Infrastructure Servicing Report

Version C

eliot sinclair

Faringdon Oval Supermarket

Prepared for Woolworths NZ Limited

520947

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Quality Control Certificate

Eliot Sinclair & Partners Limited

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A	Draft Issued to Woolworths	JKFP	19 January 2024
B	Remove Appendix A. Update S7.1.	LJJ	19 January 2024
C	Update S2.1, 2.2, 7.2	JKFP	25 January 2024

Contents

1. Introduction

Eliot Sinclair has been engaged by Woolworths NZ Ltd to prepare an Infrastructure Servicing Report to support the resource consent application for the site. The purpose of this report is to confirm the site can be serviced for the proposed commercial usage as a supermarket. Detailed civil engineering design will be completed during the building consent phase.

The land on which the supermarket is proposed to be constructed is part of a residential subdivision that is currently under construction. Davie Lovell Smith (DLS) carried out the roading and infrastructure design for the subdivision and have provided Eliot Sinclair with design drawings and other information enable this servicing assessment to be made.

DLS has produced an Infrastructure Report (**Appendix A**) for the wider Faringdon Oval development which provides context for the proposed Council services available for connection.

2. Water Supply

As part of the Infrastructure Report, DLS have produced a plan with the existing and proposed water supply infrastructure for the Faringdon Oval area. This plan was produced in accordance with SDC's water supply plan for urban growth to the year 2050 and was approved by SDC Officer Murray England.

The plan shows a new DN200 pipe is to be installed in Goulds Rd and a DN250 to be installed in Shillingford Boulevard. Therefore, the site will have two Council trunk mains available for water supply connection. We have assumed there will be sufficient water supply flow and pressure within these mains to service the site. Flow tests and the supply demand required for the site will be confirmed at detailed design stage.

2.1. Fire Fighting Supply

Eliot Sinclair has liaised with the fire engineer (Protech Design Limited) to provide a preliminary design of the firefighting water supply required for an internal sprinkler system. Full email correspondence with Protech and an annotated markup of the firefighting connection is attached in **Appendix B**.

Protech Design Limited used a typical layout of a similar size supermarket to estimate the required firefighting demand and therefore size the connection. They concluded that a single DN180OD (150mm ID) PE connection to either main would be sufficient to service the site for firefighting, although further testing is required to confirm this sizing.

The connection would be configured with an underground valve and water meter installed within the road reserve as public infrastructure near the property boundary. A backflow preventer would be installed within the site boundary as a private asset. A typical diagram of this connection is provided below.

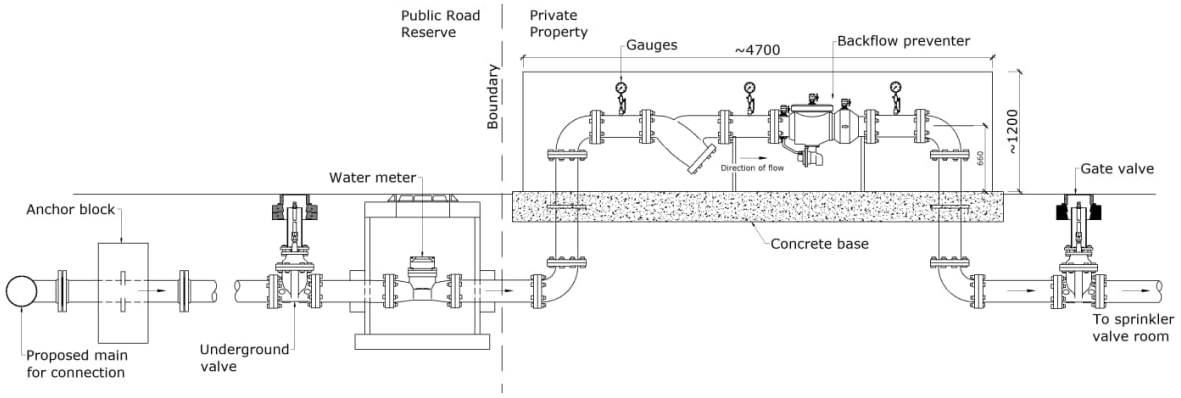

Figure 1 Firefighting water supply meter and backflow preventor

For further detail on the water supply reticulation within the property boundary, refer to the email correspondence from Protech in **Appendix B**.

2.2. Potable Water Supply

It is proposed to service the site via DN63OD submain(s) for potable water supply. The potable connection will be separate to the firefighting supply. Proposed potable water supply connections are shown on the Services Plan in **Appendix C**.

3. Wastewater

As part of the wider subdivision works, a DN150 uPVC gravity main has been installed within Goulds Rd and Edgar Way with a manhole at the junction of Goulds Road and Edgar Way. As DLS had previously anticipated residential development, several DN100 laterals have been installed from the main in Goulds Road into the supermarket site. DLS have since confirmed that the DN100 lateral from the manhole to the site will be upgraded to a DN150 connection. Thus, the site will discharge all wastewater to the Council gravity reticulation via this connection.

Preliminary calculations have conservatively estimated that a DN150 outlet will be sufficient for the supermarket wastewater discharge. DLS have also been requested to install the upsized connection at the flattest grade permitted by SDC standards to provide greater fall for the internal wastewater reticulation. The proposed wastewater connection is displayed on the Services Plan in **Appendix C**.

A detailed internal layout of the proposed supermarket is not yet available. As such, we can't confirm the likely wastewater load from the site and whether the SDC wastewater network will have sufficient capacity. Once the building layouts are confirmed during detailed design, we will be able to evaluate the wastewater discharge from the site and confirm whether the existing network has adequate capacity. If there is not sufficient capacity in the network, on site attenuation tanks may be required to ensure that the available capacity in the SDC network is not exceeded.

At this stage, the trade waste requirements for the development (if any) are not known. Once these are confirmed, we will liaise with SDC to determine any requirements they may have.

4. Stormwater

4.1. Primary System

In accordance with the strategy for the wider Faringdon Oval development, all primary stormwater discharge on site will be disposed to ground via a soakage system. We anticipate that ECan consents

will be required for the stormwater disposal. The following comments are subject to confirmation with ECan during the consenting process.

The DLS Infrastructure Report states that "*The depth to groundwater is estimated to be between 5m and 10m from surface level based on data from bores surrounding the site*." This indicates that a high groundwater level is unlikely to be a constraint on the use of soakage pits.

For commercial sites in Canterbury, ECan typically require the capacity of the stormwater system to contain and dispose of runoff from all events up to and including a 2% AEP 24-hour duration rainfall event. Therefore, downpipes, kerb and channel, and sumps will convey stormwater runoff to underground soakage pits sized to store and discharge all runoff up to and including the design event.

A preliminary site layout for the supermarket has been used to estimate the stormwater runoff for the site. Preliminary soakage pit sizing calculations have been carried out to determine the required area for the soakage pits. For a conservative estimate, an infiltration rate of 1 m/hr and pit depth of 2m was assumed for calculation purposes.

The calculations suggest an area of approximately 300 m^2 is required for a soakage pit with typical boulder media, or approximately 200 m^2 with crate media (due to a higher void ratio). The required area is subject to change at detailed design due to a variety of factors such as confirmation of soakage pit depths, on site infiltration testing, and soakage pit locations.

The soakage pits can be constructed under both hardstand and green areas although green areas are preferable for constructability and maintenance. The soakage pits can also be separated into multiple pits to dispose of different catchment areas if required. For reference, indicative soakage areas have been displayed on the Services Plan in **Appendix C**. Regardless of the soakage media, there is sufficient area within the site to facilitate soakage pits for stormwater discharge up to and including the design rainfall event.

4.2. Secondary System

The developed site will be shaped to convey stormwater runoff beyond the capacity of the primary network towards the public road network. The existing site drains toward the southeast, thus secondary flow will likely discharge to Goulds Road, subject to detailed surface design.

4.3. Finished Floor Level

Review of the current ECan Flood Model results shows only minor ponding of less than 0.2m depth across the site during the 200yr ARI rainfall event. Note that this is based on the existing ground surface and not the ground surface after the development has been completed.

We understand that DLS will intend to complete flood modelling for the proposed development. Once we have the information from this modelling, we will be able to specify a finished floor level (FFL) for the buildings within the development to ensure they meet the planning and building code flood requirements.

Until the flood modelling is complete, for the preliminary modelling of earthworks, we have assumed that all secondary flow for the development will be contained within the road reserves. Preliminary feedback from SDC requires FFL's to be a minimum of 300mm above the 1 in 200-year flood level. We have therefore set the FFL to be at least 300mm above the lowest level along the road boundary on Goulds Road.

4.4. Regional Consents

Given the stormwater discharge to ground, regional consents will be required via Environment Canterbury (ECan) for operation phase and construction phase stormwater discharge. There is likely a global operational phase stormwater consent for the wider Faringdon Oval development for discharge of the roof runoff to ground for the proposed residential lots. It is proposed to either amend this consent to include discharge from the proposed commercial site or obtain a separate consent from ECan for the site.

The consenting aspect relating to stormwater discharge and treatment will be managed by Planz Consultants, alongside the other consenting matters. Thus, we have assumed that the appropriate ECan consents will be applied for and obtained for the supermarket development site. Treatment requirements are also yet to be confirmed and will likely be included in the consent conditions. We expect the hardstand runoff will require treatment via green infrastructure (swales/basins) or a proprietary treatment device(s), prior to discharge.

Further information regarding the construction phase consent is provided in **Section 7** below.

5. Electricity Supply

As per previous reporting, Woolworths have advised the following power services will be required to service the site:

a three phase and neutral solidly earthed, 500V, 50Hz electricity supply via a 11KV/400 volt 500KVA transformer.

Third party electrical consultant Electrical Consulting Services (ECS) have also reviewed the above power supply and confirmed this would be sufficient for the proposed supermarket and retail areas.

We have assumed the electricity reticulation installed as part of the wider subdivision works will have sufficient capacity for this connection.

6. Telecommunications

ECS have also been engaged to estimate the demands for the fibre connection to the site. They have advised that the likely incoming network will be in Shillingford Blvd and a 24F cable will service the site. We have assumed the fibre reticulation installed as part of the wider subdivision works will have sufficient capacity for this connection.

Please refer to the full fibre correspondence from ECS in **Appendix D** for more detail. No internal fitout has been provided at this stage.

7. Earthworks and Erosion Sediment Control

7.1. Earthworks

A detailed topographical survey and UAV scan of the site was carried out in December 2023. The existing landfall is generally flat with a gentle grade toward Goulds Rd to the southeast.

The site must be cleared and uncontrolled fil suitably disposed of prior to any site levelling works.

Shallow test pits on site have confirmed a topsoil depth of approximately 250 mm to 300mm across the site. Earthworks will likely consist of stripping the turf layer and disposing off-site, followed by removing the topsoil layer onto a clean insitu subgrade. Once the subgrade has been approved by a suitability qualified Engineer, further cutting or filling can commence to meet the design levels.

All earthworks will need to be undertaken in accordance with NZS 4431:2022 – Code of Practice for Earth Fill for Residential Development.

Based on our preliminary design to date, we do not anticipate that any retaining walls will be required.

Accidental discovery protocols will be in place should any unexpected uncontrolled fill or contamination be encountered. Deeper localised excavations may also be instructed by the Inspection Engineer to remove unsuitable soils such as large tree roots or stumps.

Based on our "Desktop Geotechnical Report and Preliminary Conceptual Foundation Recommendations" (which recommended a CBR of 5% for the underlying silts) and some preliminary design assumptions of likely traffic loadings, we anticipate a pavement makeup for the carpark as shown:

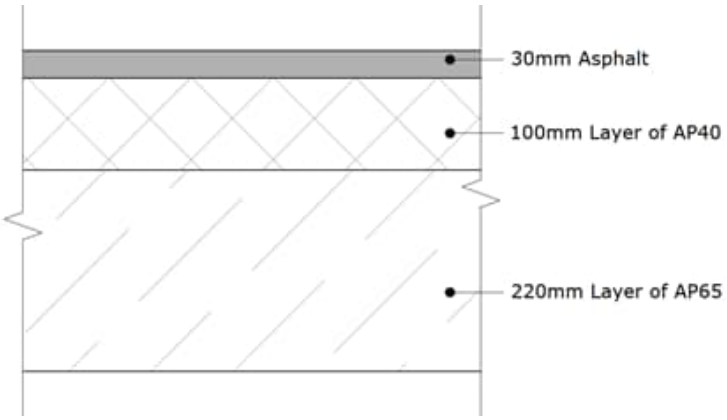

Figure 2 Carpark Pavement Detail

Note that the loading lane on the south side of the building will require a thicker pavement and surfacing to handle heavier vehicle loadings and traffic movements. This will be confirmed during detail design.

7.2. Earthworks Volumes

A preliminary surface design has been carried out as shown on the drawings attached in Appendix E. The earthworks volumes based on the preliminary design are provided below. A 20% contingency has been added to the volumes.:

Table 1 Earthwork Volumes

Item	Approximate Quantity
Topsoil Strip*	4,500m^3
Total Cut**	6,500m^3
Total Fill***	7,500m^3
Earthworks Total	14,000m^3
Maximum cut depth from existing ground level to design finished ground level	0.9m

Item	Approximate Quantity
Maximum fill depth from subgrade level to design finished ground level	1.0m

*Based on 275mm topsoil depth.

**Includes topsoil strip, cut to subgrade level, cut to fill.

***Includes cut to fill, imported pavement/hardfill and building slabs to FFL.

7.3. Erosion, Sediment and Dust Control

An erosion, sediment, and dust management plan (ESDMP) will be prepared and implemented in accordance with best practice and the recommendations from ECan's "*Erosion & Sediment Control Toolbox for Canterbury*". We have assumed that the appropriate ECan consents will be obtained by Planz Consultants given they will be required for discharging of construction phase stormwater to ground. They will also manage the subdivision and earthworks consents and engineering approvals from Selwyn District Council.

An ESDMP will provide the necessary measures required to mitigate environmental issues associated with earthworks, thereby minimising or preventing undue erosion and the risk of sediment laden stormwater discharges entering any drain or waterbody. It will also provide guidance for protecting the surrounding environment from dust emissions.

Below is a description of the likely erosion, sediment, and dust control measures to be implemented for the site earthworks. This list is an indication only and will be confirmed as part of the final ESDMP.

- A silt fence around the perimeter of the construction site.
- Stabilised site entrance/exits at site access points.
- A construction phase soakage basin(s) and/or soakage pit(s) will be required for disposal of the dirty runoff.
- Cutoff drains or bunds to divert water toward the soakage basin for discharge.
- Sediment protection around existing downstream sumps.

Key earthworks principles such as minimizing exposed areas and conducting earthworks during dryer months must also be considered during project planning and construction sequences.

8. Conclusion

The site can be serviced for wastewater, stormwater, potable water, communications, and electricity subject to preliminary and detailed design in conjunction with appropriate Council consents being obtained. On this basis the consent submission for utilizing the land for commercial use as a supermarket can be supported in respect of infrastructure and servicing capacity.

9. Disclaimer

This report has been prepared by Eliot Sinclair & Partners Limited ("Eliot Sinclair") only for the intended purpose as an Infrastructure Servicing Report.

The report is based on:

- Available documents for the Faringdon Oval fast-track consent.
- Data obtained from online GIS services such as SDC Services maps.
- Design comments from third party consultants.

Where data supplied by Woolworths NZ Limited or other external sources, including previous site investigation reports, have been relied upon, it has been assumed that the information is correct unless otherwise stated. No responsibility is accepted by Eliot Sinclair for incomplete or inaccurate data supplied by other parties.

Whilst every care has been taken during our investigation and interpretation of existing reports and information supplied by other parties to ensure that the conclusions drawn, and the opinions and recommendations expressed are correct at the time of reporting, Eliot Sinclair has not performed an assessment of all possible conditions or circumstances that may exist at the site. Variations in conditions may occur between investigatory locations and there may be conditions such as groundwater levels that were not detected by the scope of the investigation that was carried out or have been covered over or obscured over time. Eliot Sinclair does not provide any warranty, either express or implied, that all conditions will conform exactly to the assessments contained in this report.

The exposure of conditions or materials that vary from those described in this report may require a review of our recommendations. Eliot Sinclair should be contacted to confirm the validity of this report should any of these occur.

This report has been prepared for the benefit of Woolworths NZ Limited for the purposes as stated above. No liability is accepted by Eliot Sinclair or any of their employees with respect to the use of this report, in whole or in part, for any other purpose or by any other party.

Appendix A. DLS Infrastructure Report

Hughes Developments Ltd

Faringdon Oval – Rolleston

Infrastructure Report

20577 R2

December 2022

DAVIE LOVELL-SMITH

PLANNING SURVEYING ENGINEERING

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Revision History

Rev Number:	Prepared By:	Description:	Date:
Revision 0	Jamie Verstappen	For Referral Application	22-12-21
Revision 1	Jamie Verstappen	Update following review	22-2-22
Revision 2	Jamie Verstappen	For consent	14-12-22

Document Control

Action:	Name:	Signed:	Date:
Prepared By	Jamie Verstappen		21-12-22
Reviewed By	Ben Fox		21-12-22
Approved By	Jamie Verstappen		21-12-22

Contents:

1. General

1.1 Introduction

This infrastructure report addresses the future infrastructure required to service the proposed Faringdon Oval development area. This area covers approximately 69.4 ha of land and is located on the south western urban limits of Rolleston, Canterbury. The site is bounded by Dunns Crossing Road to the west, Goulds Road to the south-east and residential development areas to the north. A site location plan is attached as Appendix A. It is proposed to subdivide the development area into 1148 residential sections (stand alone, duplex and terraced), 4 apartment lots each assumed to have 40 apartments for engineering purposes, 1 commercial lot and a 4.6 Ha school site. For the purposes of determining infrastructure loadings a total of 1268 new dwellings will be used which equates to an overall density of approximately 20 lots/ha.

The surrounding area falls towards the south east at an approximate grade of 1 in 200. The land is currently comprised of several lifestyle and rural blocks of varying sizes. A number of boundaries within the site are lined with pine tree shelter belts and the blocks are fenced into smaller paddocks. There is also a Walnut Tree orchard located within one of the land parcels. Several blocks contain a dwelling and assorted out buildings, all existing buildings within the site will be removed as development progresses.

Davie Lovell-Smith Ltd (DLS) have held several meetings with Strategic Planners and Infrastructure Engineers at Selwyn District Council (SDC), primarily Murray England and Andrew Mazey with specific regards to servicing the proposal for water supply, sewer and roading. It is the Applicant's intention to construct infrastructure that will meet the demands of this project and also complement the long-term requirements of the southern end of the Rolleston Urban Area. The proposed infrastructure will be integrated into the existing networks and all efforts will be made to ensure that the installations are complimentary to the current assets.

All sites will be serviced for sewage, water supply, telecommunications and power. It is anticipated that stormwater will be discharged to ground on-site under a separate consent to be obtained from Environment Canterbury (ECan).

1.2 Legal Description

There are 6 existing land parcels within the site. The legal descriptions of these sites are; Lots 1 and 3 DP 70352, Lots 1 and 3 DP 57004 and Lots 1 and 2 DP 61278.

1.3 Soil Conditions

From the various geotechnical investigations undertaken for the development area we can deduce that the soil profile beneath the site is generally covered with 100mm-300mm of topsoil overlying silty or sandy gravels to several tens of metres depth. A thin layer of sands and silts is intermittently located between the topsoil and gravel layers. Some seams of clay and silt may be present at various depths within the deeper gravel layers. The depth to groundwater is estimated to be between 5m and 10m from surface level based on data from bores surrounding the site.

The site is situated in a 'Rural and Unmapped' area as per the MBIE mapping available on the New Zealand geotechnical database. Due to the granular nature of soils beneath the site, the low ground water table and low gradients this site has been categorised as equivalent TC1 in the geotechnical reporting.

1.4 Site Contamination

Detailed site investigations into potential contamination of soil within the land parcels which make up the Faringdon Oval development area have been undertaken by ENGEO. These have identified various forms of contamination which are above the limits set by the NES, namely heavy metals. Further surveys for asbestos have also been recommended if buildings are to be demolished.

A remediation action plan (RAP) has been provided to assist in the removal of this contaminated material from the development area. All contamination from site will be removed in accordance with this RAP prior to earthworks and civil construction being undertaken in the vicinity of contaminated soils and a site validation report provided. The contamination removal and site validation may be undertaken in stages as the development progresses. Remedial works will be programmed to commence following granting of resource consent for the works.

1.5 Development Staging

The development area will be constructed in stages. The location and size of stages have been determined by the servicing requirements, roading access and efficiencies of construction.

2. Water Supply

The Council have a strategic plan for the delivery of water trunk mains throughout Rolleston, including future growth areas. This plan has been compiled following network modelling considering areas of predicted urban growth to the year 2050. The plan details a network of water trunk mains with sizes to be progressively installed as the urban limits expand. This plan also shows where bores will be installed or upgraded to provide sufficient supply to the trunk main network. The plan is attached as Appendix B. The proposed Faringdon Oval site covers areas labelled on the plan as ODP Area 12 and SR 9.

The construction of the overall Faringdon Development, including the recently consented Faringdon South-West site, has provided additional 200mm (ID) mains along main internal traffic routes which has provided additional redundancy to the surrounding network. Water network modelling of the Faringdon Oval development area will be undertaken during detailed design to ensure the needs of the development and surrounding areas are met with consideration being given to the proposed development density and future land uses within the site.

Please refer to the attached Proposed Trunk Mains plan in Appendix B.

This plan shows the existing pipework, 200mm (ID) or over. It also shows the future proposed trunk main pipes which will service the proposed plan change area. This plan has been forwarded to SDC Officer Murray England who has confirmed acceptance of the proposed internal trunk main network. An additional 250mm (ID) pipe line will be included along the main east-west collector road through the development, this will ensure additional security of supply for surrounding communities by providing a large network link between the two bores nearest to the site.

These main pipes will follow main connecting traffic routes but it is worth noting that all other streets will contain water mains of 150mm (ID) for residential and firefighting supply purposes.

The methodology for determining peak flow for the development is presented as follows:

- Area within the Block = 69.4ha
- Number of lots for modelling purposes = 1268 lots (As shown on subdivision plan)
- With reference to Chart 1 in Chapter 7 of the SDC Code of Practice, the peak design flow will be 0.125 l/s/lot.
- This equates to 152.16 l/s.
- The peak flow requirements for the school site are expected to be 10 l/s.
- Assuming that a third of this flow may be going down any one trunk main, the max flow becomes 54.05 l/s.

  Colebrook-White Equation

Pipe diameter	250mm	
Gradient -	1 in 212	
Pipe Roughness - ks	0.15mm	
Results for Full Bore Conditions:		
Velocities	1.01	m/s
Discharge	54.13	litres/sec

- For a 250mm (ID) pipe this equates to a unit headloss of 1 in 212m which is less than the maximum allowable loss detailed in the SDC Code of Practice.

The development area will also be designed to comply with the New Zealand Fire Service Firefighting Water Supplies Code of Practice SNZ PAS 4509:2008. The water supply classification will be FW2 which requires an additional 25 l/s of flow to be available at any point within the development area. The water network model will be submitted to SDC for engineering approval as evidence that firefighting supply requirements will be met through each stage of development.

3. Stormwater

3.1 Design

The landform and contours throughout the development will be designed to ensure that secondary flow will be safely conveyed through the site via the road and reserve networks. The land falls to the south east towards Goulds Road.

Primary stormwater from the site is proposed to be discharged to ground. Soakpits on individual lots will be constructed as part of the Building Consent process. All proposed stormwater infrastructure associated with the roads will be constructed as part of the subdivision and will be vested in SDC.

Soakpits on private residential sites will accommodate storms up to a 10% AEP 1hr event in accordance with New Zealand Building Code requirements. The soakpits to be constructed within roads and reserves will accommodate flows emanating from roads for up to and including the 1% AEP event plus the runoff from the house sites once the on-site soakpits are inundated. This will be calculated as the flows generated by a 1% AEP critical duration event over the entire catchment, less a 10% AEP 1hr event calculated using the area of contributing private lots. Particular care will be made to ensure that all sumps and pipe infrastructure can accommodate these flows.

All sump outlets will be trapped as a means of separating hydrocarbons and other floatable contaminants prior to entering the pipe network.

Reserve areas throughout the site will be utilised for stormwater treatment prior to disposal to ground. Stormwater emanating from adjacent roads will be piped to shallow grassed swales which will discharge to boulder backfilled soakage trenches located beneath the surface. Grassed swales are the preferred method for stormwater treatment due to their simple function and low future maintenance cost. The basis for the design of swales will be the CCC Waterways and Wetlands Design Guide.

The depth of soakpits will be limited to 3m below ground level to allow the maximum amount of unsaturated depth between the point of discharge and the groundwater level while still achieving high infiltration rates to ensure function during more severe rainfall events.

Proprietary treatment devices located within soakpit service manholes have also been considered. All soakpit service manholes will have the ability to be retrofit with proprietary treatment devices in future should requirements regarding stormwater treatment change. This is consistent with the approach taken for the Faringdon South East and South West development areas. It is noted that as well as upfront capital cost, these treatment devices require regular maintenance resulting in an on-going cost centre to the end user. Considering the expected low contaminant levels of stormwater discharge from both roads and private lots, and the depth to groundwater at the site the use of these devices across the entire development is not deemed necessary.

Resource consent for stormwater discharge to ground from the development site will be obtained from Environment Canterbury (ECan). All consenting from ECan will be verified by SDC as being suitable for transfer to their ownership following the agreed defects liability period.

Stormwater discharge during construction will comply with the ECan Erosion and Sediment Control Guidelines. Erosion and Sediment Control Management Plans will be compiled for both ECan and SDC approval. The proposed methods of stormwater treatment and disposal will satisfy the conditions of all stormwater discharge consents granted for previous stages of the Faringdon development.

3.2 Flood Analysis

Flood modelling has identified that the site in its current landform may be affected by flooding in both the 1 in 200 year and 1 in 500 year storm events. Surface water may pool up to 0.5m deep in these events. It is noted that this flooding data has been compiled using the existing land contours. Flood Level Plans are attached as Appendix C.

The land contouring which will be undertaken as part of any development works will ensure all surface water drains towards the road and reserve corridors. Building platforms will be set between 200mm and 500mm above the kerb level at the lot frontage. Stormwater up to the 1 in 50 year storm will be discharged to ground within soakpits on site. Secondary flow paths will be provided along these road and reserve corridors to ensure all flow over and above the 1 in 50 year event is directed down contour and away from residential lots. As flood water flows through the site the velocity will increase due to the reduced friction associated with paved surfaces. This increase in velocity will reduce water depths and allow safe and efficient transfer of flood water through the site. The proposed roading layout will take into account locations where flood flow may enter the

site. Expected flood flow levels and the calculation of minimum floor levels will be determined during detailed engineering design.

Provided correct design methodologies are followed during detailed design and construction of the development, the effects of flooding from both the 1 in 200 year and 1 in 500 year storm events will be fully mitigated. Similar design methodologies have been applied through recent development works in Rolleston which have been shown to successfully mitigate the effects of high rainfall storm events.

3.3 Water Races

There are 2 water races which enter the development area. One water race enters the north side of the site at the boundary between Lot 3 DP 57004 and Lot 1 DP 26880, this water race discharges to ground at a ponded area shortly after entering the Faringdon Oval site (Lot 1 DP 57004). This water race will be maintained and the pond area located within a reserve. The other water race enters the site from Goulds Road and traverses the eastern boundary of the site before discharging to ground at the boundary between Lots 1 and 3 DP 57004. Approval has been granted by SDC for the closure of this water race and a soakpit will be installed within the reserve land adjacent to the roundabout to manage this discharge. A plan showing the water race network in the vicinity of the site is attached as Appendix D.

4. Sewer

4.1 Existing Network

As part of the Eastern Selwyn Sewage Scheme, a large pump station was constructed at the corner of Selwyn Road and Springston-Rolleston Road. This pump station is known as the Selwyn Road Pump Station. This pump station was designed to receive the flows from the southern side of Rolleston and also flows from other communities before pumping directly to the Pines Wastewater Treatment Plant west of Rolleston. SDC have recently updated their sewage scheme for the area in order to free up additional capacity in the Selwyn Road Pump Station in the near future. This additional capacity has been allocated to the south west Rolleston area. Updates to the scheme include diverting flow from catchments outside of Rolleston to a new pump station and the installation of a rising main which will connect the new pump station directly to the Pines Wastewater Treatment Plant. These upgrades will continue to ensure there are no concerns around the provision of sewer discharge capacity for continued urban development in the south of Rolleston.

Development of the Faringdon Oval site will be beneficial in providing continued funding through development contributions to progress planned upgrades to the Pines Wastewater Treatment Plant. This will result in the more efficient disposal of wastewater by-products and better environmental outcomes through the addition of various treatment processes not currently in use (ie primary sedimentation, anaerobic digestion). Early completion of any upgrades to the Pines Wastewater Treatment Plant will free up resources to allow council to expedite other upgrades to the existing sewer network which services existing residential areas.

As part of the original Faringdon development, a large sewer pipe was laid from the Selwyn Road Pump Station, south along Selwyn Road and then north into the Faringdon Development Area. This

pipe along Selwyn Road is a 525mm dia uPVC pipe and has been laid at a grade of 1 in 430. By applying the Colebrook White Equation, the following data is obtained:

Pipe diameter 525mm
Gradient - 1 in 430
Pipe Roughness ks = 0.6mm

Results for Full Bore Conditions:
Velocities 1.072 m/s
Discharge 232.11 litres/sec

Part-Full Conditions:
Proportion depth = 0.92
Actual depth = 483mm
Velocity = 1.189 m/s
Discharge = 247.64 litres/sec

By relating the flow back to Equation 3 of the Wastewater Section of the SDC Code of Practice, then we can determine the number of sites that this sewer can service.

MF =247.64 litres/sec
ASF = MF/ 3.5 = 70.75 litres/sec (Reduced peaking factor of 3.5 as agreed with SDC)
= 6,113,170 litres/day
No of lots = ASF / 220 / 2.7 = 10291 homes

A new pump station, referred to as the South-West Pump Station, is currently under construction as part of the Faringdon South-West development site which will discharge directly to this existing gravity sewer pipe. The South-West Pump Station has been designed to be constructed in two stages, with the initial stage servicing up to 400 new connections, and the second stage having the capacity to service 3330 new dwellings. The majority of the Faringdon Oval development area is included in the catchment for this pump station, along with additional residential development areas as shown in the South West Sewer Catchment and Layout Plan attached as Appendix E. Details regarding the catchment and layout of sewer infrastructure shown on this plan are in line with the most recent sewage scheme and have been agreed with SDC. Stage 1 of the pump station construction has recently been competed and stage 2 works are now underway, with commissioning scheduled for April 2023.

Emergency storage of sewage has been provided as part of stage 1 of the South-West Pump Station installation. The quantity of emergency storage provided is 8 hours of average sewage flow, this can be calculated as 616m^3 based on an average flow rate of 21.4 l/s from the 221.82 Ha catchment. It has been calculated that there is 118m^3 of storage available within the upstream gravity pipe and manhole network below the overtopping level of 33.59m. The target residual volume to be provided is 498m^3.

The stage 2 pump station works include the installation of a larger discharge pipe, more powerful pumps, a generator and an odour control device. The generator and odour control device will be situated within an acoustically lined housing structure, architecturally designed to suit the surrounding residential environment.

Emergency storage has been provided by underground fibreglass storage tanks located within the South-West Pump Station site. A float switch will be provided within the stage 2 wet-well at the appropriate elevation to alert SDC operations staff when the emergency storage has been activated. A 150mm vent pipe will connect all storage tanks to the odour treatment device, this vent pipe has been located at the opposite end of the tanks to the inlet pipes to ensure air flow through the entire storage system.

The gravity sewer network which has recently been constructed through the Faringdon South-West development area has been designed to accommodate flow from upstream catchment areas. This gravity network has been extended to the boundary of the Faringdon Oval site at several locations and is installed at a depth which will allow the Faringdon Oval site to be completely serviced by gravity. This has been verified by preliminary modelling through the proposed Faringdon Oval roading layout, the outputs of this modelling have been reviewed and accepted by SDC as part of the design acceptance for the downstream network.

4.2 Sewer Design

Referring to the sewer catchment plan (Appendix E), the blue catchment includes most of the proposed Faringdon Oval development area. Part of the Faringdon Oval site will gravitate to the existing sewer on East Maddisons Rd but the majority will be serviced by the South-West Pump Station which will serve the 222 ha blue catchment. Stage 2 of the pump station construction is underway with final commissioning by April 2023. The area of the Faringdon Oval site inside the blue catchment is 68.9 ha which equates to approximately 31% of the pump station catchment.

The sewer demand for the proposal has been calculated using SDC Code of Practice. Please refer to the calculation below for the peak domestic demands.

Blue Catchment area = 222ha

At an average density of 15 sites per hectare over the catchment that equates to 3330 lots. Considering the consented development density of the adjacent Faringdon South-West area and the inclusion of a 4.6 Ha school site this is considered a reasonable estimate of the eventual density.

Average sewer flow
ASF = 3330 lots x 220 l/person/day x 2.7 people/lot

ASF = 1978 m^3/day
ASF = 22.9 l/s

Peak wet weather flow
Combined P/A and SPF ratio of 3.5 as agreed with SDC.

MF = 21.4 x 3.5
MF = 80.13 l/s = Pump rate

The flows will be pumped to the head of the 525mm diameter gravity main on Selwyn Road, approximately 940m to the east of the South-West Pump Station. A new 280mm ODPE rising main is currently under construction along Selwyn Road as part of stage 2 of the pump station installation. In future it is expected the pump station will also be set up to pump directly into a rising main located within Selwyn Road directly to the Pines Wastewater Treatment Plant during emergency situations.

Sewer mains will be laid throughout the development site within the road network. The size and depth of mains will be determined based on their respective catchments. Gravity sewer trunk main pipes entering the development will be approximately 4.2m deep increasing to a maximum depth of 4.5m within the development to ensure the entire catchment can be serviced. Allowing for 0.3m of base preparation beneath pipes and manholes the maximum depth of excavation will be 4.8m. 150mm collector mains will be used when the depth to the trunk main is greater than 2.5m at lateral junctions. All lots will be serviced with a 100mm PVC lateral at least 1m inside the net area of the lot. Cover will be maintained on all sewer pipelines installed to ensure the entire proposed catchment area can be serviced.

All works will be to Council Standards unless otherwise agreed with council wastewater engineers. All public sewer pipes over private land or reserves will be covered by appropriate easements in favour of SDC.

5. Power / Telecommunications / Street Lights

Power and telecommunications will be provided to all sites to utility company and industry standards. All cables will be placed underground and all kiosks will be constructed on separate individual lots. The kiosk sites will be forwarded to Council for approval following the power design.

Street lights will be provided to the roading and reserves to SDC standards. The applicant will provide a street light style consistent with the style used previously in Faringdon.

Full assessments of utility network requirements will proceed if the development is approved as a referred project. This will include for potential substation sites and similar large scale infrastructure items, these items will not affect the residential yield of the development.

6. Roading

The Faringdon Oval development area will incorporate a number of collector roads in line with the CRETS network and ODP for the Faringdon Oval site. These include an extension of Shillingford Boulevard between East Maddisons and Dunns Crossing Roads and the extension of Westmoor Boulevard which traverses the Faringdon South-West development site to connect to the future Shillingford Boulevard. The locations and alignments of these roads are largely dictated by the adjacent Faringdon development areas. These roads are shown as primary routes in the ODP and will be continued through the Faringdon Oval development area as dual carriageway roads. Specific intersection design will be required for the intersections of these primary routes with Goulds Road and Dunns Crossing Road, these will be covered during the consent and detailed design phases.

A roundabout is currently under construction at the intersection of Goulds Road and Shillingford Boulevard, at the north western corner of the site which will provide connectivity between the Faringdon Oval site and surrounding areas. The construction of this roundabout is being undertaken by the developer under a cost share agreement with SDC. The roundabout is scheduled to be completed at the end of January 2023.

It is noted that the intersection of Goulds Road, Dunns Crossing Road and Selwyn Road is poorly configured in its current form. As part of the development works it is proposed to re-align Goulds Road through the southern corner of the development to provide a more suitable intersection

separation of 120m. The last 150m of Goulds Road approaching the intersection will become a no-exit street with a turning head.

The Faringdon Oval development area will also incorporate a number of secondary roads and cycle links as shown in the Movement Network plan attached as Appendix F. The roading and cycle links will extend to site boundaries where shown to provide the required level of traffic permeability within the development. Off road cycle links are also proposed to link the road network with the central reserve area. Consideration has been given to the development layouts of adjacent land to the north, in particular the roading links to the site boundaries.

Shared access lanes will be used throughout the development to service higher density housing blocks. These lanes will have a legal width of 8m and a formed width of 6m which will allow sufficient clearance for 2 way traffic. Carriageway narrowing as select locations, paved thresholds and landscape planting will assist in reducing the speed environment and to discourage use by non-residents. These design details will also add amenity and indicate the intended shared use for both vehicles and pedestrians. Lighting bollards or other low output lighting will be provided along the shared access lanes to assist with security without creating a nuisance to residents during night time hours. Vehicle tracking for a standard refuse vehicle will be undertaken on all shared access lanes to ensure refuse collection from the rear of properties is an option in future. A concept layout for the shared access lanes is attached as Appendix F.

The cross sections of new roads will be a continuation of what has been constructed within the adjacent stages of Faringdon with legal widths varying from 15m to 24m and formed widths between 8m and 12m. All cycleways will be 2.5m wide and footpaths 1.8m wide as per the SDC Engineering Code of Practice requirements. Roading Concept Plans are attached as Appendix G. These plans show the proposed road widths, alignments and cross sections of all new roads within the Faringdon Oval site. These concept plans will form the basis of detailed design and complete engineering design drawings will be submitted to SDC for Engineering Approval prior to the commencement of construction.

Water, power and telecommunications services will be located in the road berms. The width of berms will be determined to allow the installation of these services along with street trees and street lighting.

The existing roads which front the development area will be upgraded to residential standards. These upgrades will include carriageway widening, installation of kerb and channel, footpaths, grassed berms, street trees and street lighting. A large portion of the Gould Road frontage to the site is currently being upgraded as part of the Faringdon South West construction works, these upgrades include a full carriageway construction to 11m width with kerb and channel along the Faringdon Oval site frontage and the installation of streetlighting to council standards. The shared path, berms and street trees along the frontage of the site will be undertaken following underground services installation.

All new roads will be constructed in accordance with the SDC Engineering Code of Practice.

7. Earthworks and Clearing

A key intention of the development of Faringdon is to create simple building sites with as little earthworks as possible while maintaining level build platforms.

Earthworks will be carried out on the site to ensure that all future house sites will drain towards the street at a minimum grade of 1/500. Subject to detailed design the house sites will be elevated above the street to facilitate drainage and to provide amenity for outdoor living spaces. The minimum elevation from the street boundary to the building site will be 100mm and may be as high as 600mm.

The area is not prone to flooding as the soils generally allow very good soakage, however, the design of the site levels will take into consideration flood levels in the streets and all building platforms will be above potential secondary flows associated with severe storm events.

The total estimated cut to fill volume in the Faringdon Oval development area is expected to be around 150,000m³. The significant areas of cut are in the roadways where the depth to the subgrade may be up to 1m below existing ground level. Trenching for drainage will be up to 4.5m below ground level.

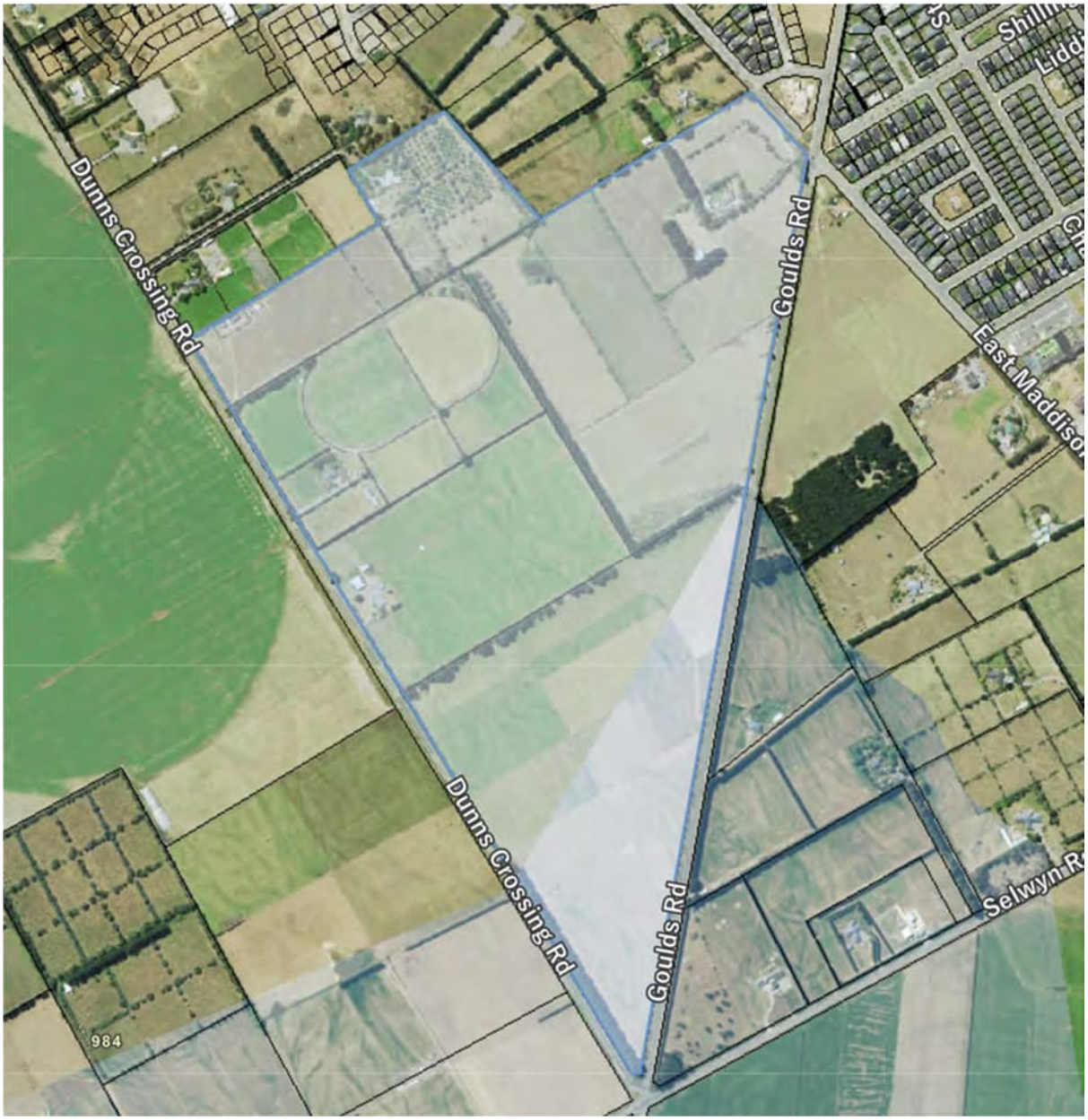
All topsoil on site will be stripped, stockpiled and replaced on the land immediately following bulk earthworks. All disturbed topsoil will be re-sown with Council specification grass seed mixes. A balance of cut and fill will be maintained where possible and removal of material from site will be kept to a minimum. Some topsoil may be removed from site due to contamination.

Sediment off the site will be controlled as per Council requirements. The basis of the sediment control will be the ECan Guidelines and the discharge during construction will be undertaken either under Council's global discharge consent or in accordance with ECan rules. All dust created on the site will be controlled by water cart or other such Council approved methods.

All bulk filling within residential sites will be undertaken in accordance with NZS 4431:2022. All fill testing will be carried out by an independent laboratory.

Jamie Verstappen
Chartered Professional Engineer
Davie Lovell-Smith Ltd

Appendix A- Location Plan



Appendix B – Water Supply Plans

To West Melton

Izone Industrial

Carter Industrial - Stage 2

Carter Industrial Stage 1

Holmes Block ODP Area

Skellerup Block ODP Area

Lowes Road ODP Area

Coles Plan Change 1

Farringdon South

SR9 SR11 SR12 SR13 SR14 SR15

ODP Area 2 3 5 6 8 9 10 11 12 13

450(10) 400(2) 350(9) 350(9) 400(3) 400(3) 400(3) 300(12) 300(12) 300(4) 300(4) 250(2) 250(2) 350(2) 250(2) 300(2) 280(6) 350(2) 400(2) 350(11) 350(2) 350(2) 350(2) 350(2) 450(2) 300(1) 300(1) 300(1) 300(1) 200(1) 300(1) 500(2) 500(2) 450(2) 400(2) 300(2) 250(2) 200(2) 250(2) 300(2) 250(7) 250(6) 250(8) 200(6)

0 1 2 3 km

LEGEND

Growth Projections
- 2050+

WS Mains - DN(Scheme#)
- New
- Upsized
- Existing

Sources
- New / Upgrades
- Existing

Selwyn District Council

Christchurch Water
+64 3 363 5400
PO Box 1482
Christchurch 8140
New Zealand

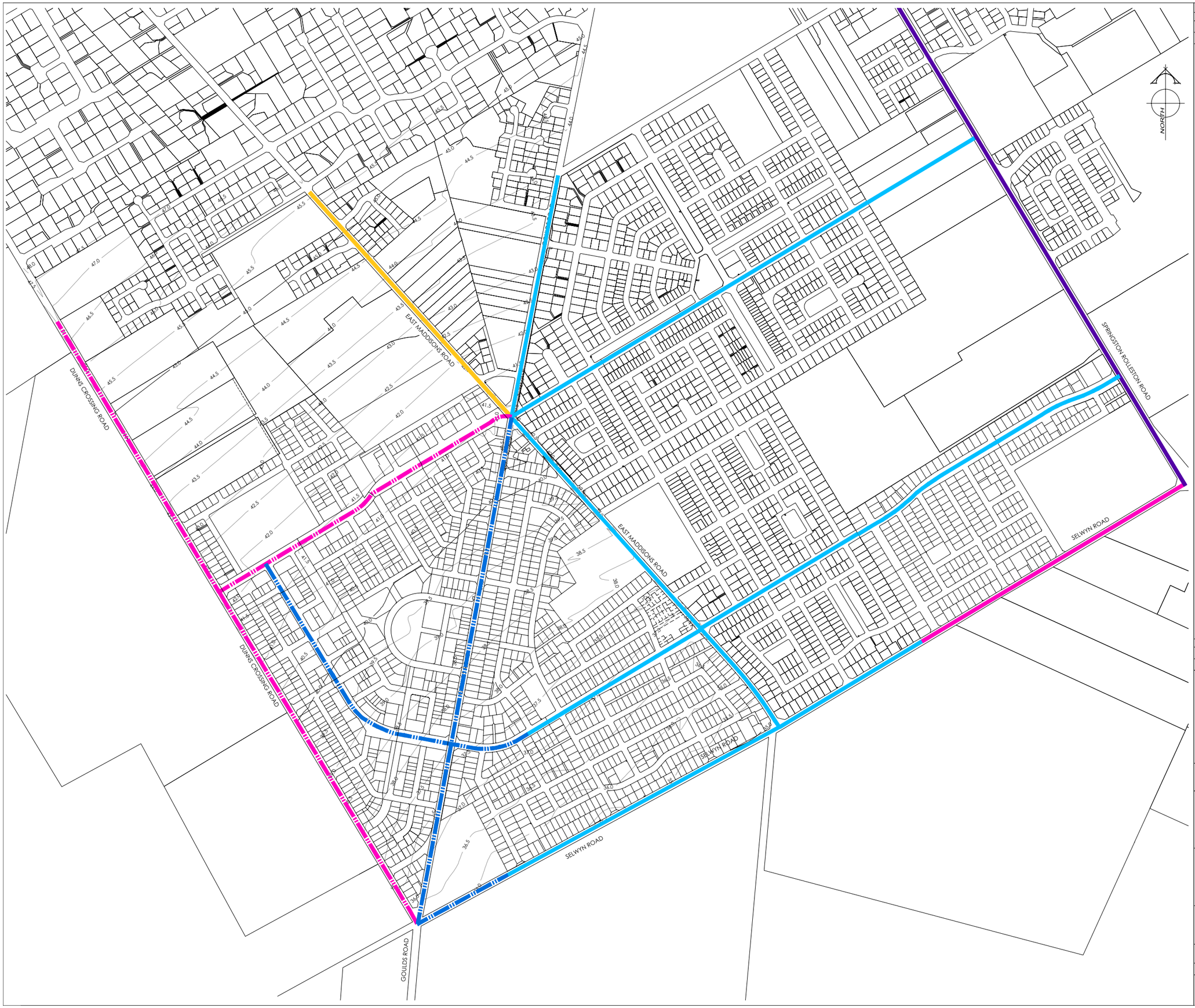
DRAWN	APPROVED
SJD	DJ
SHEET NUMBER	SCALE
1 of 1	1:27,665

PROJECT: Selwyn District Council
Water Supply Master Planning 2020 - 2050

SHEET: Rolleston Master Planning & Water Supply Upgrades

PROJECT NUMBER	REVISION DATE	REVISION
3-C1831.07 / 00150	01/04/2021	R1

Original Sheet Size: A3 [W = 420, H = 297] Plot Date: 2021-04-01 12:48:24 by Dellis, Simon (chsxd1) File Ref: \\corp.pbwan.net\ANZ\ProjectsNZ\3c\3-C1831.07 Update Selwyn Water Master Planning to 2\Home\500 Work in Progress\503 Reporting Outputs\SDC Growth Reporting Rolleston Only 2021-03-31.qgz



AMENDMENTS :

AMENDMENT	DATE	DESCRIPTION
R1	17/01/22	WATER LAYOUT AMENDED
R2	14/12/22	SUBDIVISION LAYOUT UPDATED

NOTES :

Legend

- Proposed 200mmØ
- Existing 200mmØ
- Proposed 250mmØ
- Existing 250mmØ
- Existing 375mmØ
- Existing 450mmØ

	NAME	SIGNED	DATE
DESIGNED BY	JAMIE VERSTAPPEN		
CHECKED BY	ANDY HALL		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140, New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

South West Water Supply Rolleston

SHEET TITLE:

Proposed Trunk Mains

DRAWING STATUS

For Information

SCALE : 1:5000@A1 1:10000@A3

DATE : December 2022

CAD FILE : J:\20577\ENG\Drawings\H20577 Water Supply Trunkmains_R2.dwg

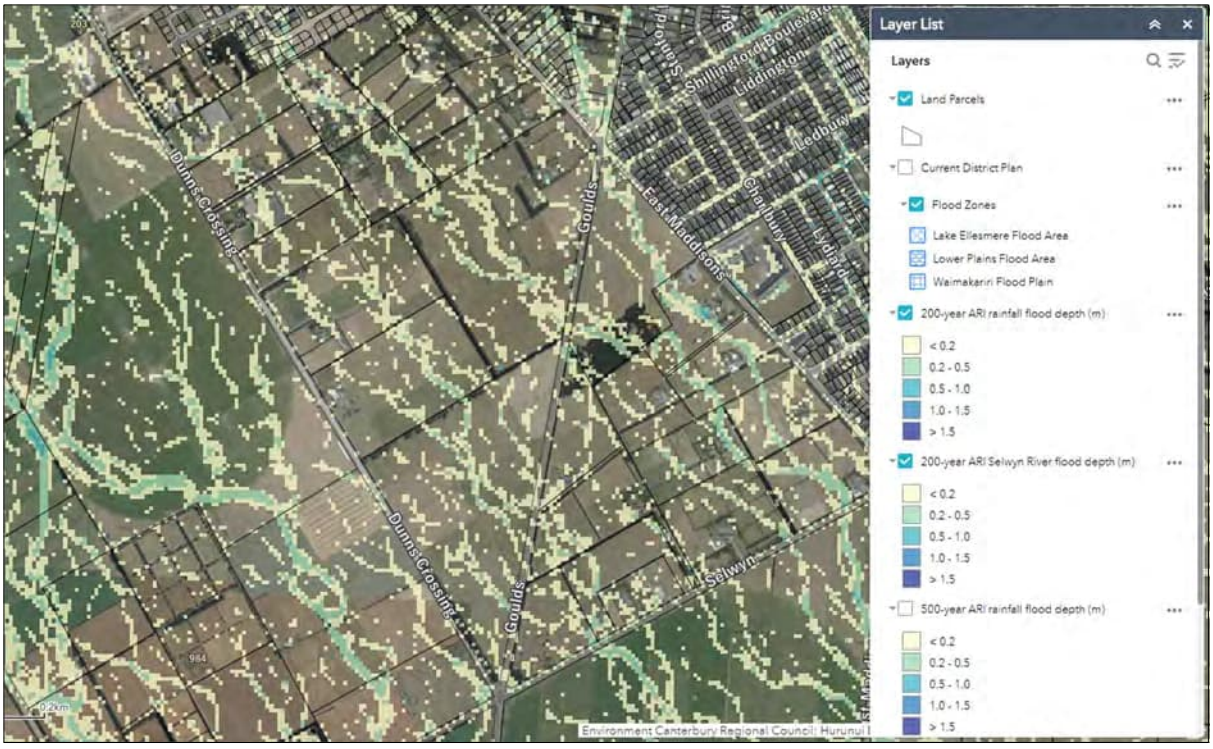
DRAWN : GC

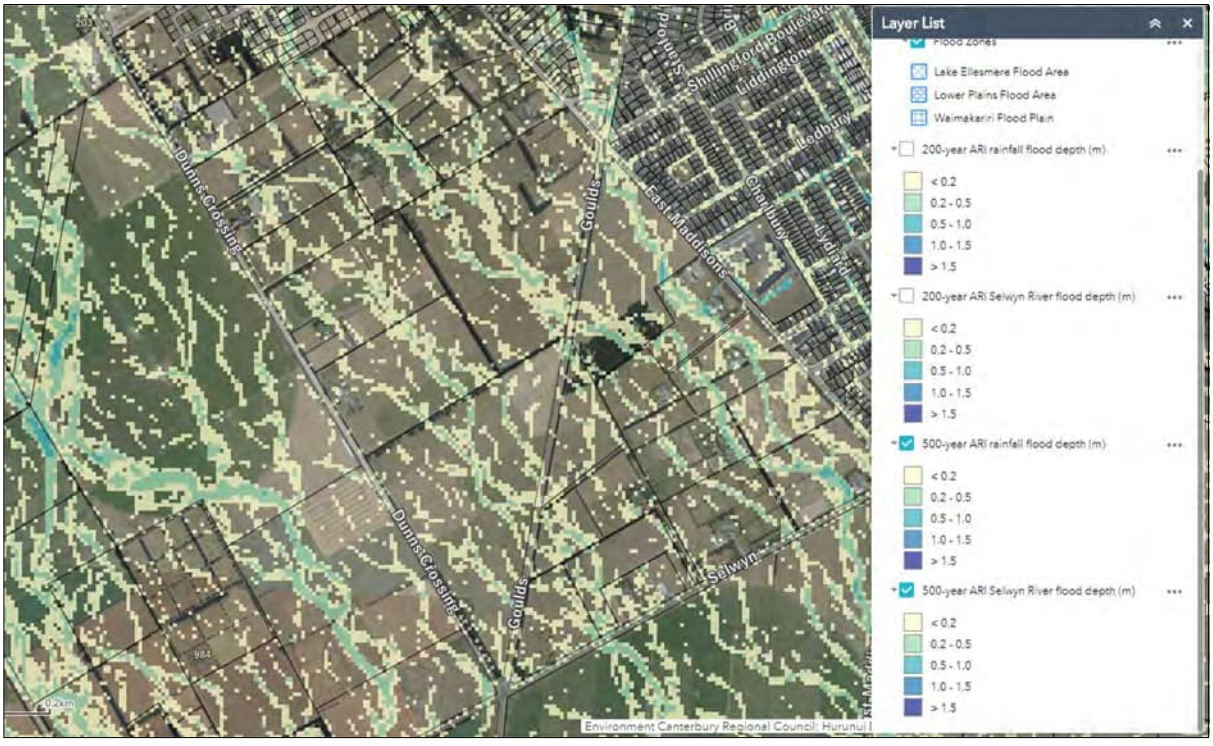
DRAWING No : **H20577**

SHEET No: **E06.0**

REVISION : **R2**

Appendix C – Flood Level Plans





Appendix D – Water Race Map and Existing Bore Data

Canterbury Maps

Information has been derived from various organisations, including Environment Canterbury and the Canterbury Maps partners. Boundary information is derived under licence from LINZ Digital Cadastral Database (Crown Copyright Reserved). Environment Canterbury and the Canterbury Maps partners do not give and expressly disclaim any warranty as to the accuracy or completeness of the information or its fitness for any purpose.

Information from this map may not be used for the purposes of any legal disputes. The user should independently verify the accuracy of any information before taking any action in reliance upon it.

N

0 0.1 0.2 0.3 0.4 Kilometres

Scale: 1:5,000 @A3

Map Created by Canterbury Maps on 15/12/2022 at 9:49 AM

Canterbury Maps

N

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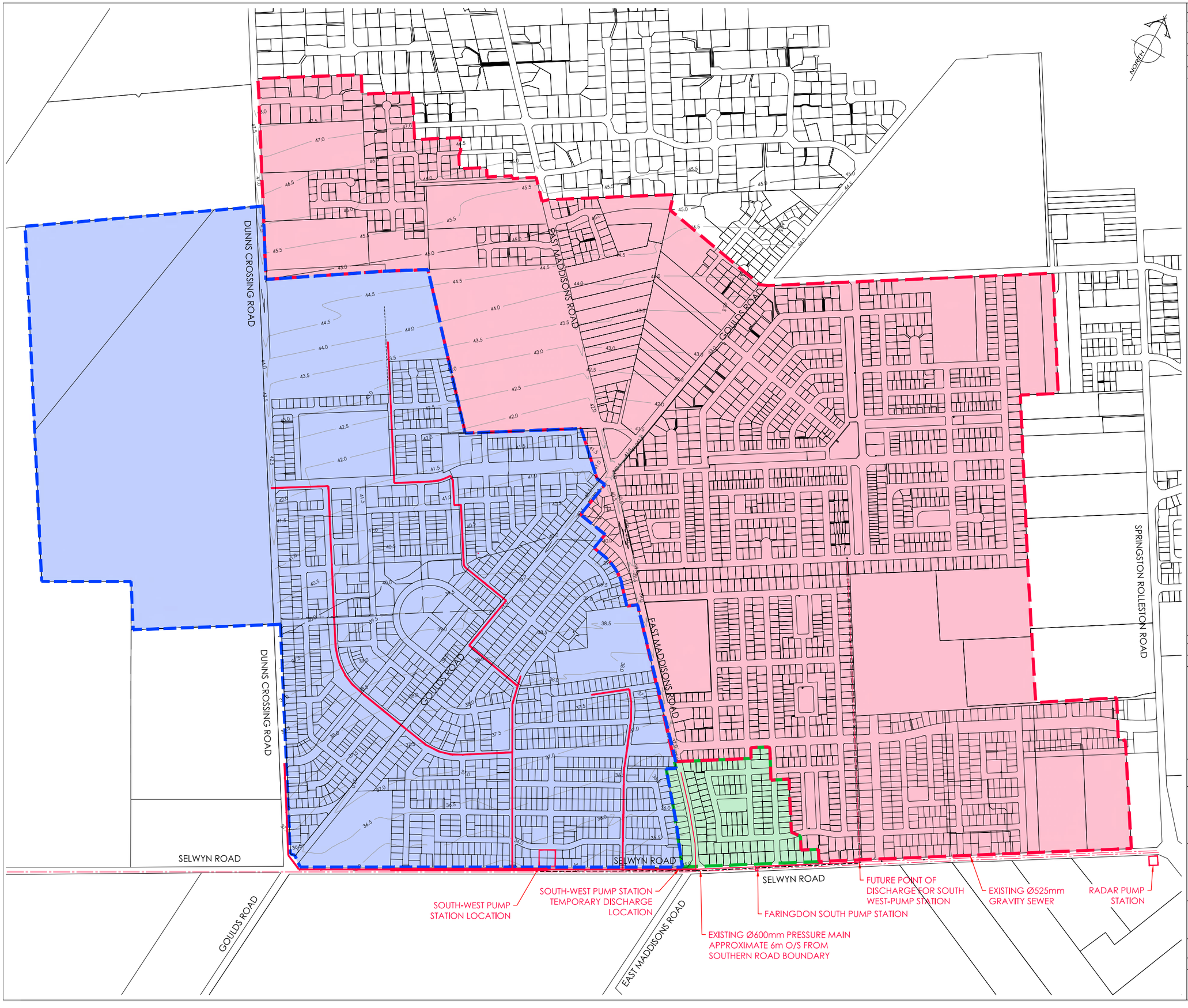
Scale: 1:5,000 @A3

Map Created by Canterbury Maps on 21/12/2021 at 5:17 PM

Appendix E – Sewer Catchment Plan



AMENDMENTS :

AMENDMENT	DATE	DESCRIPTION
R2	30.04.21	LAYOUT & SEWER PUMP STATION LOCATIONS UPDATED
R3	18.05.21	LAYOUT UPDATED
R4	20.08.21	LAYOUT UPDATED
R5	22.02.22	THE OVAL BOUNDARIES & SEWER LAYOUT UPDATED
R6	07.08.22	THE OVAL BOUNDARIES & SEWER LAYOUT UPDATED

NOTES :

TOTAL CATCHMENT AREA:

GRAVITY CATCHMENT AREA = 254.58ha

PUMPED CATCHMENT AREA = 221.82ha

LIFT STATION 1 CATCHMENT AREA = 10.00ha

SERVICES

EXISTING SEWER — STD. MH

FUTURE PRESSURE SS

FUTURE GRAVITY SS — STD. MH

CRITICAL SEWER MAINS

	NAME	SIGNED	DATE
DESIGNED BY	JAMIE VERSTAPPEN		
CHECKED BY	ANDY HALL		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140, New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

South West Sewer Rolleston

SHEET TITLE:

Catchment and Layout Plan

DRAWING STATUS

For Information

SCALE : 1:5000@A1 1:10000@A3

DATE : December 2022

CAD FILE : J:\20256\ENG\Drawings\E20256_South West Sewer Catchment_R6.dwg

DRAWN : DG

DRAWING No : **E.20256**

SHEET No: **CP01.0**

REVISION : **R6**

Appendix F – Movement Network Plan

Faringdon Development
Movement Network

Scale 1:7500@A3

January 2023

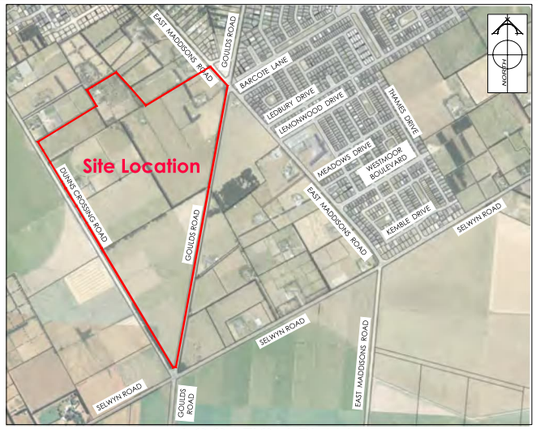
HUGHES DEVELOPMENTS

LEGEND :

- Shillingford Boulevard
- Northmoor Boulevard
- Faringdon Boulevard
- Westmoor Boulevard
- Shared Footpath Route (2.5m wide)
- Faringdon South-East
- Faringdon South-West
- Hughes Developments Limited Faringdon Oval

J:\20184\Overall Faringdon 2020\FARINGDON OVERALL 24.01.23.dwg

Appendix G – Roading Concept Plans



LOCATION PLAN

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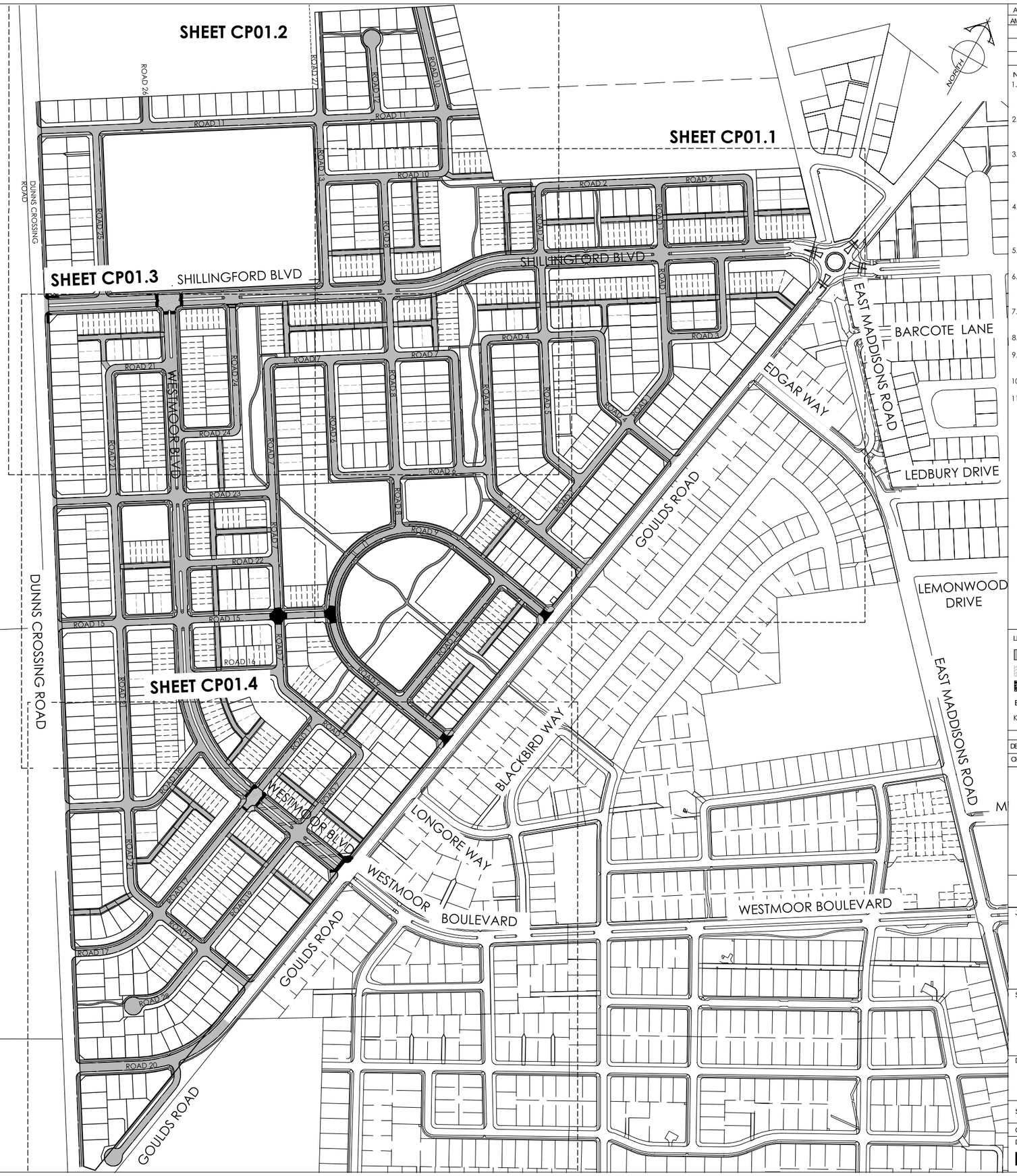
1:30,000@A3



PLAN SCHEDULE		
SHEET	DESCRIPTION	SCALE @ A1
CP01.0	Overall Plan	1:2500
CP01.1 - CP01.4	Roading Layout	1:1000
CP01.5 - CP01.7	Roading Cross sections	As Shown

AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	NO CHANGE THIS SHEET
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

NOTES:

1. ALL WORKS IN ACCORDANCE WITH SDC CODE OF PRACTICE PARTS 1-11 STANDARDS, IF STANDARDS ARE UNSPECIFIED REFER TO CCC CSS PARTS 1-7.
2. ALL PLANS ARE TO BE READ AND DISTRIBUTED AS A COMPLETE SET. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
3. ORIGIN OF LEVELS

   LEVELS ARE IN TERMS OF MEAN SEA LEVEL (LYTTELTON VERTICAL DATUM 1937) PRIOR TO CANTERBURY EARTHQUAKES OF 2010 AND 2011.
4. EXISTING SERVICES HAVE BEEN DIGITISED FROM SERVICE AUTHORITY PLANS; COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. ALL SERVICES TO BE FULLY SEARCHED AND PILOTED PRIOR TO TRENCHING.
5. ELECTRICITY & TELECOM SERVICES NOT SHOWN. REFER TO ELECTRICAL & COMMUNICATION PLANS FOR DUCT LOCATIONS.
6. TRENCHING AND INSTALLATION OF POWER AND TELECOM SERVICES TO BE PROVIDED IN ACCORDANCE WITH SERVICE PROVIDERS PLANS AND SPECIFICATIONS.
7. ALL ROW AND DRIVEWAYS ARE TO HAVE 50mm DUCTS INSTALLED FOR COMMUNICATIONS AND POWER SUPPLY.
8. NATURAL CONTOUR INTERVAL: 0.2m MINOR. 1.0m MAJOR.
9. CONTRACTOR MUST READ ALL DISCHARGE CONSENTS PRIOR TO ANY EARTHWORKS.
10. ESCMP TO BE IN PLACE PRIOR TO ANY EARTHWORKS.
11. CONTROL OF SW, SEDIMENT AND DUST ON SITE IS THE RESPONSIBILITY OF THE CONTRACTOR.

HUGHES DEVELOPMENTS

LEGEND:

NEW ASPHALT PAVEMENT
NEW FOOTPATH
COBBLES
EXPOSED AGREGATE CONCRETE
FEATURE CRAZY PAVING OR SIMILAR

EXISTING SERVICES
KERB

PROPOSED SERVICES
KERB
CUT DOWN

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
CHECKED BY	JAMIE VERSTAPPEN		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140. New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

Faringdon Oval

SHEET TITLE:

Engineering Concept Overall Plan

DRAWING STATUS:

For Discussion Purposes

SCALE: 1:2500@A1 1:5000@A3

DATE: December 2022

CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg

DRAWN: DG

DRAWING No: **H.20577**

SHEET No: **CP01.0**

REVISION: **R5**

AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	ROADING & FOOTPATH LAYOUT AMENDED
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

NOTES:

1. ALL WORKS IN ACCORDANCE WITH SDC CODE OF PRACTICE PARTS 1-11 STANDARDS. IF STANDARDS ARE UNSPECIFIED REFER TO CCC CSS PARTS 1-7.
2. LEVELS ARE IN TERMS OF MEAN SEA LEVEL (LYTTELTON VERTICAL DATUM 1937) PRIOR TO CANTERBURY EARTHQUAKES OF 2010 AND 2011.
3. METAL DEPTHS TO BE CONFIRMED OR INCREASED BY ENGINEER FOLLOWING CHECKING OF SUBGRADE CBR STRENGTH ONCE EXCAVATED.
4. ELECTRICITY & TELECOM SERVICES NOT SHOWN. REFER TO ELECTRICAL / TELECOM STREETLIGHT RETICULATION PLANS FOR RELEVANT DETAILS.
5. EXISTING SERVICES HAVE BEEN DIGITISED FROM SERVICE AUTHORITY PLANS; COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. ALL SERVICES TO BE FULLY SEARCHED & PILOTED PRIOR TO TRENCHING.
6. CARRIAGEWAY & FOOTPATH ACCEPTANCE TESTING IN ACCORDANCE WITH SDC CODE OF PRACTICE PART 8, CCC CSS PART 6 & CCC IDS.
7. FOOTPATH BASECOURSE TESTING - MINIMUM CLEGG HAMMER VALUE OF 25 REQUIRED FOR FOOTPATHS & RESIDENTIAL CROSSINGS. 35 FOR COMMERCIAL CROSSINGS.
8. KERB & CHANNEL BASECOURSE TESTING - MINIMUM DRY DENSITY OF 2100kg/m³ WITH 75% EQUAL OR EXCEEDING 2150kg/m³.
9. ROAD BASECOURSE TESTING - MAXIMUM BENKELMAN BEAM DEFLECTION OF 2.0m WITH 95% OF RESULTS BELOW 1.6mm.
10. ALL KERB & FLAT CHANNELS TO BE TO SDC CoP; RD2.0.
11. ALL AC FOOTPATHS TO CCC CSS SD607; SD608 CONCRETE.
12. DRAWINGS TO BE DISTRIBUTED AND READ AS A COMPLETE SET. ANY DISCREPANCIES ARE TO BE BROUGHT TO THE ATTENTION OF THE ENGINEER FOR CLARIFICATION.
13. LIGHTING POSITION TO BE CONFIRMED.
14. REFER TO SHEET E01.0 FOR BENCHMARKS.
15. ROAD CROSSFALLS TO BE BETWEEN 2% AND 4% WHERE KERB AND CHANNEL IS ADDED.

HUGHES DEVELOPMENTS

LEGEND:

- NEW ASPHALT PAVEMENT
- NEW FOOTPATH
- COBBLES
- EXPOSED AGREGATE CONCRETE
- FEATURE CRAZY PAVING OR SIMILAR

EXISTING SERVICES — KERB

PROPOSED SERVICES — KERB — CUT DOWN

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
CHECKED BY	JAMIE VERSTAPPEN		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140. New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

Faringdon Oval

SHEET TITLE:

Engineering Concept Roading Layout

DRAWING STATUS:

For Discussion Purposes

SCALE: 1:1000@A1 1:2000@A3

DATE: December 2022

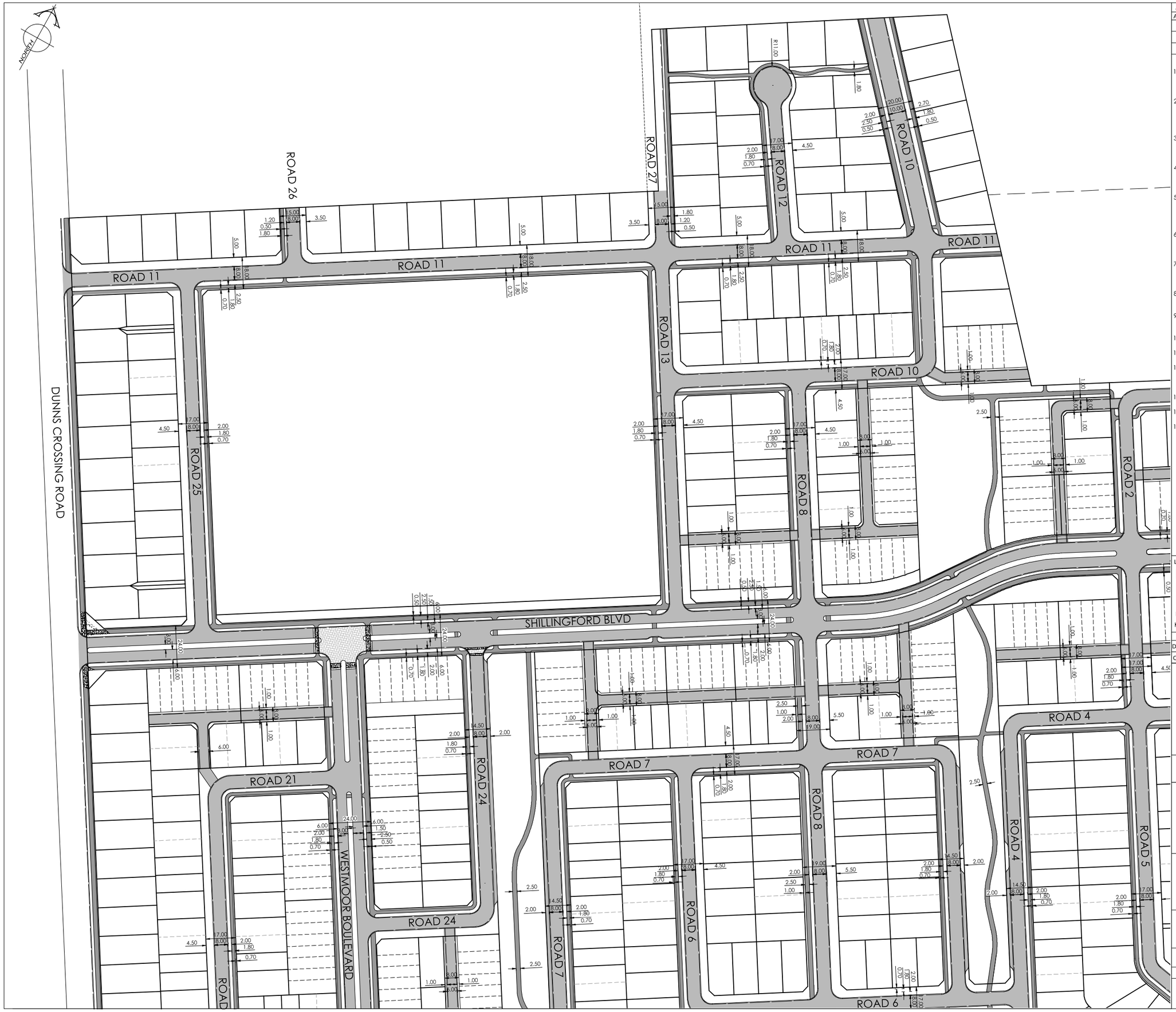
CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg

DRAWN: DG

DRAWING No: H.20577

SHEET No: CP01.1

REVISION: R5



AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	ROADING & FOOTPATH LAYOUT AMENDED
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

NOTES:

1. ALL WORKS IN ACCORDANCE WITH SDC CODE OF PRACTICE PARTS 1-11 STANDARDS. IF STANDARDS ARE UNSPECIFIED REFER TO CCC CSS PARTS 1-7.
2. LEVELS ARE IN TERMS OF MEAN SEA LEVEL (LYTTELTON VERTICAL DATUM 1937) PRIOR TO CANTERBURY EARTHQUAKES OF 2010 AND 2011.
3. METAL DEPTHS TO BE CONFIRMED OR INCREASED BY ENGINEER FOLLOWING CHECKING OF SUBGRADE CBR STRENGTH ONCE EXCAVATED.
4. ELECTRICITY & TELECOM SERVICES NOT SHOWN. REFER TO ELECTRICAL / TELECOM STREETLIGHT RETICULATION PLANS FOR RELEVANT DETAILS.
5. EXISTING SERVICES HAVE BEEN DIGITISED FROM SERVICE AUTHORITY PLANS; COMPLETENESS AND ACCURACY ARE NOT GUARANTEED. ALL SERVICES TO BE FULLY SEARCHED & PILOTED PRIOR TO TRENCHING.
6. CARRIAGEWAY & FOOTPATH ACCEPTANCE TESTING IN ACCORDANCE WITH SDC CODE OF PRACTICE PART 8. CCC CSS PART 6 & CCC IDS.
7. FOOTPATH BASECOURSE TESTING - MINIMUM CLEGG HAMMER VALUE OF 25 REQUIRED FOR FOOTPATHS & RESIDENTIAL CROSSINGS. 35 FOR COMMERCIAL CROSSINGS.
8. KERB & CHANNEL BASECOURSE TESTING - MINIMUM DRY DENSITY OF 2100kg/m³ WITH 75% EQUAL OR EXCEEDING 2150kg/m³.
9. ROAD BASECOURSE TESTING - MAXIMUM BENKELMAN BEAM DEFLECTION OF 2.0m WITH 95% OF RESULTS BELOW 1.6mm.
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14. REFER TO SHEET E01.0 FOR BENCHMARKS.
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HUGHES DEVELOPMENTS

LEGEND:

- NEW ASPHALT PAVEMENT
- NEW FOOTPATH
- COBBLES
- EXPOSED AGREGATE CONCRETE
- FEATURE CRAZY PAVING OR SIMILAR

EXISTING SERVICES — KERB

PROPOSED SERVICES — KERB — CUT DOWN

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
CHECKED BY	JAMIE VERSTAPPEN		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140. New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

Faringdon Oval

SHEET TITLE:

Engineering Concept Roading Layout

DRAWING STATUS:

For Discussion Purposes

SCALE: 1:1000@A1 1:2000@A3

DATE: December 2022

CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg

DRAWN: DG

DRAWING No: **H.20577**

SHEET No: **CP01.2**

REVISION: **R5**

AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	ROADING & FOOTPATH LAYOUT AMENDED
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

NOTES:

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HUGHES DEVELOPMENTS

LEGEND:

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- NEW FOOTPATH
- COBBLES
- EXPOSED AGREGATE CONCRETE
- FEATURE CRAZY PAVING OR SIMILAR

EXISTING SERVICES — KERB

PROPOSED SERVICES — KERB — CUT DOWN

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
CHECKED BY	JAMIE VERSTAPPEN		

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JOB TITLE

Faringdon Oval

SHEET TITLE

Engineering Concept Roading Layout

DRAWING STATUS

For Discussion Purposes

SCALE: 1:1000@A1 1:2000@A3 DATE: December 2022

CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg DRAWN: DG

DRAWING No: **H.20577** SHEET No: **CP01.3** REVISION: **R5**

AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	ROADING& FOOTPATH LAYOUT AMENDED
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

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HUGHES DEVELOPMENTS

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NEW ASPHALT PAVEMENT
NEW FOOTPATH
COBBLES
EXPOSED AGREGATE CONCRETE
FEATURE CRAZY PAVING OR SIMILAR

EXISTING SERVICES
KERB

PROPOSED SERVICES
KERB
CUT DOWN

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
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JOB TITLE

Faringdon Oval

SHEET TITLE

Engineering Concept Roading Layout

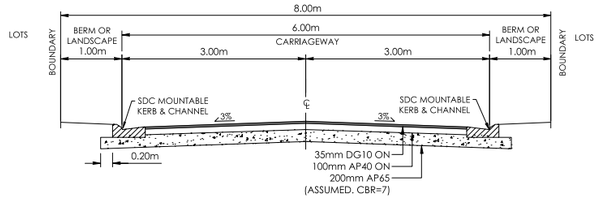
DRAWING STATUS

For Discussion Purposes

SCALE: 1:1000@A1 1:2000@A3
DATE: December 2022

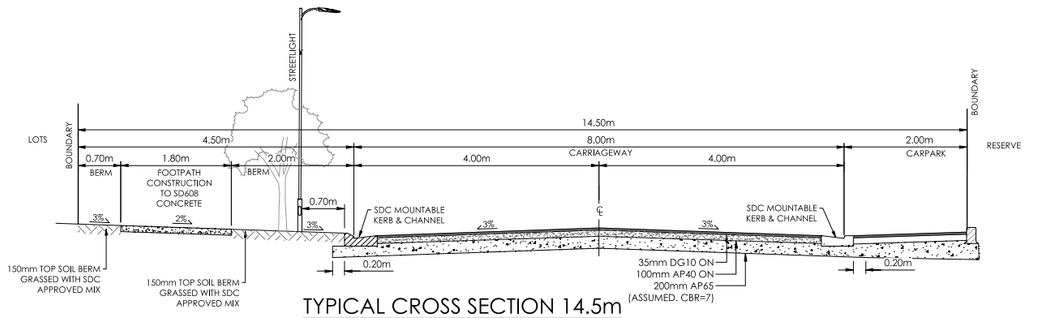
CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg
DRAWN: DG

DRAWING No: **H.20577**
SHEET No: **CP01.4**
REVISION: **R5**



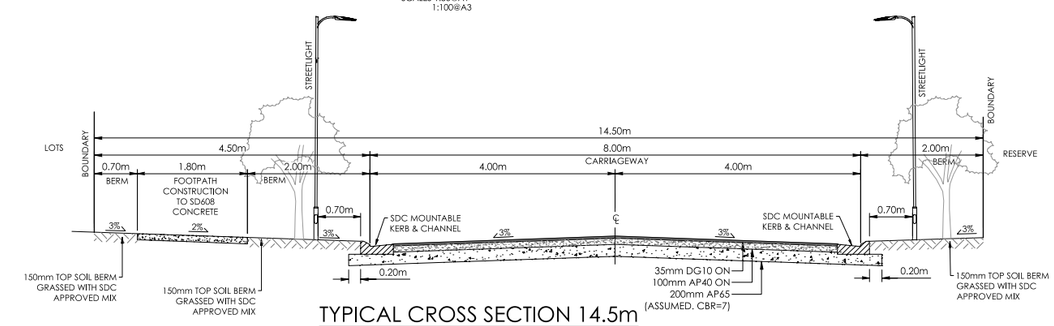
TYPICAL SHARED ACCESS CROSS SECTION 8.0m

SCALES 1:50@A1
1:100@A3



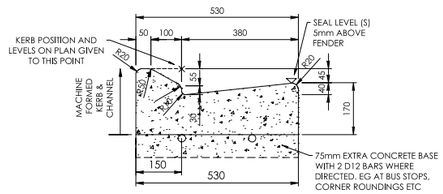
TYPICAL CROSS SECTION 14.5m

SCALES 1:50@A1
1:100@A3



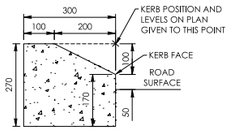
TYPICAL CROSS SECTION 14.5m

SCALES 1:50@A1
1:100@A3



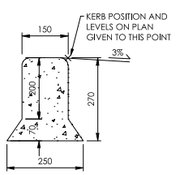
SDC MOUNTABLE KERB & CHANNEL

SCALE 1:10@A1
1:20@A3



IN SITU MOUNTABLE MEDIAN KERB TO CCC SD603

SCALES 1:10@A1
1:20@A3



KERB ONLY TO CCC SD602

SCALES 1:10@A1
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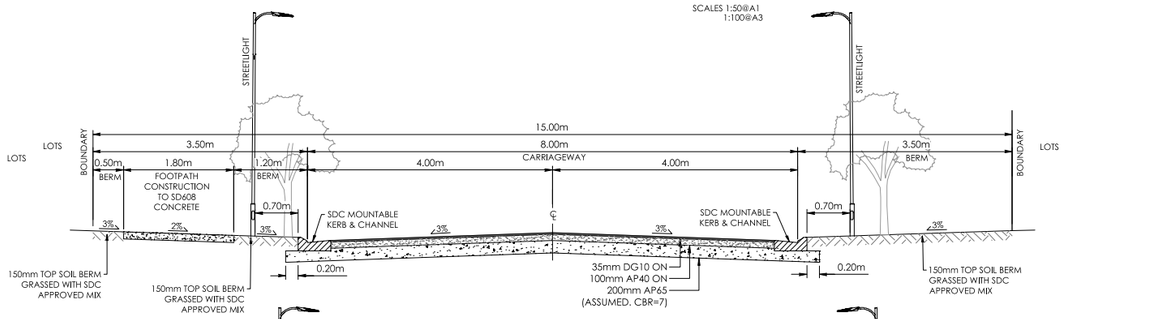
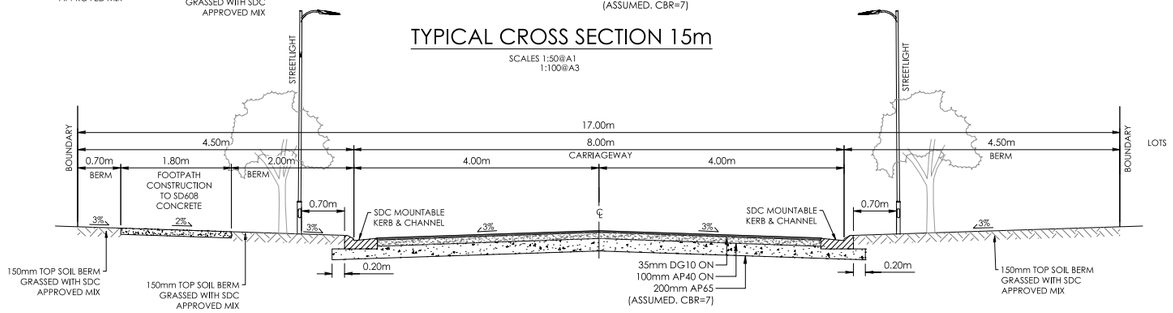


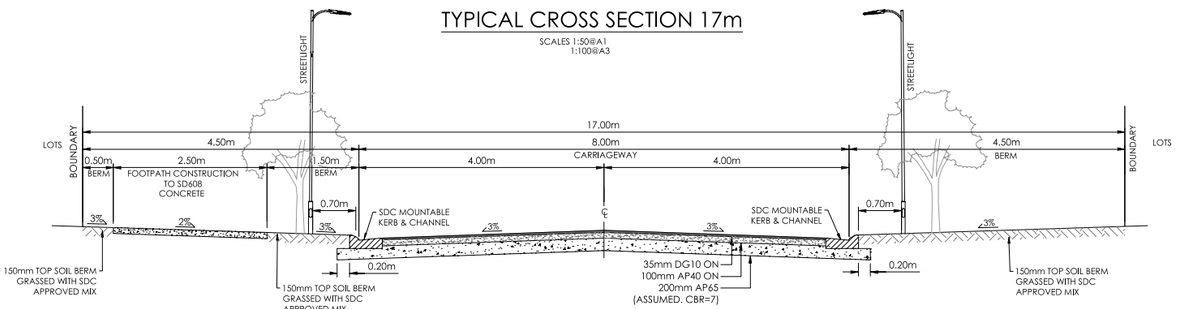
TYPICAL CROSS SECTION 15m

SCALES 1:50@A1
1:100@A3



TYPICAL CROSS SECTION 17m

SCALES 1:50@A1
1:100@A3



TYPICAL CROSS SECTION 17m WITH 2.5m FOOTPATH

SCALES 1:50@A1
1:100@A3

AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	ROAD 19m CROSS SECTION AMENDED
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

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HUGHES DEVELOPMENTS

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
CHECKED BY	JAMIE VERSTAPPEN		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

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Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

Faringdon Oval

SHEET TITLE:

Engineering Concept Roading Cross sections

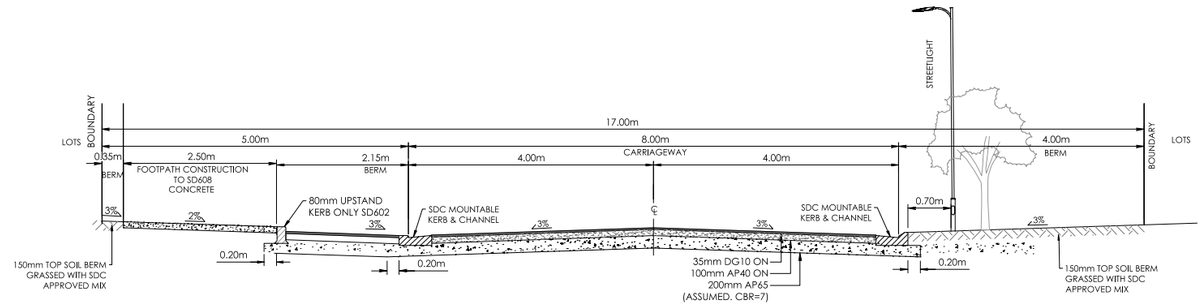
DRAWING STATUS:

For Discussion Purposes

SCALE: As Shown DATE: December 2022

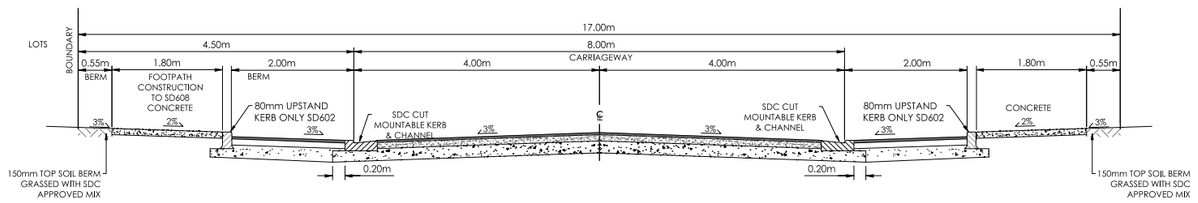
CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg DRAWN: DG

DRAWING No: **H.20577** SHEET No: **CP01.5** REVISION: **R5**



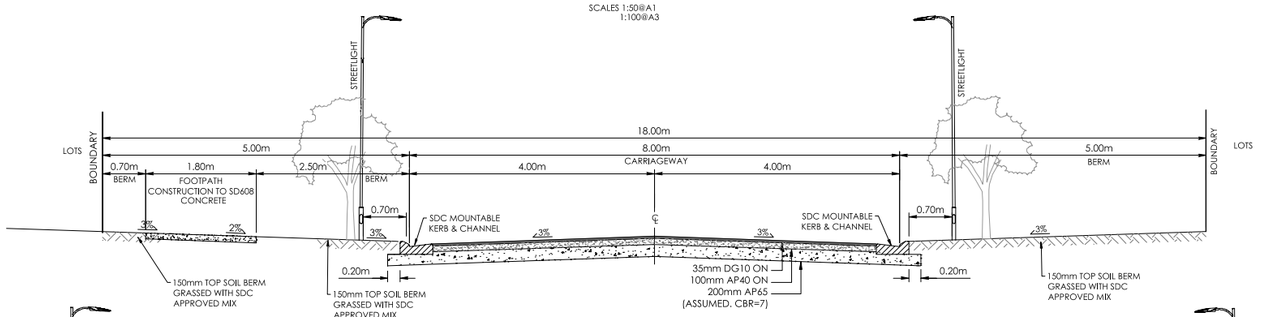
TYPICAL CROSS SECTION 17m WITH 2.5m FOOTPATH & PARKING

SCALES 1:50@A1
1:100@A3



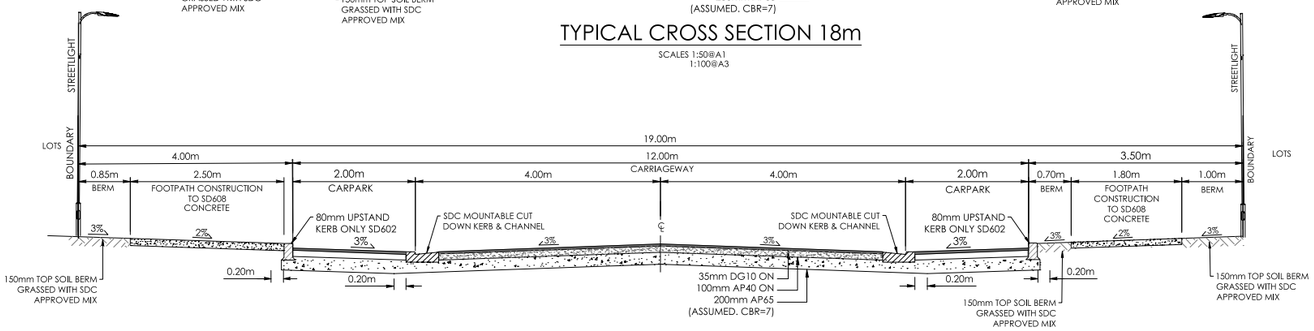
TYPICAL CROSS SECTION 17m WITH PARKING AND 1.8m FOOTPATH

SCALES 1:50@A1
1:100@A3



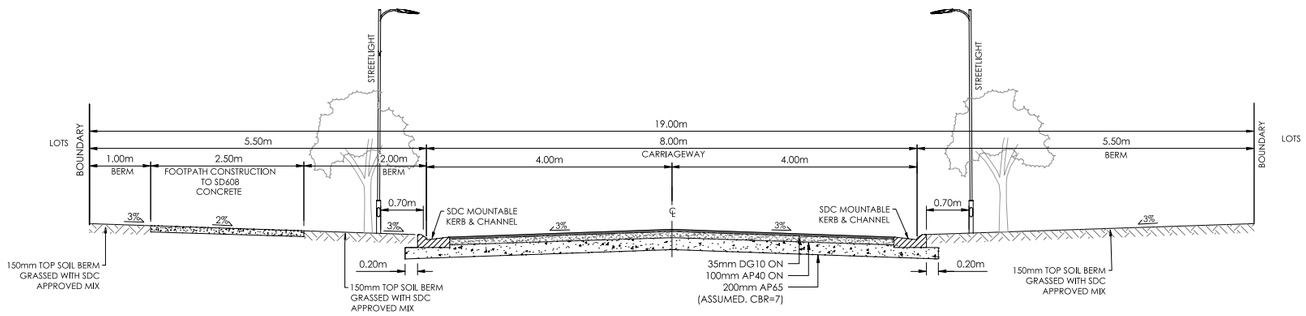
TYPICAL CROSS SECTION 18m

SCALES 1:50@A1
1:100@A3



TYPICAL CROSS SECTION 19m WITH 2.5m FOOTPATH

SCALES 1:50@A1
1:100@A3



TYPICAL CROSS SECTION 19m

SCALES 1:50@A1
1:100@A3

AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	NO CHANGE THIS SHEET
R4	07/12/22	LAYOUT UPDATED
R5	12/12/22	LAYOUT UPDATED

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JOB TITLE:

Faringdon Oval

SHEET TITLE:

Engineering Concept Roading Cross sections

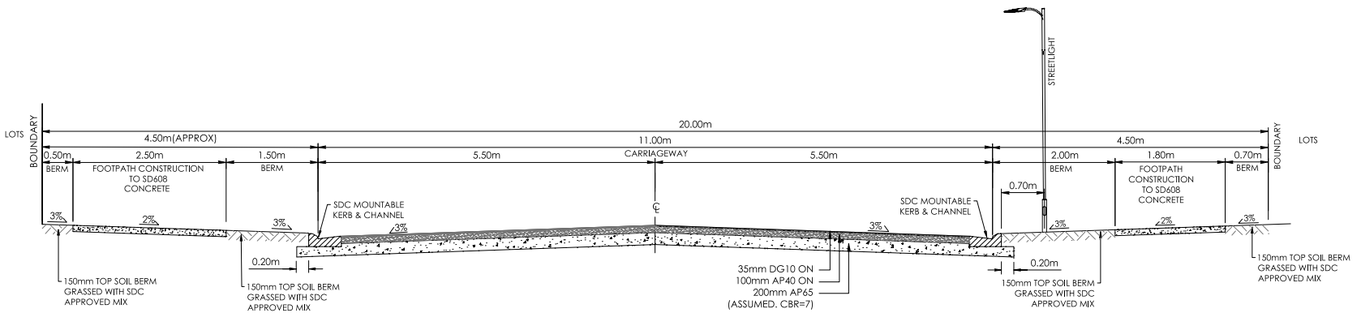
DRAWING STATUS:

For Discussion Purposes

SCALE: As Shown DATE: December 2022

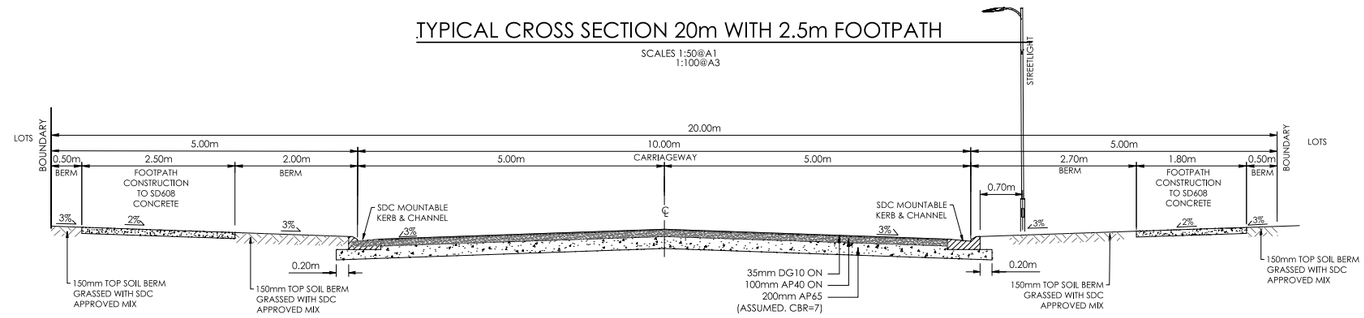
CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg DRAWN: DG

DRAWING No: **H.20577** SHEET No: **CP01.6** REVISION: **R5**



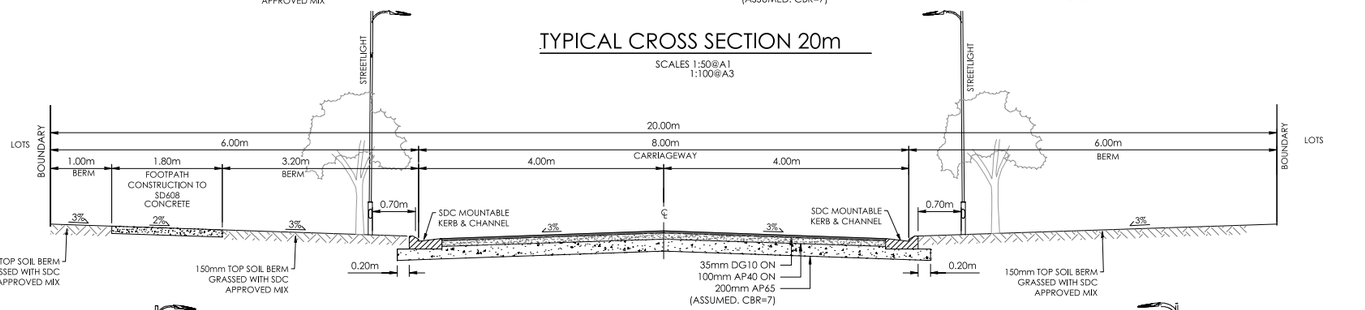
TYPICAL CROSS SECTION 20m WITH 2.5m FOOTPATH

SCALES 1:50@A1
1:100@A3



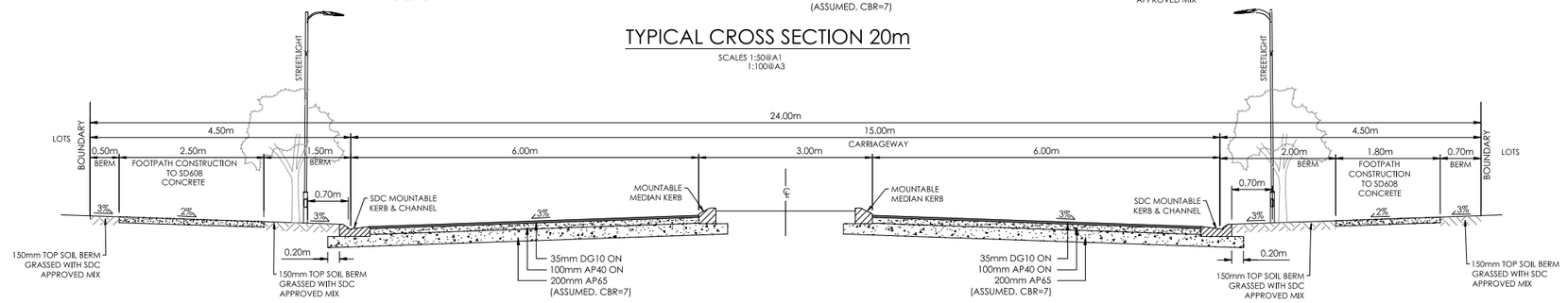
TYPICAL CROSS SECTION 20m

SCALES 1:50@A1
1:100@A3



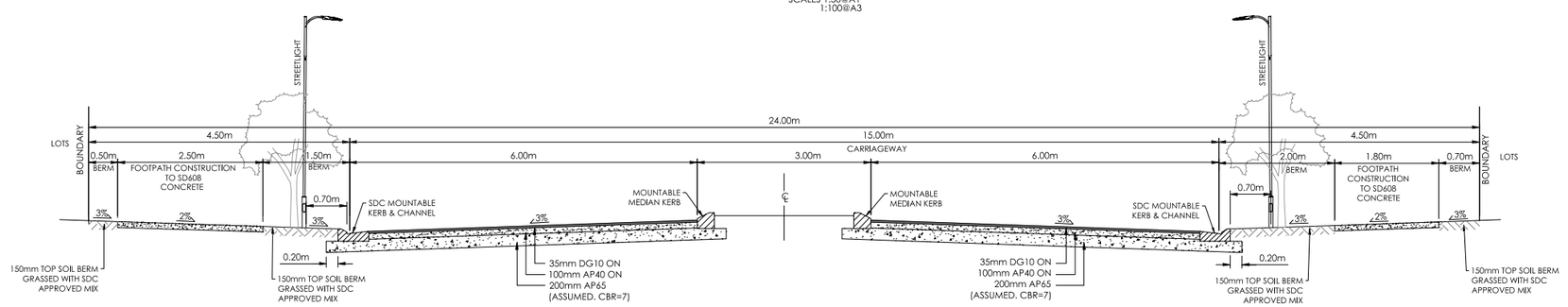
TYPICAL CROSS SECTION 24m WESTMOOR BOULEVARD

SCALES 1:50@A1
1:100@A3



TYPICAL CROSS SECTION 24m SHILLINGFORD BOULEVARD

SCALES 1:50@A1
1:100@A3



AMENDMENTS:

AMENDMENT	DATE	DESCRIPTION
R3	16/08/22	NO CHANGE THIS SHEET
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R5	12/12/22	LAYOUT UPDATED

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13. LIGHTING POSITION TO BE CONFIRMED.
14. REFER TO SHEET E01.0 FOR BENCHMARKS.
15. ROAD CROSSFALLS TO BE BETWEEN 2% AND 4% WHERE KERB AND CHANNEL IS ADDED.

HUGHES DEVELOPMENTS

	NAME	SIGNED	DATE
DESIGNED BY	DEEPANSHU GROVER		
CHECKED BY	JAMIE VERSTAPPEN		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140. New Zealand
Telephone: 03 379-0793 Website: www.dls.co.nz E-mail: office@dls.co.nz

JOB TITLE:

Faringdon Oval

SHEET TITLE:

Engineering Concept Roading Cross sections

DRAWING STATUS:

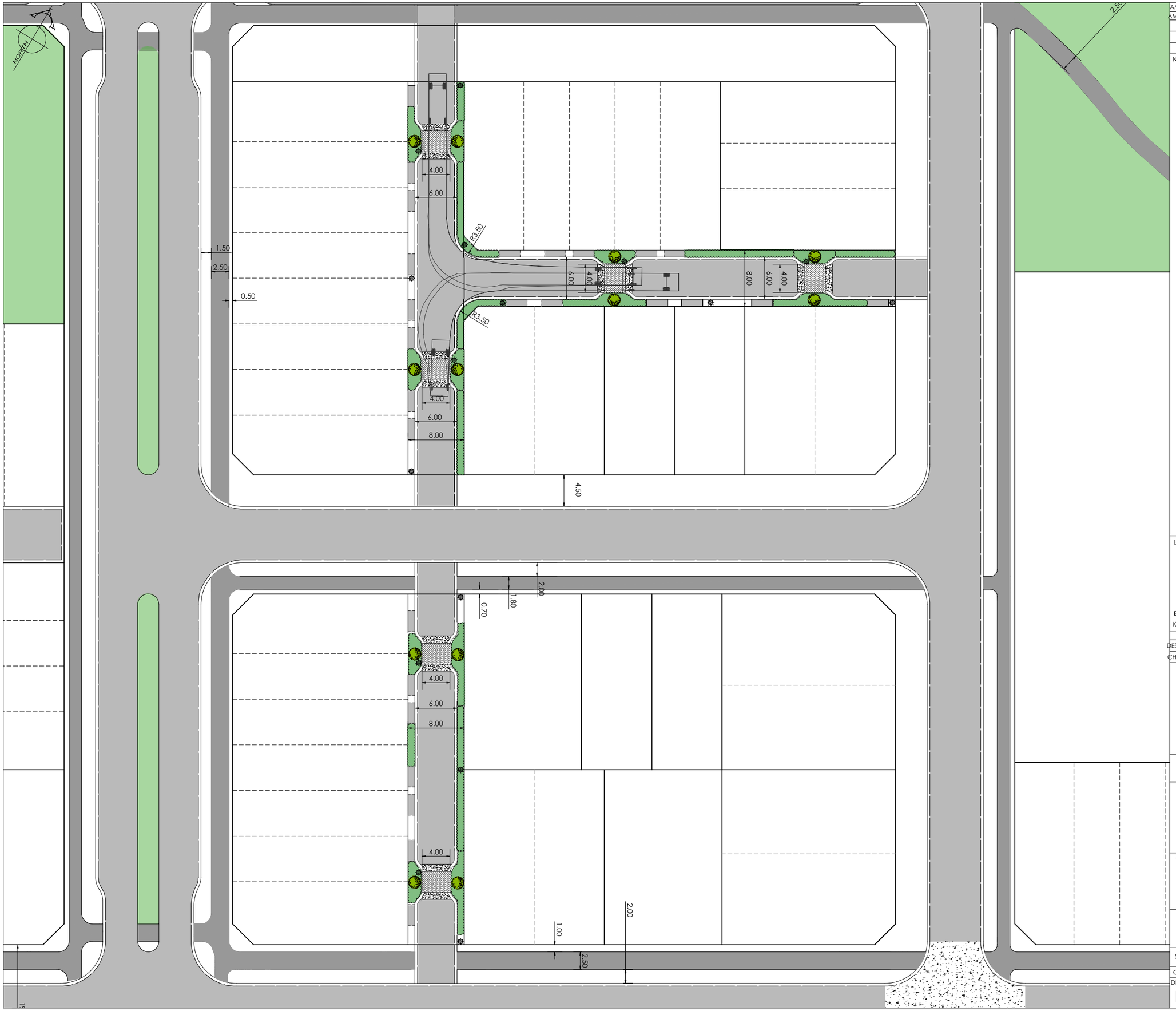
For Discussion Purposes

SCALE: As Shown DATE: December 2022

CAD FILE: J:\20577\ENG\Concept Plans\H20577 Concept CP01.0_R5.dwg DRAWN: DG

DRAWING No: **H.20577** SHEET No: **CP01.7** REVISION: **R5**

Appendix F – Shared Access Lane Concept



AMENDMENTS :

AMENDMENT	DATE	DESCRIPTION

NOTES :

1. Driveway locations shown are indicative only
2. All works to be in accordance with the SDC Engineering Code of Practice
3. Vehicle tracking shown for standard refuse collection vehicle
4. Lighting layout is indicative only. Lighting design to be confirmed through the detailed design process

HUGHES DEVELOPMENTS

LEGEND :

- NEW ASPHALT PAVEMENT
- NEW FOOTPATH
- COBBLES
- EXPOSED AGREGATE CONCRETE
- LANDSCAPE PLANTING
- SPECIMEN TREE
- LIGHTING BOLLARD

EXISTING SERVICES
KERB

PROPOSED SERVICES
KERB
CUT DOWN

	NAME	SIGNED	DATE
DESIGNED BY	JAMIE VERSTAPPEN		
CHECKED BY	BEN FOX		

DAVIE LOVELL-SMITH
PLANNING SURVEYING ENGINEERING

116 Wrights Road P O Box 679 Christchurch 8140 New Zealand
Telephone 03 379-0793 Website www.dls.co.nz E-mail bfffice@dls.co.nz

JOB TITLE:

Faringdon Oval

SHEET TITLE:

Shared Access Lane Concept

DRAWING STATUS

For Information

SCALE : 1:250@A1
1:500@A3

DATE : December 2022

CAD FILE : J:\20577\ENG\Concept Plans\H20577 Concept CP01 0_RS Lane Concept.dwg

DRAWN DG

DRAWING No : **H.20577**

SHEET No: **CP02.0**

REVISION : **R0**

Appendix B. Protech Design Ltd Correspondence

Josh Purdon

From: Liam Jagvik
Sent: Thursday, 31 August 2023 11:20 am
To: Josh Purdon
Subject: FW: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input
Attachments: 2030-13 WW Rolleston South Faringdon BNL12 PDL markup.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Josh

Some very valuable information from Nicky.

Could you please include this as an appendix?

Cheers

Liam Jagvik
SURVEYOR

Shape tomorrow

From: Nicky Marshall <nicky@protechdesign.co.nz>
Sent: Thursday, 31 August 2023 10:55 am
To: Daniel Shao <daniel.shao@countdown.co.nz>; Liam Jagvik <LJJ@eliotsinclair.co.nz>
Subject: RE: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input

Good morning
Answers to your questions based on our water supply expectations:

- Location of the desired lateral connection to the main

  Based on the store configuration and information provided we have shown on the attached pdf a proposed connection location to Goulds Rd.

- Is one or more connections required for the sprinkler connection

  Only one connection is required for sprinkler system

- Pipe diameter and type of the lateral connection to the boundary

  We would expect a DN 180mm (ID 150mm) PE connection. This would be configured similar to the detail you provided below for the CFDC with an underground valve and water meter,

strainer and Double check valve backflow preventer, underground valve. The strainer and backflow preventer can be located above or below ground. We recommend ground to avoid flooding issues associated with underground chambers. It is also a more economical option. An enclosure is required and we recommend that this is insulated to prevent damage due to freezing. The domestic supply may be in the same enclosure. It is usually an RPZ backflow preventer and if so, has to be above ground.

Water supply
Based on our knowledge of the Rolleston water supply we expect the water volume to be more than adequate.
The pressure however is quite low and a diesel pump will be required.
However, we did come across one concerning piece of information on another building that indicates there may be water supply issues. This is contradictory to all other information. We are unsure as yet if this is limited to that site, if it has been resolved, or if this is a wider problem. We are seeking additional information.
Once we have a bit more information we can then decide if further advice and/or testing is needed.
We may recommend that a flow test out to 5000 L/min be carried out as close as possible to the new site from the street hydrants to verify our expectations and ensure that a tank is not required.

Kind regards

Nicky Marshall

Southern Regional Manager

PROTECH DESIGN LIMITED

Specialist Fire Protection Consultants

Mobile Phone: +64 (0)21 433 488 **Email:** nicky@protechdesign.co.nz **Web:** www.protechdesign.co.nz

Address:105A Alabama Rd, Redwoodtown, Blenheim 7201, NZ

"I always wondered why somebody doesn't do something about that. Then I realised I was somebody" Lily Tomlin

---

From: Daniel Shao <daniel.shao@countdown.co.nz>
Sent: Thursday, 24 August 2023 8:42 pm
To: Nicky Marshall <nicky@protechdesign.co.nz>; Liam Jagvik <LJJ@eliotsinclair.co.nz>
Subject: Fwd: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input

Thanks Nicky/Liam.

Please refer below Tony Hadwin's response to the hydraulics queries.

Attached are the floor plan and cross-sections for our recently completed Belfast store. Leaving out the "E-store" component, this is a reasonable proxy for what the Rolleston South store format could look like.

Regards

Daniel Shao

Development Manager

M 027 216 6035

E daniel.shao@countdown.co.nz

80 Favona Road, Favona Auckland 2024

---------- Forwarded message ---------
From: **Tony Hadwin** <tony.hadwin@countdown.co.nz>
Date: Thu, 24 Aug 2023 at 18:46
Subject: Re: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input
To: Daniel Shao <daniel.shao@countdown.co.nz>

Hi Daniel,
No problem...

I have attached the Floor Plan and Sections for CD Belfast. You just have to ignore the E-store component to answer the questions.

The Supermarket (B & M) is similar in size at 3450, but is "handed" from what we will design for Rolleston.

The question on location of SVR is rather dependent on a number of factors. For example in Belfast, it is tucked in behind pharmacy, wich worked well for both FS access and proximity to services within the road. For Rolleston, buest guess at this stage would be in the outside corner of the 120m2 retail adjacent to access to DTB.

Hope this helps

Rgds

Tony Hadwin

Design Manager

M 027 4265880

E tony.hadwin@countdown.co.nz

80 Favona Road, Favona Auckland 2024

On Thu, 24 Aug 2023 at 15:54, Daniel Shao <daniel.shao@countdown.co.nz> wrote:

> Hi Tony,
>
> Are you able to assist with the following queries from the hydraulics engineer?
>
> The context is that we are trying to determine the ideal location/design for the water supply lateral connections (with hydraulics and civil input). Your answers will help to inform this.
>
> - What is the likely building height?
> - Where the sprinkler valve/pump room is proposed/likely to be?
> - Do you have a very high-level, indicative supermarket layout; or an indication of a recent supermarket with a similar configuration?
> - Is there a preferred road (either Goulds Rd or Shillingford Blvd) to bring the services in from? (Not sure if this is a design question - if not, just say so).
>
> Regards
>
> **Daniel Shao**
>
> Development Manager
>
> **M** 027 216 6035
>
> **E** daniel.shao@countdown.co.nz
>
> 80 Favona Road, Favona Auckland 2024
>
> 
>

---------- Forwarded message ---------
From: **Nicky Marshall** <nicky@protechdesign.co.nz>
Date: Thu, 24 Aug 2023 at 15:25
Subject: RE: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input
To: Liam Jagvik <LJJ@eliotsinclair.co.nz>
Cc: Daniel Shao <daniel.shao@countdown.co.nz>

Thanks for your email Liam
It shouldn't take too long to help with this. No engagement required.
We would like to know:

- the building height (I see 9m on one drawing), a cross section, if available.
- Where the sprinkler valve/pump room is proposed to be
- Indicative supermarket layout, or an indication of a recent supermarket with a similar configuration would be helpful.
- Is there a preferred road to bring the services in from?

I can advise that the sprinkler water configuration will be very similar to below with the Elster R1000 meter, strainer and double check valve (DCV)
(note that picture shows a RPZ, but noted as DCV)

Kind regards

Nicky Marshall
Southern Regional Manager

PROTECH DESIGN LIMITED
Specialist Fire Protection Consultants
Mobile Phone: +64 (0)21 433 488 **Email:** nicky@protechdesign.co.nz **Web:** www.protechdesign.co.nz
Address:105A Alabama Rd, Redwoodtown, Blenheim 7201, NZ

"I always wondered why somebody doesn't do something about that. Then I realised I was somebody" Lily Tomlin

---

From: Liam Jagvik <LJJ@eliotsinclair.co.nz>
Sent: Thursday, August 24, 2023 2:28 PM
To: Nicky Marshall <nicky@protechdesign.co.nz>
Cc: Daniel Shao <daniel.shao@countdown.co.nz>
Subject: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input

Hi Nicky

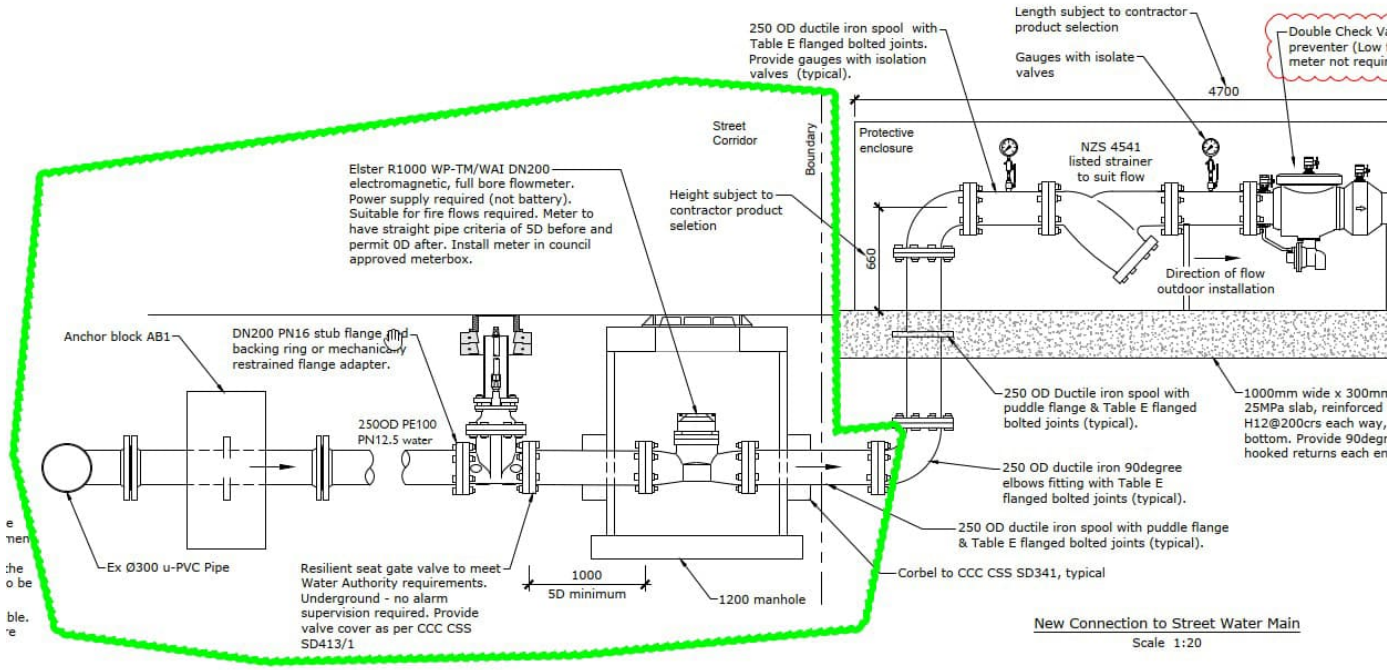
Thanks for your time on the phone earlier today.

As briefly mentioned, Woolworths are progressing due diligence investigations for a new supermarket development in Rolleston.

The proposed supermarket site forms part of a large residential subdivision (Faringdon Oval) which has recently received fast-track consent approval. You will find the full application documents and the decision at this link.

The **attached** drawings help to identify the location and context of the proposed development.

What we are needing is some preliminary guidance on the pipe diameter and pipe type from the new main in the street to the site boundary. There's an infrastructure report tied up in the consent application that will be helpful. Woolworths are going to ask the developer to provide the infrastructure services to the site boundary. Essentially what we are needing to complete is the preliminary schematic for the green clouded area (example is taken from the CFDC project).



What Woolworths needs is:

- Location of the desired lateral connection to the main
- Is one or more connections required for the sprinkler connection
- Pipe diameter and type of the lateral connection to the boundary

Please note the potable water will likely be a separate DN63OD, but to be confirmed by the hydraulics engineer.

I understand that you need a couple of things confirmed such as the sprinkler valve room and the height of the proposed building. Could you please let us know what you need and either Daniel or I will be able to assist.

Could you please liaise with Daniel for the engagement side of things.

We are on some quite tight deadlines and would ideally like something back mid next week if that's possible?

Kind regards

Liam Jagvik
SURVEYOR
BSurv MNZIS LCS
+64 3 379 4014 ext. 162
+64 27 699 0592
eliotsinclair.co.nz
Christchurch | Rangiora | Wānaka
Queenstown | Hokitika | Nelson

Sprinkler Design Criteria
Retail OH4
Cat 4 to 2.5m, 7m high roof
8 over 186 = ~1600 l/min
Rear store
Cat 5 to 2.5m? 6.1m high roof
NZ option:15 x K16 @ 140
FM option: 12 x K16 @ 210
~ 3200 L/min

INDICATIVE TRANSFORMER LOCATION

6m WIDE SLIDING GATE FOR LOADING EXIT

DISTRICT PLAN SITE RESTRICTION TO BE CONFIRMED

SUPERMARKET SITE AREA SHOWN AS RED BOUNDARY LINE = 13425m² (Approx.)

23m TRUCK & TRAILER. TO BE CONFIRMED

AREA NOT REQUIRED = 60m² (Approx.)

4.0m WIDE AUTOMATED SLIDING GATE FOR LOADING ENTRY

FUTURE COURIER PARKING AREA SHOWN AS GRAY HATCH

COURIER PARKS x6 WITH CANOPY OVER

Flow test info

	Towns Main Supply:			
Address:	Masefield Drive, Rolleston	Static		480 kPa
Time:	8.05 am	2,500 L/min	@	440 kPa
Date:	18 November 2016	5,000 L/min	@	370 kPa
Test Point:	Hydrants In Masefield Drive	7,350 L/min	@	320 kPa
		8,100 L/min	@	320 kPa

Date: 7 June 2022

Flow	Pressure (kPa)			
L/Min	Installation	Suction	Discharge	RPM
0	1200	500	1210	2076
2500	1040	350	1060	2064
4500	700	10	750	2040

PROPOSED SITE PLAN
Scale 1:600 at A3

Retail 225m²
Online 200m²
Retail 120m²
GENSET
WHELLIE BINS x11
SKIP & PALLETS
TRANSFORMER
LOADING
CANOPY OVER
CONTAINER PLANT
CANOPY OVER
DROP-OFF PARK
ENTRY
BICYCLE PARKS
MOTORCYCLE PARKS x2
PICK UP EXIT
NEW PYLON SIGN
PEDESTRIAN CONNECTION
SHILLINGFORD BOULEVARD
250mm main proposed
GOULDS ROAD
200mm main proposed
Sprinkler Pump room
DN 180 (ID 150mm) PE town main connection
Underground valve and Water meter, recommend above ground strainer and Double check valve backflow preventer in insulated enclosure
Underground valve
PROPOSED ALL DIRECTION INTERSECTION TO BE REVIEWED BY TRAFFIC ENGINEER
MEDIUM
LOW EMISSION VEHICLE PARKS x27
NEW PYLON SIGN
4.0m WIDE AUTOMATED SLIDING GATE FOR COURIER
PICK UP DIRECT TO BOOT PARKS x8 WITH CANOPY OVER
DISTRICT PLAN SITE RESTRICTION TO BE CONFIRMED
E.V PARKS x8 WITH CHARGING POINT

DEVELOPMENT SUMMARY:
1. PROPOSED SUPERMARKET = 3500m² (Incl. Mezzanine Office 200m²) (Excl. Plantroom)
2. RETAIL = 345m²
3. ONLINE = 200m²

PARKING SUMMARY:
4. PARKING REQUIRED = 191 SPACES
5. PARKING PROVIDED = 179 SPACES
6. PARKING SHORTFALL = 12 SPACES

LEGEND:
- SUPERMARKET BOUNDARY
- PROPOSED BOUNDARY FROM DEVELOPER (SITE AREA = 13545 m² (approx.)

NOTE:
1. ALL DEVELOPMENT BOUNDARIES AND DIMENSIONS ARE TO BE CHECKED AND VERIFIED BY A REGISTERED SURVEYOR.

draft

PO BOX 9584, NEWMARKET, AUCKLAND 1149, NEW ZEALAND | T: +64 (0) 9 377 5215 | www.wmza.co.nz

Fire Protection Concept sketches
By: N Marshall
Date: 31/08/2023
PROTECH DESIGN LIMITED
Woolworths Rolleston South

Woolworths

PROPOSED SUPERMARKET FEASIBILITY STUDY
Woolworths Rolleston South, Farringdon

SCALE: 1:600 at A3
DATE: 09 August 2023
JOB NO: 2030-13
DWG NO: BNL 12 - PAGE 1

WOODHAMS MEIKLE ZHAN ARCHITECTS

Appendix C. Preliminary Proposed Services Plan

G:\Jobs\52\520947\Drawings\CAD\520947_Woolworths Services Markup_20231220

NOTES:

1. The base of this drawing was obtained from Drawing BNL 13 - Page 1 produced by Woolworths NZ Ltd. The original drawing has been altered to display the preliminary serviving options clearly.

Firefighting WS: DN180 (ID 150mm) PE connection TBC by fire engineer.

WS Enclosure (Potable and FF): Above ground enclosure to include backflow preventer for fire fighting supply and potable supply. Dimensions approx. 5m L x 1m W x 1.2m H (subject to product selection). Location to be confirmed at detailed design (not required directly on the boundary)

5m

Fibre: Likely Enable fibre connection to be 24F cable (2 x 12F).

Preferred Potable WS: 63mm OD PE sub-main (or similar) to be installed as part of subdivision works. Pipe size to be confirmed by hydraulics engineer.

Transformer Location: kiosk to be located within property boundary

Proposed DN250 Water Main as per DLS Report

Secondary Potable WS: Further investigation required to determine if two potable WS connections are required. If so, proposed 63mm OD PE sub-main (or similar) to be installed as part of subdivision works. Pipe size to be confirmed by hydraulics engineer.

Soakage Pit: Indicative soakage pit location (not to scale). Refer to other soakage pit note for details

Lateral to be extended to supermarket during Building Consent stage (dashed)

WW Connection: DN150 lateral to service site.

Existing Wastewater Infrastructure: Existing DN150 gravity main with DN100 laterals installed as part of subdivision works.

Proposed DN200 Water Main as per DLS Report

Soakage Pit Area: Indicative soakage pit location (not to scale). Soakage pit preferably located under greenspace but can be constructed under hardstand.

Stormwater Disposal Option 1: Approximate Soakage Pit Area required with Boulder Media - 300 m²

Stormwater Disposal Option 2: Approximate Soakage Pit Area required with Crate Media - 200 m²

NOTES

1. Contractors to verify all dimensions and the location of all underground services on site prior to commencing work.
2. Unless noted otherwise, all work shall be undertaken in accordance with the NZBC and any relevant Territorial Authority Engineering Standards and Specifications as a minimum standard.

REV.	DRAWN	DATE	NOTE
A	JKFP	05.09.23	FOR DISCUSSION
B	JKFP	18.09.23	ANNOTATIONS AMENDED
C	JKFP	02.10.23	SERVICING UPDATED
D	JKFP	18.10.23	ANNOTATIONS AMENDED
E	JKFP	20.12.23	SERVICES UPDATED - FOR CONSENT

CLIENT

WOOLWORTHS NZ LIMITED

DESIGNED	JKFP
DRAWN	JKFP
REVIEWED	LJJ
APPROVED	07.09.23 LJJ
STATUS	FOR CONSENT
SCALE	1:300 [A1] 1:600 [A3]

WOOLWORTHS SUPERMARKET FARINGDON

Faringdon Oval Development
Rolleston

PRELIMINARY SERVICING PLAN

PROJECT	REV.
520947	E
SET	SHEET
C1	C100

eliot sinclair

Appendix D. ECS Correspondence

"A"

"B"

-DG149-

ROAD 2

BOULEVARD 1

STAGE 20

STAGE 3

STAGE 2

COUNTDOWN

Terminate ducts with temporary End Cap. Record Location. To be connected in the future.

Terminate ducts with temporary End Cap. Record Location. To be connected in the future.

Terminate ducts with temporary End Cap. Record Location

Terminate and coil a meter of duct. Temporary End Cap. Record Locatio. Alloted 24W duct for Countdown.

Terminate ducts with temporary End Cap. Record Location

Terminate ducts with temporary End Cap. Record Location

Ver.	DESCRIPTION	COMPANY	BY	CHECKED	DATE
1	Initial Issue (WO.135109)	Civtec	A. Salazar	AP / NG	8/12/2023
2	Design Approved	Civtec	A. Salazar	A. Pring	9/12/2023
3	Additional 24W for Countdown by Jamie V.	Civtec	A. Seville	A. Pring	25/12/2023

enable fibre broadband

LEGEND

End

NOTES

ID

Job Extents

ø50/100mm duct

Manhole

Cabinet (Primary)

Cabinet (Secondary)

Pedestal (SOS)

Pedestal (ROW)

Drop (CAB_Duct_Tube_Branch_Tube) eg. CN789_01_13_A_2

24Way multiduct

20Way multiduct

12Way multiduct

7Way multiduct

Ruggedized tube/s

TITLE

PROPOSED BLOWN FIBRE INSTALLATION PLAN FOR ROLLESTON CABINET - RL768 FARRINGDON OVAL STAGE 2 & 3 - DG150

SIZE A3

SCALE NTS

CABINET RL768

SHEET 1 of 1

Josh Purdon

From: Liam Jagvik
Sent: Friday, 8 September 2023 9:02 am
To: Josh Purdon
Subject: FW: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input

Follow Up Flag: Follow up
Flag Status: Completed

Liam Jagvik
SURVEYOR

Shape tomorrow

From: Dave McKenzie <dmckenzie@ecservices.co.nz>
Sent: Thursday, 7 September 2023 4:48 pm
To: Liam Jagvik <LJJ@eliotsinclair.co.nz>
Cc: Daniel Shao <daniel.shao@countdown.co.nz>
Subject: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input

Liam,

I'll assist with the Fibre Part, then Power / Transformer queries straight after.

See red below.

There is no internal fitout layout shown.
(Fitout Layout)

Enable fibre duct should be run into the store IT Room.

From what I can see, a strong chance of network along Goulds Road – Enable can confirm this.

Richard Gilbert
Business Development Manager | Enable Networks Limited
M: +64 22 179 4444 e: Richard.gilbert@enable.net.nz

Chris Gant
Business Development Manager | Enable Networks Limited
M: +64 22 044 5744
DDI: +64 3 335 1775
enable.net.nz
Chris.Gant@enable.net.nz

Chris was really helpful at CD Belfast and Halswell Junction.

If you send him a plan, I'm sure he would be able to confirm network capacity along Goulds Road.

Regards

Dave McKenzie
✉ dmckenzie@ecservices.co.nz
Mobile 0274 489 477
DDI 6005354

ELECTRICAL CONSULTING SERVICES LTD

Level 3, 65 Upper Queen Street, Eden Terrace, Auckland 1010,
P.O Box 911140, Victoria Street West,
Auckland 1142, New Zealand.
T 09 309 0640 **F** 09 309 5410
E inquiries@ecservices.co.nz **W** www.ecservices.co.nz

From: Liam Jagvik <LJJ@eliotsinclair.co.nz>
Sent: Thursday, August 24, 2023 8:00 PM
To: Dave McKenzie <dmckenzie@ecservices.co.nz>
Cc: Daniel Shao <daniel.shao@countdown.co.nz>
Subject: [#520947] Confidential: WWNZ Farringdon - Due Diligence Input

Hi Dave

I'm reaching out to you as Daniel has asked if you are able to provide us some advice in respect of the Enable fibre demands for a proposed Woolworths supermarket.

Incoming Network Cable
24F, Enable have provided **2 x 12F** at CD Belfast as 24F is not a standard Enable installed cable.

Woolworths are progressing due diligence investigations for a new supermarket development in Rolleston.

The proposed supermarket site forms part of a large residential subdivision (Faringdon Oval) which has recently received fast-track consent approval. You will find the full application documents and the decision at this link.

The **attached** drawings help to identify the location and context of the proposed development. Noted

What we are needing is some preliminary guidance on the demands and number of breakouts for the fibre connection to the site boundary. It would also be helpful if you could identify the particular location(s) which are suitable. We don't have a layout design plan from Enable at this stage. This is a similar principle to the Halswell project where you marked up a drawing showing the schematic layout. Woolworths will then pass this information onto the developer to ensure that there is the appropriate capacity and infrastructure at the boundary of the site.

Allow for 5 x ONTs (fibre breakouts / optical network terminals) for the Countdown Store.

2F internal cable from BUDI terminal (Main Fibre Terminal in IT Room) to each ONT position.
(supplied by Enable, cabled by Project Data Contractor)

Final Number of ONT's dependant on:

- WW WAN (primary connection for WW Network and Eftpos)
- NAD panel (3rd party dial in and alarms, media screens, refrigeration, audio pilot updates)
- Lotto
- Pharmacy (if required)
- ATM (if required)

A separate ONT for the Retail Tenancy (2F)

Could you please let us know if you need anything further and either Daniel or I will be able to assist.

Could you please liaise with Daniel for the engagement side of things.

We are on some quite tight deadlines and would ideally like something back mid next week if that's possible?

Kind regards

Liam Jagvik
SURVEYOR
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eliotsinclair.co.nz
Christchurch | Rangiora | Wānaka
Queenstown | Hokitika | Nelson

Appendix E. Earthworks Drawings

G:\Jobs\52\520947\Drawings\CAD\520947-C1-C100

0 10m 20m 30m 40m 50m

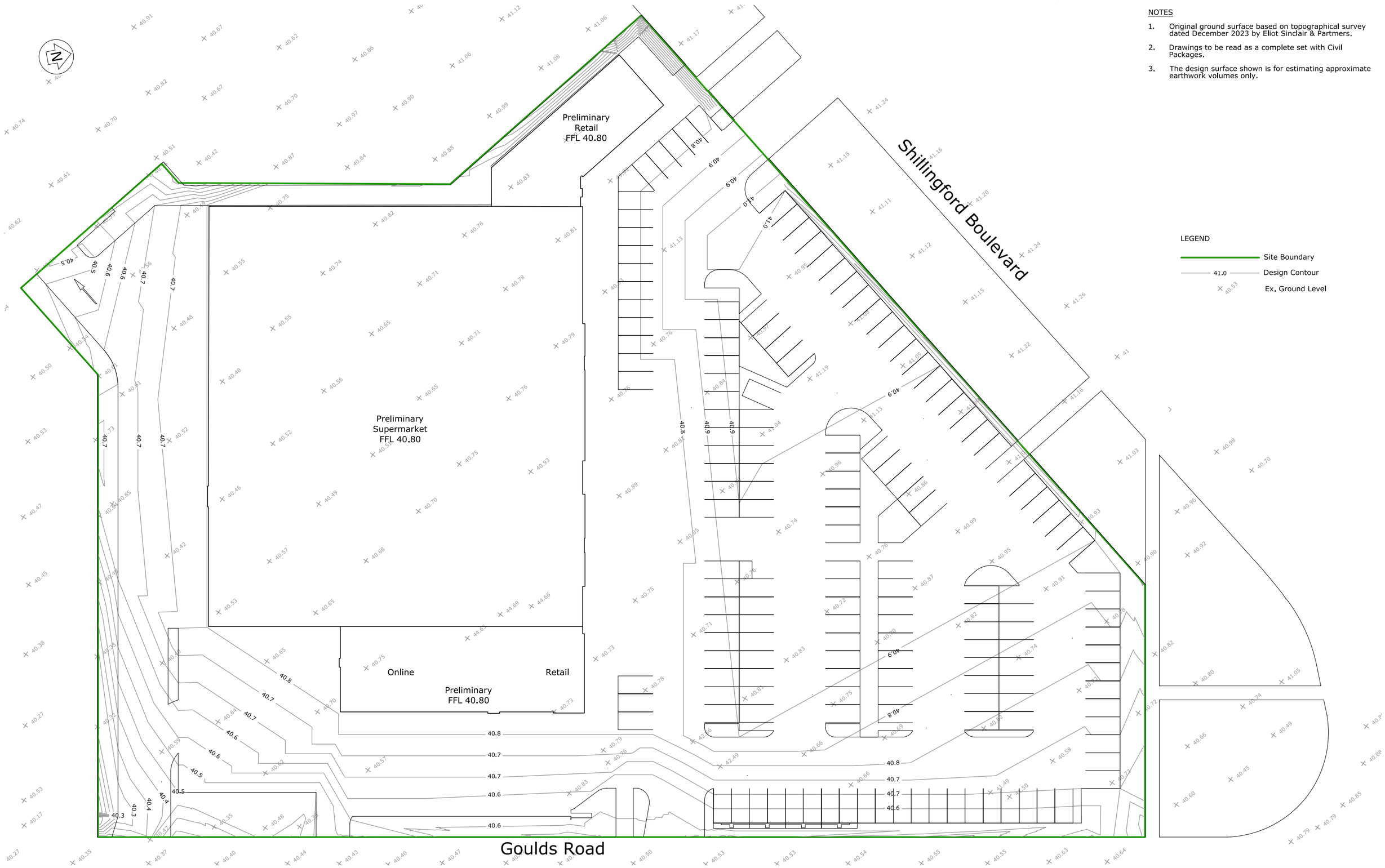
1:500 [A3]

NOTES

1. Original ground surface based on topographical survey dated December 2023 by Eliot Sinclair & Partners.
2. Drawings to be read as a complete set with Civil Packages.
3. The design surface shown is for estimating approximate earthwork volumes only.

LEGEND

- Site Boundary
- 41.0 Design Contour
- 40.53 Ex. Ground Level



NOTES

1. Contractors to verify all dimensions and the location of all underground services on site prior to commencing work.
2. Unless noted otherwise, all work shall be undertaken in accordance with the NZBC and any relevant Territorial Authority Engineering Standards and Specifications as a minimum standard.

SURVEY INFORMATION

SURVEYED	**L. Smetana**
SURVEY DATE	**05 and 06.12.2023**
COORD SYSTEM	**NZGD2000/ Mt Pleasant Circuit**
DATUM	**Lyt37 (Pre-Earthquake)**
ORIGIN OF LEVELS	**MA3 DP 583250 -R.L. 40.33m**

REV.	DRAWN	DATE	NOTE
A	**ESA**	**19.01.24**	**For Consent**

CLIENT

Woolworths New Zealand

DESIGNED		**SCC**
DRAWN		**ESA**
REVIEWED		**DK**
APPROVED	**19.01.24**	**LJJ**
STATUS	**PRELIMINARY**	
SCALE	**1:500 [A3] 1:250 [A1]**	

PROPOSED SUPERMARKET
WWNZ ROLLESTON SOUTH

PRELIMINARY DESIGN FINISHED SURFACE PLAN

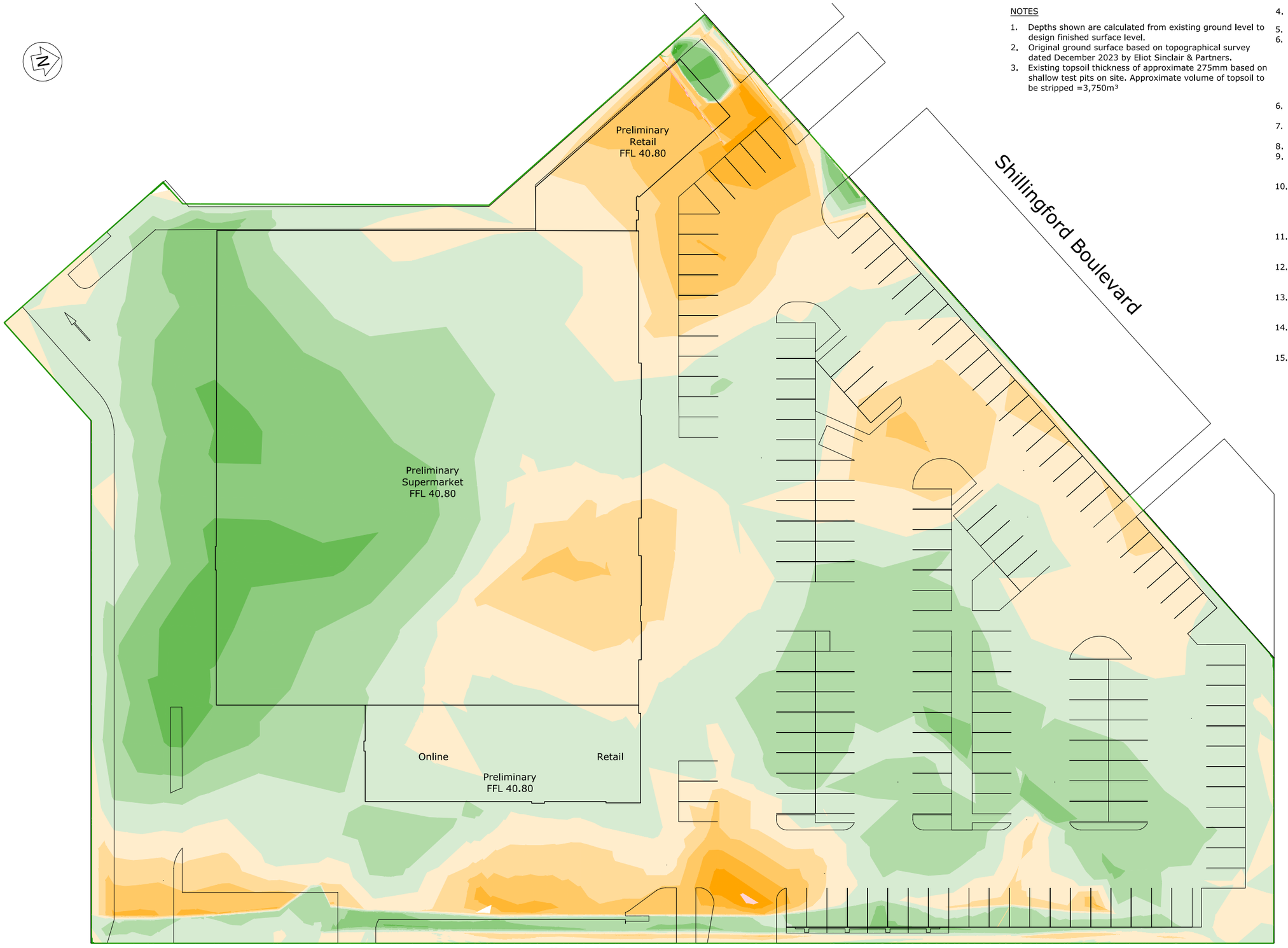
PROJECT	REV.
520947	**A**
SET	**SHEET**
C1	**C101**

eliot sinclair

G:\Jobs\52\520947\Drawings\CAD\520947-C1-C100

0 10m 20m 30m 40m 50m

1:500 [A3]



NOTES

1. Depths shown are calculated from existing ground level to design finished surface level.
2. Original ground surface based on topographical survey dated December 2023 by Eliot Sinclair & Partners.
3. Existing topsoil thickness of approximate 275mm based on shallow test pits on site. Approximate volume of topsoil to be stripped =3,750m³
4. Bulk earthworks quantities

Total Cut	TotalFill	Total Earthworks
5,500m³	6,000m³	11,500m³

5. Design subgrade level is based on:
   - 350mm pavement thickness for car park areas below design finished surface
   - 350mm below finished level floor for buildings
   - 650mm below existing ground level on the loading lane on the south side of the building (based on removing silt to approximate 0.5m to 0.8m below existing ground level i.e. average of 650mm)
6. Volumes are solid volumes, no adjustment for reject material, consolidation, compaction or bulking.
7. No allowance has been made for the excavation of services/utility trenches or building foundations.
8. Drawings to be read as a complete set with Civil Packages.
9. All dimensions are in metres unless noted otherwise. All levels, meterages, stations and coordinates are expressed in metres.
10. All easements, covenants and other legal instruments associated with this site may not be shown on this plan. An investigation of the most current legal records should be undertaken prior to design and construction commencing.
11. This plan is issued for a specific project and may not be altered or used for any other purpose without the prior written consent of Eliot Sinclair.
12. Cut/fill depths are based on preliminary bulk earthworks design and is subject to detailed design of the finished ground levels.
13. Any measurements taken from information which is not dimensioned on the electronic copy are at the risk of the recipient.
14. This plan has been prepared for resource consent purposes only. No liability is accepted if the plan is used for any other purposes.
15. This plan is subject to the granting of resource consents and should be treated as a proposal until such time as the necessary consents have been granted by the relevant authorities.

LEGEND

Site Boundary

Cut Depth	Fill Depth
0.10 to 0.00m	0.00 to 0.10m
0.20 to 0.10m	0.10 to 0.20m
0.30 to 0.20m	0.20 to 0.30m
0.40 to 0.30m	0.30 to 0.40m
0.50 to 0.40m	
0.60 to 0.50m	

NOTES
1. Contractors to verify all dimensions and the location of all underground services on site prior to commencing work.
2. Unless noted otherwise, all work shall be undertaken in accordance with the NZBC and any relevant Territorial Authority Engineering Standards and Specifications as a minimum standard.

SURVEY INFORMATION

SURVEYED	**L. Smetana**
SURVEY DATE	**05 and 06.12.2023**
COORD SYSTEM	**NZGD2000/ Mt Pleasant Circuit**
DATUM	**Lyt37 (Pre-Earthquake)**
ORIGIN OF LEVELS	**MA3 DP 583250 -R.L. 40.33m**

REV.	DRAWN	DATE	NOTE
A	**ESA**	**19.01.24**	**For Consent**

CLIENT

Woolworths New Zealand

DESIGNED	**SCC**
DRAWN	**ESA**
REVIEWED	**DK**
APPROVED	**19.01.24 LJJ**
STATUS	**PRELIMINARY**
SCALE	**1:500 [A3] 1:250 [A1]**

PROPOSED SUPERMARKET
WWNZ ROLLESTON SOUTH

CUT / FILL FROM EXISTING GROUND TO DESIGN FINISHED SURFACE

PROJECT	REV.
520947	**A**
SET	SHEET
C1	**C102**

eliot sinclair

G:\Jobs\52\520947\Drawings\CAD\520947-C1-C100

0 10m 20m 30m 40m 50m

1:500 [A3]

NOTES

1. Depths shown are calculated from existing ground level with topsoil stripped to design subgrade level.
2. Original ground surface based on topographical survey dated December 2023 by Eliot Sinclair & Partners.
3. No allowance has been made for the excavation of services/utility trenches or building foundations.
4. Drawings to be read as a complete set with Civil Packages.
5. All dimensions are in metres unless noted otherwise. All levels, meterages, stations and coordinates are expressed in metres.
6. All easements, covenants and other legal instruments associated with this site may not be shown on this plan. An investigation of the most current legal records should be undertaken prior to design and construction commencing.
7. This plan is issued for a specific project and may not be altered or used for any other purpose without the prior written consent of Eliot Sinclair.
8. Cut/fill depths are based on preliminary bulk earthworks design and is subject to detailed design of the finished ground levels.
9. Any measurements taken from information which is not dimensioned on the electronic copy are at the risk of the recipient.
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LEGEND

Site Boundary

Cut Depth	Fill Depth
0.10 to 0.00m	0.00 to 0.10m
0.20 to 0.10m	0.10 to 0.20m
0.30 to 0.20m	0.20 to 0.30m
0.40 to 0.30m	0.30 to 0.40m
0.50 to 0.40m	
0.60 to 0.50m	

NOTES

1. Contractors to verify all dimensions and the location of all underground services on site prior to commencing work.
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SURVEY INFORMATION

SURVEYED	**L. Smetana**
SURVEY DATE	**05 and 06.12.2023**
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ORIGIN OF LEVELS	**MA3 DP 583250 -R.L. 40.33m**

REV.	DRAWN	DATE	NOTE
A	**ESA**	**19.01.24**	**For Consent**

CLIENT

Woolworths New Zealand

DESIGNED	**SCC**
DRAWN	**ESA**
REVIEWED	**DK**
APPROVED	**19.01.24 LJJ**
STATUS	**PRELIMINARY**
SCALE	**1:500 [A3] 1:250 [A1]**

PROPOSED SUPERMARKET
WWNZ ROLLESTON SOUTH

CUT / FILL FROM EXISTING GROUND WITH TOPSOIL STRIPPED TO DESIGN SUBGRADE LEVEL

PROJECT	REV.
520947	**A**
SET	SHEET
C1	**C103**

eliot sinclair