

# Southern Link Inland Port

## Civil Works and Earthworks

Prepared for:  
Southern Link Property Limited

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## Acronyms / Abbreviations

| Acronym / Abbreviation | Full Name                                                                      |
|------------------------|--------------------------------------------------------------------------------|
| <b>SLPL</b>            | Southern Link Property Limited                                                 |
| <b>SLIP</b>            | Southern Links Inland Port                                                     |
| <b>DCC</b>             | Dunedin City Council                                                           |
| <b>DCSD 2010</b>       | Dunedin Code of Subdivision and Development 2010                               |
| <b>NZS4404:2010</b>    | New Zealand Standard 4404:2010 Land Development and Subdivision Infrastructure |
| <b>FTE</b>             | Full Time Employees                                                            |
| <b>NZS</b>             | New Zealand Standard                                                           |
| <b>ORC</b>             | Otago Regional Council                                                         |
| <b>km/h</b>            | Kilometres per hour                                                            |
| <b>ITA</b>             | Integrated Transport Assessment                                                |
| <b>ha</b>              | Hectares                                                                       |
| <b>GDP</b>             | Gross Domestic Product                                                         |



# 1 Executive Summary

This report has been prepared by Stantec New Zealand to support Southern Link Property Limited's (SLPL) substantive application under the Fast-track Approvals Act 2024 for the proposed Southern Link Inland Port (SLIP) at Dukes Road North, Mosgiel. The SLIP is a strategically significant logistics development intended to enable efficient transfer of freight between rail and road, support Port Otago, improve supply-chain resilience, and contribute to regional economic growth.

The proposed development occupies an approximately 40-hectare site on the Taieri Plains and will comprise a rail siding connected to the Taieri Branch Line, large scale warehousing, container storage and handling facilities, internal road networks, truck exchange areas, parking, 3 Waters infrastructure and associated earthworks. The SLIP operate on a 24/7 basis and is designed to accommodate high-productivity freight vehicles while managing effects on the surrounding transport network and environment.

This report addresses the civil engineering, transportation, geometrics, and earthworks components of the proposal. It demonstrates how the concept design responds to and implements the recommendations of the Integrated Transport Assessment (ITA), which is provided separately. It assesses compliance with the relevant provisions of the Dunedin City Council Second Generation District Plan (2GP 2024), the Dunedin Code of Subdivision and Development 2010, NZS 4404:2010, Austroads design standards and Otago Regional Council requirements.

The transportation design provides a single, well-defined primary access to Dukes Road North via a channelised T-intersection incorporating a dedicated right-turn bay for heavy vehicles. The intersection geometry and sight distances significantly exceed minimum standards for the 80 km/h operating environment, ensuring safe and efficient access for both freight vehicles and general traffic. A secondary, gated emergency left-out access is provided to support safe egress during emergency events with appropriate separation from the KiwiRail level crossing and the Stedman Road intersection. This access strategy minimises conflict points and integrates the SLIP safely with the existing road network.

Internal road networks are structured to clearly separate port vehicle operations, heavy vehicle movements, and staff or visitor traffic. Dedicated terminal roads, road exchange areas, truck routes and parking facilities have been designed to suit their specific operational functions and vehicle types. Pavement structures and geometric standards reflect heavy-duty requirements with scope for refinement at the detailed design stage to optimise constructability and balance earthworks.

The development will be constructed in three stages over approximately 10 years, allowing the project to respond to demand while managing construction effects. Earthworks volumes have been assessed for each stage with the concept design seeking to balance cut and fill as far as practicable. Temporary features including an acoustic bund and on-site stockpiling minimise the need for off-site disposal and material import. Final earthworks and batter details will be refined during the detailed design stage.

Comprehensive erosion, sediment, and environmental controls are proposed for all stages of construction, including sediment retention ponds, diversion bunds, super silt fencing, staged earthworks, and dust control measures. These controls are consistent with Otago Regional Council requirements and will be further detailed through construction and environmental management plans prior to works commencing.



## **Southern Link Inland Port**

Active mode connections along Dukes Road North are currently limited. While no new walking, cycling or public transport facilities are included in the concept design, SLPL has committed to working collaboratively with Dunedin City Council following completion of the Mosgiel Transport Study to determine appropriate future provisions at the detailed design stage.

Overall, the report concludes that the SLIP can be developed safely, efficiently and in general accordance with applicable transport and earthworks standards. Residual matters can be appropriately managed through detailed design, consent conditions and management plans. The concept design provides a robust and flexible framework to support Fast-track approval of this regionally significant infrastructure project.





## 2 General

### 2.1 Scope

This Report and attached Concept Design (Appendix A) have been prepared to support Southern Link Property Limited's (SLPL) proposed Southern Link Inland Port (SLIP). The proposed SLIP would be a purpose-built logistics freight hub in Mosgiel. This Report details design features intended to minimise freight traffic impacts and enhance safety and operational efficiency of the SLIP and provides an assessment against the Dunedin City District Plan Transport Performance Standards (Performance Standards). The scope of this assessment includes access geometry, intersection treatments, roadside drainage, earthworks and supporting assumptions and proposed consent conditions.

A separate Integrated Transport Assessment (Appendix B) has been undertaken. This Report does not repeat the issues addressed in that Report but focuses on the civil engineering and earthworks design required to implement the recommendations outlined in that report.

### 2.2 Contract Details

Stantec has been commissioned by SLPL to support a substantive application for the SLIP under the Fast-track Approvals Act 2024. The contract works have been undertaken to advance Stantec's design approach for all stages of the development with the intent to facilitate the granting of all necessary approvals.

This report comments on the following:

- Provision of external and internal roading infrastructure
- Provision of stormwater drainage which accommodates road infrastructure upgrades
- Provisions of transport infrastructure in and around the development
- Earthworks Assessment per development staging
- Supports the Construction Methodology of the proposed developed by providing Erosion and Sediment Control Plans for the proposed staging of the development.

### 2.3 Code of Conduct

The author of this report is a Principal Transportation Engineer, who applies his technical skills to multi-modal transportation projects across New Zealand and Australia. These projects involve multiple infrastructure disciplines, including roading, structural, rail, 3 waters and pedestrian/cyclist. I have been involved in transportation projects for over 20 years. Andrew has a Bachelor of Surveying (with credit) and is an Engineering NZ member working towards CPEng.

I confirm that I have read the Code of Conduct for expert witnesses contained in the Environment Court Practice Note 2023. This report has been prepared in compliance with that Code, as if it was expert evidence presented in proceedings before the Environment Court. Unless I state otherwise, this report is within my area of expertise, and I have not omitted to consider material facts known to me that might alter or detract from the opinions expressed in this report.



## 2.4 Project Overview

SLPL seeks to establish an Inland Port on an approximately 40-hectare site on the Taieri Plains near Mosgiel to enable freight transfer between trains and trucks. The Site is located at 270 – 292 Dukes Road North, as shown in Figure 2-1. This SLIP will deliver critical infrastructure to support regional economic growth, improve freight logistics, and enhance resilience to environmental risks. The development will require a range of civil and infrastructure works and will include:

- Bulk earthworks
- Construction of a rail siding to facilitate a freight shuttle connection to Port Otago and integration with the broader rail network.
- Establishment of site access.
- Construction of substantial high-stud warehouse facilities designed for both chilled and ambient storage requirements.
- Installation of a large truck canopy with associated unloading infrastructure to support efficient freight handling.
- Establishment of a container depot incorporating facilities for cleaning, repair, and inspection of used containers to ensure compliance with food-grade standards for repacking.
- Development of a container terminal area for the storage of full containers, including infrastructure to accommodate refrigerated units.
- Implementation of road improvements, including widening works.
- The formation of internal road networks with associated loading and parking areas.
- Ancillary works and supporting infrastructure necessary to facilitate the above activities.

Additional works will comprise hardstand surfaces, landscaping, and the erection of buildings for storage, administration, and maintenance purposes. Supporting infrastructure will also be implemented, including stormwater management systems and site stabilisation measures to ensure long-term operational integrity.

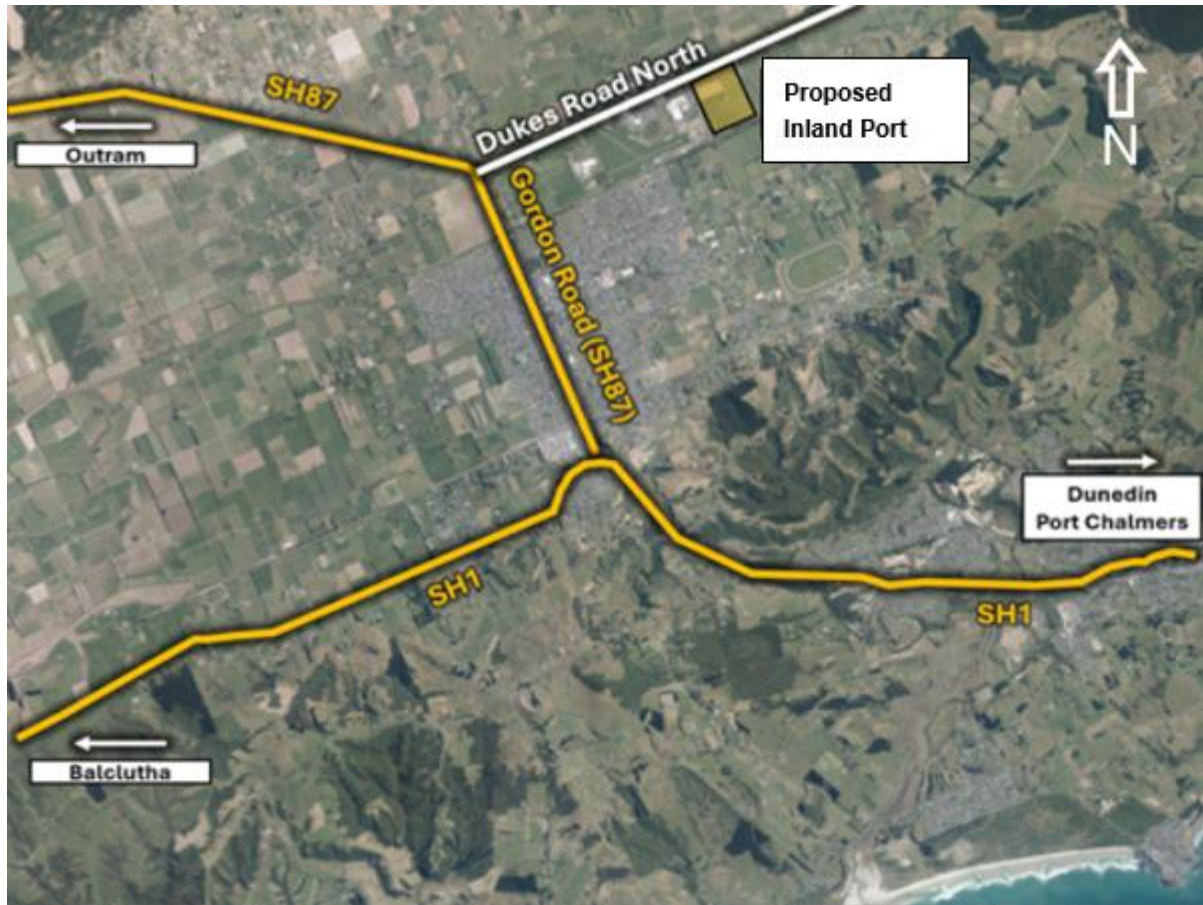


Figure 2-1: Site location

The land holdings for the SLIP are wholly owned by Southern Link Property Limited, and are legally described as follows:

- Part Section 10 Block V East Taieri Survey District, held in Record of Title OT3C/897;
- Deposited Plan 5579, held in Record of Title OT304/127;
- Part Section 9 Block V East Taieri Survey District, held in Record of Title OT3C/899; and
- Part Section 9 Block V East Taieri Survey District, held in Record of Title OT329/233.

The rectangular project site is approximately 40 ha in size, sitting northwest of urban Mosgiel and immediately adjacent west of the Dukes Road North industrial precinct. It is approximately a 15 minute drive from central Dunedin and a 30 minute drive from Port Chalmers.

The Site has historically been used for rural primary production activities. It also contains three residential dwellings and ancillary farming structures.

The boundaries of the site comprise the following:

- The northern boundary of the Site fronts Dukes Road North with all access to the Site provided off the road. The boundary is predominantly planted with a shelter belt or shelter hedging.
- The western boundary of the Site is planted with a mature shelter belt, separating the Site from the immediately adjacent KiwiRail main line. Stedman Road is located to the west of the rail line.
- The southern rear boundary of the Site adjoins Silver Stream and consists of a combination of shelter belt and normal planting.



- The eastern boundary of the Site adjoins two rural lots that appear to be used predominantly for rural residential lifestyle purposes.

The topography of the project Site is generally extremely flat except for a steep riparian margin along Silver Stream to the south. The Site is mostly clear of vegetation or structures apart from the aforementioned boundary planting and dwellings, and some additional internal boundary planting and screening planting around the dwellings.

## 2.5 Development Size

The proposed SLIP is a purpose-built logistics hub intended to support Port Otago and Dynes Transport Tapanui Limited (“Dynes”) in servicing and future-proofing the southern region’s supply chains while contributing to regional GDP growth. Strategically positioned alongside existing rail infrastructure in Mosgiel, the Site presents a rare opportunity to shift a significant proportion of road-to-port freight onto rail, reducing pressure on the wider transport network. The development will incorporate modern warehousing, efficient container-handling facilities, and will enable the use of state-of-the-art equipment to deliver an integrated and resilient freight solution for the region. Refer to Architect Master Plan (Appendix C), for the proposed layout plan.

The development will occur as described in the Project Description of SLPL’s Substantive Fast-track Application which should be referred to for a complete description of the Inland Port development. In summary, the Inland Port will include:

- A new rail siding off the Taieri Branch Line to enable loading, unloading and operation of a rail freight shuttle service to Port Chalmers and the wider rail network;
- Approximately 80,000 m<sup>2</sup> of high stud warehousing (chilled and ambient);
- Truck canopy and unloading areas;
- A 5 ha container depot facility enabling the inspection, cleaning, upgrading and repair of containers including for food grade repacking;
- Up to 5 ha of container terminal for storage of full containers including refrigerated containers;
- Break bulk storage facilities;
- Road widening;
- Ancillary activities to support the above including earthworks, construction of the rail siding, site access, internal roadways and vehicle parking, hardstand areas, landscaping, buildings for storage, administration and maintenance facilities, and associated infrastructure and works including measures necessary to manage stormwater and stabilise the site.

### 2.5.1 Staging of Works

Construction of the SLIP is anticipated to be undertaken in three stages however the timing of the delivery of each stage, and discrete works within each stage, may change in response to demand for logistics capacity at the Inland Port. This section should be read with reference to drawing 31020625-STN-00-000-DR-AA-0 – Appendix A.

Each stage of works will involve site clearance, earthworks, construction of buildings, hardstanding and access, installation of infrastructure, landscaping and works and management activities necessary to manage environmental effects during construction including erosion and sediment controls and construction management activities:



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- Stage 1 is estimated to be completed 1 to 3 years following approval of the Project and will include clearance of the southern area of the site and construction of the 'Stage 1' container storage concrete pad, rail siding, container service area, warehouses, internal roading, parking and loading, road widening and construction of the new intersection on Dukes Road North, stormwater attenuation pond, Silver Stream stormwater outlets, servicing infrastructure, flood management measures, landscaping, acoustic barriers and eastern bund, and lighting.
- Stage 2 is estimated to be completed 3 to 5 years following approval of the Project and will include clearance of the northern area of the site and construction of the 'Stage 2' container storage concrete pad, warehouses, ancillary offices, internal roading, parking and loading, emergency egress onto Dukes Road North, expansion of the stormwater attenuation pond, landscaping, extension of the servicing infrastructure and lighting.
- Stage 3 is estimated to be completed 5 to 10 years following approval of the Project and will include clearance of the eastern area of the site, including the eastern acoustic bund, and construction of the 'Stage 3' warehouse and break bulk hardstand areas, internal roading, parking and loading, eastern boundary acoustic barrier, landscaping, extension of the servicing infrastructure, and lighting.



## **3 Transportation Infrastructure Design**

### **3.1 Introduction**

In October 2024 Stantec undertook an Integrated Transport Assessment (ITA) for the SLIP and investigated how it will be integrated with the existing and planned transport network. The Dunedin City Council (DCC) provided feedback on the ITA with regard to the matters below. While the ITA itself is the subject to a separate report prepared by Stantec which forms part of the SLIP substantive application, that feedback has been used to develop the transportation concept design discussed in this Report.

- Pedestrian access
- Site traffic generation
- Staff vehicle movements
- Railway crossings in Dunedin and on SH88
- Development staging
- Road design

Further details of the feedback provided by DCC and the ways in that feedback has been addressed and / or responded to is provided in the ITA (Appendix B).

### **3.2 Existing Road Network**

Dukes Road North crosses the Taieri Branch Line at a level crossing east of Stedman Road (Photograph 3-1). The level crossing is actively controlled with signage, flashing lights and bells; there are no barrier arms.



*Photograph 3-1: Dukes Road North Railway Crossing*

The posted speed for this section of corridor is 80km/h and the road consists of a two-lane road with centre line and edge line markings. There are no pedestrian facilities within Dukes Road North outside the Site frontage with the nearest existing pedestrian infrastructure on Stedman Road and then heading west as a gravel facility along Dukes Road North. Power lines are present along the northern side of the road and there is a shallow drainage swale along the site frontage. Refer to Photograph 3-2 for a view along Dukes Road North.





*Photograph 3-2: Dukes Road Northeast of Stedman Road*

Stedman Road has been formed as an urban road with kerb and channel on each side as shown in Photograph 3-3. The posted speed on Stedman Road is 50km/h and the carriageway is approximately 10 metres wide; it has centre line and edge line markings. A pedestrian footpath is provided along the western side of Stedman Road between Odmins Place and Dukes Road North intersection. The existing footpath does not connect to any other footpaths in the immediate vicinity of the Site. No links are provided to the residential areas to the south nor the industrial area to the West via Dukes Road North. Refer to Photograph 3-3 for a view along Stedman Road.





*Photograph 3-3: Stedman Road south of Dukes Road North*

Existing access to the Site is approximately 330m east of the Dukes Road North / Stedman Road intersection. The existing access is a gravel farm access with good sight lines in both the eastern and western directions.



### **3.3 Concept Design Objectives**

The primary objectives for the entry road design are:

- Minimising adverse impacts of freight traffic on existing and future road users



- Enhancing the safety and efficiency of vehicular movements to and from the development site
- Identifying and addressing relevant regulatory transport requirements
- Ensuring robust compliance with regulatory transport requirements

Key strategies include optimised intersection geometry, provision for turning movements, and integration of stormwater management features.

### **3.3.1.1 Existing Ground Surface**

The ground model used for design has been developed by consultant surveyors Patersons, using a combination of both Light Detection and Ranging (LiDAR) data and conventional survey data. The surface is in terms of New Zealand Geodetic Datum 2000 North Taieri 2000 projection and New Zealand Vertical Datum 2016.

### **3.3.1.2 Design Surface**

The design surface was developed using Stantec roading and surface design inputs. Levels within the road corridor are controlled by the roading design, and the surface has been generated using linear interpolation between corridor models and incorporates specific client requirements. The surface will be further refined during future stages of design.



## 4 Regulatory Requirements

This section discusses the regulatory requirements applying to the transport, geometrics and earthworks elements of the of the SLIP in the following documents :

- Dunedin City Council Dunedin Code of Subdivision and Development 2010 (DCSD 2010)
- Dunedin City Council Second Generation District Plan 2024 (2GP 2024)
- New Zealand Standard 4404:2010 Land Development and Subdivision Infrastructure (NZS4404:2010)
- New Zealand Transport Agency Traffic Control Devices Manual (TCD Manual)
- Austroads Guide to Road Design Part 3: Geometric Design - February 2021
- Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections - May 2023
- Erosion and Sediment Control Guidelines for State Highway Infrastructure

### 4.1 Compliance with District Plan Transport Rules

The design has been developed in general accordance with the relevant provisions of the 2GP 2024 (Performance Standards), specifically Transport Rules relating to vehicle crossing widths, number of accesses, access distances, and sight line requirements. The following matters are discussed further in the sections below:

- Road alterations: It is proposed to construct a new intersection with Dukes Road North to provide main access and egress for the site. This will require consent as Discretionary activity for alterations to the road reserve.
- Access Numbers and Distances: The entry road provides a single main access point via the new intersection to minimise conflict and complexity of the Site's integration with the surrounding road network, with a secondary emergency exit located at an appropriate separation distance to maintain operational safety and meet plan standards. The Performance Standards permit a maximum of 2 crossings onto Dukes Road North which this intersection and single vehicle crossing arrangement complies with.
- Vehicle Crossing Widths: The proposed emergency egress will have a vehicle crossing width of approximately 8m and is below the maximum 9m width. The main access intersection exceeds the maximum width Performance Standard and for safety reasons it has been designed as an intersection, refer Section 4.2.1.1.
- Sight Lines: Sight distance assessments confirm that emergency exit egress crossing achieves the required visibility under the Performance Standards for safe entry and exit, including consideration of freight vehicle stopping distances and approach speeds.
- Minimum Separation Distances: The emergency egress crossing will be located over 100m from the KiwiRail level crossing as well as Stedman Road intersection to the west therefore complying with the minimum separation distances under the Performance Standards.
- The loading areas, carparking, road widths and gradients comply with relevant standards to provide safe operation of vehicles using this facility. These may be refined in the detailed design phase.



## 4.2 Proposed External Road Upgrades

### 4.2.1 Dukes Road North Accesses

#### 4.2.1.1 Main Access Design

The primary intersection onto Dukes Road North has been designed using Austroads Design Standards as a channelised T-intersection featuring a dedicated right-turn bay to accommodate vehicles accessing the SLIP from the west. The design enhances safety for existing road users by separating turning movements from through traffic which minimises conflict points. The design provides safe stacking out of the through lane for turning vehicles entering the facility. Alterations to existing roads requires consent as a Discretionary activity under the Performance Standards .

For further information on the Main Access Layout, refer to Figure 4-1 and drawing 31020625-STN-00-210-DR-CI-070010 in Appendix A.

According to the Performance Standards (Standards 6.6.3.3 and 6.6.3.9) the maximum and minimum vehicle crossing widths permitted for non-residential activities are 9m and 5m, respectively (formed width 5m; legal width 6m). The vehicle access is being designed as a full 20m wide intersection to safely accommodate the design heavy vehicle movement of a 26m B-Train and therefore the Performance Standards vehicle crossing width requirements do not apply.

The posted speed limit on Dukes Road North is 80 km/h and the Site benefits from a flat gradient along Dukes Road North and the absence of horizontal curves along its frontage, which provides available sight distance in both directions in excess of the Austroads guidelines and provides an excellent level of safety, refer **Error! Reference source not found.** below.

Table 1: Sight Distance Criteria

|                                                | Required Distance at 80km/h<br>(RT 2.0sec)               | Achieved<br>east | Achieved<br>west | Reference                       |
|------------------------------------------------|----------------------------------------------------------|------------------|------------------|---------------------------------|
| <b>Approach Sight Distance (ASD)</b>           | 114m                                                     | 650m +           | 481m             | Austroads Part 4a:<br>Table 3.1 |
| <b>Safe Intersection Sight Distance (SISD)</b> | 181m                                                     | 650m +           | 481m             | Austroads Part 4a:<br>Table 3.2 |
| <b>Minimum gap sight distance (MGSD)</b>       | ta (10sec) Left Turn = 222m,<br>ta(4sec) Right Turn =89m | 650m +           | 481m             | Austroads Part 4a:<br>Table 3.6 |

Longitudinal grades and crossfalls have been optimised for heavy vehicles and they also provide efficient drainage.

As outlined in the ITA, a right-turn bay has been provided for vehicles entering the Site, a storage length of 30m has been designed to provide space for one B-train to stack if required to wait before turning into the site. Widening is provided along the length of the right turn bay with widened tapers at the intersection allowing safe tracking of the design vehicle for the left-in and left-out movements.



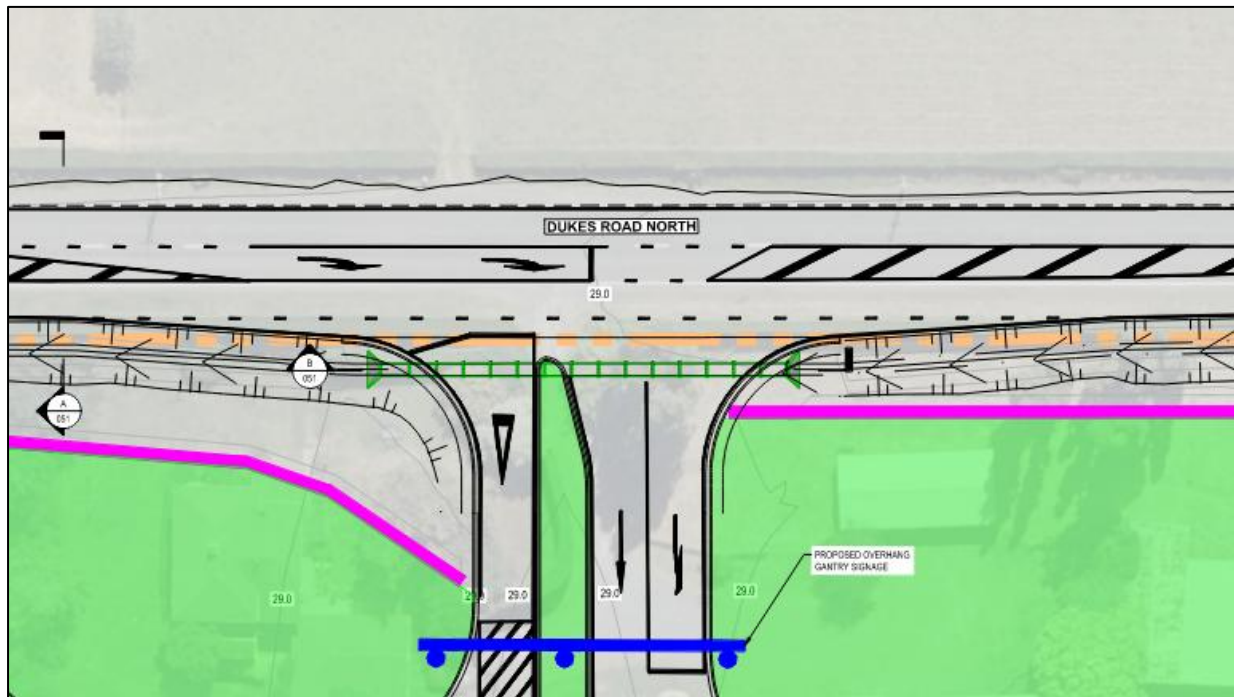


Figure 4-1: Main Access Layout

#### 4.2.1.2 Emergency Left-Only Exit

An emergency 8m wide formed width exit, complying with the Performance Standards maximum width of 9m (Standard 6.6.3.3), left-turn only exit is provided approximately 200m west of the main access and 320m from the intersection of Steadman Road, refer to Figure 4-2 below and Appendix B.

The exit has been designed to allow rapid egress from the Site in an emergency which can be defined as a fire onsite or an incident where a second point of exit is available for site users to exit the site safely. Under normal operating conditions, this exit will be gated.

The emergency left-out only access provides SISD of 291m to the West and similar to the main access, in excess of 300m to the east, complying with sight distance requirement of 111m under the Performance Standards (Standard 6.6.3.2(b)).

The egress will be located over 100m east of the Stedman Road intersection and rail crossing to the west, therefore complying with minimum separation requirements under the Performance Standards (Standard 6.6.3.4).

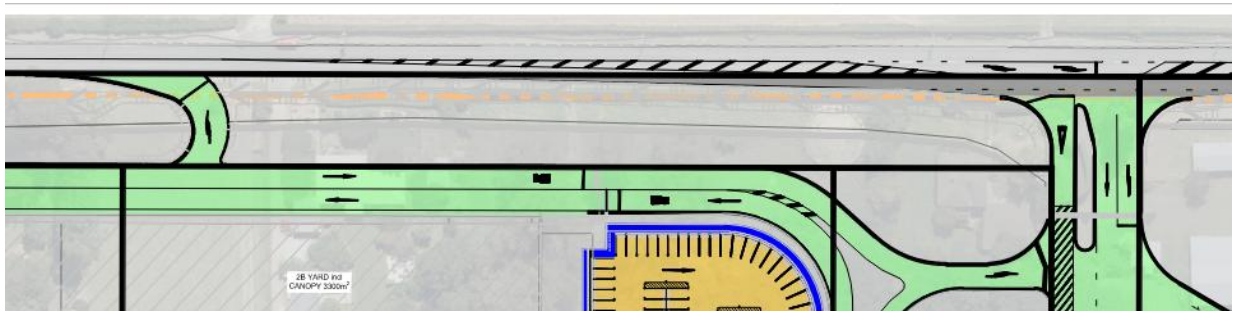


Figure 4-2: Emergency Egress (at left-hand end of figure)



Longitudinal grades and crossfalls have been optimised for heavy vehicles, ensuring efficient drainage and ease of access.

### **4.2.2 Cycling, Walking and Public Transport facilities along Site Frontage**

Since the proposed SLIP will be an employment centre and it is located a reasonable distance from Mosgiel, it is expected that there may be demand for active travel to or from the Site for staff.

As outlined in the ITA, there are missing footpath connections between Mosgiel and the site. DCC has requested a footpath is constructed on Dukes Road North, however without the missing connections constructed by DCC, the requested footpath is unlikely to be used.

The Concept Design does not include provisions for pedestrians, cyclists, or public transport as further direction from DCC is needed on future planning for cycling, walking, and public transport networks as part of the Mosgiel Transport Study and/or Otago's Regional Long-Term Plan.

The Mosgiel Transport Study's data gathering stage is ongoing, with a report on key interventions and funding expected by mid-2026 for public and stakeholder discussion. These facilities are intended to be addressed in coordination with DCC's Transport team during the detailed design/ building consent phase.

SLPL is committed to working collaboratively with the DCC Transport team following the completion of the Mosgiel Transport Study data gathering phase to determine and provide facilities at, or adjacent to the site, which are deemed to be necessary to cater to the transport needs of those utilising the SLIP.

### **4.2.3 Roadside Swale and Stormwater Management**

The Dukes Road North widening at both the main access and the emergency access incorporates a roadside swale system along the Northern boundary, designed to intercept and convey surface runoff from the carriageway and adjacent hardstand areas. In consultation with DCC (Appendix D) pipe culverts, swale dimensions, longitudinal slopes, and vegetation selection are designed in accordance with Performance Standards to maximise infiltration and pollutant removal.

Stormwater drainage is referenced in the separate specialist report, which confirms that all runoff generated by the upgraded accesses and road widening will be managed by external swales designed in accordance with Performance Standards within the road corridor as well as within the site boundaries. As discussed in that report, this design has no adverse impact on the downstream catchments or existing public infrastructure.

### **4.2.4 Street Lighting – Dukes Road North**

Other professionals, Pedersen Read have been engaged to provide the lighting design for SLIP. As outlined in their report the lighting design philosophy incorporates current best-practice approaches consistent with AS/NZS 4282:2023, the Performance Standards, CAA rules, and relevant KiwiRail considerations.

Through the detailed design phase the street lighting infrastructure can be designed and agreed with DCC to meet best practice with a focus on avoiding impacts on aviation safety and neighbouring residential properties.





The detailed design stage will confirm the illuminance levels and any refinements to luminaire selection, aiming, shielding and controls.

### 4.2.5 Road Signs and Road Markings

All new road markings and signage will be in accordance with New Zealand Transport Agency Traffic Control Devices Manual (TCD Manual) and will be agreed with KiwiRail, NZTA and DCC Transportation.

As outlined in 4.2.2, provisions for walking and cycling are to be confirmed in the detailed design phase in consultation with DCC. Signage layout plans for these user groups, if deemed to be required, will be incorporated into the transport detailed design drawings and plans package for the SLIP.

As outlined in the ITA, if practical, installed in a safe position, and agreed to by the DCC, signage providing direction to the Site may be erected. This will be confirmed during the detailed design phase.

### 4.2.6 Dukes Road Rail Crossing

No provision has been provided for in the Concept Design for any pedestrian facilities at the existing Dukes Road rail crossing. If required (as to be confirmed by KiwiRail) – a passive maze crossing layout with signage could be installed at the existing rail crossing. This can be considered during the detailed design of the project. This would be designed in accordance with KiwiRail Standards and in conjunction and coordination with the DCC Transport team.

## 4.3 Proposed Site Road Network

The SLIP internal road network is shown in Appendix A. Refer to drawing 31020625-STN-00-210-DR-CI-070051 and 31020625-STN-00-210-DR-CI-070052 for the Typical Road Cross Sections for each of the main roads within the site. Design Areas, Surfacing and typical pavement structures for each of the areas are shown in drawing 31020625-STN-00-210-DR-CI-070001.

### 4.3.1 Internal Roads

#### 4.3.1.1 Terminal Roads

Terminal Roads refers to areas dedicated to port vehicles. 'Port Vehicles' are likely to consist of a combination of straddle carriers, reach stackers, sideloaders (empty container handlers), and terminal tractors. Terminal roads are located within the container pad area as shown in Appendix A. These roads all follow the same design criteria, but it is important to note that areas designated for straddle carrier operation are exclusive to straddle carriers and be restricted to empty container handling only (with the single exception of CHE side loaders with tall visible mast).

*Table 2: Criteria and Description – Terminal Roads*

| Criteria       | Description                                                                                                                                                                                                    |
|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Design Speeds  | Low speeds (<30km/h) have been assumed within the terminal areas. This matches existing operation procedure at Port Otago.                                                                                     |
| Design Vehicle | Port Vehicles Dimensions are as follows: <ul style="list-style-type: none"><li>• Straddle Carrier<ul style="list-style-type: none"><li>○ Vehicle Width: 5m</li><li>○ Vehicle Length: 12.2m</li></ul></li></ul> |



| Criteria             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                      | <ul style="list-style-type: none"> <li>○ Axle Load: 27t</li> <li>○ Minimum Outside Turn Radius: 9m</li> <li>○ Driving Turn Radius (40' load): 10m</li> <li>○ Lane Width: 10m</li> <li>• Reach Stacker <ul style="list-style-type: none"> <li>○ Vehicle Width: 4m</li> <li>○ Vehicle Length: 11.9m</li> <li>○ Axle Load: 100t</li> <li>○ Minimum Outside Turn Radius: 9m</li> <li>○ Driving Turn Radius (40' load): 10m</li> <li>○ Lane Width: 15m</li> </ul> </li> <li>• Top Lifter <ul style="list-style-type: none"> <li>○ Vehicle Width: 4m</li> <li>○ Vehicle Length: 10.7m</li> <li>○ Axle Load: 100t</li> <li>○ Minimum Outside Turn Radius: 8m</li> <li>○ Driving Turn Radius (40' load): 10m</li> <li>○ Lane Width: 10m</li> </ul> </li> <li>• Side Loader <ul style="list-style-type: none"> <li>○ Vehicle Width: 3m</li> <li>○ Vehicle Length: 7.7m</li> <li>○ Axle Load: 24t</li> <li>○ Minimum Outside Turn Radius: 5m</li> <li>○ Driving Turn Radius (40' load): 13m</li> <li>○ Lane Width: n/a</li> </ul> </li> </ul> |
| Lane Widths          | 20m lane widths are required to allow for the worst-case port vehicle movement, which is a side loader reverse and turn. This shall be increased to 25m at transfer areas and intersections.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Grading              | Grading withing the container pad area (and therefore terminal roads) has maximum of 2% as this is required for safe operation of straddle carriers and to allow safe stacking of containers. A minimum grade .0.4% has been used for drainage purposes.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Pavement Design      | <p>The pavement design for this area is designed as heavy duty pavement. Its design is based on other port facilities. The concept design has used a 900mm pavement depth, made up of the following:</p> <ul style="list-style-type: none"> <li>• 100mm Wearing Course – AC14 Asphaltic Concrete</li> <li>• 600mm Stabilised Base Course – Imported AP65 Basecourse Stabilised @5%</li> <li>• 200mm Stabilised Subgrade – In-Situ Stabilization with 4% Hydrated Lime to Achieve Effective CBR&gt;12%</li> </ul> <p>The concept pavement design will be refined in the detailed design with a focus on reducing pavement depths to provide a more balanced earthworks volume. This will reduce the volume of material that may need to be carted from or stored on site.</p>                                                                                                                                                                                                                                                        |
| Drainage             | Drainage for terminal areas (including roads) has been allowed for in the stormwater design, please refer to the Stormwater Report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Signage and Markings | Signage and marking within the terminal area to comply industry standards and Port Otago requirements.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| Pedestrian Movements | Pedestrian access to the terminal road area is strictly prohibited. No exceptions have been shown in the concept design.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |





#### 4.3.1.2 Road Exchange Areas

There are two Road Exchange Areas which are areas in which container trucks and port vehicles will interact, refer Table 2 for design guidance.

Road Exchange 1, located in the north-west corner of the site, is designed to allow trucks to loaded via straddle carriers. Road Exchange 2 is located on the southern side of the port, adjacent to the container pad, this area will have side loaders work with the trucks rather than straddle carriers.

All loading/unloading of trucks requires the driver to exit the vehicle, the Port enforces very strict safety procedures in these areas to ensure truck drivers are not endangered as the trucks are loaded or unloaded. This is achieved by having safety booths where drivers are required to stand during the loading/unloading. The road exchange areas must have an exception to the pedestrian movement criteria setout in Table 2: Criteria and Description – Terminal Roads.

#### 4.3.1.3 Truck Roads / Heavy Vehicle Roads

There are two routes for truck movements within the SLIP, these connect the main Dukes Road access to the road exchange areas whilst providing for space for the trucks to turn around and exit again via Dukes Road. A waiting bay for arriving trucks is located in the northeast corner of the site adjacent to the main entry/exit point. These roads have been designed to facilitate trucks/heavy vehicles but will also be used by light vehicles to allow staff movement through the site.

The route through to Road Exchange 1 requires a right turn upon entry to the facility turning them passed the office, through the security gate, and then alongside Warehouse 2B and 2C. The length of this route is to be an 11m two-way road, allowing for two 5m lanes with 0.5m shoulders. A roundabout at the road exchange end allows trucks to turn around to exit.

The route through to Road Exchange 2 cuts straight through the east side of the facility between Warehouse 2 and Warehouse 3D and Break Bulk Hardstand Areas 3A-3C, this section of road is 15m wide, allowing for a lane in each direction and a 5m hazard strip between them (which allows for turning in/out of the warehouses). At the end of this stretch, at the south edge of the site, a roundabout allows for a right hand turn which continues to the southwest corner and Road Exchange 2, a left-hand turn for future a road connection has been included. In the southwest corner a roundabout provides space for trucks to turn and return along the route to Dukes Road.

All of these roads have been designed using Austroads and NZTA guidelines to meet the following criteria:

*Table 3: Criteria and Description – Truck Roads / Heavy Vehicle Roads*

| Criteria       | Description                                                                                                            |
|----------------|------------------------------------------------------------------------------------------------------------------------|
| Design Speeds  | Design speeds for the internal roads are 20-40km/h.                                                                    |
| Design Vehicle | The design vehicle used for internal truck roads is a 26.0m B-Train. All tracking curves use a design speed of 15km/h. |
| Lane Widths    | Lane widths are a minimum 4.5m. All shoulders are to be 0.5m. Crossfall on these roads shall be 3%.                    |
| Grading        | The minimum grading for truck roads shall be 0.4%. The maximum grade 10% in accordance with NZS4404:2010.              |



| Criteria             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Pavement Design      | <p>Pavement depths are based on other similar facilities as guided by Port Otago, these shall meet the required life of 20 years (NZS4404:2010). The concept design has used an 800mm pavement depth, made up of the following:</p> <ul style="list-style-type: none"> <li>• 50mm Wearing Course – AC14 Asphaltic Concrete</li> <li>• 250mm Base Course – Imported AP65 Basecourse Stabilised @5%</li> <li>• 300mm Subbase Course – DGS20 OR Approved Equivalent</li> <li>• Subgrade shall meet CBR ≥5%</li> </ul> <p>The concept pavement design will be refined in the detailed design with a focus on reducing pavement depths to provide a more balanced earthworks volume. This will reduce the volume of material that may need to be carted from or stored on site.</p> |
| Drainage             | Drainage for roads has been allowed for in the stormwater design, please refer to the Stormwater Report.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| Signage and Markings | Signage and marking for the carpark areas will be in accordance with the NZTA TCD Manual.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Pedestrian Movements | Pedestrian walkways have been included within the design of the site. A walkway, separated by berm, will follow the route to Road Exchange 2, allowing pedestrian movement between the main carpark/office and southern side of the site, this walkway is design to minimise conflicts with the road. Currently there is one crossing required at one of the port vehicle parking access points, however this a barrier-controlled entry minimising risk to pedestrian.                                                                                                                                                                                                                                                                                                        |

#### 4.3.1.4 Parking

Two carparks have been included in the concept design for the facility. The main carpark which is located near the Dukes Road entrance and will provide parking for staff working onsite and any visitors. There will also be additional parking outside Warehouse 1A which will provide for staff working at the southern end of the facility. Each of these parking areas have been designed using Austroads and NZTA guidelines, as well as the applicable Performance Standards. The table below outlines the design criteria:

Table 4: Criteria and Description - Parking

| Criteria        | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Design Vehicle  | The design vehicle used for car parks is a 99 <sup>th</sup> percentile design vehicle. All tracking curves use a design speed of 5km/h.                                                                                                                                                                                                                                                                                                                                  |
| Parking Spaces  | The number of parking spaces is based on the capacity for site operations at each stage of works, this consists of capacity for staffing of the office, warehouses and all other port operations. For the full development 250 carparks (7 mobility) have been allowed for, 80 (3 mobility) to be constructed in stage 1 and the remainder in stage 2.                                                                                                                   |
| Lane Widths     | Lane widths within the carpark are greater than 6.5m, designed for two-way flow with sufficient manoeuvring space so no vehicles are required to reverse onto or off site.                                                                                                                                                                                                                                                                                               |
| Vehicle Queuing | At least 13m of queuing space has been allowed for in each carpark.                                                                                                                                                                                                                                                                                                                                                                                                      |
| Grading         | Carpark grading is such that the gradient does not exceed 5% in any direction.                                                                                                                                                                                                                                                                                                                                                                                           |
| Pavement Design | <p>Carpark pavement depths and surfacing is designed to a 25-year design life and to ensure drainage can be managed properly. The concept design has used a 600mm pavement depth, made up of the following:</p> <ul style="list-style-type: none"> <li>• 30mm Wearing Course – AC10 in Accordance with Specifications</li> <li>• 200mm Base Course – Imported AP65 Basecourse Stabilised at 5%</li> <li>• 370mm Subbase Course – DGS20 OR Approved Equivalent</li> </ul> |
| Drainage        | Drainage for carpark areas has been allowed for in the stormwater design, please refer to the Stormwater Report.                                                                                                                                                                                                                                                                                                                                                         |



| Criteria             | Description                                                                                                                                                                      |
|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Signage and Markings | Signage and marking for the carpark areas will be in accordance with the NZTA TCD Manual.                                                                                        |
| Pedestrian Movements | The carpark area is positioned and designed to remove all conflict points with trucks or port vehicles for staff or public moving between the park and the office or warehouses. |

### Port Vehicle Parking:

There is a port vehicle parking area between the main parking area and Warehouse 2A. This parking area is part of internal terminal operations providing parking for port vehicles and trucks. This area will meet the design criteria stated within 4.3.1.1 Terminal Roads

## 5 Earthworks

### 5.1 Regulatory Requirements

#### 2GP 2024:

The following aspects has been considered or identified in relation to earthworks:

- **Archaeological sites:** An Archaeological Authority has been obtained by SLPL for the site.
- **Batter gradient:** Specific design for batter gradients to be completed in the detailed design phase. The design will conform with industry best practice and guidance documents.
- **Setback from property boundary, buildings, structures and cliffs:** Generally, earthworks will be setback from the property boundaries and structures by minimums as set out in the Process Standards, roadside swales on or over the property boundary require consent. These areas are shown on drawings 31020625-stn-00-000-dr-aa-000110. Specific height and depth of works will be refined during the detailed design to align where possible with the Process Standards.
- **Setback from network utilities:** There are network utilities located within and adjacent to the site where earthworks are likely to occur within 1.5 m of them. These can be seen on drawing 31020625-stn-00-000-dr-aa-000110 in Appendix A.

As shown in the table below, associated consents associated with these services are applied for within SLPL's application. The detailed design process will confirm the location of earthworks, and the construction management plan will set out steps and measures required to ensure effects of the project on these network utilities are appropriately managed (including consultation and the obtaining of any approvals required from the associated providers).

Table 5: Network Utilities Affected by Earthworks

| Inside site                | Outside site                 |
|----------------------------|------------------------------|
| Proposed Swales North Side | Watermain                    |
| Power pole number 5        | Telecom                      |
|                            | Power Pole number 1, 2, 3, 4 |
|                            | Proposed Swales North Side   |
|                            | Proposed Swales West Side    |

- **Sediment control:** Erosion and Sediment Control measures are outlined in 5.4.1.
- **Removal of high-class soils:** The proposed earthworks will result in the removal of high-class soils from the site. An assessment of effects associated with the removal of these soils is provided in the assessment prepared by Abacusbio which forms part of the substantive application.
- **Dust control:** Appropriate dust control measures will be provided during the construction. These will be detailed further in the construction management plan. It may include measures such as:
  - Applying controls proactively at the source
  - Trigger levels and response actions
  - Roles and responsibilities
  - Monitoring and reporting

#### Otago Regional Council:



Earthworks will be constructed in general accordance with ORC rules and regulations, noting that resource consents are required in relation to:

- The exposure of more than 2500 m<sup>2</sup> of land in a 12-month period,
- Earthworks within 10m of a water body or drain,
- Potential discharge of sediment,
- The undertaking of earthworks on a contaminated site (noting various actual and potential HAIL sites have been identified on the site, as per the Detailed Site Investigation – 270-292 Dukes Road North Mosgiel" by Environmental Consultants Otago 2025. Site remediation will occur before large scale earthworks commence.

## 5.2 Subgrade Surface

Drawing 31020625-STN-00-210-DR-CI-070001 – Appendix A can be viewed in conjunction with this section. Subgrade surfaces were created for each planned stage of the project. Assumptions have been made in relation to subgrade depths; these were based on pavement depths from other freight terminal works. The following subgrade depths have been assumed:

- Road subgrades (including parking) 600mm below future ground level. (50mm surfacing, 250mm base, 300mm subbase).
- Footpath subgrade 195mm below future ground level. (25mm surfacing, 150mm base, 20mm blinding).
- Carpark subgrades 600mm below future ground level (design surface).
- Container Depot subgrade 700mm below future ground level (design surface).
- Warehouse subgrades 600mm below future ground level (design surface).
- Hardstand subgrades 600mm below future ground level (design surface).
- Office Building subgrade 600mm below future ground level (design surface).
- Attenuation pond and stormwater swales subgrades 300mm below future ground level (design surface)

## 5.3 Earthworks Volumes

This section should be read with reference to the following earthworks drawings from Appendix A:

- 31020625-STN-00-501-DR-CI-090301
- 31020625-STN-00-501-DR-CI-090302
- 31020625-STN-00-501-DR-CI-090303

Earthworks volumes have been calculated for the works in each of the planned stages. These volumes have been determined by comparing the stripped surface (existing ground level less 300mm to account for topsoil depth stripped) with the subgrade surface for the relevant stage.

The design has been undertaken to balance earthworks volumes through grading optimisation and reduction of subgrade depths where sensible, further work to reduce excess cut material will be completed in detailed design phase.

There are two features which are key to understanding the earthworks for the site, the acoustic bund on the east of the Site and the stockpile area. In relation to earthworks, the acoustic bund (constructed in



## Southern Link Inland Port

stage 1) is a 30m wide and 4.5m high. The construction of this bund aids in balancing the earthworks in Stage 1 but its removal accounts for the majority of the cut material identified in Stage 3.

The stockpile area is also a feature of the Stage 1 earthworks included to balance the earthworks in Stage 2. The stockpile allows for the reuse of ~23,000m<sup>3</sup> of material on site for the Stage 2 works rather than having to import this material.

Estimated Cut and Fill volumes for the full works after each stage are as follows:



Table 6: Earthworks - Cut / Fill Report

| Earthworks – Cut / Fill Report |                        |                       |                                 |                        |                       |
|--------------------------------|------------------------|-----------------------|---------------------------------|------------------------|-----------------------|
| Stage                          | Area (m <sup>2</sup> ) | Cut (m <sup>3</sup> ) | Topsoil Strip (m <sup>3</sup> ) | Fill (m <sup>3</sup> ) | Net (m <sup>3</sup> ) |
| Stage 1                        | 284,300                | 99,100 <Cut>          | 85,300 <Cut>                    | 99,300 <Fill>          | 85,100 <Cut>          |
| Stage 2                        | 128,300                | 31,900 <Cut>          | *32,000 <Cut>                   | 26,800 <Fill>          | 37,100 <Cut>          |
| Stage 3                        | 48,400                 | 40,600 <Cut>          | **8,900 <Cut>                   | 1,100 <Fill>           | 48,400 <Cut>          |
| Final                          | 420,300                | 120,000 <Cut>         | 126,100 <Cut>                   | 78,200 <Fill>          | 168,100<Cut>          |

\*Topsoil for Stage 2 excludes stockpile area as it is accounted for in Stage 1 volumes.

\*\*Topsoil for Stage 3 excludes bund area as it is accounted for in Stage 1 volumes.

## 5.4 Earthworks Control Measures

### 5.4.1 Erosion and Sedimentation Control

This section should be read with reference to the following Erosion and Sedimentation Control Plan (ESCP) drawings, which can be found in Appendix A. These drawings show the proposed locations of dirty water and clean water flows, clean water diversion bunds, dirty water bunds, super silt fencing, sediment retention ponds, staging areas and bund areas.

- 310206525-STN-00-501-DR-CI-090402
- 310206525-STN-00-501-DR-CI-090403
- 310206525-STN-00-501-DR-CI-090404
- 310206525-STN-00-501-DR-CI-090405

The proposed development will be undertaken in three stages. Each stage will utilise sediment retention ponds (SRPs) to capture and treat stormwater runoff, dirty water bunds to convey sediment-laden stormwater to the SRPs, and clean water diversions to safely route uncontaminated flows around construction areas.

Each Stage will have super silt fencing installed to intercept sediment carried by stormwater runoff before the runoff reaches the Silver Stream. Together, these controls create a coordinated system that reduces erosion risk, prevents sediment discharge, and supports regulatory compliance throughout each construction stage. The erosion and sediment control measures presented are high level and will be updated in the next phase of design and included in the Environmental Management Plan.

A more detailed ESCP will be completed prior to any construction which would include sizing of all SRP's. The three stages will likely be broken down into smaller stages to reduce the area of exposed earthworks at any one time, any stockpile areas will be grassed to control erosion and sediment run-off. Refer to Construction Management Plan provided with the substantive application for more information.



# Appendices

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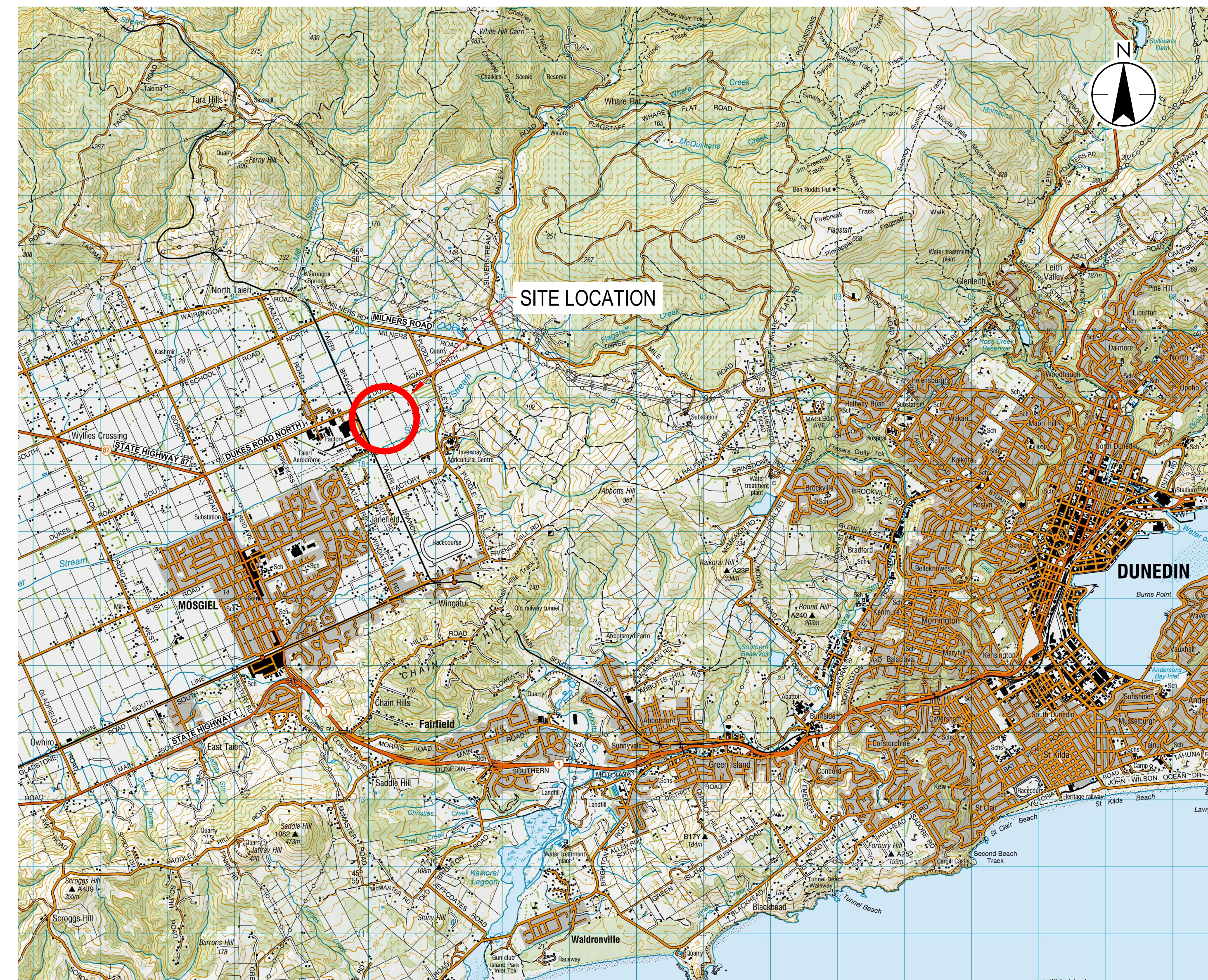
## **Appendix A Developed Concept Design Drawings**







DUKES ROAD NORTH, EAST TAIERI

**Project Number:** 310206525



C

B

A

| SCHEDULE OF DRAWINGS             |                                                                |
|----------------------------------|----------------------------------------------------------------|
| DRAWING No.                      | DESCRIPTION                                                    |
| 31020625-STN-00-000-DR-AA-000001 | SOUTHERN LINK INLAND PORT DEVELOPED CONCEPT DESIGN COVER SHEET |
| 31020625-STN-00-000-DR-AA-000002 | DRAWING INDEX                                                  |
| 31020625-STN-00-000-DR-AA-000101 | EXISTING SITE FEATURES AND SERVICES OVERALL                    |
| 31020625-STN-00-000-DR-AA-000102 | EXISTING SITE FEATURES AND SERVICES SHEET 01 OF 08             |
| 31020625-STN-00-000-DR-AA-000103 | EXISTING SITE FEATURES AND SERVICES SHEET 02 OF 08             |
| 31020625-STN-00-000-DR-AA-000104 | EXISTING SITE FEATURES AND SERVICES SHEET 03 OF 08             |
| 31020625-STN-00-000-DR-AA-000105 | EXISTING SITE FEATURES AND SERVICES SHEET 04 OF 08             |
| 31020625-STN-00-000-DR-AA-000106 | EXISTING SITE FEATURES AND SERVICES SHEET 05 OF 08             |
| 31020625-STN-00-000-DR-AA-000107 | EXISTING SITE FEATURES AND SERVICES SHEET 06 OF 08             |
| 31020625-STN-00-000-DR-AA-000108 | EXISTING SITE FEATURES AND SERVICES SHEET 07 OF 08             |
| 31020625-STN-00-000-DR-AA-000109 | EXISTING SITE FEATURES AND SERVICES SHEET 08 OF 08             |
| 31020625-STN-00-000-DR-AA-000110 | AFFECTED SERVICES                                              |
| 31020625-STN-01-000-DR-AA-000151 | STAGING PLAN STAGE 1                                           |
| 31020625-STN-03-000-DR-AA-000152 | STAGING PLAN STAGE 2                                           |
| 31020625-STN-03-000-DR-AA-000153 | STAGING PLAN STAGE 3                                           |
| 31020625-STN-00-210-DR-CI-070001 | PAVEMENTS LAYOUT PLAN OVERALL                                  |
| 31020625-STN-00-210-DR-CI-070011 | ROADING PLAN OVERALL                                           |
| 31020625-STN-00-210-DR-CI-070012 | ROADING PLAN SHEET 01 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070013 | ROADING PLAN SHEET 02 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070014 | ROADING PLAN SHEET 03 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070015 | ROADING PLAN SHEET 04 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070016 | ROADING PLAN SHEET 05 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070017 | ROADING PLAN SHEET 06 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070018 | ROADING PLAN SHEET 07 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070019 | ROADING PLAN SHEET 08 OF 08                                    |
| 31020625-STN-00-210-DR-CI-070050 | ROADING & PAVEMENTS LAYOUT PLAN ENTRANCEWAYS                   |
| 31020625-STN-00-210-DR-CI-070051 | TYPICAL ROADING CROSS SECTIONS SHEET 01 OF 02                  |
| 31020625-STN-00-210-DR-CI-070052 | TYPICAL ROADING CROSS SECTIONS SHEET 02 OF 02                  |
| 31020625-STN-00-210-DR-CI-070053 | SITE CROSS SECTIONS                                            |
| 31020625-STN-00-210-DR-CI-070054 | TYPICAL DETAILS                                                |
| 31020625-STN-00-210-DR-CI-070055 | TYPICAL CROSS SECTIONS RAIL SIDING AND WEST SWALE              |
| 31020625-STN-00-210-DR-CI-070056 | TYPICAL CROSS SECTIONS RAIL SIDING AND WEST SWALE PLANTING     |
| 31020625-STN-00-401-DR-CI-010001 | STORMWATER CATCHMENTS AREA WIDE                                |
| 31020625-STN-00-401-DR-CI-010002 | STORMWATER CATCHMENTS PRE - DEVELOPMENT                        |
| 31020625-STN-00-401-DR-CI-010003 | STORMWATER CATCHMENTS POST - DEVELOPMENT SECONDARY             |
| 31020625-STN-00-401-DR-CI-010004 | STORMWATER CATCHMENTS POST - DEVELOPMENT PRIMARY               |
| 31020625-STN-00-401-DR-CI-020001 | STORMWATER LAYOUT PLAN OVERALL                                 |
| 31020625-STN-00-401-DR-CI-020002 | STORMWATER LAYOUT PLAN SHEET 01 OF 08                          |
| 31020625-STN-00-401-DR-CI-020003 | STORMWATER LAYOUT PLAN SHEET 02 OF 08                          |
| 31020625-STN-00-401-DR-CI-020004 | STORMWATER LAYOUT PLAN SHEET 03 OF 08                          |
| 31020625-STN-00-401-DR-CI-020005 | STORMWATER LAYOUT PLAN SHEET 04 OF 08                          |
| 31020625-STN-00-401-DR-CI-020006 | STORMWATER LAYOUT PLAN SHEET 05 OF 08                          |
| 31020625-STN-00-401-DR-CI-020007 | STORMWATER LAYOUT PLAN SHEET 06 OF 08                          |
| 31020625-STN-00-401-DR-CI-020008 | STORMWATER LAYOUT PLAN SHEET 07 OF 08                          |
| 31020625-STN-00-401-DR-CI-020009 | STORMWATER LAYOUT PLAN SHEET 08 OF 08                          |
| 31020625-STN-00-401-DR-CI-040001 | WASTEWATER LAYOUT PLAN - OVERALL                               |
| 31020625-STN-00-401-DR-CI-040002 | WASTEWATER LAYOUT PLAN - PUMPSTATION                           |
| 31020625-STN-00-401-DR-CI-060001 | WATER SCHEME LAYOUT PLAN - OVERALL                             |
| 31020625-STN-00-401-DR-CI-060002 | WATER SCHEME LAYOUT PLAN - TANKS AND PUMPS                     |
| 31020625-STN-00-501-DR-CI-090001 | EARTHWORKS PLAN - FINISHED GROUND SURFACE                      |
| 31020625-STN-00-501-DR-CI-090002 | EARTHWORKS PLAN - SUBGRADE SURFACE                             |
| 31020625-STN-00-501-DR-CI-090301 | EARTHWORKS PLAN STAGE 1                                        |
| 31020625-STN-00-501-DR-CI-090302 | EARTHWORKS PLAN STAGE 2                                        |
| 31020625-STN-00-501-DR-CI-090303 | EARTHWORKS PLAN STAGE 3                                        |
| 31020625-STN-00-501-DR-CI-090402 | EROSION & SEDIMENTATION CONTROL PLAN STAGE 1                   |
| 31020625-STN-00-501-DR-CI-090403 | EROSION & SEDIMENTATION CONTROL PLAN STAGE 2                   |
| 31020625-STN-00-501-DR-CI-090404 | EROSION & SEDIMENTATION CONTROL PLAN STAGE 3                   |
| 31020625-STN-00-501-DR-CI-090405 | EROSION & SEDIMENTATION CONTROL PLAN - TYPICAL DETAILS         |
| 31020625-STN-00-400-DR-CI-511002 | 3 WATERS PLAN - STAGE 1                                        |
| 31020625-STN-00-400-DR-CI-511003 | 3 WATERS PLAN - STAGE 2                                        |
| 31020625-STN-00-400-DR-CI-511004 | 3 WATERS PLAN - STAGE 3                                        |
| 31020625-STN-00-501-DR-CI-511005 | POWER AND COMMUNICATION PLAN - STAGE 3                         |

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| D    UPDATED ISSUE FOR CONSENT | RO    | FZ    | 26.04.15   |
| C    ISSUED FOR CONSENT        | BG    | SL    | 26.02.20   |
| B    ISSUED FOR CONCEPT DESIGN | BG    | SL    | 26.02.05   |
| A    ISSUED FOR CONCEPT DESIGN | MS    | FZ    | 25.12.19   |
| Issued/Revision                | By    | Appd  | YYYY.MM.DD |

Issue Status

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Coordinate System  
NZGD North Tairāi Circuit 2000  
Datum  
NZVD 2016

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Client/Project Logo

\_\_\_\_\_

Client/Project  
SOUTHERN LINK PROPERTY Ltd  
SOUTHERN LINK INLAND PORT  
DEVELOPED CONCEPT DESIGN

Maninder Singh  
Drawn

Maninder Singh  
Designed

Matt Barber  
Reviewed

Sarah Lloyd  
Approved

2026.04.15  
YYYY.MM.DD

Title  
DRAWING INDEX

Project No.  
310206525

Revision  
D

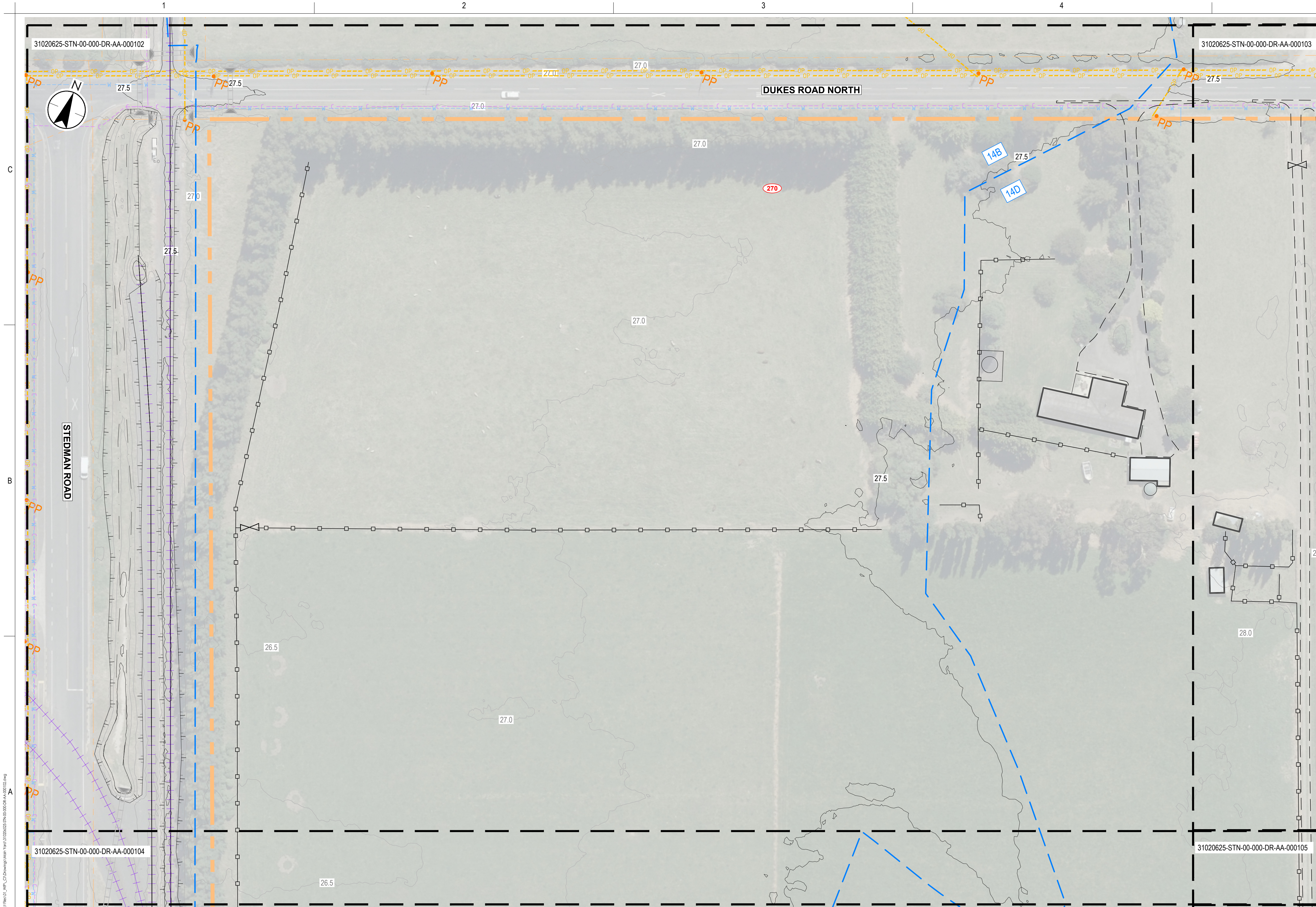
Drawing No.  
310206525-STN-00-000-DR-AA-000002

Scale at A1









**LEGEND**

- PROPERTY BOUNDARY
- PARCEL BOUNDARY
- FLOOD LINE (2GP DCC)
- FENCE
- EDGE OF ACCESSWAY
- GATE
- RAILWAY TRACK
- PROPERTY NUMBER
- OVERHEAD POWER
- TELECOM
- WATERMAIN
- STORMWATER MAIN
- SANITARY SEWER PRESSURE MAIN
- UNDERGROUND POWER
- POWER POLE
- MINOR CONTOUR
- MAJOR CONTOUR
- EXISTING BUILDINGS

**NOTE**

1. EXISTING GROUND SURFACE PROVIDED BY OTHERS AND IS A COMBINATION OF LIDAR DATA AND CONVENTIONAL TOPOGRAPHICAL SURVEY.

|        |        |
|--------|--------|
| 000102 | 000103 |
| 000104 | 000105 |
| 000106 | 000107 |
| 000108 | 000109 |

**SHEET LAYOUT LOCATION**

1:500 10 5 0 10 20 A1  
1:1000 A3

**PLAN**  
SCALE 1 : 500

|                                                                           |                                                                                               |                                                                                                                                                                                                                                                                                               |                                                                              |                                                                                                                          |                                                                                                                          |                                                                                                                                                                     |                                                                               |                                                                    |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------|--------------------------------------------------------------------|
| <p>Issue Status</p> <p><b>A1</b></p> <p><b>AUTHORISED FOR CONSENT</b></p> | <p>Coordinate System</p> <p>NZGD North Tairāhī Circuit 2000</p> <p>Datum</p> <p>NZVD 2016</p> | <p>Colour Disclaimer</p> <p>This drawing has been documented in colour. This drawing is required to be printed in colour. Failure to do so may result in loss of information. Black and white printing may be used if specific black and white documents have been obtained from Stantec.</p> | <p>Client/Project Logo</p> <p><b>Southern Link</b></p> <p>LOGISTICS PARK</p> | <p>Client/Project</p> <p>SOUTHERN LINK PROPERTY Ltd</p> <p>SOUTHERN LINK INLAND PORT</p> <p>DEVELOPED CONCEPT DESIGN</p> | <p>Client/Project</p> <p>SOUTHERN LINK PROPERTY Ltd</p> <p>SOUTHERN LINK INLAND PORT</p> <p>DEVELOPED CONCEPT DESIGN</p> | <p>Maninder Singh<br/>Drawn</p> <p>Maninder Singh<br/>Designed</p> <p>Matt Barber<br/>Reviewed</p> <p>Sarah Lloyd<br/>Approved</p> <p>2026.04.15<br/>YYYY.MM.DD</p> | <p>Title</p> <p>EXISTING SITE FEATURES AND SERVICES</p> <p>SHEET 01 OF 08</p> |                                                                    |
|                                                                           |                                                                                               |                                                                                                                                                                                                                                                                                               |                                                                              |                                                                                                                          |                                                                                                                          |                                                                                                                                                                     | <p>Project No.</p> <p>310206525</p>                                           | <p>Scale at A1</p> <p>1:500</p>                                    |
|                                                                           |                                                                                               |                                                                                                                                                                                                                                                                                               |                                                                              |                                                                                                                          |                                                                                                                          |                                                                                                                                                                     | <p>Revision</p> <p><b>D</b></p>                                               | <p>Drawing No.</p> <p><b>310206525-STN-00-000-DR-AA-000102</b></p> |
|                                                                           |                                                                                               |                                                                                                                                                                                                                                                                                               |                                                                              |                                                                                                                          |                                                                                                                          |                                                                                                                                                                     |                                                                               |                                                                    |

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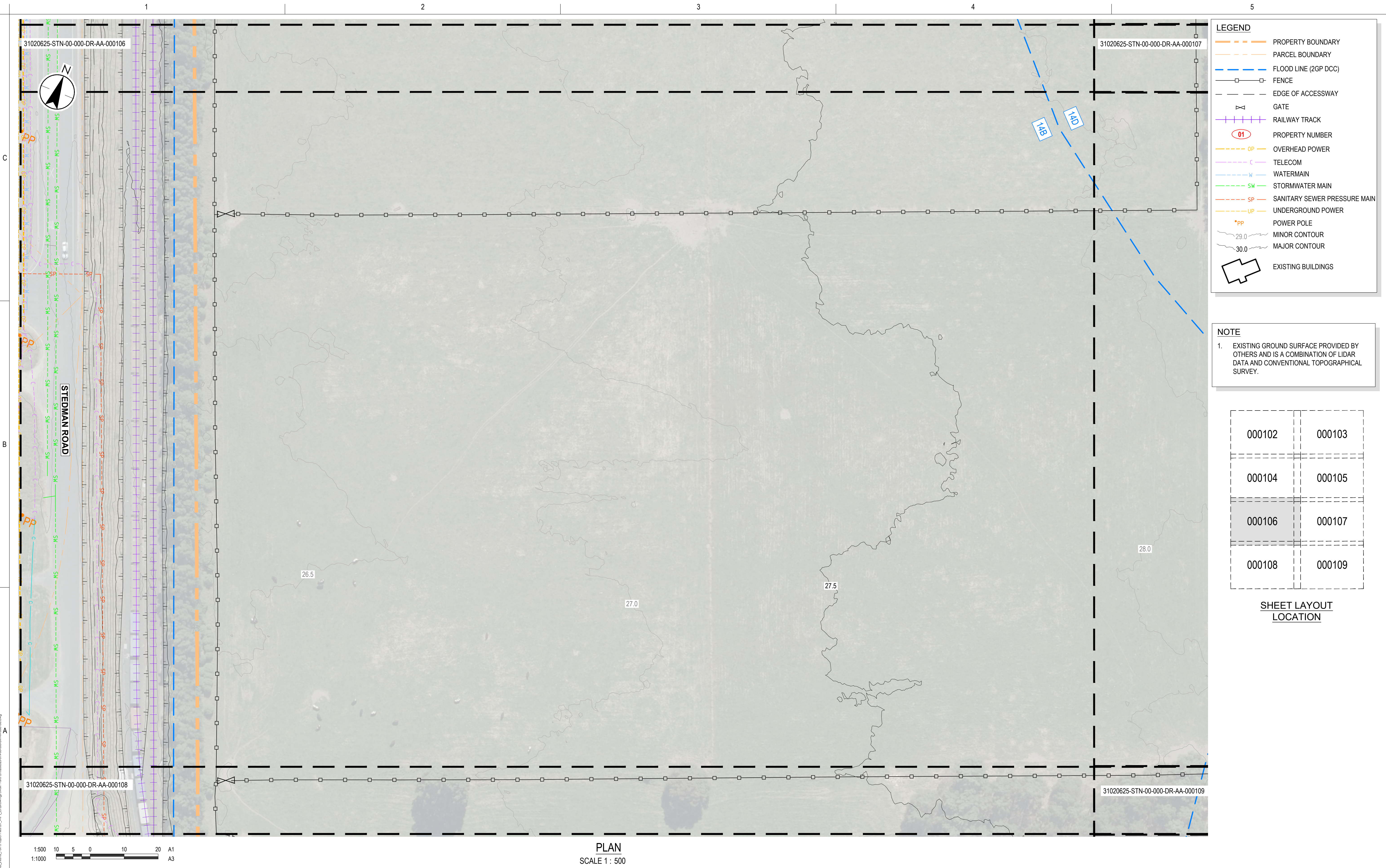












1:500  
1:1000

10

5

0

10

20

A1  
A3

PLAN

SCALE 1 : 500

Issue Status

A1

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NZGD North Tairāhī Circuit 2000

Datum

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Client/Project Logo

Maninder Singh

Maninder Singh

Matt Barber

Sarah Lloyd

2026.04.15

YYYY.MM.DD

Drawn

Designed

Reviewed

Approved

Client/Project

SOUTHERN LINK PROPERTY Ltd

SOUTHERN LINK INLAND PORT

DEVELOPED CONCEPT DESIGN

Title

EXISTING SITE FEATURES AND SERVICES

SHEET 05 OF 08

Project No.

310206525

Scale at A1

1:500

Revision

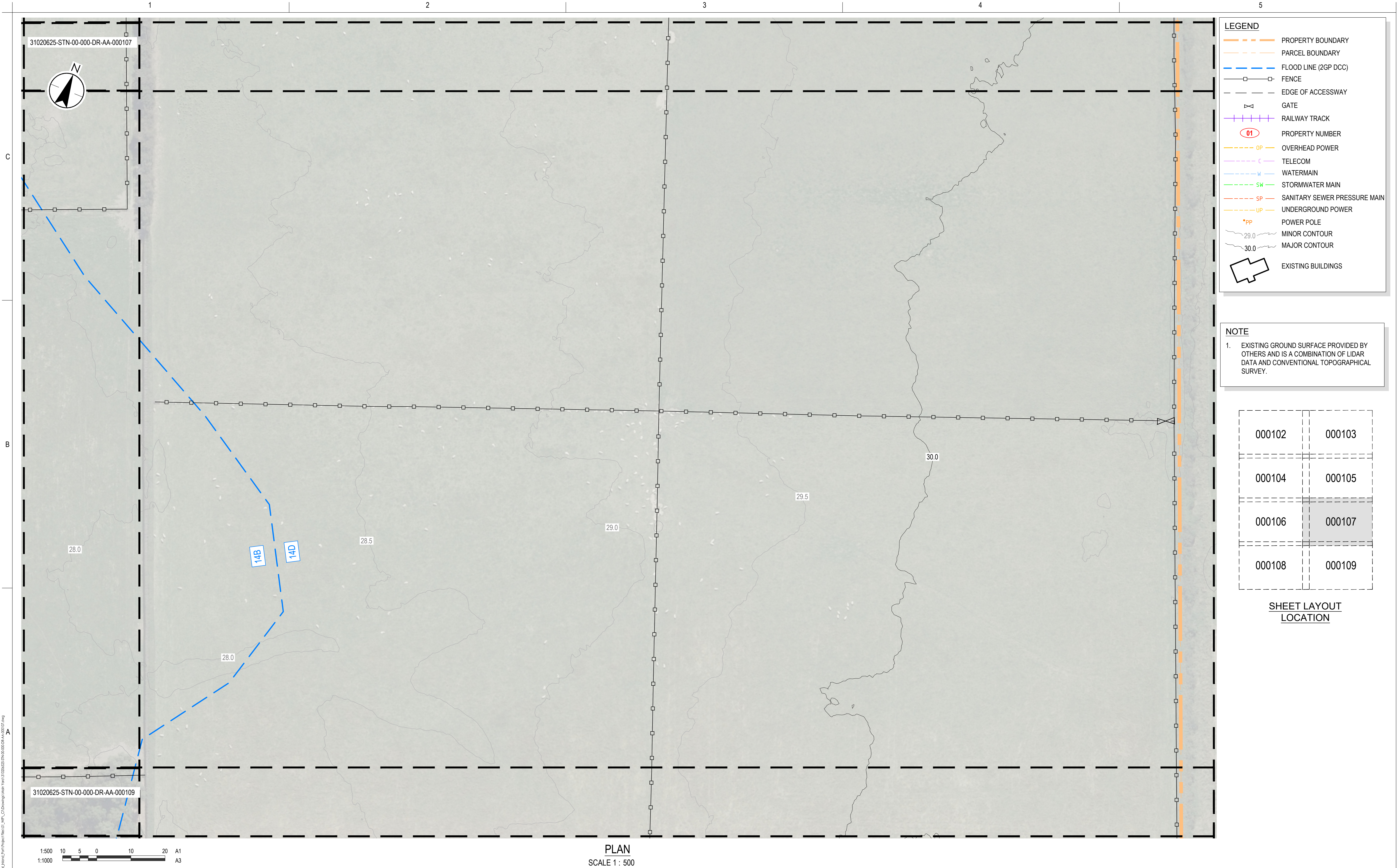
D

Drawing No.

310206525-STN-00-000-DR-AA-000106

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Printed Date: 15/04/2025 2:34:14 pm





1:500  
1:1000

10 5 0 10 20

A1  
A3

Issue Status

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Client/Project Logo

Maninder Singh  
Drawn

Maninder Singh  
Designed

Matt Barber  
Reviewed

Sarah Lloyd  
Approved

2026.04.15  
YYYY.MM.DD

Maninder Singh  
Drawn

Maninder Singh  
Designed

Matt Barber  
Reviewed

Sarah Lloyd  
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Drawing No.  
31020625-STN-00-000-DR-AA-000107

Title  
EXISTING SITE FEATURES AND SERVICES  
SHEET 06 OF 08

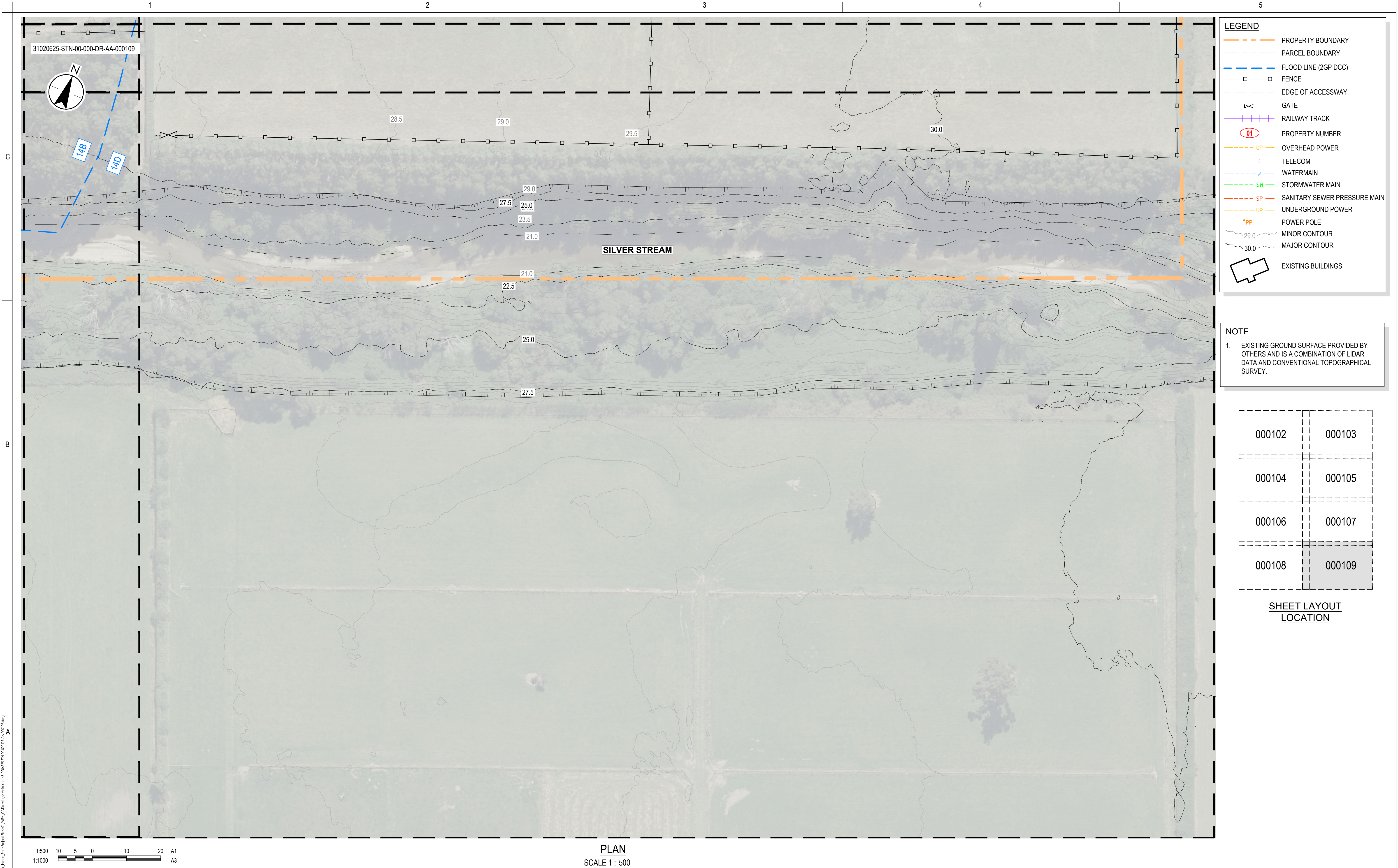
Project No.  
310206525

Scale at A1  
1:500









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Printed Date: 15/04/2024 2:40:01 pm

1:500 10 5 0 10 20 A1  
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PLAN  
SCALE 1 : 500

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|-----------------|---------------------------|----|------|------------|
| D               | UPDATED ISSUE FOR CONSENT | RO | FZ   | 26.04.15   |
| C               | ISSUED FOR CONSENT        | BG | SL   | 26.02.20   |
| B               | ISSUED FOR CONCEPT DESIGN | BG | SL   | 26.02.05   |
| A               | ISSUED FOR CONCEPT DESIGN | MS | FZ   | 25.12.19   |
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SOUTHERN LINK PROPERTY Ltd  
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|                |                |             |             |            |
|----------------|----------------|-------------|-------------|------------|
| Maninder Singh | Maninder Singh | Matt Barber | Sarah Lloyd | 2026.04.15 |
| Drawn          | Designed       | Reviewed    | Approved    | YYYY.MM.DD |

Title  
EXISTING SITE FEATURES AND SERVICES  
SHEET 08 OF 08

Project No.  
310206525

Scale at A1  
1:500

Revision  
**D**  
Drawing No.  
**310206525-STN-00-000-DR-AA-000109**