appendix 1 ("Proposed Conditions").

2. INTRODUCTION

- 2.1 My full name is Lisa Gayle Rimmer. I am a Principal Landscape Architect at Isthmus. I hold the qualifications of a Bachelor of Horticultural Science (Massey University) and a Master of Landscape Architecture (Lincoln University).
- 2.2 I am a registered member of the New Zealand Institute of Landscape Architects Tuia Pito Ora. I am also a member of the Resource Management Law Association.

Experience

- 2.3 I have 14 years' professional experience throughout New Zealand in a range of project types including infrastructure, policy and guidelines work, land development, public places, and streetscape design.
- 2.4 Of relevance to this hearing, I have worked on a number of large-scale infrastructure projects including the Waitohi Picton Ferry Terminal Redevelopment, Ngā Ūranga ki Pito One Shared Path, Mt Messenger Highway, RiverLink and Ōtaki to north of Levin Highway. I have also worked

on a number of projects for Palmerston North City Council ("PNCC") including Plan Change C: Kikiwhenua residential area, the Square East City Centre Streetscape Development and the Manawatū River Wayfinding Signage Strategy.

Involvement in the Freight Hub

- 2.5 I have been involved in the Freight Hub project since 2019. I am familiar with the existing site and the surrounding Bunnythorpe and Palmerston North City area. I prepared the Landscape and Visual Effects Assessment that was included with the Assessment of Environmental Effects ("AEE") and have undertaken a number of visits to the Site and the surrounding area through 2019 to 2021 to inform this assessment.
- 2.6 I also provided input to KiwiRail's section 92 response dated 15 February 2021 ("First Section 92 Response").
- 2.7 Further to that response, and in response to submissions, I have carried out an additional site visit to take photographs from representative viewpoints that are now included in the context photograph appendix, attached as **Appendix**A to my evidence. This includes additional representative residential viewpoints from Roberts Line west, Clevely Line west, Te Ngaio Rd and Sangsters Rd and representative viewpoints for motorists along Sangsters Rd (as Figures 22-30 in **Appendix A**).
- 2.8 In addition, further development to the lighting design for the Freight Hub has resulted in an update to the Landscape Plan and Illustrative Cross sections for the project, attached as **Appendix B** and **C** to my evidence. Consideration of lighting elements forms part of the assessment of effects on landscape and visual amenity, as considered in section 7 of this evidence.

Code of conduct

2.9 I confirm that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and that I agree to comply with it. I confirm that I have considered all the material facts that I am aware of that might alter or detract from the opinions that I express, and that this evidence is within my area of expertise, except where I state that I am relying on the evidence of another person.

3. SCOPE OF EVIDENCE

- 3.1 This statement of evidence will:
 - (a) describe the Freight Hub insofar as it is relevant to the Landscape and Visual Effects Assessment;
 - (b) provide an overview of the methodology and the existing environment, as set out in the Landscape and Visual Effects Assessment;
 - (c) explain the landscape and visual effects of the Freight Hub;
 - (d) respond to the submissions received that relate to the landscape and visual effects on the environment; and
 - (e) address relevant matters raised in the Section 42A Report.

4. PROJECT DESCRIPTION

- 4.1 An overall description of the Freight Hub is included in the AEE and evidence of Ms Bell and Mr Skelton.¹ In the following section, I outline the aspects of the concept design for Freight Hub that are particularly relevant to my assessment.
- 4.2 The primary operational elements of the Freight Hub itself will be built over 130 ha at a constant level, RL50. This includes:
 - (a) The marshalling yard will be located alongside the existing Railway Road (which will be closed) and then used to relocate the North Island Main Trunk Line ("NIMT"). The existing rail embankment will be modified, replanted and used to develop the noise barriers on the eastern side of the Freight Hub.
 - (b) The Container Terminal to the west of the marshalling yard, which will be serviced by rail and road and provide for up to 12 m high stacks (3 container units) over 880 m.
 - (c) Maintenance facilities which are proposed to be located to the north of the terminal and marshalling yards, including a larger scaled building (approximately 1,700 m²) with a maximum height of 16 m.

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Evidence of Karen Bell, dated 9 July 2021; Evidence of Michael Skelton, dated 9 July 2021.

- (d) Freight forwarding facilities are expected to be located to the west of the marshalling yards and container terminal, also serviced by road and rail. These will provide for distribution and freight forwarding type warehousing. These buildings are proposed to be set back from the new perimeter road and from Roberts Line by at least 40 m with a maximum height of 14 m (stepping up from the road edge maximum height of 11 m).
- (e) Log yard and bulk storage yards will be located to the north of the warehouses, including the potential for four tanks with a maximum height of 6 m serviced by road and rail connections.
- (f) Lighting is proposed in the Freight Hub to provide for safe 24/7 operation including 20 m high flood lights and 7 m high poles with building mounted lights set at 12 m in some locations, as shown in the Landscape Plan and Cross Sections in **Appendix B.**

Planting

Significant mitigation planting is proposed over 50 ha within the Designation Extent. As shown in the proposed Landscape Plan, the planting approach uses naturalised groupings including mass planting to the stream channel and Freight Hub boundaries. Taller trees are used to help integrate, rather than screen, the Freight Hub development into the surrounding environment, and to complement the river terrace and river plains planting proposed elsewhere in the designation. The proposed planting associated with the Freight Hub has a minimum depth of approximately 16 m, at the corner of the distribution buildings and the 'bend' in the new perimeter road, near its intersection with Roberts Line. The planted area is typically more than 35 m deep along the full extent of the distribution buildings. A draft palette of planting types, as shown on the Landscape Plan is included in **Appendix D** of my evidence.

Access and noise mitigation

4.4 Access in and out of the Freight Hub will be provided for in three locations from the new perimeter road. The Freight Hub will be secured, either with fencing or noise mitigation structures. The proposed planting has a depth of at least 5 m to the new perimeter roadside of any noise mitigation wall or fence. Noise mitigation will be required, to the edges of the designation, excluding the boundary east of Richardsons Line. Vertical walls are expected to be located directly alongside the Freight Hub, either as part of the security fencing or on top of the Sangsters Road embankment. These walls will be screened over

time by the proposed mitigation planting as shown in Cross Sections 3-9 in **Appendix B**.

- 4.5 For a short extent, to the south and north Te Ngaio Road, a vertical wall is proposed near the edge of the designation boundary, to the west of the perimeter road. This wall transitions into a 3 m high noise mitigation earth bund north of 245 Te Ngaio Rd (which is then offset from the rear of residential properties along Maple St). In the south, the vertical wall will be a 3 m structure which provides noise mitigation 'overlap' with a wall located on the opposite side of the proposed perimeter road. The vertical wall will reduce in height as it transitions into the earth bund.
- 4.6 Alongside 242 Te Ngaio Rd, there will be a 3m high wall located 90 m to the east of the residence (and 8.5 m to the east of the existing utility shed) with a top of wall RL55.2. However, as the house at this location is on higher ground, the top of the wall will be located less than 500mm above the line of sight (at 1.5m) and it will be partly screened by the shed. Its setting inside the Designation Extent also allows for planting to screen this wall over time.
- 4.7 The same relationship will exist for the residence at 241 Te Ngaio Rd, where the wall will be located approximately 80 m from the house.
- 4.8 At 245 Te Ngaio Rd, the 3m vertical concrete wall will be located approximately 30 m from the eastern wall of the house, and, although it can be screened by planting over time, half the wall will be above eye height and any planting to screen this element would screen views to the east. Properties along Te Ngaio Rd have been identified in my recommendations for further investigation, to confirm the potential for high adverse visual amenity effects and any additional mitigation required.
- A.9 North of the Te Ngaio Rd area, the 3 m earth bund will continue and wrap around to the end of Maple St. This bund will have a 1v:3h sloped profile and 2 m wide crest. The top of bund RL will vary, as required to provide effective noise mitigation. At its highest it will be set at RL58, as shown in the Cross Sections 1-2 in **Appendix B**. This bund is proposed to be planted with low river terrace type species or grassed to retain more open views to the east. It is unlikely to impact views from the cemetery, due to existing vegetation along the boundary. Views of the bund from Maple St properties will vary, depending on existing screening elements such as planting to their back boundaries. Refer to Context Photographs Viewpoints, 6-9 **Appendix A**.

Stormwater ponds

- 4.10 Two stormwater ponds totalling approximately 13.1 ha are proposed outside the Freight Hub to the west, and one to the south. These ponds will provide storage capacity to manage flooding and wetland areas for the treatment of on-site stormwater. These features are able to be naturalised, to include a more varied profile in long and cross section, as will the stream channel within the Freight Hub. The ponds and naturalised stream channel will be directly connected to the Mangaone Stream via culverts and outfall to an existing tributary. Taller river plains type mitigation planting will be integrated around these features as shown in Cross Section 5 of **Appendix B.**
- 4.11 The proposed naturalised stream channel will be set within broader areas of naturalised planting. The width and depth of the channel provides scope to vary the long and cross section; to naturalise its profile and include woody and wetland species.

Te Araroa Trail and other tracks

- 4.12 Te Araroa Trail will be reinstated alongside Sangsters Rd and this will be set to the base of the new revegetated embankment. The design integrates an opportunity to include a lookout point on top of the embankment, where the noise mitigation walls are offset, as shown in Cross Section 8, Appendix B. This lookout feature could be detailed to include interpretation of the history of the landscape.
- 4.13 The Freight Hub also includes a proposed off-road 3 m recreation track, to the west of the new perimeter road. This offers an alternative pedestrian and cycle route to and from Maple St and the Roberts Line intersection, including a short section of the perimeter road footpath. This track is proposed to include 'loops' around the naturalised stormwater ponds.

Perimeter Road and other road changes

4.14 The new perimeter road will contribute to the required fill and cut batters for the project, and these will be limited to approximately 2.5 m in height (to the south and north of Te Ngaio Rd). All batters will be gently sloped and replanted. Lighting, with 7 m high poles, will be required at the new perimeter road intersections and at the three entry / exit gates to the Freight Hub. The road reserve will accommodate a footpath along its western edge. The road reserve provides sufficient width for 2.5 m wide path with a 1 m buffer to the kerb. Other road closures will remove the level rail crossings from Railway Rd

to Sangsters Rd. Roberts Line east will become a cul de sac, removing direct access to Railway Rd.

5. METHODS OF ASSESSMENT

- 5.1 My assessment methodology has followed best practice guidance set out by the New Zealand Institute of Landscape Architects' Best Practice Guidance Note 10.1 with reference to the Te Tangi a te Manu Aotearoa Landscape Assessment Guidelines adopted as a guidance document by the institute May 2021 (this guide was available in draft form in 2020 and was used to inform my assessment).
- The assessment has not been informed by photo simulations. For the purpose of the NoR, the Context Photographs, Landscape Plan and Illustrative Cross Sections, as included in **Appendix A and B** are appropriate visual guides to the assessment of landscape, visual amenity and natural character effects at this stage of the project.
- 5.3 Preparation of photo simulations would require a detailed 3-dimensional model of the ground plane works which will only be confirmed through the Outline Plan phase. Further, the design for the buildings (which will be important contributors to potential adverse visual amenity effects) will be developed at the detailed design stage. Showing these buildings at this concept design phase would over or under state the potential effects, as the design is not confirmed. Photo simulations are not required by the NZILA guidelines and, due to the design development required, these would not act as an accurate representation of the proposal at this early stage.

Definitions of key concepts

5.4 There are a number of key concepts for assessing the landscape and visual effects of the Freight Hub, which are described below.

Landscape

Landscape is the cumulative expression of natural and human features, patterns, and processes in a geographical area, including physical components, perceptions, and associations. This term captures both the natural and urban (built) landscape matters including urban (built) design. Landscape components include the physical (natural science), sensory (perceptual) and associative (shared and recognised) matters which result from both natural and urban (built) landscape factors such as landform,

waterways, vegetation, existing buildings, road networks, heritage features and activities (noting this is not an inclusive list).

Visual amenity

Visual amenity is a component of landscape. It is the amenity derived from views of a landscape area. Amenity is the natural or physical qualities and characteristics of an area that contribute to people's appreciation of its pleasantness, aesthetic coherence, and cultural and recreational attributes.

Natural character

5.7 Natural character is a type of character, resulting from the balance of physical, sensory, and associative factors that have been influenced by human intervention. In this context, and with reference to section 6(a) of the RMA, natural character relates to the Mangaone Stream and its environs, what is perceived as the 'river and their margins'.

Assessment approach

- 5.8 With reference to best practice NZILA guidance:
 - (a) The existing degree of natural character is able to be rated on a 7-point scale, from very low to very high, as part of a summative evaluation, along with the identification of natural science (physical) and sensory (perceptual) qualities and characteristics, that contribute to this. The NZILA guidelines, Te Tangi a te Manu, defines natural character as:

the distinct combination of an area's natural characteristics and qualities, including degree of naturalness.

The degree of naturalness, or significance of natural character, can be rated on a 7-point scale. The range, from pristine to modified, is one aspect of natural character. The existing degree of natural character and the qualities and characteristics that contribute to this, are addressed in my assessment.

(b) Landscape character is not assessed on a 7-point scale. Unlike natural character, there is no credible scale of evaluation that can be applied to it. There is no 'very low' or 'very high' landscape character, just the factors that contribute to it. Character results from the unique combination of natural and built components including natural

- science, sensory and shared and recognised (associative) matters, as are identified and described in my assessment.
- (c) Existing factors that contribute to visual amenity are identified and described in my assessment. With reference to aesthetic conventions, this includes factors such as the presence of streams, mature vegetation, distinct landforms, openness, retained patterns of rural activity (including early buildings) and distant views of the Tararuas. Outside of district wide landscape visual amenity evaluation, where there is greater scope for calibration, existing environment visual amenity ratings have less utility and are not considered necessary to inform the assessment of effects.
- The potential natural character (where applicable), natural and urban (built) landscape and visual amenity effects are assessed in terms of the main components of the Freight Hub, being the operational Freight Hub itself, the noise mitigation structures, the stormwater ponds and new road connections and trail / path connections. I have used this approach to ensure that the overall assessment identifies both the source of the effects and the design and mitigation measures that contribute to it.
- The effects are assessed against the existing environment including the reasonably foreseeable future environment. The effects assessment includes the mitigation proposed as outlined in the AEE and illustrated in the Landscape Plan and Cross Sections in **Appendix B** and **C**. Effects can be positive, neutral or adverse. Landscape effects are measured against landscape values. They comprise the nature of effect, its magnitude, and its significance in context. Magnitude is assessed against the 7-point scale, but magnitude should be considered together with the nature of the effect and the context.
- In the evaluation of the existing environment, and the assessment of effects, I have drawn from the technical reports and evidence prepared by other specialists including Mr Garrett-Walker, Mr Leahy, Mr Parker, Mr Georgeson, Dr Chiles, and Ms Austin as they provide information that is relevant to natural character, landscape and visual amenity matters. The consideration of values to tangata whenua, as a landscape matter, addresses known values based on desktop research only. These values are appropriately assessed through cultural impact assessment(s).

6. EXISTING ENVIRONMENT

- The existing environment has been considered in three contexts as shown in Figure 1 below:
 - (a) the broader Manawatu stream plains and terraces;
 - (b) the Bunnythorpe Palmerston North environs; and
 - (c) the Freight Hub Designation Extent.

Manawatu - Mangaone Stream Plains and Terraces

- The Site is located between Roberts Line, Railway Rd, Maple St, and the Mangaone Stream, near the township of Bunnythorpe and the existing development in the NEIZ of Palmerston North City. The Context Photographs shown in Figures 2-5 of **Appendix A** represent views of the wider landscape from public roads around the Site.
- The relevant landscape context for the Freight Hub is the flood plain of the Mangaone Stream and the elevated landforms to the east between Bunnythorpe and Palmerston North. This area extends between Kairanga—Bunnythorpe Rd and Mangaone Stream to the west, the Sangsters Rd slopes to the east, the north-eastern industrial land and interface, with the regional airport to the south and the Bunnythorpe township to the north.

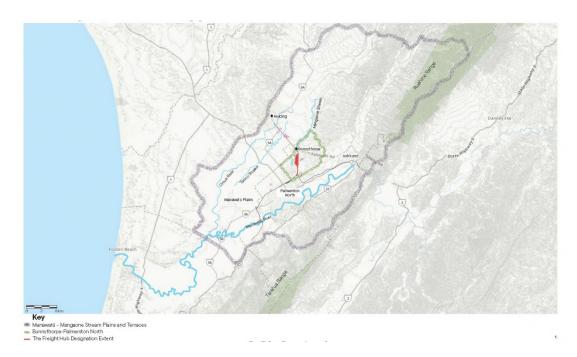


Figure 1 - Freight Hub - Landscape Context

- The broadscale context for the Freight Hub includes the Ōroua River Plains and setting within the wider Manawatū River catchment backdropped by the Tararua and Ruahine Ranges. Figure 1 above shows the setting of the Freight Hub within these contexts.
- 6.5 The patterns of natural and urban (built) landscape in the broadscale context establish the Site and the Freight Hub as part of:
 - a diverse river-based landscape with an intricate relationship between waterways and existing commercial, industrial, residential, and recreational activities;
 - (b) an area with a rich history of settlement for mana whenua over the past 800 years with continued ahi kā and a marae at Aorangi near the Ōroua River; and
 - (c) an important junction point for rail and road connections with a long history of road, rail and infrastructure development and area with natural and urban (built) landscape patterns that fit with and have the potential to contribute to Palmerston North's role as an inland port.

Bunnythorpe - Palmerston North

- 6.6 The immediate landscape context for the Freight Hub, shown in Figure 1, has diverse landscape characteristics. The Context Photographs at **Appendix A** noted above (Figures 02-05) and those taken from other public roads and locations within the site (Figures 06-30) show views of this landscape setting.
- 6.7 To the west of Railway Road, the topography is less pronounced. The rolling landforms have been shaped by the Mangaone Stream and its highly modified tributaries. Vegetation patterns reflect a transition from lowland kahikatea dominant forest to productive rural land use, including naturalised exotic weeds along the waterways and mature shelter belts and trees. Indigenous vegetation is limited to short sections of recent planting along the Mangaone and naturalised low growing plants along the tributaries. Recent subdivision has included a finer grain of rural residential development. Larger historic land holdings, such as the Clevely farm, as recognised in naming of local roads, are now much reduced in size. With this transition, has come the progressive removal or demolition of older rural vernacular structures and homes.
- 6.8 To the east of the NIMT embankment, the landforms are dissected by numerous tributaries of the Mangaone stream. The topography in this area is elevated, with greater variation in contours, compared to the Mangaone stream

plains to the west of Railway Road, and slopes up to Kelvin Grove 'terrace' above the Manawatū River. The pattern of rural residential development and curtilage planting is more established in this area compared to that of the west, with most residences located between Tutaki and Stoney Creek Rd.

- 6.9 Te Araroa Trail follows Sangsters Road reserve including its unformed sections at the base of the existing rail embankment. The NIMT line traces the toe of this landscape and varies in height. Although the Mangaone tributaries are culverted through this embankment, it acts as a barrier to water flow such that low lying properties can be impacted by flooding.
- To the north is the small township of Bunnythorpe established along the NIMT line in the late 1800s. A number of features trace the town's history and add to its character, including the primary school along Baring Street, the Bunnythorpe cemetery on Maple Street, and Glaxo factory on Campbell Road. Heritage matters are discussed in further detail in the evidence of Mr Parker.²
- 6.11 To the south of the township, Roberts Line marks the edge of the current development within the NEIZ. Recent development has included the Foodstuffs warehouse which is of a similar scale and height to the freight forwarding facilities proposed on the Site and, beyond this, the regional airport. To the south of Roberts Line east, there is an area of rural zoned land retained, that features larger lot rural residential land use, and minor commercial activities, for example off Midhurst St.

The Freight Hub Designation Extent

Freight Hub natural landscape

- 6.12 The Site's natural landscape is characterised by the rolling landforms of the Mangaone Stream that have been shaped by tributaries and past flooding events. The Site's contours vary by approximately 5 m. Low lying areas are included in the flood hazard patterns identified in PNCC planning maps.
- A number of the tributaries flow across the Site, including through culverts under Railway Rd and the NIMT line. These tributaries follow a naturalised path, influenced by farming activities and access bridges, with minor patterns of vegetation on their edges, predominantly exotic weeds. They support degraded habitats. On a 7-point scale these waterways have low natural character values.

Evidence of Daniel Parker, dated 7 July 2021.

6.14 Land cover across the Site is characteristic of existing rural land use, pasture and a mix of exotic trees, including shelter belts with a minor patter of indigenous species. Recent rural residential development has added a finer grain pattern of amenity planting to the Site, particularly along Clevely Line and Te Ngaio Rd.

Freight Hub urban (built) landscape

- 6.15 The Freight Hub's urban (built) landscape patterns are set to a framework of existing transport routes including:
 - (a) the existing single line NIMT and its varied height embankment;
 - (b) the arterial routes that follow the rail, Railway Road Campbell Rd that connect Palmerston North City, Bunnythorpe and Feilding, the links to SH54 and SH3 via Kairanga Bunnythorpe Rd and Ashhurst Rd and alternative routes through to Palmerston North City via Tutaki Rd and Stoney Creek Rd; and
 - (c) the pattern of connecting streets and cadastral boundaries that follow a distinct grid off Railway Rd.
- 6.16 Land use across the Site combines rural and rural residential activities and associated utility buildings with current landholdings subdivided off larger farms. There are a number of sites marking older homesteads, now demolished, such as the original Clevely homestead which was located at 489a Railway Rd (as are addressed in Mr Parker's evidence). Recent patterns of rural residential development with larger scaled homes, are located within the Site.
- 6.17 Together these features combine to characterise the Site as relatively open rolling land with remaining rural and recent rural-residential land use. This landscape is set to a busy rail and road corridor and a wider context of urban growth, including recent development and industrial zoning across part of the Site and recent rural-residential and residential growth to the north of the city.
- 6.18 Significant landscapes have not been identified in the vicinity of the Site. The Tararua Ranges has been identified as an Outstanding Natural Feature and Landscape in the One Plan and as a Landscape Protection Area in the Palmerston North District Plan. These ranges can be viewed from public area and private properties, mainly to the west of the Site, for example, along Maple St.

7. ASSESSMENT OF LANDSCAPE AND VISUAL EFFECTS

7.1 I have assessed the summative natural character, landscape and visual effects of the Freight Hub itself, noise mitigation and stormwater ponds during construction and from its operation. This assessment includes a consideration of the proposed mitigation as shown on the Landscape Plan and Cross Sections, as shown in **Appendix B.**

Natural character

- 7.2 I have assessed the overall effects of the Freight Hub on the natural character of the Mangaone Stream environs as **moderate positive** (on a 7-point scale).
- 7.3 The existing tributaries through the site are highly modified, have low natural character values, and are not accessible to the public. Culverting these waterways will remove opportunities for restoration in the future. However, the length of tributary removed is small in the context of the overall catchment and fish passage will be maintained upstream (or has the potential to be enhanced, as outlined in the evidence of Mr Garrett-Walker).³
- Adverse effects resulting from the loss of these tributaries are mitigated by the design for a naturalised channel and the stormwater ponds and by the integration of mitigation planting around these features, including river plain and wetland species. Given time for establishment, and their scale, these features will result in positive natural character effects due to their physical and perceptual connections with the stream environment and their setting within a significant area of naturalised planting that would have been typical of the area historically.
- 7.5 The proposed planting will create a significant area of naturalised lowland bush and wetland vegetation near the stream, and compared to the existing environment, this will enhance indigenous habitats. The channel and stormwater features and the planting surrounding these, are directly connected to, and will be perceived as part of the Mangaone environment, when viewed from public areas. Compared to the existing environment, and including the proposed pedestrian and cycle loop tracks, they provide greater access to the stream margins which will enhance perceptions of natural character.

Evidence of Jeremy Garrett-Walker, dated 9 July 2021, at section 7.

Natural and urban (built) landscape

Natural landscape

- 7.6 I have assessed the effects of the Freight Hub on natural landscape as moderate-high adverse.
- 7.7 This is a large-scale industrial development requiring significant earthworks. Excavation required will level a large area of land for rail and associated activities. However, these effects have been mitigated and reduced by the earthworks approach. The scale of the cut and fill batters have been reduced by the RL proposed for the Freight Hub and these batters are able to be revegetated. Natural landscape matters are further mitigated by the construction of naturalised features, including the proposed stormwater channel and ponds and significant areas of river plain, terrace and wetland mitigation planting.

Urban (built) landscape

- 7.8 The effects on the urban landscape will be **low-moderate adverse**. While the concept design layout provides for the best interface with the surrounding land uses, it is of a different scale and character to the surrounding environment. Some of these effects have been mitigated by the preferred layout to accommodate the larger structures to the south within the NEIZ, where industrial land use is anticipated. The removal of level crossings and provision of logical alternative routes impacted by road closures, has also limited these effects.
- 7.9 The proposed footpath and off-road track increases options for walking and cycling in the area. Combined with the opportunities for a lookout along Te Araroa Trail and planting to its edges, these paths will provide **positive urban** (built) landscape effects. Mitigation planting proposed along the edges of the perimeter road will also help to improve the gateway experience to Bunnythorpe, compared to the existing environment.

Visual amenity

7.10 While the potential effects will vary, I have assessed the adverse visual amenity effects as no more than **low-moderate adverse** for most viewing audiences. Adverse effects have been mitigated by the proposed layout of the Freight Hub, where the larger structures are located to the south, and the significant areas of planting proposed.

- 7.11 The mitigation planting proposed will, overtime, improve the visual amenity of the entrance to Bunnythorpe and along the edge of Te Araroa Trail edge.
- As expected for a project of this scale and nature, there are a number of residential properties where there is the potential for residual **high adverse** visual amenity effects. These are properties with close open views towards the Freight Hub and where noise mitigation structures are proposed in close proximity. As set out in section 8 of my evidence, I have recommended further investigations should be carried out in the next stages of the project, to determine whether these effects can or need to be reduced further, including by additional mitigation planting, if required.

Construction

7.13 The effects of construction for natural character, landscape and visual amenity are likely to range from **high to moderate-high adverse**, assuming mitigation planting can occur early in the staging, outside of the Freight Hub, as is addressed in Landscape and Design Plan condition.

8. MEASURES TO ADDRESS EFFECTS

8.1 I have made a number of recommendations to manage adverse natural landscape, urban (built) landscape and visual amenity effects from the Freight Hub.

Additional planting in the Mangaone Stream environs

8.2 I have recommended additional planting be integrated into the proposal, beyond that already provided for in the Landscape Plan, as attached to my evidence as **Appendix B**. Appropriate areas would potentially include the flood hazard land between the two stormwater ponds and alongside the tributary to Mangaone Stream which will be the outfall for the naturalised channel. This additional planting would further mitigate adverse effects on natural landscape, enhance the natural character of the Mangaone Stream environs and, for nearby residents, help to mitigate adverse visual amenity effects. This can be addressed through the proposed Landscape and Design plan (discussed below).

Landscape and Design Plan

8.3 I have recommended that a Landscape and Design Plan be prepared and submitted with the Outline Plan of works. This plan should outline the extent to which the design of the Freight Hub aligns with the industrial and rural values

highlighted in the NEIZ Design Guide. Where any departure from the NEIZ Design Guide is proposed, the Landscape and Design Plan will outline the reasons for that departure and why the alternative approach is preferred.

I consider the guide covers the range of factors that are relevant to the management of effects of the Freight Hub. In particular, as the Outline Plan progresses, design development in keeping with the guide is needed to ensure the Freight Hub minimises the perceived bulk and scale of the buildings. Matters to be addressed will include final location, form, materials, colours used and the articulation of the building facades such that they can be further integrated into the surrounding Bunnythorpe, rural and rural-residential landscape.

Integrated noise mitigation structures

8.5 Similarly, design of noise mitigation structures, where guided by the NEIZ principles, will confirm the location, final form, finish, and planting for screening alongside Sangsters Road and Maple Street, and will consider the views from those streets and residential properties nearby. The guide will provide opportunities for further integration through design. For example, opportunities to improve the gateway experience into Bunnythorpe at the end of Ashurst Rd and the new perimeter road – Maple Rd intersection through appropriate detailing of noise mitigation structures and planting. Such an approach would provide urban (built) landscape and visual amenity benefits.

Integrated roading design

8.6 The Proposed Conditions provide that the Landscape and Design Plan will outline how roads and walkways will integrate with the character of the surrounding area including the rural residential properties, township and existing NEIZ. Design matters to consider for new road connections will include required carriageway widths, requirements for curb and channel, intersection type options, lighting, and associated planting to ensure the quality of the urban (built) environment is improved and the design fits with the broader patterns of mitigation planting proposed.

Lighting design

8.7 To further manage visual amenity effects, including on the night sky, I have recommended lighting design considers opportunities for a 'zoned' approach to fit particular uses across the Site which can be considered under the Operational Lighting Design Plan in the Proposed Conditions. Visual clutter should be limited by balancing the number of lighting poles with maintaining

lower tower type lighting to minimise light spill. I have recommended the Landscape and Design Plan has particular regard to lighting design to mitigate adverse visual amenity effects.

- 8.8 I understand that Mr McKensey has considered skyglow in his evidence. There is zero light tilt for most lights to avoid this, and there are opportunities to consider turning off lights in certain areas when not required, where this is practical and meets safety requirements.
- 8.9 Mr McKensey agrees that the Site should not be "over lit", but in his opinion the Updated Lighting Design has been optimised and is not "over lit".4

Integration with Te Araroa Trail where possible

8.10 I have recommended opportunities to integrate the rural cycle path be considered, in consultation with PNCC, along with a possible lookout over the Freight Hub. This would enhance the urban (built) landscape. Alternatively, this rural cycle path could be accommodated along the perimeter road footpath or off-road trails proposed to access the stormwater ponds. Any opportunities to integrate with Te Araroa Trail will also be outlined in the Road Network Integration Plan, and the Landscape and Design Plan in the Proposed Conditions.

Further investigation of opportunities to minimise adverse visual amenity effects

- 8.11 As discussed in my evidence above, I have recommended further investigation (including desktop and site work) at the Outline Plan stage to confirm additional planting, beyond that shown on the Landscape Plan as shown in **Appendix B**, which may be necessary to mitigate for adverse visual amenity effects for specific residential properties.
- 8.12 As a starting point, to be confirmed in both desktop and field investigation, and in response to the confirmed design, the residential properties recommended for further investigation are located:
 - (a) between Richardson's Line to 873 Roberts Line;
 - (b) 163 Clevely Line West;
 - (c) Te Ngaio Rd properties east of Maple St; and

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Evidence of John McKensey, dated 9 July 2021, at paragraph [8.7].

- (d) residential properties directly alongside the NIMT that have an open and or elevated view towards the site which could include properties along Sangsters Rd, Tutaki Rd, Parrs Rd, Clevely Line east, Nathan Pl and Stoney Creek Rd.
- 8.13 A 3 D model, as will be confirmed in the next stages of the Freight Hub, would usefully inform this investigation, by providing exact location and height references that can be calibrated with the existing environment.
- 8.14 The extent to which any additional planting may help to address visual amenity effects would depend on early implementation of the proposed mitigation planting. This would ensure earth worked areas are replanted and achieve good coverage as quickly as possible and larger shrubs and trees are established prior to the main buildings being constructed. The timing of planting will be outlined in the Landscape and Design Plan in the Proposed Conditions at detailed design stage.

9. RESPONSE TO SUBMISSIONS

- 9.1 I comment below on submissions relating to the landscape, natural character and visual effects of the Freight Hub on the environment.
- 9.2 I respond to these submissions by way of the following themes, rather than individual submissions:
 - (a) mana whenua values:
 - (b) access to waterways;
 - (c) positive landscape effects;
 - (d) landscape character and amenity;
 - (e) lighting;
 - (f) conditions; and
 - (g) the multi criteria analysis ("MCA") process.

Mana Whenua values

9.3 Values associated with the site surrounds, of the landscape characterised by the Mangaone Stream and its tributaries, are noted in submissions by mana whenua Ngāti Kauwhata, Rangitāne o Manawatū, Ngāti Raukawa ki te Tonga.

I acknowledge these submissions as they relate to values to mana whenua, and the physical, perceptual and associative components of landscape. As set out in the Landscape and Visual Effects Assessment, my assessment has not addressed values to mana whenua, other than through a desktop review of shared and recognised values associated with the Ōroua and Mangaone area.

9.4 My assessment acknowledges continuing associations and use of the awa and whenua (streams and land) historically, and through continuing association and as part of the rohe for marae in the area. KiwiRail has proposed to prepare a Mana Whenua Engagement Framework in collaboration with mana whenua to recognise and provide for mana whenua values including in the development of the Landscape and Design Plan, and the design principles that underpin that plan. This is outlined in the Proposed Conditions. I agree with these conditions. This collaborative approach would acknowledge mana whenua values and the principles of partnership, included in the NZILA guidelines, Te Tangi a te Manu, as being important to the management of landscape, visual amenity and natural character effects in Aotearoa.

Access to waterways

- 9.5 With respect to public access to waterways, it is my assessment that this has been improved, compared to the existing environment. Sections of existing tributaries on private properties will be culverted under the Freight Hub and others diverted through a naturalised channel inside security and safety fencing. However, the Landscape and Design Plan, as conditioned, proposes public access in the Mangaone Stream environs, through the mitigation planting areas including recreation loop tracks around large, naturalised stormwater ponds.
- 9.6 There is no existing public access to the stream or the tributaries within the site currently. The land is in private ownership and the natural character of these waterways is low. Overall, I have assessed natural character gains provided by the naturalised features and mitigation planting in the Mangaone stream environs as moderate and positive, including perceptions that will be enhanced by public access.

Positive landscape effects

9.7 Some submissions note positive effects in terms of the proposed planting with indigenous species and they are supportive of the conditions to put this in place prior to construction. The submitters highlight visual amenity and natural environment benefits, associated with the mitigation planting, naturalised

stormwater ponds and the improved planted edge to Te Araroa Trail. The mitigation planting is also recognised as providing an opportunity to enhance the gateway entrance to Bunnythorpe and there is support for the naturalised channel and stormwater ponds, as having the potential to improve habitats and the streams to 'looking after the native flora and fauna and making efforts to improve the natural environment around the hub' (23).

In terms of urban (built) landscape matters related to transport, the submissions highlight the benefits of removing the level crossings, moving the NIMT line away from residential properties and the inclusion of enhanced cycling and walking facilities. This includes specific reference made to the opportunity for a Te Araroa Trail lookout 'to watch the trains' and the proposed tracks around the stormwater ponds for their 'recreational value' (23). The location of the new perimeter road to the west, and connection through to the existing level crossing, is supported, in that it bypasses the centre of Bunnythorpe, therefore helping to retain village character. The submissions support the use of the NEIZ Design Guide and include general recognition of the importance of detailed design in avoiding potential adverse effects on the urban (built) landscape and make specific reference to the importance of measures to retain Te Araroa Trail.

- 9.9 I agree with these submissions.
- 9.10 There are a number of other submissions in support (for example, Jim Jefferies, Christopher Clarke, and the Central Economic Development Agency) that address how the Freight Hub fits with existing broadscale urban (built) landscape patterns, including reference to adopted growth and regional transport plans.
- 9.11 In terms of broad scale urban (built) landscape patterns, I agree with the submissions. There is a logic to the location of the Freight Hub in this area, as it ties into existing rail and road transport networks and developing infrastructure zone.

Landscape character and amenity

9.12 A number of submissions raise concerns in relation to adverse effects on landscape character and the related issue of amenity.⁵ However, the majority

(59) ,Peter Gore and Dale O'Reilly (61), Danelle O'Keeffe and Duane Butts (72), Kate

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Submissions addressing these matters include: Bruce and Alison Hill (4), Glen and Karen Woodfield (6) Maree Woods (15), Ian and Alexander Shaw (21) Fiona Hurly (22), Bunnythorpe Community Committee (30) Stuart Robinson (34) Helen S Thompson (36), Aaron Fox (47), John Austin and Rosaleen Wapp (57), Joanne Kathrine Whittle

of concerned submissions address character and amenity through the issues they raise, including changes in transport patterns, noise, dust, fumes and lighting. While these matters are addressed by other specialists on technical grounds, they are noted as relevant to this evidence and my response, given that urban (built) patterns and sensory matters contribute to landscape character and amenity.

- 9.13 A number of submissions reference the loss of physical features, sensory or perceptual matters and ongoing associations or connections related to the existing rural land use of the site, and how the Freight Hub will fit within the immediate context of Bunnythorpe and surrounding rural and residential areas.
- 9.14 I acknowledge the concerns raised in these submissions and that the Freight Hub will result in a change to the existing landscape. As outlined at section 4 of my evidence, these types of concerns have been a central consideration in the design of the Freight Hub to date and have informed a number of aspects of the proposal, such as the layout of the Freight Hub, including the mitigation planting, building setback and approach to earthworks.
- 9.15 For example, the concept design layout:
 - (a) aggregates much of the proposed planting to the edges of the Freight Hub, as shown on the Landscape Plan in Appendix B. This provides for a continuous area of naturalised River Terrace, Plain and wetland species to be located alongside the perimeter road, the Mangaone Stream environs and Te Araroa Trail where it will be viewed and experienced from public roads, recreation tracks and residential properties;
 - (b) provides for building setback, to the edges of adjacent roads (of at least 40 m) and the stepping of building height (with the tallest bulkier buildings located to the centre of the site and at a greater distance from residential areas) which will assist these larger scale forms to be integrated; and
 - (c) includes an integrative approach to earthworks. By setting the Freight Hub at RL50, this has reduced the height and extent of cuts and fills required to the edges of the perimeter road. As these batters are gently sloped, they can be tied back into existing contours and

McKenzie (79), Raewyn Carey (84), Justine Jensen (90), Ministry of Education – Bunnythorpe School (92).

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planted. This further integrates the development into the landscape, which reduces the potential for adverse effects.

- 9.16 However, there will be adverse effects on landscape character and amenity ranging from low-moderate to high (as contributed to by the natural and urban (built) landscape and visual amenity). These adverse effects are due to the nature and extent of the development.
- 9.17 My assessment concludes that adverse potential effects on landscape character and amenity have been avoided and mitigated by the proposed design and I have made a number of further recommendations that are intended to inform the detailed design process and ensure that further opportunities to landscape character and amenity effects can be mitigated, as outlined at section 8 of my evidence.
- 9.18 In my opinion, these adverse effects are able to be reduced further in the process of detailed design and in the approach taken to construct the Freight Hub and the Proposed Conditions outline how those opportunities will be considered through the Landscape and Design Plan. These include:
 - the preparation of design principles and design outcomes for the Freight Hub, using the NEIZ Design Guide, but also departing from it (and adding to it) where necessary;
 - (b) how roads and walkways will integrate with the Freight Hub, including paths and cycleways;
 - (c) the timing of planting to maximise establishment before construction starts;
 - (d) the final form and articulation of the buildings; and
 - (e) the final form and finish of the noise mitigation structures and associated planting.
- 9.19 I consider that the measures outlined in the proposed condition for the Landscape and Design Plan will address these matters and help to limit adverse effects on the values associated with existing landscape character and amenity.

Existing views

9.20 In addition to landscape character and amenity issues, Karen and Greg Woodfield of 9a Maple St raise concerns relevant to specific elements in their existing views. A representative view from their property is included in the Context Photograph **Appendix A**. Figure 7 and 8 and cross section 1 and 9, in **Appendix C**, shows the proposed levels through this area. Their concerns relate specifically to the location and height of the proposed earth bund for noise mitigation, and they request that this be lowered in height or other such measures as to ensure that views of the NIMT, the windmills and hills are retained, as is important to their family, including their son with autism.

9.21 I consider that the matters raised in the submission are most appropriately addressed through detailed design. At that stage of the process, the best location of the earth bund and options to plant or grass this area will be confirmed. While I acknowledge the specific concerns of the submitter, and that a lower earth bund would have less of a screening effect, it will be important to ensure there is a consistent approach applied which considers all properties along Maple St and integration with the village and wider rural residential context.

Walking and cycling

- 9.22 There are a number of submissions relating to walking and cycling which are addressed in detail within the evidence of Mr Georgeson.⁶ I have addressed these submissions where they raise urban (built) landscape and visual amenity concerns, for example, as associated with the loss of privacy and public access to waterbodies.
- 9.23 Amenity benefits related to new paths and the lookout to the edges of Te Araroa Trail are considered above in my evidence. I have also addressed concerns relating to public access to waterways, as raised by mana whenua, noting that the proposed paths include areas in the vicinity of the Mangaone Stream, and that these areas are currently in private ownership. The recommendation to increase areas of mitigation planting between the ponds, over flood prone land, would provide further opportunities to enhance public access to waterways noting they are existing tributaries to be retained in this area that currently flow through private land.
- 9.24 Loss of privacy, due to the proximity of the proposed loop track around the stormwater ponds is raised by Helen and Pita Kinaston (27) at 824a Roberts Line. They also make the request that any public car park be located at a distance from their property. The loss of privacy is a particular matter addressed in the NIEZ Design Guide and the integration of walkways within

Evidence of Mark Georgeson, dated 9 July 2021, at section 9.

the designation is specifically noted as a factor to consider in the development of the detailed Landscape and Design Plan. Access to the tracks is currently proposed via the footpath along the new perimeter road and there is no provision for a public car park. Fencing to the edges of the ponds and proposed mitigation planting of taller River Plains species are also relevant to the consideration of privacy effects. Overall, I consider the submission matters raised are able to be addressed in detailed design through the Proposed Conditions proposed.

Noise mitigation

- 9.25 Some submitters have raised concerns regarding the technical aspects of the proposed noise mitigation. These are addressed in detail in Dr Chiles' evidence.⁷ As a sensory matter relevant to landscape, I have also considered noise as being a contributor to character and amenity.
- 9.26 Concerns raised regarding the design of the earth bund alongside Maple St have been addressed above. Two other submissions raise concerns relating to the screening of the vertical noise mitigation walls and of the timing of mitigation planting.
- 9.27 These matters are addressed by the proposed Landscape and Design Plan which will outline the location of the proposed noise mitigation structures including the final form, finish and planting of these structure. The proposed plan will also address the location, type and timing of mitigation planting.

Lighting

- 9.28 A number of submissions relate to lighting which are addressed in detail within the evidence of Mr McKensey.⁸ My assessment of lighting matters is limited to the consideration of the proposed layout and types of lighting structures (including flood light poles 20 m in height) as they will from part of the new built environment. The evidence of Mr McKensey is that the relevant standards for glare and light spill have been met.⁹
- 9.29 My assessment recognises there will be adverse effects on the urban (built) landscape associated with the Freight Hub, due to the scale and character of the development, and this relates, in part, to changes to the night sky. This is to be expected for a project of this nature and scale in this environment. However, measures to ensure adverse lighting effects are minimised through

Evidence of Stephen Chiles, dated 9 July 2021, at section 8.

⁸ Evidence of John McKensey, dated 9 July 2021, at section 7.

⁹ Evidence of John McKensey, dated 9 July 2021, at section 6.

detailed design are further addressed in the Landscape and Design Plan and through the Operational Lighting Design Plan, as outlined in the Proposed Conditions.

10. RESPONSE TO SECTION 42A REPORT

- 10.1 I have reviewed the sections of the Section 42A Report relevant to my evidence, particularly the Section 42A Technical Evidence prepared by Chantal Whitby.¹⁰
- 10.2 Ms Whitby concludes that the site "is not necessarily an inappropriate location for the Freight Hub" but that "the landscape will fundamentally change due to the scale and natural of the activity in the proposed rural setting" and therefore the adverse effects will require "appropriate mitigation and management."

 She recommends further conditions to address effects.
- 10.3 I broadly agree with Ms Whitby and the Council Officers, subject to a number of qualifications below.

Design framework

- 10.4 Ms Linzey and Ms Whitby have recommended a "design framework" be prepared specific to the Freight Hub to provide for an integrated and interactive approach to addressing potential effects such as social, noise, lighting and transport.¹²
- I do not consider that a bespoke design framework is necessary for the Freight Hub. The existing NEIZ Design Guide already provides guidance for how the design of the Freight Hub can integrate with the surrounding area. However, I do agree with Ms Whitby that establishment of design principles and outcomes that will inform the design of the Freight Hub should be prepared using the NEIZ Design Guide as a base. There would be flexibility in the preparation of the design principles and design outcomes to allow for departure from the NEIZ Design Guide, or additional matters to be considered, where it is appropriate to do so. This could be to recognise, for example, how integration with Bunnythorpe to the north can be best achieved.

Section 42A Technical Evidence: Landscape and visual effects, dated 18 June 2021.

Section 42A Technical Evidence: Landscape and visual effects, dated 18 June 2021,, at paragraph [111].

Section 42A Technical Evidence: Landscape and visual effects, dated 18 June 2021,at paragraph [100].

- 10.6 A set of design principles and design outcomes would help to manage successive phases of development in an integrated and iterative manner.¹³

 These design outcomes would act as a benchmark against which to assess future Outline Plans of work.
- 10.7 In light of Ms Whitby's recommendations, I have recommended that the Landscape Plan be updated to a Landscape and Design Plan to reflect this. In preparing that plan, KiwiRail will prepare a set of design principles and design outcomes to inform the design of the Freight Hub. This is reflected in the Proposed Conditions.
- 10.8 The Community Liaison Forum proposed by KiwiRail would also allow the community opportunities to provide input on the preparation of the design principles and outcomes. It is anticipated that mana whenua would be involved through this process as part of the Mana Whenua Engagement Framework.

The approach to considering natural character

- 10.9 The main matter on which Ms Whitby and I disagree is the net effect on natural character. I assessed a net positive effect because of the creation of the naturalised channel, large stormwater ponds and extensive planting of river plain and wetland indigenous species in association with these features.
- 10.10 Ms Whitby considers there will be net adverse effects on natural character and that the measures discussed above are mitigation for landscape character.
- 10.11 We have different theoretical interpretations of 'natural character'. Ms Whitby states that natural character is firstly established from a scientific focus with a subsequent evaluation of how natural character would be perceived and experienced. She considers the ponds may contribute to perceptions of natural character but that they would not be considered natural from an ecological perspective and would have limited ecological value.
- 10.12 By comparison, I consider natural character is a subset of landscape character. That natural character is a perceived value and, while scientific understanding helps inform perception, natural character is not primarily a scientific matter (it does not take the place of matters such as ecology and related matters addressing stream length loss, addressed by that discipline).

Section 42A Technical Evidence: Landscape and visual effects, dated 18 June 2021, at paragraph [107].

Section 42A Technical Evidence: Landscape and visual effects, dated 18 June 2021, at paragraph [49].

- 10.13 Setting aside the theoretical matters, there may be little difference between Ms Whitby and my assessment. I acknowledge that there will be 'moderate-high' adverse effects on the 'natural landscape' (including the extent of modification of natural landform and loss of tributary streams), and Ms Whitby acknowledges the proposed planting measures will have some benefit in mitigating for landscape character (32).
- 10.14 Ms Whitby raised several other matters relating to methodology, effects, and mitigation which I respond to briefly for completeness:
 - I do not consider the effects are diluted by being assessed at too wide a scale. The context is properly described at three spatial levels. Visual amenity effects are assessed with respect to the primary viewing 'audiences'. Effects on landscape character (natural and urban or built) are assessed firstly with respect to the Site, and then in terms of the surroundings to the extent necessary to understand the effects. For example, the disruption of streams within the Site is acknowledged and contextualised as being confined to parts of the tributaries with low natural character within the catchment (the Site being selected and configured to avoid the main stem of the Mangaone Stream).
 - (b) The terms 'natural and urban' mean the same as 'natural and built' (LVA page 6), and distinguish the layers collectively comprising landscape character, rather than compartmentalising into separate areas. I agree the area is the rural outskirts on the edge of the Palmerston North urban area. I assessed effects in that context.
 - (c) As discussed above, I do not consider that photo simulations are required at this stage of the process. I consider the visual effects, other than that on the night sky, can be analysed from the use of cross-sections and viewpoints.
 - (d) While the Freight Hub will unavoidably result in a 'fundamental change' on the Site and its adjacent rural surrounds (as acknowledged in the LVA) a key landscape matter is whether the Site is appropriate. The Site's adjacency to the NIMT, straddling the NEIZ on the edge of the city, and its modified nature are relevant considerations. (I note that it is the second time in Palmerston North's history that the rail yard has been moved from within the city to its outskirts).

- (e) While I agree with Ms Whitby that landscapes are experienced through all the senses, including sound, I consider this should not be conflated with the specialist noise assessment. The character of the sound from the Freight Hub will be consistent with its landscape character of a transport and distribution facility. Likewise, the lighting will be consistent with the character of a transport and distribution facility. Such landscape effects should be interpreted in terms of the site's context on the edge of the Palmerston North urban area and have been considered in my assessment under urban (built) landscape and visual amenity. However, they should not be conflated with specialist light assessment including such things as light levels and glare.
- (f) Ms Whitby raised the question of cumulative effects associated with natural character, due to the loss of streams. Stream loss is a matter addressed in the evidence of Mr Garrett-Walker. The natural character of waterways on this area of the plains has been considerably diminished over time. An aspect of the alternatives assessment was to minimise further effects on streams (for instance, a characteristic of the site is its small tributaries, reasonably near the watershed and with relatively low natural character values). While the proposal will have adverse effects on the existing natural character, which is low, the proposal also includes restoration and rehabilitation.
- Ms Whitby acknowledges she has not assessed the alternative locations for the proposed Freight Hub.¹⁶ I confirm that I was involved throughout that process. I compared the different sites with respect to potential landscape, visual, and natural character effects, had input to the broad configuration of the Freight Hub, and took part in MCA workshops. These matters are documented in the alternative's assessment. I consider the Site is appropriate from a landscape perspective.

11. RESPONSE TO RECOMMENDED CONDITIONS

11.1 I have reviewed the recommended conditions in the Section 42A Report, including those taken from Ms Whitby's suggestions. In my opinion, a "design framework" developed afresh is not necessary where the NEIZ Design Guide

Evidence of Jeremy Garrett-Walker, dated 9 July 2021, at section 8.

Section 42A Technical Evidence: Landscape and visual effects, dated 18 June 2021, at paragraph [98].

can be used as a foundation from which to build upon the design principles and outcomes to be achieved for the Freight Hub. Those principles and outcomes will then form part of a Landscape and Design Plan, with input from mana whenua, the community and the project specialist team (including, but not limited to, terrestrial and freshwater ecology, noise, lighting, social impacts, stormwater, historical heritage, archaeology).

- 11.2 As outlined above, I have recommended a Landscape and Design Plan that provides for the establishment of design principles and design outcomes that have informed the design of the Freight Hub, using the NEIZ Design Guide as a base. The proposed Landscape Plan, in the conditions lodged with the NoR, has been updated to a Landscape and Design Plan as incorporated into the conditions attached as Appendix 1 to Ms Bell's evidence.
- My recommendation is that the Landscape and Design Plan is to be submitted for approval as part of the first Outline Plan of works. The Landscape and Design Plan will set out landscape and design principles and outcomes to guide successive stages of development and on-going management of the landscape.

11.4 I recommend that:

- (a) The Landscape and Design Plan provides for the following key outcomes:
 - positive net effects for natural character of the Mangaone stream environs through restoration and rehabilitation measures;
 - (ii) integration of the Freight Hub with the landscape character and amenity values of the surrounding area, including Bunnythorpe Village; and
 - (iii) connectivity of cycle / footpaths around the perimeter of the site, and realignment of Railway Road to maintain connectivity between Bunnythorpe and Palmerston North.
- (b) The Landscape and Design Plan shall have regard to the following:
 - (i) the principles of the NEIZ Design Guide;

- (ii) contouring of earthworks to integrate with the surrounding topography, with cut and fill batters graded and topsoiled to enable planting where necessary;
- (iii) landscape buffers around the perimeter of the Site. The recommended buffer depth is a typical minimum of 5 m to any noise mitigation wall (there may be minor, short length, departures to this minimum depth, for example, to accommodate paths and essential infrastructure). These depths will be confirmed through the Landscape and Design Plan;
- (iv) planted building setbacks from adjoining land to mitigate for adverse effects. The recommended minimum building setbacks are 30 m from Sangsters Rd and the new perimeter road and a minimum of 8 m at the corner of this and Roberts Line. These depths will be confirmed through the Landscape and Design Plan process, and it may be appropriate to consider some variation to these recommended minimum depths where adverse effects are able to be mitigated appropriately. For example, should the final design provide for 9 m high distribution warehousing along the perimeter road, a narrower planted building setback may be appropriate;
- (v) planting to screen noise walls from areas around the Site and design measures to confirm their final form and finish contributes positively to the urban (built) landscape;
- (vi) guidelines for treatment of rooflines and upper walls of taller buildings (those over 10 m in height) to soften unrelieved building expanses;
- (vii) naturalised form and margins for the two major stormwater ponds;
- (viii) naturalised form and margins for the diverted tributary stream (channel) at the north end of the Site, including consideration of alignment;
- (ix) restoration of indigenous river plain, river terrace, and wetland plant communities that would naturally have

occurred in the area including enhanced indigenous biodiversity;

- detailed design of lighting to reduce adverse effects on the urban (built) landscape and visual amenity integrating the required Operational Lighting Design Plan;
- (xi) opportunities for a lookout over the Freight Hub and Bunnythorpe gateway improvements to be integrated into the final design; and
- (xii) opportunities for mitigation of visual amenity effects from residential properties.
- 11.5 I consider that these outcomes and matters to have regard for are reflected in the Proposed Conditions attached to Ms Bell's evidence. The Council Officers have also recommended that a planting establishment plan be prepared.¹⁷ I consider that the planting, including the timing for its establishment is addressed through the Landscape and Design Plan such that a separate condition is not required.

Lisa Rimmer

9 July 2021

Section 42A Report, dated 18 June 2021, at paragraph [422].

APPENDIX A

KiwiRail Regional Freight Hub Context Photographs - Appendix A Landscape and Visual Evidence

NOTE: FOR SCREEN VIEWING ONLY. TO BE PRINTED AS AN A32 PAGE SPREAD INCLUDING CROP MARKS.

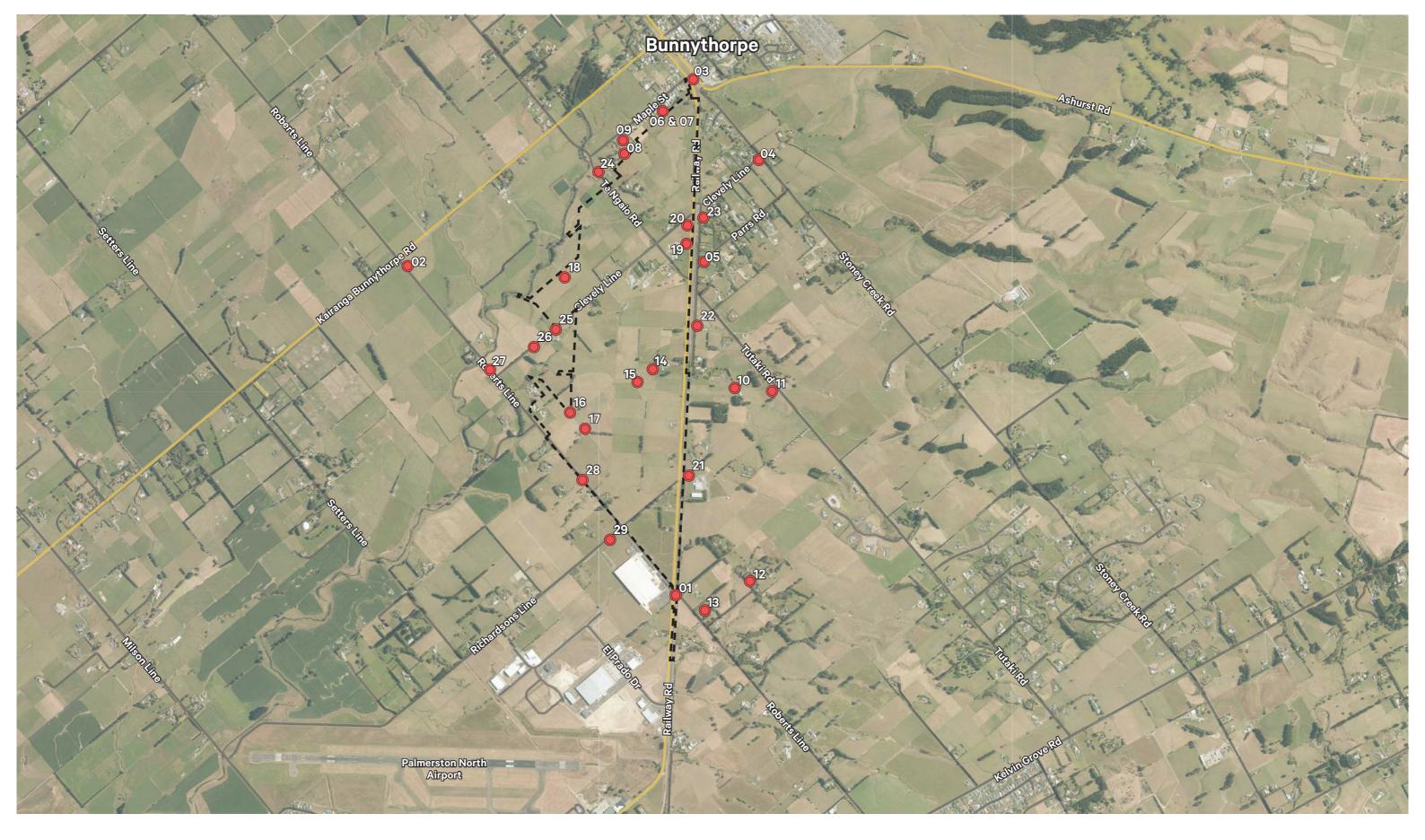


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Document record				
Issue	Revision	Author	QA	Date
EVI	A	TW	LR	30/06/2021
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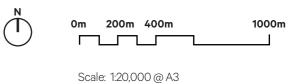
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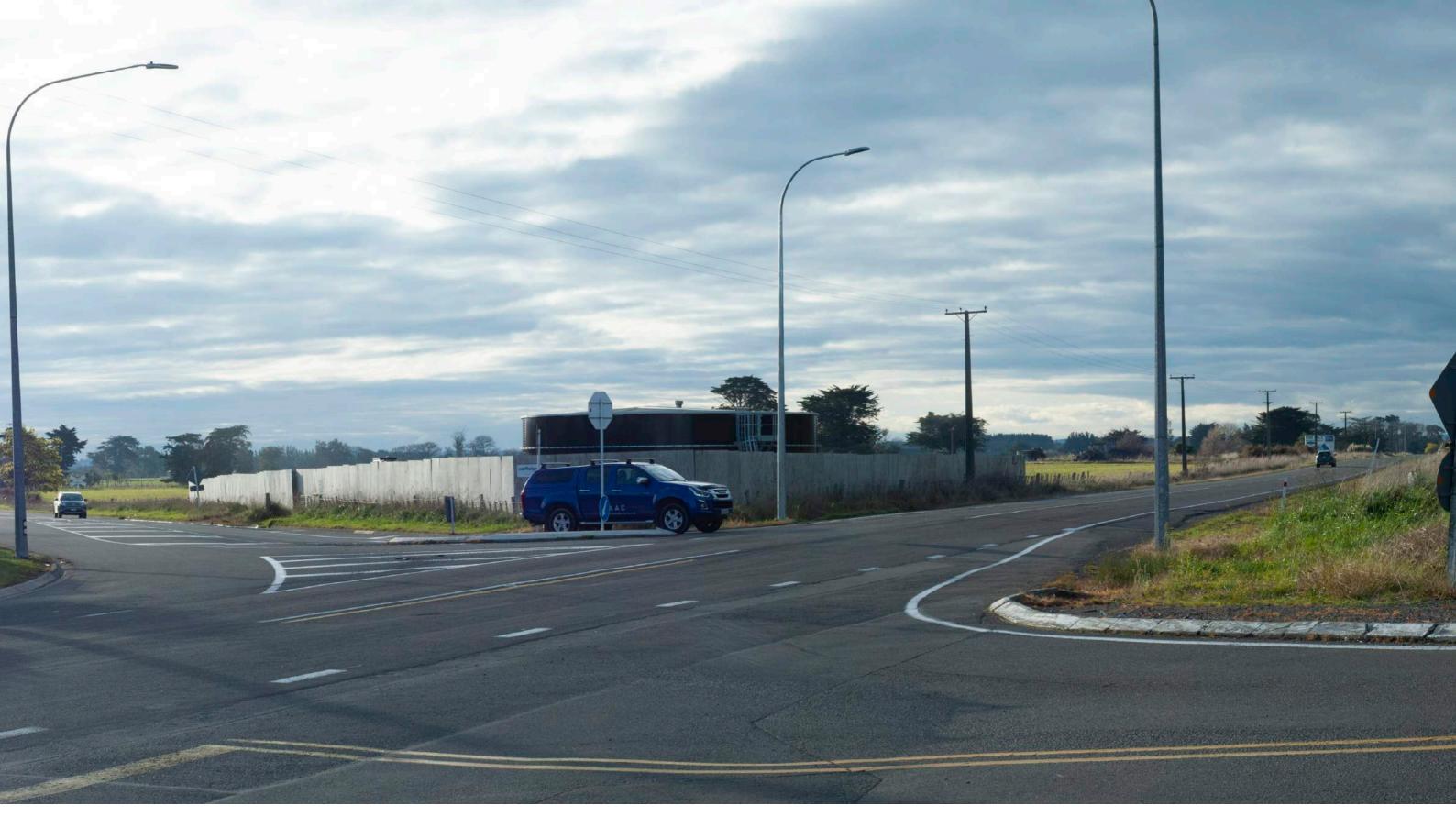
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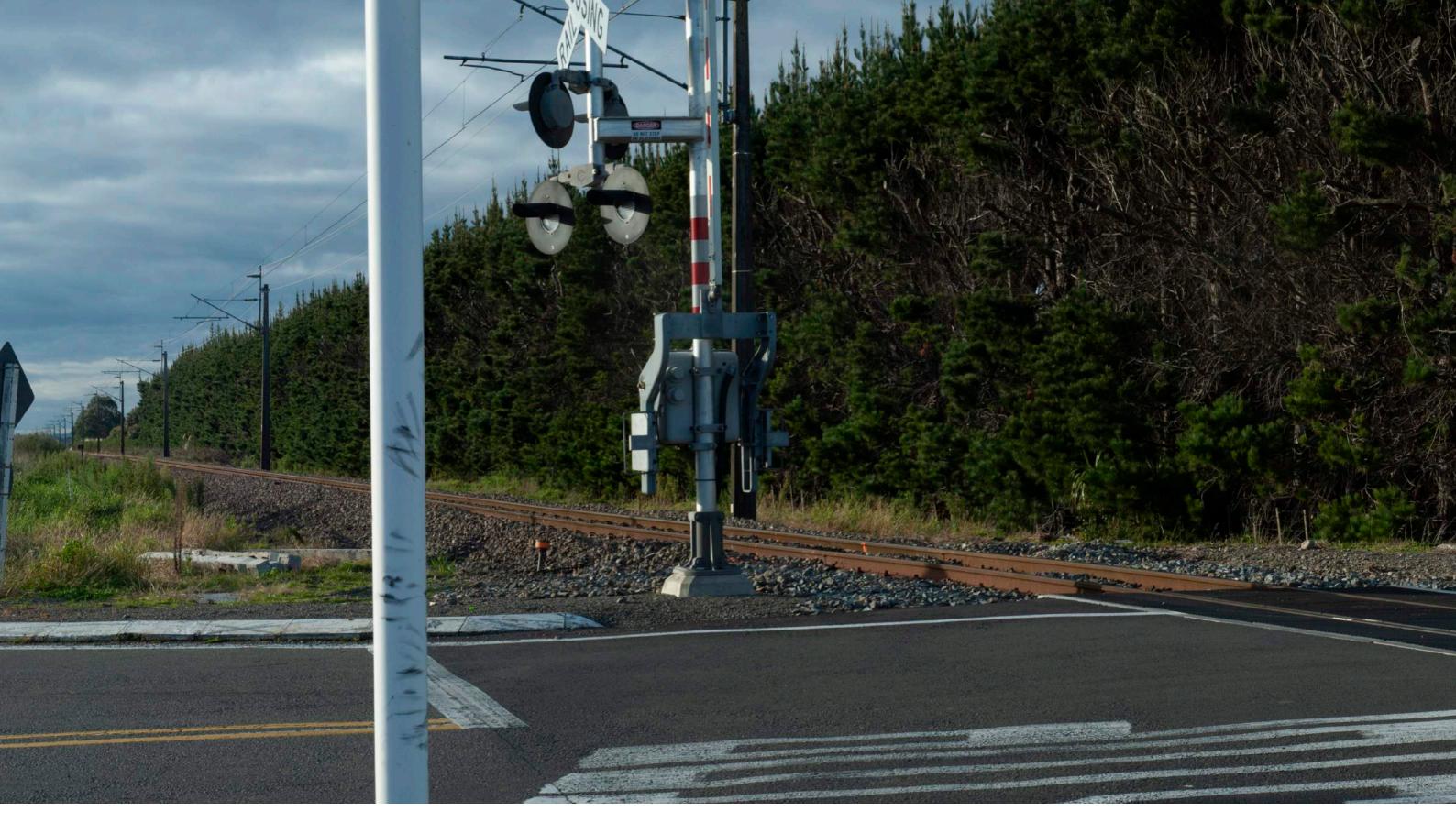




Viewpoint 01 - Corner of Roberts Line & Railway Road Figure 02

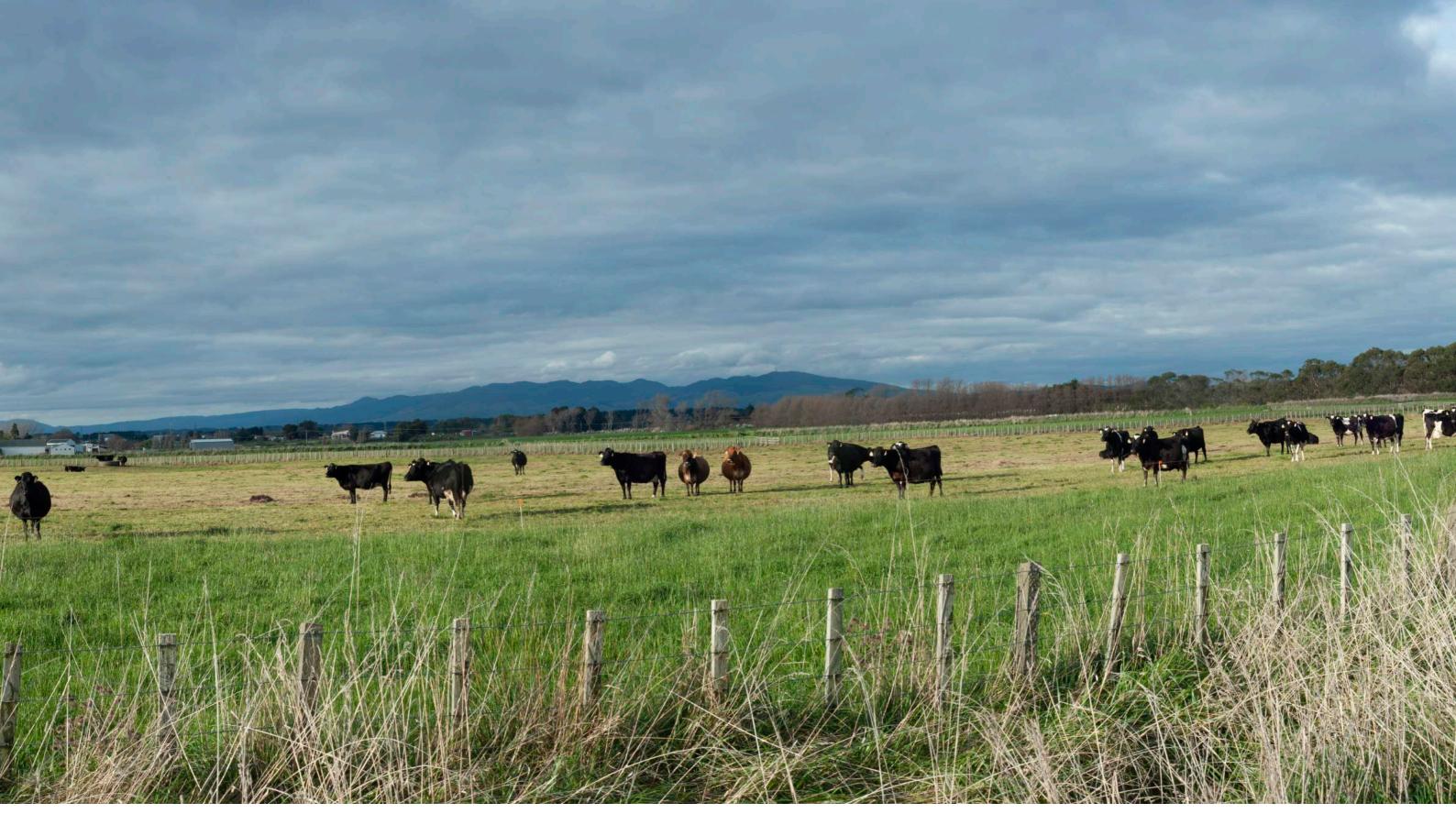
View from the corner of Roberts Line and Railway Road, looking north towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 05:03pm 28 July 2020 | N 5534435 E 1823644 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 48m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 01 - Corner of Roberts Line & Railway Road Figure 02 Page 2 of 2 page spread.



Viewpoint 02 - Corner of Roberts Line & Kairanga Bunnythorpe Road Figure 03

View from the corner of Roberts Line and Kairanga Bunnythorpe Road, looking east towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 04:54pm 28 July 2020 | N 5536337 E 1822070 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 35m: Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 02 - Corner of Roberts Line & Kairanga Bunnythorpe Road Figure 03 Page 2 of 2 page spread.



Viewpoint 03 - Campbell Road, Bunnythorpe Figure 04

View from Campbell Road, Bunnythorpe, looking south-east towards the site and the north island main trunk line (NIMT).





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 04:48pm 28 July 2020 | N 5537445 E 1823726 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 48m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 03 - Campbell Road, Bunnythorpe Figure 04 Page 2 of 2 page spread.



Viewpoint 04 - Corner of Clevely Line & Stoney Creek Rd intersection Figure 05

View from the corner of Clevely Line and Stoney Creek Road, looking south-west towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 04:42pm 28 July 2020 | N 5536955 E 1823134 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 51m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 04 - Corner of Clevely Line & Stoney Creek Rd intersection Figure 05
Page 2 of 2 page spread.



Viewpoint 05 - Parrs Road & Sangsters Road intersection Figure 06

View from the corner of Parrs Road and Sangsters Road, looking south-west towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 04:37pm 28 July 2020 | N 5536355 E 1823806 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 46m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 05 - Parrs Road & Sangsters Road intersection Figure 06 Page 2 of 2 page spread.



Viewpoint 06-9A Maple Street, lower deck Figure 07

View from the ground level deck at 9A Maple Street, looking south east towards Railway Road and the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 2:36pm 23 September 2020 | N 5537234.638 E 1823559.064 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 49m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 06- 9A Maple Street, lower deck Figure 07 Page 2 of 2 page spread.



Viewpoint 07 - 9A Maple Street, upper deck Figure 08

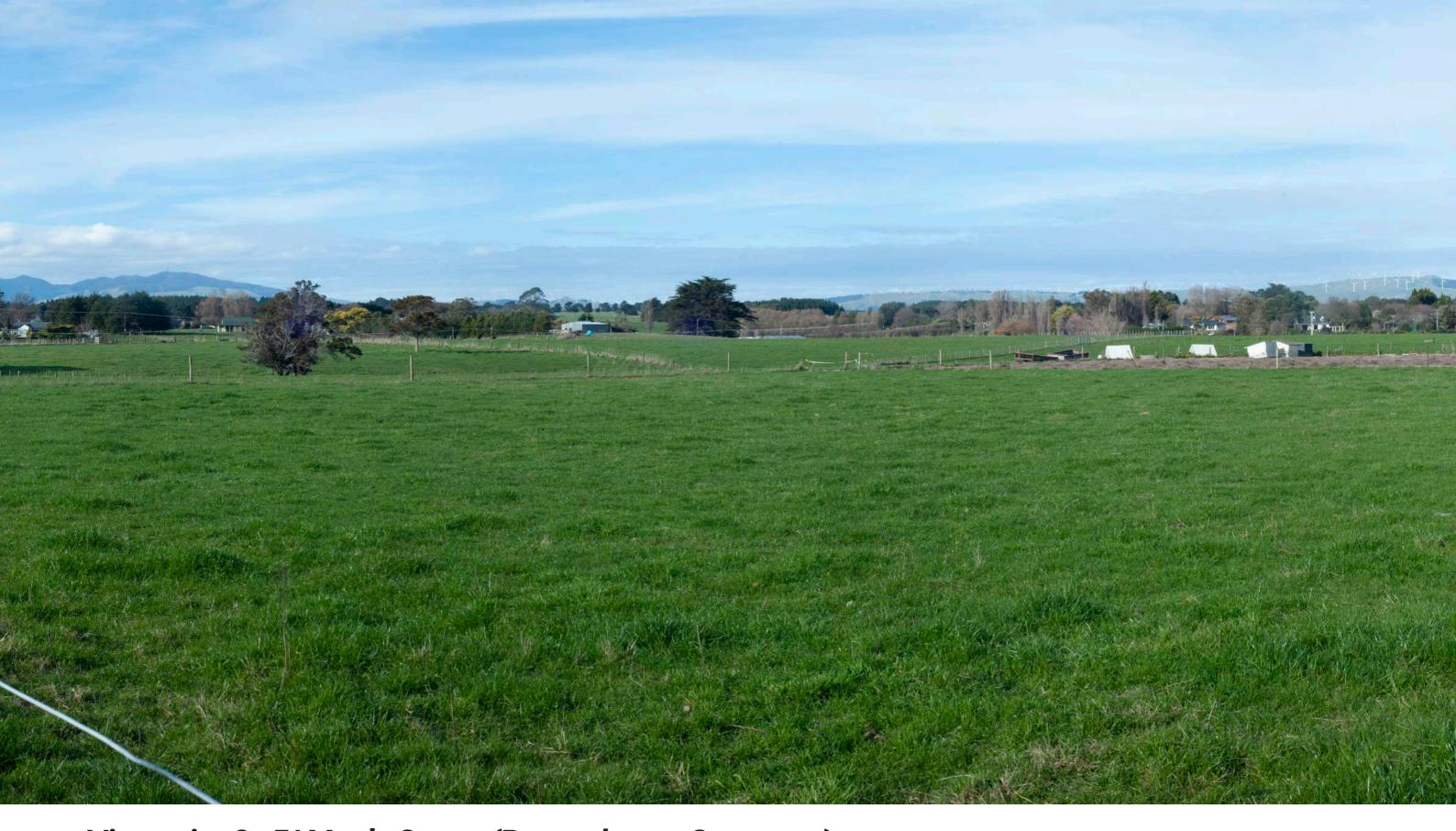
View from upstairs deck at 9A Maple Street, looking south east towards Railway Road and the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 2:46pm 23 September 2020 | N 5537232.325 E 1823555.875 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 50m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 07 - 9A Maple Street, upper deck Figure 08 Page 2 of 2 page spread.



Viewpoint 8 - 51 Maple Street (Bunnythorpe Cemetery) Figure 09

View from 51 Maple Street (Cemetery), looking south east towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 03:04pm 28 July 2020 | N 5536976 E 1823351 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 42m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 8 - 51 Maple Street (Bunnythorpe Cemetery) Figure 09 Page 2 of 2 page spread.



Viewpoint 9 - 51 Maple Street (Bunnythorpe Cemetery 2) Figure 010

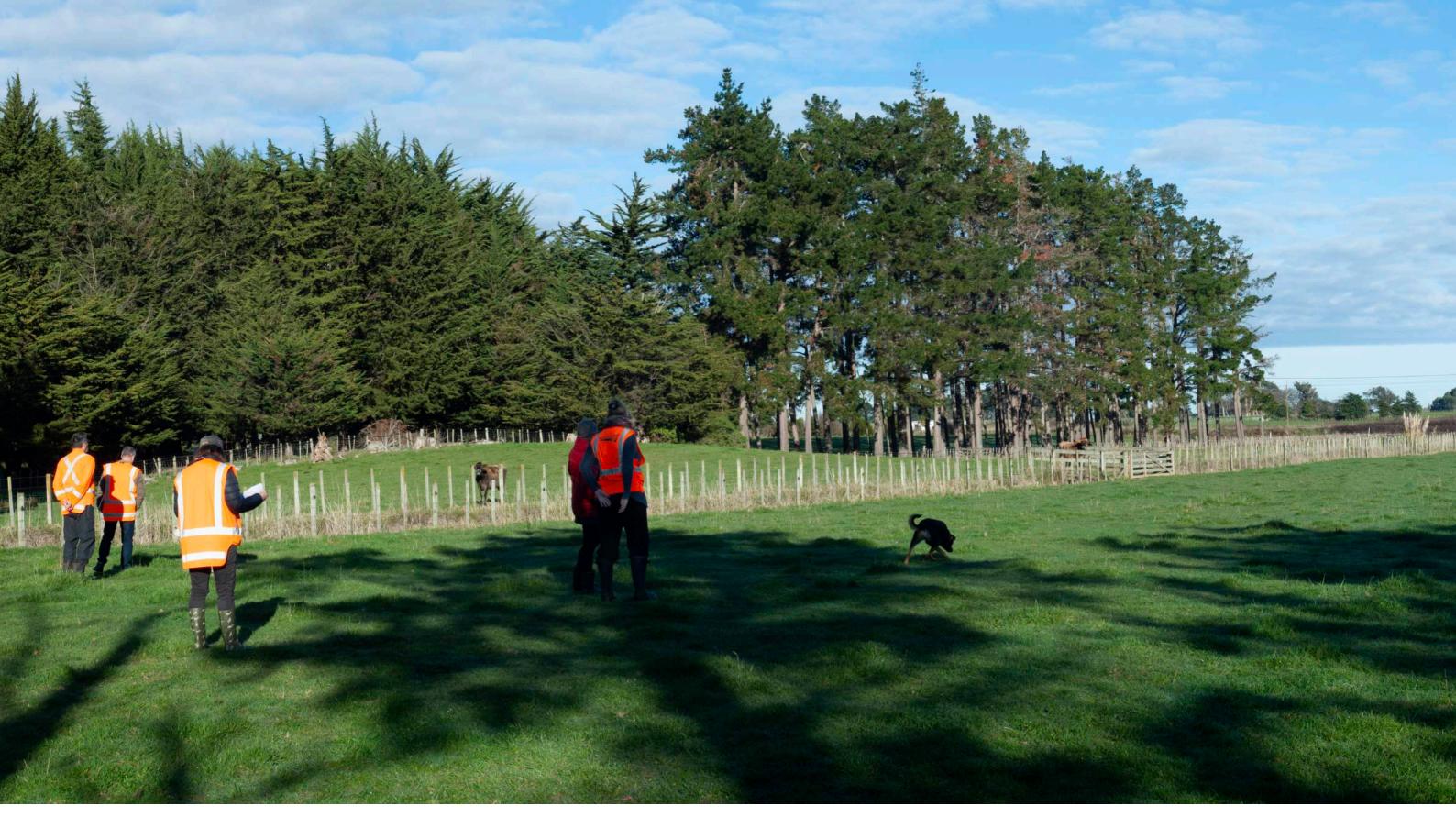
View from 51 Maple Street (Cemetery), looking south-east towards the site





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 03:15pm 28 July 2020 | N 5537082 E 1823359 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 49m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 9 - 51 Maple Street (Bunnythorpe Cemetery 2) Figure 010 Page 2 of 2 page spread.



Viewpoint 10 - 363 Tutaki Road Figure 011

View from 363 Tutaki Road, looking south west towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 10:27am 28 July 2020 | N 5535607 E 1823995 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 36m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 10 - 363 Tutaki Road Figure 011 Page 2 of 2 page spread.



Viewpoint 11 - 363 Tutaki Road (2) Figure 012

View from 363 Tutaki Road, looking south west towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 11:22am 28 July 2020 | N 5535583 E 1824211 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 50m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 11 - 363 Tutaki Road (2) Figure 012 Page 2 of 2 page spread.



Viewpoint 12 - 662 Roberts Line Figure 013

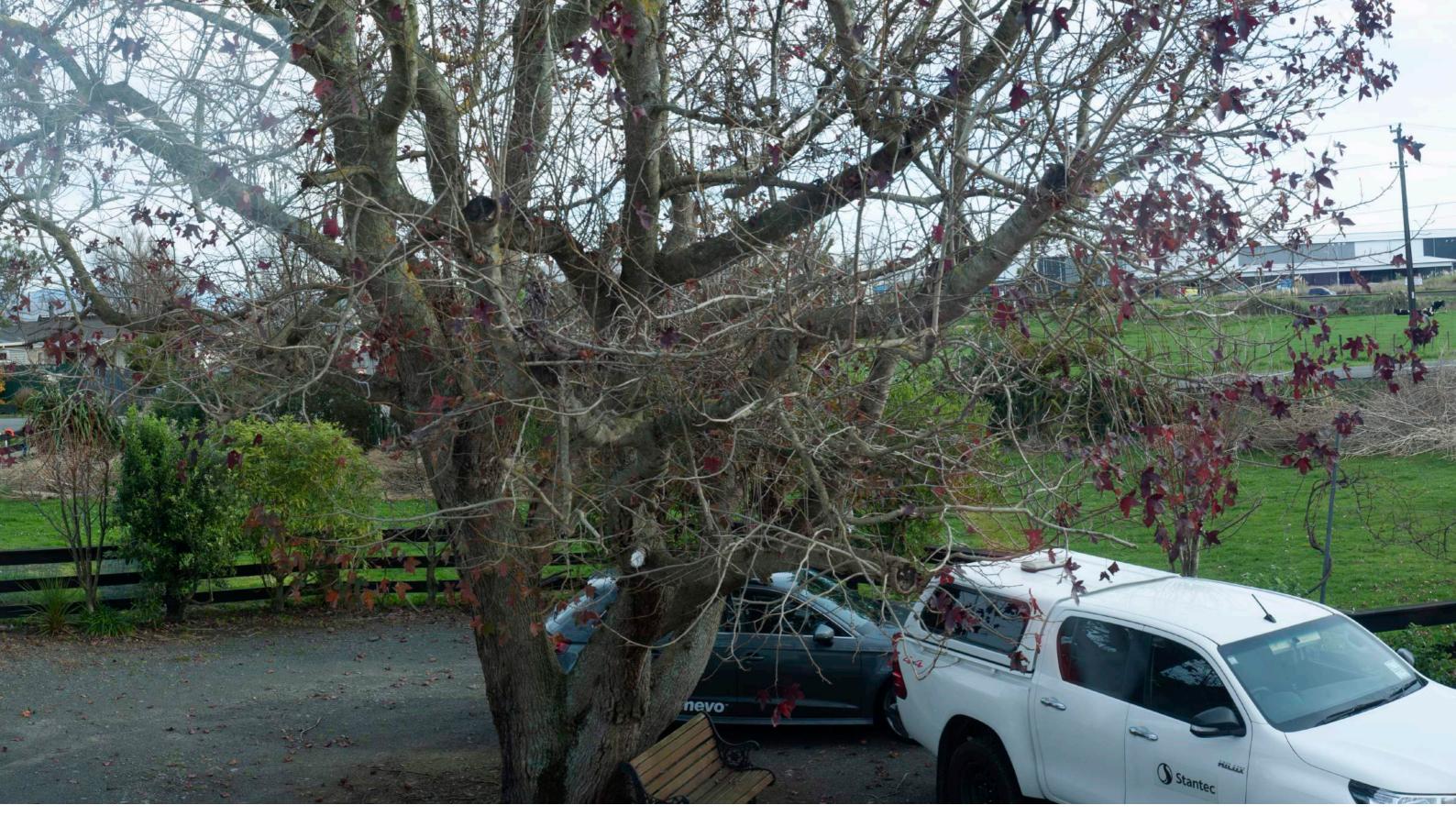
View from 662 Roberts Line, looking west from an upstairs window towards Railway Rd, Roberts Line intersection and the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 03:32pm 28 July 2020 | N 5534570 E 1824003 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 65m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

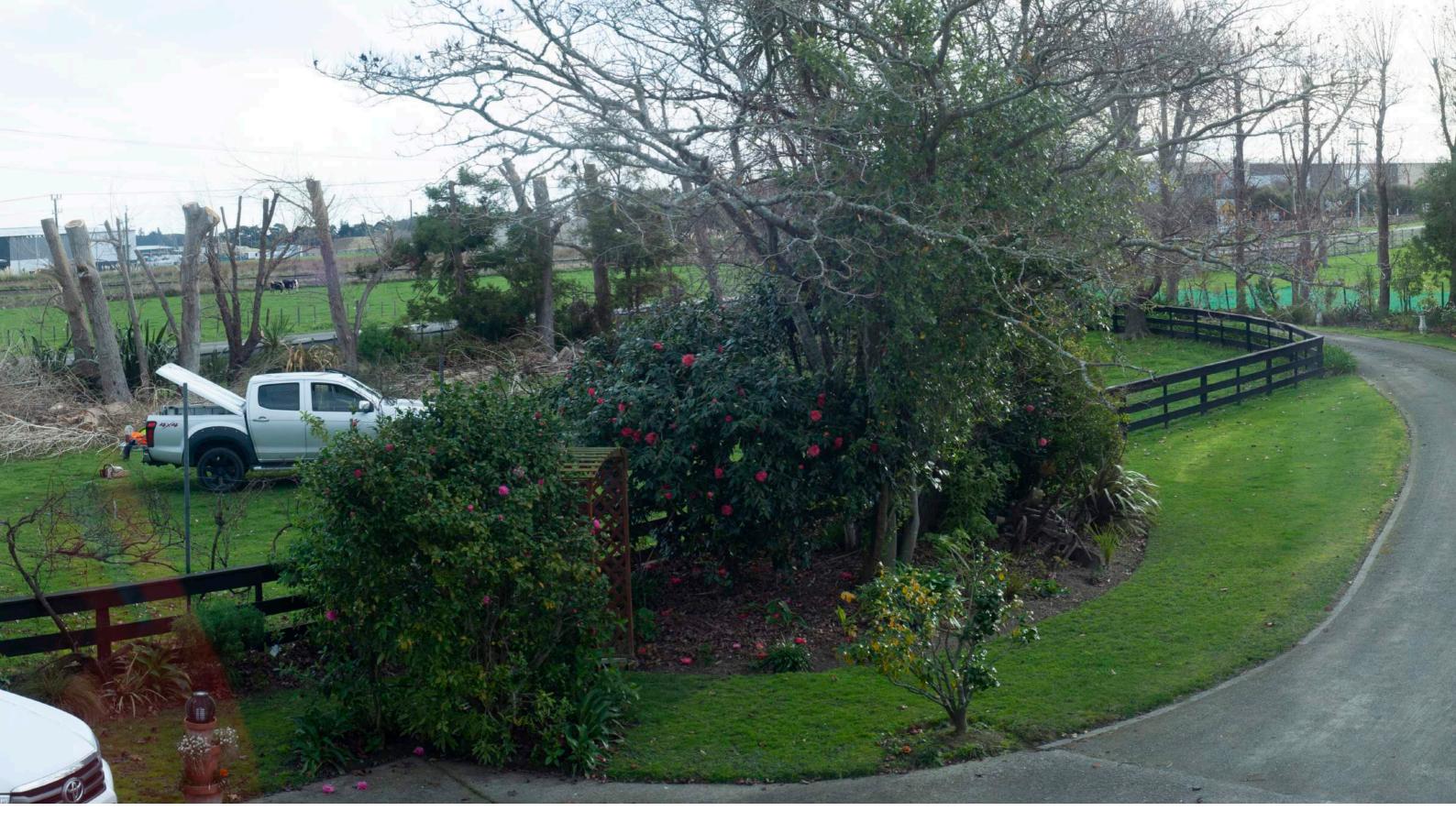
Viewpoint 12 - 662 Roberts Line Figure 013 Page 2 of 2 page spread.



Viewpoint 13 - 672 Roberts Line Figure 014

View from 672 Roberts Line, looking south west from an upstairs window towards Railway Rd, Roberts Line intersection.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 04:13pm 28 July 2020 | N 5534307 E 1823808 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 53m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 13 - 672 Roberts Line Figure 014 Page 2 of 2 page spread.



Viewpoint 14 - 789 Railway Road Figure 015

View from within the proposed designation, 789 Railway Road, looking south west towards Roberts Line and Clevely Line.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 03:32pm 27 July 2020 | N 5535728 E 1823520 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 42m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 14 - 789 Railway Road Figure 015 Page 2 of 2 page spread.



Viewpoint 15 - 789 Railway Road (2) Figure 016

View from within the proposed designation, 789 Railway Road, looking south east towards Railway Rd





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 3:47pm 27 July 2020 | N 5535666 E 1823424 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 31m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 15 - 789 Railway Road (2) Figure 016 Page 2 of 2 page spread.



Viewpoint 16 - 788 Roberts Line Figure 017

View from within the proposed designation, at 788 Roberts Line, looking north-east towards Clevely Line and Railway Rd.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 12:47pm 28 July 2020 | N 5535381 E 1823110 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 40m: Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 16 - 788 Roberts Line Figure 017 Page 2 of 2 page spread.



Viewpoint 17 - 788 Roberts Line (2) Figure 018

View from within the proposed designation, at 788 Roberts Line, looking north-west towards Clevely Line.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 12:56pm 28 July 2020 | N 5535462 E 1823038 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 41m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 17 - 788 Roberts Line (2) Figure 018 Page 2 of 2 page spread.



Viewpoint 18 - 125 Kairanga Bunnythorpe Road Figure 019

View from within the proposed designation, at 125 Kairanga Bunnythorpe Road, looking east towards Clevely Line (Location on the eastern side of the Mangaone Stream)





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 4:47pm 27 July 2020 | N 5536257 E 1823007 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 41m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 18 - 125 Kairanga Bunnythorpe Road Figure 019 Page 2 of 2 page spread.



Viewpoint 19 - 307 Te Ngaio Road Figure 020

View from within the proposed designation at 307 Te Ngaio Road, looking south-west towards Te Ngaio Rd and Railway Rd.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 11:58am 28 July 2020 | N 5536464 E 1823722 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 44m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 19 - 307 Te Ngaio Road Figure 020 Page 2 of 2 page spread.



Viewpoint 20 - 307 Te Ngaio Road (2) Figure 021

View from within the proposed designation at 307 Te Ngaio Road, looking north towards the Clevely Line-Railway Rd intersection.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 12:06pm 28 July 2020 | N 5536567 E 1823728 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 41m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 20 - 307 Te Ngaio Road (2) Figure 021 Page 2 of 2 page spread.



Viewpoint 21 - 282 Railway Road Figure 022

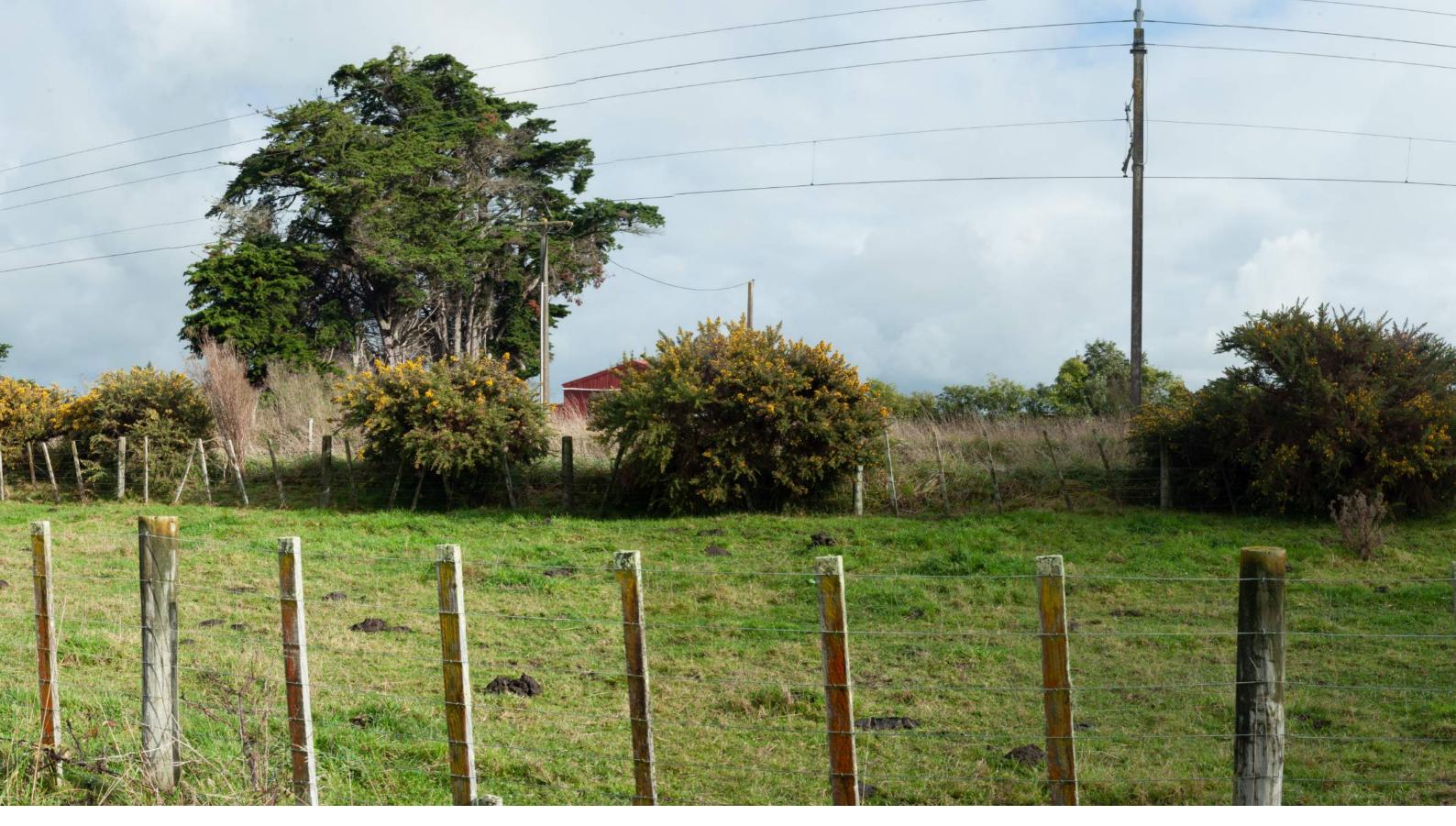
View from 282 Railway Road Intersection, looking West towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:32pm 16 June 2021 | N 5535113 E 1823710 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 45m: Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 21 - 282 Railway Road Figure 022 Page 2 of 2 page spread.



Viewpoint 22 - 73 Sangsters Road Figure 023

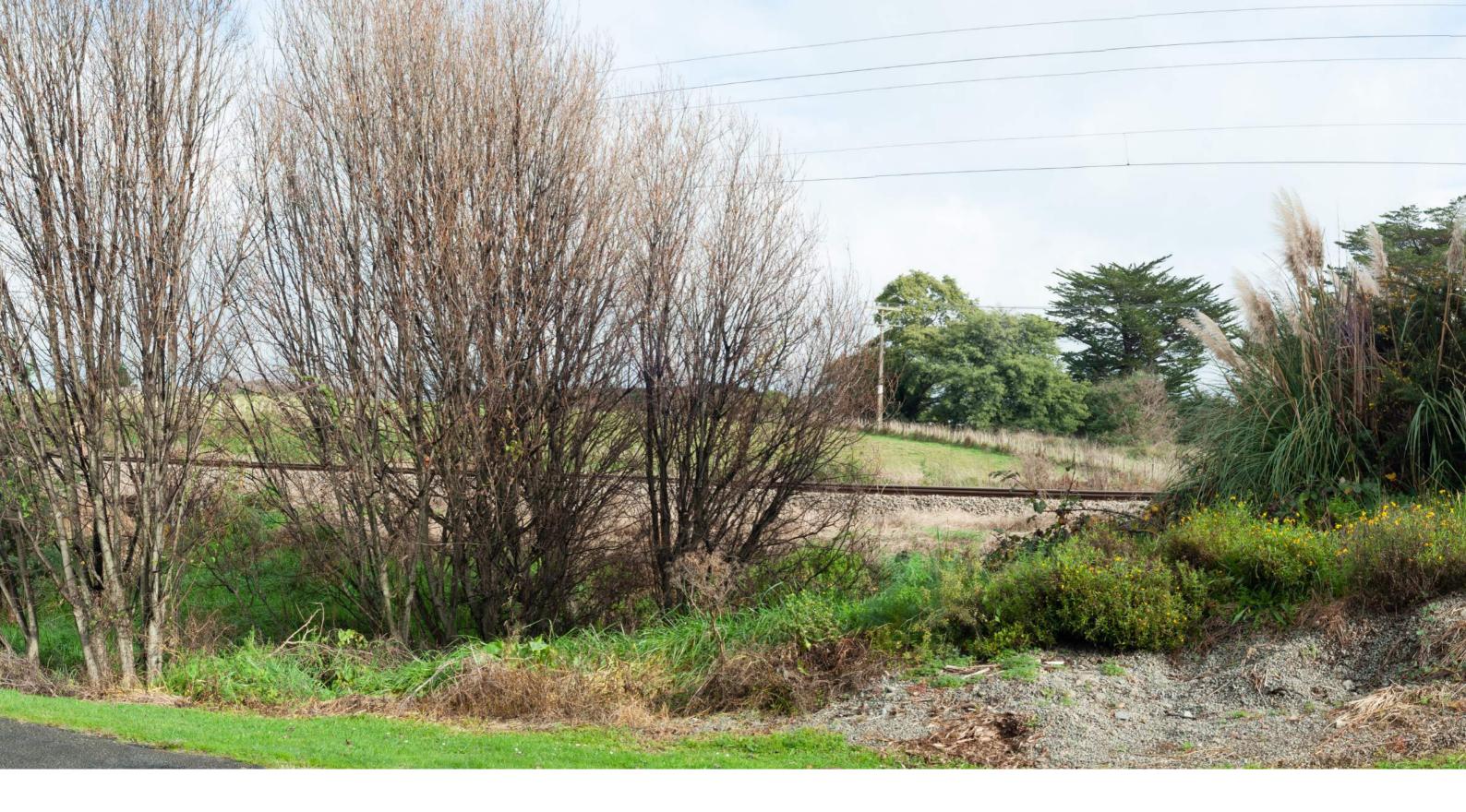
View from just south of 73 Sangsters Road, looking west towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 12:49pm 16 June 2021 | N 5536001 E 1823773 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 44m: Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 22 - 73 Sangsters Road Figure 023 Page 2 of 2 page spread.



Viewpoint 23 - 11 Sangsters Road Figure 024

View from 11 Sangsters Road, looking west towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 12:34pm 16 June 2021 | N 5536613 E 1823806 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 46m: Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 23 - 11 Sangsters Road Figure 024 Page 2 of 2 page spread.



Viewpoint 24 - 241 Te Ngaio Road Figure 025

View from 241 Te Ngaio Road, looking south east towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:10pm 16 June 2021 | N 5536866 E 1823207 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 46m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 24 - 241 Te Ngaio Road Figure 025 Page 2 of 2 page spread.



Viewpoint 25 - 163 Clevely Line West Figure 026

View from 163 Clevely Line West, looking south east towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:20pm 16 June 2021 | N 5536001 E 1823000 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 41m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 25 - 163 Clevely Line West Figure 026 Page 2 of 2 page spread.



Viewpoint 26 - 163 Clevely Line West (2) Figure 027

View from just south of 163 Clevely Line West, looking south east towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:24pm 16 June 2021 | N 5535873 E 1822845 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 40m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 26 - 163 Clevely Line West (2) Figure 027 Page 2 of 2 page spread.



Viewpoint 27 - Roberts Line North and Clevely Line West Figure 028

View from the corner of Roberts Line North and Clevely Line West intersection, looking east towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:52pm 16 June 2021 | N 5535709 E 1822602 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 40m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 27 - Roberts Line North and Clevely Line West Figure 028 Page 2 of 2 page spread.



Viewpoint 28 - 771 Roberts Line North Figure 029

View from 771 Roberts Line North, looking north towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:42pm 16 June 2021 | N 5535087 E 1823119 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 43m: Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 28 - 771 Roberts Line North Figure 029 Page 2 of 2 page spread.



Viewpoint 29 - Richardsons Line Figure 030

View from Richardsons Line, looking north towards the site.





Original Photo Lisa Rimmer | 50mm | DSLR Nikon D700 | 1:34pm 16 June 2021 | N 5534796 E 1823329 (NZTM) Reading distance for correct scale: 400mm | Viewpoint Elevation: 45m : Field of View Approximately 110° horizontal (across 2 x A3 pages) & 34° vertical

Viewpoint 28 - 771 Roberts Line North Figure 029 Page 2 of 2 page spread.

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Context Photograph Methodology Statement

- Photos were taken with a fixed lens on DSLR camera. Locations were fixed using a handheld GPS unit with accuracy of 5m. Reference points in the landscape were also located to assist referencing of photo to digital terrain model.
- A sequence of photos was taken from each viewpoint and stitched to form panoramas. Photos were overlapped by approximately 30% and edges cropped prior to stitching to eliminate edge distortion.
- The time and weather when the photo was taken was entered to the programme in order to replicate lighting conditions.
- The completed photomontage is presented over two pages:
 - The photos are produced to replicate correct scale at the nominated reading distance (in this case 400mm).
 - Each photomontage is printed across two facing pages to illustrate a field of view of approximately 110° at a reading distance of 400mm. This approximates the field of human binocular vision. (But not peripheral vision which extends to approximately 200°)

Notes on use of Context Photographs:

- The Context Photographs are a useful tool but they cannot not precisely reproduce real life for the following reasons:
 - 2D Photography flattens an image compared to binocular vision.
 - Photography is static, whereas the human vision can scan and remember information.
 - Photographs are passive, whereas the eye seeks out detail.
 - The human eye can see more contrast than can be reproduced through photography.
 - Physical resolution of photography and printing is less than that of the human eye.

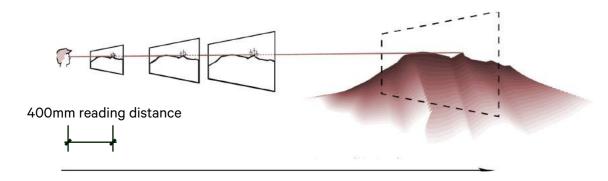


Figure 01: The relationship between reading distance and real life scale.

Figure 31

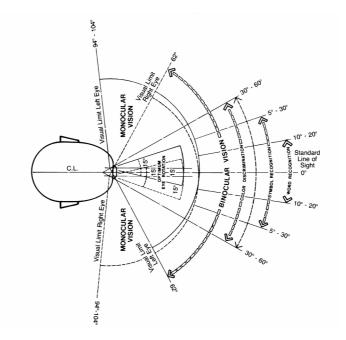


Figure 02: Binocular vision is approximately 124°. Field of view is approximately 110° across 2 x A3 pages at correct scale image for 400mm reading distance (vertical field of view is approximately 33°)

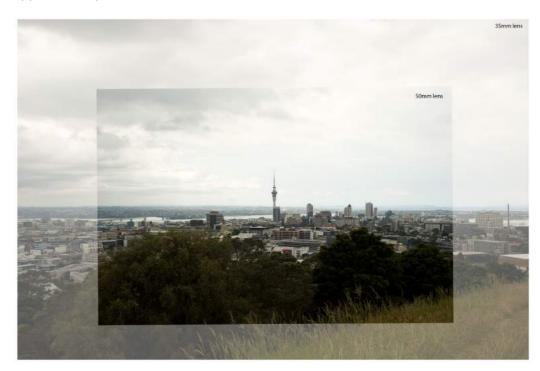
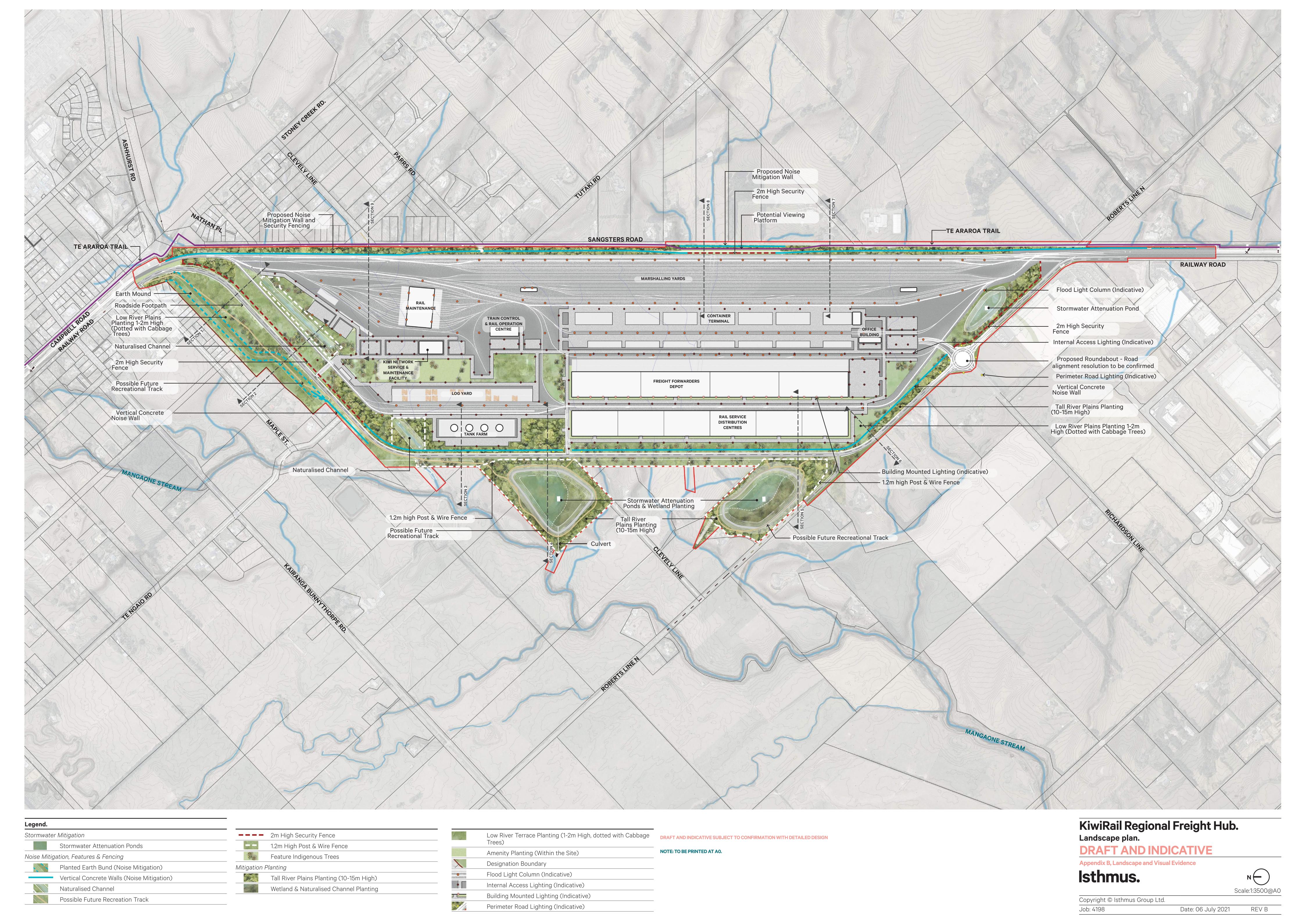


Figure 03: Comparison of 35mm lens and 50mm lens

Two images from the same location. With 35mm and 50mm lenses perspective is influenced by field of view, not by lens focal length. The overlaid portion is identical.

APPENDIX B



APPENDIX C

SECTION 1 - MAPLE ST DRAFT AND INDICATIVE 1:250@A1 / 1:500@A3



SECTION 2 - MAPLE ST DRAFT AND INDICATIVE 1:250@A1 / 1:500@A3



KiwiRail Regional Freight Hub.
Landscape plan Cross Sections.
DRAFT AND INDICATIVE

Isthmus.

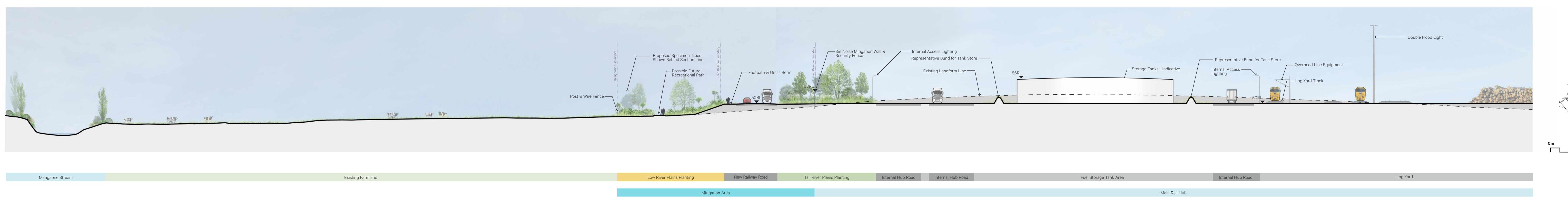
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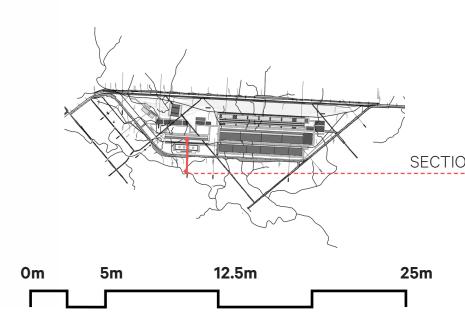
NOTE: THESE ARE TO BE PRINTED ON LONG RUN A1.

Appendix C, Landscape and Visual evidence

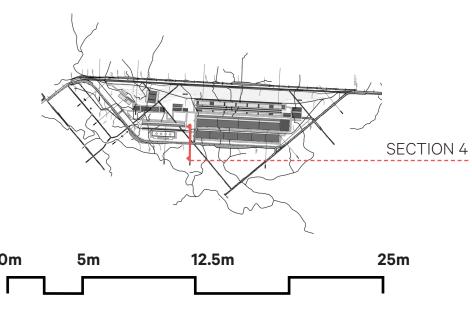
SECTION 3 - MANGAONE STREAM DRAFT AND INDICATIVE

1:250@A1 / 1:500@A3









KiwiRail Regional Freight Hub.
Landscape plan Cross Sections.

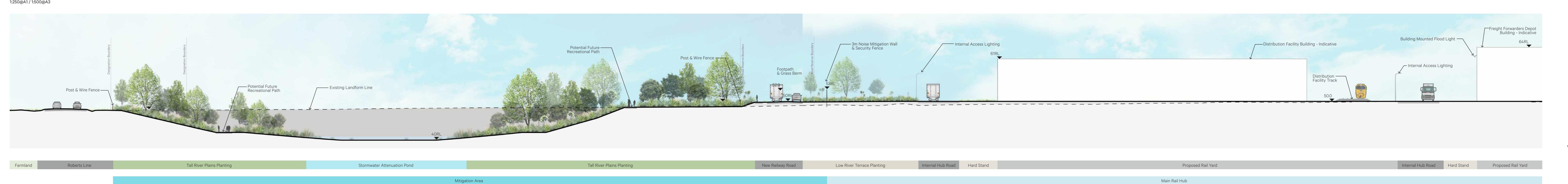
DRAFT AND INDICATIVE

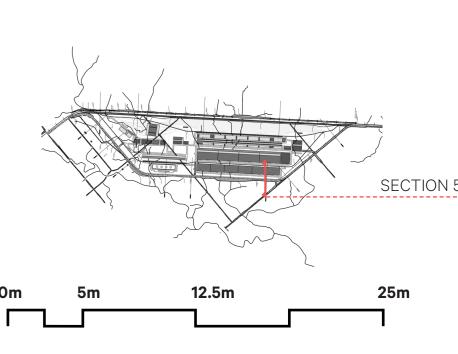
Isthmus.

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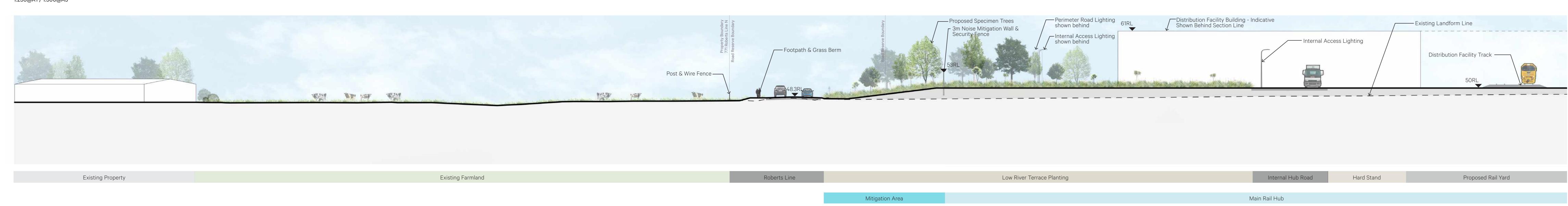
Appendix C, Landscape and Visual evidence

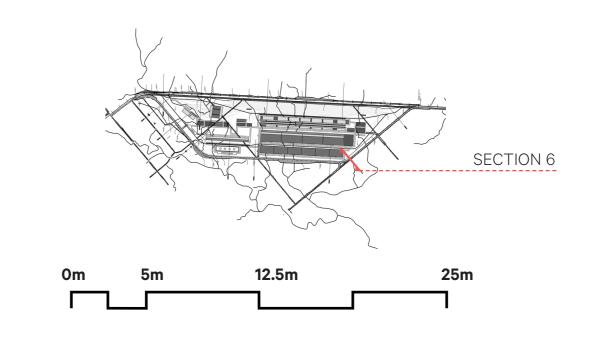
NOTE: THESE ARE TO BE PRINTED ON LONG RUN A1.





SECTION 6 - ROBERTS LINE DRAFT AND INDICATIVE





KiwiRail Regional Freight Hub.
Landscape plan Cross Sections.
DRAFT AND INDICATIVE

Isthmus.

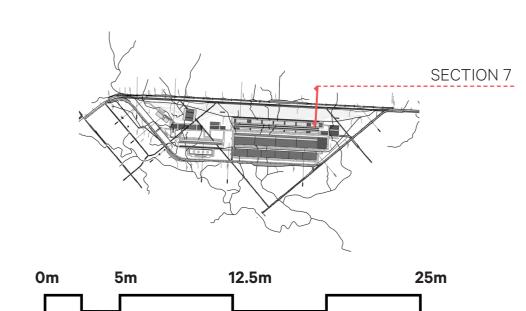
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Job: 4198 Date: 08 July 2021 REV C

Appendix C, Landscape and Visual evidence

NOTE: THESE ARE TO BE PRINTED ON LONG RUN A1.

SECTION 7 - SANGSTERS ROAD DRAFT AND INDICATIVE 1:250@A1 / 1:500@A3

Single Flood Light Couble Flood Light Indicative Containers Existing Road —— Existing Landform Line —— / Internal Access Lighting Te Araroa Trail New NIMT Future Second Track



Mitigation Area

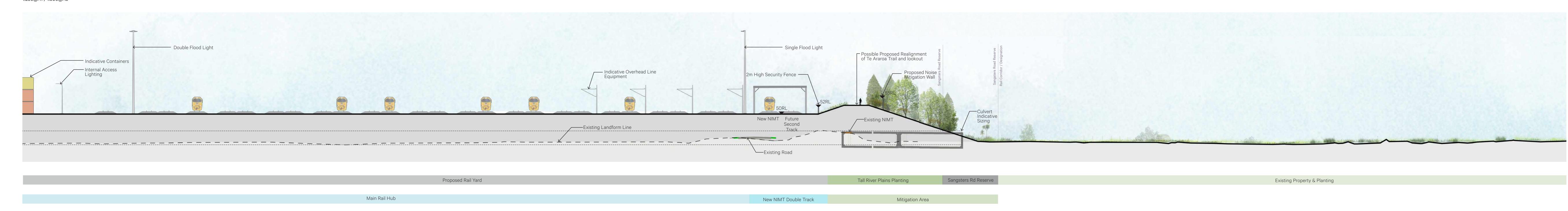
Proposed Rail Yard Existing Property & Planting Private Property

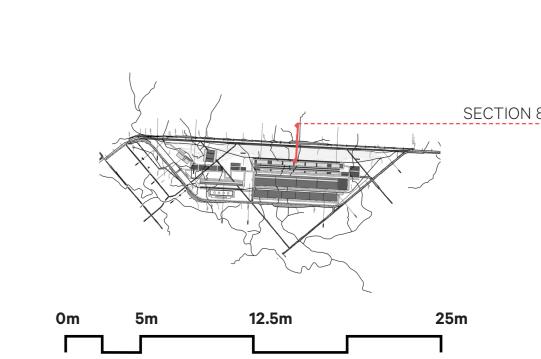
Mitigation Area

New NIMT Double Track

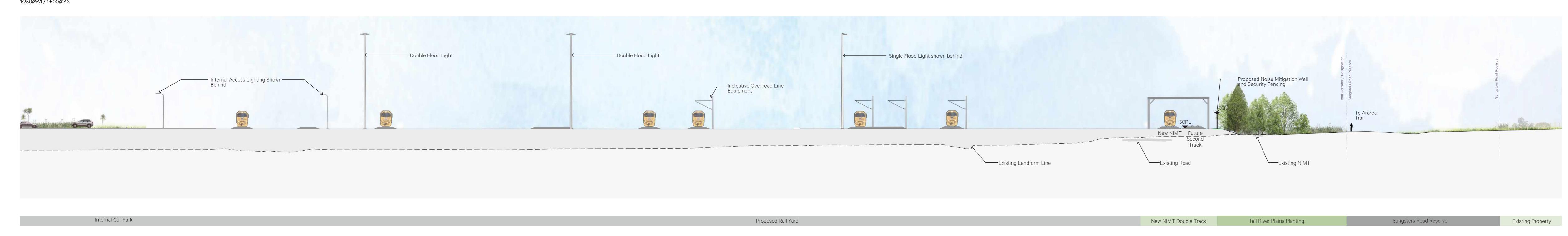
SECTION 8 - SANGSTERS ROAD DRAFT AND INDICATIVE

Main Rail Hub

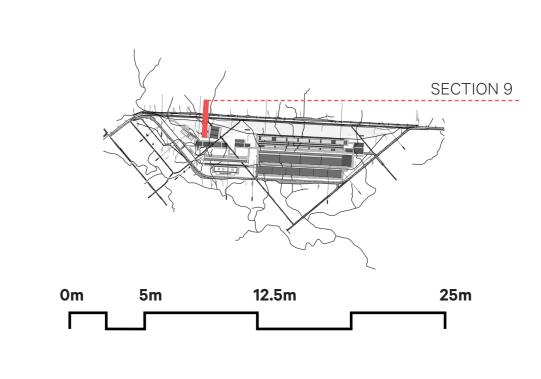




SECTION 9 - SANGSTERS ROAD DRAFT AND INDICATIVE



Main Rail Hub



Isthmus.

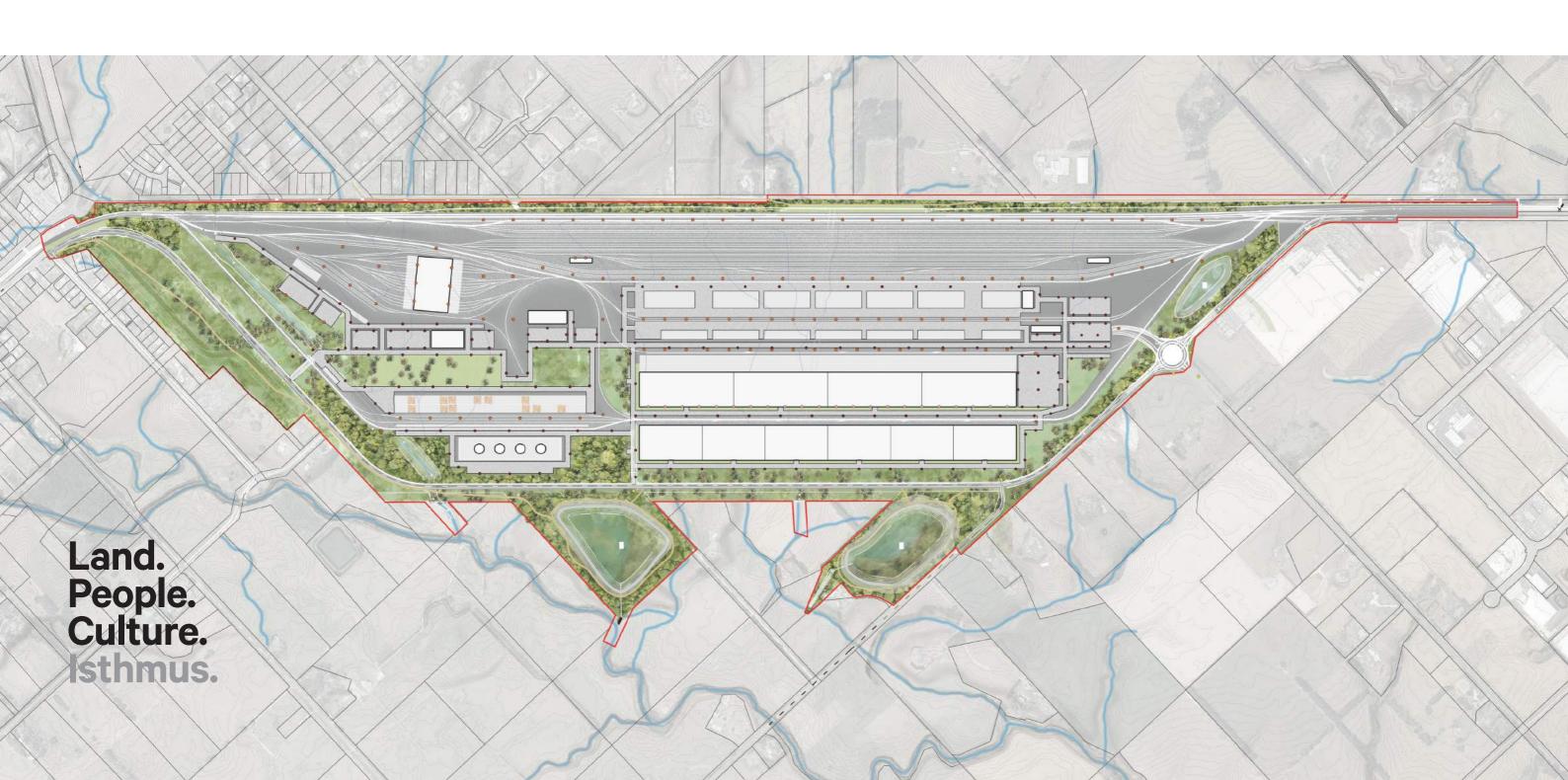
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Job: 4198 Date: 08 July 2021 REV C Appendix C, Landscape and Visual evidence

NOTE: THESE ARE TO BE PRINTED ON LONG RUN A1.

APPENDIX D

Kiwi Rail Regional Freight Hub Planting Palette - Appendix D Landscape and Visual Evidence

NOTE: TO BE PRINTED AT A3



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Document record					
Issue	Revision	Author	QA	Date	
EVI	А	TW	LR	30/06/2021	
EVI	В	CD	LR	06/07/2021	

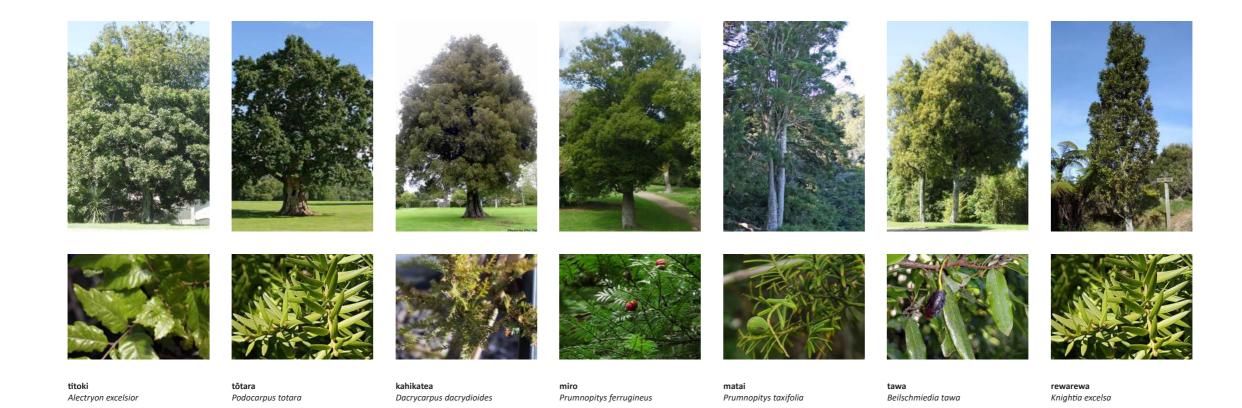
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Low River Terrace Planting.	6
Naturalised Channel and Wetlands.	7
Amenity Planting.	8



Feature Indigenous Trees.





Tall River Plains Planting

TREES

Incudes all feature indigenous trees



Elaecarpus dentatus



Pittosporum tenuifolium















putaputawētā Carpodetus serratus

harakeke

Phormium tenax

Melicytus ramilforus

kānuka Kunzea ericoides

rangiora Brachyglottis repanda

karamū

Coprosma lucida





SHRUBS

Austroderia fulvida

Hebe stricta

mingimingi Coprosma propinqua

mingimingi Coprosma rhamnoides

Low River Terrace Planting







māhoe Melicytus ramilforus



whauwhaupaku Pseudopanax arboreus



tī kōuka Cordyline australis



harakeke Phormium tenax



toetoe Austroderia fulvida



rangiora Brachyglottis repanda



mingimingi Coprosma propinqua



karamū Conrosma robusti



pukio Carex virgata



wiwi Ficinia nodosa



toetoe upoko-tangata Cyperus ustulatus



wautahi Carex geminata



pohuehue Muehlenbeckia complexa



hook sedge Uncinia rubra



Naturalised Channel and Wetlands Planting

Upper bank





Sophora microphylla



Cordyline australis



Geniostoma ligustrifolium



Leptospermum scoparium

Mid bank



hukihuki Coprosma tenuicaulis



Plagianthus regius

Phormium tenax



Austroderia fulvida



Apodasmia similis



bumblebee nut sedge Baumea tenax



Ficinia nodosa



Blechnum novae-zelandiae

Base of bank



pūrei Carex secta



raupō Typha orientalis



Juncus edgariae



wautahi Carex geminata

Isthmus.

Amenity Planting







rengarenga Arthropodium cirratum



miniature toetoe Chionochloa flavicans



pukio Carex virgata



mikoikoi Libertia grandiflora