Appendix H
Precinct Network Plan (PNP)

Yarrabilba Precinct 7 Town CentreRAL1 Precinct Network Plan – Water and Wastewater Infrastructure

PREPARED FOR Stockland | March 2026

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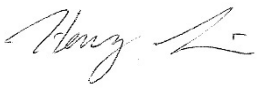
Revision schedule

Rev No	Date	Description	Signature of Typed Name (documentation on file)			
			Prepared by	**Checked by**	**Reviewed by**	**Approved by**
00	27/10/2025	Draft for Stockland Review	H Lin	H Lin	-	-
01	27/11/2025	Final	H Lin	H Lin		
02	27/03/2026	Revision (EDQ comments addressed)	H Lin	H Lin	P Hall	P Flint

Quality statement

Project manager	Project technical lead
Paul Flint	Henry Lin

PREPARED BY Henry Lin		27/03/2026
CHECKED BY Henry Lin		27/03/ 2026
REVIEWED BY Phil Hall (RPEQ 23017)		27/03/2026
APPROVED FOR ISSUE BY Paul Flint		27/03/2026

Stantec Australia Pty Ltd
Level 3, SW1 52 Merivale Street
PO Box 3602
SOUTH BRISBANE, QLD 4101

ABN: 17 007 820 322
TEL +61 7 3029 5000
FAX +61 7 3029 5050

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1 Introduction

This report outlines the requirements for the water and sewerage network for Precinct 7 Town Centre RAL1 located in the Yarrabilba development.

In accordance with the Yarrabilba Precincts 7 Town Centre Context Planning Area Strategy (Precinct 7 Town Centre CPAS) endorsed by Economic Development Queensland (EDQ), Precinct 7 Town Centre RAL1 is located to the south of approved Precinct 3D non-residential and to the west of Precinct 4 residential developments (refer to Figure 1). This RAL comprises of 24.9 ha of five non-residential lots (refer to Appendix A).

Figure 1: Locality of Precinct 7 Town Centre RAL1 Development

1.1 Previous Assessments

An infrastructure master plan (IMP) report entitled *Yarrabilba Water Supply and Sewerage – Infrastructure Master Plan 2017* was submitted to EDQ and endorsed by EDQ in August 2017 outlining the water supply and sewerage requirements for the entire Yarrabilba development area (it is noted that a 2023 IMP revision report will be also submitted to EDQ in September 2023). These works were based on an earlier proposed land use master plan with a total Yarrabilba equivalent persons (EP) of 46,869 EP and 47,647 EP for water and sewerage respectively. EDQ and Logan City Council (LCC) also instructed that an additional 1,486

future detached residential dwellings or 4,162 EP external to Yarrabilba are also in the priority development area (PDA) and are to be considered in the water and sewerage infrastructure plan.

Following the IMP, Precinct Network Plan (PNP) reports were prepared for the Precincts 1 to 6 and 8. A PNP is a detailed planning document that identifies all trunk infrastructure to service the proposed Precinct both internal and external to the site. These PNP reports include both interim and ultimate solutions in accordance with the revised regional strategy agreed by both EDQ and LCC.

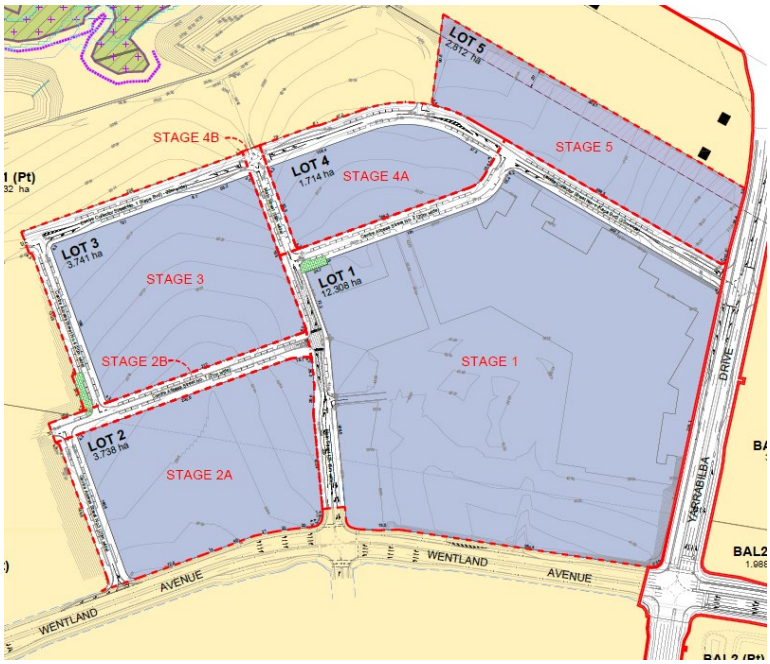
For the water infrastructure, the PNP includes details of all the water infrastructure required to deliver peak demand, fire flow and pressure management (as required), including layout plans, pipe sizes, and details of pressure reduction areas and equipment.

For the sewerage infrastructure, the PNP includes details of all the sewerage infrastructure required, including layout plans, pipe sizes, conceptual design of the new pump station, vertical alignment of controlling sewer, and conceptual design of interim servicing infrastructure required to address development staging and odour/corrosion control.

Seven PNP reports were prepared for the Precincts 1 to 6 and 8. This PNP report is proposed for the Precinct 7 Town Centre RAL1 development.

1.2 Precinct 7 Town Centre RAL1

There are five non-residential lots and lands for street reserves, centre collector and access in the Precinct 7 Town Centre RAL1 development area (refer to Figure 2). It is noted that Lot 2 also comprises 248 senior living apartments development.



Land Use Areas:		
Total Application Area	**264.112ha**	**100%**
Proposed Allotments	**259.797ha**	**98%**
Town Centre Super Lots	24.313ha	9%
Balance Lots	235.485ha	89%
Proposed Road Reserve	**4.315ha**	**2%**
Centre Collector	1.820ha	1%
Centre Access	2.495ha	1%

Figure 2: Precinct 7 Town Centre RAL1 Development Contents

1.3 Development Timeline

Stockland advises that the Precinct 7 Town Centre RAL1 development is likely to start in 2026 and this study assumes that the entire Precinct 7 Town Centre RAL1 development would be completed throughout 2027/2028.

2 Desired Standards of Service

The Desired Standards of Service (DSOS) adopted for this assessment are in accordance with the 2018 DSOS review report provided by LCC. The DSOS is provided in Appendix B and the key criteria are provided in the following sub-sections.

2.1 Water DSOS

An average day potable water demand (AD) of 165 L/EP/day plus an unaccounted for water (UFW) allowance of 25 L/EP/day was adopted. Adopted water supply peaking factors are summarised in Table 2-1.

Table 2-1: Potable Water Demand Peaking Factors

Peaking Factors	Residential Detached	Residential Attached	Commercial Education	Industry
Maximum Day (MD) / AD	1.7	1.6	1.3	1.3
Maximum Hour (MH) / AD	3.1	2.6	2.0	1.7
Mean Day Maximum Month (MDMM) / AD	1.3	1.3	1.2	1.2

The key water infrastructure sizing criteria applied to this study are outlined in Table 2-2.

Table 2-2: Potable Water Demand Peaking Factors

Parameter	Description
Minimum service pressure	22 m at the property boundary
Maximum service pressure	55 m
Fire flow demands	Residential: 15 L/s Non-Residential: 30 L/s
Residual pressure during fire flow event	12 m at the fire flow location
Background demand during fire	2/3 MH demand
Maximum allowable pipe headloss	5 m/km for diameter <= 150 mm 3 m/km for diameter > 150 mm

2.2 Sewerage DSOS

An average dry weather flow (ADWF) of 165 L/EP/day is adopted for this study in accordance with the 2014 LCC DSOS. As 'Reduced Infiltration Gravity Sewers' (RIGS) are utilised in the Yarrabilba development, the peak weather flow (PWWF) was calculated based on 1,000 L/EP/day. It is noted that gravity mains are designed to transfer PWWF of 1,000 L/EP/day with a depth of flow of 75% pipe depth and to meet self-cleansing velocities.

3 Population Development

3.1 Approach

Expected population growth and EP were assessed based on the proposed subdivision layouts (provided by Stockland) and the occupancy rates/densities agreed with LCC.

The residential populations for Precincts 1 to 6 and 8 were calculated using the following methodology:

- A lot-count was performed for areas where the subdivision layout was complete and where the future layout was sufficiently detailed.
- Terrace houses, town houses and senior living apartments were regarded as attached residential dwellings in the developed Precincts 1 to 3.
- Where the future layout was not available 11.2 % of the total number of residential lots was assumed to be attached residential dwellings

The projected yield for each village of future precincts (Precincts 9 to 17) of the Yarrabilba development was provided by Stockland. The map of future precincts outlines the extent of future commercial, industrial, open space and varying densities of residential development within the Yarrabilba PDA. The projected number of dwellings for each of future precincts was provided by Stockland (refer to YAR_CA_LL_241118.xlsx). The development staging plan provided by Stockland is also included in Appendix C. These documents form the basis of long-term population projection assessment.

3.2 Planning Densities and Occupancy Rates

The following planning density and occupancy rates were used for estimating the EP for Precincts 1 to 6:

- Residential occupancy rates:
  - Detached dwelling: 2.8 EP/dwelling
  - Attached dwelling: 1.78 EP/dwelling.
- Planning densities for non-residential development without the gross floor area (GFA) information:
  - Commercial and Industrial: 30 EP/ha (water) and 37 EP/ha (sewerage)
  - Education state and private primary schools: 166 EP, as per the Precinct 2 Yarrabilba State School population (138 EP) plus 20% planning allowance.
  - Education state and private high schools: 187 EP, as per the Precinct 3 Yarrabilba State Secondary College population (156 EP) plus 20% planning allowance.
  - Toilet block: 1.1 EP/toilet.
- Non-residential conversion rates for the non-residential development with the GFA information (refer to Table 3-1):

Table 3-1: LCC Non-residential EP Conversion Rates

Non-residential Development Type	Water EP per ha GFA	Sewerage EP per ha GFA
Commercial	55.9	50.31
Office	55.9	50.31
Warehouse Distribution	55.9	50.31
Education	105.3	84.24
Health	226.5	203.85
Industry Heavy	56.6	45.28
Industry Medium	47.25	37.8
Industry Light	37.8	30.24

Non-residential Development Type	Water EP per ha GFA	Sewerage EP per ha GFA
Retail Services	97.6	87.84
Showroom Bulk Goods	110.8	99.72
Accommodation	233.9	210.51

3.3 Population Summary

Precinct 7 Town Centre RAL1 comprises of five non-residential lots and 248 senior living apartments in Lot 2 (refer to Figure 2). A total of 1,744.1 EP for water and 1,593.2 sewerage EP were estimated for Precinct 7 Town Centre RAL1 in accordance with the planning densities documented above.

A summary of the EP in both earlier Precincts and Precinct 7 Town Centre RAL1 is provided in Table 3-2 and Table 3-3. The development applications of Precinct 8 ROL3 and Precinct 5 MIBA South ROL1 are also included and assumed to be developed before 2028.

Table 3-2: Estimated 2028 Water EP for Precincts 1 to 4, Precincts 6, Precinct 8 ROL1, Precinct 5 MIBA North & South ROL1 and Precinct 7 Town Centre RAL1

Precinct / Village	Residential Detached	Residential Attached	Commercial Employment/Retail/ Community	Education	Total EP	Estimated 2028 EP*
1	1,658	110	375	101	2,244	2,244
2	5,432	320	0	392	6,144	6,144
3A	605	255	44	214	1,118	1,118
3B	1,249	59	0	0	1,308	1,308
3C	610	0	0	0	610	610
3D	0	0	317	0	317	317
4A	430	35	0	0	465	465
4B	405	33	0	133	571	571
4C	303	24	0	0	328	328
4E/6A	1,725	139	0	0	1,864	1,864
4D	1,021	82	0	0	1,104	1,104
5A MIBA North	0	0	393	0	393	393
6 ROL1	1,492	52	0	0	1,544	1,544
6 ROL2	1,159	100	0	0	1,259	1,259
4G (previously 5F)	325	0	0	0	325	325
6 ROL3	201.6	10.7	0	0	212.3	212.3
8 ROL1	2,337	59	0	0	2,397	2,397
5 MIBA South ROL1	0	0	438	0	438	438
4H (previously 5H)	392	0	9.1	0	401	401
7 Town Centre RAL1	**0**	**414.4**	**1,096.2**	**206.4**	**1,744.1**	**1,744.1**
Total	**19,346**	**1,720**	**2,673**	**1,046**	**24,785**	**24,785**

*: Based on development approvals up to and including 2028.

Table 3-3: Estimated 2028 Sewerage EP for Precincts 1 to 4, Precincts 6, Precinct 8 ROL1, Precinct 5 MIBA North & South ROL1 and Precinct 7 Town Centre RAL1

Precinct / Village	Residential Detached	Residential Attached	Commercial Employment/Retail/ Community	Education	Total EP	Estimated 2028 EP*
1	1,658	110	460	101	2,329	2,329
2	5,432	320	0	392	6,144	6,144
3A	605	255	55	214	1,129	1,129
3B	1,249	59	0	0	1,308	1,308
3C	610	0	0	0	610	610
3D	0	0	390	0	390	390
4A	430	35	0	0	465	465
4B	405	33	0	133	571	571
4C	303	24	0	0	328	328
4E/6A	1,725	139	0	0	1,864	1,864
4D	1,021	82	0	0	1,104	1,104
5A MIBA North	0	0	484	0	484	484
6 ROL 1	1,492	52	0	0	1,544	1,544
6 ROL 2	1,159	100	0	0	1,259	1,259
4G (previously 5F)	325	0	0	0	325	325
6 ROL3	201.6	10.7	0	0	212.3	212.3
8 ROL1	2,337	59	0	0	2,397	2,397
5 MIBA South ROL1	0	0	540	0	540	540
4H (previously 5H)	392	0	11.2	0	403.2	403
7 Town Centre RAL1	**0**	**414.4**	**986.6**	**165.1**	**1.593.2**	**1.593.2**
Total	**19,346**	**1,720**	**2,927**	**1,005**	**24,997**	**24,997**

*: Based on development approvals up to and including 2028.

4 Water Supply Network Assessment

Water supply to the Yarrabilba development Precinct 7 Town Centre RAL1 is provided from the Travis Road reservoirs. In the interim, supply to Travis Road reservoirs is provided from the South Maclean pumping station with the long-term plan for supply being provided through a new connection to the Southern Regional Water Pipeline (SRWP) at Chambers Flat.

4.1 Water Demand

The ultimate maximum day (MD) and mean day maximum month (MDMM) demands for Precincts 1 to 6 and Precinct 8 ROL1 were calculated in accordance with the LCC DSOS stated in Section 2.1, and are summarised in Table 4-1. The sources of modelled population are:

- Precincts 1, 2 and 3A and 3B: Directly extracted from LCC water reticulation model, which includes the 2021 LCC infrastructure demand model (IDM) outcomes.
- Precincts 3C, 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 and Town Centre RAL1: Updated population (refer to Table 3-1) based on the development yields and layout provided by Stockland.

Table 4-1: Yarrabilba Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1 and MIBA South ROL1 Demand Summary

Category	MD (ML/d)	MDMM (ML/d)
Detached residential	5.8	4.4
Attached residential	0.5	0.4
Commercial / education	0.6	0.5
Industry	0.2	0.2
Open space	0.0	0.0
Leakage/loss allowance	0.6	0.6
Total (ML/d)	7.7	6.2

In addition, fire flow was also considered at a requirement of 15 L/s for residential properties and 30 L/s for non-residential properties at a background demand of 2/3 peak hour.

4.2 Storage and Bulk Supply Assessment

The required reservoir volume to serve the Yarrabilba Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 Town Centre RAL1 plus 2026 Logan Village population (extracted from the LCC water reticulation model) was estimated as 6.1 ML. The existing Travis Road reservoir capacity is 9 ML. Hence there will be sufficient storage for Yarrabilba development until the end of Precinct 7 Town Centre RAL1 development.

LCC advised the timing of two sub-regional trunk mains for construction are as below:

- **600 mm diameter trunk main between the Seqwater SRWP and Travis Road reservoirs:** LCC advised that this trunk main will be delivered by the end of 2026.
- **600 mm diameter trunk main from the Travis Road Reservoir outlet on Camp Cable Road to the development:** LCC advised the schedule of this trunk main has been postponed and is constantly reviewed and monitored based on the real/operational demands growth from Logan Village and Yarrabilba. LCC will use their hydraulic network model with the operation scenario and interim solution to assist this study to access the need of this augmentation for the Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 and Town Centre RAL1 development (refer to Section 4.4).

4.3 Proposed Precinct Water Supply Layout

Precinct 7 Town Centre RAL1 will be also served by the new DN450 mm trunk water main (refer to the Figure 4.3 Ultimate Yarrabilba Water Network in the IMP report) on Yarrabilba Drive from the Precinct 3 development. One DN200 mm reticulation main teed of the DN450 Yarrabilba Drive trunk main is connected to the proposed Town Centre RAL1 reticulation mains shown in in Figure 3.

It is noted that the Wentland Avenue trunk main sizes were approved in 2024 and constructed now. Also, three more contingency connections between the Wentland Avenue trunk main and future Town Centre water reticulation mains have been provided along with the Wentland Avenue trunk main construction (part of Town Centre East-West Road construction, refer to approved memorandum, April 2024, in Appendix H).

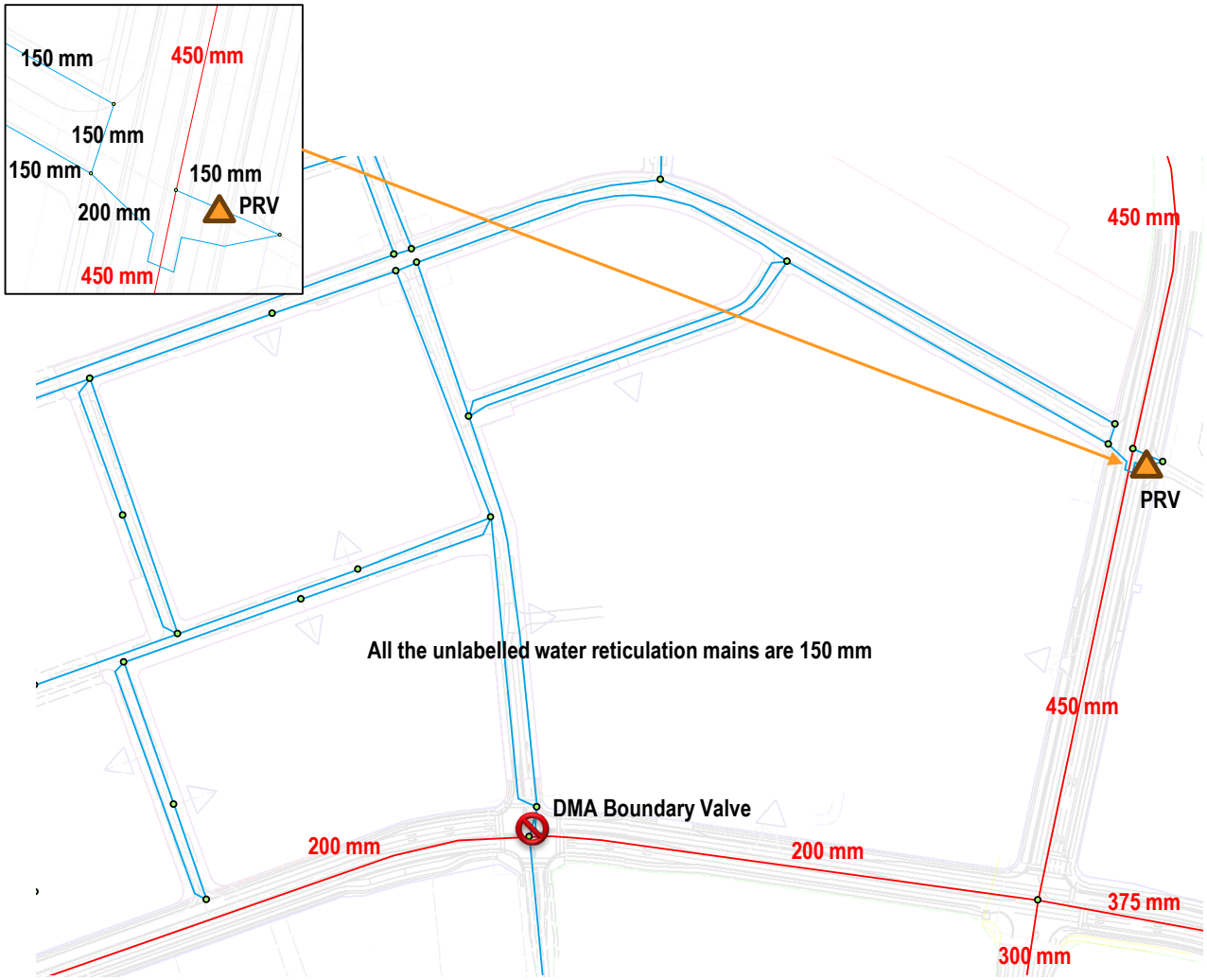


Figure 3: Proposed Precinct 7 Town Centre RAL1 Water Reticulation Mains

The preliminary elevations of the five Town Centre non-residential lots range from 38.5 m AHD to 46.5 m AHD. By comparing with the top water level (TWL) of 110 m AHD at the Travis Road reservoirs to the development elevations it is proposed that a new DMA with a modulated pressure reduce valve is required to comply with LCC DSOS.

The hydraulic performance of the network including Yarrabilba DMAs was assessed against the LCC DSOS with the forecast population in the ultimate planning horizon. Performance under the maximum hour (MH) demand scenario and the fire flow scenario were assessed, and the assessment outcomes are provided in Appendix D.

The detailed DMA device and cabinet drawings will be aligned with the LCC approved Precincts 6 and 8 DMA.

This study has updated the background future Yarrabilba population as 28,566 EP (the rest of Stockland Precincts 9 to 17 plus four external lots in the Yarrabilba PDA) based on the projected yield of each village of future precincts (Precincts 9 to 17) of the Yarrabilba development provided by Stockland. The Ultimate DMA, network size and layout required for servicing early precincts were approved in the 2022 endorsed PNP report assessment and therefore have not been reviewed in this report.

4.4 Interim Solution Assessment

Before the 600 mm diameter Travis Road Reservoir outlet trunk main is constructed, LCC advised that the interim operation scenarios will be checked through the LCC current InfoWorks WS Pro hydraulic model with the preferred operational settings and interim solution (a boost pump station downstream the Travis Road reservoir).

5 Sewerage Network Assessment

5.1 Overview of Sewerage System

Sewage from Precinct 1 and western portion of Precinct 2 are served by the existing pumping station SPS-084. Sewage from the eastern portion of Precinct 2 and western part of Precinct 3A are collected by the existing gravity sewers servicing Precincts 1 and 2 which deliver sewage to pumping station SPS 087. Pumping station SPS 087 transfers flow through the existing 200 mm diameter rising main to pumping station SPS 084. This pumping station transfers sewage via a 300/375 mm diameter rising main to LCC's Logan Village pumping station (SPS 081) and then to Chambers Flat and ultimately to the Loganholme sewerage treatment plant (STP).

Sewage from the eastern part of Precinct 3A, Precincts 3B, 3C, 3D, all stages of Precinct 4, Precinct 6, Precinct 5A MIBA North, Precinct 8 ROL1 and Precinct 5 MIBA South ROL1 will gravitate to the interim pumping station, SPS 153, located in the Precinct 3D area to the west of Yarrabilba Drive. The interim pumping station will be replaced in future by an ultimate regional pumping station PS 3, which is proposed to service approximately 50,000 EP. The interim pumping station SPS 153 transfers flows to SPS 084 and then to LCC's wastewater network at Logan Village.

The combined design flow for Precinct 7 Town Centre RAL1 lots are as follows:

- ADWF of 3.0 L/s; and
- PWWF of 18.4 L/s.

Sewage from Precinct 7 Town Centre South RAL1 lots will be collected by the local DN150 reticulation network before being transferred by the DN225/DN300/DN375 and DN675 trunk sewers to the pumping station SPS 153 (interim) or PS 3 (ultimate). The preliminary sewerage reticulation layout is provided in Appendix F. The revised PS3 catchment trunk sewerage infrastructure plan is provided in Appendix G. As the previous Yarrabilba precinct applications, the detailed longitudinal sections will be sent to LCC for further approvals before the construction phase.

5.2 Sewerage Interim Solution Assessment

In Section 5.1 of the 2018 endorsed PNP report, it was agreed with LCC that pumping station SPS 084 along with the 2 ML storage and the downstream Logan Village/Chamber Flats trunk infrastructure can service a capacity of 12,729 EP from the Yarrabilba development. This capacity cap was revised by the 2021 LCC study 'Chambers Flat Road 2 SPS Strategy Review - IP0011'. LCC recently advised that the spare capacity for the Yarrabilba development between SPS 084 and the Chambers Flat 2 pumping station is between 20,420 EP and 25,000 EP assuming that a 2 EY (twice in one year) event containment standard is adopted. This revised capacity cap is higher than the total sewerage EP of 23,001 EP from the Yarrabilba Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 and Precinct 7 Town Centre RAL1 development. A summary of the recent LCC capacity assessment is provided in Appendix E.

LCC latest assessment shows the SPS 153 'static' capacity is 6,869 EP, which equates to 79.5 L/s at 1,000 L/EP/day PWWF loading. The population contributing to SPS 153 has been higher than 6,869 EP after the MIBA North approval. As LCC adopts the dynamic containment standard for the SPS 153 catchment, and LCC is reviewing and monitoring the SPS 153 dynamic capacity since 2023. EDQ, LCC and Stockland agreed the following actions/approaches are to be used for the recent development applications, which include Precinct 5 MIBA South ROL1 and this application:

- Stockland is to provide the latest development rollout schedule to LCC.
- LCC is to revise the dynamic capacity of pumping station SP 153:
    - Stockland is to undertake the field investigation to remove the possible sources of fast response components of rainfall induced inflow and infiltration (RDII) in the network.
    - LCC is to install the flow gauges in the Yarrabilba gravity sewer network and to calibrate the fully developed pumping station SPS 084 catchment.
    - LCC is to re-assess the dynamic capacity of pumping station SP 153 by applying the modelling parameters obtained from the pumping station SPS 084 catchment.

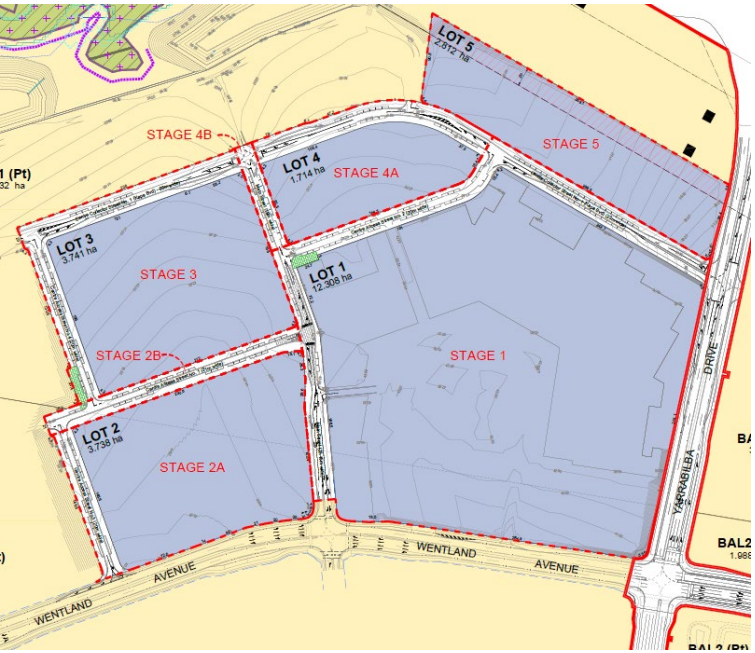
- LCC is to undertake the relevant option assessment between advancing the scheduled ultimate sub-regional sewerage infrastructure and local interim solutions (wet weather storage near SPS 153, larger SPS 153 pumps, or constructing and utilising the ultimate Yarrabilba PS3 rising main). The interim solutions will be at LCC's costs in accordance with the endorsed infrastructure agreement. LCC also advised "if SPS153 capacity is exceeded before 2031, a pump upgrade is probably the best option that can be employed in the interim".
- LCC has secured the funds in 2025 and been on schedule (before 2031) to deliver the pumping station PS3, PS3 trunk rising main and regional sewerage treatment plant in Chambers Flat.

6 Conclusions

The following conclusions are drawn from the assessment of the water supply and sewerage network requirements for Precinct 7 Town Centre RAL1:

1. 1,744.1 water EP and 1,593.2 sewerage EP were estimated for Precinct 7 Town Centre RAL1 development.
2. The estimated population of Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 and Precinct 7 Town Centre RAL1 is 24,785 EP for water and 24,997 EP for sewerage.
3. A total of 6.1 ML of storage capacity is required to supply Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 Precinct 7 Town Centre RAL1 plus the forecast Logan Village demand in the 2026 planning horizon. The existing Travis Road reservoir capacity is 9 ML. Hence there will be sufficient storage for Yarrabilba development until the end of Precinct 7 Town Centre RAL1 development.
4. The proposed water network layout, as outlined in Figure 3, can service the ultimate demands of Precincts 1 to 4, 5A MIBA North, 6, 8 ROL1, MIBA South ROL1 and Precinct 7 Town Centre RAL1 with the DMA arrangement outlined in the endorsed 2018 PNP report.
5. The water interim operation scenarios (before the 600 mm diameter Travis Road Reservoir outlet trunk main is constructed) of the recent development applications (Precinct 5 MIBA South ROL1 and Precinct 7 Town Centre RAL1) will be checked through the LCC current InfoWorks WS Pro hydraulic model with the preferred operational settings and interim solution (an interim boost pump station downstream the Travis Road reservoir).
6. The design sewage flows for the Precinct 7 Town Centre RAL1 lots are ADWF of 3.0 L/s and PWWF of 18.4 L/s respectively.
7. Sewage from Precinct 7 Town Centre RAL1 lots will be collected by the local DN150 reticulation network before being transferred by the DN225/DN300/DN375 trunk and DN675 sewers to the pumping station SPS 153 (interim) or PS 3 (ultimate).
8. Agreed actions provided in Section 5.2 are to be undertaken before the external trunk sewerage infrastructure are constructed.

Appendix A Precinct 7 Town Centre RAL1 Layout Plan and Population Development



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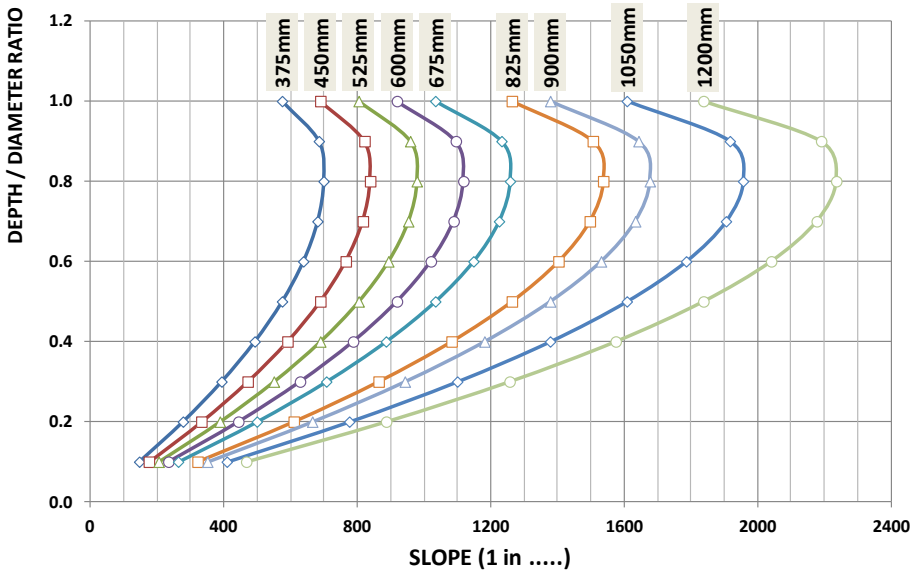
Translation Table				Water Res EP	Water Non-Res EP	Sewerage Res EP	Sewerage Non-Res EP
Stage 1 Lot no. 1	**Use**	**GFA**	**Dwellings**				
Lot 1	Retail	40,000 m²			390.4		351.4
	Childcare	1,000 m²			10.5		8.4
	Other Retail	3,190 m²			31.1		28.0
	Food &Beverages	800 m²			7.8		7.0
	Allied Health	1,700 m²			38.5		34.7
	Commercial Office	10,420 m²			58.2		52.4
subtotal lot 1		*57,110 m²*					
Lot 2	Library	1,500 m²			8.4		7.5
	District Art Gallery	600 m²			3.4		3.0
	Community Centre	900 m²			5.0		4.5
	Commercial Office	2,900 m²			16.2		14.6
	Food &Beverages	800 m²			7.8		7.0
	Other Retail	600 m²			5.9		5.3
	Gym/Wellness	500 m²			11.3		10.2
	Allied Health (private)	750 m²			17.0		15.3
	Senior Living (res counted in next column)	4,000 m²	248	441.4		441.4	
subtotal lot2:		*12,550 m²*	248				
Lot 3	Education (Private School)	10,000 m²			105.3		84.2
	Education (Tafe urban campus)	7,600 m²			80.0		64.0
	Commercial Office	8,590 m²			48.0		43.2
	Food &Beverages	500 m²			4.9		4.4
	Child Care	1,000 m²			10.5		8.4
	Other Retail	650 m²			6.3		5.7
subtotal lot 3		28,340 m²					
Lot 4	Public Health	7,000 m²			158.6		142.7
	Allied Health (private)	2,950 m²			66.8		60.1
	Private Hospital	5,200 m²			117.8		106.0
subtotal lot 4		15,150 m²					
Lot 5	Commercial	16,600 m²			92.8		83.5
subtotal lot 5		16,600 m²					
Total		**129,750 m²**			**1,744.1**		**1,593.2**

Appendix B LCC DSOS

WASTEWATER NETWORK DSS		
Parameter	**Criteria**	
Sewage load		
ADWF	165 L/EP/day	
PDWF	Use actual flow data; or *d x 165 L/EP/d or;* *d x 0.00191 x EP L/s* *Where:* $d = 0.01(\log A)^4 - 0.19(\log A)^3 + 1.4(\log A)^2 - 4.66\log A + 7.57$ *d = dry weather peaking factor* *A = gross plan area of development catchment, in hectares* *Refer to WSAA Sewerage Code of Australia; Part 1 Planning and Design*	
Overflow Frequency Standard for assessment of existing networks and planning and design of augmentations for existing networks This standard is only to be used by Council and their consultants	Master Planning; • Manholes: Maximum of 1 overflow per year • Sewer designated outlet: Maximum of 2 overflows per year Detailed Planning: • Acceptable network overflow frequency standard to be determined using a risk or effects based approach. The standard is to be determined in consultation with Council.	
PWWF For planning and design of wastewater networks servicing greenfield development This standard is to be used by developers, Council and their consultants	Residential	1000 L/EP/d (6.1xADWF)
	Non-residential	840 L/EP/d (5xADWF)
	High density residential (minimum 3 storey development)	PDWF+0.2 L/s/Ha
	Common Effluent Drainage	660 L/EP/d (4xADWF)
Gravity sewer design		
Flow equation	Colebrook White to be used for all applications – design and modelling	
Pipe roughness general	Colebrook White k = 1.5mm	
Maximum velocity @ PWWF	3 m/s	
Depth of flow @ PWWF - Existing	Up to 1m below MH surface level and no spillage through overflow structures	
Depth of flow @ PWWF - Proposed/ new sewers	75% of pipe depth	
Depth of flow @ PDWF – Existing and new sewers	Maximum 60% of pipe depth	
Minimum shear stress	Minimum grades are to be based on achieving self-cleansing shear stress of 1.6 Pa at 75% of PDWF. Self-cleansing shear stress should be met within 5 years of constructing a pipeline in a greenfield area. The designer must consider the operational implications of not meeting self-cleansing shear over any timeframe.	

Slime Stripping shear stress		It is desirable where gradients permit to achieve slime stripping. A wall shear of 3.35Pa is required to achieve slime stripping. Slime stripping shear should be achieved at PWWF. Where gravity mains are constructed in greenfield areas, the operational implications of not meeting slime stripping shear in the early years of growth are to be considered.
Minimum grades for self cleansing	**Diameter (mm)**	**Grades (mm, 1 in X)**
	150	180 (80 in last section between last manholes or to an end)
	225	300
	300	400
	375 - 1200	Minimum Grades are to be based on achieving Self Cleansing Shear Stress of 1.6 Pa at 75% PDWF, refer formula and figure below. $$S_{min} = \frac{\tau}{\rho . g . R_p}$$ Where: S_{min} = Minimum Grade τ = Self Cleansing Shear Stress = 1.6 Pa τ = Slime Stripping Shear Stress = 3.85 Pa $\boldsymbol{\rho}$ = Density of Water = 1000 kg/m^3 g = Gravitational constant = 9.8 m^2/s R_p = Hydraulic Radius Partial Full Pipe (m) = Wetted Perimeter / Cross sectional flow area  Note: Depth/Diameter ratio is based on flow conditions at PDWF

Gravity sewer design	
Flow criticality	If the gradient of a pipeline creates super critical flow conditions consideration must be given to appropriate manhole design to ensure flow disturbances do not occur. Flow criticality is determined by the Froude number: Fr<1.0 sub critical Fr= 1.0 critical Fr>1.0 super critical Where $Fr = \frac{v}{\sqrt{g\ D}}$ v=velocity m/s g=gravity m^2/s D=hydraulic depth (m)
Sewerage pump stations	
Wet well operating requirements	V (kL) $\frac{0.9 \times \text{pump rate (L/s)}}{N}$ Where N is the acceptable number of starts per hour Pump Rate (L/s) = capacity of the largest duty pump N = 12 for motors <= 15 kW N = 8 for motors 15kW - 200 kW N = 5 for motors > 200 kW Control levels shall be based on Table 5.1 of WSA04-2005. The minimum depth between duty start and duty off is 100mm and ideally should be 300mm or greater.
Emergency storage	Emergency storage volume requirement to be based on containment of 2 hours of PDWF. Where actual measured flow data is available, then volume should be based on containing 2 hrs measured PDWF provided it takes into account any future growth. Except where otherwise specified to meet the requirements of the overflow risk assessment If there is an overflow pipe - storage in the system is measured between the high level alarm and overflow pipe invert level. If there is no overflow pipe - storage is measured between the high level alarm and 300mm below the lowest upstream manhole or top of wet well.
Pump capacity Guidance Note: As pump stations (PS) are typically categorised as trunk infrastructure this standard shall also apply to pump stations in RIGS networks.	If PWWF <20L/s, then 2 pumps (duty/standby arrangement) shall be provided, with each pump being capable of delivering PWWF. If PWWF >20L/s and <200L/s, then 2 pumps (duty/duty assist arrangement) shall be provided, with each pump being sized such that the two pumps running in parallel are capable of delivering PWWF. The minimum single pump capacity shall be not less than the calculated PDWF, where PDWF is a minimum of 2.5xADWF. If calculated PDWF has a peaking factor <2.5xADWF then 2.5 shall be used. All pump stations with a capacity greater than 200 L/s are to be designed on a case by case basis in consultation with Logan City Council. Pump stations that discharge directly to a WWTP are to be designed to minimise flow variability in wet and dry weather conditions.
NPSH	***Refer Clause 6.4 of WSA04-2005***

Rising mains	
Flow equation	Colebrook White to be used for all applications
Friction mains	For preliminary design a Colebrook White Roughness (k) of 0.6 mm is to be used. For detailed design, roughness shall be based on velocity and pipe roughness at end of pump design life. However, pumps should be able to operate (not necessarily meet design flow) for Colebrook White roughness's between manufacturers specified roughness for new pipes and 0.6 mm
Minimum velocity	Minimum Velocity to be based on: • achieving an absolute minimum self cleansing shear stress of 1.6 Pa at single pump flow • achieving slime stripping shear stress of 3.85 Pa at the greater of PWWF or maximum pump station pumping capacity • If slime stripping shear cannot be met with single pump flow a regular flushing regime is required to prevent slime build up. The wall shear is to be calculated using the following equation: **$\tau = \rho.g .(D/4) \times (HL/L)$** Where: τ = Wall Shear Stress (minimum of 1.6 Pa required for self cleansing) HL =Frictional loss over main length of L based on Colebrook White (m) L =Length of main (m) ρ = Density of Water = 1000 kg/m³ g =Gravitational constant = 9.8 m²/s D =Internal Diameter of Pipe (m)
Maximum velocity	3.0 m/s proposed systems Manufacturer's specifications for new systems
Max detention time	Maximum time of detention in pressure main and SPS wet well is 6 hours [2 hours in wet well and 4 hours in rising main] (based on daily average flows) to minimise potential for odour / hydrogen sulphide generation. Where high retention times are likely to occur, odour / sulphide control measures will be required to the satisfaction of Logan City Council. ***(Refer WSA 07-2007-1.1 section 3.15)***
Reduced infiltration gravity sewers (RIGS) & NuSewers	
NuSewer	Are not permitted without Logan City Council approval
RIGS Design	Refer to ***SEQ WS&S D&C Code Section 6.7.2 Design Parameters***
Low pressure sewers / vacuum pumps	
Low pressure sewers / vacuum pumps	Are not preferred and will only be allowed subject to approval from Logan City Council.
Private pump stations and rising mains	
Private pump stations and rising mains	Private pump stations and rising mains are permitted for single users only and no connection or sharing will be permitted without approval from Logan City Council.
Common effluent drainage	
Common effluent drainage (CED)	Not permitted without approval from Logan City Council.

Water Network Desired Standards of Service (DSS)					
Parameter	**Criteria**				
Water demand					
Average Day Demand (ADD)	On demand areas - 190 L/EP/d. Based on 165 L/EP/d residential consumption + allowance for leakage/losses (25 L/EP/d).				
	Constant flow areas -190 L/EP/d. Based on 165 L/EP/d residential consumption + allowance for leakage/losses (25 L/EP/d).				
Peaking factors	**Category**	**MDMM/AD**	**MD/AD**	**PH/AD**	
Guidance Note: Peaking factors are to be applied to the residential component of demand, i.e. 165 L/EP/d. Leakage /loss levels will remain constant throughout all demand categories and should only be appended after any peaking escalation has occurred.	Residential detached	1.3	1.7	3.1	
	Residential attached	1.3	1.6	2.6	
	Rural residential / Constant flow	1	1	1.5	
	Commercial	1.2	1.3	2.0	
	Industry	1.2	1.3	1.7	
	Parks / Open space	1.2	1.3	1.7	
System planning					
Bulk supply and reticulation	3 days of MDMM. Reservoirs to have a net positive inflow and capable of continuous operation and not fall below the emergency level. 3 days of MD. Reservoirs should not fall below the emergency level. 5 days of AD. Reservoirs should fill from empty to full.				
Service pressures					
Minimum operating pressure at PH	On demand areas – 22m at the property boundary based on reservoir at minimum operating level (MOL). MOL defined as 15% of storage height or top of emergency storage.				
	Constant flow areas – 10m at the property boundary based on reservoir at minimum operating level (MOL) MOL defined as 15% of storage height or top of emergency storage.				
Maximum operating pressure	80 m at the property boundary based on the reservoir at TWL				
Target maximum operating pressure	55 m at the property boundary based on the reservoir level at TWL				
Fire fighting					
System pressure	On demand areas	12 m minimum at property boundary			
	Constant flow areas	no fire service provided			
Fire flow	Constant flow areas	no fire service provided			
	Rural Residential	7.5 L/s for 2 hrs			
	Rural Commercial / Industrial	15 L/s for 2 hrs			
	Residential	15 L/s for 2 hrs			
	Commercial & Industrial	30 L/s for 4 hrs			
	Special risk / hazard	to be advised by Logan City Council (LCC)			
Background demand	2/3 PH (as per DEWS requirements)				
Reservoir level	Minimum Operating Level (MOL)				

<table>
<tr><td colspan="3">Water quality</td></tr>
<tr><td colspan="2">Drinking water quality</td><td>Drinking water to comply with the NHMRC Australian Drinking Water Guidelines</td></tr>
<tr><td colspan="3">Reservoir storage</td></tr>
<tr><td colspan="2">Ground level storage capacity</td><td>3 (MD - MDMM) + (Emergency storage)

Emergency Storage = 4 hr MDMM demand in zone or 0.5 ML whichever is greater.</td></tr>
<tr><td colspan="2">Elevated storage capacity

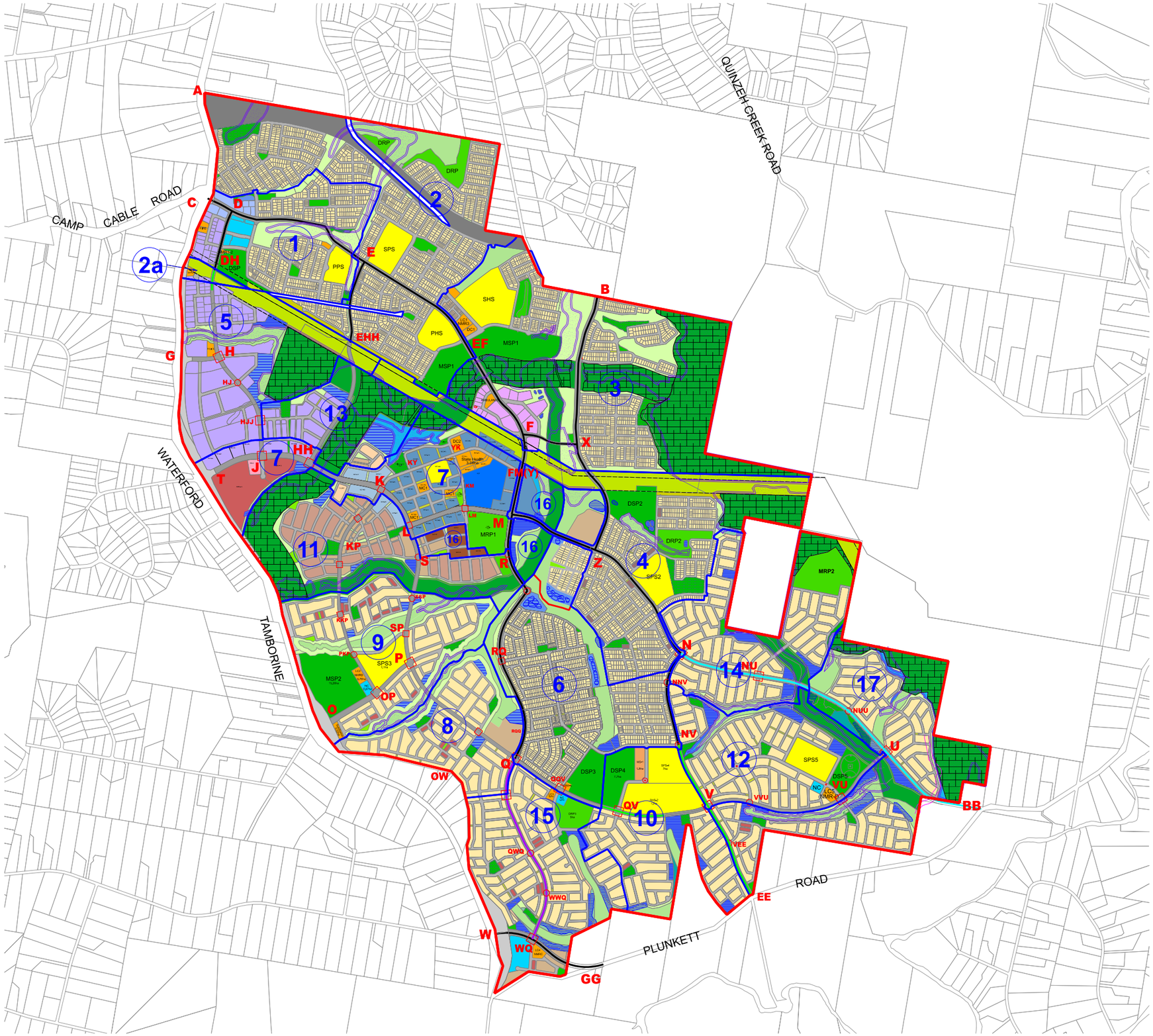
Guidance Note:
In-line pressure booster pumping without high-level storage shall be considered where satisfactory pressures can be provided by gravity flow during low demand periods or booster failure can be mitigated to an acceptable level (risk assessment required) and where there is no other feasible means of providing adequate pressure.</td><td>6 (PH - 1/12 MDMM) + minimum firefighting reserve.
Fire Fighting reserve =
> 4800EP:
• rural residential 0.11 ML
• industry 0.54 ML
• otherwise 0.22 ML
< 4800 EP:
• rural residential 0.05 ML
• industry 0.43 ML
• otherwise 0.11 ML</td></tr>
<tr><td colspan="3">Pumping capacity</td></tr>
<tr><td colspan="2">Pump supplying a ground level reservoir</td><td>MDMM over 20 hrs</td></tr>
<tr><td colspan="2">Pump supplying an elevated reservoir</td><td>(6PH – operating volume) / (6 x 3600)

Operating volume =
Elevated reservoir capacity - fire fighting reserve</td></tr>
<tr><td colspan="2">Standby pump capacity</td><td>To match duty, except where more than one duty pump or as determined by risk assessment.</td></tr>
<tr><td colspan="2">Reticulation booster pumps/pumped system</td><td>PH + fire flow</td></tr>
<tr><td colspan="3">Pipeline assessment & design</td></tr>
<tr><td>Main capacity</td><td colspan="2">Raw water mains & trunk feeding ground level reservoir:
MDMM for a gravity supply and MDMM over 20hrs for a pumped supply
Trunk Mains feeding elevated reservoir: capacity of pumps:
Reticulation Mains: PH + fire flow.</td></tr>
<tr><td rowspan="2">Mains size
Guidance Note:
New CF areas are not permitted by LCC.</td><td colspan="2">Constant flow areas - where mains terminate in short runs such as cu- de-sacs minimum sizes that may be acceptable are:
DN 63 up to 150 m from main
DN 80 up to 350 m from main</td></tr>
<tr><td colspan="2">On demand areas - minimum reticulation main 100mm in residential areas and 150mm in commercial and industrial areas.</td></tr>
<tr><td rowspan="2">Friction default value</td><td>Existing Infrastructure</td><td>Future Infrastructure</td></tr>
<tr><td>Colebrook White k values (mm)

<table>
<tr><th rowspan="2">Pipe Material</th><th colspan="3">Pipeline Age (years)</th></tr>
<tr><th>< 10</th><th>10 to 25</th><th>> 25</th></tr>
<tr><td>Asbestos Cement</td><td>0.15</td><td>0.3</td><td>0.3</td></tr>
<tr><td>Plastic (UPVC, MDPE, Hobas, etc)</td><td>0.06</td><td>0.06</td><td>0.15</td></tr>
<tr><td>MSCL/DICL</td><td>0.3</td><td>0.3</td><td>0.6</td></tr>
<tr><td>CICL</td><td>0.3</td><td>0.3</td><td>0.6</td></tr>
</table>
</td><td>The design shall be conducted to achieve less than the following head losses:
a) 5 m head/km for ≤DN 150 (CIOD) or ≤DN 180 (ISO).
b) 3 m head/km for ≥DN 200 (CIOD) or ≥DN 250 (ISO).
c) Head loss shall be calculated using computer models or hydraulic formulas.</td></tr>
<tr><td>Maximum velocity</td><td colspan="2">2.5 m/s
At peak hour for trunk mains and at peak hour including fire flow for reticulation.</td></tr>
</table>

Standpipe and Hydrant Filling Points	
Hydraulic model	**Planning Scenario** All designated and planned standpipes and hydrant filling points are to be modelled at either anticipated flowrates or recorded flows from SCADA or field test (hourly patterns).
	Operational Scenario Operational scenario to be modelled at 15 min time steps to highlight actual likely impacts on network.
Augmentation – In general significant network augmentations would not be considered prudent to support new hydrant filing points. Alternate strategies such as relocation or management of hydrant filing point flows (while maintaining suitable service levels) should be considered to maintain DSS. Suitable service levels should be agreed with Council's Water Business & Customer Management team.	

Appendix C Yarrabilba Development Rollout Plan



YARRABILBA

LEGEND

- YARRABILBA PROJECT SITE (WITHIN GREATER YARRABILBA STRUCTURE PLAN AREA)
- PROPOSED PRECINCT BOUNDARY
- RESIDENTIAL - STANDARD
- RESIDENTIAL - URBAN
- RESIDENTIAL - URBAN DETACHED
- RESIDENTIAL - URBAN SEMI-DETACHED
- RESIDENTIAL - TERRACES
- MAJOR ACTIVITY CENTRE - CORE
- MIXED USE - TOWN CENTRE CORE
- MIXED USE - TOWN CENTRE FRAME
- COMMERCIAL MIXED USE
- COMMUNITY
- LOCAL RETAIL
- EDUCATION
- MIXED INDUSTRY AND BUSINESS
- MIXED BUSINESS / INFRASTRUCTURE
- OPEN SPACE - EPBC FAUNA CORRIDOR & ENVIROMENTAL PROTECTION
- OPEN SPACE - REMNANT VEGETATION OF CONCERN
- OPEN SPACE - CONSERVATION
- OPEN SPACE - DISTRICT AND MAJOR
- OPEN SPACE - LINEAR
- OPEN SPACE - NEIGHBOURHOOD PARK
- OPEN SPACE - LOCAL PARK
- OPEN SPACE - LAND UNDER Q100
- KOALA PROTECTION / WETLAND / BUSHFIRE AND ASSOCIATED BUFFERS
- ELECTRICITY EASEMENT AND BUFFER
- SOUTHERN INFRASTRUCTURE CORRIDOR
- MAJOR ROAD
- WATERFORD TAMBORINE ROAD WIDENING
- VILLAGE ROAD
- STORMWATER TREATMENT

- PRIMARY MOVEMENT NETWORK AS DESIGNED / APPROVED
- PRIMARY MOVEMENT NETWORK 40m
- PRIMARY MOVEMENT NETWORK 35m/33.5m
- PRIMARY MOVEMENT NETWORK 26.5m
- PRIMARY MOVEMENT NETWORK 25.6m
- KOALA HABITIAT TO BE PROTECTED AND MANAGED (PLUS 10m BUFFER)
- EPBC OFFSET LAND - 195ha

THE CONTENTS OF THIS PLAN ARE CONCEPTUAL ONLY, FOR DISCUSSION PURPOSES. ALL AREAS AND DIMENSIONS ARE APPROXIMATE ONLY SUBJECT TO RELEVANT STUDIES, SURVEY, ENGINEERING AND DEVELOPMENT APPROVALS. THIS IS NOT A MASTERPLAN.

Yarrabilba Masterplan
Land Use Commercial Assessment

DRAFT ONLY

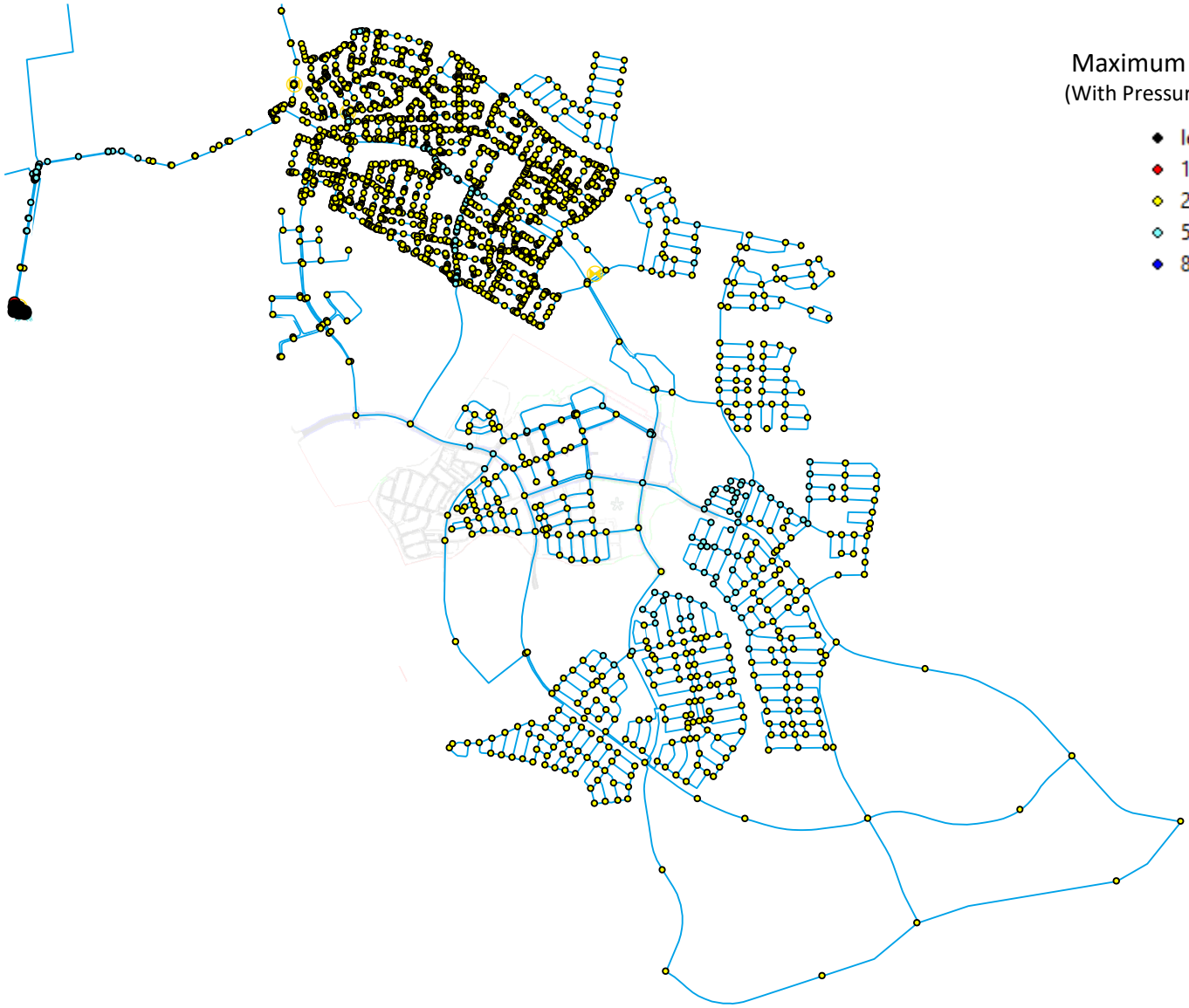
0 300 600 900 1200 1500m

Scale 1:30,000 at A3

North

File No. F1.1 Dgn No. YAR-LUCA_241118 Date 18 NOV 2024

Appendix D Water Reticulation Hydraulic Performance Assessment Outcomes


Maximum Hour Pressure (m)
(With Pressure Reduction, Ultimate)
less than 12.00
12.00 ~ 22.00
22.00 ~ 55.00
55.00 ~ 80.00
80.00 ~ 128.86


Fire Fighting Residual Pressure (m)
(With Pressure Reduction, Ultimate)
less than 12.00
12.00 ~ 55.72

Appendix E LCC Yarrabilba Sewerage Spare Capacity Assessment Summary

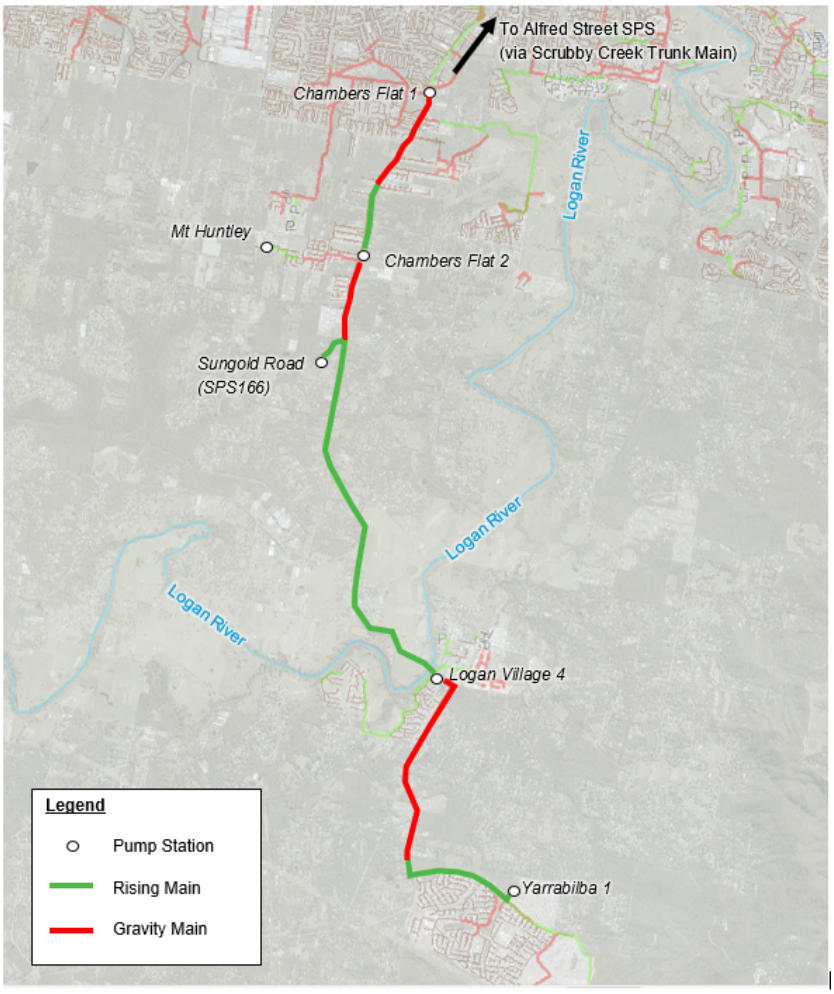
Lin, Henry

Subject: FW: Spare capacity for the Yarrabilba Development

From: Pollard, Matt <Matt.Pollard@wsp.com>
Sent: Wednesday, March 30, 2022 11:45 AM
To: Lin, Henry <Henry.Lin@stantec.com>; Pollard, Matt <MattPollard@logan.qld.gov.au>
Cc: WaterDA <WaterDA@logan.qld.gov.au>; DanielO'Brien@logan.qld.gov.au; Seymour, Michael <MichaelSeymour@logan.qld.gov.au>
Subject: RE: Spare capacity for the Yarrabilba Development

Hi Henry

A recent planning task undertaken by Logan Water (Chambers Flat Road 2 SPS Strategy Review - IP0011) has analysed the capacity of the existing system between Yarrabilba 1 and the Chambers Flat 2 SPS in detail. A map of this system is shown below:



The Task involved running the Loganholme calibrated model for this system for the 1EY and 2EY design storms. The model was calibrated based on flow data collected in 2019, which included 3 flow gauges within Yarrabilba. Conservative assumptions have been made for the wet weather response for future development / development not captured during the flow survey period.

For these runs, the adopted setting for the Yarrabilba 1 pump station was to limit pumped flows to 70 L/s at all times to minimise overflows in the downstream network and utilise the 2 ML storage. The outcomes for this assessment for different populations at Yarrabilba is shown in the following table.

		Option 2				
SPS		Yarrabilba (SPS084)			Logan Village 4 (SPS081)	Chambers Flat 2 (SPS082)
Yarrabilba Population	Event	Emergency Storage (% full)	Wet Weather Storage (% full)	Overflow Volume (m^3)	Overflow Volume (m^3)	Overflow Volume (m^3)
25,000 EP	2 EY	100%	100%	173	0	0
	1 EY	100%	100%	2,553	0	0
20,420 EP	2 EY	76%	76%	0	0	0
	1 EY	100%	100%	375	0	0
15,500 EP	2 EY	50%	0%	0	0	0
	1 EY	95%	95%	0	0	0

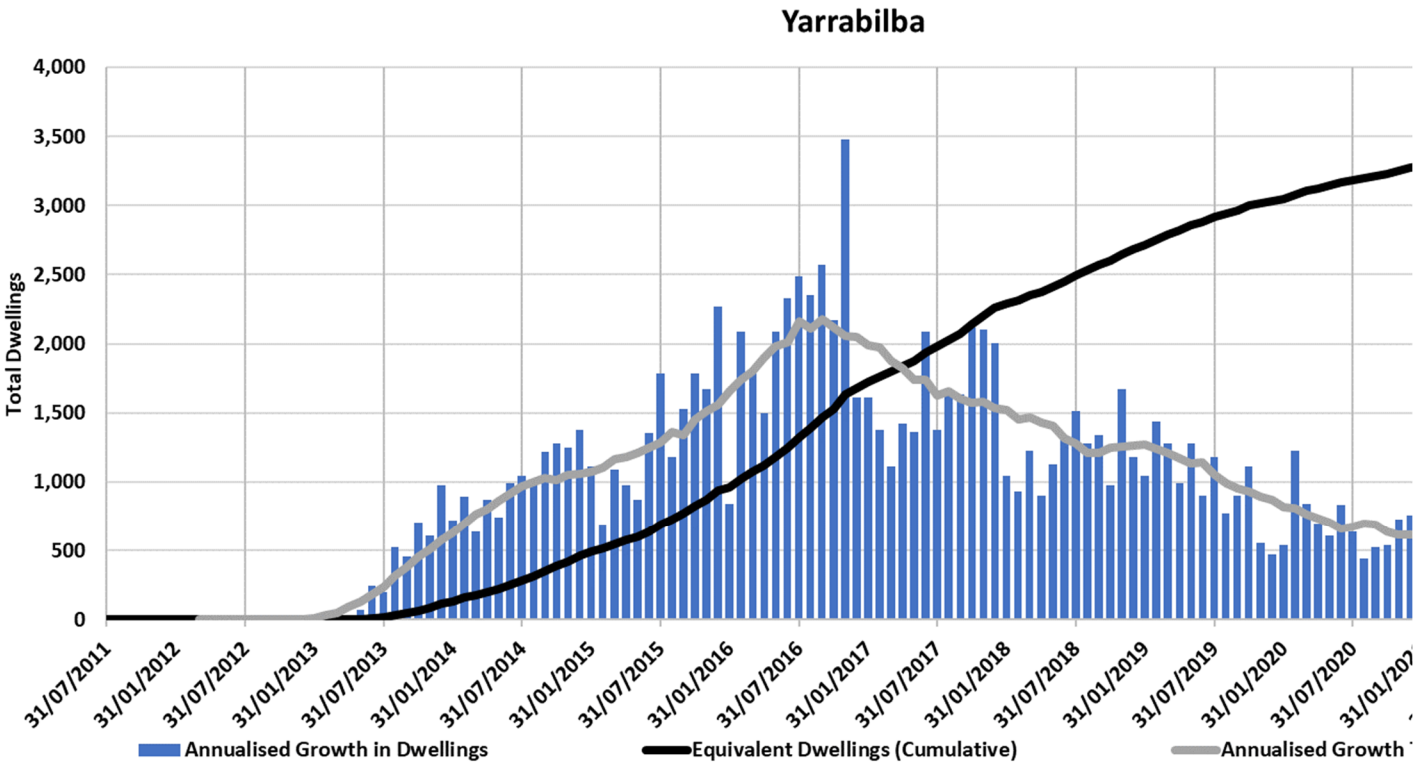
Logan Water stakeholders have agreed that for the Yarrabilba storage, the appropriate containment standard is the 2EY event and therefore the Yarrabilba population that the existing system can cater for is somewhere between 20,420 EP and 25,000 EP.

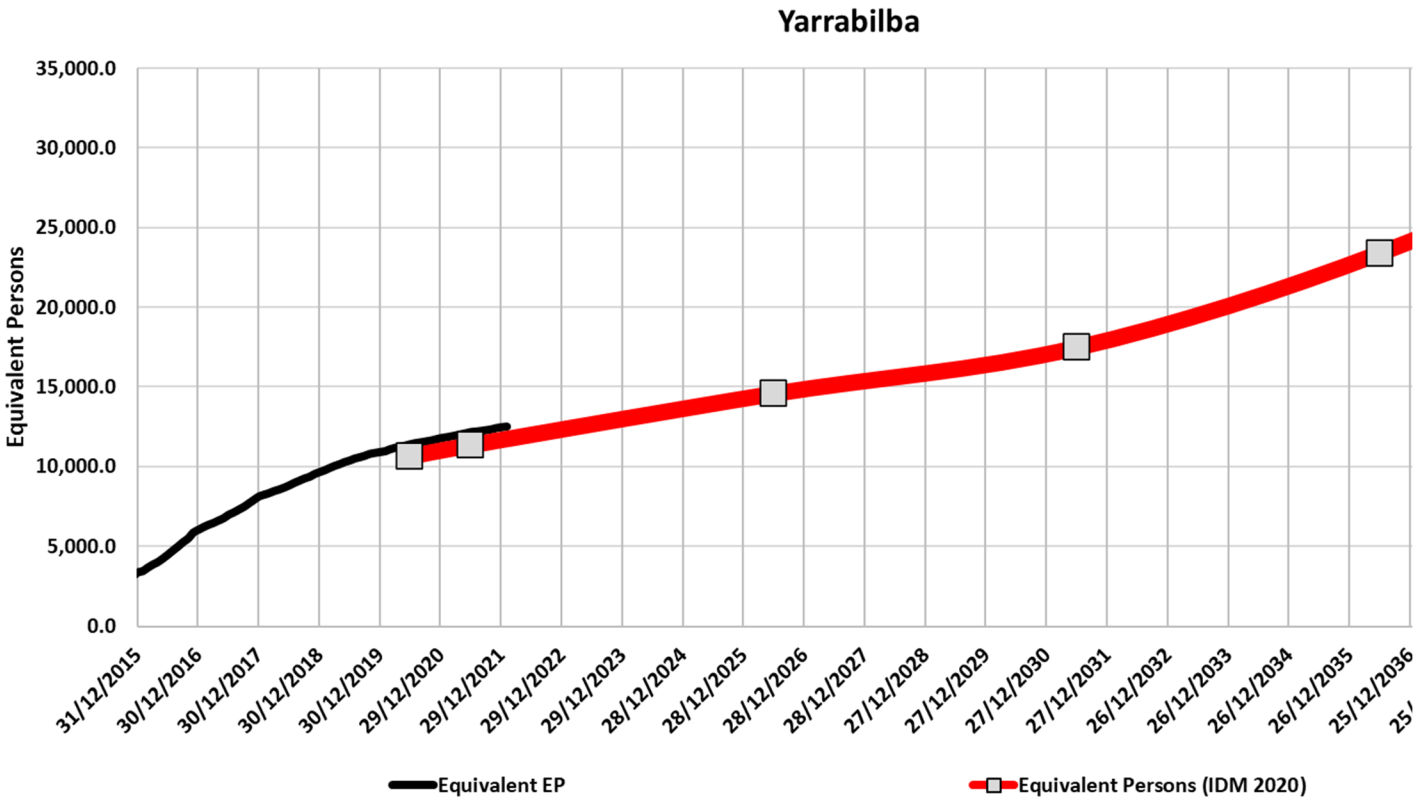
To achieve the performance outlined in the above table, works will be undertaken to upgrade the Chambers Flat 2 SPS. These works are included in the Subregional Infrastructure Program (SRIP).

Based on current growth rates, we expect that the existing system will have sufficient capacity to cater for Yarrabilba until sometime between 2033 and 2037 (refer graph below). If the recent increase in the rate of lot sales is sustained and converts to occupied dwellings that date may come forward.

I note that as at the start of February 2022, we are still not seeing the increased lot sales translate into occupied dwellings. The charts below are taken from residential Bin data extracted from Councils data base on the 9th of February.

That aside, should the growth rates increase and be sustained, Council has already progressed planning for the Yarrabilba 3 regional / transfer pump station and the Chambers Flat WWTP so that the long term servicing solution can be brought forward if required.


Yarrabilba
Total Dwellings
4,000
3,500
3,000
2,500
2,000
1,500
1,000
500
0
31/07/2011
31/01/2012
31/07/2012
31/01/2013
31/07/2013
31/01/2014
31/07/2014
31/01/2015
31/07/2015
31/01/2016
31/07/2016
31/01/2017
31/07/2017
31/01/2018
31/07/2018
31/01/2019
31/07/2019
31/01/2020
31/07/2020
Annualised Growth in Dwellings
Equivalent Dwellings (Cumulative)
Annualised Growth


Yarrabilba
Equivalent Persons
35,000.0
30,000.0
25,000.0
20,000.0
15,000.0
10,000.0
5,000.0
0.0
31/12/2015
30/12/2016
30/12/2017
30/12/2018
30/12/2019
29/12/2020
29/12/2021
29/12/2022
29/12/2023
28/12/2024
28/12/2025
28/12/2026
28/12/2027
27/12/2028
27/12/2029
27/12/2030
27/12/2031
26/12/2032
26/12/2033
26/12/2034
26/12/2035
25/12/2036
Equivalent EP
Equivalent Persons (IDM 2020)

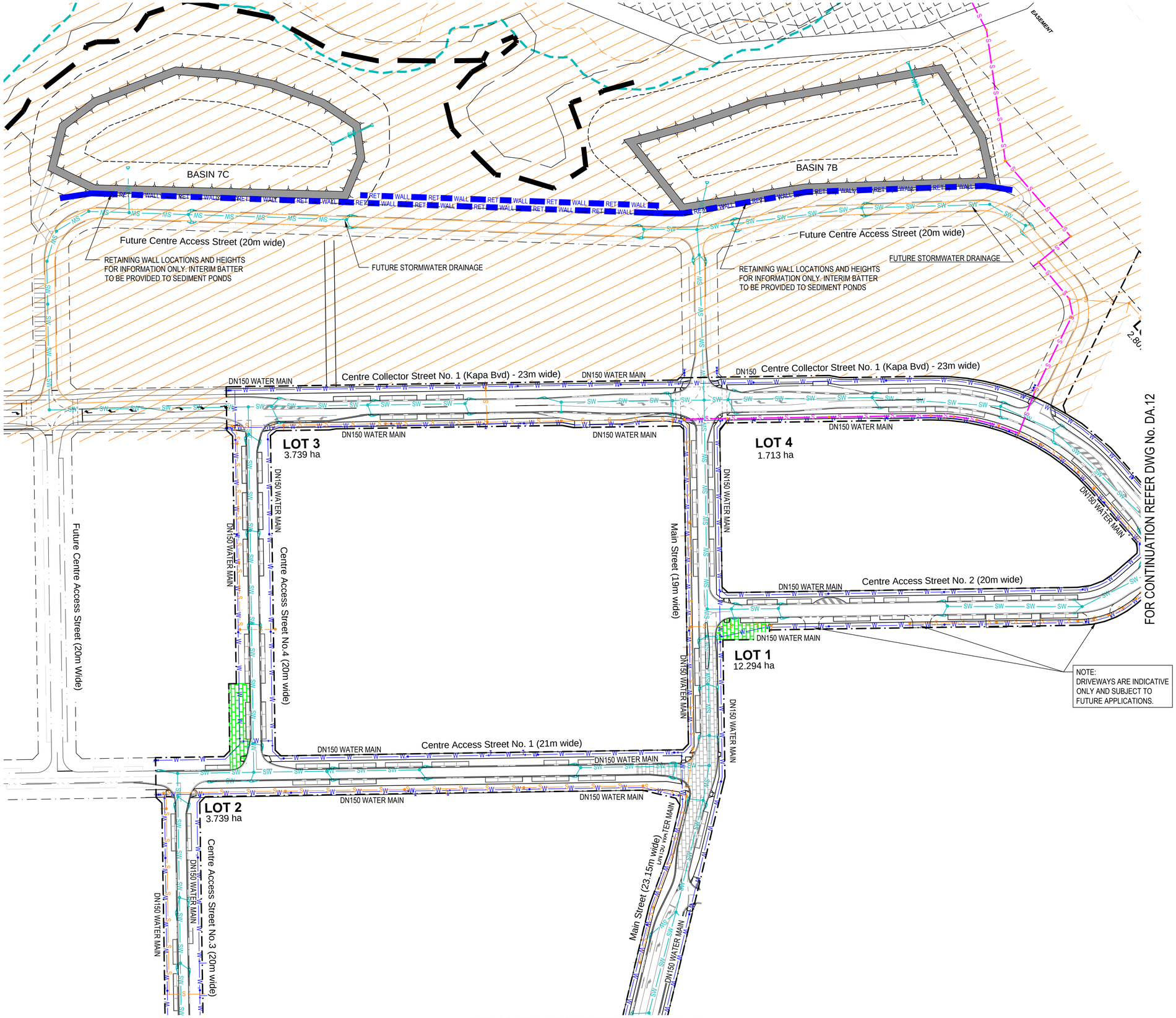
Regards

Matthew Pollard
Principal Planning Engineer | Water Infrastructure Solutions

RELIABLE · SUSTAINABLE · COMMITTED
Mattpollard@logan.qld.gov.au | 07 3412 0000 | 0420 755 900| Teams Call / Chat
Connect with us: Website | Facebook | Twitter | LinkedIn

Logan City Council acknowledges the Traditional Custodians of the lands and waterways across the City of Logan. We pay our respects to Elders past, present and emerging.

Appendix F Preliminary Water and Sewerage Reticulation Plan



LEGEND

EXISTING		PROPOSED
	PROPERTY BOUNDARY	
	EASEMENT BOUNDARY	
	CONTOUR	
	BUILDING	
	CONCRETE	
	EDGE OF BITUMEN	
	KERB	
	KERB AND CHANNEL	
	FLUSH KERB	
	KERB RAMP	
	BOLLARD	
SW	STORM WATER MAIN	SW
W W	WATER MAIN	W W
S S	SEWER MAIN	
	DN150 SEWER MAIN	S S
	DN225 SEWER MAIN	S S
RM	RISING MAIN	
G G	GAS MAIN	
T T	TELECOMMUNICATIONS	
	TOP OF BATTER	
	FACE OF BATTER	
	TOE OF BATTER	
RET WALL	SANDSTONE BLOCK WALL	RET WALL
RET WALL	RETAINING WALL	
	KOALA HABITAT 10m OFFSET	
	15m WATERWAY BUFFER	
	CONSERVATION BUFFER	
	EDGE KOALA HABITAT	
	DRIVEWAY (INDICATIVE)	

CONCEPT ASSESSMENT ONLY FOR LAYOUT REVIEW. TO BE COMPLETED UNDER FUTURE APPLICATION

NOTE:
REFER TO DA.23 FOR SEWER NETWORK DETAILS

ISSUE	DATE	AMENDMENT	BY	APP
D	17.03.26	FOR APPROVAL	KC	LS
C	02.03.26	FOR APPROVAL	DG	LS
B	26.11.25	FOR APPROVAL	DG	LS
A	14.11.25	PRELIMINARY	DG	LS

MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3,
Kings Row Office Park,
42 McDougall Street, Milton, QLD, 4064

CLIENT: Stockland

YARRABILBA TOWN CENTRE
MAJOR CENTRE CORE
STAGE 1 RAL PLAN
YARRABILBA DRIVE

SERVICES LAYOUT SHEET 1

DESIGN: DG	DRAWN: DG	SCALES: AS SHOWN
CHKD:	APPRD:	DATE:

mpn JOB	DRAWING No.	REV
10467	DA.11	D

NOT FOR CONSTRUCTION

FOR APPROVAL

FOR CONTINUATION REFER DWG No. DA.11

EASEMENT

ENVIRONMENTAL BUFFER

WATERWAY BUFFER

RETAINING WALL LOCATIONS AND HEIGHTS FOR INFORMATION ONLY. INTERIM BATTER TO BE PROVIDED TO SEDIMENT PONDS

BASIN 7B1

Future Centre Access Street (20m wide)

FUTURE STORMWATER DRAINAGE

Centre Collector Street No. 1 (Kapa Bvd) - 23m wide)

LOT 5
2.807 ha

LOT 4
1.713 ha

LOT 1
12.294 ha

DN150 WATER MAIN

Main Street (19m wide)

Centre Access Street TYPE 3 (20m wide)

Centre Access Street No. 1 (21m wide)

Main Street (23.15m wide)

NOTE:
DRIVEWAYS ARE INDICATIVE ONLY AND SUBJECT TO FUTURE APPLICATIONS.

NOTE:
DRIVEWAYS ARE INDICATIVE ONLY AND SUBJECT TO FUTURE APPLICATIONS.

FOR CONTINUATION REFER DWG No. DA.13

INSET

DECOMMISSION EXISTING DN150 ROAD CROSSING AND TRUNK CONNECTION - END CAP AS REQUIRED.

NEW DN200 CROSS ROAD RETICULATION MAIN - TUNNEL BORE.

DECOMMISSION EXISTING DN150 ROAD CROSSING AND TRUNK CONNECTION - END CAP AS REQUIRED.

DECOMMISSION EXISTINGWATER CONNECTION.

REDUCER TO DN150 INTERNAL RETICULATION MAINS.

DN200 CONNECTION TO EXISTING TRUNK WATER MAIN.

POSSIBLE FUTURE ELECTRICAL

PRESSURE REDUCTION VALVE ARRANGEMENT TO LOGAN WATER SPECIFICATIONS. MIN. INTERNAL PIT SIZE 4.0m x 1.2m. TO BE DESIGNED POST ROL APPROVAL.

ELECTRICAL PIT

YARRABILBA DRIVE

NOTE:
THE PRV STRUCTURE WILL SIT IN THE ROAD RESERVE OF PRECINCT 16 INTERSECTION ACCESS

REFER INSET

REDUCER TO DN150 INTERNAL RETICULATION MAINS.

DECOMMISSION EXISTING DN150 ROAD CROSSING AND TRUNK CONNECTION - END CAP AS REQUIRED.

DN200 CONNECTION TO EXISTING TRUNK WATER MAIN.

NEW DN200 CROSS ROAD RETICULATION MAIN - TUNNEL BORE.

DECOMMISSION EXISTING DN150 ROAD CROSSING AND TRUNK CONNECTION - END CAP AS REQUIRED.

PRESSURE REDUCTION VALVE ARRANGEMENT TO LOGAN WATER SPECIFICATIONS. TO BE DESIGNED POST ROL APPROVAL.

EX. DN150 TRUNK WATER MAIN

LEGEND

EXISTING		PROPOSED
	PROPERTY BOUNDARY	
	EASEMENT BOUNDARY	
	CONTOUR	
	BUILDING	
	CONCRETE	
	EDGE OF BITUMEN	
	KERB	
	KERB AND CHANNEL	
	FLUSH KERB	
	KERB RAMP	
	BOLLARD	
SW	STORM WATER MAIN	SW
W W	WATER MAIN	W W
S S	SEWER MAIN	
	DN150 SEWER MAIN	S S
	DN225 SEWER MAIN	S S
RM	RISING MAIN	
G G	GAS MAIN	
T T	TELECOMMUNICATIONS	
	TOP OF BATTER	
	FACE OF BATTER	
	TOE OF BATTER	
RET WALL	SANDSTONE BLOCK WALL	RET WALL
RET WALL	RETAINING WALL	
	KOALA HABITAT 10m OFFSET	
	15m WATERWAY BUFFER	
	CONSERVATION BUFFER	
	EDGE KOALA HABITAT	
	DRIVEWAY (INDICATIVE)	

CONCEPT ASSESSMENT ONLY FOR LAYOUT REVIEW. TO BE COMPLETED UNDER FUTURE APPLICATION

NOTE:
REFER TO DA.23 FOR SEWER NETWORK DETAILS

ISSUE	DATE	AMENDMENT	BY	APP
D	17.03.26	FOR APPROVAL	KC	LS
C	02.03.26	FOR APPROVAL	DG	LS
B	26.11.25	FOR APPROVAL	DG	LS
A	14.11.25	PRELIMINARY	DG	LS

MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3, Kings Row Office Park, 42 McDougall Street, Milton, QLD, 4064

CLIENT: Stockland

YARRABILBA TOWN CENTRE
MAJOR CENTRE CORE
STAGE 1 RAL PLAN
YARRABILBA DRIVE

SERVICES LAYOUT SHEET 2

DESIGN: DG	DRAWN: DG	SCALES: AS SHOWN
CHKD:	APPRD:	DATE:

mpn JOB	DRAWING No.	REV
10467	DA.12	D

NOT FOR CONSTRUCTION

FOR APPROVAL

FOR CONTINUATION REFER DWG No. DA.11

LEGEND

EXISTING		PROPOSED
	PROPERTY BOUNDARY	
	EASEMENT BOUNDARY	
	CONTOUR	
	BUILDING	
	CONCRETE	
	EDGE OF BITUMEN	
	KERB	
	KERB AND CHANNEL	
	FLUSH KERB	
	KERB RAMP	
	BOLLARD	
SW	STORM WATER MAIN	SW
W W	WATER MAIN	W W
S S	SEWER MAIN	
	DN150 SEWER MAIN	S S
	DN225 SEWER MAIN	S S
RM	RISING MAIN	
G G	GAS MAIN	
T T	TELECOMMUNICATIONS	
	TOP OF BATTER	
	FACE OF BATTER	
	TOE OF BATTER	
RET WALL	SANDSTONE BLOCK WALL	RET WALL
RET WALL	RETAINING WALL	
	KOALA HABITAT 10m OFFSET	
	15m WATERWAY BUFFER	
	CONSERVATION BUFFER	
	EDGE KOALA HABITAT	
	DRIVEWAY (INDICATIVE)	

CONCEPT ASSESSMENT ONLY FOR LAYOUT REVIEW. TO BE COMPLETED UNDER FUTURE APPLICATION

NOTE:
REFER TO DA.23 FOR SEWER NETWORK DETAILS

FOR CONTINUATION REFER DWG No. DA.12

ISSUE	DATE	AMENDMENT	BY	APP
D	17.03.26	FOR APPROVAL	KC	LS
C	02.03.26	FOR APPROVAL	DG	LS
B	26.11.25	FOR APPROVAL	DG	LS
A	14.11.25	PRELIMINARY	DG	LS

MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3,
Kings Row Office Park,
42 McDougall Street, Milton, QLD, 4064

CLIENT: Stockland

YARRABILBA TOWN CENTRE
MAJOR CENTRE CORE
STAGE 1 RAL PLAN
YARRABILBA DRIVE

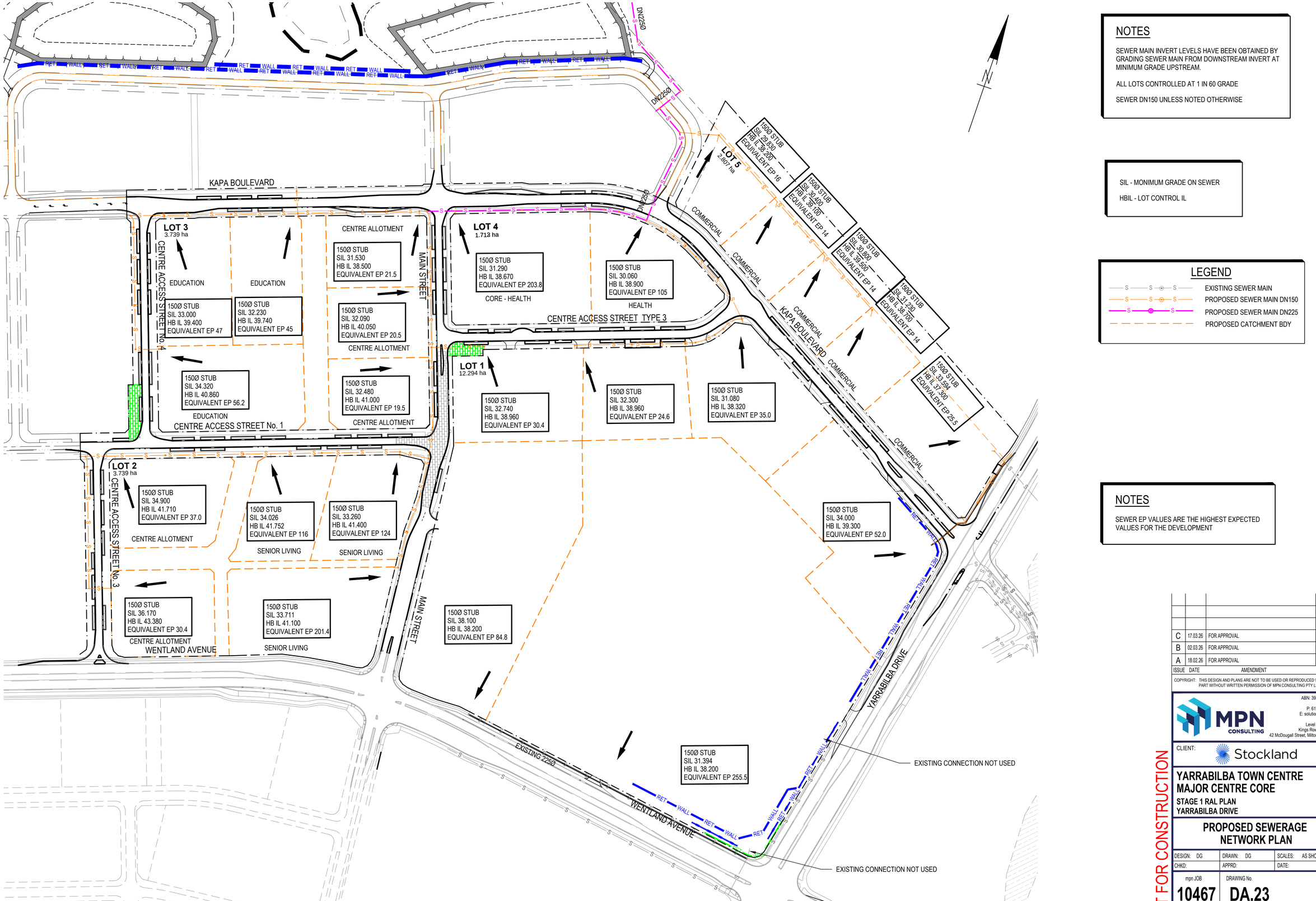
SERVICES LAYOUT
SHEET 3

DESIGN: DG	DRAWN: DG	SCALES: AS SHOWN
CHKD:	APPRD:	DATE:

mpn JOB	DRAWING No.	REV
10467	DA.13	D

FOR APPROVAL

NOT FOR CONSTRUCTION



NOTES

SEWER MAIN INVERT LEVELS HAVE BEEN OBTAINED BY GRADING SEWER MAIN FROM DOWNSTREAM INVERT AT MINIMUM GRADE UPSTREAM.

ALL LOTS CONTROLLED AT 1 IN 60 GRADE

SEWER DN150 UNLESS NOTED OTHERWISE

SIL - MONIMUM GRADE ON SEWER

HBIL - LOT CONTROL IL

LEGEND

- EXISTING SEWER MAIN
- PROPOSED SEWER MAIN DN150
- PROPOSED SEWER MAIN DN225
- PROPOSED CATCHMENT BDY

NOTES

SEWER EP VALUES ARE THE HIGHEST EXPECTED VALUES FOR THE DEVELOPMENT

ISSUE	DATE	AMENDMENT	BY	APP
C	17.03.26	FOR APPROVAL	KC	LS
B	02.03.26	FOR APPROVAL	DG	LS
A	18.02.26	FOR APPROVAL	DG	LS

MPN CONSULTING
ABN: 39 062 191 799
P: 61 7 3335 4555
E: solutions@mpnc.au
Level 4, Building 3,
Kings Row Office Park,
42 McDougall Street, Milton, QLD, 4064

CLIENT: Stockland

YARRABILBA TOWN CENTRE MAJOR CENTRE CORE

STAGE 1 RAL PLAN
YARRABILBA DRIVE

PROPOSED SEWERAGE NETWORK PLAN

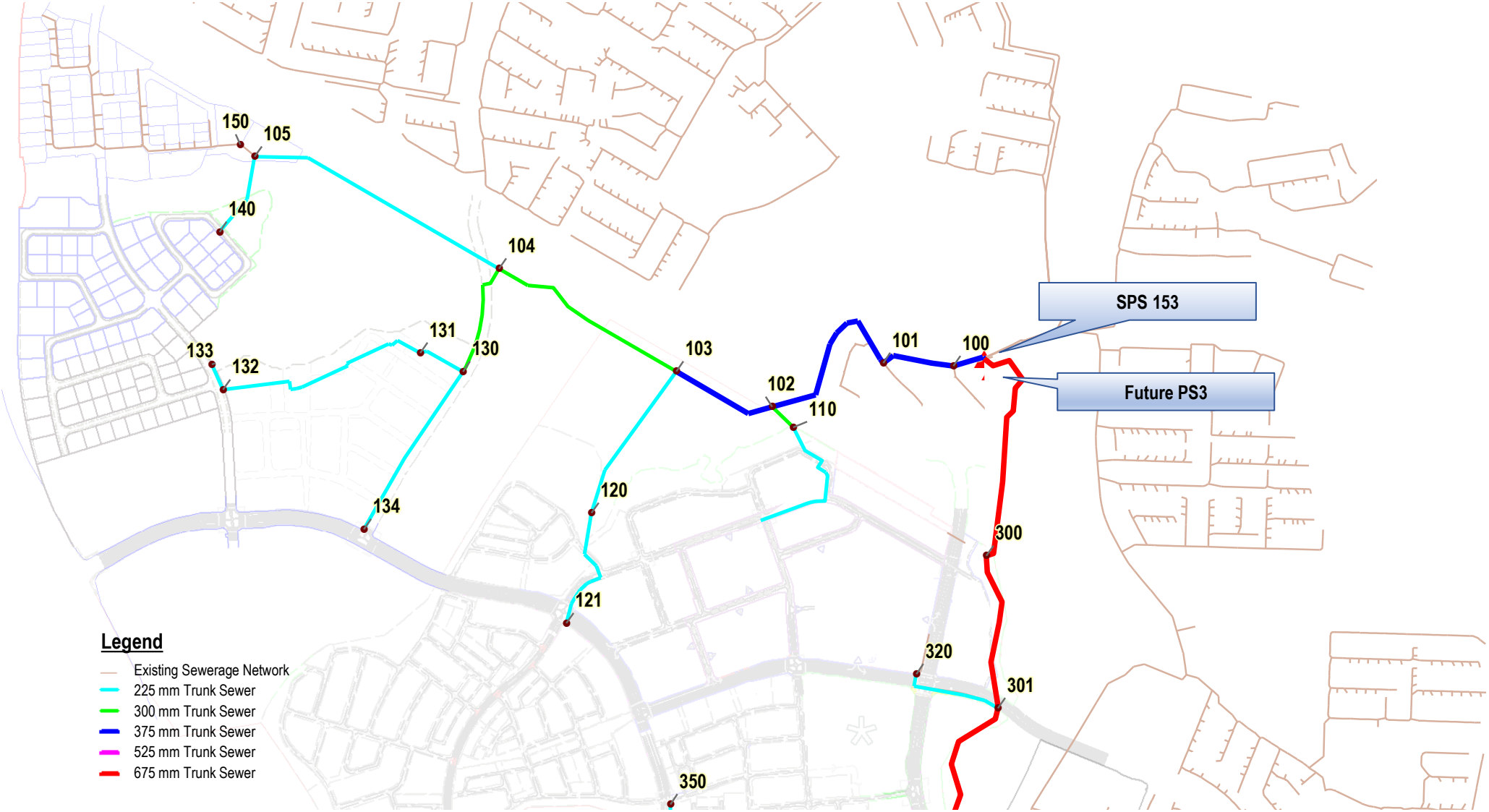
DESIGN:	DG	DRAWN:	DG	SCALES:	AS SHOWN
CHKD:		APPRD:		DATE:	

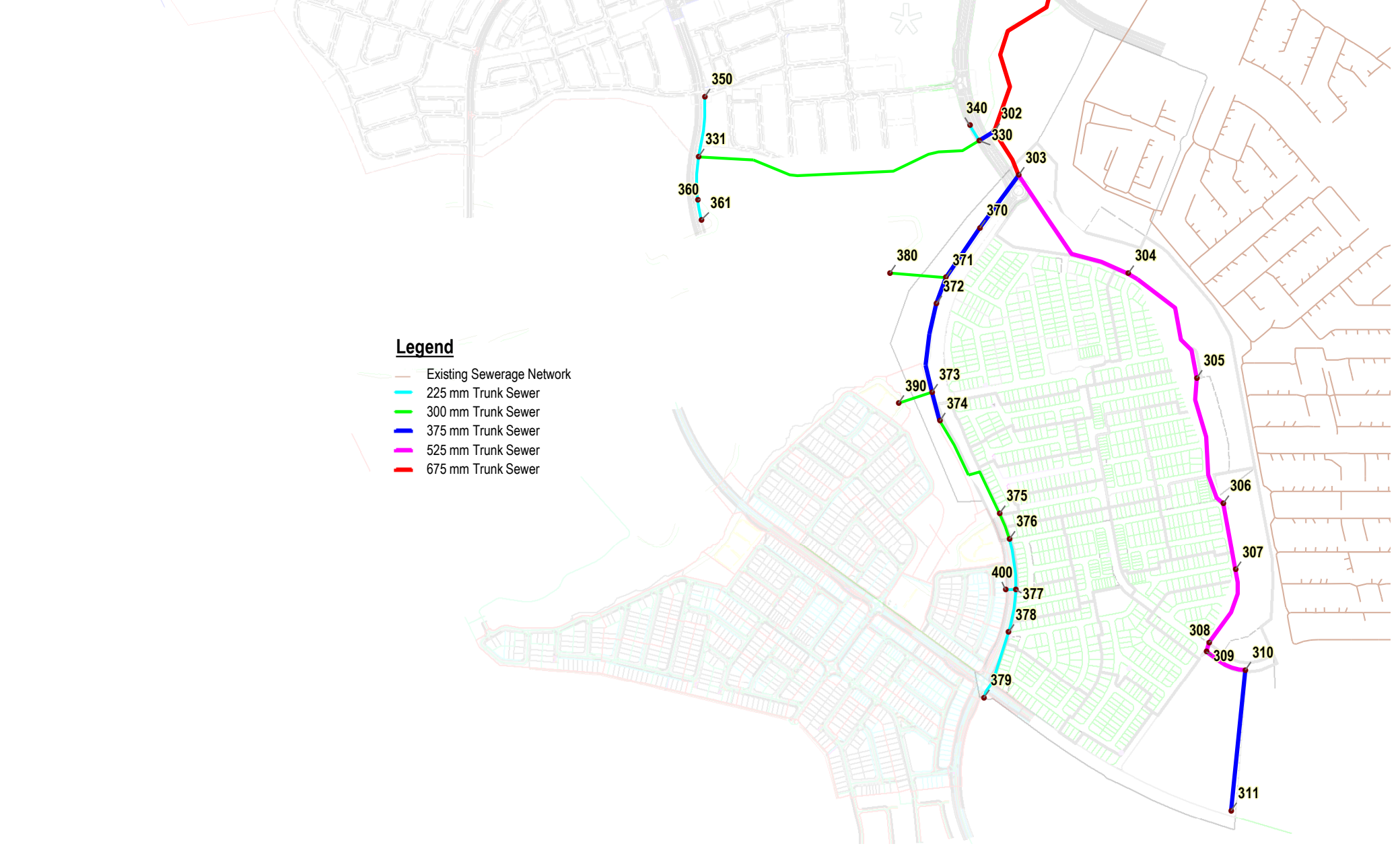
mpn JOB	DRAWING No.	REV
10467	DA.23	C

NOT FOR CONSTRUCTION

FOR APPROVAL

Appendix G Pumping Station PS3 Catchment Trunk Sewer information


150
105
140
104
131
133
132
130
103
102
101
100
110
SPS 153
Future PS3
120
134
300
121
320
301
350
Legend
Existing Sewerage Network
225 mm Trunk Sewer
300 mm Trunk Sewer
375 mm Trunk Sewer
525 mm Trunk Sewer
675 mm Trunk Sewer


Legend
Existing Sewerage Network
225 mm Trunk Sewer
300 mm Trunk Sewer
375 mm Trunk Sewer
525 mm Trunk Sewer
675 mm Trunk Sewer
350
331
360
361
340
302
330
303
370
380
371
372
304
373
390
374
305
375
376
306
307
400
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378
308
309
310
379
311

YARRABILBA - SEWERAGE SYSTEM CAPACITY REVIEW

NODE	CATCHMENT (Precinct)	CATCHMENT (Loading EP)	ACCUMMULATIVE (Loading EP's)	GRADE (1 in _)	DIAMETER/ MATERIAL (mm)	(Pipe 75% full) WET AREA (m2)	(Pipe 75% full) WET PERIMETER (m)	(Pipe 100% Full) WET AREA (m2)	(Pipe 100% Full) WET PERIMETER (m)	n	ADWF L/EP/day	(Design Flow) ADWF (L/s)	C2	(Design Flow) PDWF (L/s)	(Design Velocity) PDWF (100% Full) (m/s)	(Design Flow) PWWF (L/s)	(Design Velocity) PDWF (75% Full) (m/s)	(Maximum) SYSTEM CAPACITY (L/s)	(Check) EXCESS CAPACITY (L/s)	(Maximum) SYSTEM CAPACITY (EPs)	(Check) EXCESS CAPACITY (EPs)
100	Existing P3D North	191.61	8213.65	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	19.01	1.82	34.68	0.928	95.07	1.051	92.42	-2.64	7985	-228
	+ Node 101	8022.04																			
101	Existing P3D South	272.34	8022.04	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	18.57	1.83	33.96	0.928	92.85	1.051	92.42	-0.43	7985	-37
	+ Node 102	7749.70																			
102	NODE 102		7749.70	317	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	17.94	1.84	32.92	0.902	89.70	1.023	89.91	0.21	7768	18
	+ Node 103	5312.20																			
	+ Node 110	2437.50																			
103	NODE 103		5312.20	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	12.30	1.91	23.48	0.928	61.48	1.051	92.42	30.94	7985	2673
	+ Node 104	3465.37																			
	+ Node 120	1846.83																			
104	NODE 104		3465.37	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	8.02	2.00	16.02	0.791	40.11	0.897	48.99	8.89	4233	768
	+ Node 105	1024.57																			
	+ Node 130	2440.80																			
105	NODE 105		1024.57	325	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	2.37	2.27	5.38	0.653	11.86	0.740	25.61	13.75	2213	1188
	+ Node 140	540.44																			
	+ Node 150	484.13																			
110	P07B	1575.34	2437.50	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	5.64	2.07	11.69	0.791	28.21	0.897	48.99	20.78	4233	1796
		0.00																			
		862.16																			
120	P13B	284.50	1846.83	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	4.28	2.13	9.12	0.704	21.38	0.797	27.59	6.22	2384	537
		126.00																			
		143.80																			
	+ Node 121	1292.53																			
121	P11A & P11B	1125.60	1292.53	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	2.99	2.22	6.63	0.704	14.96	0.797	27.59	12.63	2384	1091
		81.88																			
		85.05																			
130	NODE 130		2440.80	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	5.65	2.07	11.71	0.791	28.25	0.897	48.99	20.74	4233	1792
	+ Node 131	1803.56																			
	+ Node 134	637.24																			
131	P13A& P07C	683.20	1803.56	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	4.17	2.14	8.93	0.704	20.87	0.797	27.59	6.72	2384	580
		304.18																			
	+ Node 132	816.18																			
132	MIBA South App 2_Bulky Goods	447.85	816.18	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	1.89	2.32	4.39	0.704	9.45	0.797	27.59	18.14	2384	1568
	+ Node 133	368.34																			
133	MIBA South App 2_Ind Lots	368.34	368.34	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	0.85	2.53	2.15	0.704	4.26	0.797	27.59	23.33	2384	2016
134	P07C	637.24	637.24	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	1.48	2.39	3.52	0.704	7.38	0.797	27.59	20.22	2384	1747
140	P5 MIBA South App 1	540.44	540.44	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	1.25	2.43	3.04	0.704	6.26	0.797	27.59	21.34	2384	1843
150	P5 MIBA North	484.13	484.13	150	150 PVC	0.014	0.314	0.018	0.471	0.0128	200	1.12	2.46	2.75	0.715	5.60	0.810	11.52	5.91	995	511
300	P07A	41.76	32789.34	333	675 GRP	0.328	1.508	0.407	2.262	0.0128	200	75.90	1.58	119.73	1.365	379.51	1.547	506.73	127.22	43781	10992
	+ Node 301	32747.58																			
301	NODE 301		32747.58	333	675 GRP	0.328	1.508	0.407	2.262	0.0128	200	75.80	1.58	119.59	1.365	379.02	1.547	506.73	127.70	43781	11034
	+ Node 302	32045.04																			
	+ Node 320	702.54																			
302	NODE 302		32045.04	325	675 GRP	0.328	1.508	0.407	2.262	0.0128	200	74.18	1.58	117.29	1.382	370.89	1.566	512.93	142.03	44317	12272
	+ Node 303	27280.64																			
	+ Node 330	4764.40																			
303	NODE 303		27280.64	300	675 GRP	0.328	1.508	0.407	2.262	0.0128	200	63.15	1.61	101.56	1.438	315.75	1.630	533.87	218.12	46126	18846
	+ Node 304	21018.56																			
	+ Node 370	6262.08																			
304	P06 ROL1_5	210.00	21018.56	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	48.65	1.65	80.42	1.223	243.27	1.387	279.69	36.42	24165	3147
	+ Node 305	20808.56																			
305	P06 ROL1_6	407.20	20808.56	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	48.17	1.65	79.70	1.223	240.84	1.387	279.69	38.85	24165	3357
	+ Node 306	20401.36																			
306	P6 ROL2_5	228.50	20401.36	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	47.23	1.66	78.30	1.223	236.13	1.387	279.69	43.56	24165	3764
	+ Node 307	20172.86																			
307	P06 ROL2_3	114.80	20172.86	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	46.70	1.66	77.51	1.223	233.48	1.387	279.69	46.21	24165	3992
	+ Node 308	20058.06																			
308	P06 ROL2_2	240.80	20058.06	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	46.43	1.66	77.12	1.223	232.15	1.387	279.69	47.54	24165	4107
	+ Node 309	19817.26																			
309	P6 Park	406.50	19817.26	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	45.87	1.66	76.29	1.223	229.37	1.387	279.69	50.32	24165	4348
	+ Node 310	19410.76																			
310	P6 School	363.76	19410.76	300	525 GRP	0.202	1.183	0.251	1.775	0.0128	200	44.93	1.67	74.89	1.223	224.66	1.387	279.69	55.03	24165	4755
	+ Node 311	19047.00																			
311	PS4	8278.00	19047.00	37	375 PVC	0.088	0.783	0.110	1.175	0.0128	200	44.09	1.67	73.63	2.646	220.45	2.999	265.05	44.60	22901	3854
	PS5	10769.00																			
320	P07A	369.60	702.54	250	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	1.63	2.36	3.84	0.745	8.13	0.844	29.20	21.07	2523	1820
		332.94																			
330	NODE 330		4764.40	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	11.03	1.93	21.30	0.928	55.14	1.051	92.42	37.28	7985	3221
	+ Node 331	2601.20																			
	+ Node 340	2163.20																			
331	NODE 331		2601.20	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	6.02	2.06	12.39	0.791	30.11	0.897	48.99	18.89	4233	1632
	+ Node 350	929.60																			
	+ Node 360	1671.60																			
340	P11D & P16A	512.64	2163.20	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	5.01	2.10	10.51	0.704	25.04	0.797	27.59	2.55	2384	221
		859.08																			
		776.70																			
		14.78																			

350	P11A, P11B & P11C	929.60	929.60	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	2.15	2.29	4.93	0.704	10.76	0.797	27.59	16.83	2384	1454
360	P9 ROL1 Stages 20 to 48 (50%) + Node 361	835.80 835.80	1671.60	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	3.87	2.16	8.34	0.704	19.35	0.797	27.59	8.24	2384	712
361	P9 ROL1 Stages 20 to 48 (50%)	835.80	835.80	280	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	1.93	2.32	4.49	0.704	9.67	0.797	27.59	17.92	2384	1548
370	P06 ROL1_4 + Node 371	336.00 5926.08	6262.08	250	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	14.50	1.88	27.21	1.016	72.48	1.152	101.24	28.76	8747	2485
371	NODE 371 + Node 372 + Node 380	 4140.17 1785.91	5926.08	250	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	13.72	1.89	25.90	1.016	68.59	1.152	101.24	32.65	8747	2821
372	P06 ROL1_3 + Node 373	103.60 4036.57	4140.17	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	9.58	1.96	18.79	0.928	47.92	1.051	92.42	44.50	7985	3845
373	NODE 373 + Node 374 + Node 390	 1639.83 2396.74	4036.57	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	9.34	1.97	18.37	0.928	46.72	1.051	92.42	45.70	7985	3949
374	P06 ROL1_2 + Node 375	394.80 1245.03	1639.83	300	375 SEWER MAX	0.088	0.781	0.109	1.172	0.0128	200	3.80	2.16	8.20	0.928	18.98	1.051	92.42	73.44	7985	6345
375	P06 ROL1_1 + Node 376	92.40 1152.63	1245.03	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	2.88	2.22	6.41	0.791	14.41	0.897	48.99	34.58	4233	2988
376	P6 ROL2_4 + Node 377	235.20 917.43	1152.63	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	2.67	2.24	5.98	0.791	13.34	0.897	48.99	35.65	4233	3080
377	NODE 377 + Node 378 + Node 400	0.00 705.15 212.28	917.43	300	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	2.12	2.30	4.88	0.680	10.62	0.770	26.66	16.04	2303	1386
378	P06 ROL2_1 + Node 379	439.60 265.55	705.15	60	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	1.63	2.36	3.85	1.520	8.16	1.723	59.60	51.44	5150	4445
379	P15A	265.55 0.00	265.55	150	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	0.61	2.62	1.61	0.961	3.07	1.090	37.70	34.62	3257	2991
380	P9 ROL1 Stages 2 to 17 plus non-re	1785.91	1785.91	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	4.13	2.14	8.85	0.791	20.67	0.897	48.99	28.32	4233	2447
390	P8 ROL1	2396.74	2396.74	300	300 PVC	0.055	0.616	0.068	0.924	0.0128	200	5.55	2.08	11.52	0.791	27.74	0.897	48.99	21.25	4233	1836
400	P06 ROL3	212.28	212.28	300	225 PVC	0.035	0.490	0.043	0.735	0.0128	200	0.49	2.68	1.32	0.680	2.46	0.770	26.66	24.20	2303	2091

Appendix H Approved Town Centre East-West Road Memorandum

Client Ref: Lendlease

03 April 2024

Lendlease
Kingsgate, Kings Street, 2 King Street
BOWEN HILLS, QLD 4006

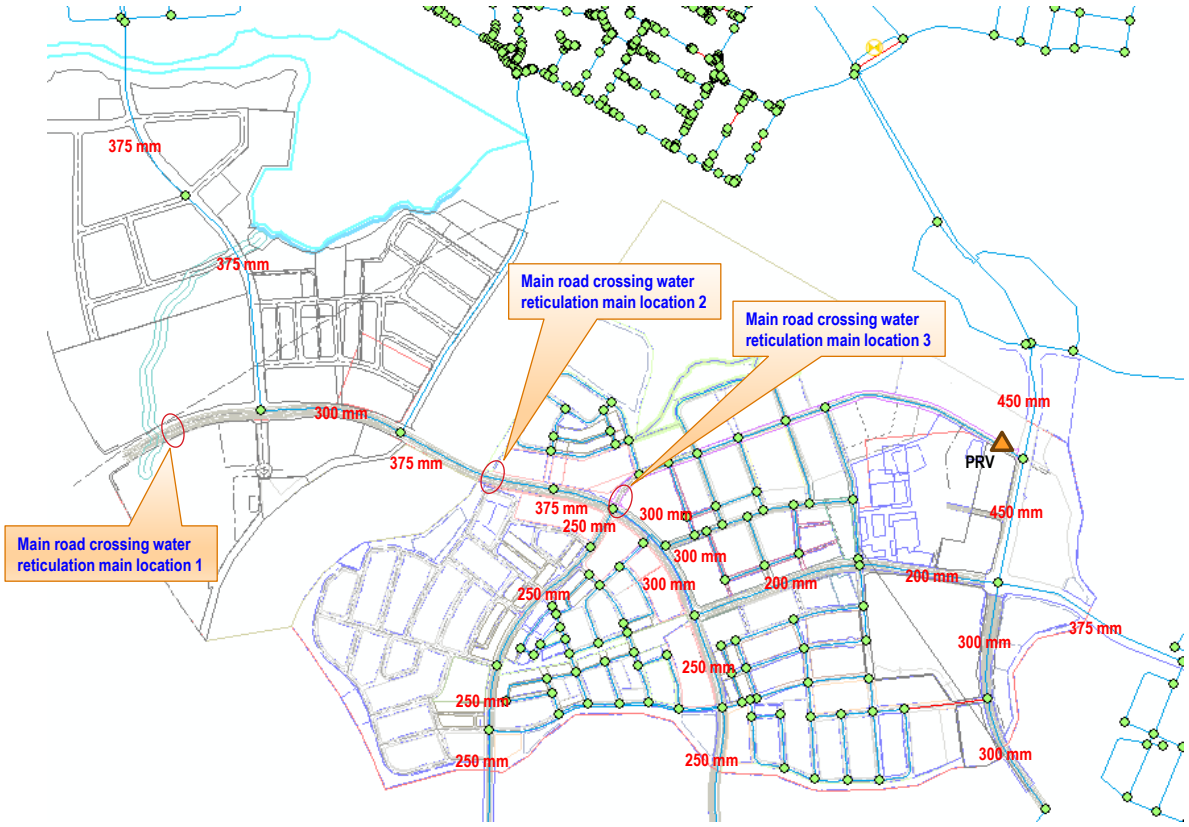
Attention: Andrew Erzetich

Dear Andrew,

Yarrabilba – Trunk and Reticulation Water Main Sizes Along Proposed Town Centre East-West Road

Lendlease has previously summited the water reticulation layout plan drawing for the section along the proposed Yarrabilba Town Centre East-West Road (TCER) in March 2024. This letter provides the water trunk main sizes and 'the locations of cross-road water reticulation mains (not connected to the trunk water mains on the TCER), which can connect the future reticulation mains between both sides of TCER in the future. The water trunk main sizes were extracted from the overall Yarrabilba water network model, which has been provided to Logan City Council (LCC) in 2023. The proposed Yarrabilba water trunk mains sizes were tested against with the ultimate Yarrabilba PDA demands and the outcomes have been documented in the previous infrastructure master plan and precinct network plan reports.

A plan showing the water trunk main sizes and the locations of water reticulation mains crossing main roads is provided below:



Stantec Australia Pty Ltd
Level 3, SW1 52 Merivale Street
PO Box 3602
SOUTH BRISBANE, QLD 4101

ABN: 17 007 820 322
TEL +61 7 3029 5000
FAX +61 7 3029 5050

The submitted water reticulation layout plan design drawings is also provided in Appendix A.

Please do not hesitate to contact the undersigned if you require any clarification on this assessment.

Yours sincerely

Henry Lin

Stantec Australia Pty Ltd

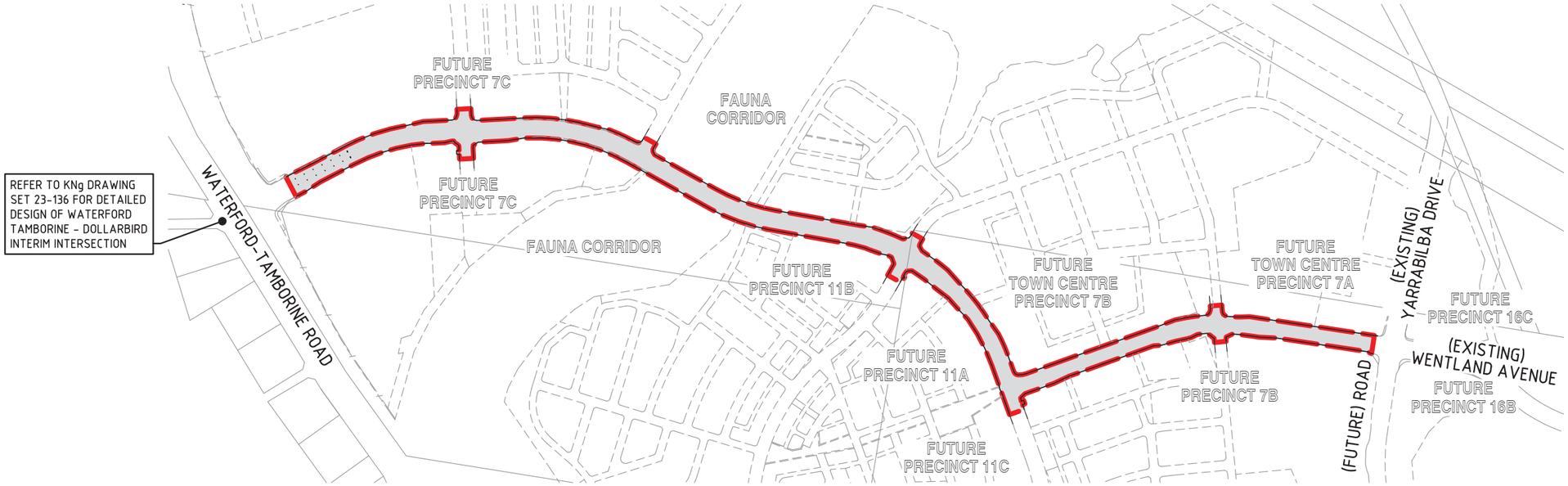
Approved By: Phillip Hall RPEQ 23017.

Appendix A – TCER Water Reticulation Layout Plan Design Drawings

APPLICATION No.
DEV 2017/860

YARRABILBA

TOWN CENTRE
EAST-WEST ROAD
(WATERFORD - TAMBORINE RD TO YARRABILBA DRIVE)



PLAN
SCALE 1:5000

GENERAL NOTES

1. ALL WORK SHALL BE JOINED NEATLY TO EXISTING CONSTRUCTION.
2. WHERE REFERENCE IS MADE ON THESE DRAWINGS TO A KERB LINE, IT SHALL BE TAKEN TO MEAN THE KERB INVERT LINE.
3. LEVELS FOR KERB AND CHANNEL CONSTRUCTION ARE SHOWN AT LIP OF CHANNEL UNLESS SHOWN OTHERWISE.
4. KERB AND CHANNEL AND SPOON DRAINS SHALL BE CONSTRUCTED IN ACCORDANCE WITH INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA STANDARD DWG NO SEQ RS-80. SPOON DRAINS ACROSS ROAD INTERSECTIONS SHALL BE IN ACCORDANCE WITH INSTITUTE OF PUBLIC WORKS ENGINEERING AUSTRALIA STD DWG NO SEQ RS-80. THE CONCRETE SHALL BE CLASS N32 AND THE DEPTH INCREASED BY 50mm TO 175mm AT INVERT. FLUSH KERB TO BE INCREASED IN DEPTH BY 50mm TO 280mm.
5. IF MACHINE MADE KERB AND CHANNEL IS USED, EXTRA FINES AND 20mm SLUMP IS REQUIRED.
6. ALL DRAINAGE CENTRE LINES ARE 2m FROM INVERT OF KERB UNLESS OTHERWISE SHOWN.
7. GULLY CONNECTIONS AND STORM WATER PIPES SHALL BE 375mm DIAMETER CLASS '2' R.C. PIPES UNLESS SHOWN OTHERWISE.
8. THE CONTRACTOR SHALL INITIALLY EXCAVATE THE PAVEMENT BOX TO 450mm BELOW THE FINISHED PAVEMENT LEVEL SHOWN ON THE DRAWINGS. HE SHALL THEN NOTIFY THE ENGINEER WHO WILL FIX THE PAVEMENT THICKNESS TO BE CONSTRUCTED FOLLOWING THE RESULTS OF SUB-GRADE TESTING.
9. NOTWITHSTANDING THE LIMITS OF CUTTING AND FILLING SHOWN ON THE DRAWINGS, THE ACTUAL LIMITS SHALL BE DETERMINED ON SITE BY THE ENGINEER AND SIMILARLY THE FINISHED SURFACE CONTOURS MAY BE ADJUSTED BY WRITTEN DIRECTION OF THE ENGINEER DURING CONSTRUCTION.
10. THE MINIMUM CLEARANCE BETWEEN OUTER WALLS OF PIPES IN MANHOLES SHALL BE 150mm.
11. SUBSURFACE DRAIN CLEANING POINTS SHALL BE INSTALLED IN ACCORDANCE WITH IPWEAQ STD DWG NO SEQ RS-142.
12. CONSTRUCTION LOAD CONTROL ON THE INSTALLATION OF REINFORCED CONCRETE STORMWATER PIPE WORK SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE RECOMMENDATIONS DEFINED IN THE CONCRETE PIPE ASSOCIATIONS OF AUSTRALASIA'S "THE INSTALLATIONS OF STEEL REINFORCED CONCRETE PIPES - MINIMUM PIPE COVER REQUIRED FOR VARIOUS COMPACTORS".
13. PRIOR TO COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR SHALL ERECT A 2 STRAND WIRE FENCE INCLUDING SAFETY BARRIER MESH TO THE PERIMETER OF VEGETATION TO BE RETAINED AND/OR EXCLUSION ZONES.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFYING THE LOCATION AND DEPTH OF EXISTING SERVICES WITH RELEVANT AUTHORITIES/DIAL BEFORE YOU DIG PRIOR TO COMMENCING WORKS.
15. THE CONTRACTOR SHALL NOTE THE PRESENCE OF EXISTING SERVICES ASSOCIATED WITH THE WORKS. SPECIAL CARE MUST BE TAKEN BY THE CONTRACTOR IN THE VICINITY OF ALL SERVICES.

REFER TO DWG 22-201-02 FOR DRAWING INDEX

DATUM A.H.D.
P.S.M. No 59068
E 2125.967
N 26685.151
RL 46.040

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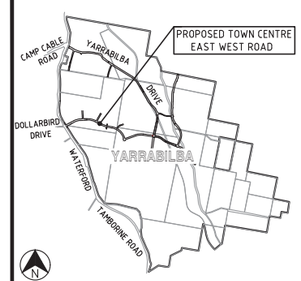
DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client
lendlease

Project
YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:13:46+10'00'

Drawing Title
GENERAL
LOCALITY PLAN AND NOTES

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SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	01 of 176

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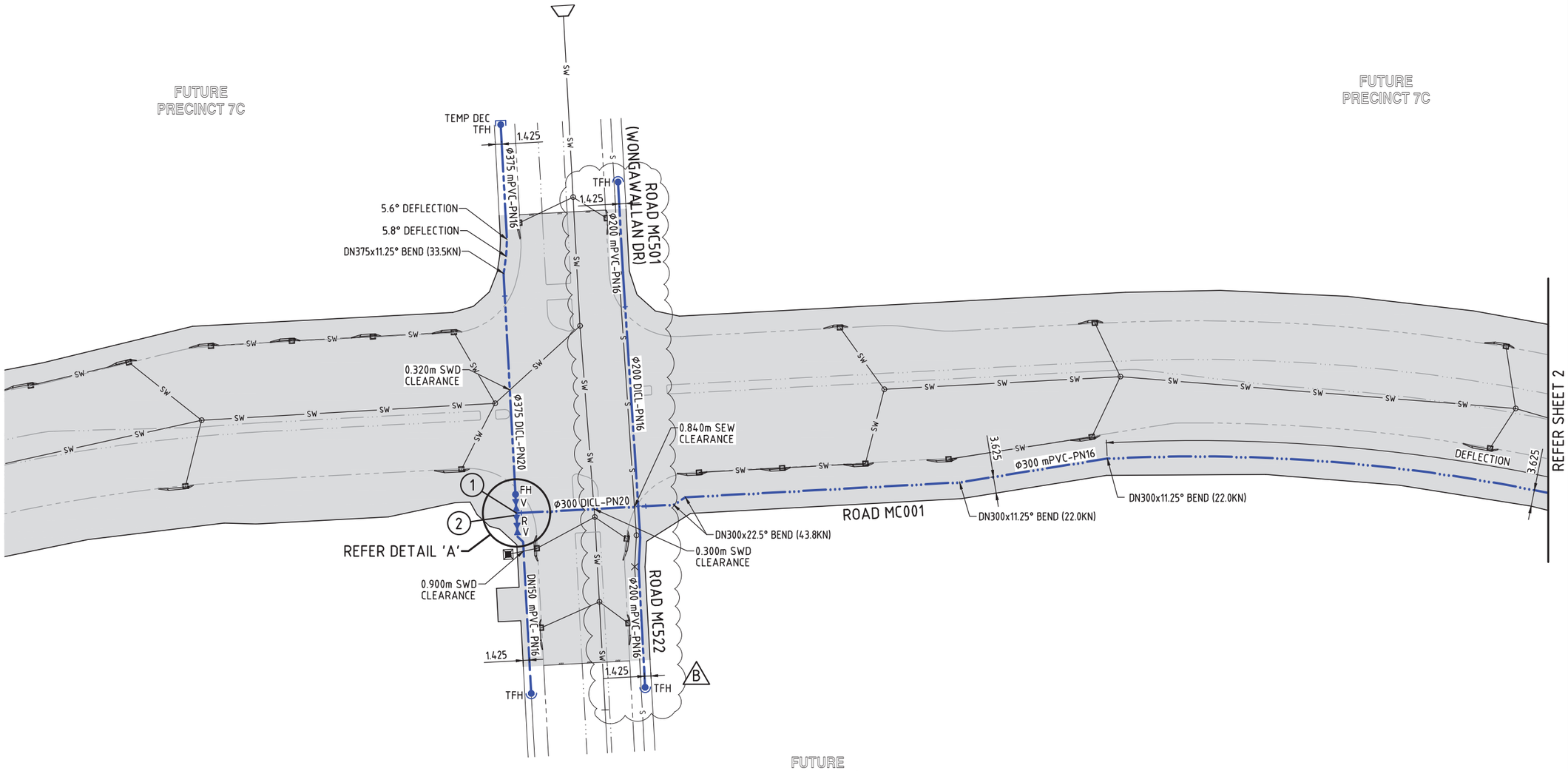

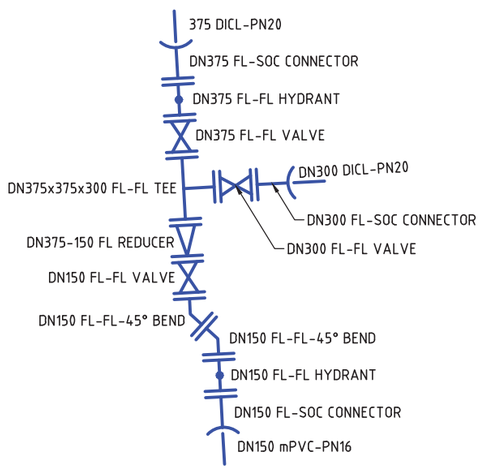

DETAIL 'A'
SCALE NTS

WATER RETICULATION LAYOUT PLAN
SCALE 1:500

LOGAN WATER LIVE WATER CONNECTION TABLE

LOCATION	DIAMETER
CORNER OF YARRABILBA DR AND ROAD MC601	Ø200

SCHEDULE OF PIPES

PIPE SIZE	LENGTH(m)
Ø150 PVC	213.984
~~Ø150 DICL~~	~~99.000~~
Ø200 PVC	755.140
Ø200 DICL	115.500
~~Ø250 PVC~~	~~112.379~~
Ø250 DICL	-
Ø300 PVC	660.744
Ø300 DICL	88.000
Ø375 PVC	615.421
Ø375 DICL	44.000

B

NOTE – "DUCTILE IRON" PIPEWORK UNDER ROAD CARRIAGEWAYS DENOTES DICL CLASS PN35

NOTE-
FIRE HYDRANT'S PROVIDED ON TRUNK WATER FOR DEPRESSURISATION ONLY

SCHEDULE OF FITTINGS

1	Ø375 x Ø375 x Ø300 TEE (112.2KN)	3 REQUIRED
2	Ø375-Ø150 REDUCER	1 REQUIRED
3	Ø375-Ø300 REDUCER	1 REQUIRED
4	Ø375-Ø250 REDUCER	1 REQUIRED
5	Ø300 x Ø300 x Ø200 TEE (50.7KN)	1 REQUIRED
6	Ø300-Ø250 REDUCER	1 REQUIRED
7	Ø200 x Ø200 x Ø200 TEE (50.7KN)	1 REQUIRED
8	Ø150 x Ø150 x Ø150 TEE (29.5KN)	1 REQUIRED
9	Ø200-Ø150 REDUCER	1 REQUIRED

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
- FH — FIRE HYDRANT
- TFH — TEMPORARY FIRE HYDRANT
- V — VALVE
- R — REDUCER
- AV — AIR VALVE
- SV — SCOUR VALVE
- * — CONNECTION REQUIRED BY LOGAN WATER
- W — EXISTING WATER MAIN
- SW — STORMWATER DRAINAGE
- S — SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)

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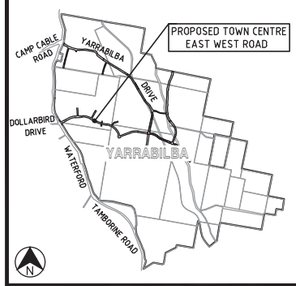
DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
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B	WATERMAIN ADDED	03.04.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.04.03 10:43:41+10'00'

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WATER RETICULATION LAYOUT PLAN SHEET 1

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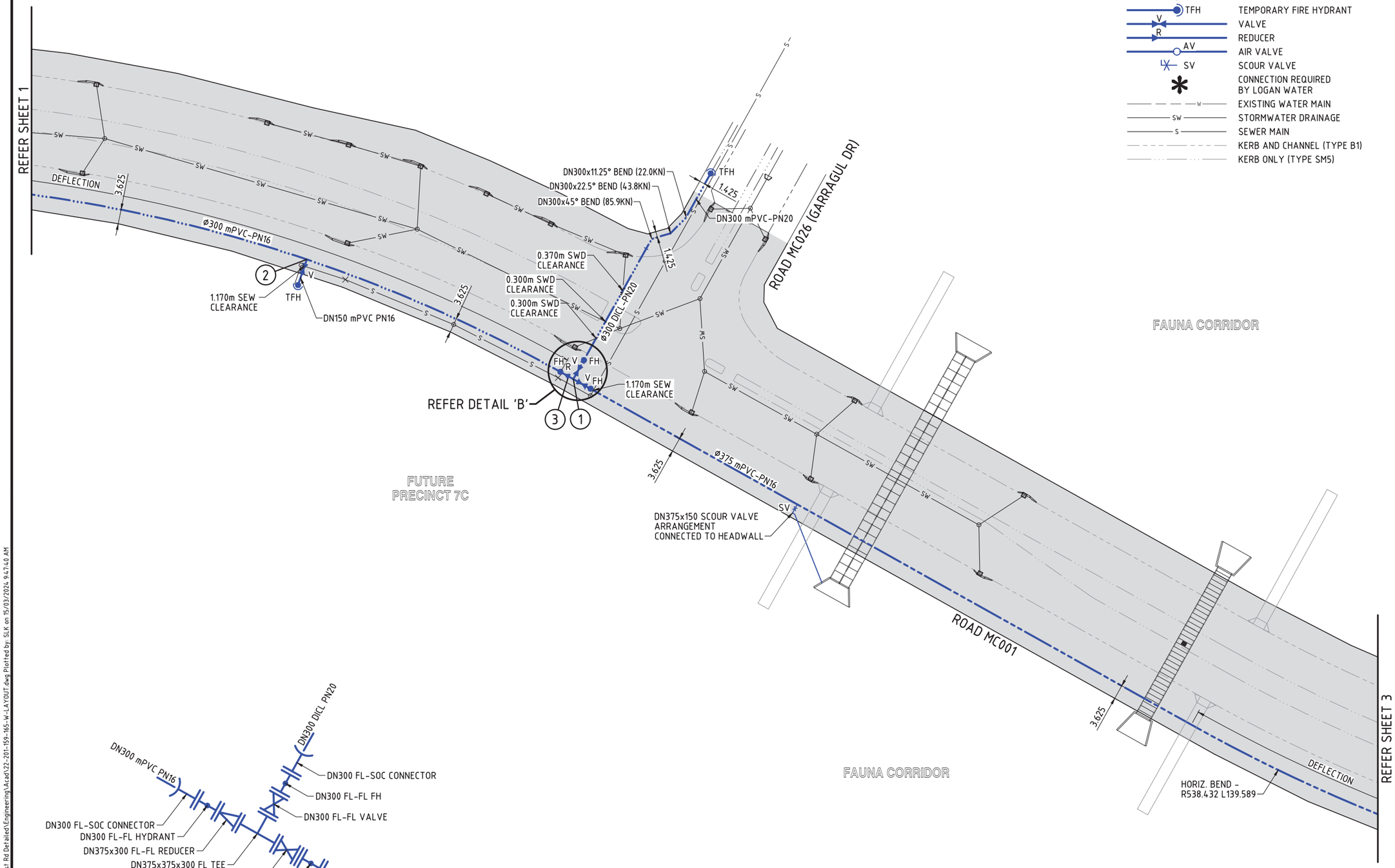

DETAIL 'B'
SCALE NTS

WATER RETICULATION LAYOUT PLAN
SCALE 1:500

SCALE
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1 : 500 (A1 UNREDUCED)

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
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- S — SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)

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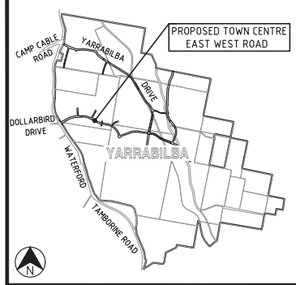
NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
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Date: 2024.03.15 11:32:15+10'00'

Drawing Title
WATER RETICULATION LAYOUT PLAN SHEET 2

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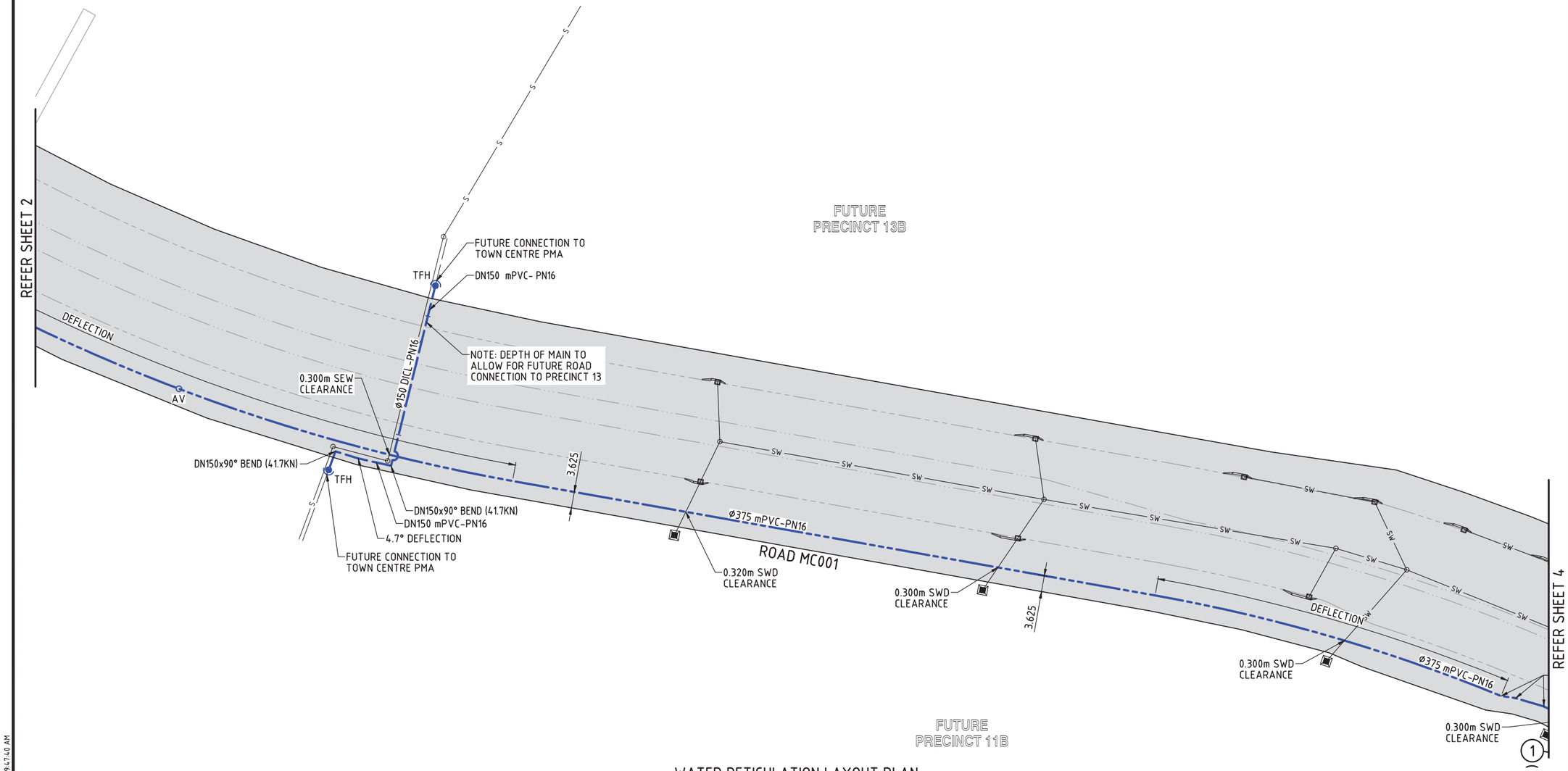

WATER RETICULATION LAYOUT PLAN
SCALE 1:500

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
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- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)

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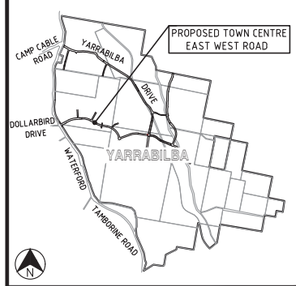
DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

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TOWN CENTRE
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kn group
ABN 35 112 53 611
L1, 62 Astor Tce
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Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:15+10'00'

Drawing Title
WATER RETICULATION LAYOUT PLAN
SHEET 3

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
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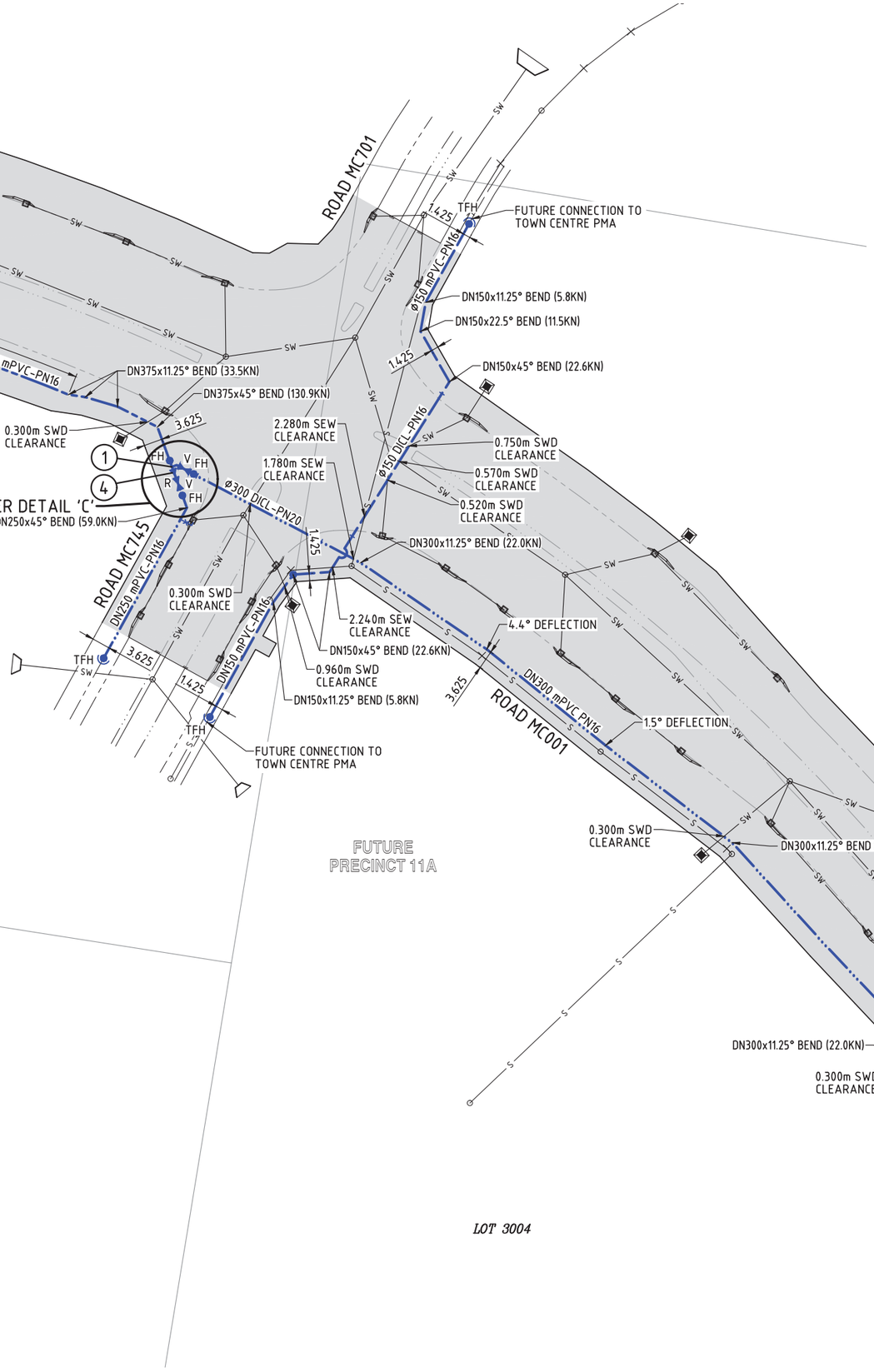
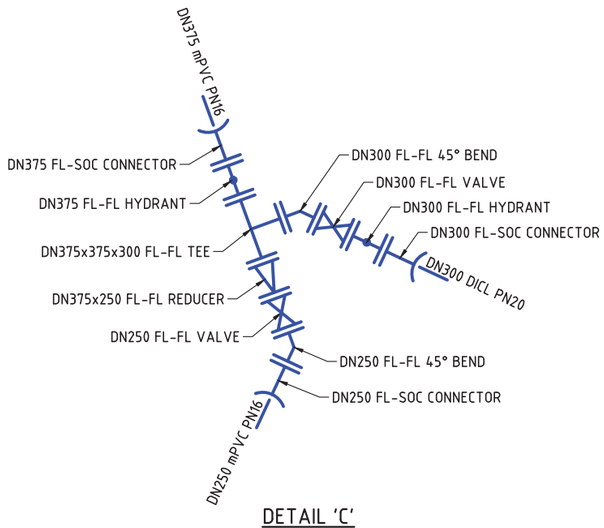


WATER RETICULATION LAYOUT PLAN
SCALE 1:500



DETAIL 'C'
SCALE NTS

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
- FH — FIRE HYDRANT
- TFH — TEMPORARY FIRE HYDRANT
- V — VALVE
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- AV — AIR VALVE
- SV — SCOUR VALVE
- * — CONNECTION REQUIRED BY LOGAN WATER
- W — EXISTING WATER MAIN
- SW — STORMWATER DRAINAGE
- S — SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)

SCALE 10 5 0 10 20 30 40 50m
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DO NOT SCALE THIS DRAWING
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NORTH

LOCALITY PLAN

REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:16+10'00'

Drawing Title
WATER RETICULATION
LAYOUT PLAN
SHEET 4

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	162 of 176

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	22-201-162	A

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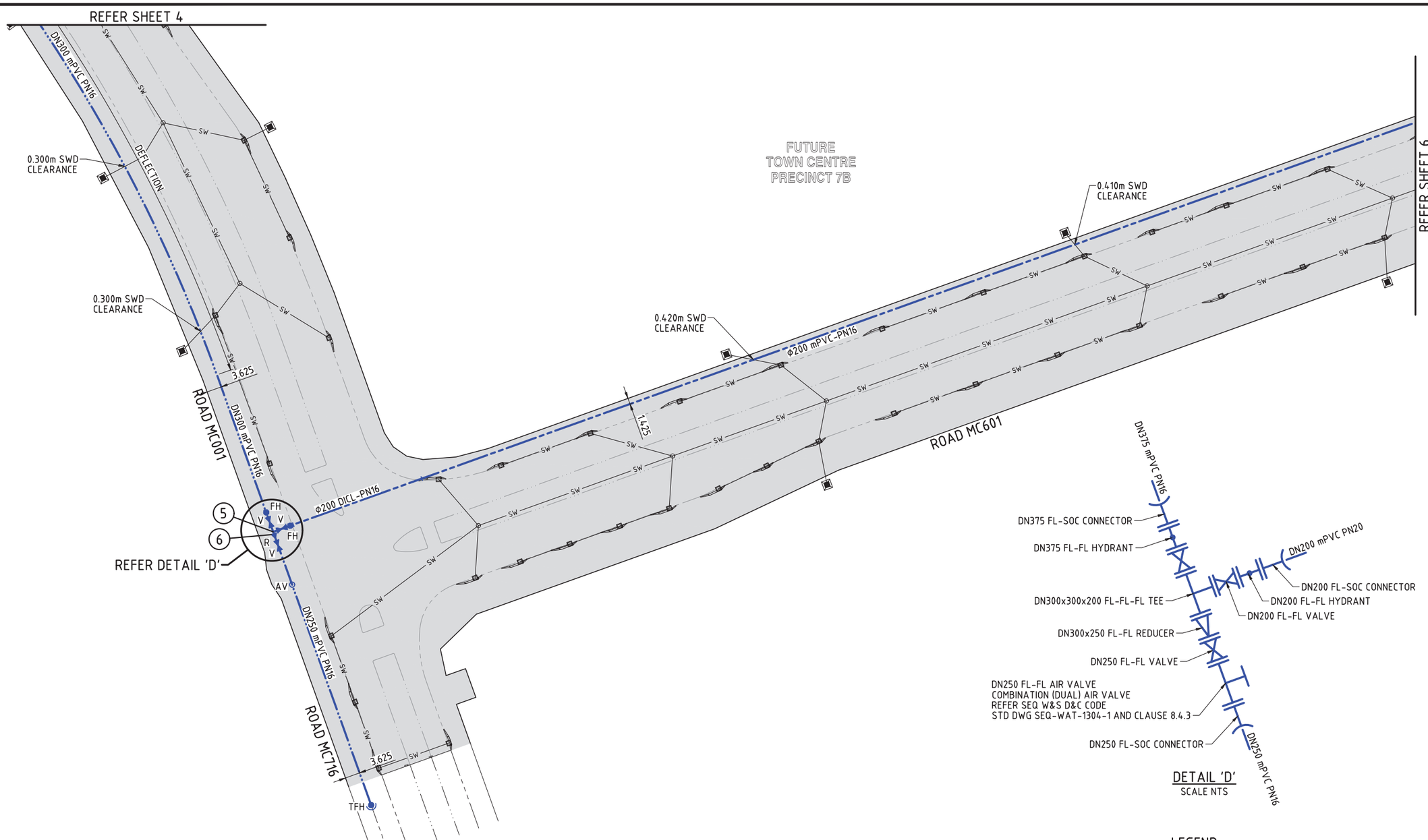

WATER RETICULATION LAYOUT PLAN
SCALE 1:500

DETAIL 'D'
SCALE NTS

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
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- KERB ONLY (TYPE SM5)

SCALE
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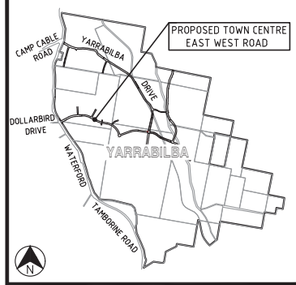
1 : 500 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
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Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:17+10'00'

Drawing Title
WATER RETICULATION
LAYOUT PLAN
SHEET 5

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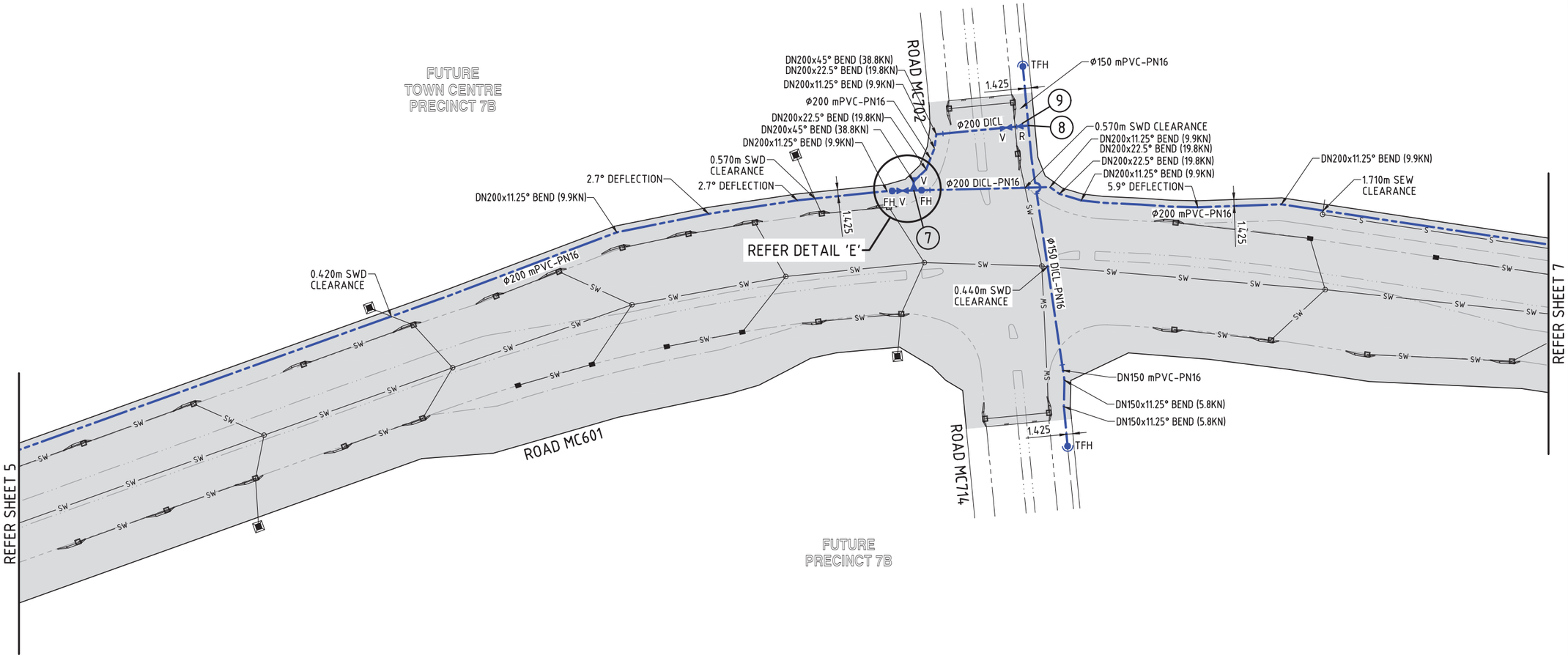
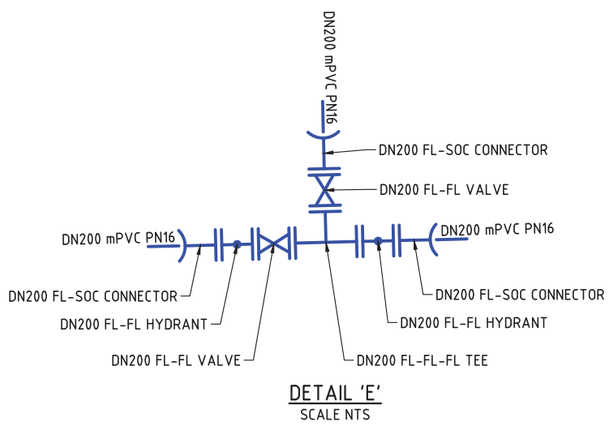


WATER RETICULATION LAYOUT PLAN
SCALE 1:500



DETAIL 'E'
SCALE NTS

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
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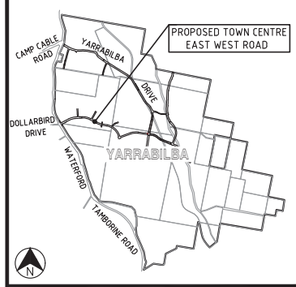
- S — SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)

SCALE
10 5 0 10 20 30 40 50m
1 : 500 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client

lendlease

Project

YARRABILBA

TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved

Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:17+10'00'

Drawing Title

WATER RETICULATION
LAYOUT PLAN
SHEET 6

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	164 of 176

	Drawing No	Revision
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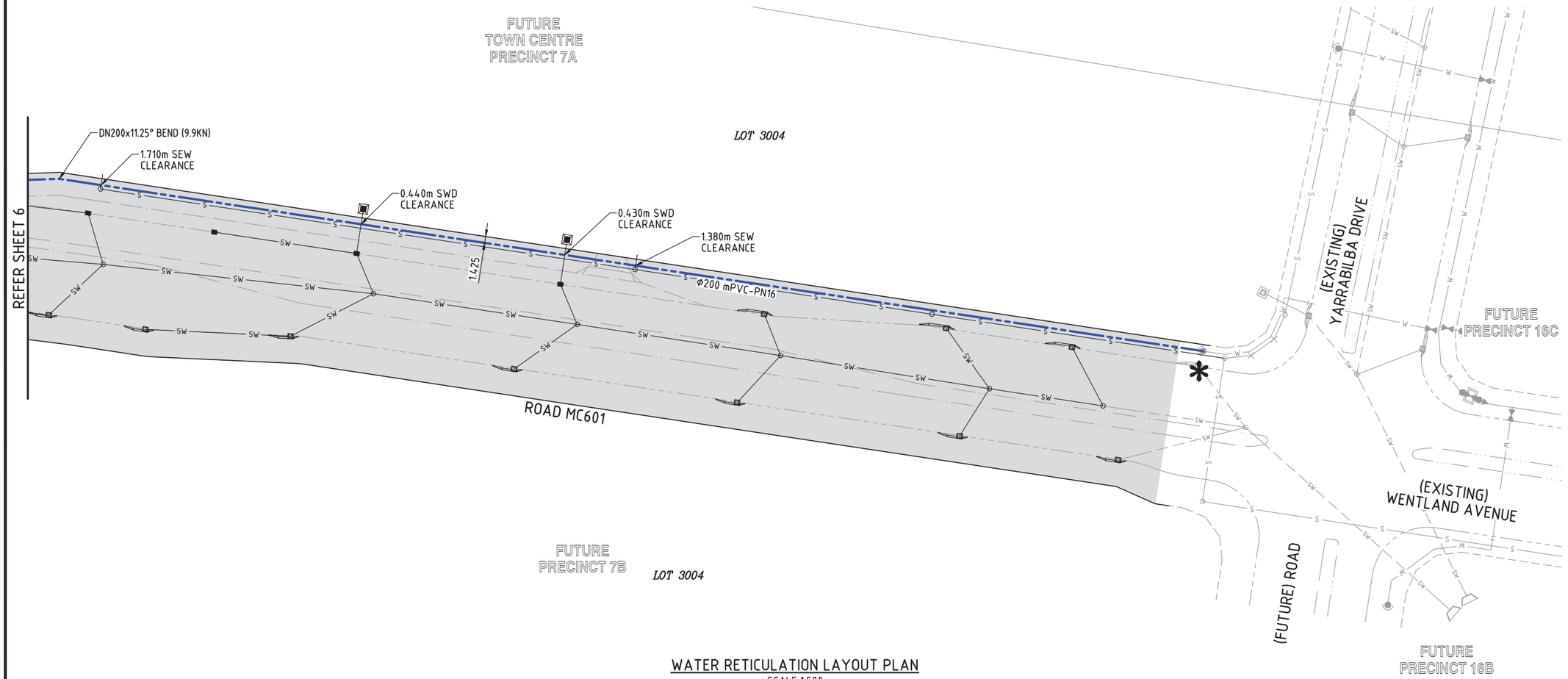

WATER RETICULATION LAYOUT PLAN
SCALE 1:500

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
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SCALE
10 5 0 10 20 30 40 50m
1 : 500 (A1 UNREDUCED)

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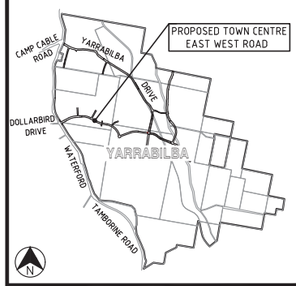
NORTH

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client

lendlease

Project

YARRABILBA

TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved

Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:18+10'00'

Drawing Title

WATER RETICULATION
LAYOUT PLAN
SHEET 6

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	165 of 176

	Drawing No	Revision
A1	22-201-165	A

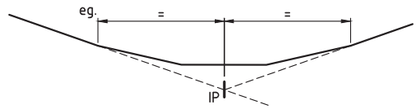
M:\2022\22201YB - Town Centre East West Rd Detailed\Engineering\Xcad\22-201-165-W-LAYOUT.dwg Plotted by: SLK on 15/03/2024, 9:47:42 AM

GENERAL NOTES

1. ALL WORK AND MATERIALS SHALL BE IN ACCORDANCE WITH CURRENT SEQ WS&S CODE SPECIFICATIONS AND STANDARDS.
2. UNLESS SPECIFIED OTHERWISE ALL MATERIALS AND WORK SHALL COMPLY WITH THE RELEVANT AUSTRALIAN STANDARDS.
3. ADOPT LIP OF KERB OR SHOULDER OF ROAD AS PERMANENT LEVEL.
4. COVER OVER MAINS FROM PERMANENT LEVEL TO BE AS SHOWN IN STANDARD DRAWING No. SEQ-WAT-1200-2.
5. MINIMUM EMBEDMENT (TYPE C MIN.) SHALL BE IN ACCORDANCE WITH STANDARD DRAWING Nos. SEQ-WAT-1200-2 TO SEQ-WAT-1203-1.
6. THRUST BLOCKS SHALL BE IN ACCORDANCE WITH AND PRESSURE TESTED TO 1200kPa AS PER STANDARD DRAWING No. SEQ-WAT-1205-1 AND SEQ-WAT-1206-1.
7. CONDUITS TO BE INSTALLED IN ACCORDANCE WITH THE STANDARD DRAWING No. SEQ-WAT-1110-1 AND 2.
8. A WATER METER IS TO BE INSTALLED AT THE RESIDENT'S COST, BY LOGAN WATER.
9. ALL MATERIALS USED IN THE WORKS SHALL BE AS FOLLOWS:

   - ALL DUCTILE IRON FITTINGS SHALL BE MANUFACTURED TO AS/NZS 2280 WITH SOCKET ENDS (UNLESS NOTED) AND DESIGNED FOR USE WITH PVC OR DI PIPES AS APPLICABLE. ALL DI PIPES SHALL BE CEMENT LINED TO AS/NZS 2280.
   - DICL USED IN ROAD CROSSINGS WILL BE PN35 AS PER WATER AUTHORITY STANDARDS.
   - PRESSURE PIPES USED FOR WATER SUPPLY SHALL BE RRJ PIPES AND SHALL BE EITHER PVC CLASS PN16 (UNLESS NOTED OTHERWISE) MINIMUM AND MANUFACTURED TO (UPVC AS/NZS 1477), (PVC-M AS/NZS 4765) (PVC-0 AS/NZS 4441) OR DICL PN 20, 35 OR FLANGED CLASS TO AS/NZS 2280).
   - DUCTILE IRON SLUICE AND SCOUR VALVES SHALL BE PN16 RESILIENT SEATED WITH DOUBLE "O" RING STEM SEALS MANUFACTURED TO AS 2638.
   - ALL VALVES, FITTINGS AND PIPE FITTINGS TO BE COATED INTERNALLY AND EXTERNALLY WITH FACTORY APPLIED THERMAL POLYMERIC CORROSION PROTECTION TO AS 4158.
   - ALL NUTS, BOLTS AND WASHERS, SHALL BE STAINLESS STEEL GRADE 316 CLASS 50, WITH AN ANTI-SEIZE APPLIED DURING ASSEMBLY.
   - ALL DUCTILE IRON FLANGES ARE TO COMPLY WITH AS/NZS 2280 AND SHALL BE RAISED FACE TO AS 4087.

10. ALL CONCRETE FOOTPATHS TO BE CLEAR OF WATER MAINS (WHERE APPLICABLE).
11. TEST/CHLORINATION POINTS TO BE INSTALLED IN ACCORDANCE WITH STANDARD DRAWING No. SEQ-WAT-1410-1.
12. MARKERS SHALL BE INSTALLED FOR ALL SERVICE CROSSINGS, HYDRANTS AND VALVES IN ACCORDANCE WITH STANDARD DRAWING Nos. SEQ-WAT-1107-1, SEQ-WAT-1300-1 AND SEQ-WAT-1300-2.
13. THE CONSTRUCTION OF THE WATER RETICULATION WORK SHOWN ON THIS DRAWING MUST BE SUPERVISED BY AN ENGINEER WHO HAS R.P.E.Q. REGISTRATION. WORKS NOT COMPLYING WITH THIS REQUIREMENT WILL NOT BE PERMITTED TO CONNECT TO THE RETICULATION SYSTEM.
14. WATER MAIN SHALL BE LAID AT 1.425m ALIGNMENT FROM PROPERTY BOUNDARY UNLESS NOTES OTHERWISE.
15. WHERE PERMANENT HYDRANTS ARE NOT INSTALLED AT END OF MAINS OF EACH STAGE, A TEMPORARY HYDRANT WILL BE INSTALLED INSTEAD.
16. NO WORK SHALL BE BACKFILLED UNTIL PERMISSION IS GRANTED BY THE SUPERINTENDENT OR LOGAN WATER.
17. NOT ALL SERVICES HAVE NECESSARILY BEEN SHOWN. THE LOCATION OF SERVICES ON THESE PLANS ARE APPROXIMATE ONLY. NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OR COMPLETENESS OF THIS INFORMATION NO WORK IS TO BE UNDERTAKEN WITHOUT CONSULTING THE RELEVANT SERVICE AUTHORITY PRIOR TO COMMENCEMENT OF THE WORK. DEPTH OF SERVICES AT POSSIBLE CONFLICT POINTS ARE TO BE CONFIRMED PRIOR TO THE COMMENCEMENT OF CONSTRUCTION. ABOVE GROUND SERVICES AS SHOWN ON THE DRGS HAVE BEEN LOCATED BY FIELD SURVEY. ALL UNDERGROUND SERVICES HAVE BEEN PLOTTED FROM THE RELEVANT AUTHORITY'S RECORDS.
18. ALL EXISTING FEATURES (eg. DRIVEWAYS, GARDENS, PATHS etc.) ARE TO BE REINSTATED WHERE DISTURBED BY THE WORKS. ALLOW FOR SUPPORT OF POWER POLES/STAYS, FENCES etc. ADJACENT TO TRENCHES.
19. WHERE BEND FITTINGS ARE NOT SHOWN, MAKE CHANGES IN DIRECTION USING PIPE JOINT DEFLECTIONS. MAKE EQUAL NUMBER AND SIZE OF PIPE DEFLECTIONS EACH SIDE OF CHAINAGE SHOWN (MAX. DEFLECTION 3° PER JOINT). IL SHOWN ON LONG SECTIONS IS AT INTERSECTIONS POINT (IP). JOINT DEFLECTIONS MAY ALSO BE REQUIRED AT FITTINGS TO MEET ALIGNMENT AND LEVELS AS SPECIFIED.



20. WATER SERVICE CONNECTIONS INCLUSIVE OF WATER METER BOXES ARE TO BE INSTALLED IN ACCORDANCE WITH STD DWGS SEQ-WAT-1110-1 & SEQ-WAT-1110-2 AND OTHER RELEVANT STANDARD DRAWINGS FROM THE SEQ DESIGN AND CONSTRUCTION CODE, AT NO COST TO COUNCIL.
21. TERMINATE ALL WATER SERVICES AFTER INSTALLATION OF THE BALL VALVE (PRIOR TO THE WATER METER). THE APPLICANT IS NOT REQUIRED TO MAKE AN APPLICATION TO COUNCIL FOR THE PROVISION OF A WATER METER AT THIS TIME.
22. THE POLYETHYLENE SERVICE LINE MUST COMPLY WITH AS/NZS4130 SERIES 1 DN20 PN16.
23. TAPPING BANDS MUST BE USED WHEN PROVIDING CONNECTION, UNLESS OTHERWISE APPROVED BY COUNCIL.
24. PROPERTY SERVICES WITHIN ANY FOOTWAY SHALL BE POSITIONED AT 90±5 DEGREES TO THE WATER MAIN OR KERB. WHERE REQUIRED TO CROSS THE ROAD CARRIAGEWAY, PROPERTY SERVICES SHALL BE LOCATED WITHIN THE SERVICE DUCTS (CONDUITS) POSITIONED AT 90±5 DEGREES TO THE ROAD CARRIAGEWAY OR FROM SIDE BOUNDARY TO SIDE BOUNDARY AND EXTENDING BEHIND EACH KERB IN ACCORDANCE WITH CLAUSE 5.11.3 OF THE SOUTH EAST QUEENSLAND WATER SUPPLY AND SEWERAGE DESIGN AND CONSTRUCTION CODE. THE CONDUIT SHALL HAVE A MAXIMUM LENGTH OF 25m AND EXTEND 300mm BEYOND THE BACK OF THE KERB OR CONCRETE/PAVED AREA.
25. WHERE PRACTICABLE, PROPERTY SERVICE CONNECTION POINTS MUST BE LOCATED 300mm FROM THE RESIDENTIAL PROPERTY SIDE BOUNDARY ON THE OPPOSITE SIDE OF THE ALLOTMENT TO THE ELECTRICAL SERVICE PILLAR-BOX. SERVICES MUST BE LOCATED AT LEAST 1.0m FROM ALL ELECTRICAL SOURCES AND CLEAR OF EXISTING OR FUTURE DRIVEWAY. PROPERTY SERVICES LAID PARALLEL TO THE FOOTPATH AND/OR PROPERTY BOUNDARY ARE NOT PERMITTED (SEQ CODE CLAUSE 5.11.5). TERMINATE ALL WATER SERVICES AFTER INSTALLATION OF THE BALL VALVE (PRIOR TO THE WATER METER). THE APPLICANT IS NOT REQUIRED TO MAKE AN APPLICATION TO COUNCIL FOR THE PROVISION OF A WATER METER AT THIS TIME.

PIPES, FITTINGS AND VALVES

1. ALL DUCTILE IRON FITTINGS SHALL BE MANUFACTURED TO AS/NZS 2280 WITH SOCKET ENDS (UNLESS NOTED) AND DESIGNED FOR USE WITH PVC OR DI PIPES AS APPLICABLE. ALL DI PIPES SHALL BE CEMENT LINED TO AS/NZS 2280.
2. DICL USED IN ROAD CROSSINGS WILL BE PN35 AS PER WATER AUTHORITY STANDARDS.
3. PRESSURE PIPES USED FOR WATER SUPPLY SHALL BE RRJ PIPES AND SHALL BE EITHER PVC CLASS PN16 (UNLESS NOTED OTHERWISE) MINIMUM AND MANUFACTURED TO (UPVC AS/NZS 1477), (PVC-M AS/NZS 4765) (PVC-0 AS/NZS 4441) OR DICL PN 20, 35 OR FLANGED CLASS TO AS/NZS 2280).
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5. ALL VALVES, FITTINGS AND PIPE FITTINGS TO BE COATED INTERNALLY AND EXTERNALLY WITH FACTORY APPLIED THERMAL POLYMERIC CORROSION PROTECTION TO AS 4158.
6. ALL NUTS, BOLTS AND WASHERS, SHALL BE STAINLESS STEEL GRADE 316 CLASS 50, WITH AN ANTI-SEIZE APPLIED DURING ASSEMBLY.
7. ALL DUCTILE IRON FLANGES ARE TO COMPLY WITH AS/NZS 2280 AND SHALL BE RAISED FACE TO AS 4087.

VEGETATION PROTECTION (WHERE APPLICABLE)

A. TREES LOCATED ALONG THE FOOTPATH SHALL BE, TRANSPLANTED PRIOR TO CONSTRUCTION, OR REPLACED IF DESTROYED.
B. WHEN WORKING WITHIN 4m OF TREES, RUBBER OR HARDWOOD GIRDLES SHALL BE CONSTRUCTED WITH 1.8m BATTENS CLOSELY SPACED AND ARRANGED VERTICALLY FROM GROUND LEVEL. GIRDLES SHALL BE STRAPPED TO TREES PRIOR TO CONSTRUCTION AND REMAIN UNTIL COMPLETION.
C. TREE ROOTS SHALL BE TUNNELLED UNDER, RATHER THAN SEVERED. IF ROOTS ARE SEVERED THE DAMAGED AREA SHALL BE TREATED WITH A SUITABLE FUNGICIDE. CONTACT RELEVANT COUNCIL ARBORIST FOR FURTHER ADVICE.
D. ANY TREE LOPPING REQUIRED SHOULD BE UNDERTAKEN BY AN APPROVED ARBORIST.

SOIL (WHERE APPLICABLE)

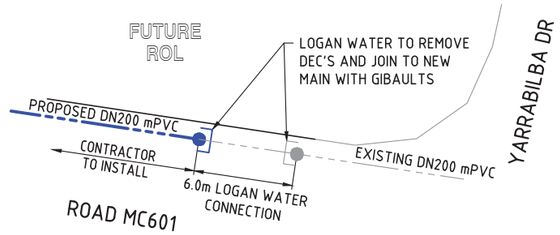
A. TOPSOIL AND SUBSOIL SHOULD BE STOCKPILED SEPARATELY.
B. CARE SHOULD BE TAKEN TO PREVENT SEDIMENT FROM ENTERING THE STORMWATER SYSTEM. THIS MAY INVOLVE PLACING APPROPRIATE SEDIMENT CONTROL AROUND STOCKPILES.

CREEK CROSSINGS (WHERE APPLICABLE)

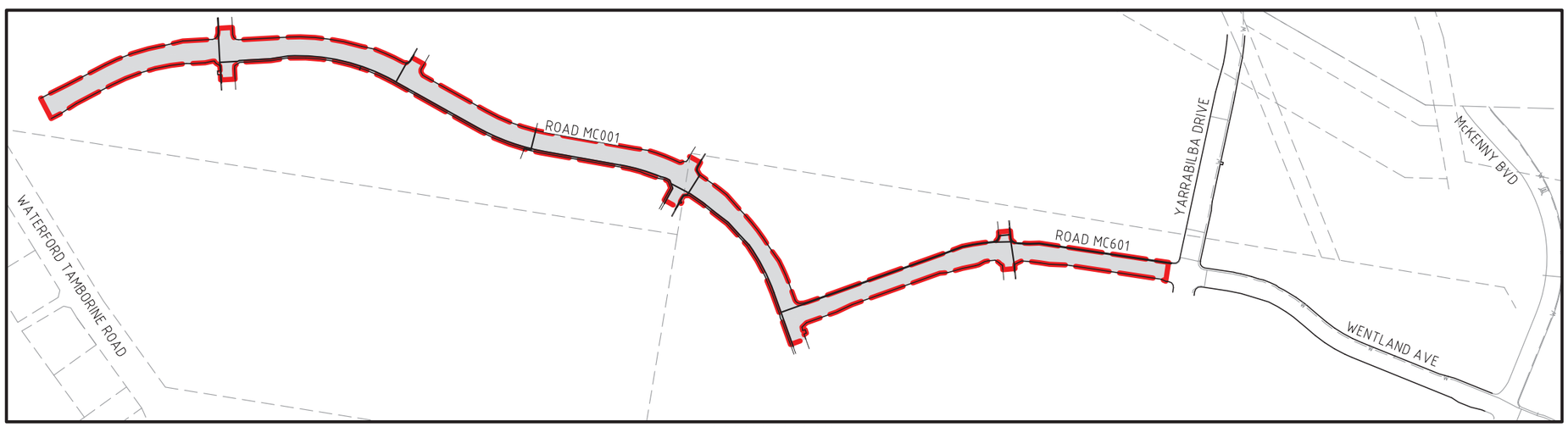
A. SILTATION CONTROL MEASURES SHALL BE PLACED DOWNSTREAM OF ANY EXCAVATION WORK.
B. APPROPRIATE SEDIMENT CONTROLS SHALL BE USED TO PREVENT SEDIMENT FROM ENTERING THE CREEK.
C. NO SOIL SHOULD BE STOCKPILED WITHIN 5m OF CREEK.

REHABILITATION (WHERE APPLICABLE)

A. PREDISTURBANCE SOIL PROFILES AND COMPACTION LEVELS SHALL BE REINSTATED.
B. PREDISTURBANCE VEGETATION PATTERNS SHALL BE RESTORED.



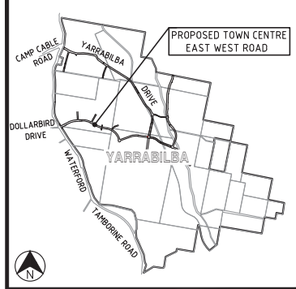
LIVE CONNECTION DETAIL
INTERSECTION YARRABILBA DR AND ROAD MC601
NOT TO SCALE



LOCALITY PLAN
SCALE 1:5000

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client

lendlease

Project

YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved

Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:19+10'00'

Drawing Title

WATER RETICULATION
LIVE CONNECTION DETAILS
AND NOTES

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	166 of 176

	Drawing No	Revision
A1	22-201-166	A

DO NOT SCALE THIS DRAWING
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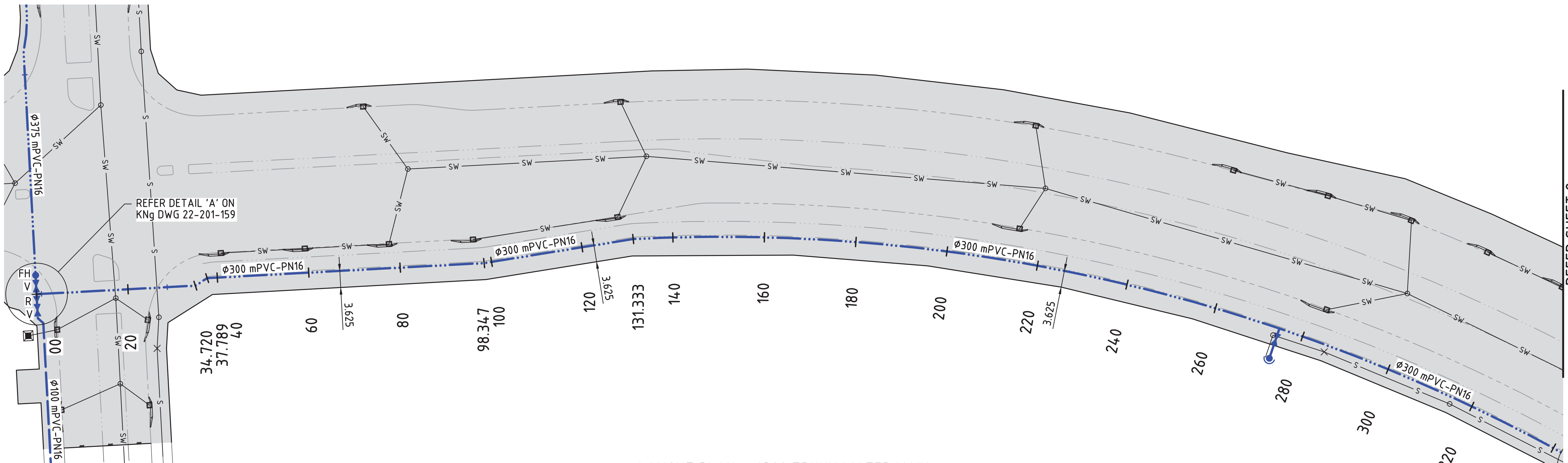
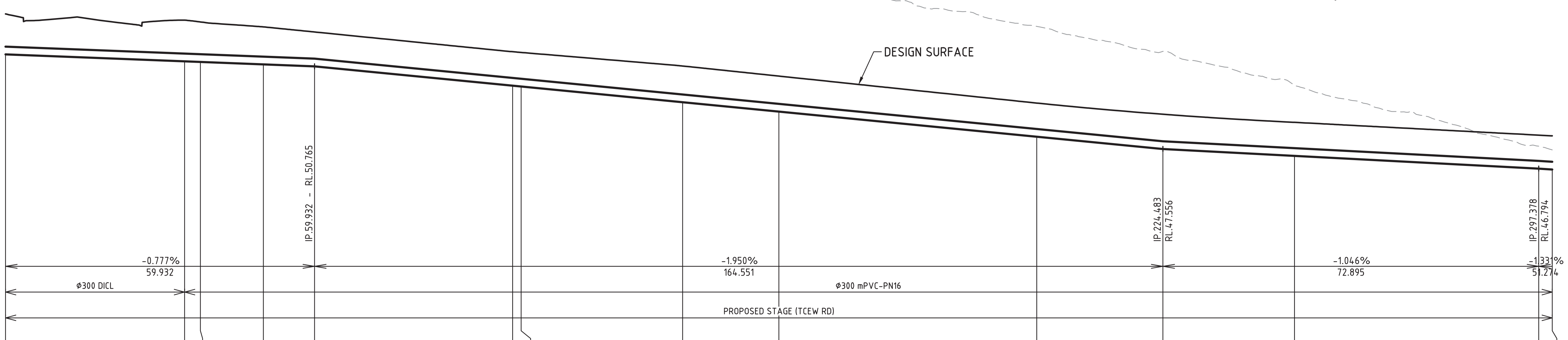


LAYOUT PLAN – Ø300 TRUNK WATER MAIN
SCALE 1:500

LEGEND

PROPOSED Ø150 WATER MAIN		R	REDUCER
PROPOSED Ø200 WATER MAIN		AV	AIR VALVE
PROPOSED Ø250 WATER MAIN		SV	SCOUR VALVE
PROPOSED Ø300 WATER MAIN		W	EXISTING WATER MAIN
PROPOSED Ø375 WATER MAIN		SW	STORMWATER DRAINAGE
FH	FIRE HYDRANT	S	SEWER MAIN
TFH	TEMPORARY FIRE HYDRANT		KERB AND CHANNEL (TYPE B1)
V	VALVE		KERB ONLY (TYPE SM5)
		*	CONNECTION REQUIRED BY LOGAN WATER



NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165

Vertical Geometry Grade / Vertical Geometry Length (m): -0.777% / 59.932; -1.950% / 164.551; -1.046% / 72.895; -1.331% / 51.274

PIPE SIZE: Ø300 DICL; Ø300 mPVC-PN16

STAGE: PROPOSED STAGE (TCEW RD)

DATUM R.L40.000

DESIGN SURFACE	52.801	52.557	52.488	52.297	52.099	51.333	51.305	50.776	50.386	49.338	48.905	48.590	48.093	48.066
DEPTH TO INVERT LEVEL	-1.570	-1.596	-1.551	-1.455	-1.334	-1.317	-1.321	-1.403	-1.377	-1.305	-1.348	-1.301	-1.299	-1.307
NATURAL SURFACE	58.726	57.869	57.789	57.338	57.051	55.475	55.395	54.738	54.078	52.317	51.345	50.046	47.663	47.523
DEPTH TO NATURAL	-7.495	-6.908	-6.851	-6.496	-6.286	-5.459	-5.411	-5.365	-5.069	-4.283	-3.789	-2.756	-0.870	-0.764
INVERT LEVEL	51.231	50.961	50.937	50.842	50.765	50.016	49.984	49.373	49.009	48.034	47.556	47.289	46.794	46.759
PEGGED CHAINAGE	0.000	34.720	37.789	50.000	59.932	98.347	100.000	131.333	150.000	200.000	224.483	250.000	297.378	300.000

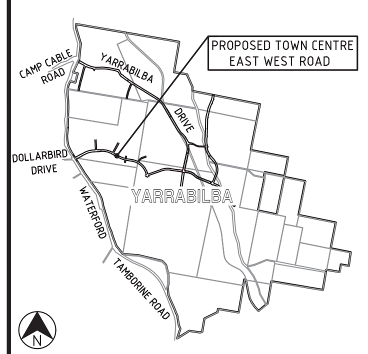
LONGITUDINAL SECTION – Ø300 TRUNK WATER MAIN
SCALE – H – 1:500
V – 1:100

SCALE 1 : 100 (A1 UNREDUCED)

SCALE 1 : 500 (A1 UNREDUCED)

SCALE 1 : 5000 (A1 UNREDUCED)

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

KN group
ABN 35 112 53 611
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www.kngroup.com.au

Approved

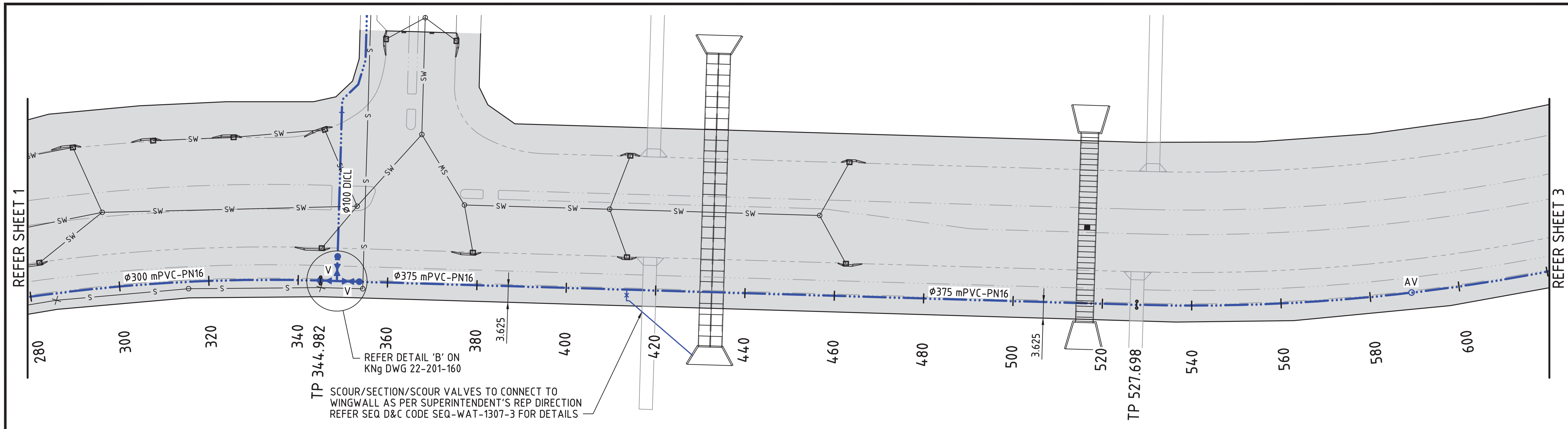
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:19+10'00'

Drawing Title
WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 1

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	167 of 176

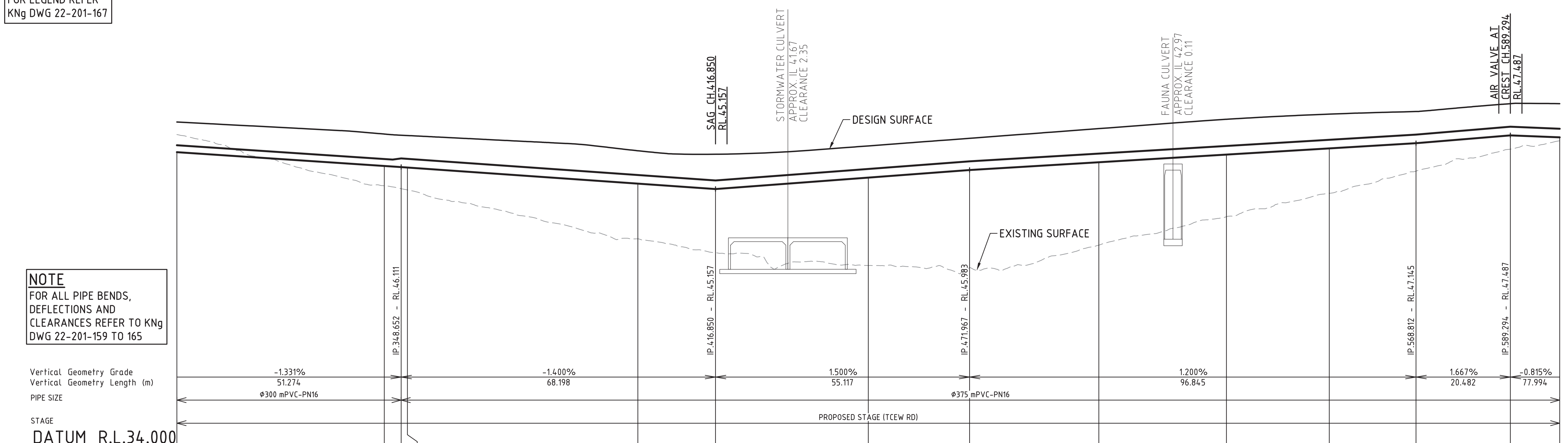
	Drawing No	Revision
A1	22-201-167	A



LAYOUT PLAN – Ø375 TRUNK WATER MAIN

SCALE 1:500

NOTE
FOR LEGEND REFER KNg DWG 22-201-167



NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165

DATUM R.L.34.000

DESIGN SURFACE	48.066	47.543	47.493	47.479	46.819	46.667	47.029	47.358	47.779	48.184	48.407	48.520	48.862	48.863
DEPTH TO INVERT LEVEL	-1.307	-1.383	-1.381	-1.386	-1.426	-1.510	-1.375	-1.375	-1.459	-1.532	-1.488	-1.375	-1.375	-1.463
NATURAL SURFACE	47.523	45.300	45.169	45.120	42.999	42.397	41.840	41.740	42.722	43.957	44.974	45.935	46.889	47.255
DEPTH TO NATURAL	-0.764	0.860	0.943	0.973	2.393	2.760	3.814	4.243	3.598	2.695	1.945	1.210	0.597	0.144
INVERT LEVEL	46.759	46.160	46.111	46.093	45.393	45.157	45.654	45.983	46.320	46.652	46.920	47.145	47.487	47.399
PEGGED CHAINAGE	300.000	344.982	348.652	350.000	400.000	416.850	450.000	471.967	500.000	527.698	550.000	568.812	589.294	600.000

LONGITUDINAL SECTION – Ø375 TRUNK WATER MAIN

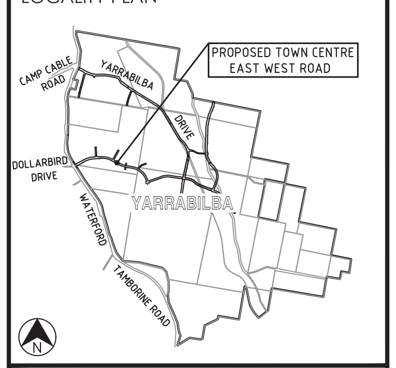
SCALE – H – 1:500
V – 1:100

SCALE 1 : 100 (A1 UNREDUCED)

SCALE 1 : 500 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

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Date: 2024.03.15 11:32:20+10'00'

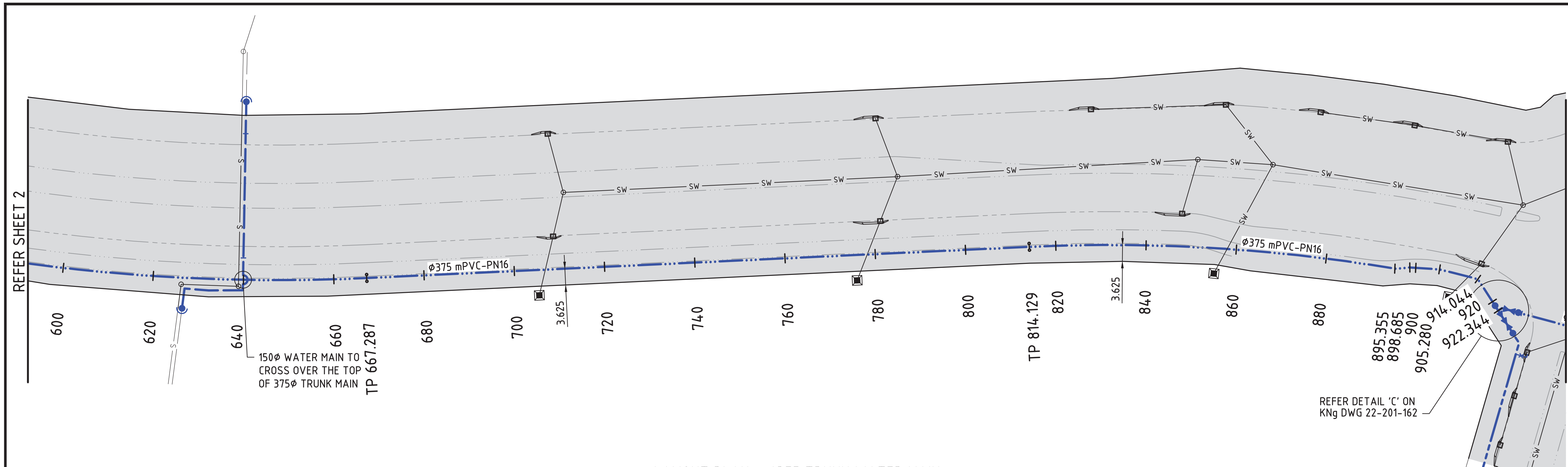
Drawing Title: WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 2

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale: AS SHOWN | Sheet: 168 of 176

A1 | Drawing No: 22-201-168 | Revision: A

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

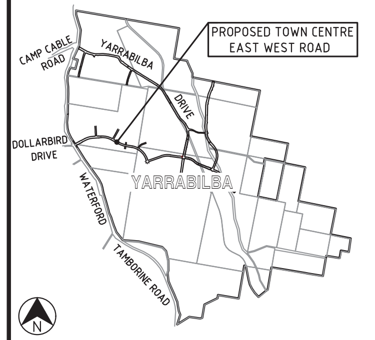


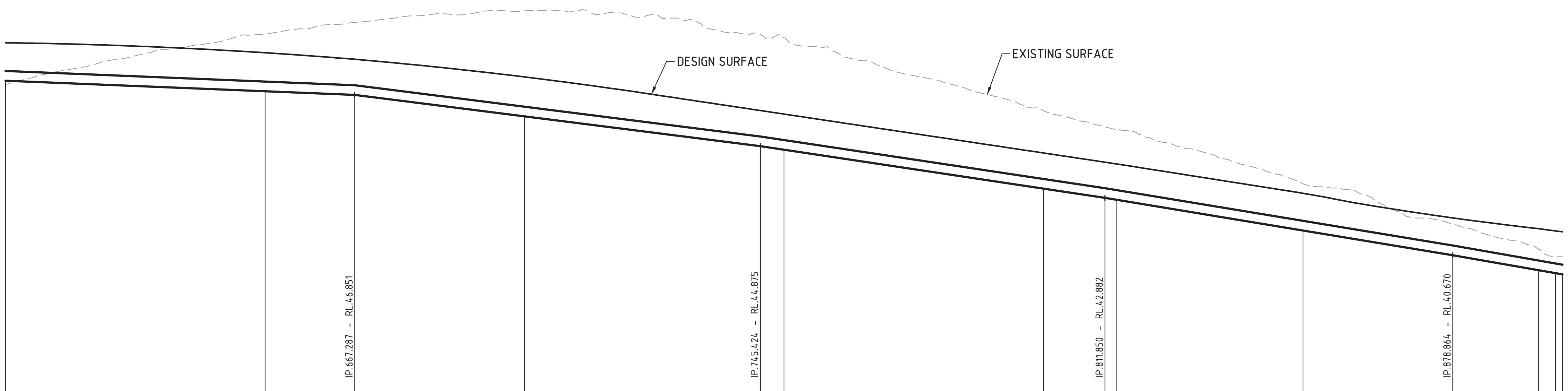
LAYOUT PLAN - Ø375 TRUNK WATER MAIN

SCALE 1:500

NOTE
FOR LEGEND REFER
KNg DWG 22-201-167

LOCALITY PLAN





NOTE
FOR ALL PIPE BENDS,
DEFLECTIONS AND
CLEARANCES REFER TO KNg
DWG 22-201-159 TO 165

Vertical Geometry Grade / Vertical Geometry Length (m)	-0.815% / 77.994	-2.529% / 78.137	-3.001% / 66.426	-3.300% / 67.014	-3.500% / 43.480

PIPE SIZE: Ø375 mPVC-PN16

STAGE: PROPOSED STAGE (TCEW RD)

DATUM R.L.32.000

DESIGN SURFACE	48.863	48.478	48.226	47.545	46.250	46.113	44.613	44.257	44.188	43.057	42.108	41.695	41.605	41.574
DEPTH TO INVERT LEVEL	-1.463	-1.486	-1.375	-1.521	-1.375	-1.375	-1.375	-1.375	-1.381	-1.434	-1.438	-1.602	-1.628	-1.643
NATURAL SURFACE	47.255	49.196	49.647	50.096	49.185	49.048	46.245	45.617	45.533	43.429	41.867	40.897	40.615	40.609
DEPTH TO NATURAL	0.144	-2.204	-2.796	-4.072	-4.310	-4.310	-3.008	-2.735	-2.727	-1.806	-1.197	-0.804	-0.639	-0.679
INVERT LEVEL	47.399	46.992	46.851	46.024	44.875	44.737	43.237	42.882	42.806	41.623	40.670	40.093	39.976	39.930
PEGGED CHAINAGE	600.000	650.000	667.287	700.000	745.424	750.000	800.000	811.850	814.129	850.000	878.864	895.355	898.685	900.000

LONGITUDINAL SECTION - Ø375 TRUNK WATER MAIN

SCALE - H - 1:500
V - 1:100

SCALE 1 : 100 (A1 UNREDUCED)

SCALE 1 : 500 (A1 UNREDUCED)

REVISIONS

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A	FOR APPROVAL	14.03.24	SLK

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EAST-WEST ROAD

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Date: 2024.03.15 11:32:20+10'00'

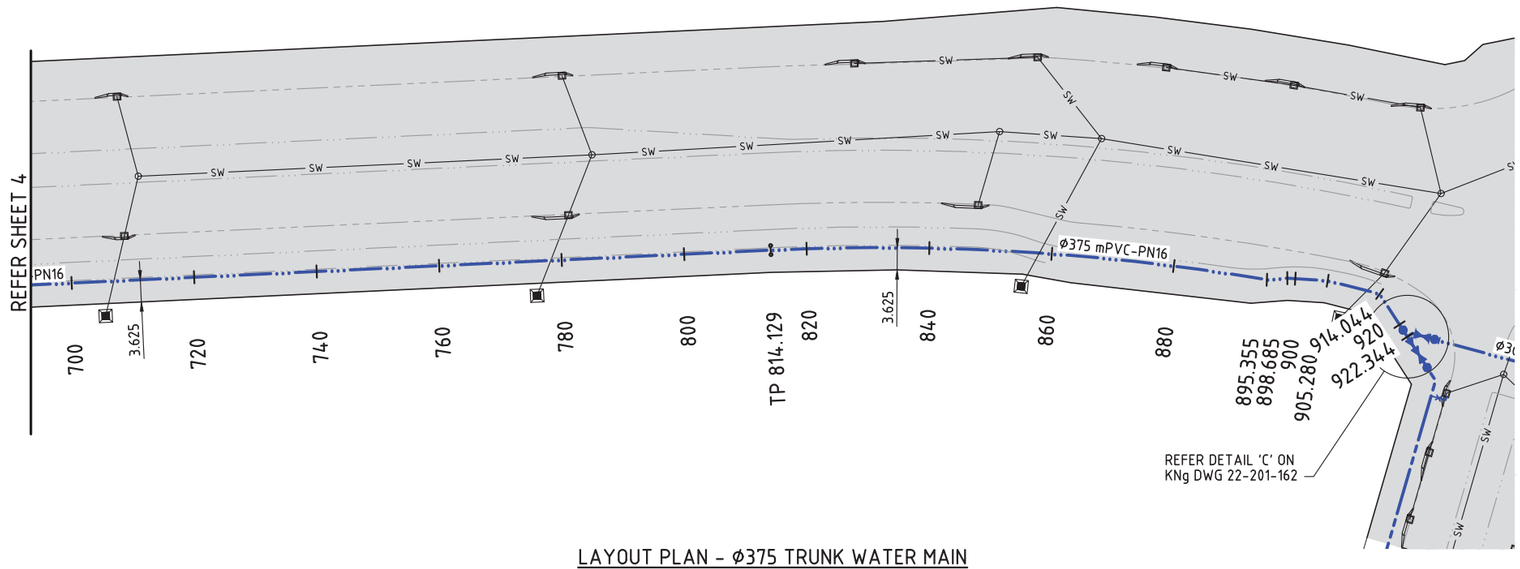
Drawing Title: WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 3

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

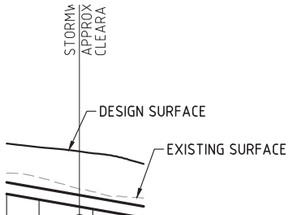
Scale: AS SHOWN | Sheet: 169 of 176

A1 | Drawing No: 22-201-169 | Revision: A

M:\2022\22201 YB - Town Centre East West Rd Detailed\Engineering\Acad\22-201-167-174-W-TRUNK LAYOUT.dwg Plotted by: SLK on 15/03/2024 9:47:49 AM



LAYOUT PLAN - Ø375 TRUNK WATER MAIN
SCALE 1:500



NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165

Vertical Geometry Grade		-3.500%		
Vertical Geometry Length (m)		43.480		
PIPE SIZE		Ø375 mPVC-PN16		
STAGE		PROPOSED STAGE (TCEW RD)		
DATUM R.L.27.000				
DESIGN SURFACE	41.574	41.453	41.254	40.910
DEPTH TO INVERT LEVEL	-1.643	-1.707	-1.815	-1.762
NATURAL SURFACE	40.609	40.468	40.001	39.794
DEPTH TO NATURAL	-0.679	-0.723	-0.563	-0.646
INVERT LEVEL	39.930	39.746	39.439	39.148
PEGGED CHAINAGE	900.000	905.280	914.044	922.344

LONGITUDINAL SECTION - Ø375 TRUNK WATER MAIN
SCALE - H - 1:500
V - 1:100

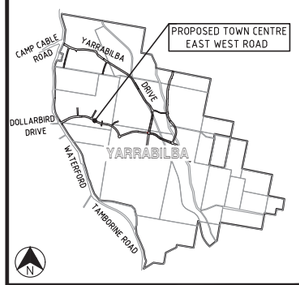
LEGEND
- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
- FH — FIRE HYDRANT
- TFH — TEMPORARY FIRE HYDRANT
- V — VALVE
- R — REDUCER
- AV — AIR VALVE
- SV — SCOUR VALVE
- W — EXISTING WATER MAIN
- SW — STORMWATER DRAINAGE
- S — SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)
- * CONNECTION REQUIRED BY LOGAN WATER

SCALE 1 0.5 0 1 2 3 4 5 6 7 8 9 10m
1 : 100 (A1 UNREDUCED)

SCALE 10 5 0 10 20 30 40 50m
1 : 500 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client
lendlease

Project
YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:21+10'00'

Drawing Title
WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 4

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24
Scale: AS SHOWN			Sheet: 170 of 176
A1	Drawing No: 22-201-170		Revision: A

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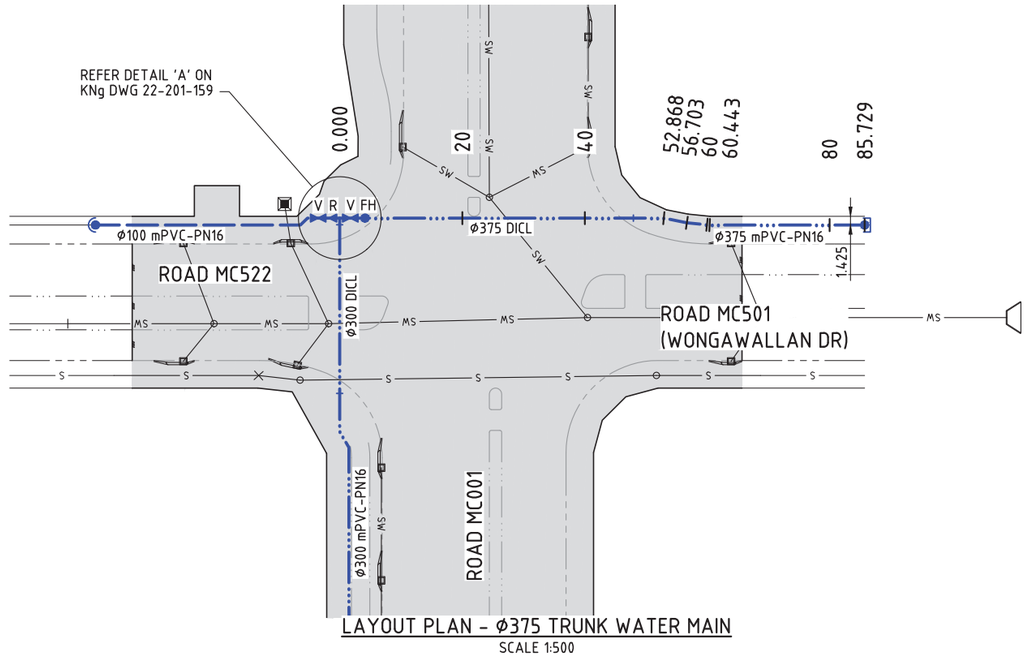
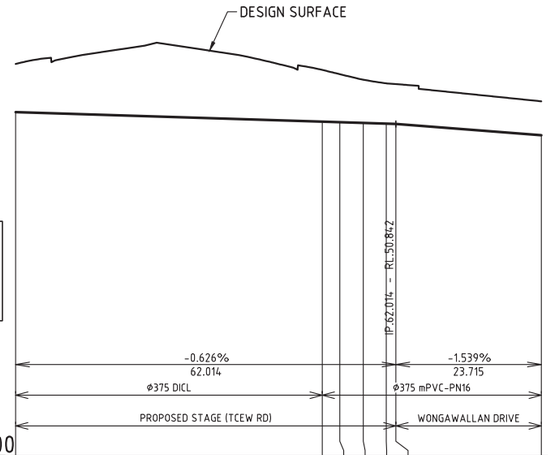


LAYOUT PLAN – ø375 TRUNK WATER MAIN

SCALE 1:500



NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165

Vertical Geometry Grade		-0.626%					-1.539%	
Vertical Geometry Length (m)		62.014					23.715	
PIPE SIZE		ø375 DICL					ø375 mPVC-PN16	
STAGE		PROPOSED STAGE (TCEW RD)					WONGAWALLAN DRIVE	
DATUM R.L.40.000								
DESIGN SURFACE	52.801	52.606	52.466	52.285	52.167	52.142	51.581	
DEPTH TO INVERT LEVEL	-1.570	-1.689	-1.566	-1.410	-1.315	-1.300	-1.104	
NATURAL SURFACE	58.726	58.158	58.111	58.052	57.976	57.950	57.265	
DEPTH TO NATURAL	-7.495	-7.241	-7.211	-7.176	-7.124	-7.108	-6.788	
INVERT LEVEL	51.231	50.918	50.900	50.876	50.852	50.842	50.477	
PEGGED CHAINAGE	0.000	50.000	52.868	56.703	60.443	62.014	85.729	

LONGITUDINAL SECTION – ø375 TRUNK WATER MAIN

SCALE – H – 1:500
V – 1:100

LEGEND

- PROPOSED ø150 WATER MAIN
- PROPOSED ø200 WATER MAIN
- PROPOSED ø250 WATER MAIN
- PROPOSED ø300 WATER MAIN
- PROPOSED ø375 WATER MAIN
- FH – FIRE HYDRANT
- TFH – TEMPORARY FIRE HYDRANT
- V – VALVE
- R – REDUCER
- AV – AIR VALVE
- SV – SCOUR VALVE
- W – EXISTING WATER MAIN
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- S – SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)
- * – CONNECTION REQUIRED BY LOGAN WATER

SCALE 1 0.5 0 1 2 3 4 5 6 7 8 9 10m
1 : 100 (A1 UNREDUCED)

SCALE 10 5 0 10 20 30 40 50m
1 : 500 (A1 UNREDUCED)

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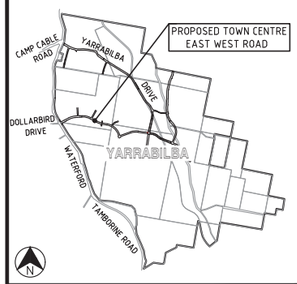
LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client

lendlease

Project

YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved

Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:22+10'00'

Drawing Title

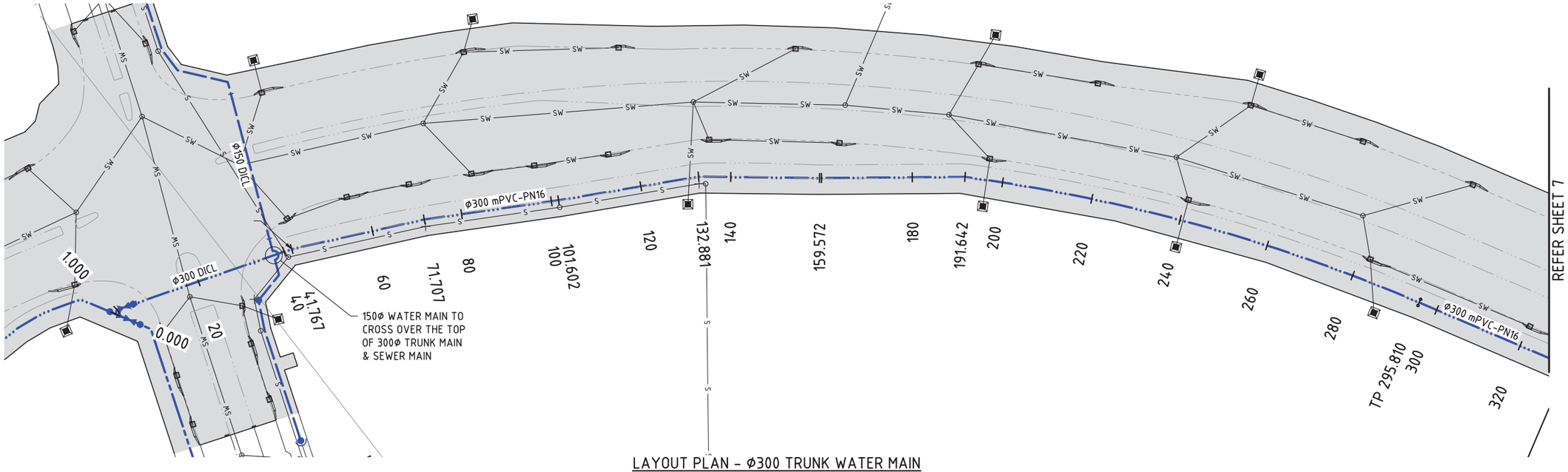
WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 5

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	171 of 176

	Drawing No	Revision
A1	22-201-171	A

M:\2022\22201 YB – Town Centre East West Rd Detailed\Engineering\Acad\22-201-167-171-W-TRUNK LAYOUT.dwg Plotted by: SLK on 15/03/2024 9:47:50 AM

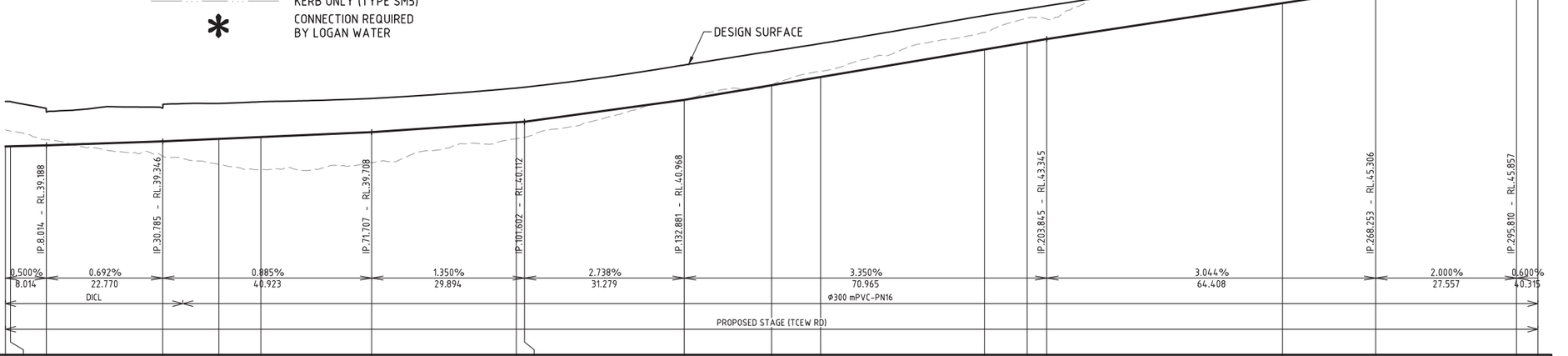


LAYOUT PLAN – Ø300 TRUNK WATER MAIN
SCALE 1:500

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
- FIRE HYDRANT
- TEMPORARY FIRE HYDRANT
- VALVE
- REDUCER
- AIR VALVE
- SCOUR VALVE
- EXISTING WATER MAIN
- STORMWATER DRAINAGE
- SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)
- CONNECTION REQUIRED BY LOGAN WATER

NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165



Vertical Geometry Grade		0.500%		0.692%		0.885%		1.350%		2.738%		3.350%		3.044%		2.000%		0.600%							
Vertical Geometry Length (m)		8.014		22.770		40.923		29.894		31.279		70.965		64.408		27.557		40.315							
PIPE SIZE				DICL								Ø300 mPVC-PN16													
STAGE												PROPOSED STAGE (TCEW RD)													
DATUM R.L.31.000																									
DESIGN SURFACE	40.910	40.903	40.488	40.646	40.829	40.894	41.024	41.430	41.463	42.331	42.873	43.170	44.262	44.525	44.645	46.083	46.622	47.169	47.219						
DEPTH TO INVERT LEVEL	-1.762	-1.749	-1.300	-1.300	-1.385	-1.378	-1.316	-1.340	-1.352	-1.363	-1.331	-1.308	-1.326	-1.308	-1.299	-1.333	-1.316	-1.312	-1.337						
NATURAL SURFACE	39.794	39.751	39.411	38.760	38.442	38.240	38.514	39.451	39.504	40.949	41.548	42.090	43.604	44.169	44.127	47.157	48.321	50.042	50.255						
DEPTH TO NATURAL	-0.646	-0.597	-0.223	0.586	1.001	1.276	1.194	0.639	0.607	0.019	-0.007	-0.228	-0.667	-0.952	-0.782	-2.407	-3.015	-4.185	-4.373						
INVERT LEVEL	39.148	39.153	39.188	39.346	39.443	39.516	39.708	40.090	40.112	40.968	41.542	41.862	42.937	43.217	43.345	44.750	45.306	45.857	45.882						
PEGGED CHAINAGE	0.000	1.000	8.014	30.785	41.767	50.000	71.707	100.000	101.602	132.881	150.000	159.572	191.642	200.000	203.845	250.000	268.253	295.810	300.000						

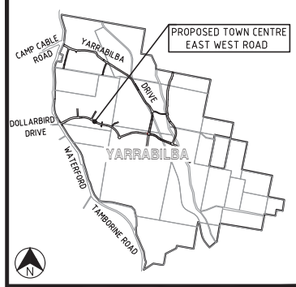
LONGITUDINAL SECTION – Ø300 TRUNK WATER MAIN
SCALE – H – 1:500
V – 1:100

SCALE 1 0.5 0 1 2 3 4 5 6 7 8 9 10m
1 : 100 (A1 UNREDUCED)

SCALE 10 5 0 10 20 30 40 50m
1 : 500 (A1 UNREDUCED)

DO NOT SCALE THIS DRAWING
IF IN DOUBT - ASK!

LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:22+10'00'

Drawing Title
WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 6

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	172 of 176

	Drawing No	Revision
A1	22-201-172	A

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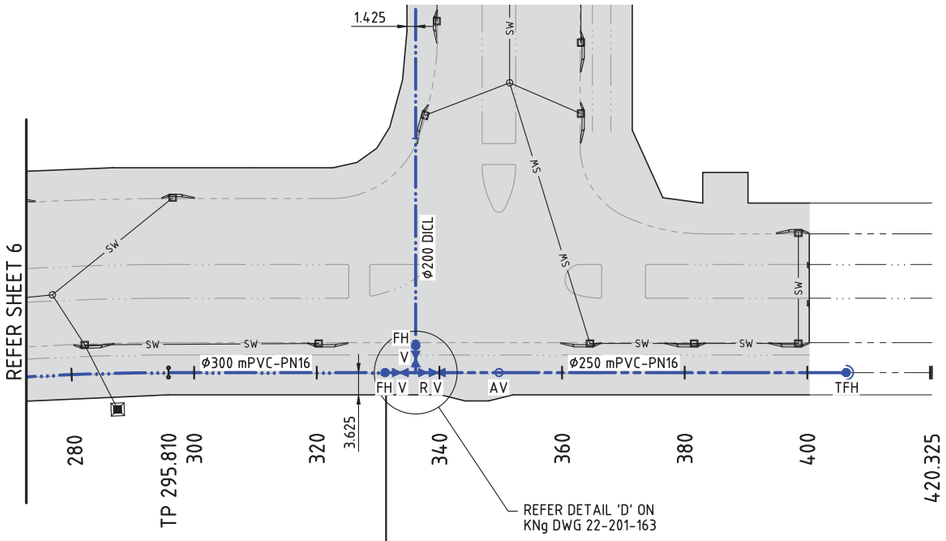
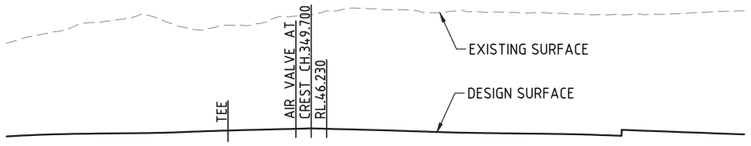
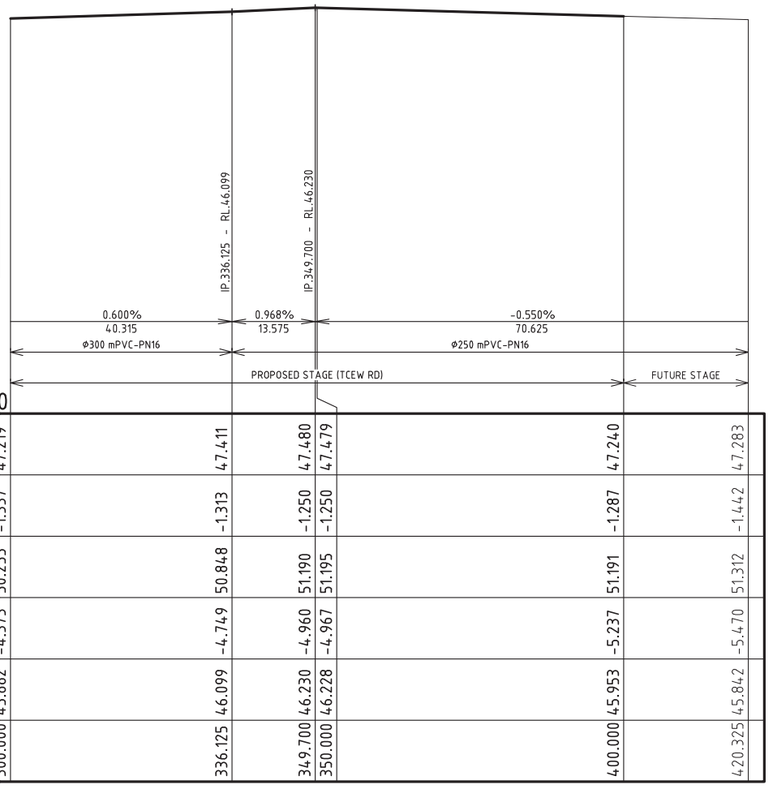


LAYOUT PLAN – Ø300 TRUNK WATER MAIN

SCALE 1:500



NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165



DESIGN SURFACE	47.219	47.411	47.480	47.479	47.240	47.283	
DEPTH TO INVERT LEVEL	-1.337	-1.313	-1.250	-1.250	-1.287	-1.442	
NATURAL SURFACE	50.255	50.848	51.190	51.195	51.191	51.312	
DEPTH TO NATURAL	-4.373	-4.749	-4.960	-4.967	-5.237	-5.470	
INVERT LEVEL	45.882	46.099	46.230	46.228	45.953	45.842	
PEGGED CHAINAGE	300.000	336.125	349.700	350.000	400.000	420.325	

LONGITUDINAL SECTION – Ø300 TRUNK WATER MAIN

SCALE – H – 1:500
V – 1:100

LEGEND

- PROPOSED Ø150 WATER MAIN
- PROPOSED Ø200 WATER MAIN
- PROPOSED Ø250 WATER MAIN
- PROPOSED Ø300 WATER MAIN
- PROPOSED Ø375 WATER MAIN
- FH – FIRE HYDRANT
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- V – VALVE
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- S – SEWER MAIN
- KERB AND CHANNEL (TYPE B1)
- KERB ONLY (TYPE SM5)
- * – CONNECTION REQUIRED BY LOGAN WATER

SCALE 1 0.5 0 1 2 3 4 5 6 7 8 9 10m
1 : 100 (A1 UNREDUCED)

SCALE 10 5 0 10 20 30 40 50m
1 : 500 (A1 UNREDUCED)

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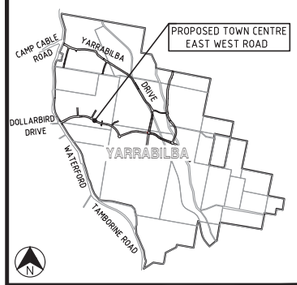
LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client: lendlease

Project: YARRABILBA
TOWN CENTRE
EAST-WEST ROAD

kn group
ABN 35 112 53 611
L1, 62 Astor Tce
Spring Hill Q 4000
07 3017 1900
www.kngroup.com.au

Approved
Digitally signed by Robert William Mander BEng (Civil), CPEng, RPEQ 12805
Date: 2024.03.15 11:32:23+10'00'

Drawing Title
WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 7

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24

Scale	Sheet
AS SHOWN	173 of 176

	Drawing No	Revision
A1	22-201-173	A

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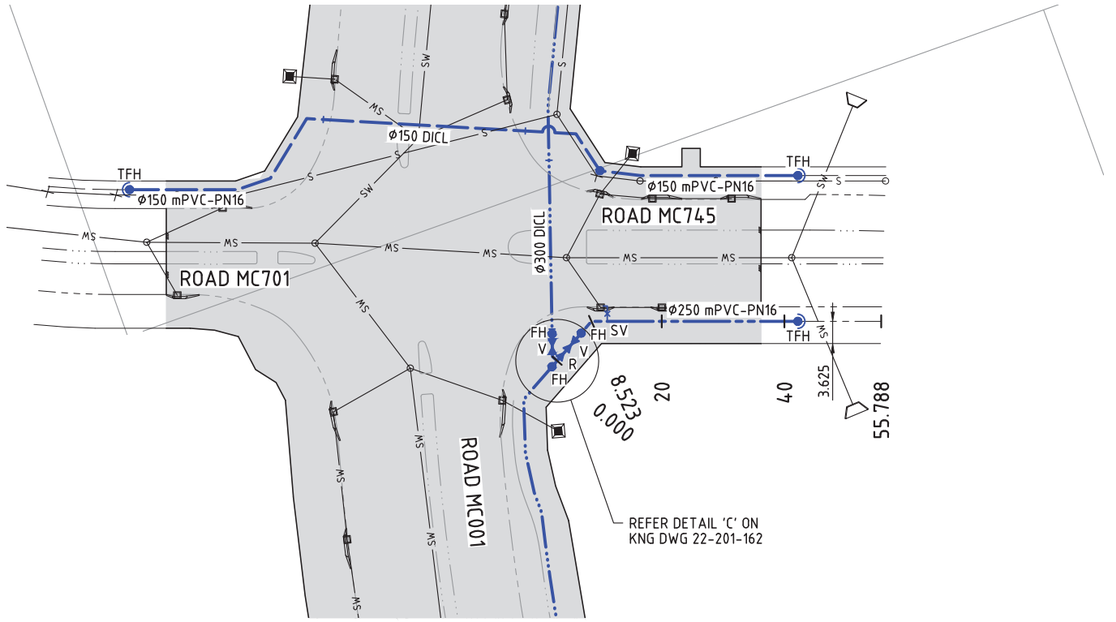
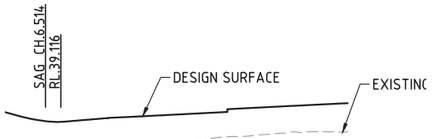


LAYOUT - ø250 TRUNK WATER MAIN
SCALE 1:500



NOTE
FOR ALL PIPE BENDS, DEFLECTIONS AND CLEARANCES REFER TO KNg DWG 22-201-159 TO 165

Vertical Geometry Grade		-0.500%	3.386%		1.000%	
Vertical Geometry Length (m)		6.514	10.703		38.571	
PIPE SIZE		ø250 mPVC-PN16				
STAGE		PROPOSED STAGE			FUTURE STAGE	
DATUM R.L.26.000						
DESIGN SURFACE	40.910	40.617	40.590	40.728	41.148	41.205
DEPTH TO INVERT LEVEL	-1.762	-1.502	-1.406	-1.250	-1.342	-1.341
NATURAL SURFACE	39.794	39.585	39.563	39.783	40.275	40.275
DEPTH TO NATURAL	-0.646	-0.469	-0.379	-0.305	-0.469	-0.411
INVERT LEVEL	39.148	39.116	39.184	39.478	39.806	39.864
PEGGED CHAINAGE	0.000	6.514	8.523	17.218	50.000	55.788

IP.6.514 - RL.39.116
IP.17.218 - RL.39.478

LONGITUDINAL SECTION - ø250 TRUNK WATER MAIN
SCALE - H - 1:500
V - 1:100

LEGEND
- PROPOSED ø150 WATER MAIN
- PROPOSED ø200 WATER MAIN
- PROPOSED ø250 WATER MAIN
- PROPOSED ø300 WATER MAIN
- PROPOSED ø375 WATER MAIN
- FH — FIRE HYDRANT
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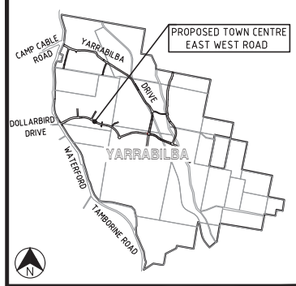
LOCALITY PLAN



REVISIONS

No	Description	Date	By
A	FOR APPROVAL	14.03.24	SLK

Client
lendlease

Project
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TOWN CENTRE
EAST-WEST ROAD

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Date: 2024.03.15 11:32:24+10'00'

Drawing Title
WATER RETICULATION
LAYOUT & LONG. SECTIONS
SHEET 8

Drawn	Designed	Checked	Date
SLK	JAS	RWM	MAR 24
Scale: AS SHOWN			Sheet: 174 of 176
A1	Drawing No: 22-201-174		Revision: A

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CREATING COMMUNITIES

Communities are fundamental. Whether around the corner or across the globe, they provide a foundation, a sense of belonging. That's why at Stantec, we always **design with community in mind**.

We care about the communities we serve—because they're our communities too. We're designers, engineers, scientists, and project managers, innovating together at the intersection of community, creativity, and client relationships. Balancing these priorities results in projects that advance the quality of life in communities across the globe.

Australian offices:
Adelaide, Albany, Brisbane, Busselton,
Gold Coast, Karratha, Melbourne, Newcastle, Perth,
Rockhampton, Sydney

Stantec Australia Pty Ltd
Level 3, SW1 52 Merivale Street
PO Box 3602
SOUTH BRISBANE, QLD 4101