

**To**

Sam Saunders  
Property Development Advisor  
ssaunders@propertygroup.co.nz

**From**

Woods  
Tim Brock – Engineer

W-REF: P18-303 – Milldale Civil Stage 3A  
14 August 2019  
Reviewer: Jamie Whyte

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## Memorandum

### Infrastructure Capacity at the Milldale School Site

#### 1. Introduction

Fulton Hogan Land Development are working with the Ministry of Education on establishing a 3.75 Ha school site within the Milldale development. This memorandum details the initial design work undertaken to provide a serviced school site for road access, stormwater, wastewater, water supply, power, gas, and telecommunications.

#### 2. Roading

The school site has road frontage on all four sides, with an arterial road frontage along the western boundary and local suburban street frontages to the north, east and south.

##### 2.1. Road Typologies:

There are three different road typographies for the roads surrounding the site.

- Roads 11 and 18 (south and eastern frontages) are both the suburban street typography which includes a 5.6m wide carriageway and 1.8m wide footpaths on both sides.;
- The stream edge road along the northern frontage also has a 5.6m wide carriageway with a 1.8m wide footpath along the frontage with the school and 3.0m wide shared path along the stream edge that links with the wider Milldale shared path network.
- Argent Lane along the western frontage is a 30m wide road reserve. It will be constructed to a collector road standard with this development, but has capacity within the 30m road reserve to be widened to a 4 lane arterial road in the future.

All roads within Milldale required 'at source' stormwater mitigation. This is achieved by rain garden detention located within the road berms. All roads around the school site will have rain garden detention devices. The layout of these devices is demonstrated on the attached drawing - P18-303-3A-050-EW.

These road typology plans are shown in the attached drawings P17-003-221, P17-003-223 and P17-003-224.

##### 2.2. Parking

Drawing P18-303-050 shows parking bay locations on the suburban streets surrounding the School Site. Consideration has been given to enabling as many parking opportunities around the school site as possible. There is no provision for public parking along the Argent Lane frontage.

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## 2.3. Public Transport

Argent Lane is a planned public transport route within the development. As part of the engineering approval design for Stage 3A, provisions for bus stops have been made for the section of Argent Lane adjacent to the school site.

While the provision for public transport and bus stops has been enabled along Argent Lane, there is no confirmed commencement date from Auckland Transport as to when public transport services will be operational.

## 3. Stormwater

The stormwater in the School Site is collected in a manhole located in the lowest part of the site which is the north-east corner of the site as shown in drawing P18-303-050. This manhole outlets into a 750mm diameter pipe which discharges into the Waterloo stream. This has been sized assuming that the school site has a maximum of 60% impervious coverage which includes 45% building coverage. This assumption has been used as the school site is zoned "Mixed Housing Urban".

## 4. Wastewater

The wastewater for the school site collects in a manhole located in lowest part of the site which is the north-east corner of the site as shown in the attached drawing P18-303-050. The outlet from the manhole is a 150mm diameter pipe which will have sufficient capacity for the proposed school.

## 5. Water Supply

The current potable water design layout has pressurised potable water laid in all the roads surrounding the school site. There is the potential to have a connection to the school site in any location. If the Ministry of Education designers can supply where water connections are desired Woods can check the design and ensure that there is capacity in the pipes to take the load generated by the school.

## 6. Power

A design for the power layout has not yet been done for the site. Woods expect that the power design will have cables laid along Argent Lane and Roads 11 and 18. Our preference would be to know where the Ministry of Education require power connection points and the supply volume so that the power designers can incorporate this into the power layout design.

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## 7. Gas

There currently is no gas design for the site. Our preference would be to know where the Ministry of Education require gas a connection point and the anticipated supply volume so that the service provider can incorporate this into the gas layout design.

## 8. Communications

The design for the communication service has not yet been done around the school site. The preference of Woods would be to know where the Ministry of Education require power connection points and the expected supply volume so that the service provider can incorporate this into the layout design.

Yours faithfully



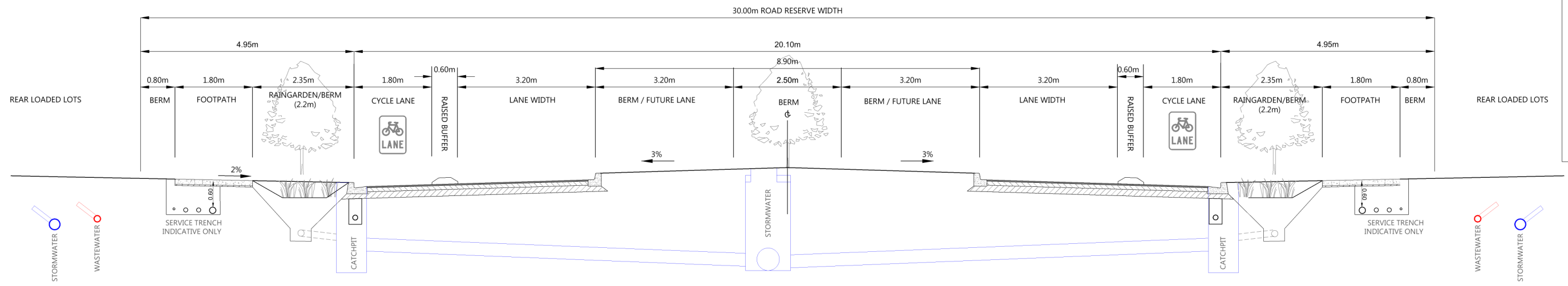
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*Tim Brock*

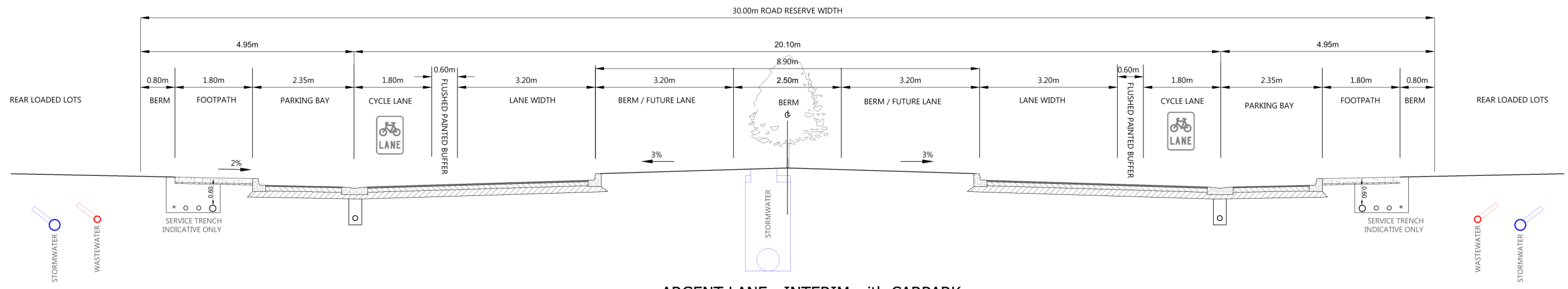
*Engineer*

Email – [timothy.brock@woods.co.nz](mailto:timothy.brock@woods.co.nz)

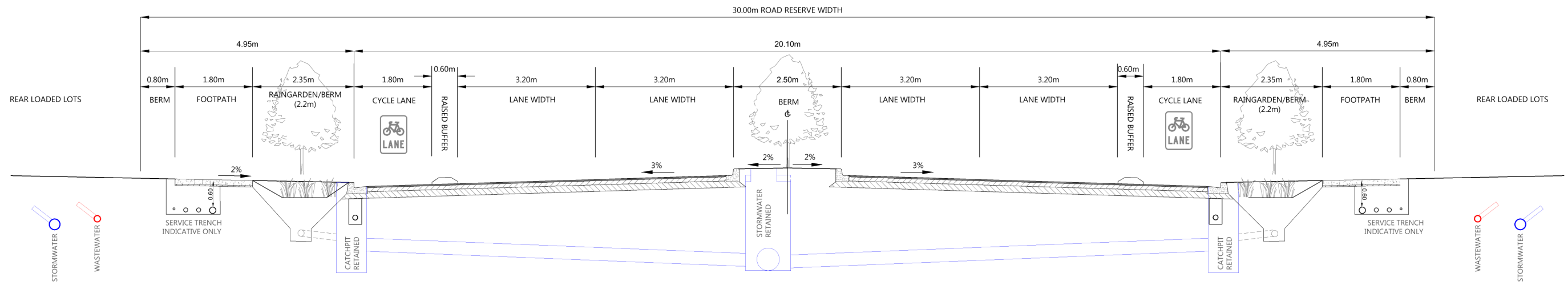
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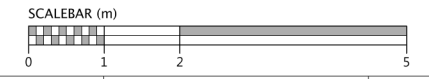
ARGENT LANE - INTERIM  
Scale: 1:100



ARGENT LANE - INTERIM with CARPARK  
Scale: 1:100



ARGENT LANE - FUTURE  
Scale: 1:100



REVISION DETAILS	INT	DATE	SURVEYED	WOODS
1 ISSUED FOR CONSENT	JW	JUNE 2018	DESIGNED	JW
2 S.92 RESPONSE	JW	MARCH 2019	DRAWN	FA
			CHECKED	JW
			APPROVED	JW

CLIENT:

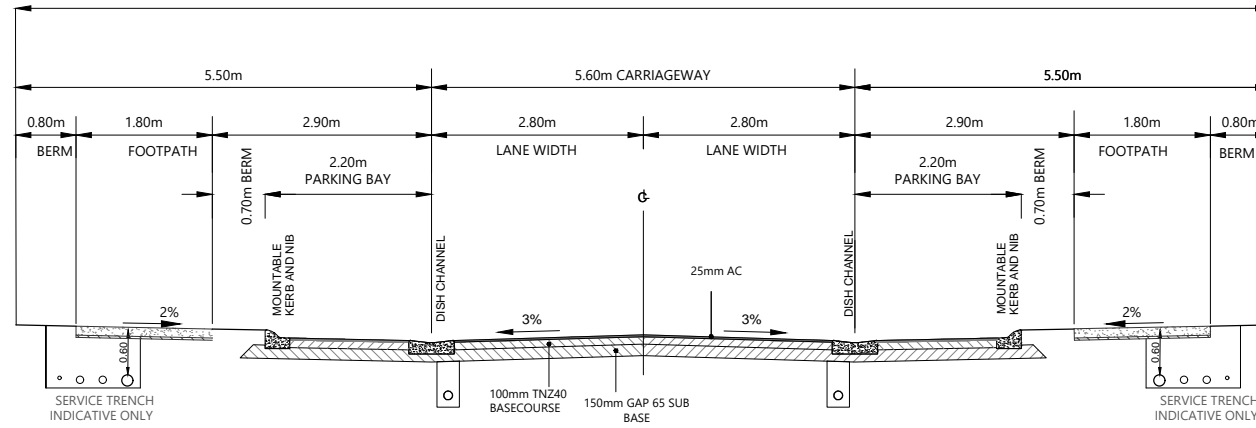
**MILLDALE**  
Connecting Lifestyles

**MILLDALE - STAGE 3**

TYPICAL ROAD CROSS SECTIONS ARGENT LANE INTERIM

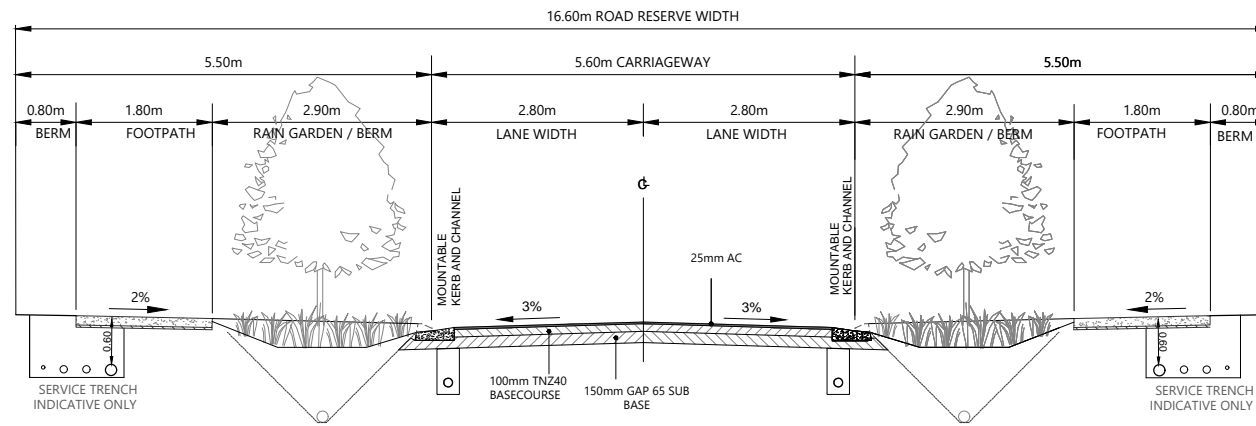
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SCALE	1:100 @A3	2
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P17-003-221-RD	





**SUBURBAN STREET TYPE 1 INDENTED PARKING BAYS**

Scale: 1:100



**SUBURBAN STREET TYPE 2**

Scale: 1:100

TYPE 1 LOCAL ROADS  
 INDENTED PARKING BAYS. NO PARKING LINES BOTH SIDES OF THE ROAD

TYPE 2 LOCAL ROADS  
 NO PARKING BAYS PROVIDED. NO PARKING LINES TO BE PAINTED DOWN ONE SIDE OF THE ROAD



REVISION DETAILS	INT	DATE	SURVEYED	WOODS
1 ISSUED FOR CONSENT	JW	JUNE 2018	DESIGNED	JW
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			CHECKED	JW
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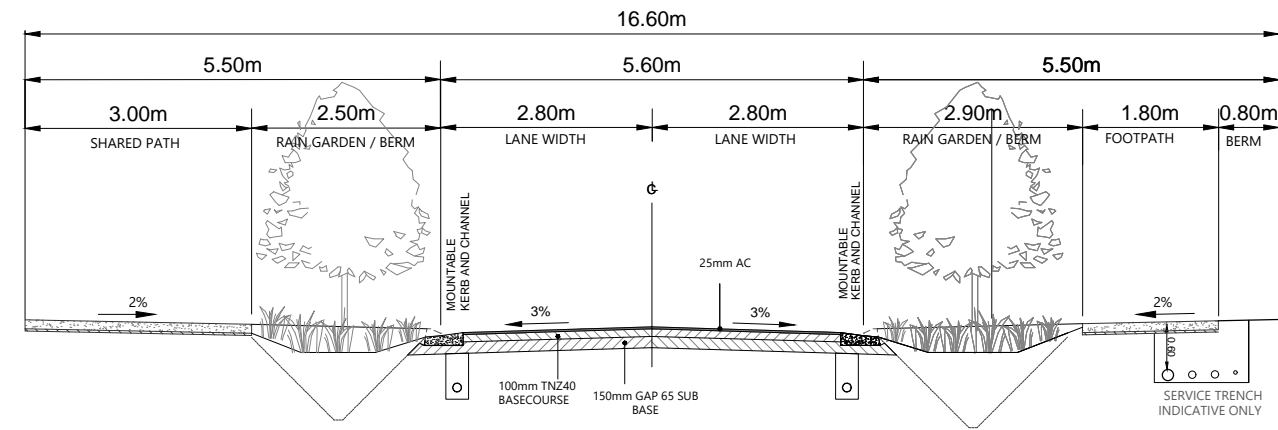
CLIENT:

MILLDALE  
 Connecting & Inspiring

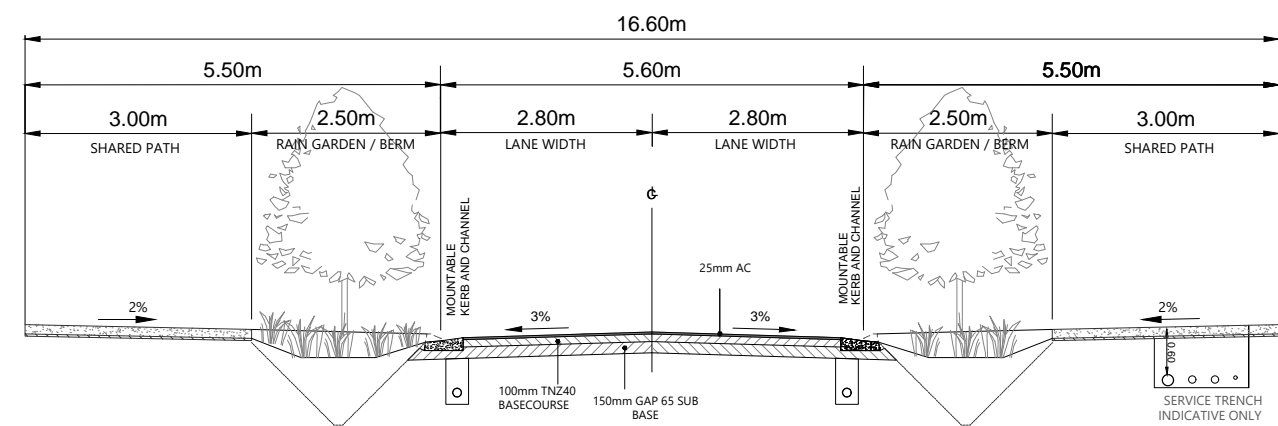
**MILLDALE - STAGE 3**

TYPICAL ROAD CROSS SECTIONS SUBURBAN STREETS

STATUS	ISSUED FOR CONSENT	REV
SCALE	1:100 @A3	2
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P17-003-223-RD	



**SUBURBAN STREET WITH SHARED PATH**  
Scale: 1:100



**SUBURBAN STREET WITH SHARED PATH BOTH SIDES**  
Scale: 1:100

SUBURBAN STREET WITH SHARED PATH & SUBURBAN STREET WITH SHARED PATH BOTH SIDES  
NO PARKING BAYS PROVIDED. NO PARKING LINES TO BE PAINTED DOWN BOTH SIDES OF THE ROAD



REVISION DETAILS	INT	DATE	SURVEYED	WOODS
1 ISSUED FOR CONSENT	JW	JUNE 2018	DESIGNED	JW
2 S.92 RESPONSE	JW	MARCH 2019	DRAWN	FA
			CHECKED	JW
			APPROVED	JW

CLIENT:

**MILLDALE**  
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**MILLDALE - STAGE 3**

TYPICAL ROAD CROSS SECTIONS SUBURBAN STREETS

STATUS	ISSUED FOR CONSENT	REV
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COUNCIL	AUCKLAND COUNCIL	
DWG NO	P17-003-224-RD	

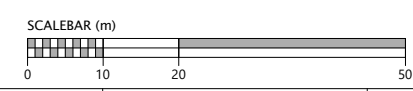


MoE SITE  
3.7480 Ha

SUPERLOT

**LEGEND**

- RAINGARDEN
- PROPOSED DRIVEWAY LOCATION
- MAJOR CONTOURS (1m)
- MINOR CONTOURS (0.25m)



REVISION DETAILS	INT	DATE	SURVEYED	DESIGNED	DRAWN	CHECKED	APPROVED
1 FOR DISCUSSION				TGB	TGB		

MILLDALE  
WAINUI  
AUCKLAND  
[WOODS.CO.NZ](http://WOODS.CO.NZ)



**MILLDALE - CIVIL STAGE 3A**  
SCHOOL SITE - OVERALL PLAN



STATUS	ISSUED FOR INFORMATION	REV
SCALE	1:1000 @ A3	1
COUNCIL	AUCKLAND COUNCIL	
DWG NO	P18-303-050-EW	