Landscape and Visual Assessment Report

SH1 Rolleston Access Improvements | Package 2 - Overpass

Prepared for New Zealand Transport Agency Waka Kotahi
Prepared by Beca Limited

28 November 2024

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Revision History

Revision Nº	Prepared By	Description	Date
Version 1	Sophie Strachan	Draft for technical verification	14/08/24
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Document Acceptance

Action	Name	Signed	Date
Prepared by	Sophie Strachan		28/11/24
Reviewed by	Wade Robertson		28/11/24
Approved by	David Aldridge		28/11/24
on behalf of	Beca Limited		

1 Executive Summary

New Zealand Transport Agency Waka Kotahi (NZTA) is submitting a Notice of Requirement (NOR) to designate land for State Highway One (SH1) for the purpose of roading upgrades necessary to enable the safe movement of transportation and described as the Rolleston Access Improvements, Package 2 – Overpass (the Project).

An Assessment of Effects on the Environment (AEE) report has been prepared by Beca Limited in support of the NOR and associated resource consent applications required to provide statutory approvals for the Project. This report provides a technical assessment of the potential **Landscape and Visual Effects** of the Project as required to support the AEE. The assessment methodology is based on, and consistent with, the **Te Tangi A Te Manu Aotearoa New Zealand Landscape Assessment Guidelines**, Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022. This report should be read alongside the supporting Appendices 1-6.

The key issues this landscape and visual assessment focuses on are potential effects on urban character and amenity, while also addressing the nature of the residential interface with the road corridors.

The land use surrounding the project area is comprised of residential, commercial, industrial and some retail activities within the General Industrial zone (GIZ), Medium Density Zone (MDZ), and Town Centre Zone (TCZ) of the Partially Operative Selwyn District Plan (POSDP). Existing lineal infrastructure including State Highway One (SH1) and South Island Main Trunk (SIMT) rail line (both designated in the POSDP) demarcate land use activities within the area and serve as prominent elements within the landscape. The assessment considers the expected outcomes in these zones and existing designations and is therefore focussed on assessing effects on road users, businesses, and residential areas adjacent to the Project.

The main components of the works comprising the Project are referred to as the Overpass, SH1 southbound service lane and left turn access into Rolleston town centre. The Overpass is proposed to be located across State Highway 1 (SH1) joining Jones Road to the north and Rolleston Drive North to the south. Potential physical effects are assessed as likely to be **low-moderate**. This assessment is driven by several factors, including the overpass structure itself, the bulk and scale of earthworks to implement the overpass and stormwater management devices and associated loss of vegetation to enable construction.

For most of the residential properties and associated viewing audiences to the southeast of the Project, the Project will result in **very-low to negligible** effects. This is primarily due to the existing earth bund and associated planting and fencing which largely screens the overpass structure and the associated components from views. For residents along the northern end of Rolleston Drive potential effects may arise from the elevated nature of the overpass and a sense of being looked down upon, contributing to a perceived loss of privacy and increased presence of traffic and lighting. Visual effects for these residents are likely to be **moderate**.

Temporary effects related to construction activities will be **low-moderate.** Adverse effects arising from construction activities are related to project enabling and formation works (refer section 6.3), impacts on perceptual values due to the proximity to the works, disruption to access and visual clutter experienced by residents living adjacent to the Project.

The Project is located within the Rolleston Key Activity Centre (identified in the POSDP). This necessitates a well-integrated design response which maintains and improves connectivity, supports good urban form, and considers adjacent residential areas. It is understood the location of the proposed overpass, at the ‘gateway’ to Rolleston, will improve the safety and function of the existing major intersection on SH1. The recommendations include preparation of an Urban and Landscape Design Framework and Landscape

Management Plan to achieve the intended outcomes. The successful establishment and long-term success of the proposed landscape design and outcomes described in the UDLF will help to reduce adverse effects.

Overall, given the extent of existing roading infrastructure, compatible land zoning (TCZ and GIZ), and provided the recommended design integration measures are volunteered as part of the NOR, the overpass and connecting roads will be appropriate within this setting from a landscape and visual perspective.

2 Introduction

2.1 Purpose and Scope

NZ Transport Agency Waka Kotahi (NZTA) is submitting a Notice of Requirement (NOR) to designate land for State Highway One (SH1) for the purpose of roading upgrades necessary to enable the safe movement of transportation and described as the Rolleston Access Improvements, Package 2 – Overpass (the Project).

The purpose of this report is to assess the actual and potential landscape effects of the Project on the identified character and values of the landscape. It has been prepared by Beca Limited to inform the Assessment of Effects on the Environment (AEE) accompanying the NOR for the Project.

The scope of the assessment is underpinned by the methodology provided in Section 2.2 below, where it describes how the report is shaped by established industry guidance and the key activities and process that have been undertaken in preparing this assessment. Section 5 describes the relevant policy context that informs the assessment and shapes the conclusions around aspects of compatibility with the adjoining land uses.

2.2 Methodology

The assessment methodology is based on, and consistent with, the **Te Tangi A Te Manu Aotearoa New Zealand Landscape Assessment Guidelines** (the Guidelines), Tuia Pito Ora New Zealand Institute of Landscape Architects, July 2022. The Guidelines emphasise the need for the scope and method of assessment be tailored to three key aspects:

- The relevant landscape setting,
- The nature of the proposal and associated degree of change in the landscape, and
- Associated policy framework.

Refer to Appendix 1 for the full Landscape and Visual Assessment methodology and terms used when assessing the potential landscape and visual effects of the proposal. The relevant landscape setting is outlined in Section 3, Existing Environment. The Project is summarised in Section 4 and details the components likely to influence the effects assessment. The relevant statutory framework is described in full in the AEE with policy relating to landscape character and visual amenity outlined in Section 5 of this report.

2.2.1 Scope of the Assessment

The relevant landscape context has been identified by analysing the receiving environment and defining the physical extents of the Project. The analysis of the landscape includes a description of the existing environment, setting out the physical, perceptual and associative attributes that exist across the site and relevant landscape context. These attributes are summarised in a statement of the overarching character and landscape values in **Section 3.** The proposed designation includes existing road corridors and areas of land zoned for commercial and industrial use. Accordingly, the assessment is made with comparison to the reasonably anticipated outcomes in these zones and is therefore largely limited to addressing effects for road users, businesses, and residential areas directly adjacent to the Project.

2.2.2 Preparation for this Report

In preparing this report and Appendix 1-6 to be read in conjunction with the report, the following tasks have been undertaken to identify and assess the landscape values of the site context and the Project's actual and potential effects on those values:

Background documentation and desktop analysis - The following material was reviewed and analysed to develop an understanding of the potential issues and matters to be addressed during the assessment process:

- Project description, concept layout and alignments provided by the project team
- Statutory setting as guided by the Resource Management Act 1991 (RMA), Canterbury Regional Policy Statement and Partially Operative Selwyn District Plan (POSDP)
- Relevant NZTA documentation including:
  - NZTA Landscape Guidelines, 2018
  - Bridging the Gap - NZTA Urban Design Guidelines, 2013
- Other data provided via the project GIS portal, such as land uses and zoning, topography, hydrology, vegetation patterns, natural resources and natural heritage layers and aerial photography
- Other technical reports informing the AEE

Site Visits - A site visit was undertaken on 29th April 2024 to investigate the site and local landscape, assess the visual catchments in the area and to take viewpoint photos at local places of interest including:

- The SH1 route, travelling both north and south and connected local roads
- Rolleston township
- Residential areas adjacent to the Project (particularly Dalwood Cres, Maitland Cres, Wyndham Mews, Milton Court and Rolleston Drives)
- Public areas proximate to the Project (e.g. Rolleston Train Station, McDonald's, Selwyn District Council, Kidman St bus stop)

Manawhenua engagement - It is noted that engagement and consultation with Manawhenua is being undertaken concurrently with the preparation of this assessment. As a result, cultural values will be identified and addressed separately. Despite this, consideration of integration of Manawhenua values into the project has been identified in the recommendations in Section 7.

3 Existing Environment

3.1 Landscape Context

Rolleston township is approximately 22km southwest of Christchurch and sits on flat land, typical of the wider Canterbury Plains.

The South Island Main Trunk rail line (SIMT), local roads and SH1 are a key driver of the pattern of development for Rolleston. The TranzAlpine train journey is provided by Great Journeys New Zealand and follows two railway lines on its journey from east to west (and return). Starting in Christchurch, the journey follows the South Island Main Trunk line (SIMT). Then at Rolleston, the TranzAlpine train turns north onto the Midland Line.

The construction of the Christchurch Southern Motorway (forming part of SH1 and SH76) was completed in 2020 and was designed to address increased travel demand and congestion in the south of Christchurch and into the Selwyn District. The project enabled the growth of Rolleston and introduced large scale roading and stormwater management infrastructure to the area including grade-separated interchanges, roundabouts, four-laning, and dry attenuation basins which extend to the eastern edge of Rolleston.

3.1.1 Local Landscape

As described in Section 2.2 Methodology, the relevant landscape context is focused largely around the intersection between SH1 and Rolleston Drive at the interface between the existing residential, commercial and industrial land uses in Rolleston – refer to Appendix 4, Proposed Designation Plan.

The interface between SH1 and residential areas adjacent to the southbound lane is demarcated by a 2-3m high earth bund covered in native amenity plantings with a closed board and batten fence on its crest. This creates a strong physical and visual separation along Rolleston's northern residential edge.

Part of the town centre commercial and retail area adjoins SH1 and is bounded by Rolleston Drive and Tennyson Street. Buildings and activities are commercial in nature including the BP, McDonalds, and KFC. Rolleston School, Selwyn Health Hub and Selwyn District Council together with a Park and Ride are also located in the area and act as intermediaries between SH1 and residential land to the south.

In contrast, the landscape north of SH1 and SIMT is distinctly characterised by industrial activities, with manufacturing plants, storage facilities, and large-scale logistic centres – known as the 'Izone Industrial Park'. The western edge of the industrial area is bordered by the Midland Line which extends away from the SIMT in a north-west orientation.

Hoskyns Road provides the only road connection from SH1 across the SIMT to the Industrial area which is centrally located within the Industrial zone. Roads forming part of the older industrial areas closer to SH1 such as Jones Road, tend to have low amenity with limited planting and pedestrian facilities. The amenity of the street corridors improves as one moves further north within the industrial zone with substantial planting and grassed berms visually softening adjacent industrial activities.

The landscape to the south-east of the Project area consists of medium density residential housing of varying age. These houses are generally high quality having been developed since the early 2000's. A greenway extends through the subdivision from Highgate Reserve and playground, culminating in a planted bund at the Rolleston Drive/SH1 intersection. In this location, Wyndham Mews is the last street to be developed, with one small pocket of residential zoned land yet to be subdivided, and likely providing for 3 to 4 dwellings.

3.1.2 The Site

The site encapsulates the transition between the industrial land north of SH1, and the Rolleston Town Centre to the south. This area is characterised by land uses that reflect four underlying zones of the POSDP and is focused on several roads/movement corridors as described below:

3.1.2.1 Rolleston Drive

Rolleston Drive acts as the 'gateway' to Rolleston township, with curved feature walls displaying the name of the town on the corner of the intersection with SH1. The entrance is framed by mature planting and trees with rolling (man-made) grassed areas, opening up to fenced grassed areas (undeveloped) on the western side of the road, currently with sight lines to McDonalds and BP along Kidman Road. The eastern side of Rolleston Drive forms the interface with residential areas. This intersection is a recognisable node which signals arrival in the township.

3.1.2.2 Kidman St Extension

Kidman Street connects Rolleston Drive to Tennyson Street and provides access to bus stops and the Park and Ride located beside Selwyn District Council. The sections of undeveloped land adjacent to SH1 are zoned TCZ. These areas are fenced and used as a car parking area, with a square of gravel area and informal access off Kidman Street. This street provides access to many of the businesses in the northern commercial and retail cluster.

3.1.2.3 SH1 & SIMT Rail Line

Key features of the existing section of SH1 through Rolleston township include two sets of traffic signals (Rolleston Dr, Hoskyns Rd) with two lanes travelling in each direction and turning bays. The speed zone is 80km/h. There are two lanes northbound from this location, connecting into Christchurch Southern Motorway works. The two laning of southbound lanes only occurs for approximately 400m through these two intersections before merging to one lane.

As noted previously, the SH1 corridor is separated from the residential area to the south by an earth bund, that includes native planting and closed board fence on its crest. This interface treatment contributes to the visual amenity of the road corridor and fulfils an important function in maintaining amenity values for adjacent residential dwellings. There are also mature exotic trees together with gently rolling, grassed open space along the southern edge of SH1, both further to the north, and at the interface with the TCZ. This changes at the cluster of commercial activity including McDonalds, where mown grassed verges with some pockets of low vegetation border the road, punctuated by vehicle lanes for site access.

The SIMT runs parallel to the northern edge of SH1. The space between SH1 and the rail line generally consists of grassed verge and a variety of infrastructure including light poles, electrical cabinets, signage and powerlines. The proposed designation includes areas adjacent to the existing Rolleston Train Station currently used for bus parking and as a stop for the TranzAlpine journey. Pedestrian access is provided across the Rolleston Dr/SH1 Intersection and an asphalt footpath extends along the verge area to the Hoskyns Road intersection, crossing the rail line into the industrial area. A narrow garden bed with low growing amenity planting is located beside the Train station building, adjacent to the footpath in the road reserve.

3.1.2.4 Jones Road

The commercial property on the corner of Jones and Hoskyns Road is characterised by an open yard (currently occupied by earthwork and farming machinery) surrounding a large building with glazed facades set back from the roads.

The Jones Road corridor itself has a low level of amenity typical of an industrial area and provides for heavy vehicle traffic. It consists of a single lane in each direction with a wide median and no on-street parking. There is a footpath and grassed verge on the northern side of the road. Light poles are located on the

southern side of the road within the grassed verge and powerlines have largely been undergrounded in this location, reappearing as overhead lines in front of 805 Jones Road.

3.1.2.5 Hoskyns Road

There is a level rail crossing adjacent to the Hoskyns Rd/SH1 intersection. The existing corridor consists of traffic signals at the intersection with Jones Road and four lanes for the full length within the proposed designation area. The exception being the northbound lane over the level crossing which consists of a wide, single lane. There is formed kerb and channel to both sides of the road, with a footpath on the western side of the road. The roads are wide to support heavy vehicle movements into the industrial zone.

3.2 Landscape Values Summary

The overarching character of the site is underpinned by the function as a movement corridor (including existing SH1 and rail designations) and the adjoining urbanised nature of the local landscape. Specific landscape values which are the key focus for the assessment include:

- Wayfinding, visual amenity and vegetation - The ‘gateway’ at the SH1/Rolleston Drive intersection, marks a shift in character from a busy road environment into the urban character of the township. The existing manicured rolling lawns are combined with exotic trees to provide an attractive entrance area. The gateway feature is pre-empted by the increased amenity provided by the edge treatment to residential areas north of the site along SH1, consisting of earth bund with a closed board fence at the crest and integrated native vegetation. Rolleston Drive also reflects a higher amenity streetscape character with mature trees and high-quality frontage to the Selwyn District Council building, including native planting.
- The functional movement patterns currently facilitated by the site are driven by the importance of the SH1 road corridor and adjacent SIMT rail corridor. These elements are formative of the development of the township and are reinforced by edge and interface treatments. The TranzAlpine passenger train journey passes through Rolleston, connecting to the Midland Line. The road and rail corridor create a visually open, but physically demarcated transition between industrial and residential land use. This also creates challenges for the interconnectivity within the township.
- Historic and associative values - The upgrade of roading infrastructure and subsequent residential growth in Rolleston has resulted in a stronger connection between Rolleston, Christchurch City and the Lyttelton Port. This connection is both physical and perceived, with the connectivity not only related to road infrastructure and business access, but the reduction of time spent travelling associated with making the township a more accessible and therefore, favourable place to live in and commute from.

4 Proposal

The Project is proposed to respond to existing transport deficiencies while providing for forecast future growth in the area. It includes a number of safety improvements to intersections along SH1 and directly adjacent to Rolleston, to manage the forecast future growth in traffic volumes and reduce serious injuries and deaths.

A full project description is provided in the Assessment of Environmental Effects (AEE) Report.

Figure 2 below illustrates the extent of both existing and proposed designations together with the preliminary design of the overpass and connecting roads. Appendix 4 provides an enlarged version of the Figure 2 designation plan.

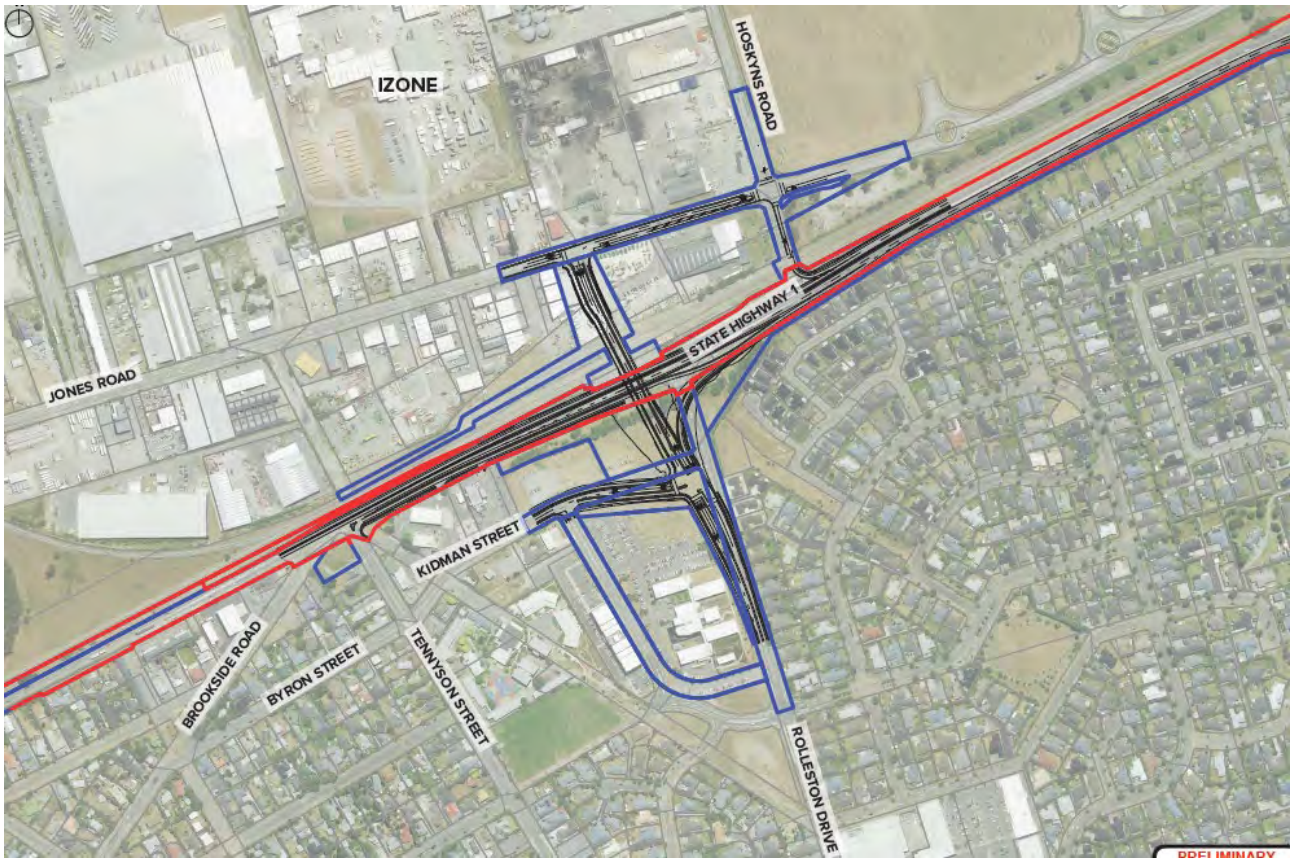


Figure 1: The Project designation boundaries, with existing designation shown in red and proposed designation shown in blue

The Project components most relevant to this assessment include:

- **Overpass** - A new multi-modal overpass, connecting the residential and industrial areas of Rolleston. The overpass will provide improved facilities for walking and cycling. The proposed roading infrastructure will be elevated above existing flat terrain with the earth embankments supporting the overpass. The overpass road surface traverses SH1, approximately 8m above (road surface to road surface), creating a large physical structure connecting from south to north.
- Upgrade of three (3) intersections[1] together with removal of existing traffic signals on SH1.

[1] Being: Jones Rd / Hoskyns Rd, Hoskyns Rd / SH1 and Rolleston Drive Nth / Kidman St intersections

- Safer access southbound off-ramp and service lane (i.e. barrier separated from the main carriageway) to the town centre and service businesses alongside SH1 including extending the second southbound lane from Christchurch Southern Motorway.
- Rolleston Drive is proposed to be widened, with earthworks abutting the frontages of residential properties requiring existing trees to be removed and property accesses reformed.
- Overhead gantries and associated signage including at the top of the Overpass (reaching approx. 16m above existing road surface)
- Associated lighting on the overpass and approach roads
- Retaining structures are anticipated on the northern side of the existing earth bund to enable four-laning and widening of the SH1 corridor.
- Retention of the existing earth bunds along the residential boundary adjacent to SH1 southbound lane, together with the existing board and batten fencing atop.
- Two grassed stormwater basins on the south-east corner of the Project, adjacent to the residential zone, with existing mature trees and vegetation in this location to be removed.
- Provision for future park and ride development in TCZ zoned land between SH1 and Kidman Street with a grassed verge to separate the overpass abutment batter from the development.
- Reinstatement of grassed verges where road infrastructure is widened.
- Planted 2:1 or 3:1 batter to overpass embankments.
- Grassed basin with planted batters at the western corner of Jones Road, located between the existing industrial buildings and the overpass.
- Landscaped interface on the western side of Hoskyns Road, which is to be single-laned for a left turn only onto SH1 (northbound). The main access for heavy traffic into the industrial area will be via Weedons Road / Jones Road

5 Statutory Planning Context

The relevant statutory framework is outlined in the AEE. Those provisions that are relevant to this assessment include:

5.1 Selwyn District Plan

The Project is located across four zones within the POSDP (see Appendix 3). The General Rural Zone underlies the existing designation area as illustrated in Figure 2 below, and due to this designation, does not reflect rural characteristics. The proposed designation largely extends into the Town Centre Zone and the General Industrial Zone:

- Town Centre Zone (TCZ)
- Medium Density Residential Zone (MRZ)
- General Rural Zone (GRUZ)
- General Industrial Zone (GIZ)

In addition to the above, the Project area is located across two existing designations in the POSDP:

- NZTA-1 – New Zealand Transport Agency
- KRH-1 - Kiwirail Holdings Limited

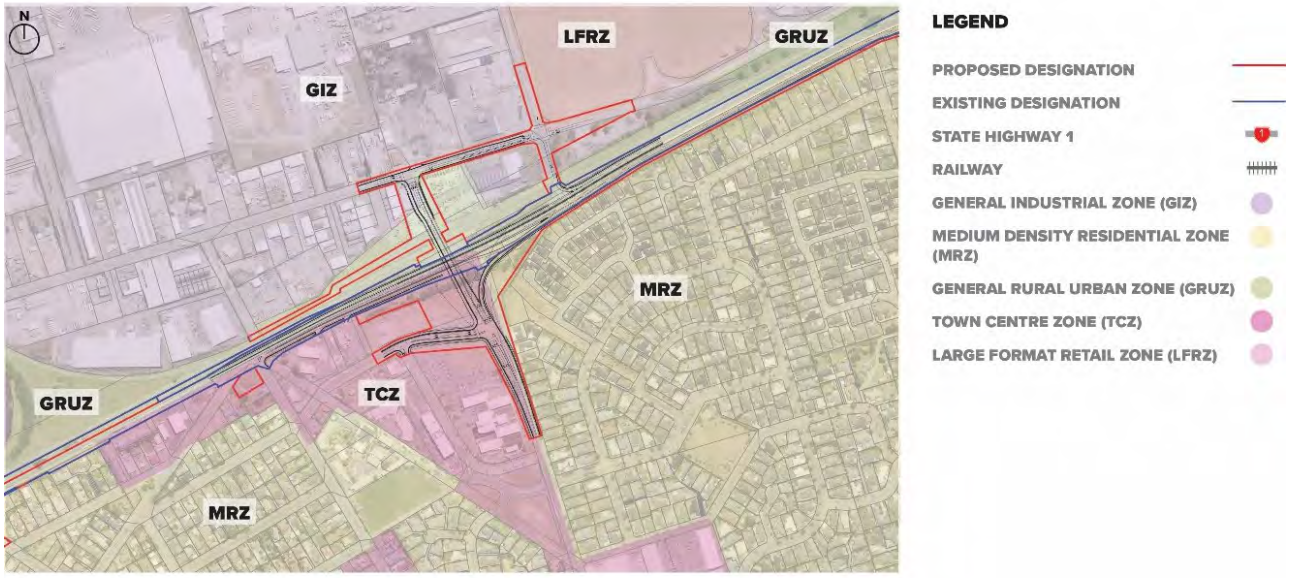


Figure 2: POSDP zoning overlaid with designation boundaries

It is noted that Project also sits with the Rolleston Key Activity Centre (KAC) Precinct 2 – Rolleston Fringe, as part of the Town Centre Zone. The TCZ sits within the Commercial and Mixed-Use Zone in the POSDP.

5.1.1 Objectives and Policies

The purpose of reviewing the relevant POSDP zone objectives and policies is to help frame the assessment. The following provisions are relevant to this landscape assessment and clarify the type of outcomes expected for each zone, which the Project may be compared with to define the potential degree of effect:

Table 1: Excerpts from POSDP – Relevant Objectives and Policies

Reference	Description

Town Centre Zone	
TCZ-P1	*Enable a range of commercial activities, residential activities, visitor accommodation, recreational, cultural, community activities, and public amenities to establish and operate within the Town Centre Zone.*
TCZ-P2	*Promote the development of vibrant, integrated and coordinated Town Centre Zones in Rolleston and Lincoln by managing built form within precincts*
TCZ-P3	*Ensure buildings are set back an appropriate distance from identified boundaries to maintain privacy and outlook for residents and contribute to the planned urban form.*
General Rural Zone	
GRUZ-O1	*Subdivision, use, and development in rural areas that:* *1. supports, maintains, or enhances the function and form, character, and amenity value of rural areas;* *3. allows primary production, those activities that directly support primary production and have a functional or operational need to locate with the General Rural Zone and important infrastructure, to operate without being compromised by incompatible sensitive activities and reverse sensitivity effects;* *4. retains a contrast in character to urban areas; and*
GRUZ-P1	*Maintain or enhance rural character and amenity values of rural areas by:* *4. retaining a clear delineation and contrast between the district's rural areas and urban areas; and*
General Industrial Zone	
GIZ-02	*The amenity values of residential and rural areas adjoining the General Industrial Zone are maintained, while recognising the functional and operational requirements of industrial activities.*
GIZ-P3	*Avoid activities that are incompatible with the character and function of the industrial area*
Commercial and Mixed Use Zone	
CMUZ-O4	*The 'Commercial and Mixed Use Zones' reflect good urban design principles by providing pleasant places to be with attractive and functional buildings and public spaces.*
CMUZ-O6	*That the scale and density of development in 'Commercial and Mixed Use Zones' is proportionate to the function of the applicable zone and reinforces that centres are focal points for the community.*
CMUZ-P1 ***Character and Function of Commercial Zones***	*Avoid activities locating within any 'Commercial and Mixed Use Zone' that have effects that are incompatible with the character and function of that zone; and where located in a Local Centre, Large Format Retail or Neighbourhood Centre Zone are of a scale or nature that would adversely affect the viability and function of the Town Centre Zone, including individual and cumulative adverse retail distributional and urban form effects.*
CMUZ-P4 ***Urban Design***	*Manage development within the Town Centre, Local Centre, and Neighbourhood Centre Zones to ensure that it:* *1. Maintains the environmental qualities, aesthetics, and amenity values which make the zone distinctive and attractive;* *2. Engages and is well integrated with streets and public areas, contributing to the variety and vitality of the street scene; and* *3. Provides a high-quality pedestrian experience that support the economic and social vibrancy of the township.*
CMUZ-P5 ***Urban Design***	*Maintain the amenity and aesthetic values of the 'Commercial and Mixed Use Zones' and surrounding residential areas, by:* *1. Managing the visual effects from the outdoor storage of goods; and* *2. Ensuring that buildings and structures do not unduly shade or dominate adjoining residential zoned properties.*

6 Landscape and Visual Effects

As discussed in Section 2.2 and described in Appendix 1, the following assessment categorises the nature and degree of effects into landscape and visual, whereby:

1. Landscape effects are those that the project has on the **physical**, **perceptual** and **associative** aspects that comprise landscape character. Effects on amenity values are part of this evaluation; and

2. Visual effects are a subset of landscape (perceptual) effects that require the consideration of project visibility and assessing potential effects on specific 'viewing audiences'.

6.1 Landscape Effects

6.1.1 Physical Effects

Potential effects on the physical landscape values are the result of:

- bulk and scale of earthworks to support the overpass
- loss of mature trees and vegetation, and
- changes to surface water run-off resulting from the Project and requiring stormwater devices and associated earthworks, to be constructed.

The proposed earthworks will create a landform which is typical in the context of the SH1 corridor. The scale of the Project is consistent with other roading upgrades forming a continuation of interventions across the local State Highway Network. The physically elevated components of the Project are largely set back from the proposed designation boundaries adjacent to the MRZ and are likely to avoid physical shading effects.

There will be adverse effects on the physical values due to loss of mature street trees along in front of residential properties on Rolleston Drive as well as loss of native trees and vegetation in front of the Selwyn District Council buildings. Existing mature trees located around the Rolleston Drive intersection and 'gateway' area will be removed to enable construction of roading and stormwater management devices. The existing vegetation and man-made bund along the northern edge of the MRZ adjacent to SH1 is to be retained, but with some excavation at the toe of the slope to construct a retaining wall. This may result in further vegetation removal.

The proposed designation allows for improvements to local roads in the GIZ including Jones and Hoskyns Road but given these changes are within the existing road corridor, no effect on physical landscape values will occur.

Stormwater treatment is required due to the runoff created by the project. While there are likely to be short term adverse effects from construction activities such as earthworks, long term effects will be nil, as stormwater devices perform their function in effectively conveying and managing surface runoff in a manner typical for a roading environment.

Overall, given the extent of existing roading infrastructure, compatible land zoning (TCZ and GIZ) and proposed earthworks and vegetation removal, the overpass and connecting road changes are likely to have **low-moderate** adverse effect on physical landscape values.

6.1.2 Perceptual Effects

Perceptual effects are related to how people perceive or experiences places. The POSDP highlights that the location of the Project in the Rolleston KAC necessitates a well-integrated design response which maintains and improves connectivity, supports good urban form and considers adjacent residential areas. A high level

of finish is expected for highways in urban areas due to the close interaction between people and the roading network [2]. Wayfinding and visual amenity are key considerations in this context - the location of the proposed overpass at the 'gateway' to Rolleston aims to improve function of this major intersection and provide a better overall experience for road users. Once constructed, road users will benefit from safety improvements, decongestion of traffic and a higher level of on-ground legibility provided by signage elements and layout of the routes which contributes to easy navigation of the corridor. Additionally, the overpass overcomes the challenge to connectivity arising from the physical demarcation and location of the SIMT.

Changes to Rolleston Drive are likely to result in adverse effects on the perceptual values of this streetscape. In combination with the extended areas of roading infrastructure, loss of vegetation along the street in front of the Selwyn District Council building and loss of mature trees from the residential interface will reduce the visual amenity of the streetscape, with less visual softening to balance the existing and proposed built form.

The TCZ land bordered by Kidman Street and Rolleston Drive is currently undeveloped and the Project will introduce earthworks and an new, visible element within the landscape. While this change will be obvious in the current setting, the proposed infrastructure will be in keeping with the intended future scale and density of built form of the TCZ. It will support the function of activities expected for the TCZ through improved access and stormwater infrastructure. Views for these users are addressed further in Section 6.2.4.

The Project will enhance the existing pedestrian and cyclist connectivity and experience to businesses in the industrial zones. The provision of a 4m wide separated shared path will increase the sense of safety when moving through this area and there is likely to be new views from the top of the overpass.

For the residential area to the southeast of the Project, effects on perceptual values may arise from the elevated nature of the overpass and a sense of overlooking, contributing to a perceived loss of privacy and increased presence of traffic and lighting. This is discussed in more detail in Section 6.2 Visual Effects Analysis. For some dwellings, the proposed interventions (such as extension of the second southbound lane) will mean that the road corridor and resulting vehicle movements will be closer to their properties and likely more noticeable, for example at 5A Seymour Drive (refer to Appendix 7 General Arrangement Sheet 3 of 7) where the proposed retaining wall comes within 2m of the property boundary (demarcated by the fence atop the earth bund). The degree of perceptual effect relates to the extent of the vegetation able to be retained - noting the earth bund, planting and vegetation is proposed to be retained. Long term adverse effects on the perceptual values of these dwellings may arise from construction of the proposed retaining wall in locations where there is limited space for protecting existing planting or implementing replacement planting.

Overall, the Project will have a **low-moderate** adverse effect on perceptual landscape values.

6.1.3 Associative Effects

The co-location of infrastructure along existing lineal road corridors will have **no effect** on associative values. In creating a new connection across SH1 and the SIMT, the Project is consistent with the pattern of development in the area. The Project will enhance the functional movement patterns of the local roading network and support associative values by providing a high-quality linkage between Rolleston and Christchurch, making the township a more accessible and therefore, favourable place to live in and commute from.

At the time of preparing this assessment there are no known cultural values that may materially influence the assessment of associative effects– noting that engagement with mana whenua is ongoing, as outlined in Section 2.2.2.

[2] NZTA Landscape Guidelines, 2018, page 45

6.2 Visual Effects Analysis

Despite the elevated nature of the overpass the associated visual catchment is relatively small. This is due to the presence of built form in the GIZ and TCZ zone and existing earth bund and vegetation which borders the MRZ area. However, there are several key audiences within the localised visual catchment, that may experience visual effects, including road users, nearby residents, and workers or users of nearby businesses.

Appendix 5 contains a series of site photographs that are representative for the different viewing audiences together with a photograph location map. These photographs are used as a reference for the following analysis alongside two visual simulations which have been prepared to represent views from Residential areas which are expected to present the greatest potential visual effects.

6.2.1 Adjoining residential property owners/ occupiers

a) Properties along Wyndham Mews, Dalwood Crescent and Maitland Crescent (Refer to Photosimulation A and Site Photographs 1 to 6)

Photosimulation A shows an open reserve area with views toward the Project site. The existing noise bund with fencing and vegetation largely screens the proposed overpass structure. Subsequently, despite proximity to the existing SH1 corridor, properties in this area are likely to retain the same level of residential amenity which they currently experience. Some lighting and signage structures may be visible above the bund vegetation, but these are likely to be consistent with current views, given that the existing Rolleston Drive light poles can be seen from this area.

The key component of this residential setting generally is the existing landscaped earth bund and closed board fence at the interface with SH1. This landscape component provides an effective buffer to the road corridor, screening it from view and reducing the experience of road noise and lights. Some retaining is proposed to be constructed at the toe of this slope and may result in removal of vegetation. Provided that this does not hinder the effectiveness of the noise mitigation and screening functions, the outlook from these properties is unlikely to change to any noticeable degree and any resulting visual effects will be **negligible**.

b) Properties along Rolleston Drive (refer to Photosimulation B and Site Photographs 7 and 8)

The location of Photosimulation B was selected to show the likely greatest extent of change for residential properties along Rolleston Drive. The proposed changes encompass a large proportion of the view from this location. The components of the view are similar, but with a raised, wider verge area with the road alignment curving away from the existing alignment. Vehicle traffic passing these houses will have slightly elevated views overlooking the dwellings.

Given the road is part of the everyday landscape for this community, commuters, cyclists and pedestrians along Rolleston Drive, the properties adjacent are likely to already have a degree of visual tolerance for passing traffic and component which are part of roadscapes such as lightpoles and signage. However, 12 existing mature, exotic street trees in the road reserve in front of these properties may be removed, and the scale of the upgraded road and overpass is larger (both in area and height) than the existing layout of Rolleston Drive and at close proximity for some residents. Driveways are likely to require realignment and/or reinstatement for 13A, 13B, 15, 17, 19A and 19B Rolleston Drive which will generate some short-term adverse effects related to the visibility of construction activities.

Proposed overhead signage gantries on approach to the overpass together with new light poles will be visible from dwellings along Rolleston Drive. While the outlook from these properties will change, the components of views are likely to be consistent with the existing road environment, zoning and extent of built form expected.

Overall, the Project is likely to result in **moderate adverse visual effects** for residential dwellings along Rolleston Drive – primarily influenced by the proximity to the Project and related infrastructure which is elevated in nature and has limited opportunity for landscape buffers or integration along property frontages. Recommendations are made in Section 7 to help integrate the Project in the setting and address this residential interface.

6.2.2 Road Users

Three types of views are relevant in this regard:

a) Views from SH1 corridor

These views are typically experienced by vehicle (car and bus) as they travel along SH1. Views are generally constrained/ funneled within and along the carriageway itself. Northbound travelers are likely to experience a very similar journey overall, although with a more streamlined passage through the township due to the removal of existing traffic lights. Southbound travellers will benefit from a well resolved roading network with a high level of legibility on the ground with regard to access into the town centre, businesses and amenities. The overpass and its embankments will be a solid visual structure. This is considered to be a positive effect, with the creation of a strong waymarker at the centre of the town. Recommendations regarding landscape and cultural integration measures on the faces of the overpass and embankments to enhance the structure are outlined in Section 7. The Project is likely to result in an increased level of visual amenity for the corridor.

b) Views from local roads (e.g. Rolleston Drive and Kidman Street) (Refer to Photographs 9 to 11)

Views of the Project from local roads may be experienced by people in vehicles, walking or cycling. The quality of views is likely to improve as a result of the proposed design integration measures. The Project will provide a visual transition between the TCZ and MRZ, with avenue tree planting along Rolleston Drive framing and reinforcing the importance of the road while providing some visual softening.

The components of views are likely to be consistent with the TCZ and GIZ. The extent and scale of built form is also consistent with that expected in the SH1 corridor and landscaping measures will help to integrate the Project in the urban setting of Rolleston.

The overpass is likely to provide road users with unimpeded views across the GIZ, Canterbury Plains towards the Southern Alps, and Port Hills to the south. This is a positive effect, whereby the character of the broader landscape will be newly accessible at the centre of the township as a result of the Project.

Overall, the Project is likely to enhance the overall road user experience from local roads.

6.2.3 Rail Users

The TranzAlpine passenger train journey passes through Rolleston, connecting to the Midland line and heading toward the Southern Alps. Currently, this journey through Rolleston does little to add to the experience of rail users, who are likely to be tourists and holiday makers, who will perceive the interventions within the broader context of the TranzAlpine journey from Christchurch to Greymouth. There is little in the way of amenity planting, and this section of the rail journey is likely to be similar to that experienced from within a vehicle.

The proposed overpass will traverse the railway line and provides the opportunity to create a strong identity and more memorable waymarker for this part of the TranzAlpine journey. Overall, visual effects on rail users are likely to be **negligible**.

6.2.4 Businesses in the Town Centre Zone

a) Businesses along SH1 road frontage (Refer to Photographs 12 and 13)

Viewing audiences at these locations are likely to be road users, travelling SH1 and experiencing the Project within the context of a broader journey and sequence of roading infrastructure along SH1. The project components are likely to be visible from these areas, with some changes at close proximity. However, the changes are likely to result in a roading network which is fits with the scale and context of the TCZ and existing road environments. As such visual effects on these businesses will be **negligible.**

b) Businesses in the TCZ generally

Similar to above, the TCZ is considered to be a compatible activity for integration with the proposed changes. Businesses will interface with a well resolved, high quality, built form which fits with the scale and context of the TCZ and existing road environments. Users of the TCZ area and related businesses and bus stops are likely to be local people, more sensitive to change in this environment. The time spent by people in this area is likely to be short, and heavily influenced by the accessibility and function of the space and its linkages. Amenity related outcomes are able to be further addressed by recommendations in section 7. Overall, the Project is likely to result in **negligible** visual effect for this audience.

6.2.5 Businesses in the Industrial Zone

Refer to Appendix 5, Site photographs 14 and 15

Viewing audiences in these areas are not considered to be relevant to the assessment of visual effects. This is due to the commercial and industrial nature of the business-related area, where people are at work and likely to be task focused. Additionally, proposed improvements to Hoskyns and Jones Road within the proposed designation are located within existing road corridors.

6.3 Temporary Effects

Potential adverse effects on landscape values may result from construction activities including (but not limited to):

- **Site enabling works** - site establishment, demolition and vegetation clearance.
- **Project formation works** - bulk earthworks and formation of new road surface and batter slopes, stormwater wetlands, private driveway regrades and overpass construction.
- **Finishing works** - lighting, signage, footpath/cycleway installation and line markings, streetscape elements and landscaping including street trees, mitigation planting and riparian/wetland planting (to be determined at detailed design stage of project).

The visual quality of the landscape is likely to be adversely affected during the construction phases of the project as a result of visual clutter, noise (machinery and activities) and disruption created by construction activities, particularly during site enabling and project formation works. It is considered that the degree of effect on perceptual values is likely to be generally **low**, given the limited permanent viewing audiences (residents directly adjacent) and intermittent nature of views/experiences. Road and rail users have a brief interaction with environment while they are passing through and are likely to experience a variety of views and degrees of disruption such as using alternative transport routes. The Project has linkages with local roads and short term localised effects will occur while those physical connections to the local network are being undertaken. Overall for road users, the construction activities have an obvious link to infrastructure upgrades and a long term improvement in the road user experience, so while there may be some short term

adverse effect, this is tempered by the short duration and gradual shift to positive effects for road users over time.

Residents along Rolleston Drive, adjacent to potential construction activities (e.g. laydown areas) may experience a greater degree of effect on perceptual values due to the proximity to the works, disruption to access and visual clutter. These effects may be **moderate** or **moderate-high** depending on the proximity to the works and the duration of disruption to daily activities.

Residential areas more broadly may have views of taller construction machinery such as cranes and the activities being undertaken. The distance of these views, intervening built form, vegetation and existing bunding contribute to limit the extent of construction activities perceived by the broader residential areas and potential adverse effects are likely to be **very low** for properties along Wyndham Mews, Dalwood Crescent and Maitland Crescent. The degree of effect is likely to reduce at greater distances from the site, and there are no landforms providing elevated views.

Recommendations to avoid, remedy or mitigate temporary effects arising from construction activities are included in Section 7.1.3.

6.4 Effects Summary

Effect	Assessment	Degree
Landscape Effects		
Physical	Overpass structure Vegetation loss Earthworks	**Low-moderate**
Perceptual		**Low-moderate**
Associative		**No effect**
Visual Effects		
Residential Areas	Wyndham Mews, Dalwood Crescent and Maitland Crescent,	**Very low**
	Rolleston Drive	**Moderate**
Road Users	SH1	**Positive**
	Local Roads	**Positive**
Rail Users		**Negligible**
Businesses	Town Centre Zone	**Negligible**
	General Industrial Zone	Not relevant for visual effects
Temporary Effects		
Generally	Adverse effect on perceptual (experiential and visual) values due to visual clutter, noise and disruption	**Low**
Rolleston Drive properties (adjacent to the project)	Visual clutter and reduction of residential amenity as a result of construction activities, vegetation clearance and earthworks	**Moderate to High-moderate**
	Noise and disruption to access and adverse effect on perceptual (experiential) values	

7 Recommendations

To provide for successful integration of the Project in the landscape context, the following measures are recommended to reduce or mitigate the degree of potential adverse effects.

7.1.1 Urban and Landscape Design Framework (ULDF)

A ULDF focuses on achieving positive design outcomes, plays a key role integration the Project into its context. It is recommended a ULDF be prepared during the Project Concept Design Phase in accordance with "Bridging the gap - NZTA Urban Design Guidelines"[3] and as a minimum, include the following considerations:

1. **Character and sense of place**

    a. Create, maintain and enhance vistas to the Port Hills | Ngā Kohatu Whakarakaraka o Tamatea Pōkai Whenua
    b. Enable public art to be integrated with the form and finish of structures, or inserted as standalone work in public open areas to celebrate the historic, cultural and environmental narratives of the area
    c. Identify opportunities to include interpretive wayfinding signage to reflect the historic, cultural and environmental narratives of the area, and locate it at key points along pedestrian and cycle networks.
    d. Identify and enhance nodes (especially multi-modal) within the corridor, such as gateways, through a unified landscape design and structures.

2. **Landscape and biodiversity**

    a. Identify design opportunities to minimise the impact of the Project on the local physical environment (runoff, groundwater, surface water, erosion).
    b. Identify opportunities to enhance stormwater management devices with planting that provides ecological habitat, contributes to water purity, softens the man-made contouring of earthworks and integrate with any adjacent landscape / interchange planting.
    c. Select plant species for open spaces to contribute to biodiversity and enhance environmental health.
    d. Address the adjacent landscape and planting character when revegetating
    e. Provide amenity planting appropriate for the residential interface.

7.1.2 Landscape Management Plan

To further implement considerations listed above a Landscape Management Plan (LMP) should be prepared in accordance with the NZTA Landscape Guidelines[4] as part of the Detailed Design Phase by a suitably qualified Landscape Architect. The LMP shall provide a design response for residual areas within the designation boundary and connecting roads along with other design opportunities within the carriageway in accordance with the ULDF. General design outcomes to be addressed may include:

a. Mahi toi - opportunity for cultural narrative expression on face of overpass
b. Opportunity for new Rolleston gateway / entrance signage

[3] bridging-the-gap.pdf (nzta.govt.nz)

[4] NZ Transport Agency Landscape Guidelines - Final, March 2018 (nzta.govt.nz)

c. Low planting on any new embankments
d. Grass verge to separate abutment batter and future park and ride development. Inclusion of reserve tree planting. Interface with SH with proposed grassed swale, to be further developed as part of RC application.
e. Reinstatement of grassed verges and trees where road infrastructure is widened
f. Planted overpass embankments (maximum slope of 2H:1V)

The following specific considerations should also be addressed:

a. Reinstated or realigned driveway accesses for 13 and 13b Rolleston Drive
b. Address the northern boundary treatment of properties located on Seymour Drive adjacent to the proposed retaining along the extended SH1 southbound lane
c. Consideration of the visual amenity and experience for rail passengers on the TranzAlpine
d. Planting around the Stormwater retention ponds and the residual land between Rolleston Drive and residential dwellings
e. Pathway connection from Highgate greenway to Rolleston Drive
f. Avenue tree planting to Rolleston Drive and Kidman Street
g. Reinstatement of grassed or planted interface along Rolleston Drive and Kidman Street
h. Grassed basin with planted batters at the western corner of Jones Road where it meets with the proposed Rolleston Drive overpass
i. Landscaped interface on the western side of Hoskyns Road, which is to be single-laned for a left turn only onto SH1.

3. **Proposed planting** – detailed planting plans and specification shall be prepared by a suitably qualified Landscape Architect in accordance with the outcomes set out in the ULDF and parameters in the LMP. A landscape establishment, maintenance (including replacement) and monitoring plan is prepared by a suitably qualified Landscape Architect, to enable long term success of proposed planting. The plan shall establish a minimum five (5) year maintenance and monitoring requirement.

7.1.3 Recommended Measures to Avoid, Remedy, or Mitigate Construction Effects

To address the modification to the landscape arising from the Project, prior to construction, the following measures should be considered in order to reduce the degree of potential adverse construction effects to '**low-moderate'**:

1. **Site compounds and construction yards:** Locate yards in discrete locations where possible, away from residential areas and retail businesses where possible. Reinstate construction and site compound areas by removing any left-over fill and shaping ground to integrate with surrounding landform. Reinstate land with consideration for the future use of the site or reinstate with grass at the completion of works.
2. **Screening/noise mitigation:** to minimise adverse perceptual (including visual) effects, establish controls for reducing visual clutter and managing construction noise, particularly where work is adjacent to residential areas. Provide fencing screening around works, yards and compounds where they are adjacent to residential dwellings to contain or hide activities where possible, to reduce visual clutter.
3. **Traffic Management Plan:** identify opportunities to maintain and manage access routes for residents and businesses directly adjacent to the project works to reduce effects on perceptual (experiential) values.

8 Conclusion

On balance, provided the recommendations in Section 7 are volunteered as conditions to the designation and subsequently adhered to, and with regard to the provisions listed in Section 5, it is considered that the Project fits with the identified landscape context and is likely to be compatible with the urban setting.

This conclusion has been reached taking into account the following factors:

- **Physical Effects** – the scale of the Project is also consistent with other roading upgrades forming a continuation of interventions across the State Highway Network which appear localised within the context of the plains. Potential effects are driven by several factors, including the earthworks required for construction of the Project and the resulting loss of vegetation, particularly in regard to the residential interface. Overall, given the extent of existing roading infrastructure, compatible land zoning (TCZ and GIZ), the overpass and connecting roads are likely to have a **moderate** adverse effect on physical landscape values. With implementation of proposed recommendations, this may reduce to **low**.
- **Perceptual effects** – The POSDP highlights that the location of the Project in the Rolleston KAC necessitates a well-integrated design response which maintains and improves connectivity, supports good urban form and considers adjacent residential areas. For road users, the experience of the Project is likely to be positive, with improved and safe connectivity. For the residential area to the south east of the Project, effects may arise from the extension of the southbound lane, elevated nature of the overpass and a sense of overlooking, contributing to a perceived loss of privacy and increased presence of traffic and lighting. Overall, adverse effects on perceptual values are considered to be **low-moderate**, underpinned by the retention of the existing earth bund with associated planting and fencing. With implementation of proposed recommendations, this may reduce to **low**.
- **Associative effects** – the co-location of infrastructure along existing lineal road corridors will have **no effect** on associative values. The Project is consistent with the historical associations of transport infrastructure in the development of Rolleston township. With implementation of proposed recommendations, this may result in **positive** associative effects strengthening the movement functions and contributes to a greater sense of accessibility and connectivity between Rolleston and Christchurch.
- **Visual Effects** – For residential areas, visual effects are primarily influenced by the existing earth bund with associated planting and fencing which screens the overpass structure and the majority of associated components. Proposed overhead signage gantries on approach to the overpass together with new light poles are likely to be visible from dwellings along Rolleston Drive. Visual effects are likely to result from the elevated nature of the road and associated signage and lighting. Overall, visual effects for these residents are likely to be **moderate**. With implementation of proposed recommendations, this may reduce to **low-moderate**. For residents along the northern end of Rolleston Drive, avenue tree planting, footpath and grass verge reinstatement (as recommended through the ULDF and LMP) will maintain the character of this residential interface.
- **Temporary Effects –** potential adverse effects arising from construction activities are likely to relate to project enabling and formation works (refer section 6.3) and with the implementation of recommendations, there may be a **low-moderate** degree of effect on perceptual values due to the proximity to the works, disruption to access and visual clutter experienced by residents living adjacent to the Project.

  For all road users the Project improves the overall quality of the viewing experience, resulting in **positive effects**. In particular, the Project will serve to amplify the openness and enable views to the wider landscape while the proposed planting will soften its edges.

Appendix 8: Assessment Methodology

Industry Guidance

The New Zealand Institute of Landscape Architects (NZILA), Te Tangi a te Manu Aotearoa New Zealand Landscape Assessment Guidelines (July 2022) provides the technical backdrop to this landscape assessment. The guidelines are recognised within the landscape architectural profession as providing good practice guidance in the assessment of landscape effects under the Resource Management Act 1991 (RMA).

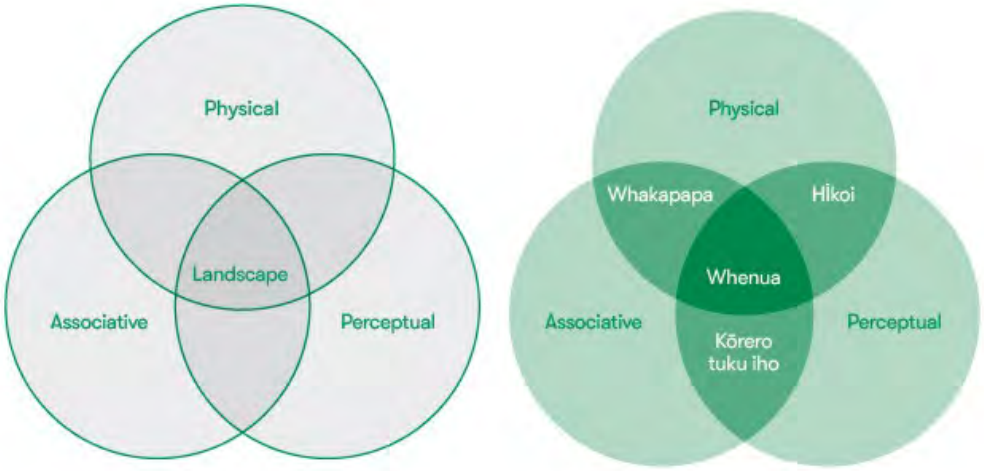
"The Guidelines adopt a principles-based approach to methodology that allows for assessment methods to be tailored to each situation. They emphasise transparency and reason, rather than adherence to prescriptive methods."[5]

The principles-based approach presented in the Guidelines, includes several key tenets to landscape assessment within New Zealand. Firstly, the Guidelines emphasises the need for the **scope and method of assessment be tailored** to:

- The nature of the proposal and associated degree of change in the landscape,
- The relevant landscape setting, and
- Associated policy framework.

Secondly, the guideline presents **three overlapping dimensions** shown below in the conceptualisation of the landscape[6], consisting of:

- **Physical:** the physical environment—its collective natural and built elements, patterns and processes
- **Associative:** the meanings and values we associate with places; and
- **Perceptual:** how we perceive and experience places, including views and visual qualities.



[5] Para 1.04, Page 22. The New Zealand Institute of Landscape Architects (NZILA), Te Tangi a te Manu Aotearoa New Zealand Landscape Assessment Guidelines. July, 2022.

[6] Para 4.10 and Figure 4, Page 72. Ibid.

'Landscape' is a term that describes an integrated whole. It is the combination of all attributes and phenomena that manifest in a particular place. In assessment terminology, 'landscape' encompasses or includes the likes of natural character, visual effects and amenity.

Thirdly, and central to the overall process of landscape assessment (in general and specific to this assessment) is the notion that *"to assess a landscape is to assess its **character and values**".*[7] In summary:

"*While landscape assessment methods vary, they are all based on landscape character and values. **Character** is an expression of the landscape's collective attributes. **Values** are the reasons a landscape is valued. Values, though, are embodied in attributes. **Effects** are consequences for a landscape's values resulting from changes to attributes. The landscape's values are managed through managing such attributes."*[8]

Assessment Process

Analysis of existing landscape

Landscape is an expression of those natural and cultural features, patterns and processes that exist in an area. The analysis of the landscape includes a description of the existing environment, setting out the physical, perceptual and associative components that exist across the site and relevant wider landscape context (e.g. local and/or broader scale landscape). These components are synthesised into a description of the landscape values for the site and broader landscape context. The process of undertaking a site visit assists with informing or verifying these landscape values.

Assessing Effects

Effects fall into two categories: landscape and visual. Two 'timeframes' are also considered: temporary (during construction) and permanent (operational effects).

Landscape effects:

Landscape Effects are essentially those that the Project has on the physical, perceptual and associative aspects that comprise landscape character. These effects are considered separately, with a summary statement regarding effects on landscape character and values. Effects on amenity values are inherent within this context.

Visual Effects:

Visual effects are a subset of perceptual effects that require the consideration of project visibility and assessing the effects for specific viewing audiences. Factors that (generally) contribute to visual effects include:

- The nature and sensitivity of the viewing location (e.g. static or moving; orientation of view; public or private location)
- The nature and sensitivity of the viewing audience (e.g. homeowners, local road users, tourists etc)
- Overall bulk and scale of the proposal.
- Distance of the proposal from key viewpoints
- The complexity of the view and extent of intervening elements (e.g. topography, structure and vegetation)
- The nature of the existing view (e.g. heavily modified vs 'natural'; fixed or moving structures)
- Transient values such as seasonal variation and weather patterns.

[7] Para 5.01, Page 105. Ibid.

[8] Para 5.02, Page 105. Ibid.

Temporary Effects (Construction Effects):

Describes the anticipated impacts on the bio-physical elements and features of the landscape resource resulting from the construction of the Project. It also includes visual amenity effects for both public and private viewing audiences from construction works.
The construction activities required to implement the Project are categorised under the following broad headings:

- **Site enabling works** - site establishment, demolition and vegetation clearance.
- **Project formation works** - bulk earthworks and formation of new road surface and batter slopes, culvert upgrades, stormwater wetlands, private driveway regrades and bridge construction.
- **Finishing works** - lighting, signage, footpath/cycleway details and line markings, streetscape elements and landscaping (including street trees, mitigation planting and riparian/wetland planting (to be determined by detailed design through future regional resource consents).

Permanent Effects (Operational Effects):

Describes the effects on the landscape of completed works (including integrated landscape mitigation measures), the significance of physical landscape change and ultimately the resulting effects of the Projects on landscape character and visual amenity for both public and private viewing audiences. This section summarises the potential effects and mitigation measures proposed.

Degree of Effect

The effects ratings below are based on a seven-point assessment scale which is outlined in Te Tangi a te Manu[9]. The scale ranges from very low to very high for assessing the degree of landscape character and visual effects that have been identified. The scale is used to determine negative effects of the proposal, whereas positive effects of the proposal are not scaled, they are simply described as positive effects. Where proposed changes are deemed to result in less than very low or no effect on the landscape values, this may be described as 'negligible'.

To assist project planners and decision makers in understanding the degree of landscape and visual effects of the proposal in relation to the requirements under the RMA, those effects that are assessed as 'low moderate' are considered 'minor' in planning evaluation terms. Effects that are at the 'very low' end of the scale are less than minor, refer to Figure 2 below.

Figure 3: Effects rating scale[10]

[9] Te Tangi a te Manu, Aotearoa New Zealand Landscape Assessment Guidelines (NZILA, 2022)

[10] Ibid, 6.39

ROLLESTON ACCESS IMPROVEMENTS - OVERPASS - LANDSCAPE ASSESSMENT APPENDICES

28.11.2024 Project Number: 3338703 Revision C

Note: This document should be viewed with '*two-page view with cover page*' display setting in Adobe Acrobat PDF viewer, or printed double sided at A3 size.

Revision History

Project Number: 3338703

Revision	Prepared By	Description	Date
C	Sophie Strachan	Final	28/11/2024
B	Ryan Aranyi	Draft For Client Review	11/10/2024
A	Ryan Aranyi	Draft For Internal Review	12/09/2024

Document Acceptance

Action	Name	Signed	Date
Prepared by	Sophie Strachan and Ryan Aranyi		28/11/2024
Reviewed by	Wade Robertson		28/11/2024
Approved by	David Aldridge		28/11/2024

on behalf of Beca Ltd.

This document should be printed double sided at A3.

Images in this document: Unless otherwise noted, drawings, illustrations, photos and other images have been provided directly by Beca. In all other instances, best efforts have been made to reference the image to its original source.

CONTENTS

APPENDIX 1

SITE CONTEXT

LEGEND

ROLLESTON PACKAGE 2 WORKS

STATE HIGHWAY 1

SOUTH ISLAND MAIN TRUNK RAILWAY LINE (SIMT)

APPENDIX 2

HISTORICAL AERIAL IMAGERY

1942

1982

2010

2016

2020

NOTE:

Historical Aerial Imagery sourced from Retrolens.

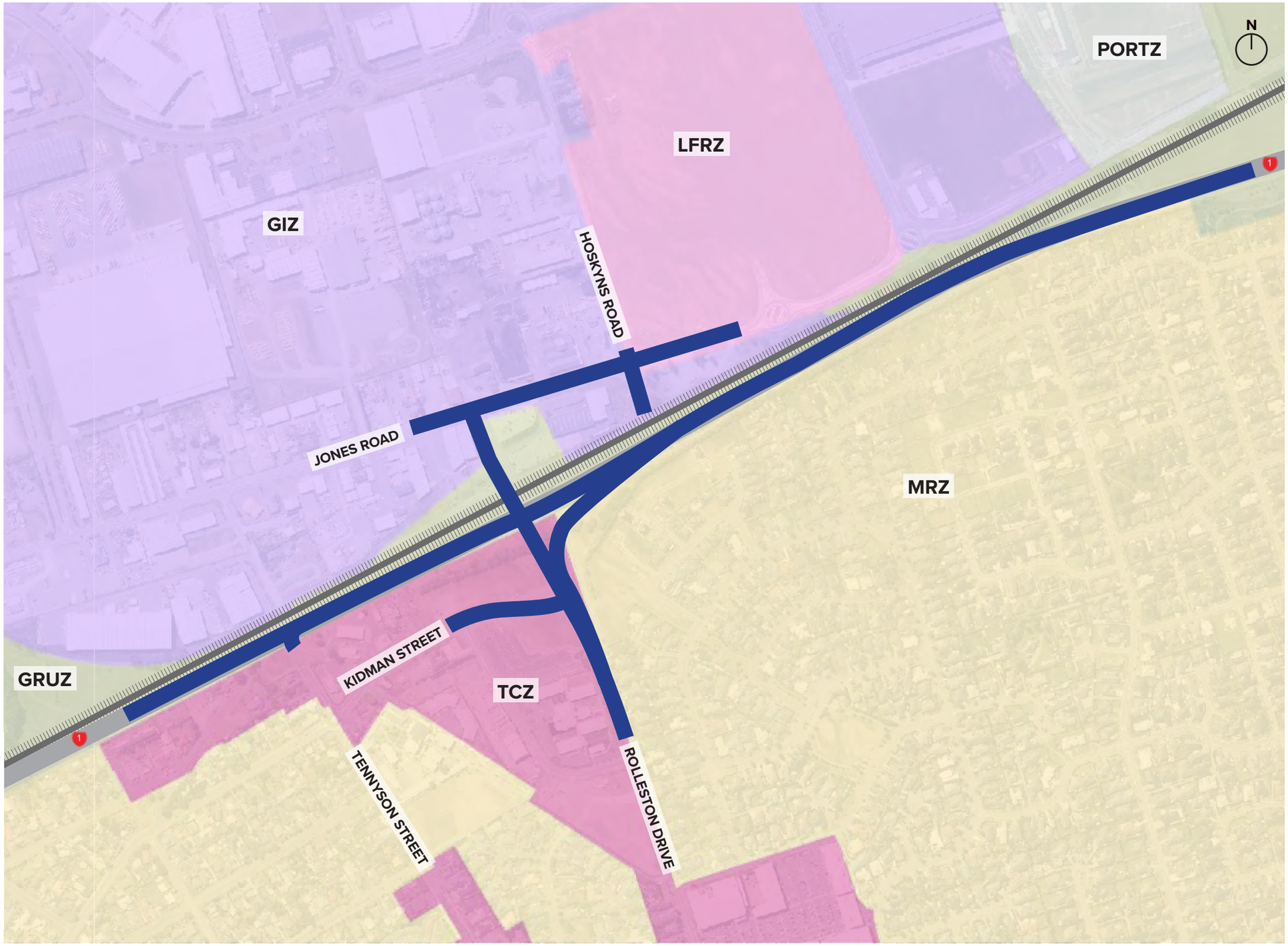
0 400 800 m

APPENDIX 3

DISTRICT PLAN MAP

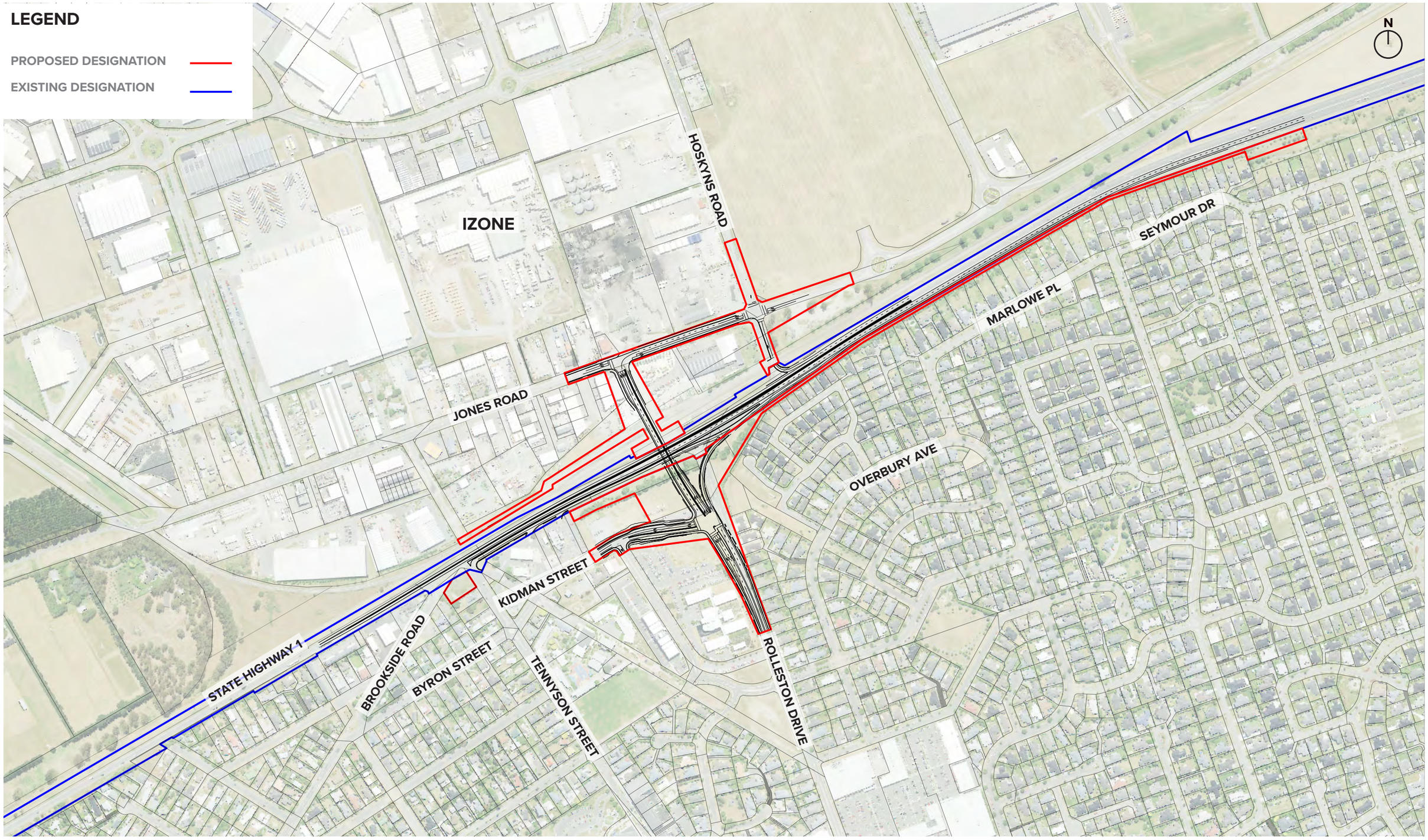
LEGEND

- ROLLESTON PACKAGE 2 WORKS
- STATE HIGHWAY 1
- SOUTH ISLAND MAIN TRUNK RAILWAY LINE (SIMT)
- GENERAL INDUSTRIAL ZONE (GIZ)
- MEDIUM DENSITY RESIDENTIAL ZONE (MRZ)
- GENERAL RURAL URBAN ZONE (GRUZ)
- TOWN CENTRE ZONE (TCZ)
- LARGE FORMAT RETAIL ZONE (LFRZ)
- PORT ZONE (PORTZ)



APPENDIX 4

PROPOSED DESIGNATION PLAN



APPENDIX 5

VIEWPOINT LOCATION PLAN AND SITE PHOTOGRAPHY

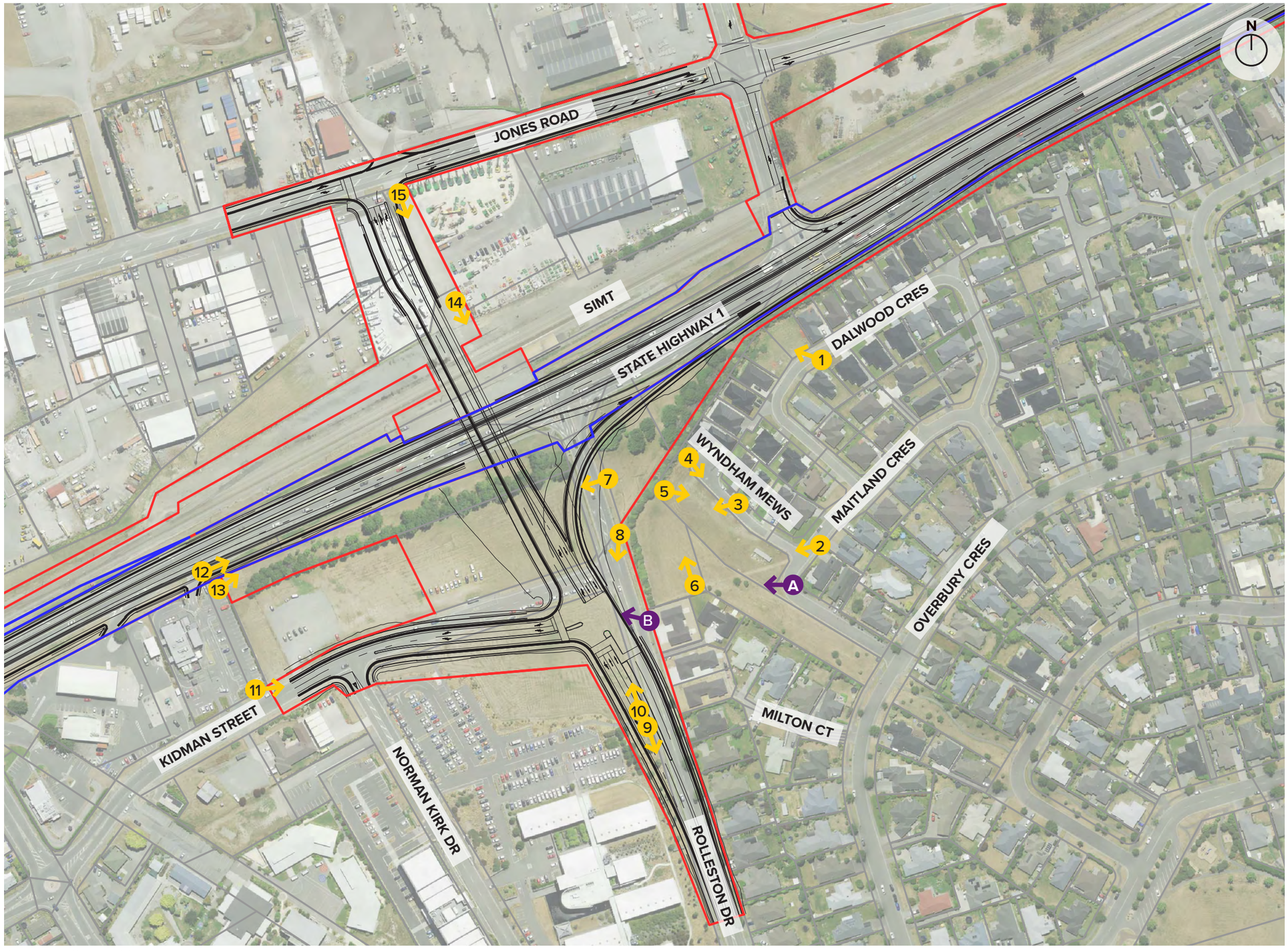
LEGEND

PROPOSED DESIGNATION

EXISTING DESIGNATION

SITE PHOTOGRAPH LOCATIONS

VIEWPOINT LOCATIONS



NOTE:

All panorama images have been photomerged in Photoshop 2024.

Site Photograph 1: View from 8 Dalwood Crescent looking North

Site Photograph 2: View from 8 Maitland Crescent looking West

Site Photograph 3: View from 8 Wyndham Mews looking West

Site Photograph 4: View from cul-de-sac of Wyndham Mews looking South

Site Photograph 5: View from northern end of greenway, looking East

Site Photograph 6: View from greenway near 15 Rolleston Drive on boundary fence, looking North

Site Photograph 7: View from Rolleston Drive looking West

Site Photograph 8: View from eastern side of Rolleston Drive, opposite the Kidman Street intersection, looking South

Site Photograph 9: View from western side of Rolleston Drive, looking South towards Selwyn District Council property

Site Photograph 10: View from western side of Rolleston Drive, looking North towards SH1

Site Photograph 11: View from southern side of McDonalds Carpark adjacent to Kidman Street, looking Northeast

Site Photograph 12: View from northern side of McDonald's Carpark adjacent to SH1, looking Northeast

Site Photograph 13: View from McDonald's Carpark, looking Northeast towards SH1

Site Photograph 14: View from 799 Jones Road looking South

Site Photograph 15: View from 799 Jones Road looking South

APPENDIX 6

PHOTOSIMULATIONS

METHODOLOGY

The photosimulations in this document were prepared using the sequence of steps outlined below:

- Photos were taken using a Olympus OMD EM3 camera (2x crop factor) with a 25mm lens. The Olympus OMD EM3 is a cropped frame camera and the 25mm lens provides an equivalent field of view to a full frame camera with a 50mm lens, which is considered to be equivalent to the way the human eye sees.
- Viewpoint and site photograph locations were identified using GPS referencing.
- Additional survey control points were obtained to assist in geo-referencing the 3D terrain model into the panorama photo.
- The individual photos were stitched together using a cylindrical photomerge in Photoshop to form a panoramic image.
- A wireframe digital model was created incorporating 3D models of the proposed development and 3D and 2D survey data using Revit 2024 and AutoCAD 2024.
- Computer images were generated within the digital model from the same locations and representing the same view shed as the photos.
- The images were overlaid and aligned to the photomontage using control points and visual matching.
- Time and location information for each of the photos was entered into the programme in order to replicate lighting conditions.
- The wireframe digital model was then switched off with the proposed development left in its correct location and scale relative to the photo.
- The portions of the proposed development that would not be visible in a view (i.e. obscured by vegetation) were masked using Adobe Photoshop CC24.
- The completed visual simulation is then reproduced across two A3 pages at the correct scale for viewing at a 300mm viewing distance (see Figure B).
- Production of the photosimulation following the sequence outlined above, and when viewed at 300mm, provides a view that is within the centre of the field of human binocular vision (see Figure A)

The following references can provide a comprehensive explanation of the methodology outlined above as well as outlining those caveats that are associated with the preparation of visual simulations:

- **New Zealand Institute of Landscape Architects (2/11/10).** *Best Practice Guide – Landscape Assessment and Sustainable Management/ Best Practice Guide – Visual Simulations*. **NZILA Education Foundation.**
- **Scottish Natural Heritage et al (29/03/06).** *Visual Representation of Windfarms. Good Practice Guidance*. **Horner + Maclennan and Envision.**

NOTE

- Visual simulations are to be used as a tool to aid in establishing an understanding of the visual qualities of a proposal.
- Visual simulations are not a reproduction of real life and are not intended to replace on-site observations.
- Photos are two-dimensional and flatten an image compared to real life.
- The human eye can see much more contrast than can be reproduced through photos.
- Physical resolution of photography is less than that of the human eye.
- A photo is static and passive; the human vision can scan for detail and remember information.

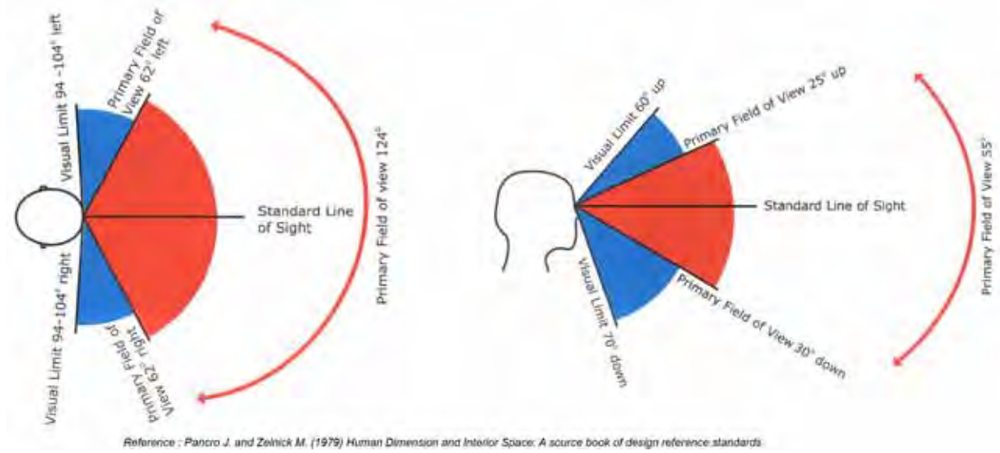
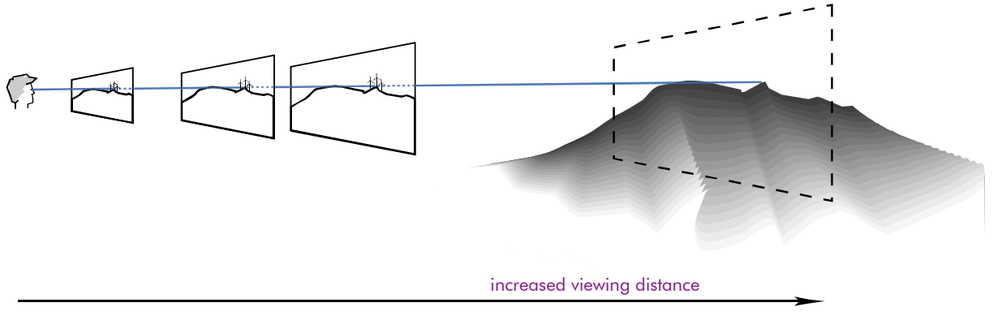


Figure A: Diagram showing horizontal and vertical field of view



Using a standard paper size, a projected boardwalk image will be smaller at a shorter viewing distance, and larger at a further viewing distance. However if held at the correct viewing distance they will be seen as being the same size. This represents a direct mathematical realtionship between the eye and the image of the subject (the landscape).

Figure B: Diagram showing relationship between viewing distance and reproduction size.

VIEWPOINT A - EXISTING

View from Maitland Crescent - Existing

Original photo: Olympus OMD EM3 camera with a 25mm lens | 12:16pm 29.04.2024 | Sophie Strachan

Viewpoint GPS details: 37°45'13"S | 175°13'26"E

Photomontage: Photoshop 2024

Approximate field of view: 95° horizontal | 40° vertical

Suggested viewing distance: 300mm

VIEWPOINT A - PROPOSED

View from Maitland Crescent - Proposed

Original photo: Olympus OMD EM3 camera with a 25mm lens | 12:16pm 29.04.2024 | Sophie Strachan

Viewpoint GPS details: 37°45’13”S | 175°13’26”E

Photomontage: Photoshop 2024

Approximate field of view: 95° horizontal | 40° vertical

Suggested viewing distance: 300mm

NOTE: Traffic signals shown in indicative locations at proposed intersection. To be confirmed at Detailed Design.

VIEWPOINT B - EXISTING

View from Maitland Crescent - Existing

Original photo: Olympus OMD EM3 camera with a 25mm lens | 11:28am 15.08.2024 | Sophie Strachan

Viewpoint GPS details: 37°45'13"S | 175°13'26"E

Photomontage: Photoshop 2024

Approximate field of view: 124° horizontal | 40° vertical

Suggested viewing distance: 300mm


Timaru
Christchurc
80
80

VIEWPOINT B - PROPOSED

View from Maitland Crescent - Proposed

Original photo: Olympus OMD EM3 camera with a 25mm lens | 11:28am 15.08.2024 | Sophie Strachan

Viewpoint GPS details: 37°45'13"S | 175°13'26"E

Photomontage: Photoshop 2024

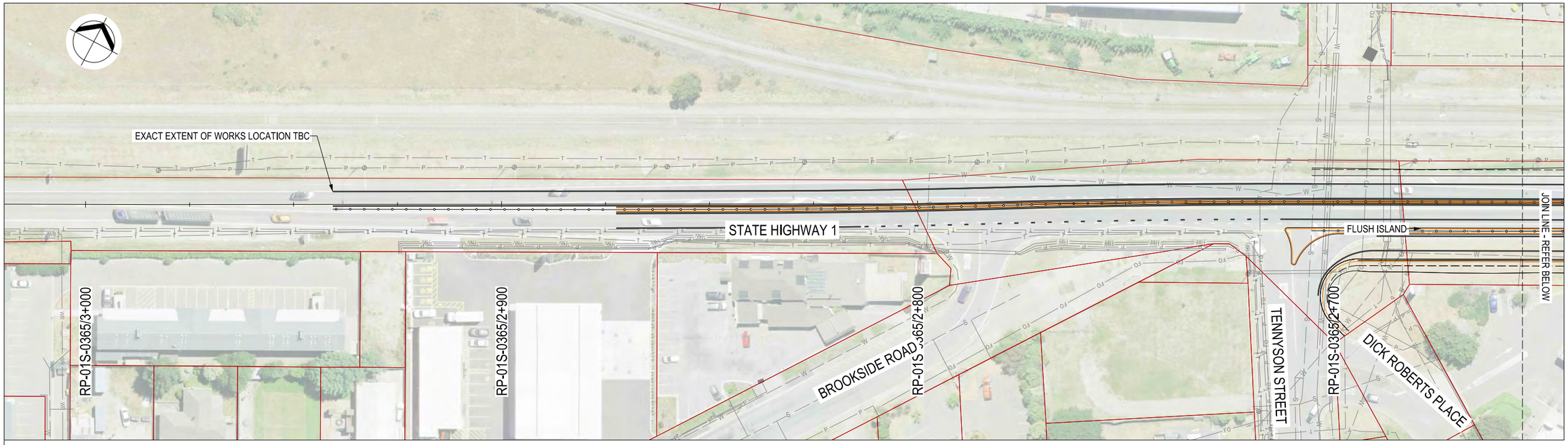
Approximate field of view: 124° horizontal | 40° vertical

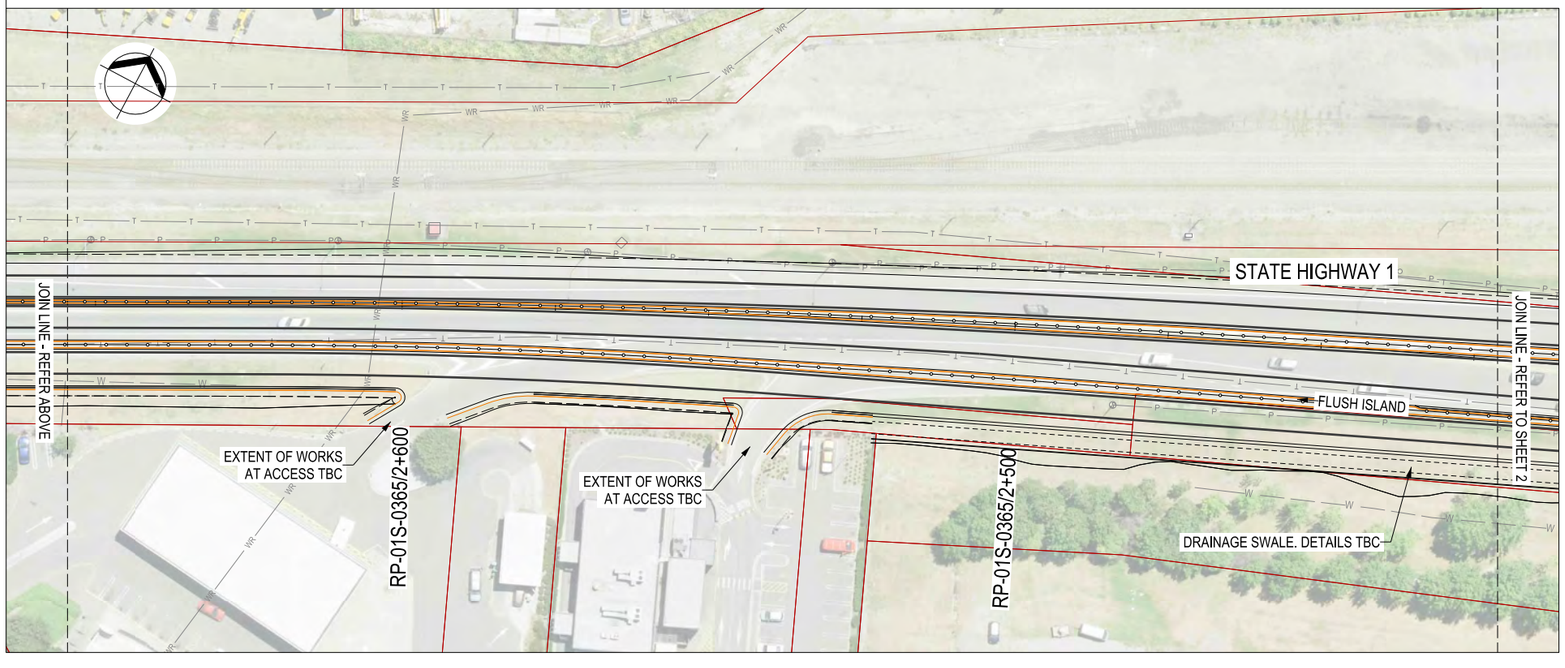
Suggested viewing distance: 300mm

NOTE: Traffic signals and driveways shown in indicative locations at proposed intersection. To be confirmed at Detailed Design.

APPENDIX 7

GENERAL ARRANGEMENT PLANS





LEGEND

- BOUNDARY

EXISTING SERVICES
- OVERHEAD POWER
- 11kV CABLE
- LOW VOLTAGE POWER
- FIBRE OPTIC
- CHORUS
- WATER MAIN
- STORMWATER
- SEWER
- STOCK WATER RACE
- LIGHTING COLUMN

PROPOSED DESIGN
- LIGHTING COLUMN
- KERB BREAK
- STORMWATER MANHOLE
- SCRUFFY DOME
- STORMWATER CATCHPIT
- STORMWATER PIPE
- SWALE
- KERB
- SEAL EDGE
- BACK OF VERGE
- GROUND INTERFACE
- WIRE ROPE BARRIER

NOTES:

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A	FOR INFORMATION	JC	MH	BC	28.05.24
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Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

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Project: SH1 ROLLESTON ACCESS IMPROVEMENTS PACKAGE 2

Title: GENERAL ARRANGEMENT SHEET 1 OF 7

Discipline: CIVIL ENGINEERING

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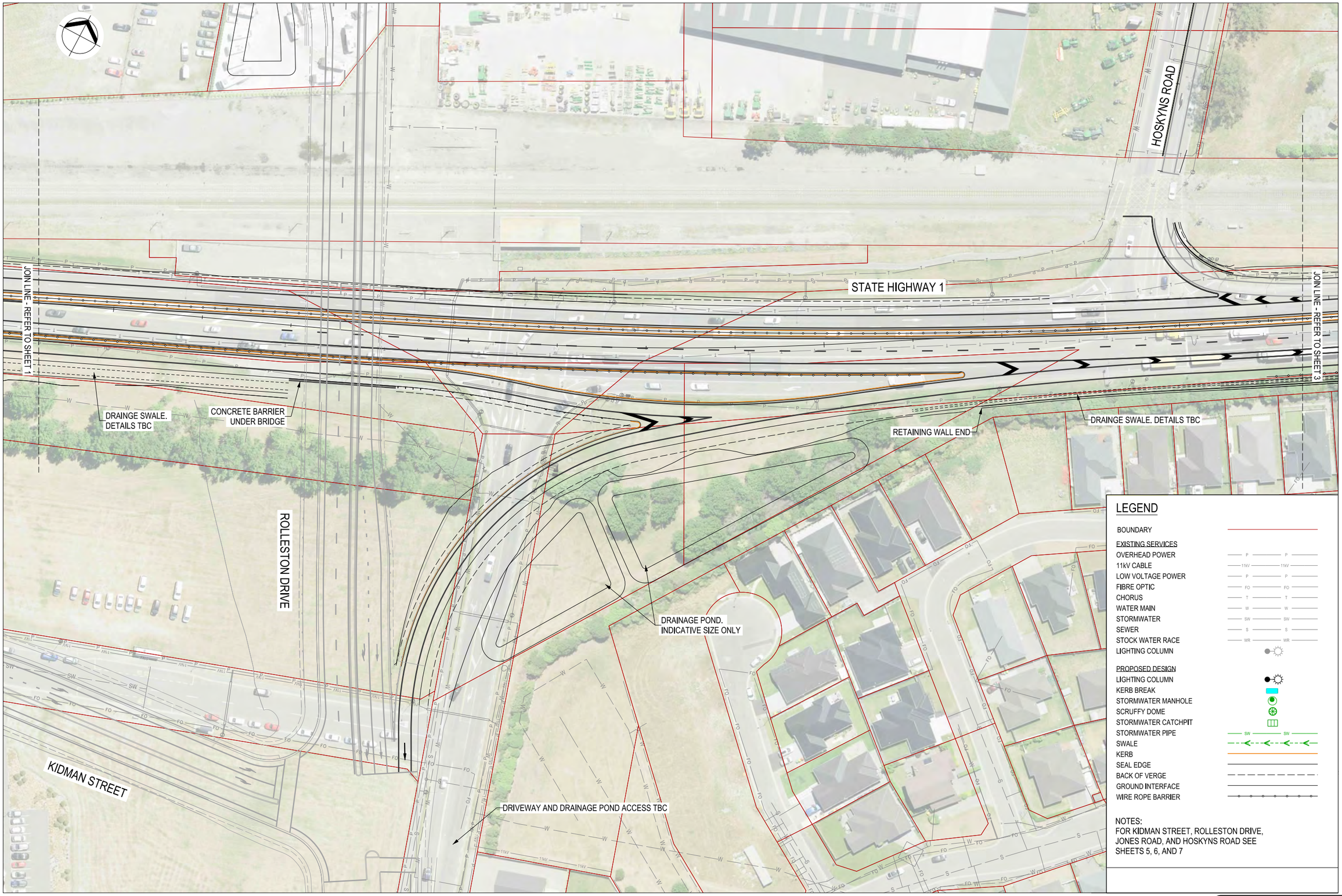

LEGEND

- BOUNDARY

EXISTING SERVICES
- OVERHEAD POWER
- 11kV CABLE
- LOW VOLTAGE POWER
- FIBRE OPTIC
- CHORUS
- WATER MAIN
- STORMWATER
- SEWER
- STOCK WATER RACE
- LIGHTING COLUMN

PROPOSED DESIGN
- LIGHTING COLUMN
- KERB BREAK
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- SCRUFFY DOME
- STORMWATER CATCHPIT
- STORMWATER PIPE
- SWALE
- KERB
- SEAL EDGE
- BACK OF VERGE
- GROUND INTERFACE
- WIRE ROPE BARRIER

NOTES:
FOR KIDMAN STREET, ROLLESTON DRIVE, JONES ROAD, AND HOSKYNS ROAD SEE SHEETS 5, 6, AND 7

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Reduced Scale (A3) 1:1000

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Project: SH1 ROLLESTON ACCESS IMPROVEMENTS PACKAGE 2

Title: GENERAL ARRANGEMENT SHEET 2 OF 7

Discipline: CIVIL ENGINEERING

Drawing No.: 3338703-20-CA-1202

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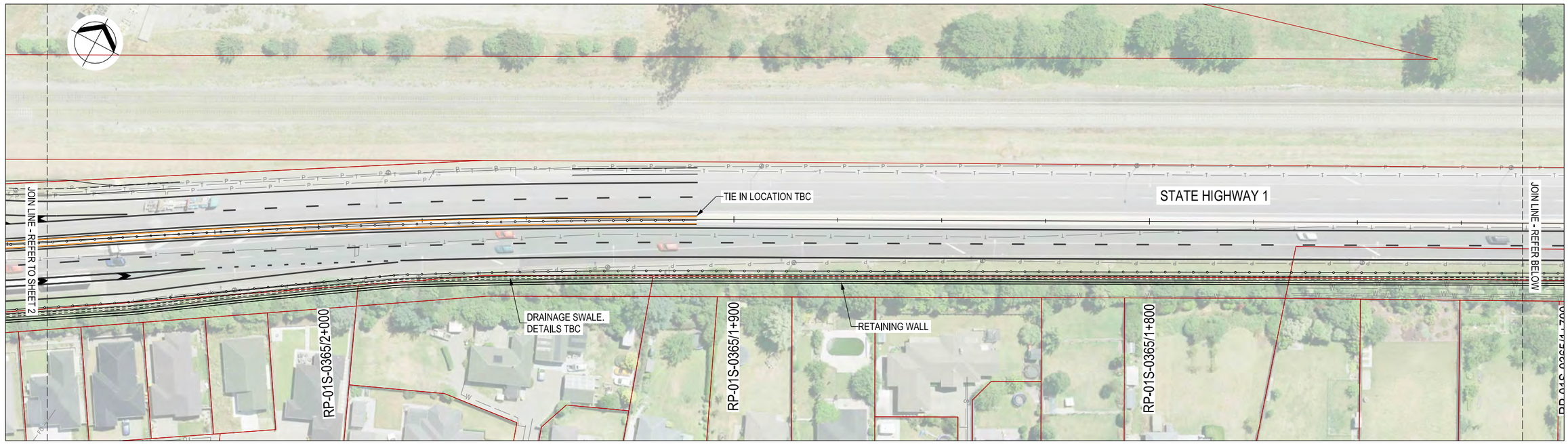

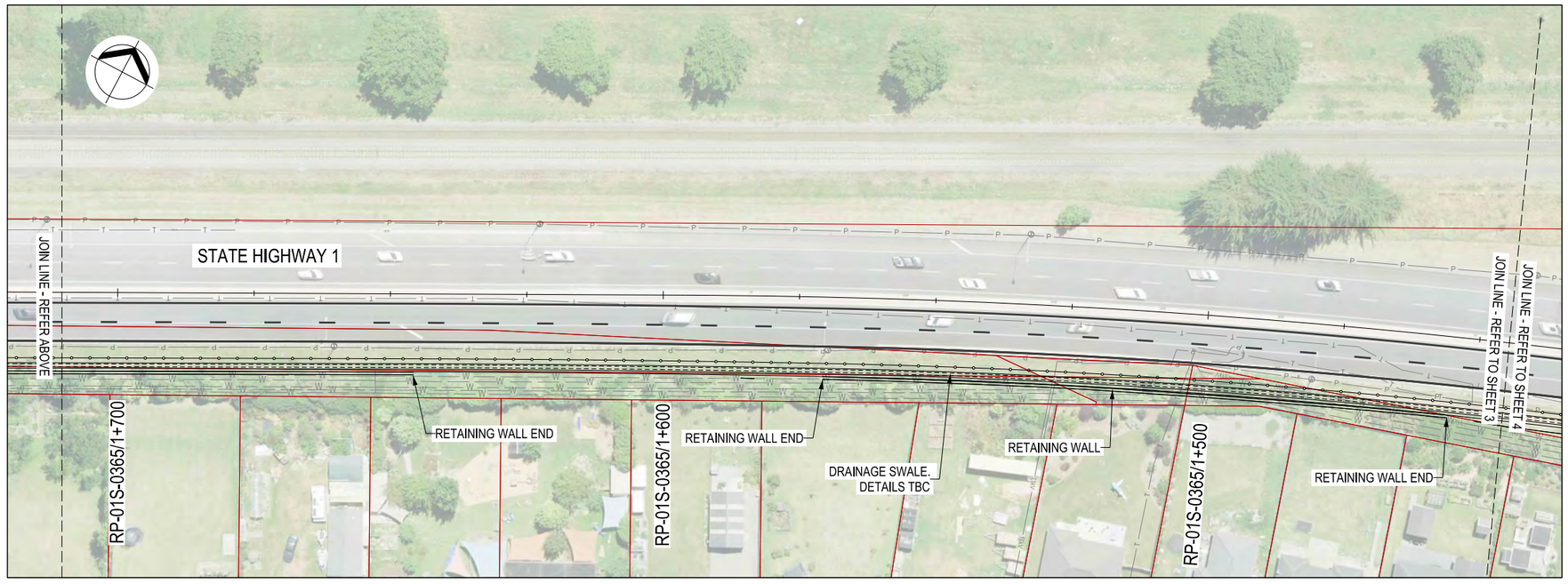

LEGEND

- BOUNDARY

EXISTING SERVICES
- OVERHEAD POWER
- 11kV CABLE
- LOW VOLTAGE POWER
- FIBRE OPTIC
- CHORUS
- WATER MAIN
- STORMWATER
- SEWER
- STOCK WATER RACE
- LIGHTING COLUMN

PROPOSED DESIGN
- LIGHTING COLUMN
- KERB BREAK
- STORMWATER MANHOLE
- SCRUFFY DOME
- STORMWATER CATCHPIT
- STORMWATER PIPE
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Title: GENERAL ARRANGEMENT SHEET 3 OF 7

Discipline: CIVIL ENGINEERING

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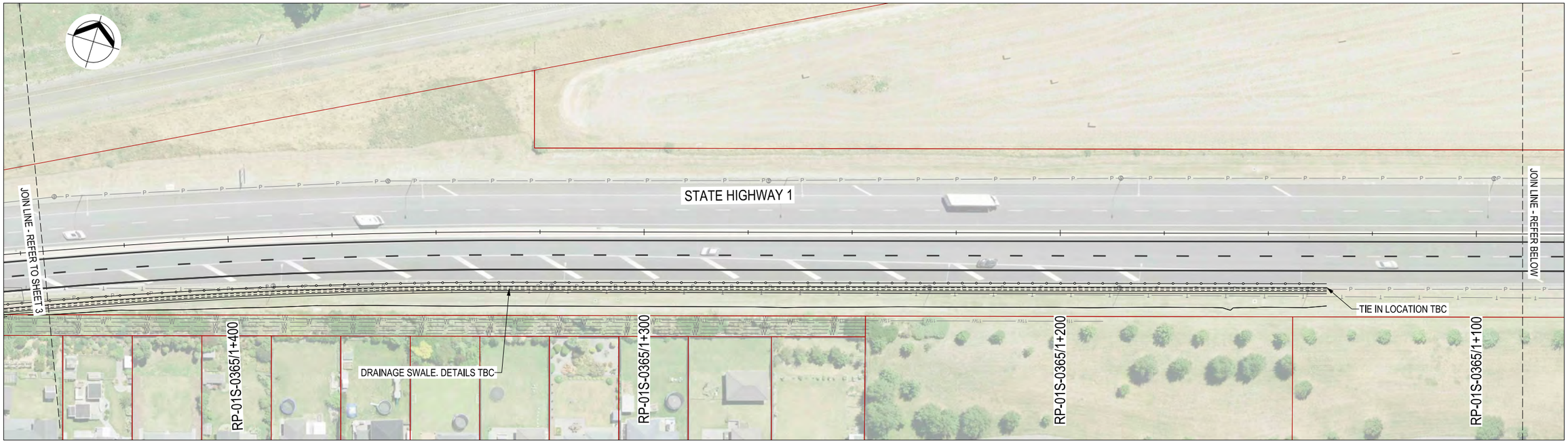

LEGEND

BOUNDARY	
EXISTING SERVICES	
OVERHEAD POWER	P
11kV CABLE	11kV
LOW VOLTAGE POWER	P
FIBRE OPTIC	FO
CHORUS	T
WATER MAIN	W
STORMWATER	SW
SEWER	S
STOCK WATER RACE	WR
LIGHTING COLUMN	
PROPOSED DESIGN	
LIGHTING COLUMN	
KERB BREAK	
STORMWATER MANHOLE	
SCRUFFY DOME	
STORMWATER CATCHPIT	
STORMWATER PIPE	SW
SWALE	
KERB	
SEAL EDGE	
BACK OF VERGE	
GROUND INTERFACE	
WIRE ROPE BARRIER	

NOTES:

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Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

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Project: SH1 ROLLESTON ACCESS IMPROVEMENTS PACKAGE 2

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Discipline: CIVIL ENGINEERING

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LEGEND

BOUNDARY

EXISTING SERVICES
- OVERHEAD POWER
- 11kV CABLE
- LOW VOLTAGE POWER
- FIBRE OPTIC
- CHORUS
- WATER MAIN
- STORMWATER
- SEWER
- STOCK WATER RACE
- LIGHTING COLUMN

PROPOSED DESIGN
- LIGHTING COLUMN
- KERB BREAK
- STORMWATER MANHOLE
- SCRUFFY DOME
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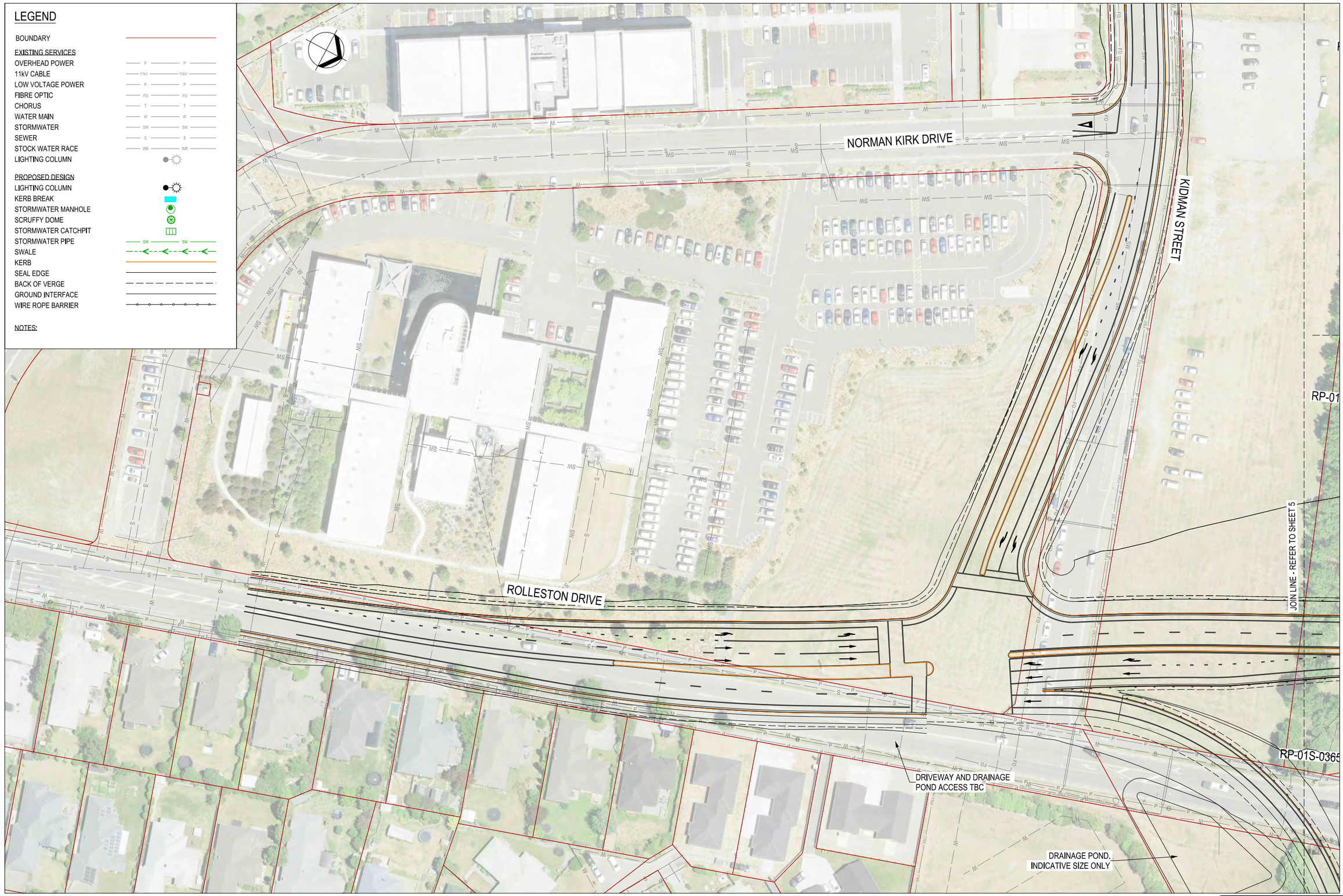
- STORMWATER PIPE
- SWALE
- KERB
- SEAL EDGE
- BACK OF VERGE
- GROUND INTERFACE
- WIRE ROPE BARRIER

NOTES:



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Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

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Title: GENERAL ARRANGEMENT SHEET 5 OF 7

Discipline: CIVIL ENGINEERING

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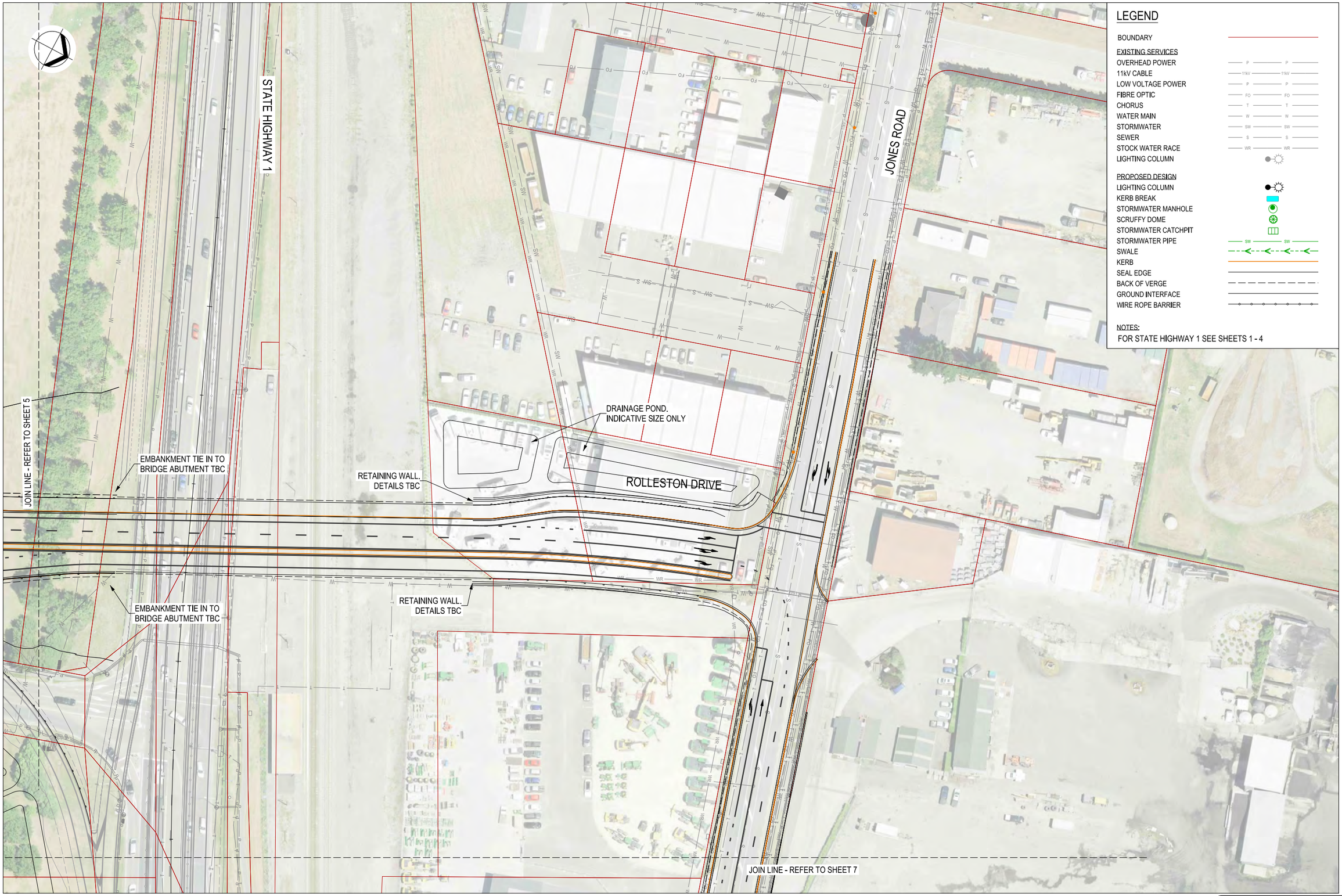

LEGEND

BOUNDARY

EXISTING SERVICES
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NOTES:
FOR STATE HIGHWAY 1 SEE SHEETS 1 - 4

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Original Scale (A1) 1:500
Reduced Scale (A3) 1:1000

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Title: GENERAL ARRANGEMENT SHEET 6 OF 7

Discipline: CIVIL ENGINEERING

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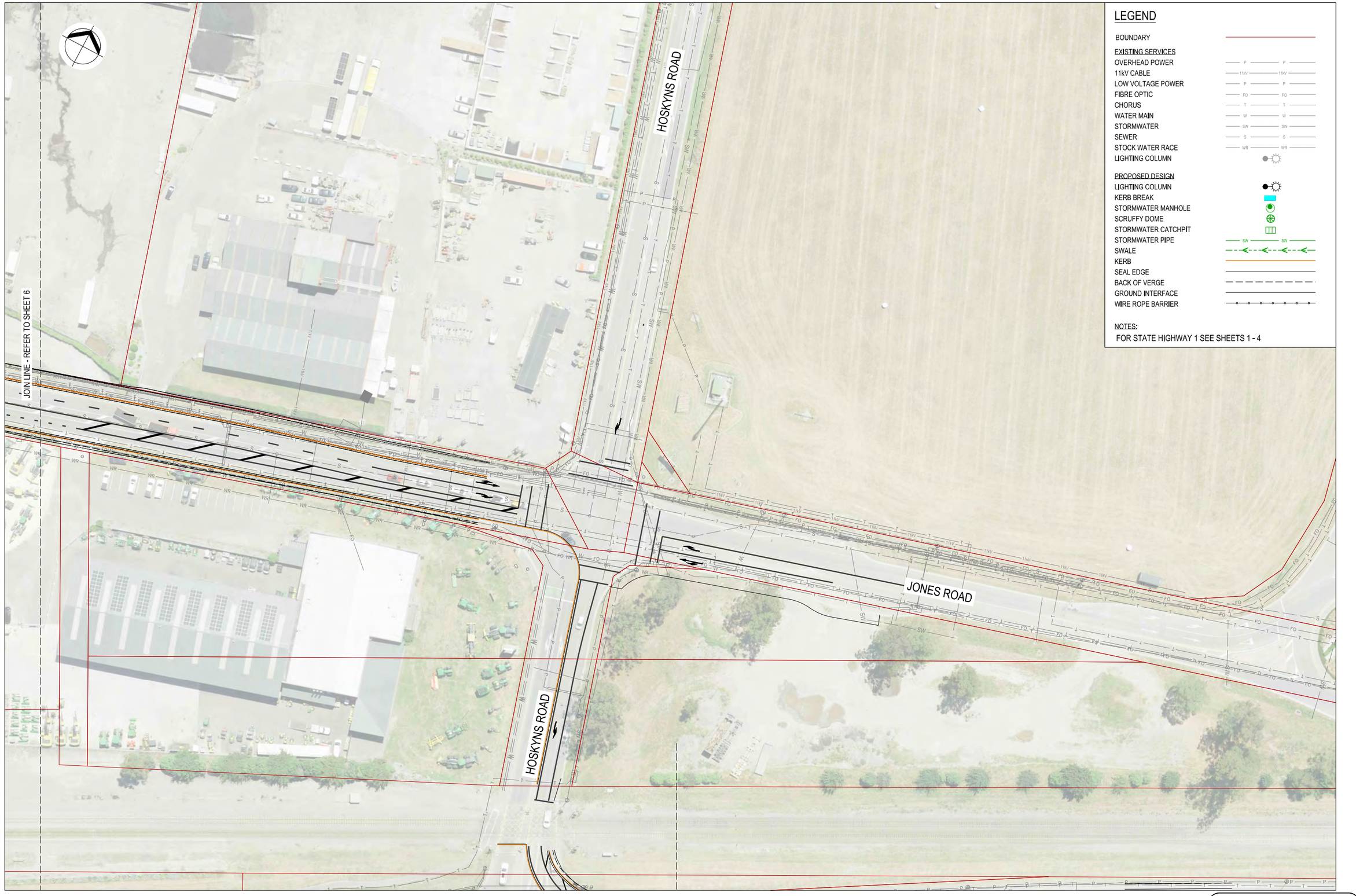

LEGEND

BOUNDARY

EXISTING SERVICES
- OVERHEAD POWER
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- LOW VOLTAGE POWER
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- WATER MAIN
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