

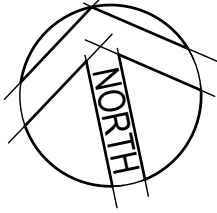
XREF's:



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn YNL	Date 1/10/2019	Client LENLEASE COMMUNITIES					
Checked PL	Date 1/10/2019	Project CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION	Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Designed HLD	Date 1/10/2019						
Verified PL	Date 1/10/2019						
Approved		Title GENERAL ARRANGEMENT PLAN					
AJG	1/10/2019		Datum A.H.D		Date Oct 2019	Scale 1:2000	Size A1
			Drawing Number 80219053-001-CI-1031				Revision 3



UNIVERSITY OF WESTERN
SYDNEY

EXISTING RAILWAY CORRIDOR

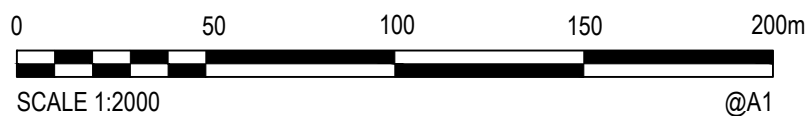


LEGEND

- WERRINGTON ROAD (ARTERIAL ROAD)
- EAST WEST LINK ROAD (MAJOR COLLECTOR ROAD)
- NORTH SOUTH LINK ROAD (MINOR COLLECTOR ROAD)
- LOCAL ROAD
- MINOR LOCAL ROAD
- LANEWAY
- DRIVEWAY

NOTE

THE LAYOUT IS BASED ON INFORMATION PROVIDED BY
LENLEASE SW LOT YIELD OPT9H (DATED 24/09/2019)



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
A/JG		1/10/2019	

Client **LENLEASE COMMUNITIES**

Project **CHAPMAN STREET WERRINGTON**

CIVIL WORKS
DEVELOPMENT APPLICATION

Title **ROAD HIERARCHY PLAN**

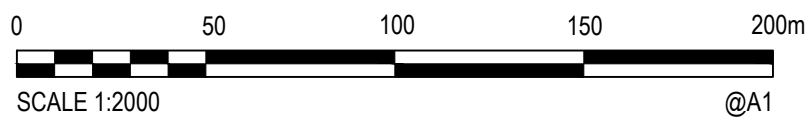
Status				
FOR APPROVAL				
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct' 2019	1:2000	A1	
Drawing Number			Revision	
80219053-001-CI-1041			3	

DATE PLOTTED: 1 October 2019 3:1 PM BY: YIN NWE LWN

XREFs: XR-80219053-CI-BOUNDARY; XR-80219053-CI-SURVEY; XR-80219053-CI-EXISTING SERVICES; XR-80219053-CI-CONTROL; XR-80219053-CI-EXIST CONTOURS-500
CAD File: \\cardno-cad\global\AU\NSW\Drawings\Build\001 CIVIL WORKS\80219053-001-CI-1051 EXISTING SERVICES AND SURVEY PLAN.dwg



Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

 **Cardno**
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

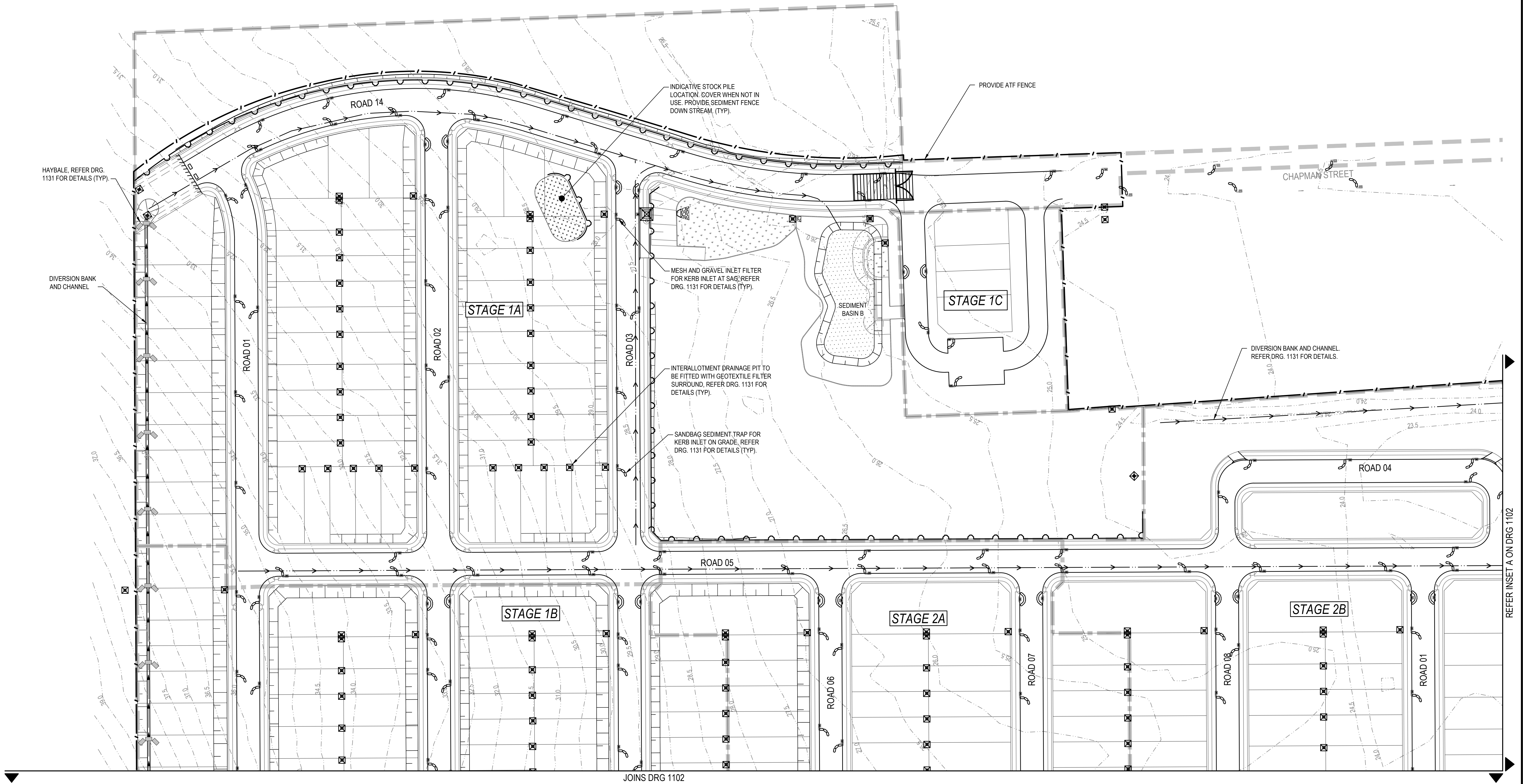
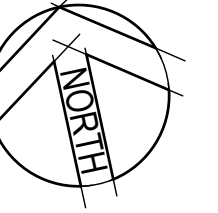
Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	EXISTING SERVICES AND SURVEY PLAN

Status	FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct' 2019	1:2000	A1	
Drawing Number			Revision	
80219053-001-CI-1051			3	

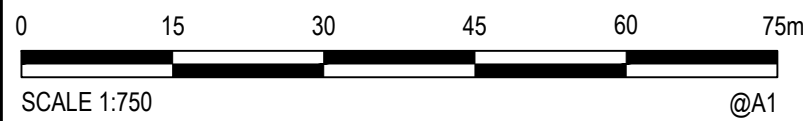
XREFs: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-STORMWATER; XR-80219053-CI-STEWORKS; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SED-EROS; XR-80219053-CI-ROUNDABOUT; XR-80219053-CI-SURVEY
CAD File: \\cardno-corp\global\AU\NSW\Drawings\Build\001\Civil Works\80219053-001-CI-1101-103 EROSION AND SEDIMENTATION CONTROL PLAN.dwg
DATE PLOTTED: 1 October 2019 5:31 PM BY: YIN NWE LWIN

NOTE

REFER DRG. 1011 FOR NOTES AND LEGEND.



Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



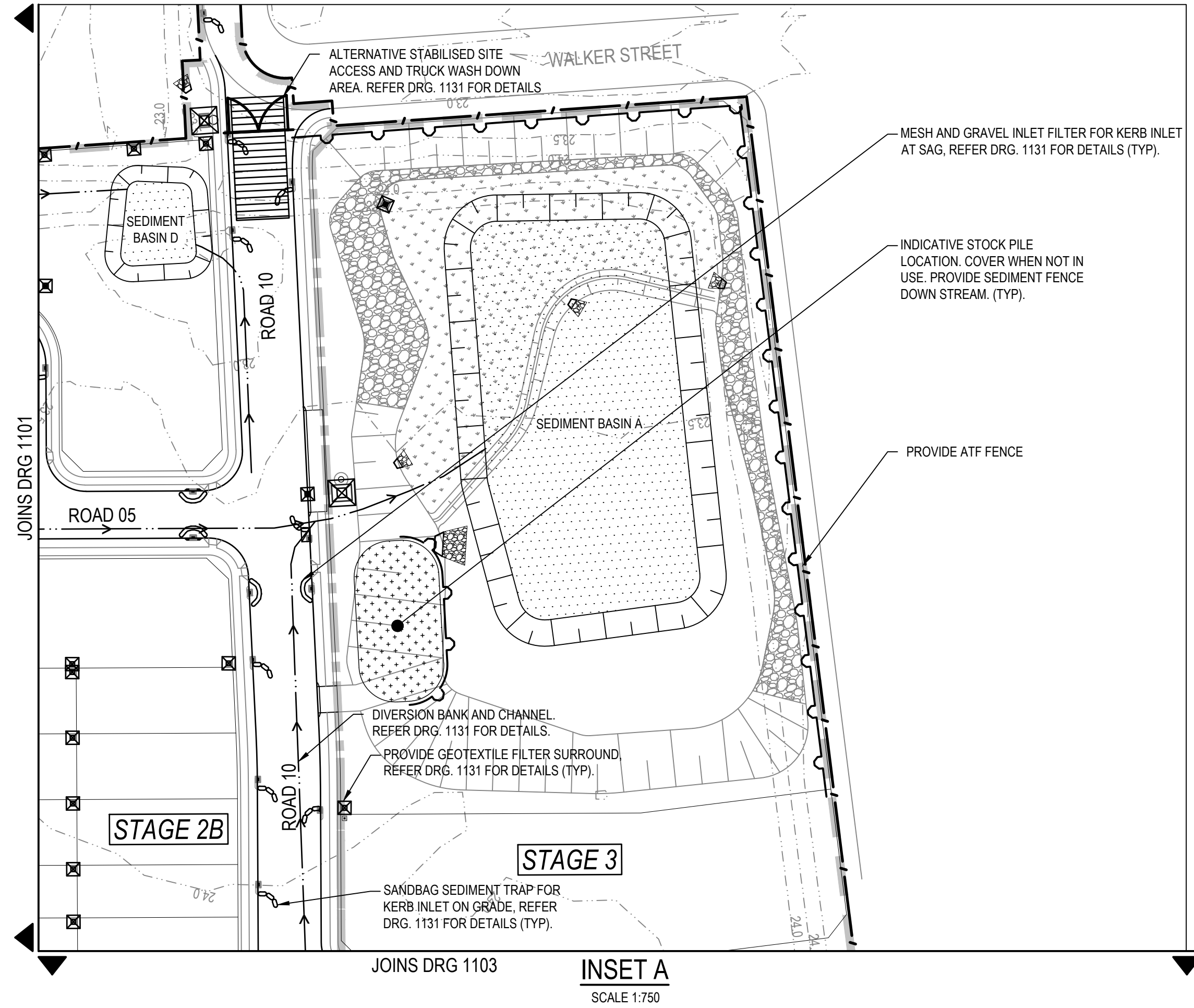
Cardno
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

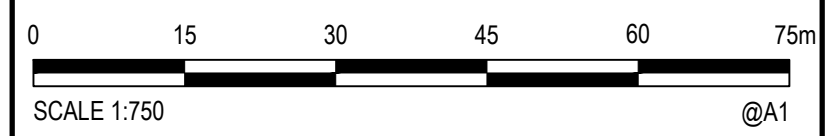
Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
AJG		1/10/2019	

Client	LENDEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	EROSION AND SEDIMENT CONTROL PLAN
	SHEET 1 OF 3

Status	FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct' 2019	1:750	A1	
Drawing Number			Revision	
80219053-001-CI-1101			3	



NOTE
REFER DRG. 1011 FOR NOTES AND LEGEND.



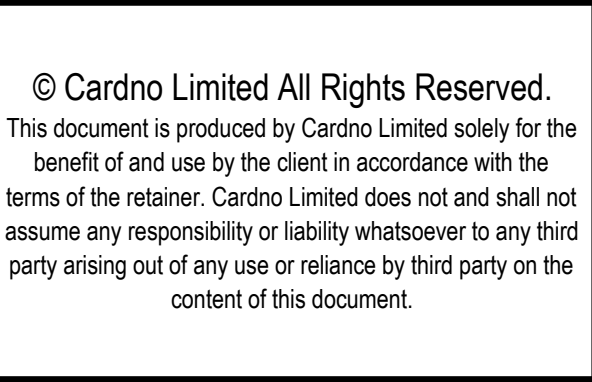
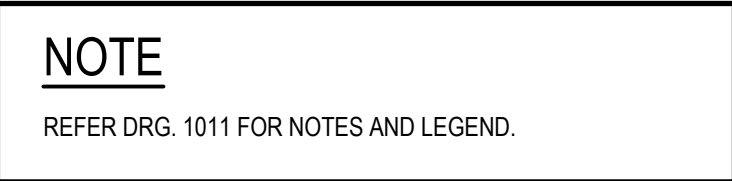
© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the
benefit of and use by the client in accordance with the
terms of the retainer. Cardno Limited does not and shall not
assume any responsibility or liability whatsoever to any third
party arising out of any use or reliance by third party on the
content of this document.



Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved	
AJG	1/10/2019

Client	LENDEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	EROSION AND SEDIMENT CONTROL PLAN SHEET 2 OF 3

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:750	A1
Drawing Number			Revision
80219053-001-CI-1102			3

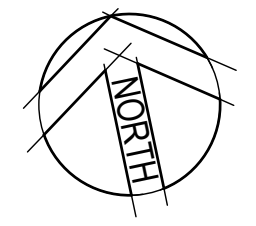
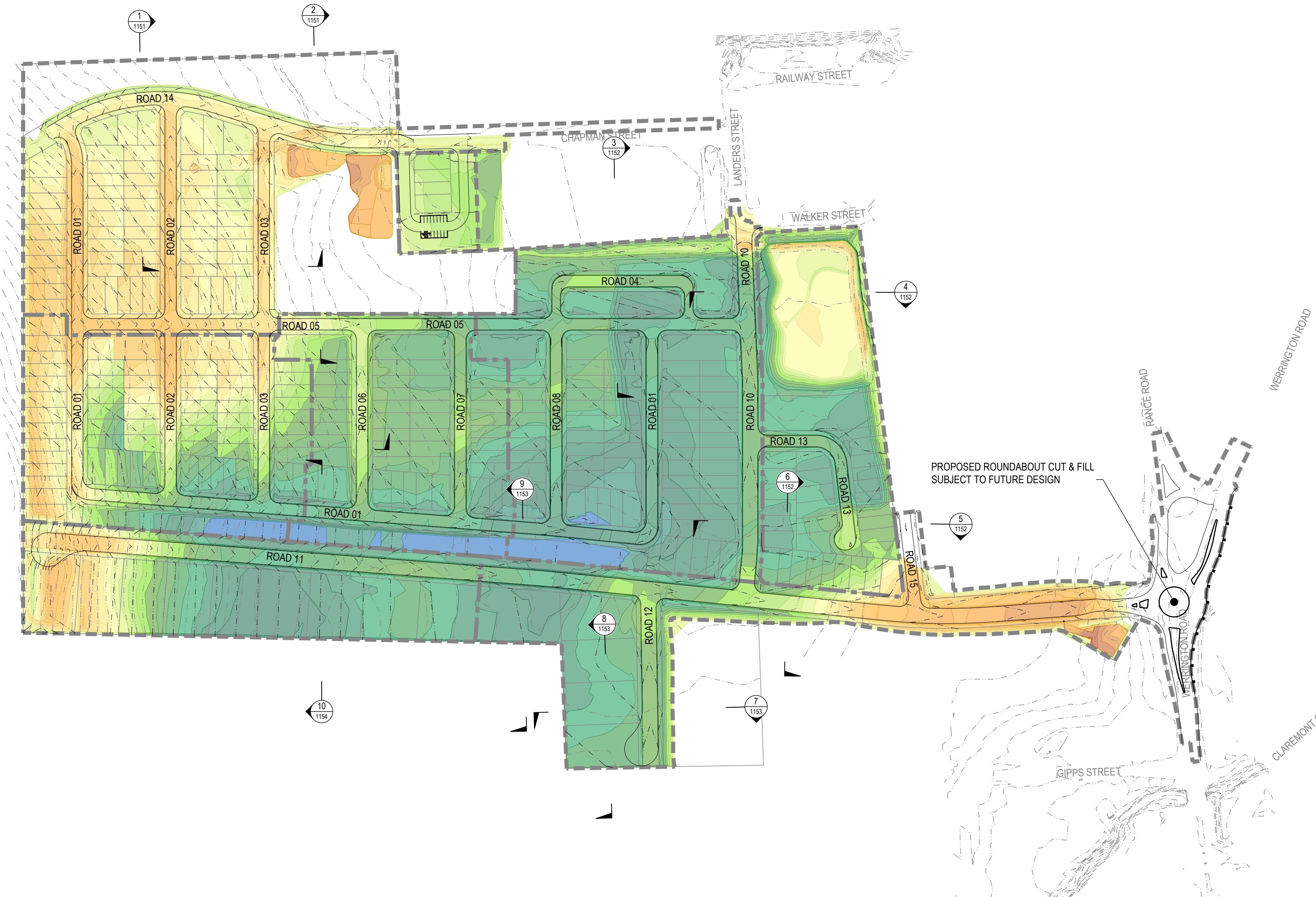


Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:750	A1
Drawing Number			Revision
80219053-001-CI-1103			3

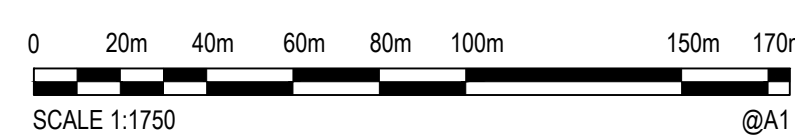


Status				FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Date	Date	Scale	Size		
A.H.D	Oct' 2019	AS SHOWN	A1		
Drawing Number				Revision	
80219053-001-CI-1131				3	



LEGEND	
[Red]	CUT GREATER THAN 3m
[Dark Red]	CUT BETWEEN 2.75m AND 3m
[Orange]	CUT BETWEEN 2.5m AND 2.75m
[Light Orange]	CUT BETWEEN 2.25m AND 2.5m
[Yellow-Orange]	CUT BETWEEN 2.0m AND 2.25m
[Yellow]	CUT BETWEEN 1.75m AND 2.0m
[Light Yellow]	CUT BETWEEN 1.5m AND 1.75m
[Pale Yellow]	CUT BETWEEN 1.25m AND 1.5m
[Light Green]	CUT BETWEEN 1.0m AND 1.25m
[Green]	CUT BETWEEN 0.75m AND 1.0m
[Light Green]	CUT BETWEEN 0.5m AND 0.75m
[Yellow-Green]	CUT BETWEEN 0.25m AND 0.5m
[Light Green]	CUT LESS THAN 0.25m
[Light Green]	FILL LESS THAN 0.25m
[Light Green]	FILL BETWEEN 0.25m AND 0.5m
[Light Green]	FILL BETWEEN 0.5m AND 0.75m
[Light Green]	FILL BETWEEN 0.75m AND 1.0m
[Light Green]	FILL BETWEEN 1.0m AND 1.25m
[Light Green]	FILL BETWEEN 1.25m AND 1.5m
[Light Green]	FILL BETWEEN 1.5m AND 1.75m
[Light Green]	FILL BETWEEN 1.75m AND 2.0m
[Light Green]	FILL BETWEEN 2.0m AND 2.25m
[Light Green]	FILL BETWEEN 2.25m AND 2.5m
[Light Green]	FILL BETWEEN 2.5m AND 2.75m
[Light Green]	FILL BETWEEN 2.75m AND 3.0m
[Blue]	FILL GREATER THAN 3.0m

APPROXIMATE BULK EARTHWORK VOLUMES	
CUT =	- 45650m³
FILL =	+ 301790m³
BALANCE =	256141m³



Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

**Cardno**
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
AJG		1/10/2019	

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	CUT AND FILL PLAN

Status	FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct 2019	1:1750	A1	
Drawing Number			Revision	
80219053-001-CI-1141			3	



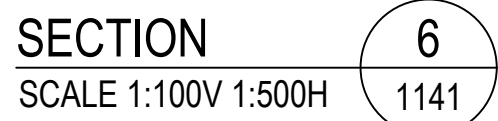
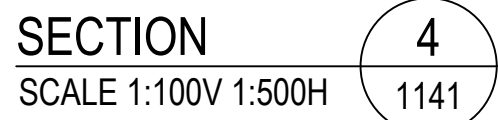
H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



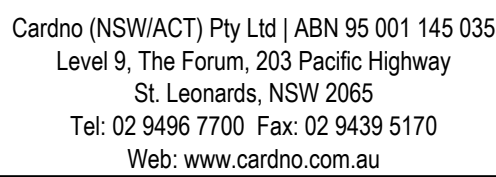
Client	LENDLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	SITE SECTIONS SHEET 1 OF 5

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1
Drawing Number			Revision
80219053-001-CI-1151			3



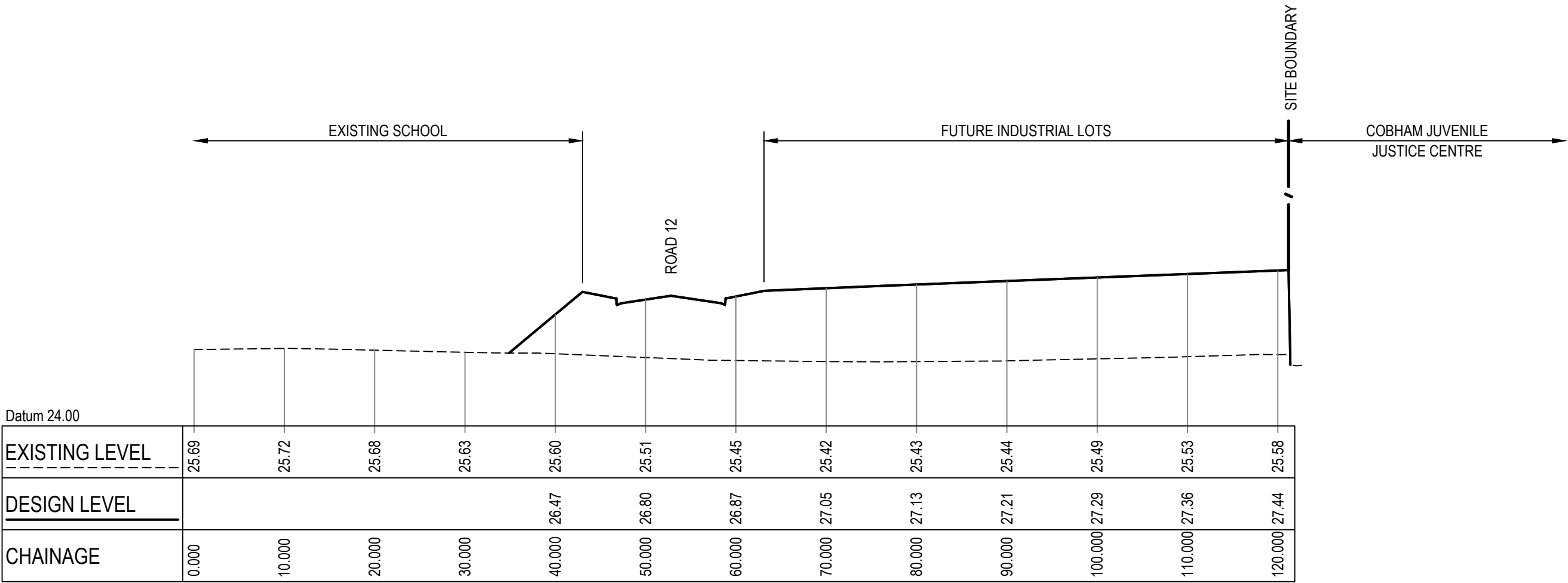
H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

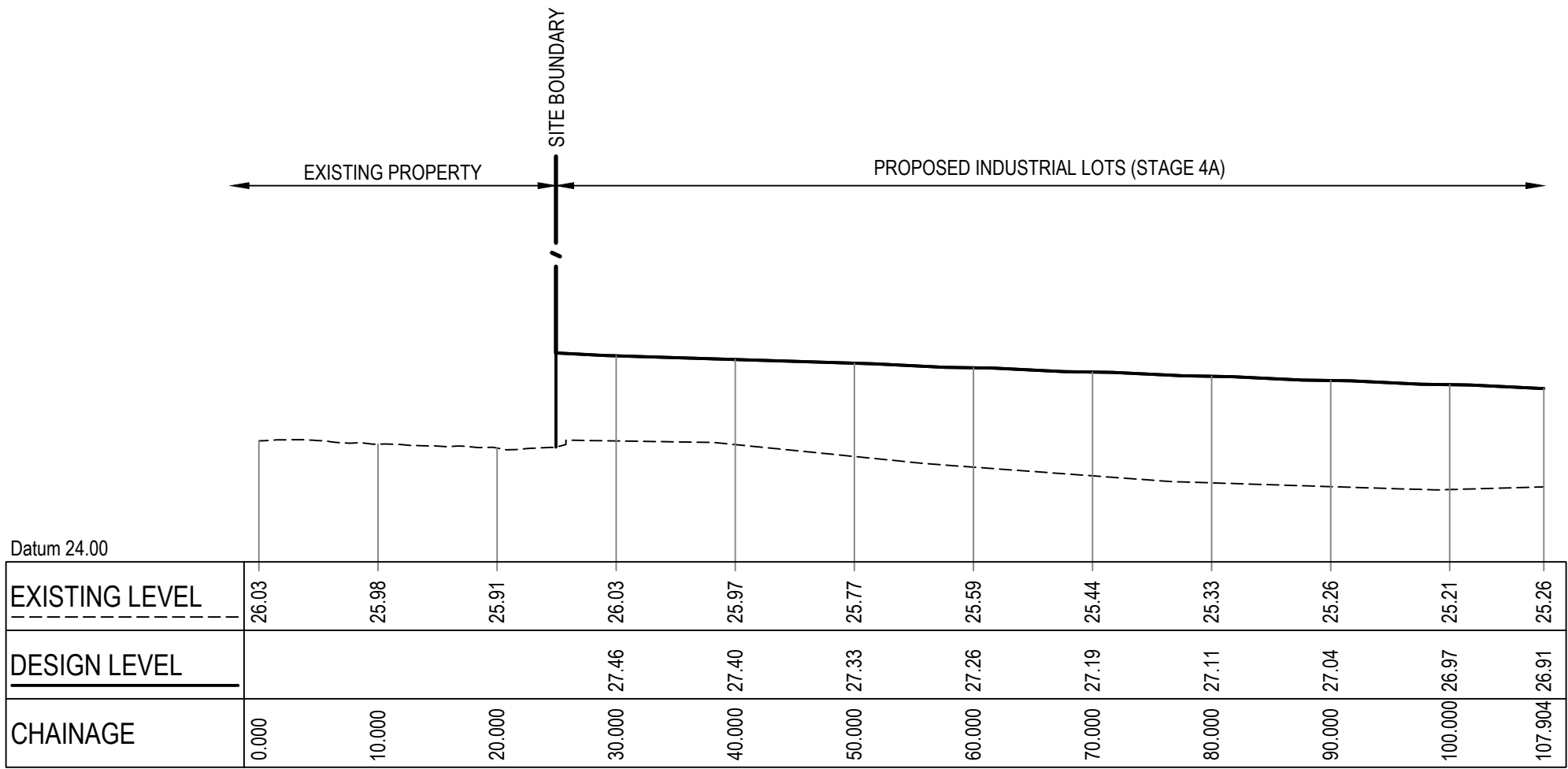


Client	LENLELEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	SITE SECTIONS SHEET 2 OF 5

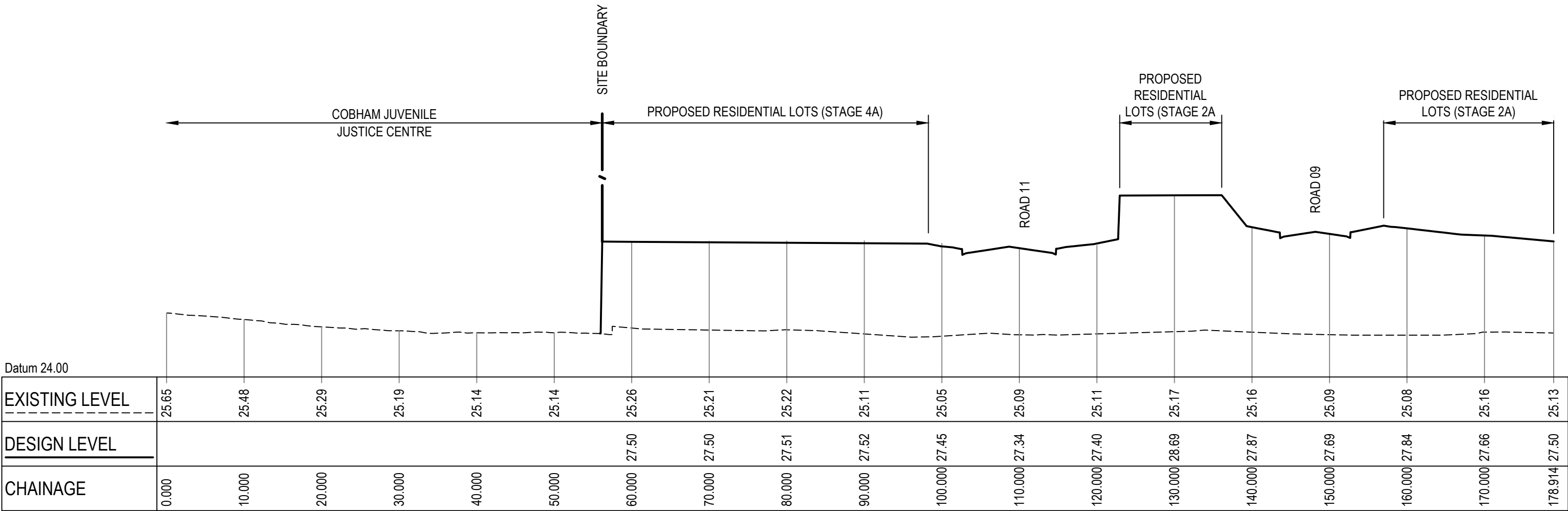
Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1
Drawing Number			Revision
80219053-001-CI-1152			3



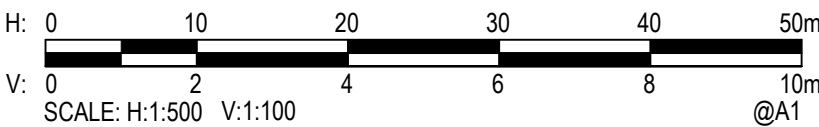
SECTION 7
SCALE 1:100V 1:500H



SECTION 8
SCALE 1:100V 1:500H



SECTION 9
SCALE 1:100V 1:500H



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

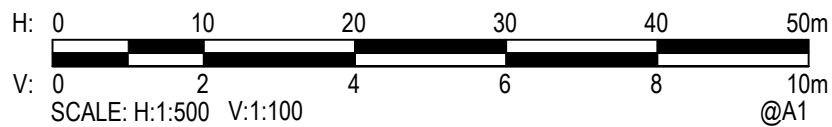
Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
AJG			1/10/2019

Client	LENDEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	SITE SECTIONS
	SHEET 3 OF 5

Status				
FOR APPROVAL				
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct' 2019	AS SHOWN	A1	
Drawing Number			Revision	
80219053-001-CI-1153			3	



2	1/10/2019	ISSUED FOR DA APPROVAL.	HLD	PL	A/JG
1	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



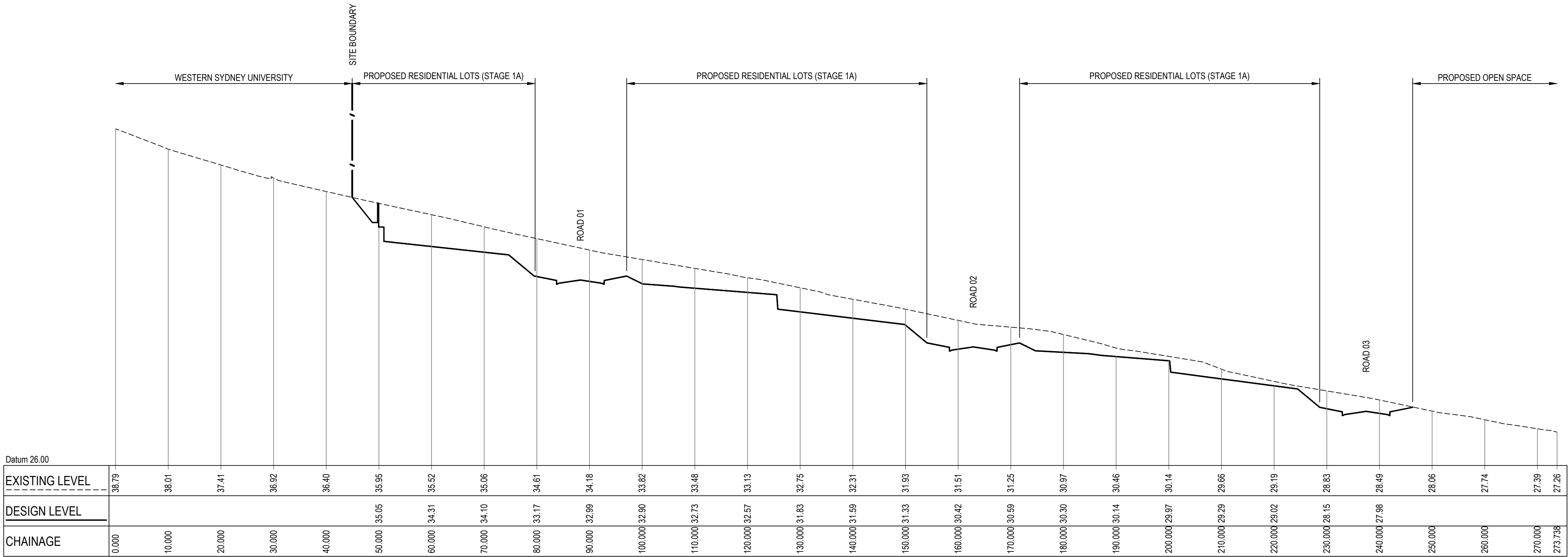
© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

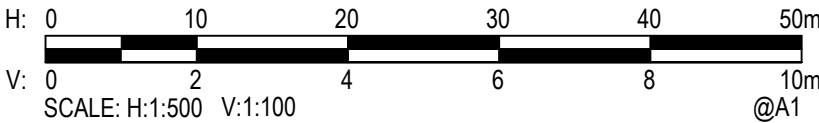
Title SITE SECTIONS
SHEET 4 OF 5

Status				FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum		Date		Scale		Size	
A.H.D		Oct' 2019		AS SHOWN		A1	
Drawing Number						Revision	
80219053-001-CI-1154						2	



SECTION 12
SCALE 1:100V 1:500H

2	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
1	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

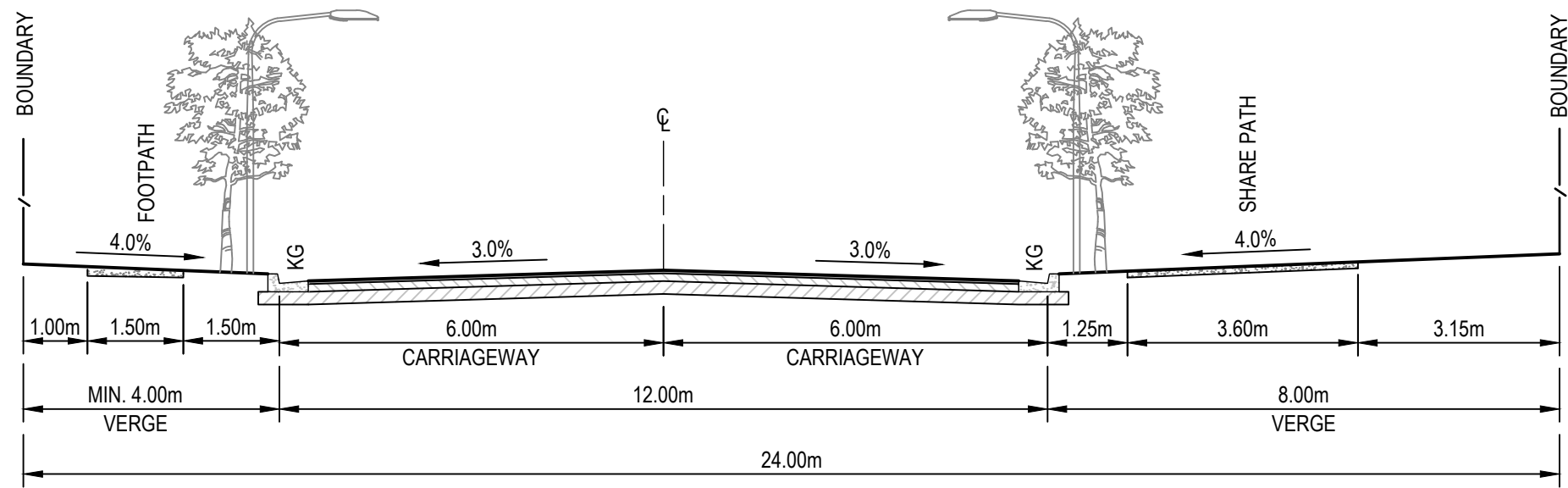


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

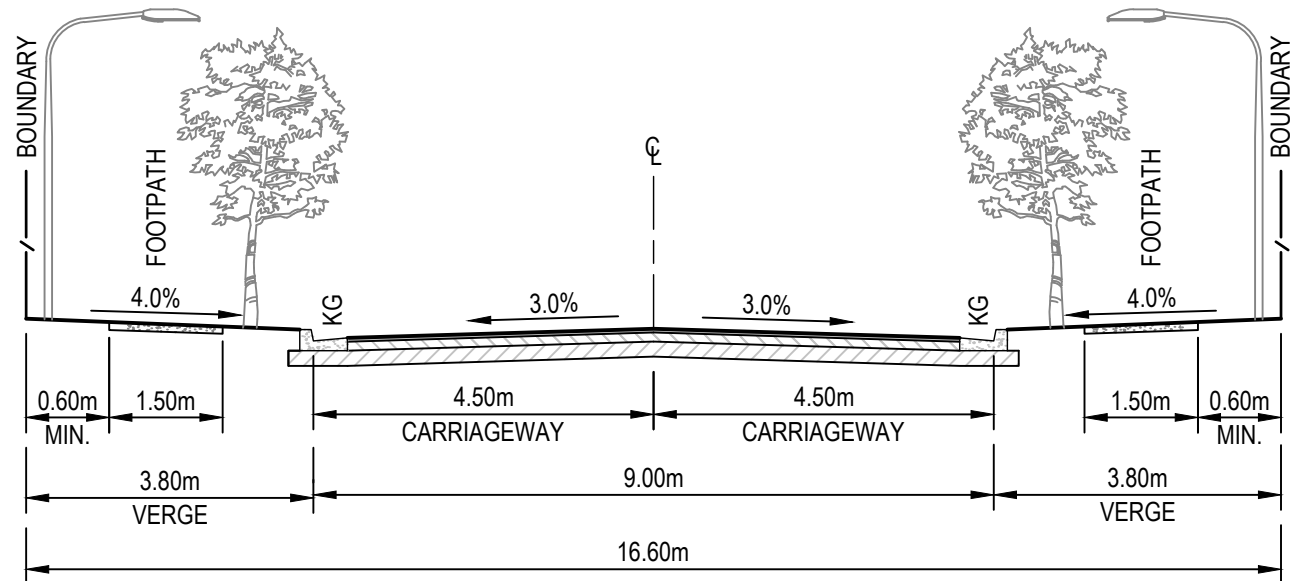
Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	SITE SECTIONS
	SHEET 5 OF 5

Status	FOR APPROVAL
Datum	A.H.D
Date	Oct 2019
Scale	AS SHOWN
Size	A1
Drawing Number	80219053-001-CI-1155
Revision	2



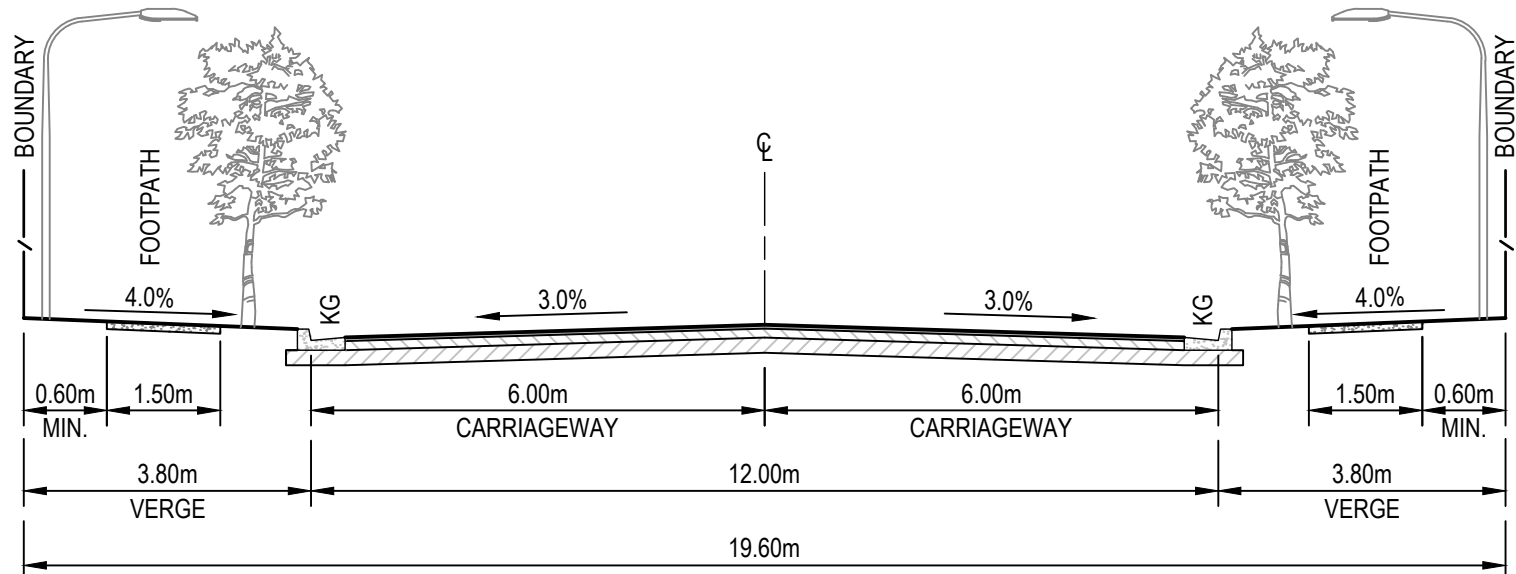
TYPICAL SECTION - EAST-WEST LINK ROAD
(MAJOR COLLECTOR ROAD)

ROAD 11
SCALE 1:100



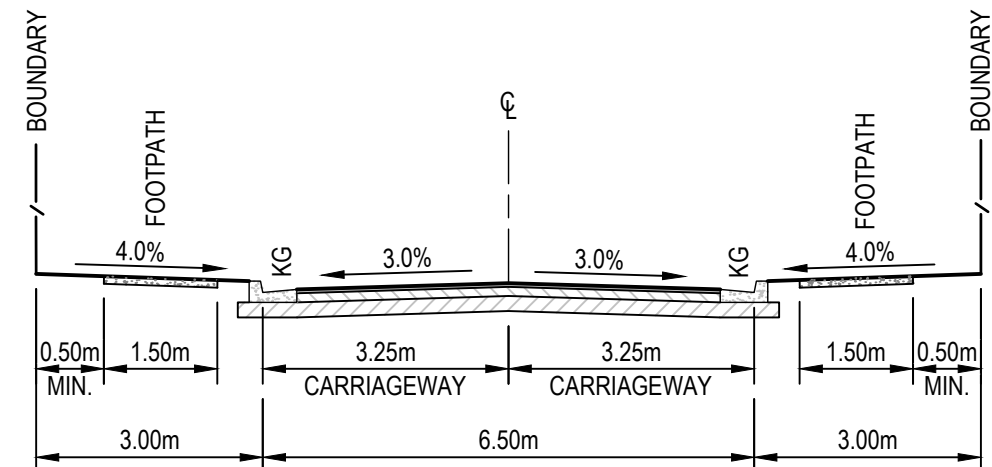
TYPICAL SECTION - MINOR LOCAL ROAD

ROAD 01, 02, 03, 04 (CH30.000- CH135.000), 05, 06, 07, 08, 13, 15
SCALE 1:100



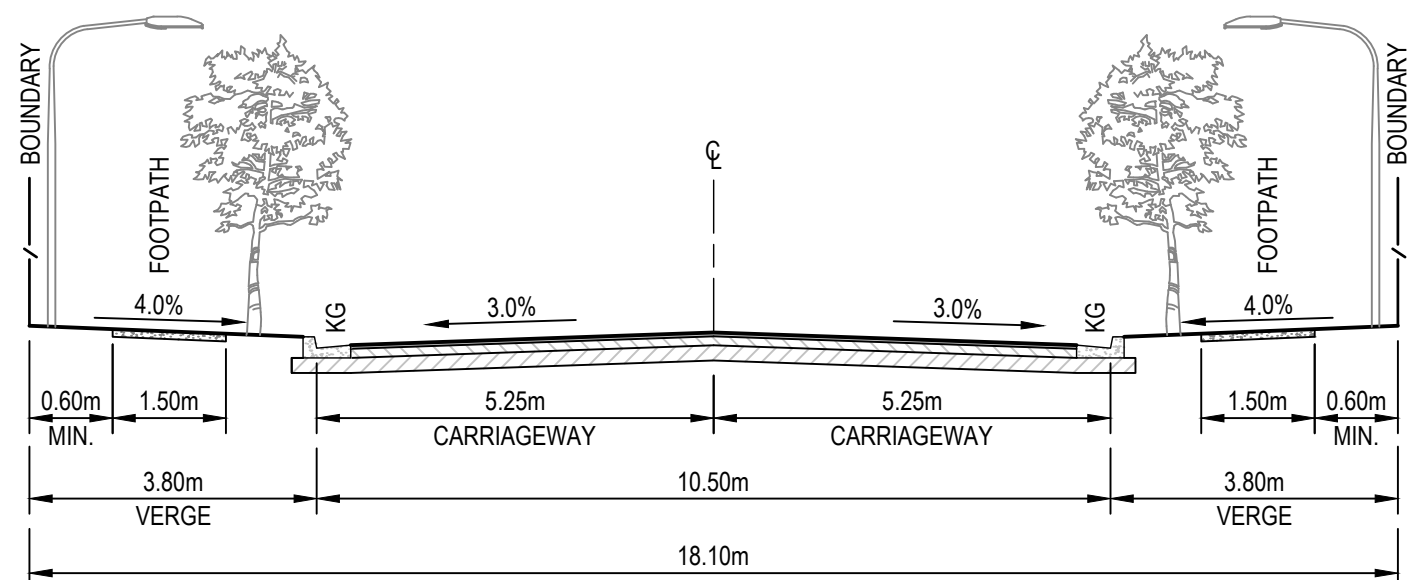
TYPICAL SECTION - NORTH SOUTH ROAD
(MINOR COLLECTOR ROAD)

ROAD 10, 12
SCALE 1:100



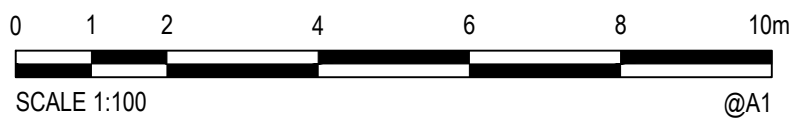
TYPICAL SECTION - LANEWAY

ROAD 04 (CH0.000-CH30.000 AND CH135.00-CH167.638)
SCALE 1:100



TYPICAL SECTION - LOCAL ROAD

ROAD 14
SCALE 1:100



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

Client LENDLEASE COMMUNITIES

Project CHAPMAN STREET WERRINGTON

CIVIL WORKS

DEVELOPMENT APPLICATION

Title ROAD TYPICAL CROSS SECTION

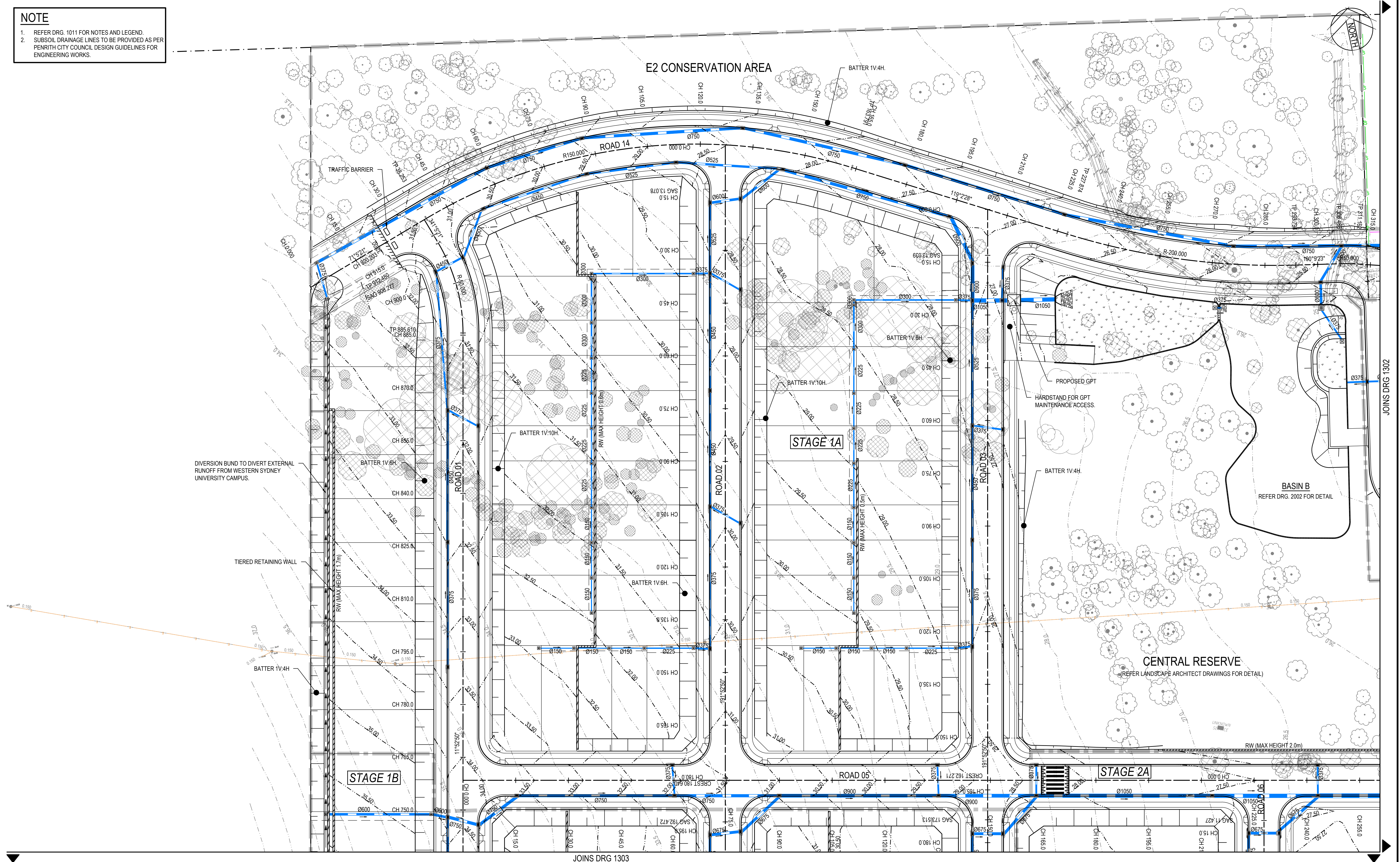
Status FOR APPROVAL

NOT TO BE USED FOR CONSTRUCTION PURPOSES

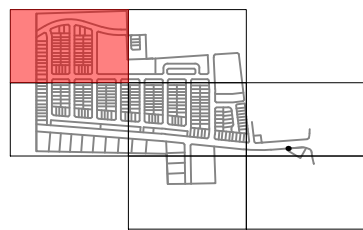
Datum A.H.D Date Oct 2019 Scale 1:100 Size A1

Drawing Number 80219053-001-CI-1251 Revision 3

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.



3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	A/JG	
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD			
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD			
Rev.	Date	Description	Des.	Verif.	Appd.	



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

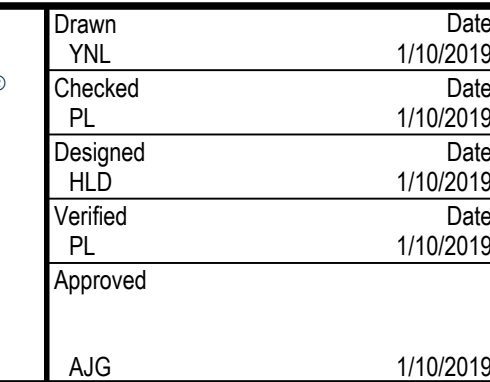
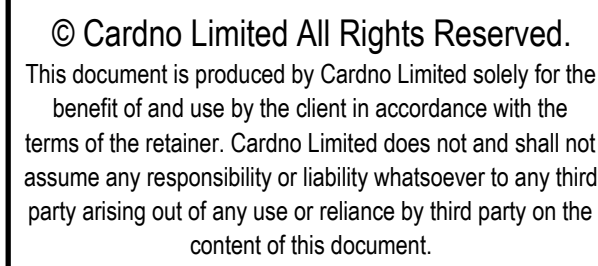


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

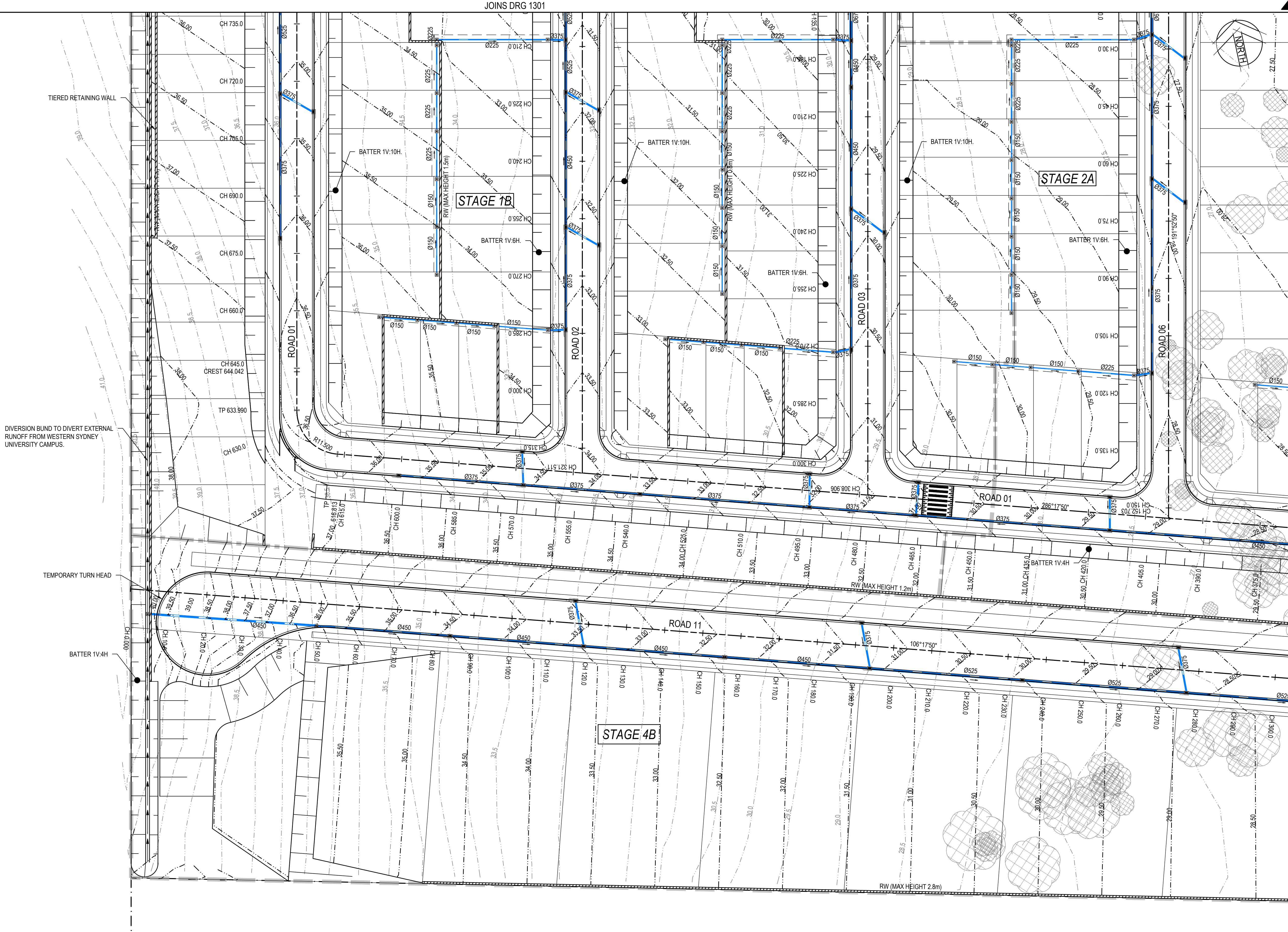
Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	SITEWORKS AND STORMWATER PLAN SHEET 1 OF 7

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1
Drawing Number			Revision
80219053-001-CI-1301			3



Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1
Drawing Number			Revision
80219053-001-CI-1302			3



NOTE

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.

3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	A/JG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

Client	LENdlease Communities
Project	Chapman Street Werrington Civil Works Development Application
Title	Siteworks and Stormwater Plan Sheet 3 of 7

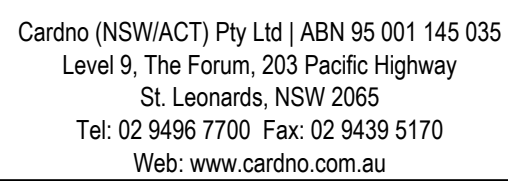
Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Scale	Size	
A.H.D	Oct' 2019	1:500	A1
Drawing Number			Revision
80219053-001-CI-1303			3



The diagram shows a top-down view of a building complex. A large rectangular area in the center is shaded in red. To the left of this red area is a multi-story building with a grid-like window pattern. To the right is a long, narrow structure, possibly a corridor or a smaller building, with a small circular feature at its end. The entire diagram is overlaid with a grid of lines.

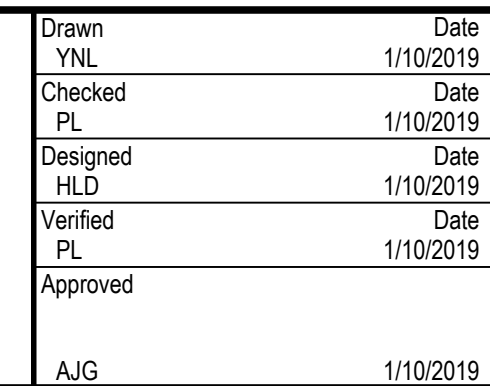
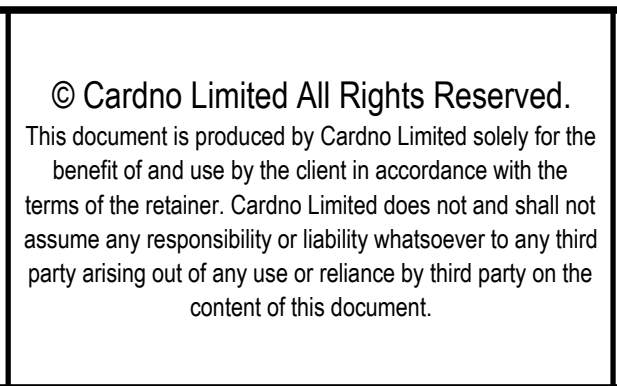
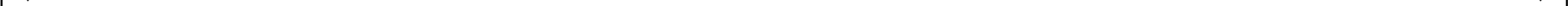


JOINS DRG 1306



Date 1/10/2019	Client LENLEASE COMMUNITIES
Date 1/10/2019	Project CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Date 1/10/2019	
Date 1/10/2019	
Date 1/10/2019	Title SITEWORKS AND STORMWATER PLAN SHEET 4 OF 7
1/10/2019	

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1
Drawing Number			Revision
80219053-001-CI-1304			3



Status			
FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1
Drawing Number			Revision
80219053-001-CI-1305			3

1. REFER DRG. 1011 FOR NOTES AND LEGEND.
2. SUBSOIL DRAINAGE LINES TO BE PROVIDED AS PER PENRITH CITY COUNCIL DESIGN GUIDELINES FOR ENGINEERING WORKS.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

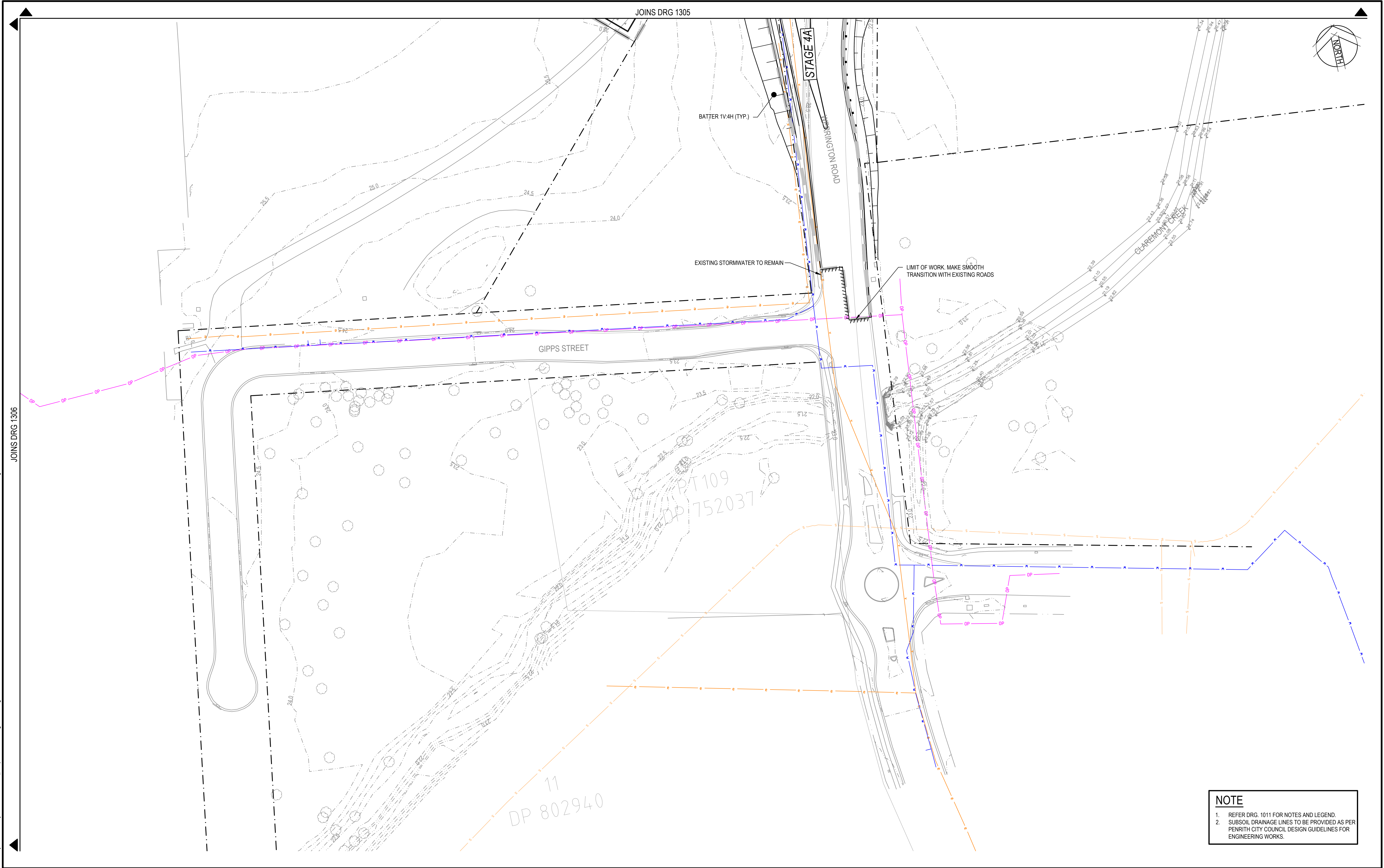


Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

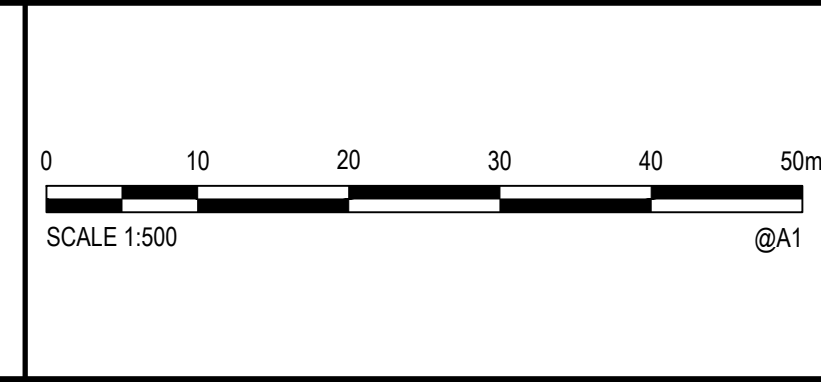
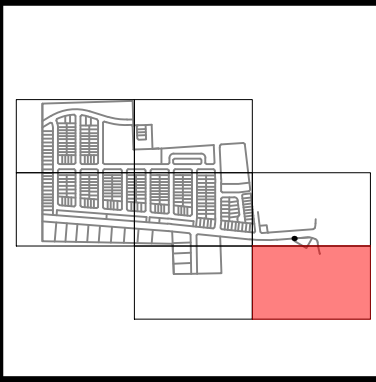
Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	SITWORKS AND STORMWATER PLAN SHEET 6 OF 7

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:500	A1
Drawing Number			Revision
80219053-001-CI-1306			3

XREFs: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-PORTS; XR-80219053-CI-SURVEY; XR-80219053-CI-ROAD; XR-80219053-CI-TREES; XR-80219053-CI-DESIGN CONTOURS-500; XR-80219053-CI-STORMWATER; XR-80219053-CI-RETAINING WALL PLAN; XR-80219053-CI-SITEWORKS; XR-80219053-CI-CL-1301-1307 SITEWORKS AND STORMWATER PLAN.dwg
 CAD File: \\cardno\proj\global\AU\NSW\Drawings\Build\001 CI-1301-1307 SITEWORKS AND STORMWATER PLAN.dwg
 DATE PLOTTED: 1 October 2019 5:32 PM BY: YIN NWE LWIN



Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		



© Cardno Limited All Rights Reserved.

This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

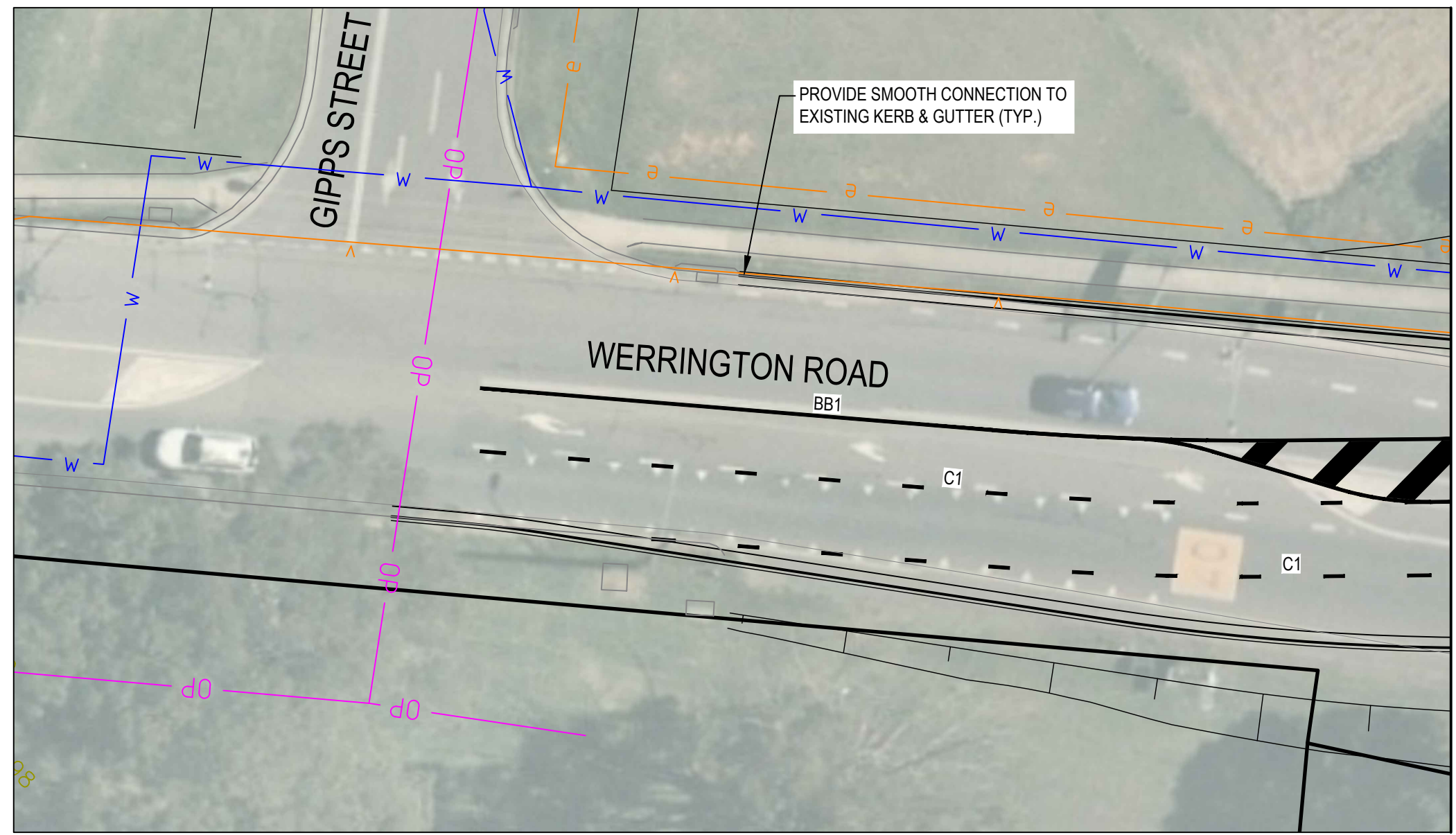
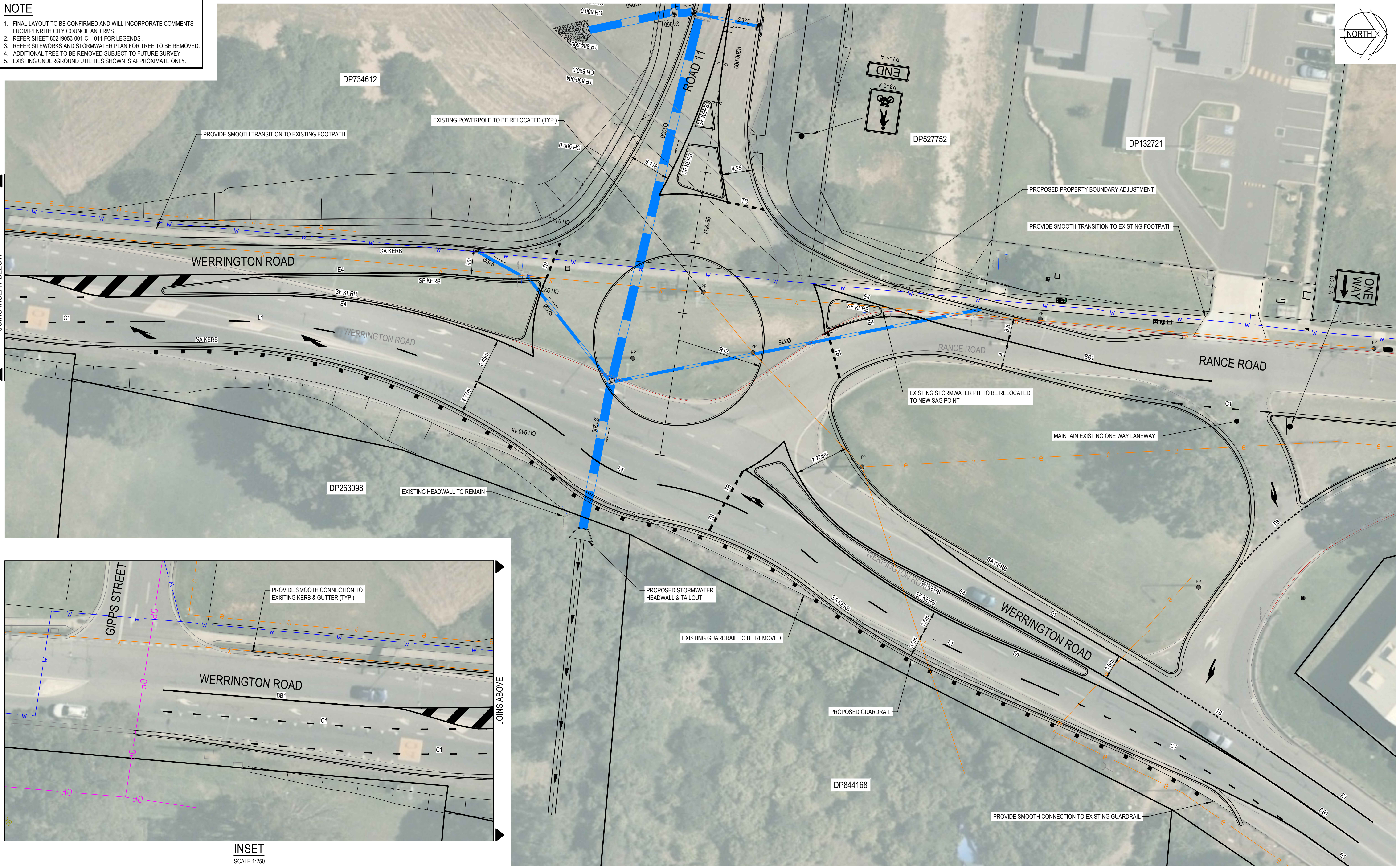
Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	SITEWORKS AND STORMWATER PLAN
	SHEET 7 OF 7

Status				
FOR APPROVAL				
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct' 2019	1:500	A1	
Drawing Number				Revision
80219053-001-CI-1307				3

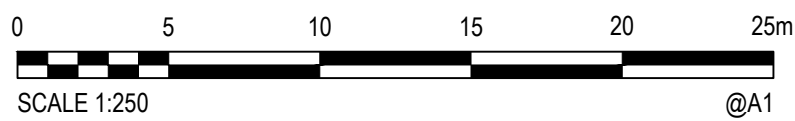
DATE PLOTTED: 1 October 2019 5:32 PM BY: YIN NWE LWIN

XREFs: XR-80219053-CI-AERIAL; XR-80219053-CI-ROUNDABOUT; XR-80219053-CI-SURVEY; XR-80219053-CI-STORMWATER; XR-80219053-CI-CONTROL; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-ROAD; XR-80219053-CI-SITEWORKS
CAD File: \\cardno-cop\global\AU\NSW\Drawings\Build\001 CIVIL WORKS\80219053-001-CI-1311 ROUNDABOUT CONCEPT PLAN.dwg

- NOTE**
1. FINAL LAYOUT TO BE CONFIRMED AND WILL INCORPORATE COMMENTS FROM PENRITH CITY COUNCIL AND RMS.
 2. REFER SHEET 80219053-001-CI-1011 FOR LEGENDS.
 3. REFER SITEWORKS AND STORMWATER PLAN FOR TREE TO BE REMOVED.
 4. ADDITIONAL TREE TO BE REMOVED SUBJECT TO FUTURE SURVEY.
 5. EXISTING UNDERGROUND UTILITIES SHOWN IS APPROXIMATE ONLY.



Rev.	Date	Description	HLD	PL	A/JG
1	1/10/2019	ISSUED FOR DA APPROVAL			
			Des.	Verif.	Appd.



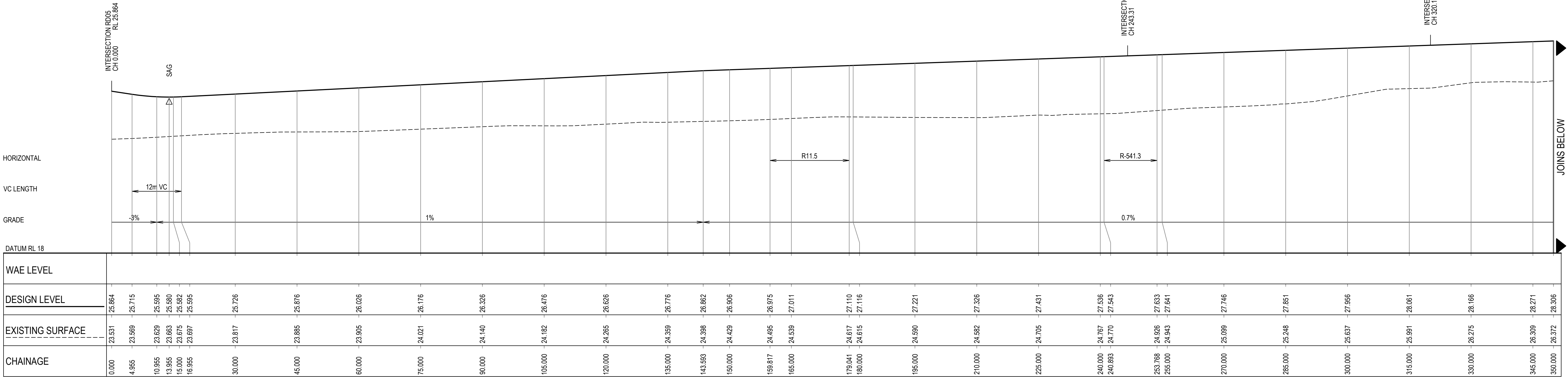
© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
A/JG		1/10/2019	

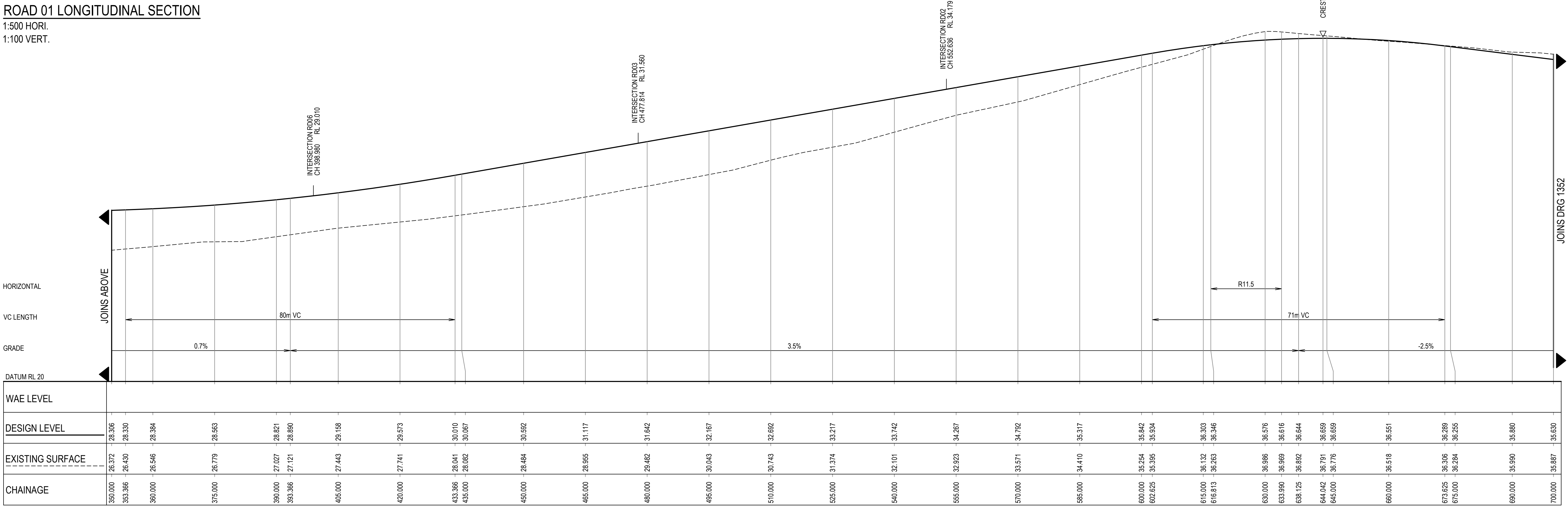
Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	ROUNDABOUT CONCEPT PLAN

Status	FOR APPROVAL				
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
Datum	Date	Scale	Size		
A.H.D	Oct' 2019	1:250	A1		
Drawing Number				Revision	
80219053-001-CI-1311				1	



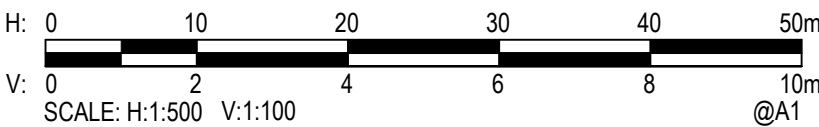
ROAD 01 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



ROAD 01 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

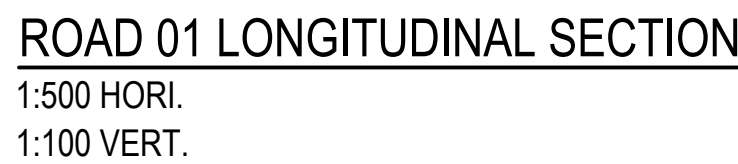


Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
A/JG		1/10/2019	

Client LENDLEASE COMMUNITIES
Project CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION
Title ROAD LONGITUDINAL SECTIONS
SHEET 1 OF 10

Status				FOR APPROVAL	
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
Datum	Date	Scale	Size		
A.H.D	Oct' 2019	AS SHOWN	A1		
Drawing Number			Revision		
80219053-001-CI-1351			3		

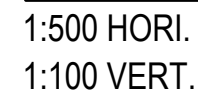
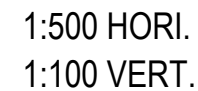


H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Document Set ID: 8888043
Version: 1. Version Date: 15/10/2019



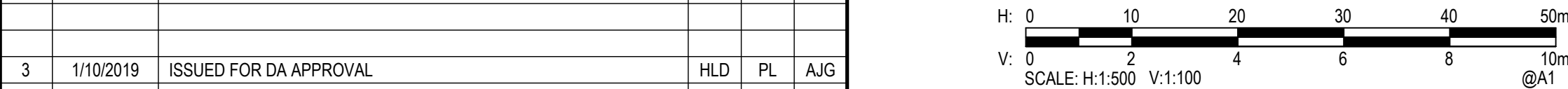
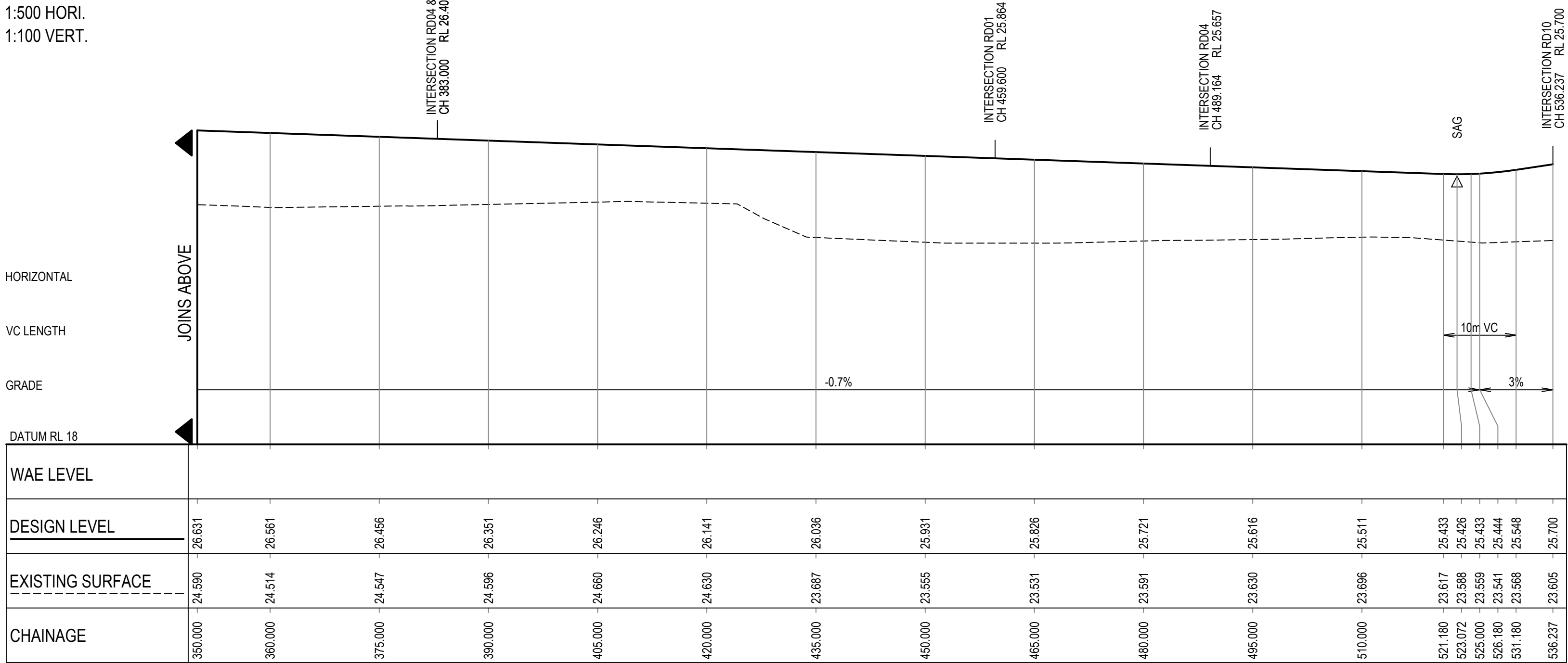
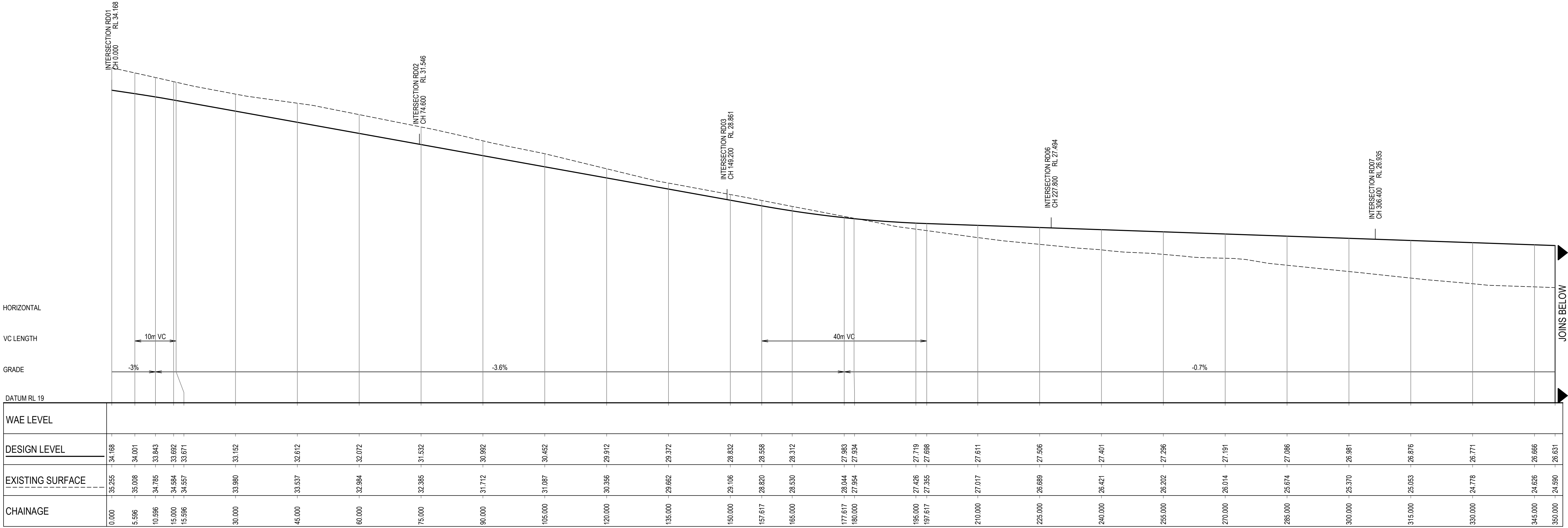
H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Client	LENLELEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	ROAD LONGITUDINAL SECTIONS SHEET 3 OF 10

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1
Drawing Number			Revision
80219053-001-CI-1353			3



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

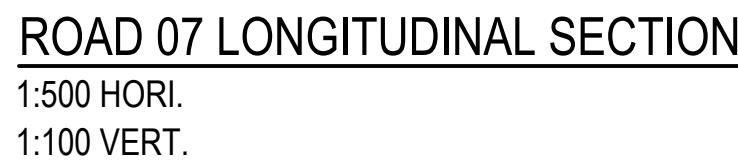
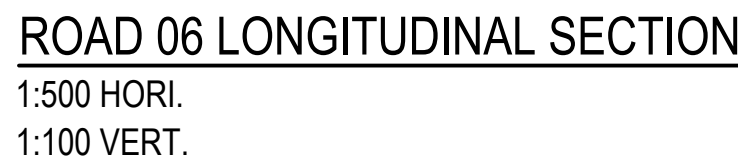
Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved A/JG	Date 1/10/2019

Client LENDLEASE COMMUNITIES

Project CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title ROAD LONGITUDINAL SECTIONS
SHEET 4 OF 10

Status NOT TO BE USED FOR CONSTRUCTION PURPOSES	FOR APPROVAL
Datum A.H.D	Date Oct 2019
Scale AS SHOWN	Size A1
Drawing Number 80219053-001-CI-1354	Revision 3

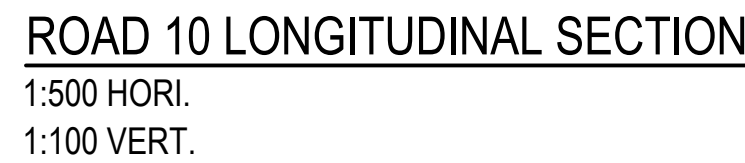
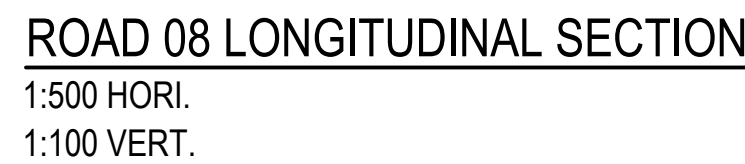


H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Document Set ID: 8888043
Version: 1, Version Date: 15/10/2019



H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Client	LENLELEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	ROAD LONGITUDINAL SECTIONS SHEET 6 OF 10

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date/Time	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1
Drawing Number			Revision
80219053-001-CI-1356			3

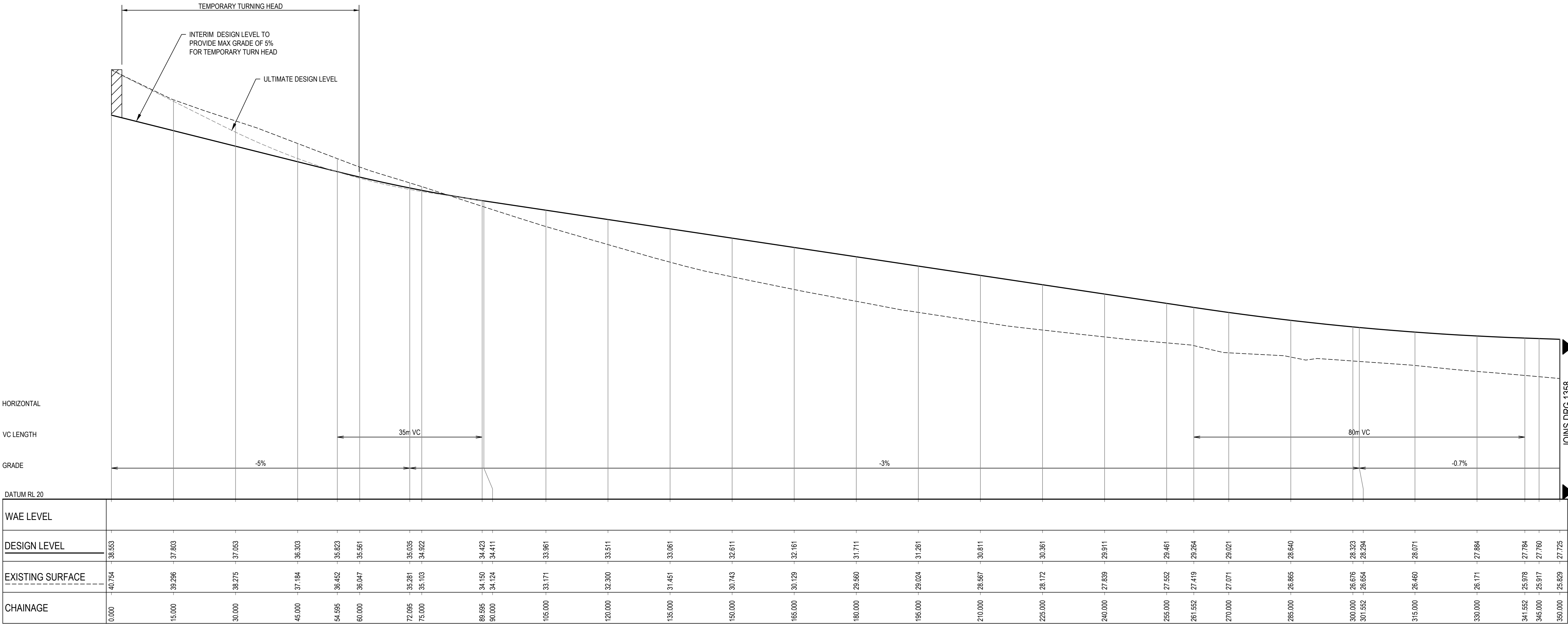
DATE PLOTTED: 1 October 2019 3:32 PM BY: YIN NWE LWIN

XREFs:

CAD File: \\cardno-corp\global\AU\NSW\Drawings\Structure\Projects\802FY19\063_Chapman St\Werrington\Drawings\Build\001-CI-1351-360 ROAD LONGITUDINAL SECTIONS.dwg

Document Set ID: 8888043

Version: 1, Version Date: 15/10/2019

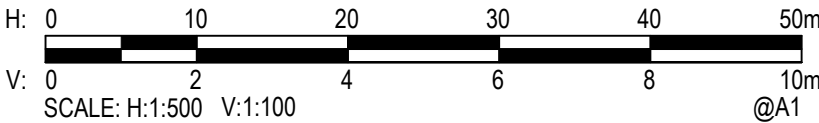


ROAD 11 LONGITUDINAL SECTION

1:500 HORI.

1:100 VERT.

3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.

This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035

Level 9, The Forum, 203 Pacific Highway

St Leonards, NSW 2055

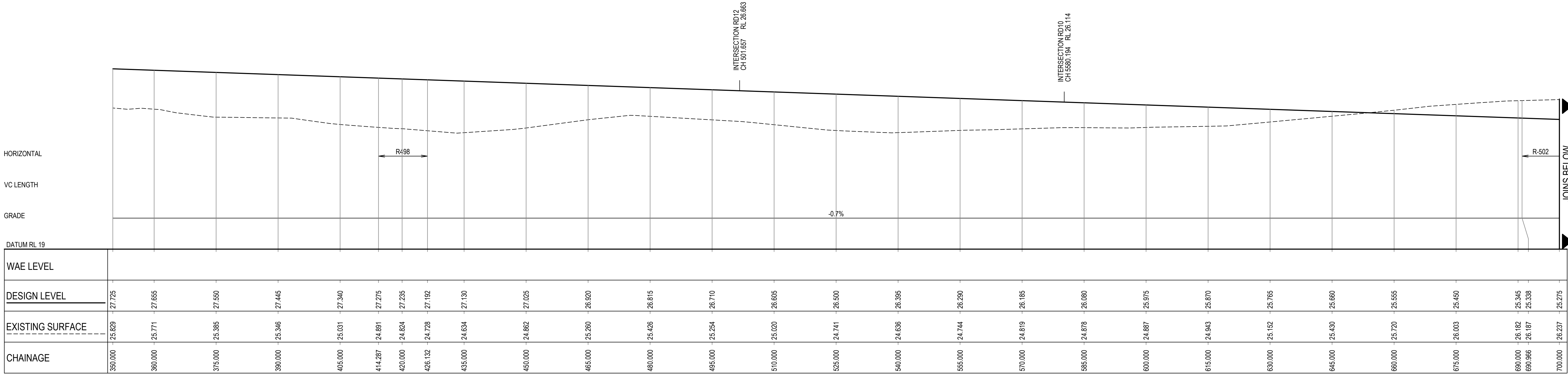
Tel: 02 9496 7700 Fax: 02 9439 5170

Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
AJG		1/10/2019	

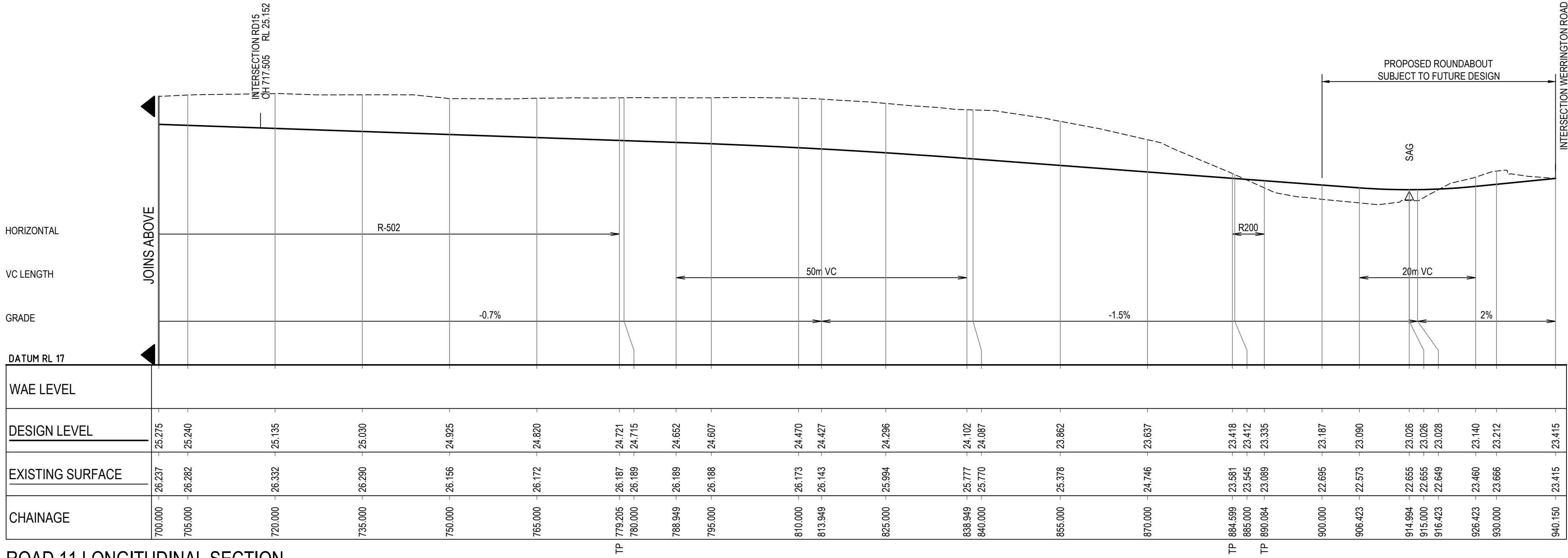
Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	ROAD LONGITUDINAL SECTIONS
	SHEET 7 OF 10

Status				FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum		Date		Scale		Size	
A.H.D		Oct' 2019		AS SHOWN		A1	
Drawing Number						Revision	
80219053-001-CI-1357						3	



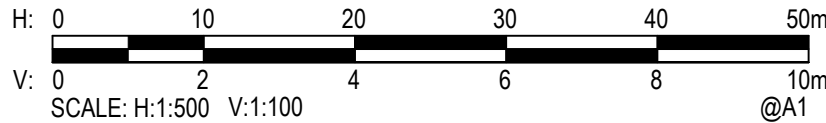
ROAD 11 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



ROAD 11 LONGITUDINAL SECTION

1:500 HORI.
1:100 VERT.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

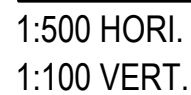
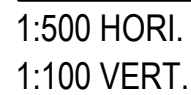
Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved A/JG	Date 1/10/2019

Client LENDLEASE COMMUNITIES

Project CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION

Title ROAD LONGITUDINAL SECTIONS
SHEET 8 OF 10

Status NOT TO BE USED FOR CONSTRUCTION PURPOSES	FOR APPROVAL
Datum A.H.D	Date Oct 2019
Scale AS SHOWN	Size A1
Drawing Number 80219053-001-CI-1358	Revision 3



H: 0 10 20 30 40 50m
V: 0 2 4 6 8 10m
SCALE: H:1:500 V:1:100 @A1

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



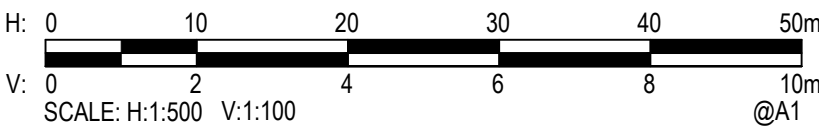
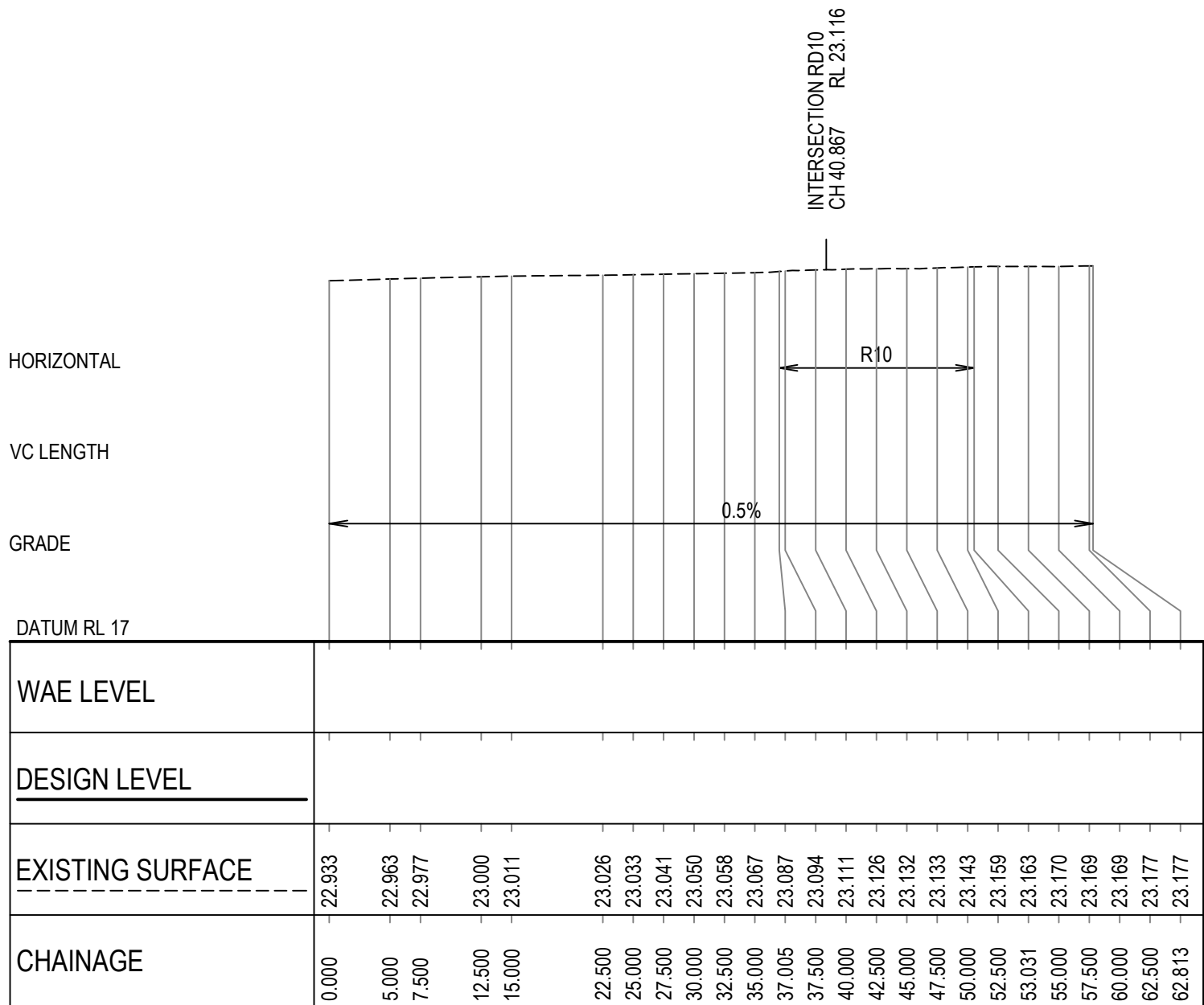
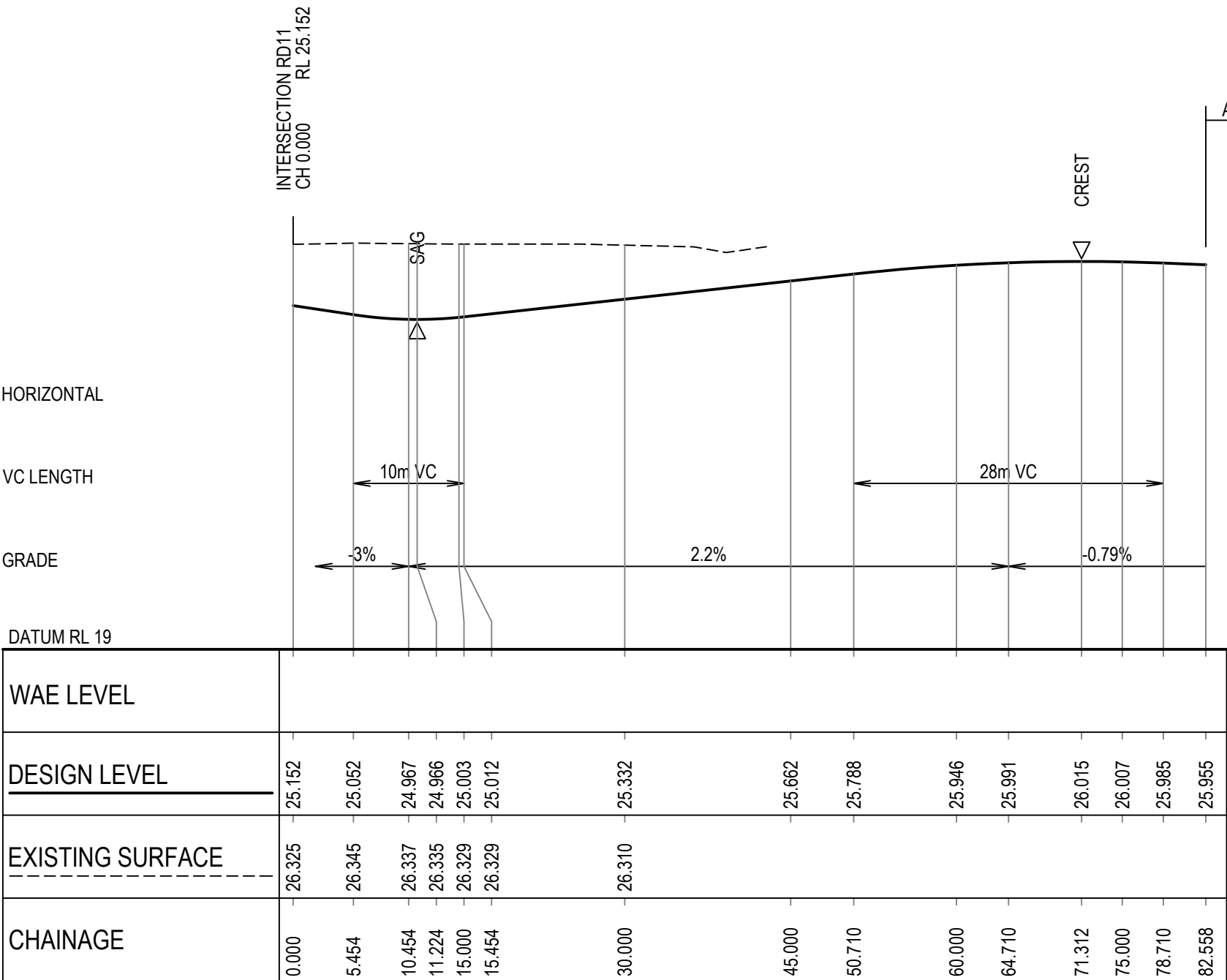
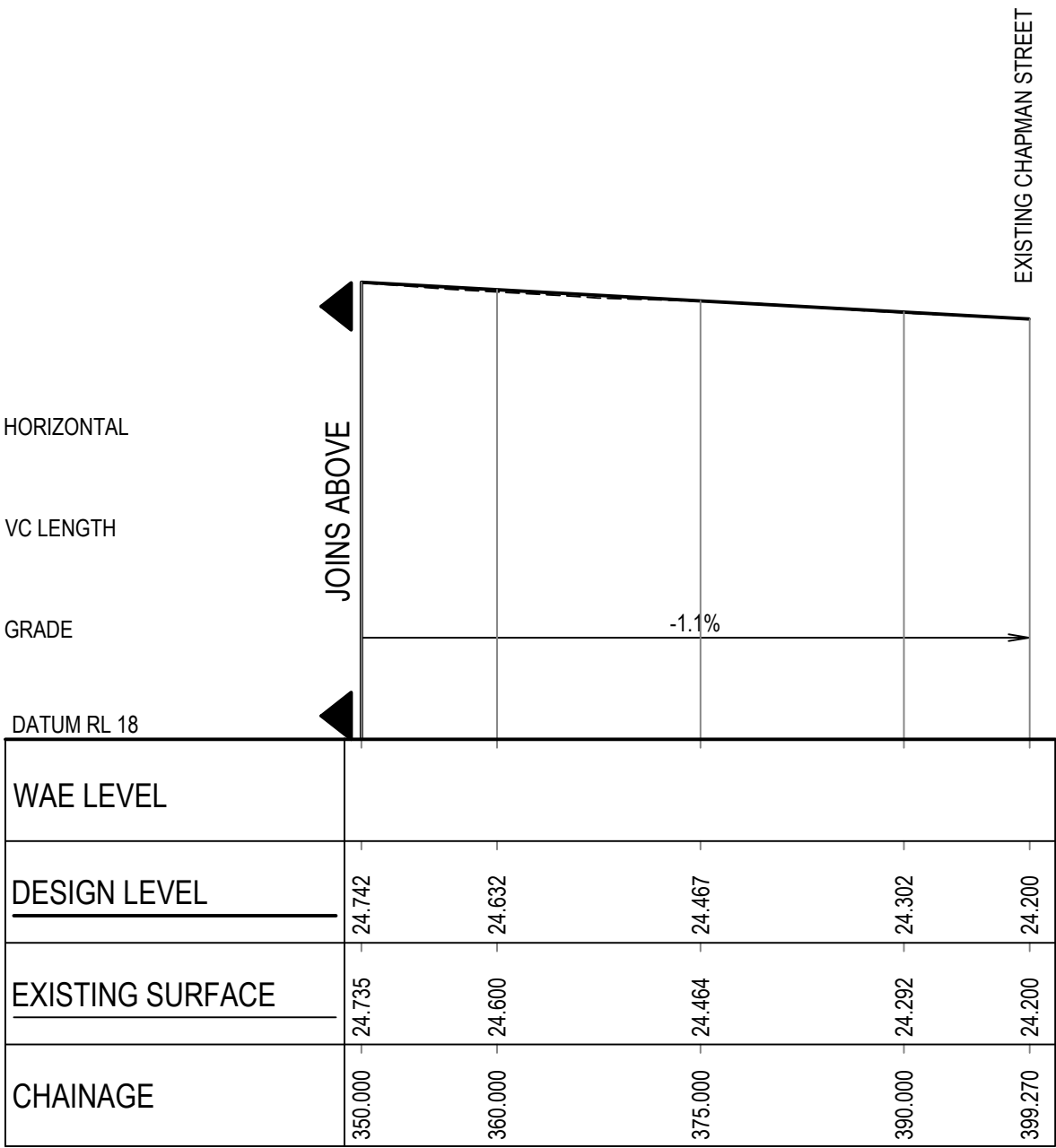
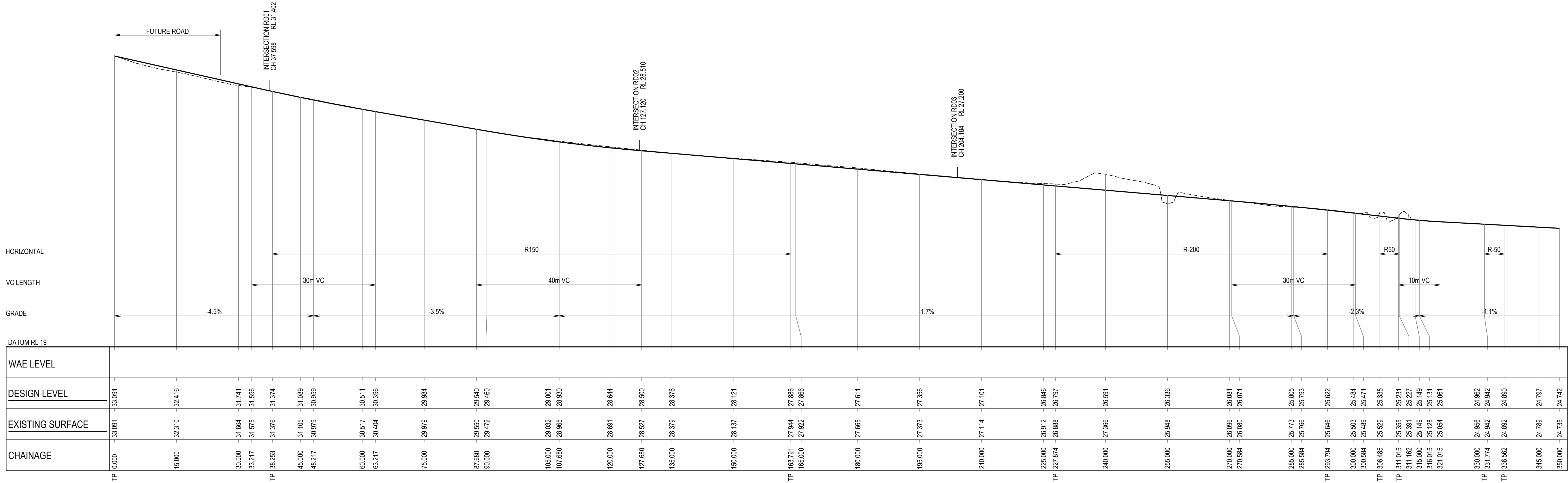
Client	LENDLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	ROAD LONGITUDINAL SECTIONS SHEET 9 OF 10

Status				FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES							
Datum		Date		Scale		Size	
A.H.D		Oct' 2019		AS SHOWN		A1	
Drawing Number						Revision	
80219053-001-CI-1359						3	

DATE PLOTTED: 1 October 2019 3:33 PM BY: YIN NWE LWIN

XREFs:
CAD File: \\cardno-corporate\au\NSW\Directory\Structure\Projects\802FY19053_Chapman St\Werrington\Drawings\Build\001-CI-1351-360 ROAD LONGITUDINAL SECTIONS.dwg

Document Set ID: 8888043
Version: 1, Version Date: 15/10/2019



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

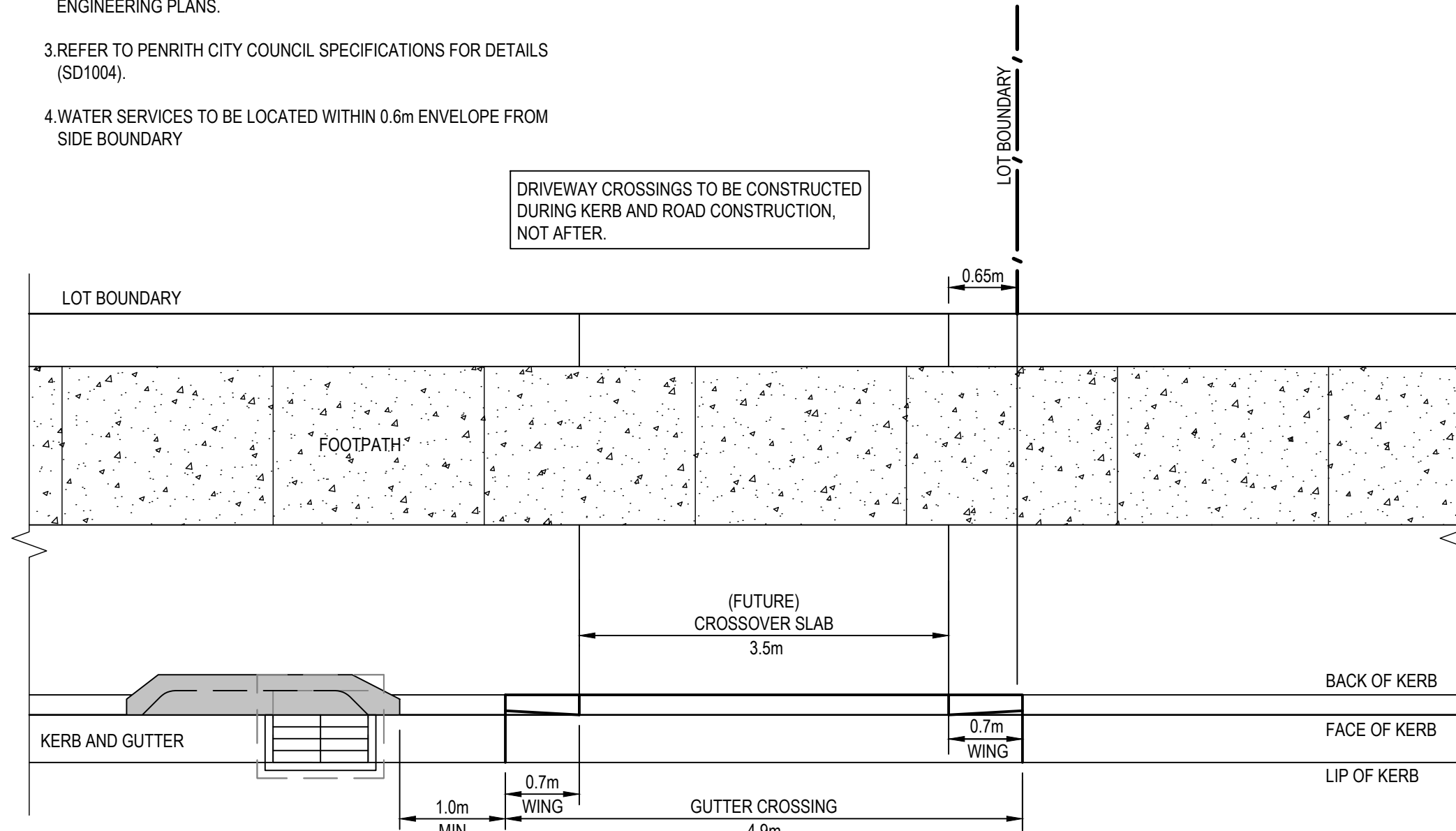
Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved A/JG	Date 1/10/2019

Client LENLEASE COMMUNITIES	Project CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title ROAD LONGITUDINAL SECTIONS SHEET 10 OF 10	

Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	Datum A.H.D	Date Oct 2019	Scale AS SHOWN	Size A1
Drawing Number 80219053-001-CI-1360				Revision 3

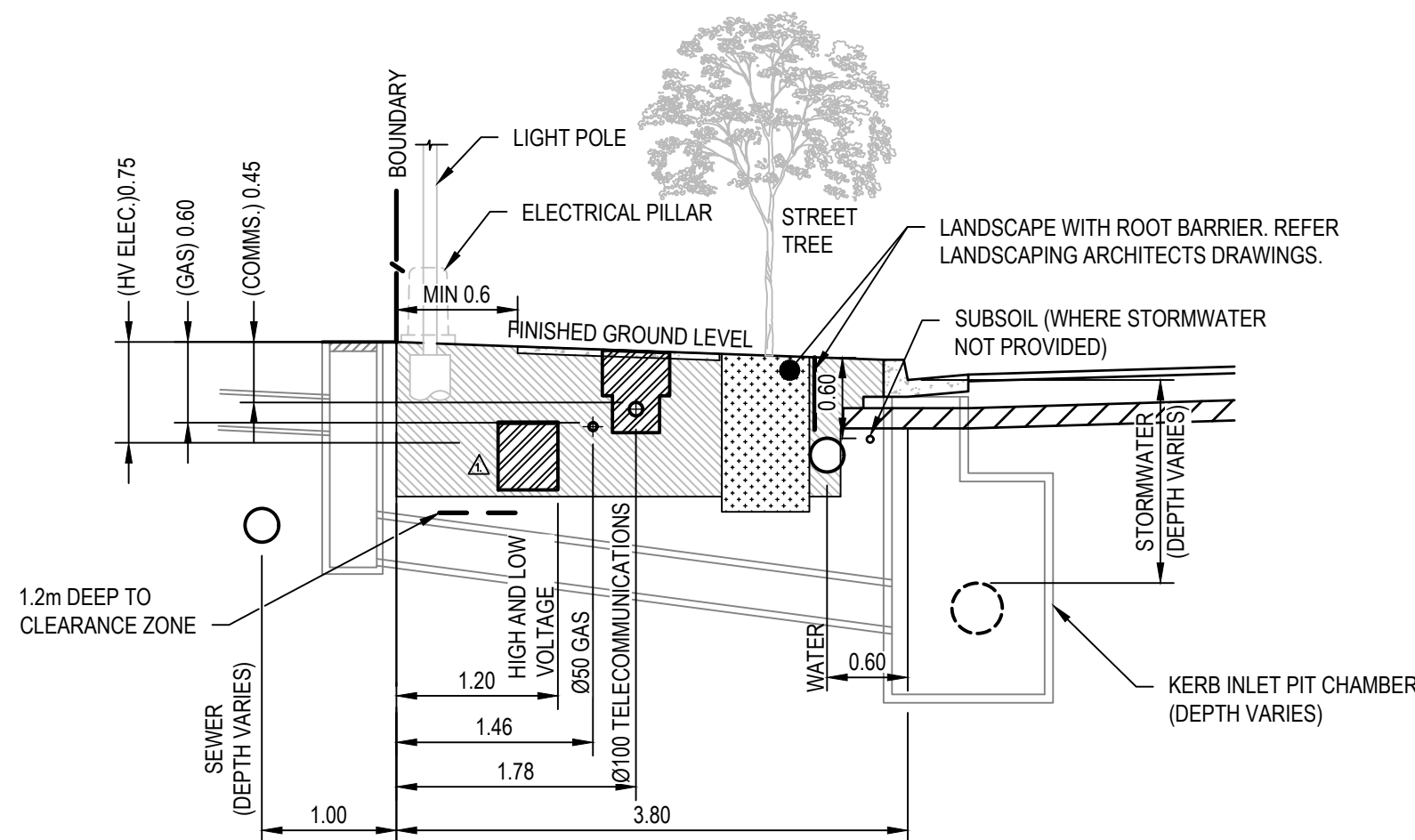
NOTE:

- 1.DRAINAGE PITS TO BE LOCATED MINIMUM 1.0m FROM EDGE OF DRIVEWAY.
- 2.LAYBACKS TO BE CONSTRUCTED ON PRIMARY DRIVEWAY FRONTAGE FOR CORNER LOTS UNLESS OTHERWISE NOTED ON ENGINEERING PLANS.
- 3.REFER TO PENRITH CITY COUNCIL SPECIFICATIONS FOR DETAILS (SD1004).
- 4.WATER SERVICES TO BE LOCATED WITHIN 0.6m ENVELOPE FROM SIDE BOUNDARY



TYPICAL DRIVEWAY LOCATION DETAIL

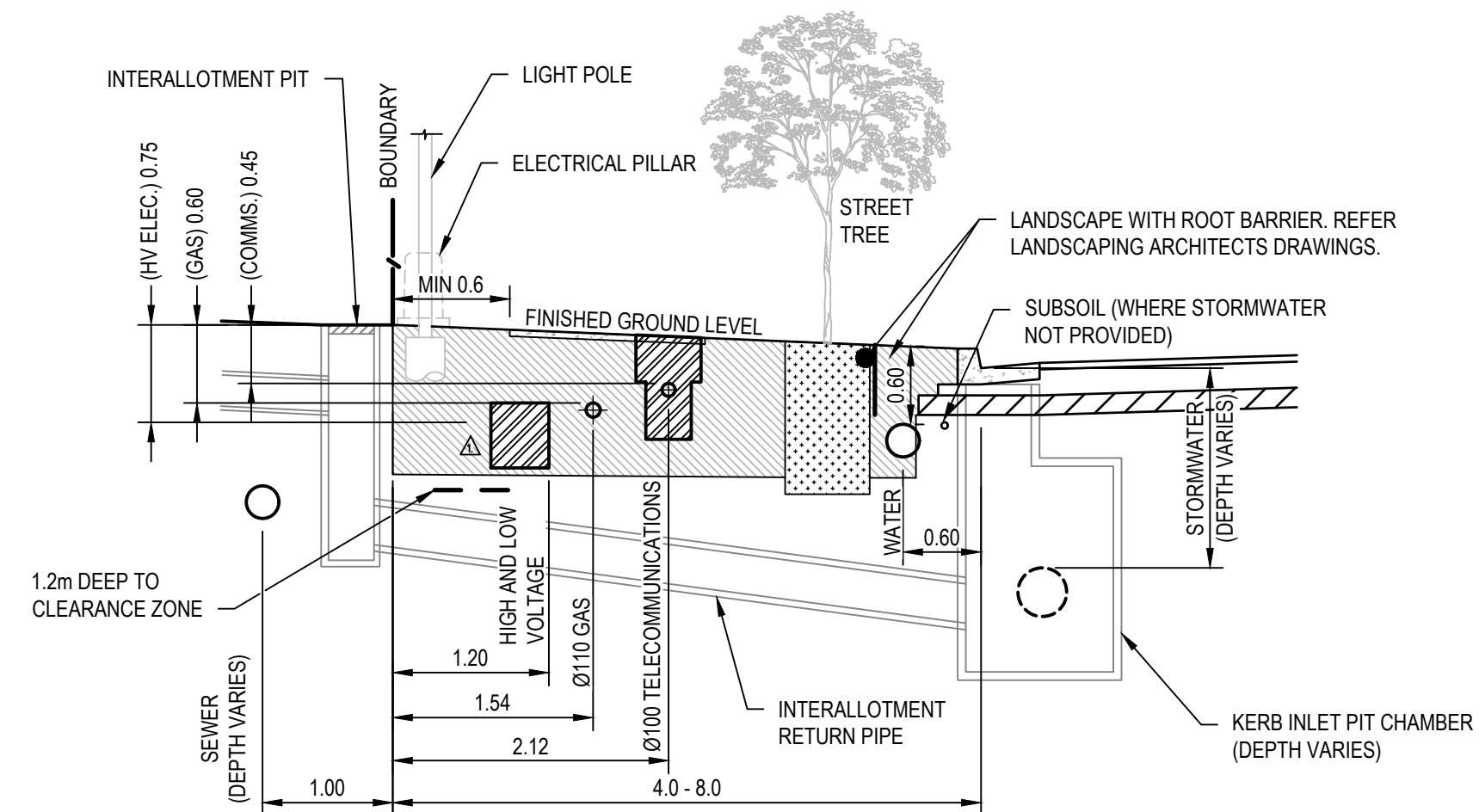
1:50m



TYPICAL LOCAL ROAD SERVICES

TRENCH EXCAVATION

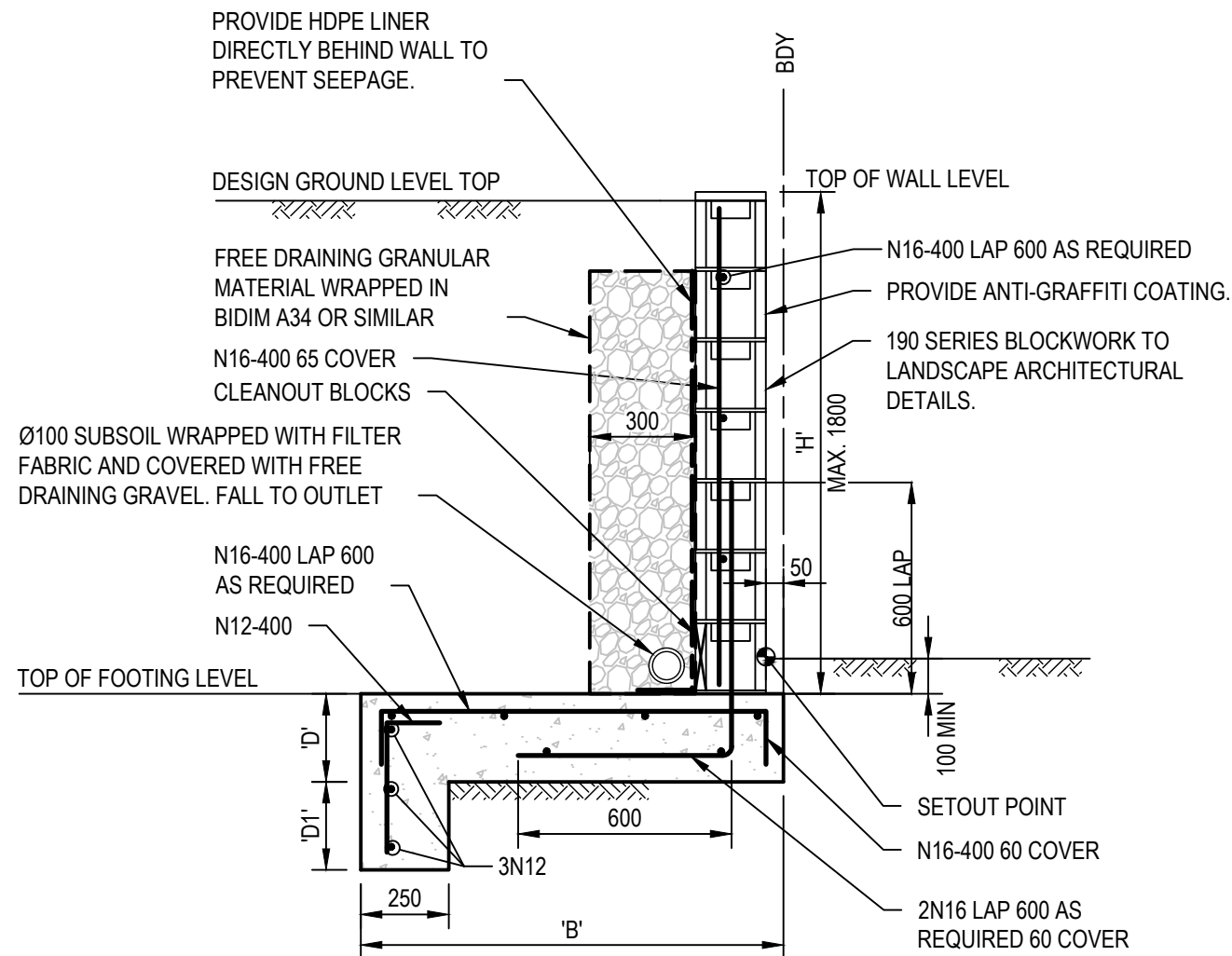
1:50m



TYPICAL COLLECTOR ROAD SERVICES

TRENCH EXCAVATION

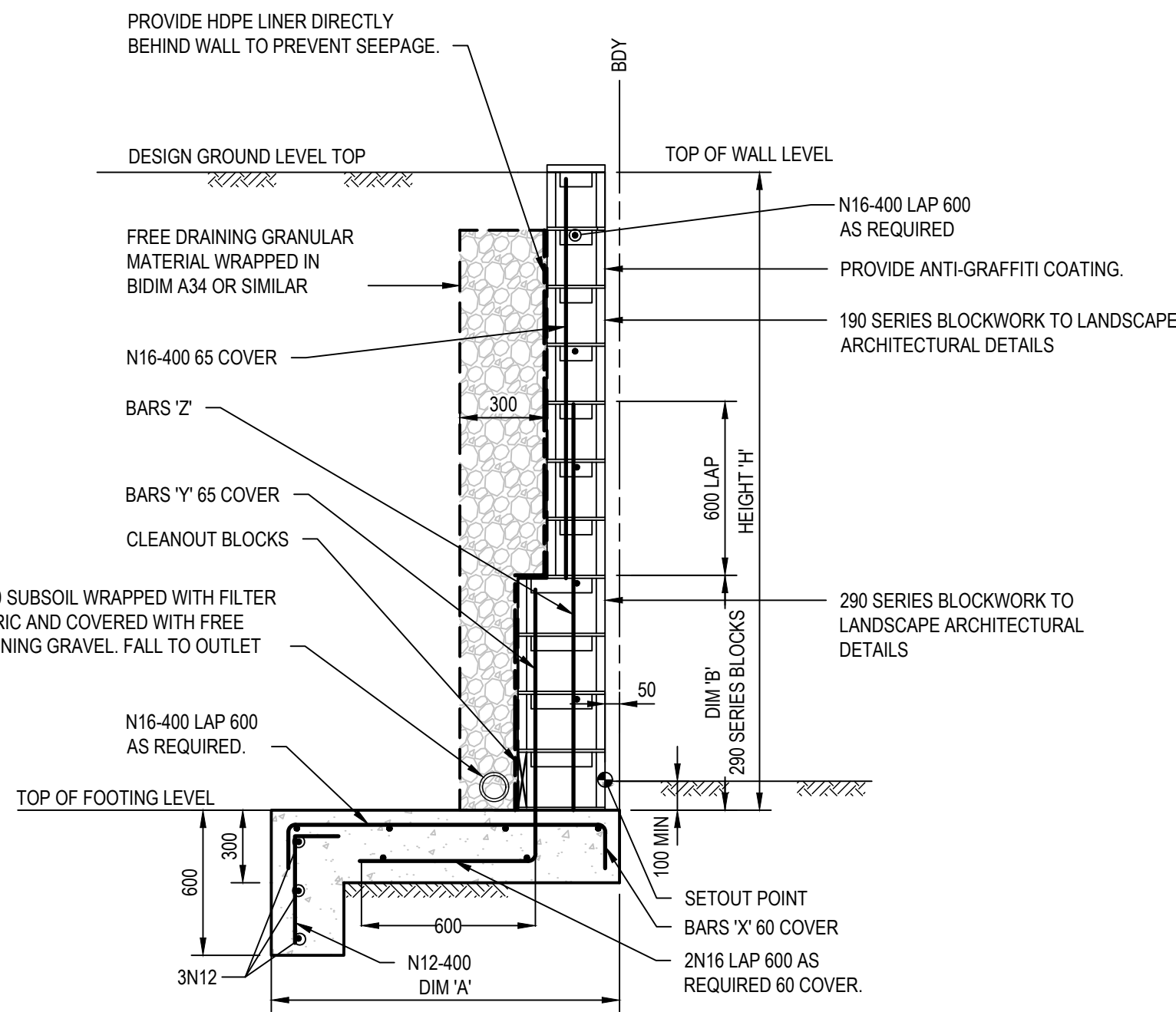
1:50m



BLOCKWORK RETAINING WALL UP TO 1800mm

SCALE 1:20

H DIM	B DIM	D DIM	D1 DIM
400 < H ≤ 600	600	250	0
600 < H ≤ 1200	1000	250	0
1200 < H ≤ 1800	1300	300	300



BLOCKWORK RETAINING WALL 1800mm TO 3500mm

SCALE 1:20

H DIM	A DIM(1)	B DIM	BARS X	BARS Y	BARS Z
1800 < H ≤ 2200	1500	800	N16-400	N16-400	N16-400
2200 < H ≤ 2600	1900	1000	N16-200	N16-200	N16-200
2600 < H ≤ 3000	2300	1000	N16-200	N16-200	N16-200
3000 < H ≤ 3500	2400	1600	N20-200	N16-200	N20-200

NOTE

1. FINAL SERVICES ALLOCATION TO BE COORDINATED WITH SERVICES AUTHORITIES.

© Cardno Limited All Rights Reserved.

This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



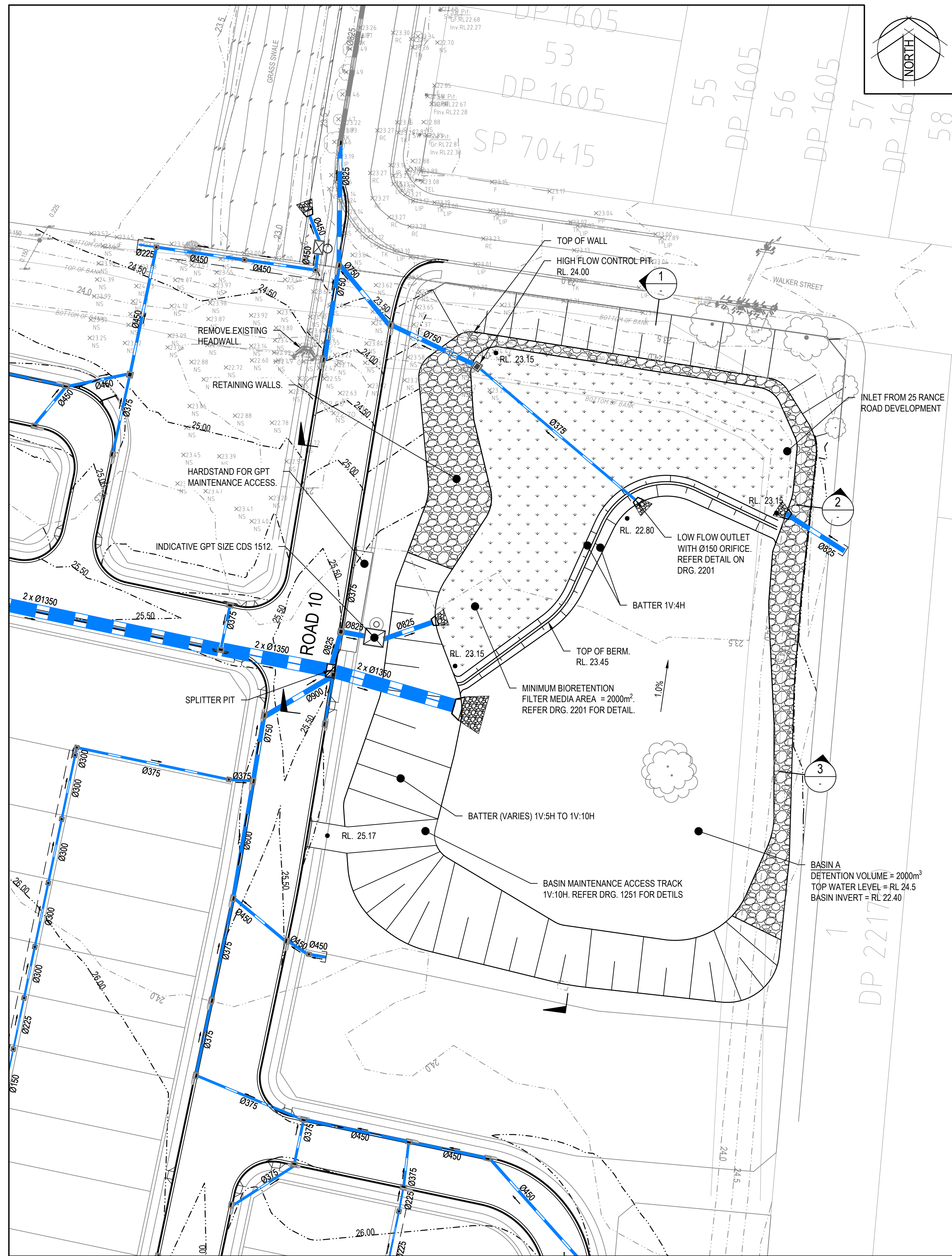
Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

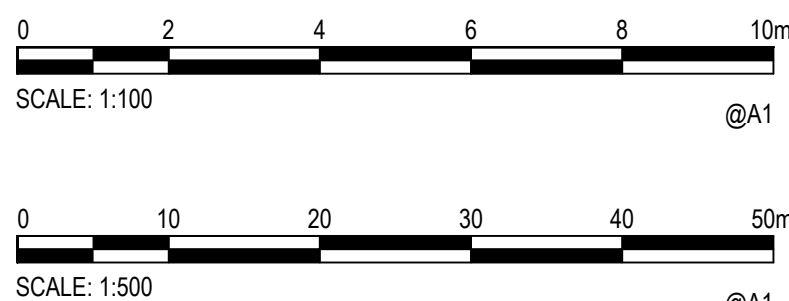
Client LENDLEASE COMMUNITIES

Project CHAPMAN STREET WERRINGTON
CIVIL WORKS
DEVELOPMENT APPLICATION
Title ROAD TYPICAL DETAILS

Status				
FOR APPROVAL				
NOT TO BE USED FOR CONSTRUCTION PURPOSES				
Datum	Date	Scale	Size	
A.H.D	Oct' 2019	AS SHOWN	A1	
Drawing Number				Revision
80219053-001-CI-1601				3



DETENTION BASIN A PLAN

[illegible]

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

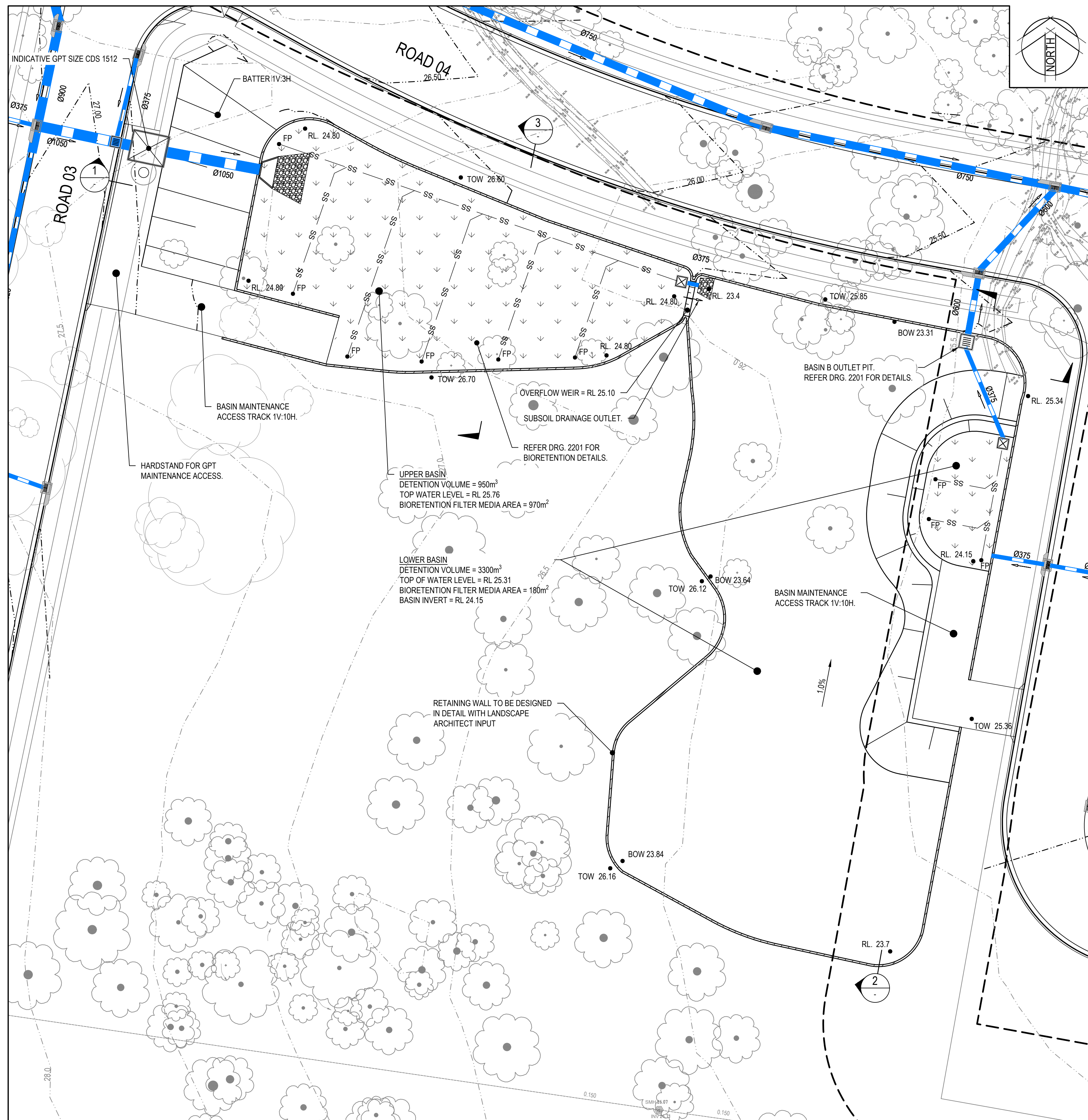
Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved	
AJG	1/10/2019

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	BIORETENTION / OSD BASIN PLAN AND SECTIONS SHEET 1 OF 3

NOTE:

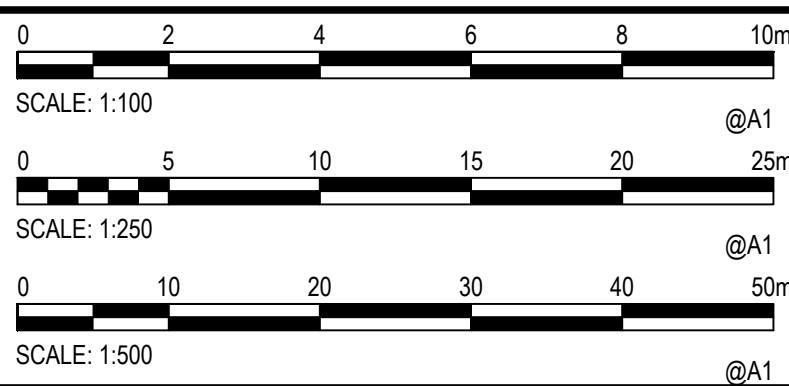
1. REFER DRG. 2201 FOR OUTLET DETAILS
2. REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1
Drawing Number			Revision
80219053-001-CI-2001			3



DETENTION BASIN B PLAN

3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	A/JG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved	
AJG	1/10/2019

Client **LENDLEASE COMMUNITIES**

Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	BIORETENTION / OSD BASIN PLAN AND SECTIONS SHEET 2 OF 3

NOTE:

1. REFER DRG. 2201 FOR OUTLET DETAILS
2. REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

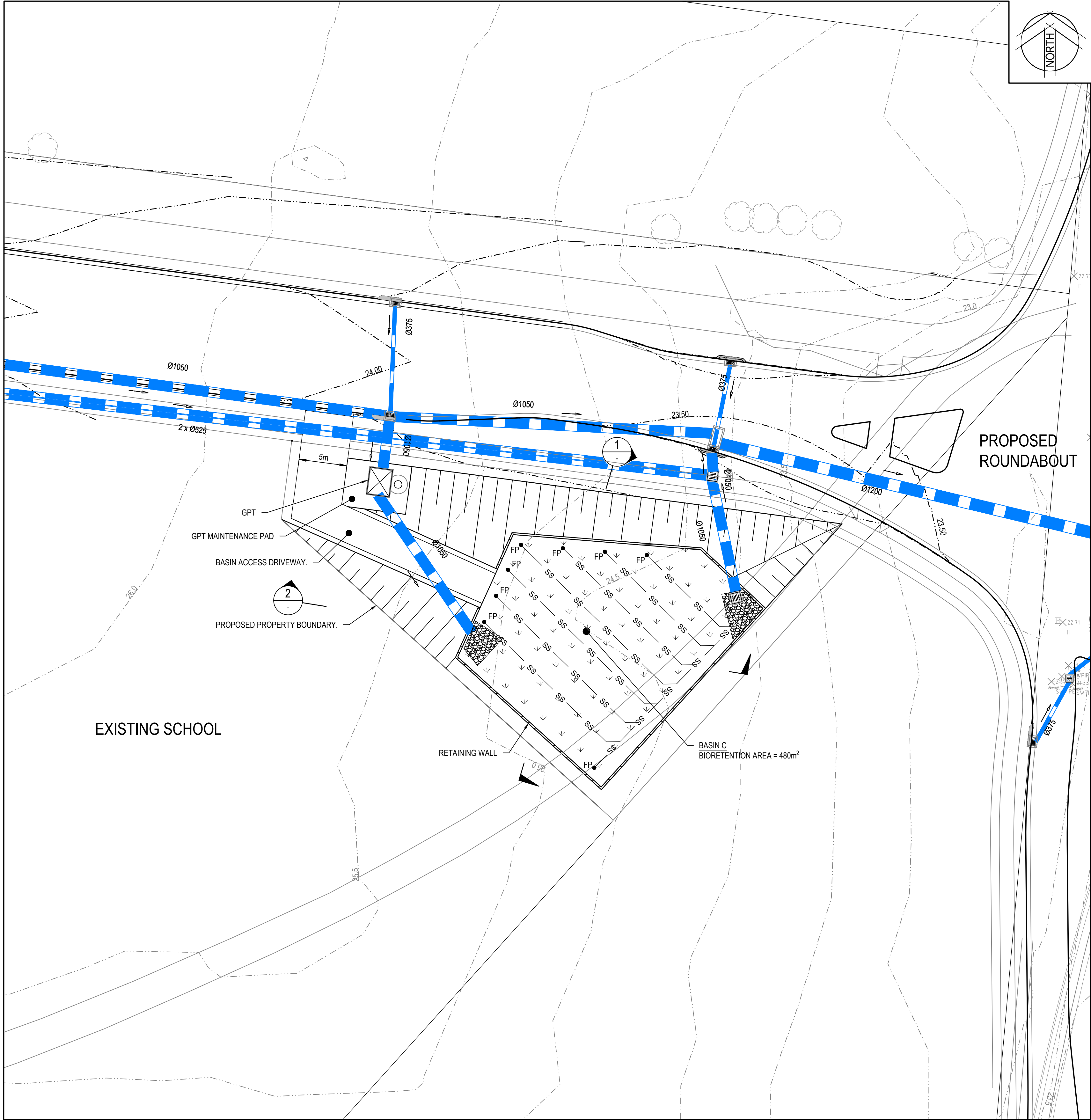
Status	FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES
--------	--

Datum A.H.D	Date Oct' 2019	Scale AS SHOWN	Size A1
Drawing Number 80219053-001-CI-2002			Revision 3

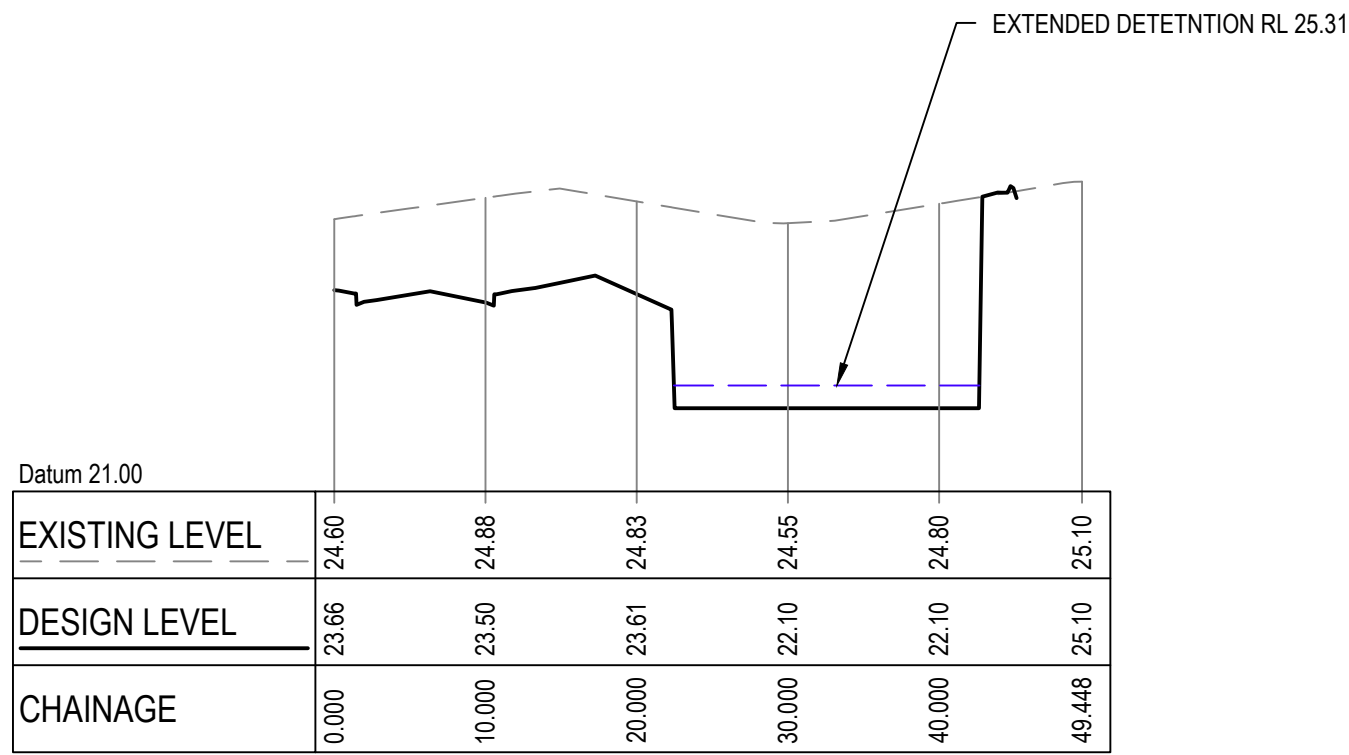
DATE PLOTTED: 1 October 2019 3:33 PM BY: YIN NWE LWIN

XR-80219053-CI-OSD-PLAN; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-SURVEY; XR-80219053-CI-ROAD; XR-80219053-CI-STORMWATER; XR-80219053-CI-EXIST CONTOURS-500; XR-80219053-CI-ROUNDABOUT
CAD File: \\cardno-cad\global\AU\NSW\Drawings\Build\001 CI-2001-2003 DETENTION BASIN PLAN AND SECTIONS.dwg

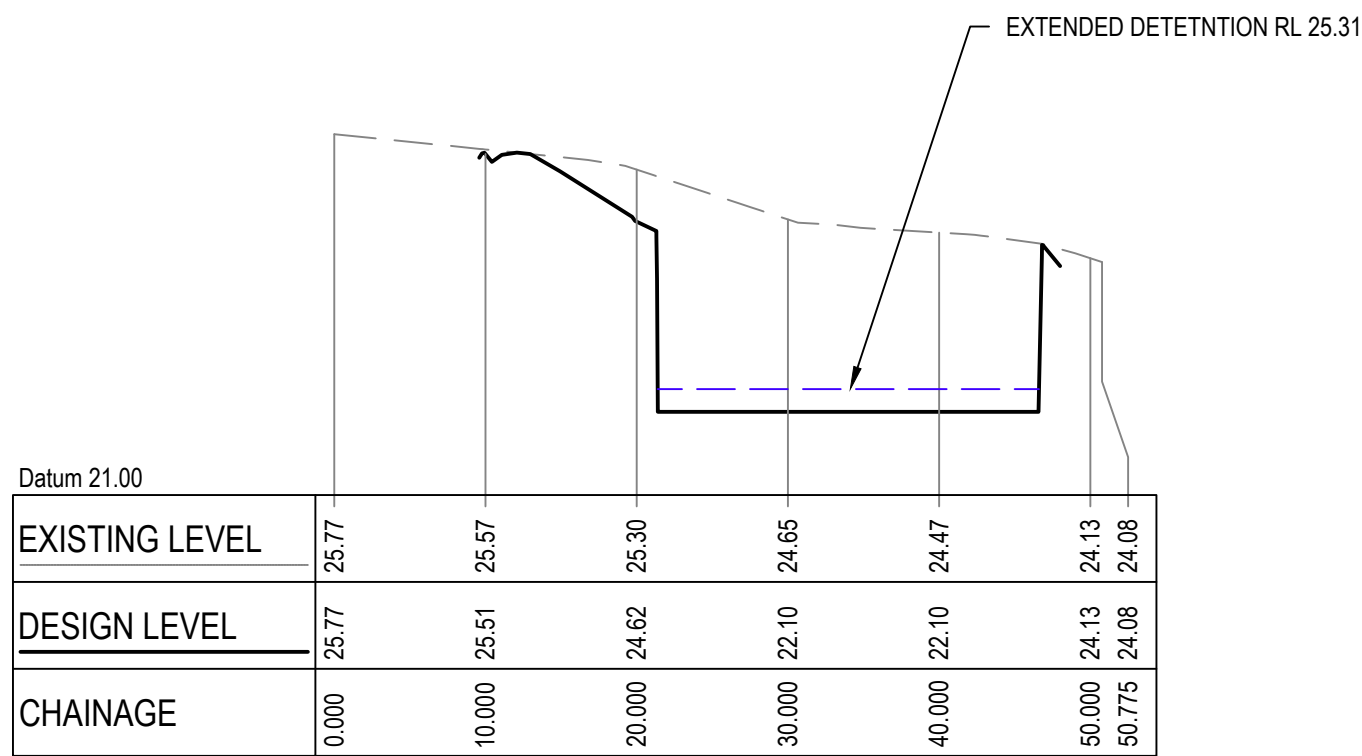
Project: CHAPMAN STREET WERRINGTON
Title: BIORETENTION BASIN PLAN AND SECTIONS
Sheet: SHEET 3 OF 3



DETENTION BASIN C PLAN
SCALE 1:250



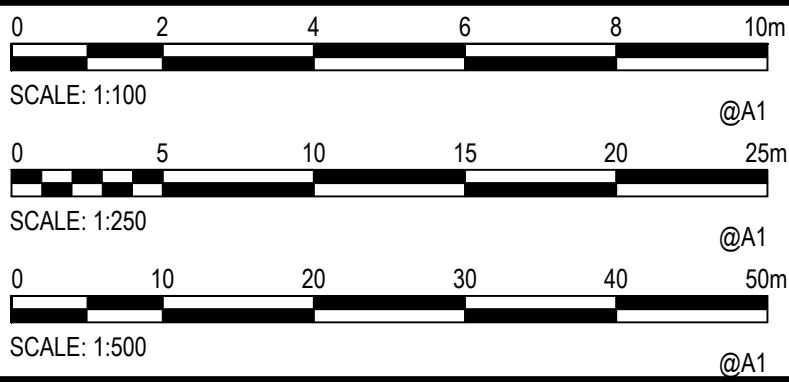
SECTION 1
SCALE 1:100V 1:500H



SECTION 2
SCALE 1:100V 1:500H

NOTE:
1. REFER DRG. 2201 FOR OUTLET DETAILS
2. REFER LANDSCAPE ARCHITECT DRAWINGS FOR OPEN SPACE ESTABLISHMENT DETAILS

Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

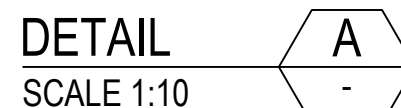
Drawn YNL	Date 1/10/2019
Checked PL	Date 1/10/2019
Designed HLD	Date 1/10/2019
Verified PL	Date 1/10/2019
Approved AJG	Date 1/10/2019

Client LENLEASE COMMUNITIES	Project CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title BIORETENTION BASIN PLAN AND SECTIONS SHEET 3 OF 3	

Status FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	Datum A.H.D	Date Oct 2019	Scale AS SHOWN	Size A1
Drawing Number 80219053-001-CI-2003				Revision 3



SCALE 1:25



NOTE
OSD CALCULATED AT THE INTERSECTION OF LANDERS STREET AND CHAPMAN STREET.



0 200 400 600 800 1000mm
SCALE 1:10 @A1

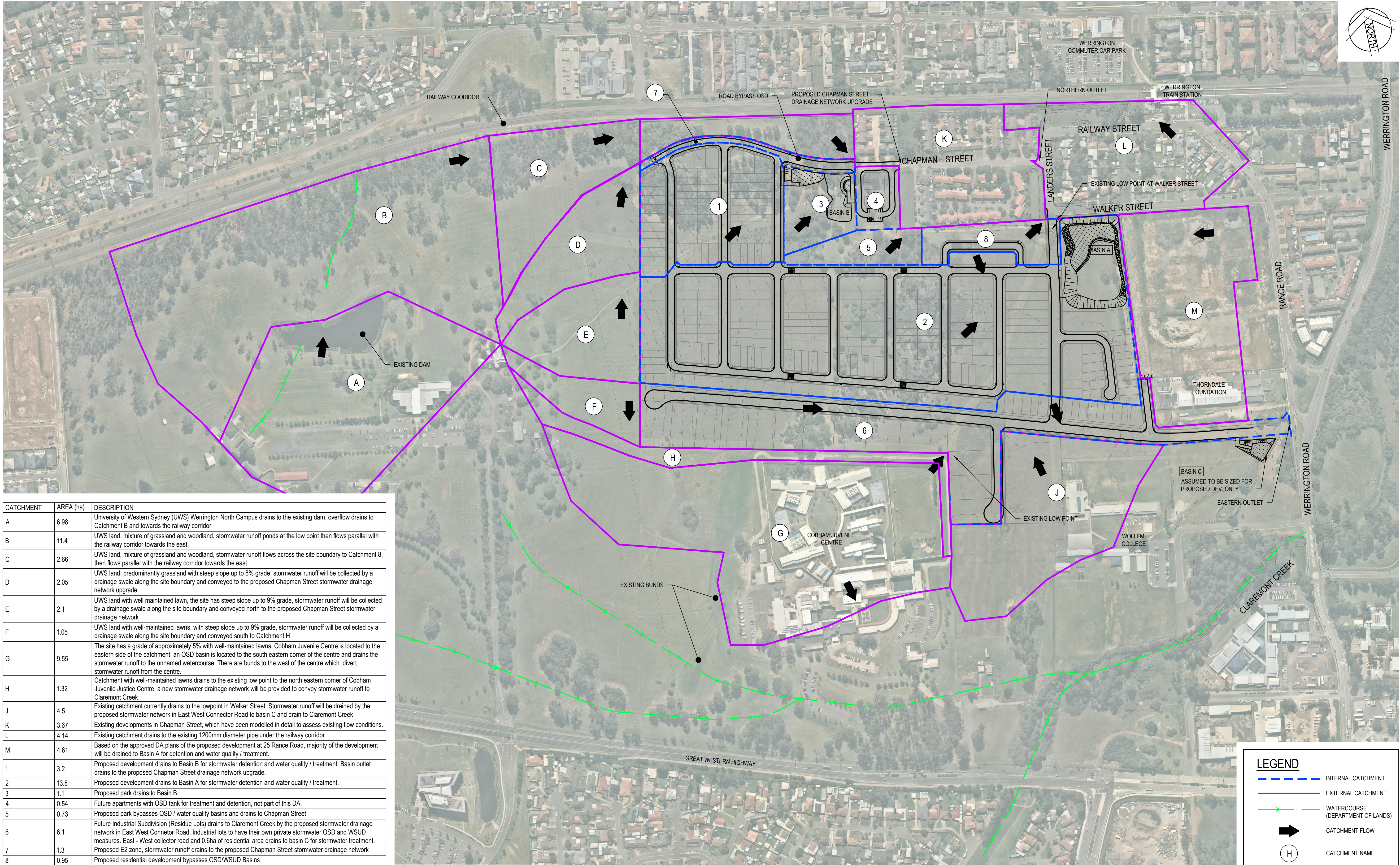
0 500 1000 1500 2000mm
SCALE 1:20 @A1

0 0.5 1 1.5 2 2.5m
SCALE 1:25 @A1

Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

Status				FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
Date	Date	Scale	Size		
A.H.D	Oct' 2019	AS SHOWN	A1		
Drawing Number				Revision	
80219053-001-CI-2201				3	

DATE PLOTTED: 1 October 2019 5:33 PM BY: YIN NWE LWN
XREFS: XR-80219053-CI-SURVEY; XR-80219053-CI-ROAD; XR-80219053-CI-EXISTING CONTOURS; XR-80219053-CI-AERIAL; XR-80219053-CI-EXISTING WATERCOURSES; XR-80219053-CI-OSD-PLAN
CAD File: \\cardno-corp\global\AU\NSW\Drawings\Build\001 CIVIL WORKS\80219053-001-CI-2301 STORMWATER CATCHMENT PLAN.dwg



CATCHMENT	AREA (ha)	DESCRIPTION
A	6.98	University of Western Sydney (UWS) Werrington North Campus drains to the existing dam, overflow drains to Catchment B and towards the railway corridor
B	11.4	UWS land, mixture of grassland and woodland, stormwater runoff ponds at the low point then flows parallel with the railway corridor towards the east
C	2.66	UWS land, mixture of grassland and woodland, stormwater runoff flows across the site boundary to Catchment 8, then flows parallel with the railway corridor towards the east
D	2.05	UWS land, predominantly grassland with steep slope up to 8% grade, stormwater runoff will be collected by a drainage swale along the site boundary and conveyed to the proposed Chapman Street stormwater drainage network upgrade
E	2.1	UWS land with well maintained lawn, the site has steep slope up to 9% grade, stormwater runoff will be collected by a drainage swale along the site boundary and conveyed north to the proposed Chapman Street stormwater drainage network
F	1.05	UWS land with well-maintained lawns, with steep slope up to 9% grade, stormwater runoff will be collected by a drainage swale along the site boundary and conveyed south to Catchment H
G	9.55	The site has a grade of approximately 5% with well-maintained lawns. Cobham Juvenile Centre is located to the eastern side of the catchment, an OSD basin is located to the south eastern corner of the centre and drains the stormwater runoff to the unnamed watercourse. There are bunds to the west of the centre which divert stormwater runoff from the centre.
H	1.32	Catchment with well-maintained lawns drains to the existing low point to the north eastern corner of Cobham Juvenile Justice Centre, a new stormwater drainage network will be provided to convey stormwater runoff to Claremont Creek
J	4.5	Existing catchment currently drains to the lowpoint in Walker Street. Stormwater runoff will be drained by the proposed stormwater network in East West Connector Road to basin C and drain to Claremont Creek
K	3.67	Existing developments in Chapman Street, which have been modelled in detail to assess existing flow conditions.
L	4.14	Existing catchment drains to the existing 1200mm diameter pipe under the railway corridor
M	4.61	Based on the approved DA plans of the proposed development at 25 Rance Road, majority of the development will be drained to Basin A for detention and water quality / treatment.
1	3.2	Proposed development drains to Basin B for stormwater detention and water quality / treatment. Basin outlet drains to the proposed Chapman Street drainage network upgrade.
2	13.8	Proposed development drains to Basin A for stormwater detention and water quality / treatment.
3	1.1	Proposed park drains to Basin B.
4	0.54	Future apartments with OSD tank for treatment and detention, not part of this DA.
5	0.73	Proposed park bypasses OSD / water quality basins and drains to Chapman Street
6	6.1	Future Industrial Subdivision (Residue Lots) drains to Claremont Creek by the proposed stormwater drainage network in East West Connector Road. Industrial lots to have their own private stormwater OSD and WSUD measures. East - West collector road and 0.6ha of residential area drains to basin C for stormwater treatment.
7	1.3	Proposed E2 zone, stormwater runoff drains to the proposed Chapman Street stormwater drainage network
8	0.95	Proposed residential development bypasses OSD/WSUD Basins

LEGEND

INTERNAL CATCHMENT

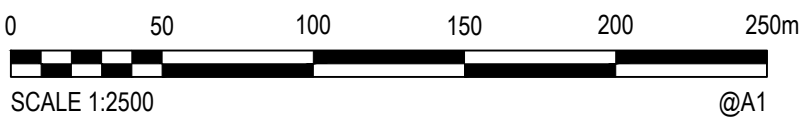
EXTERNAL CATCHMENT

WATERCOURSE
(DEPARTMENT OF LANDS)

CATCHMENT FLOW

CATCHMENT NAME

Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL		HLD	PL A/JG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)		HLD	
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)		HLD	



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

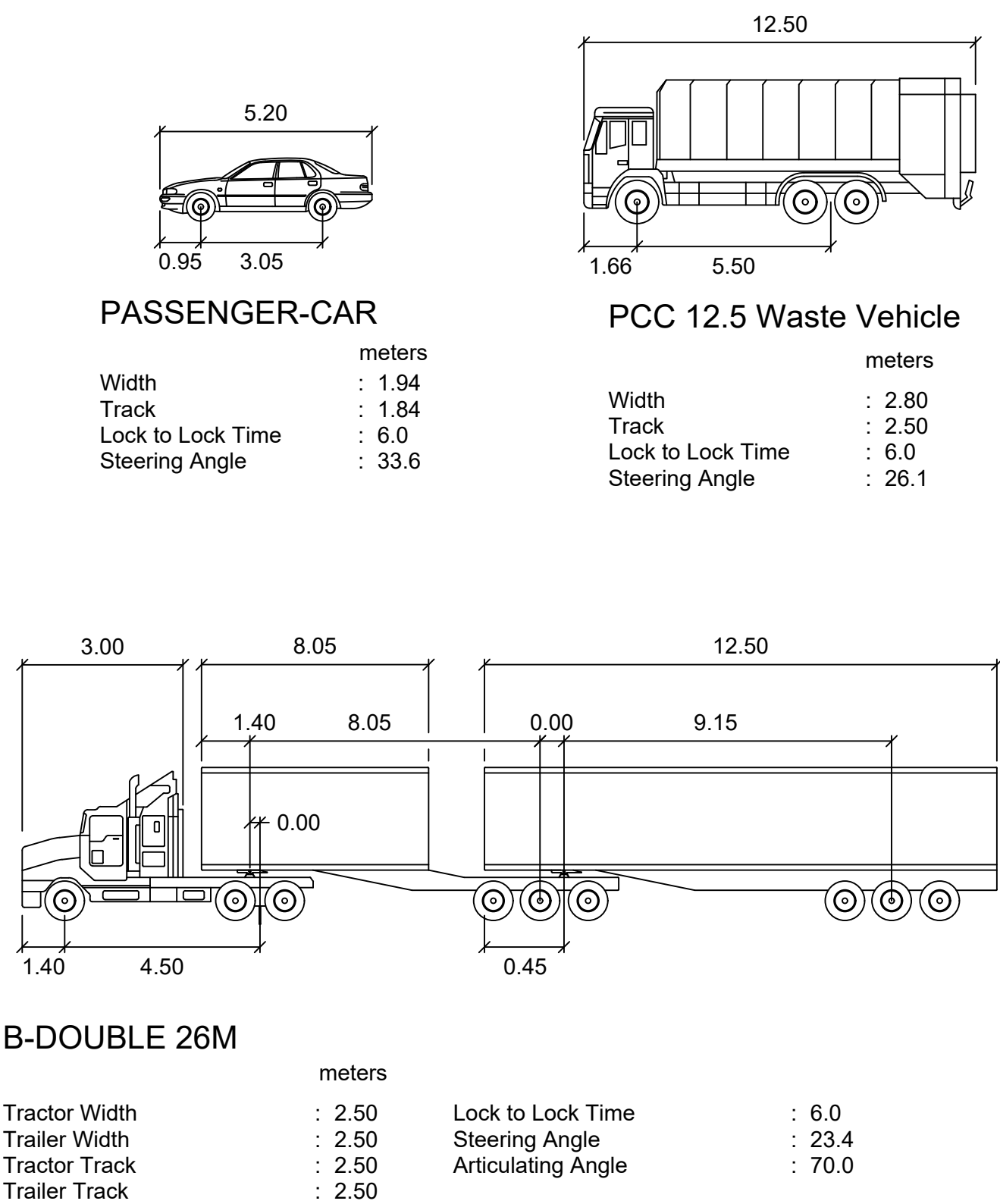
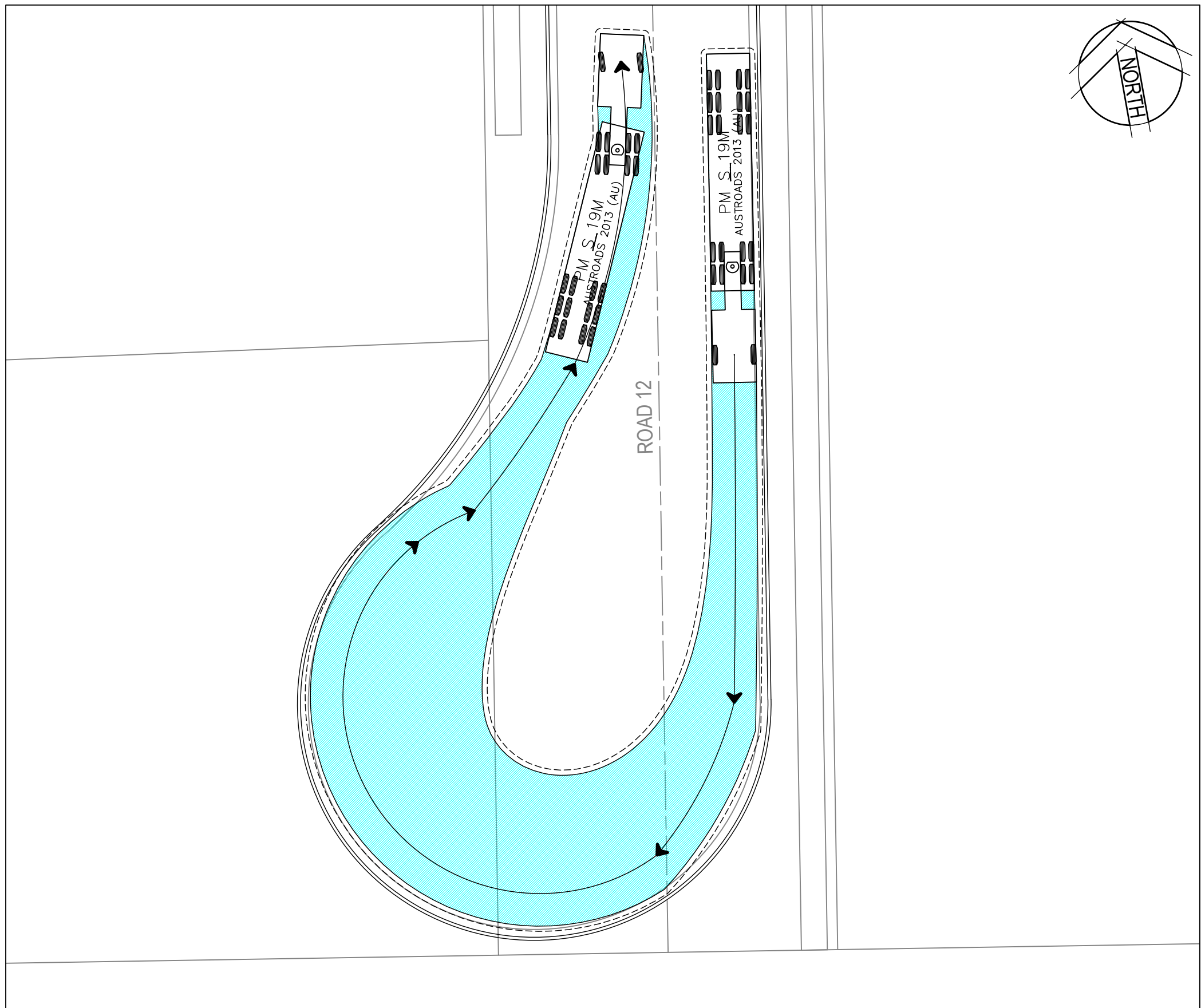
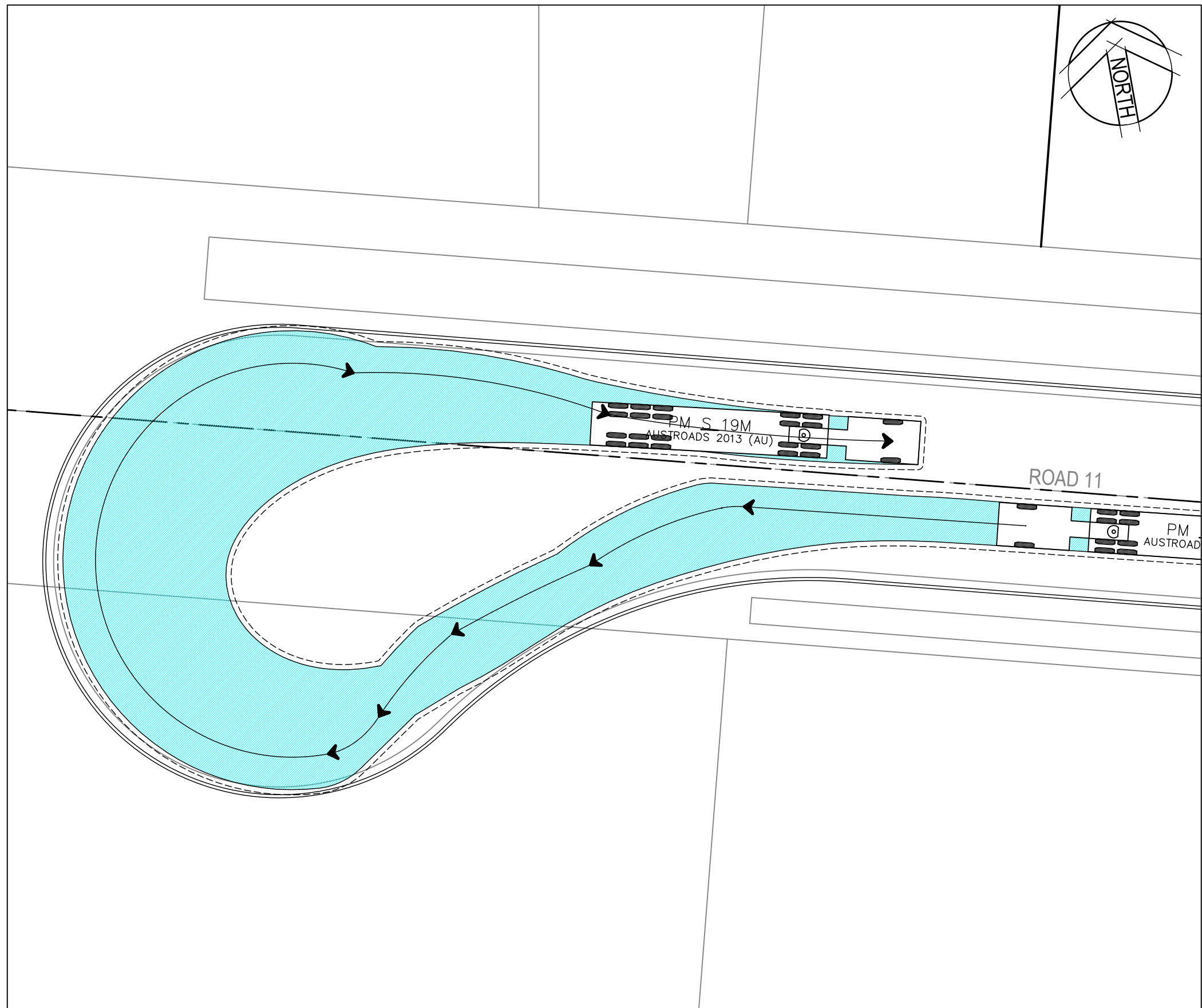
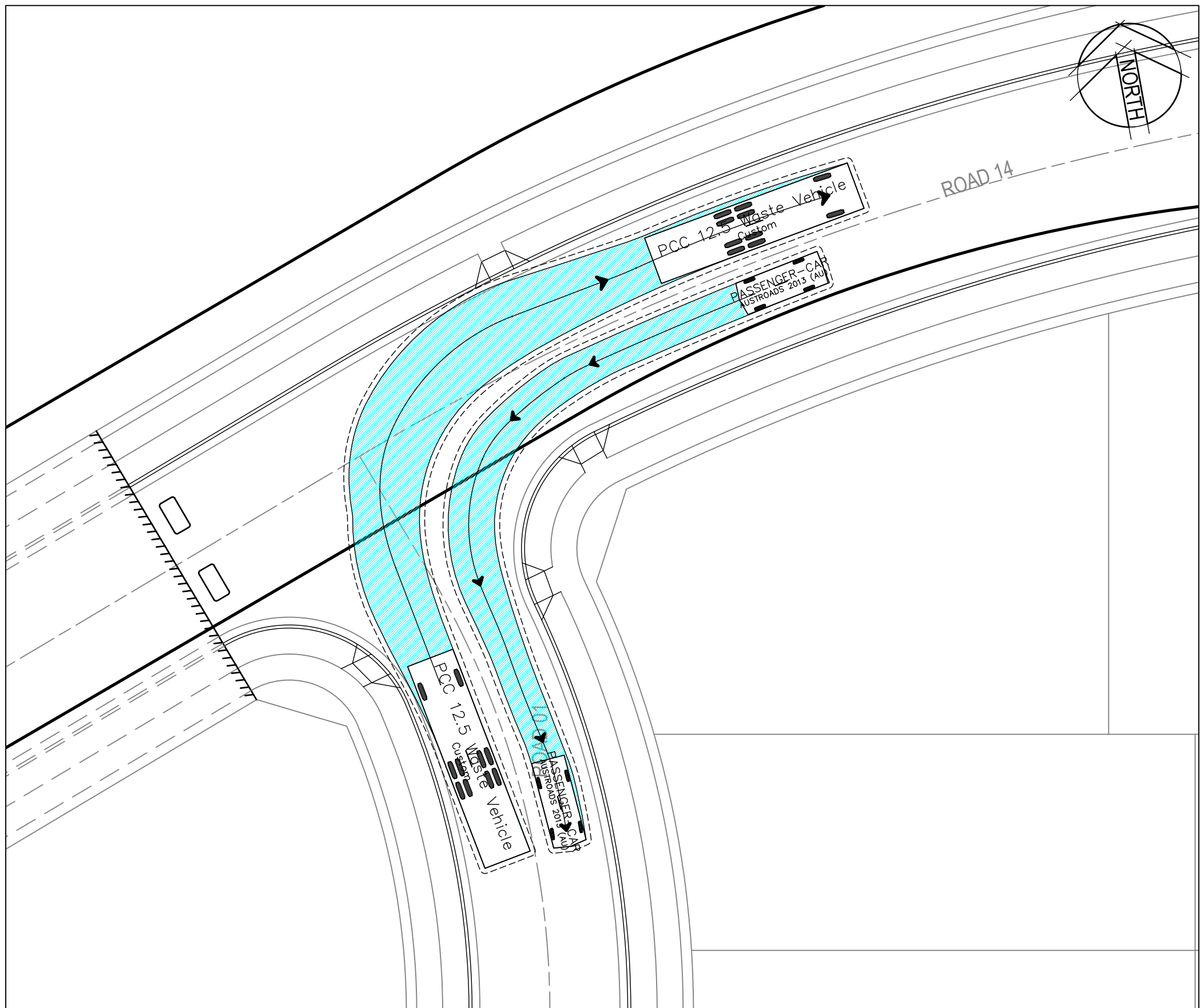
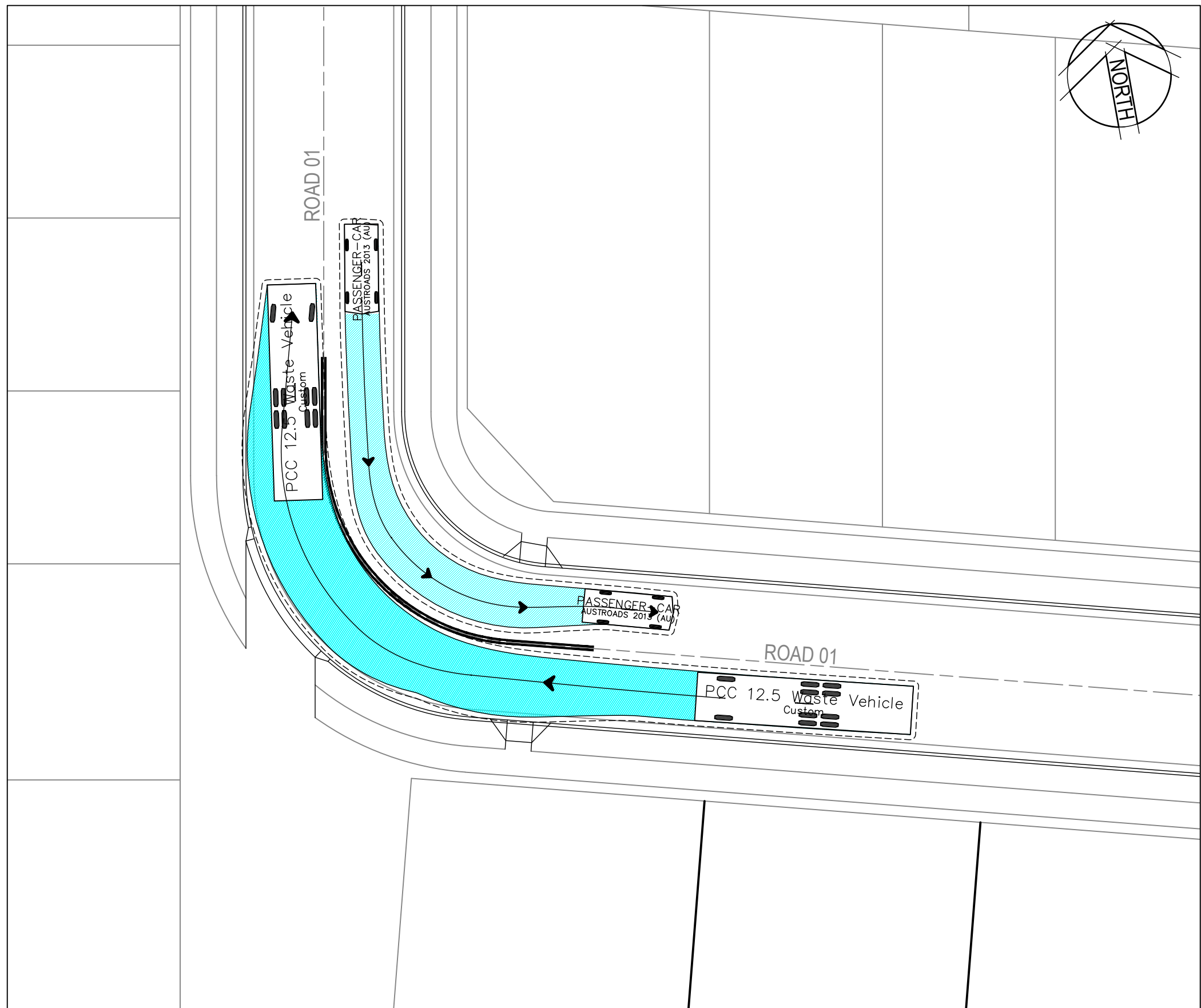
Cardno
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

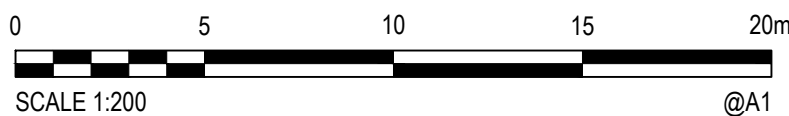
Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
A/JG		1/10/2019	

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	STORMWATER CATCHMENT PLAN

Status	FOR APPROVAL		
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Datum	Date	Scale	Size
A.H.D	Oct' 2019	1:2500	A1
Drawing Number			Revision
80219053-001-CI-2301			3



3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	A/JG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

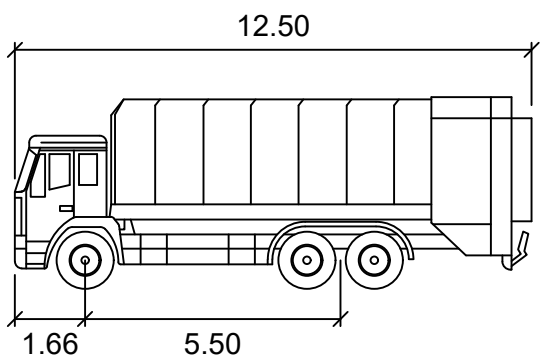


Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

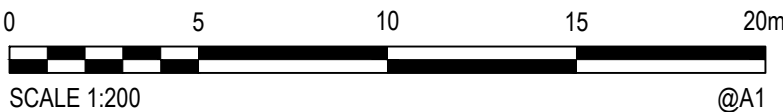
Client	LENDLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	TURN PATH PLANS SHEET 1 OF 5

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	AS SHOWN	A1
Drawing Number			Revision
80219053-001-CI-3001			3

XREFs: XR-80219053-CI-BOUNDARY; XR-80219053-CI-LOT LAYOUT; XR-80219053-CI-PORTS; XR-80219053-CI-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SIGNAGE AND LINEMARKING; XR-80219053-CI-ROUNDABOUT; SW Base Opble RECONFIGURE 190008
CAD File: \\cardno-corp\global\AU\NSW\Drawings\Build\001 CIVIL WORKS\80219053-001-CI-3001-3005 TURN PATH PLANS.dwg



PCC 12.5 Waste Vehicle
meters
Width : 12.50
Track : 1.66
Lock to Lock Time : 26.1
Steering Angle : 26.1



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.



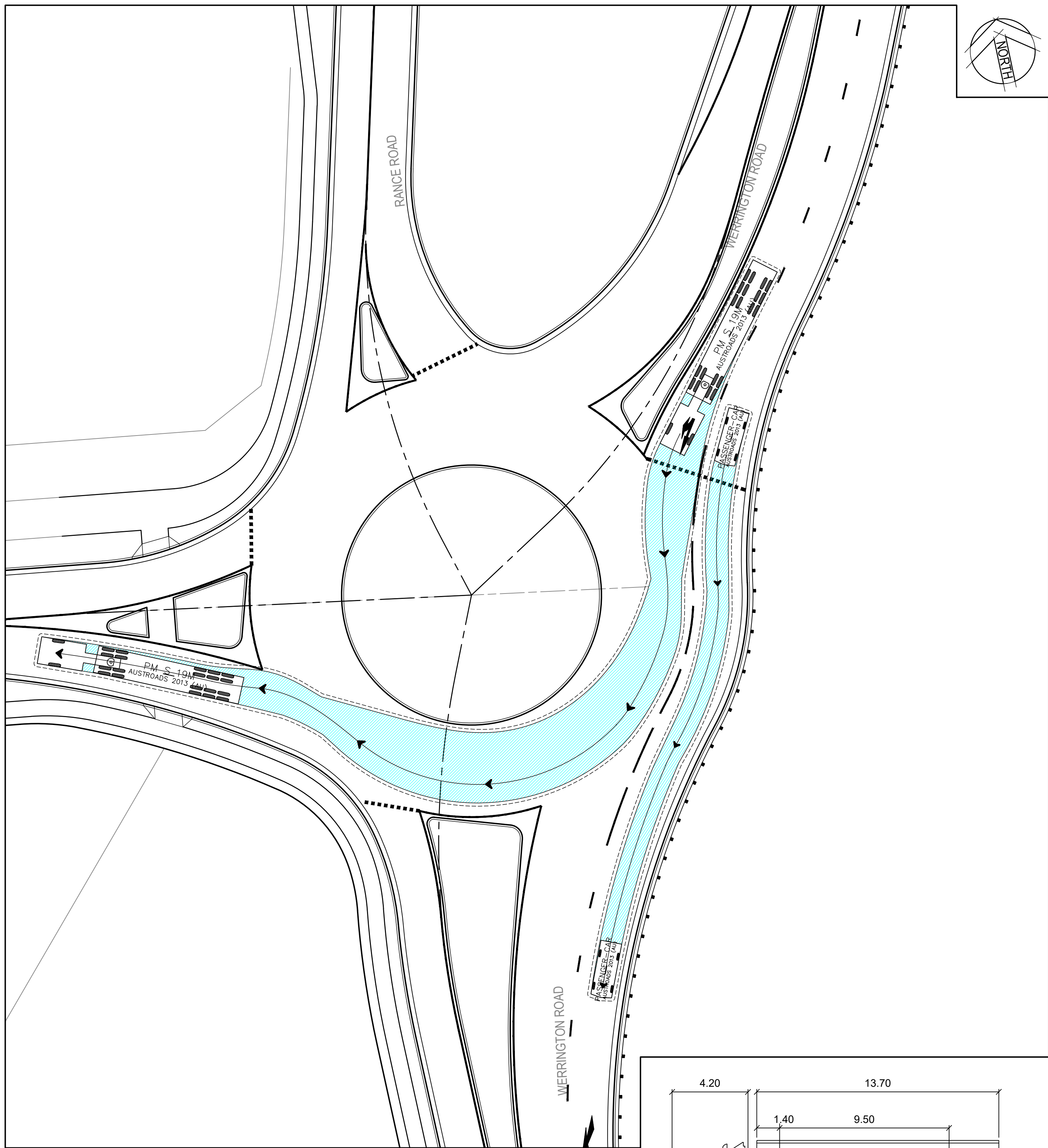
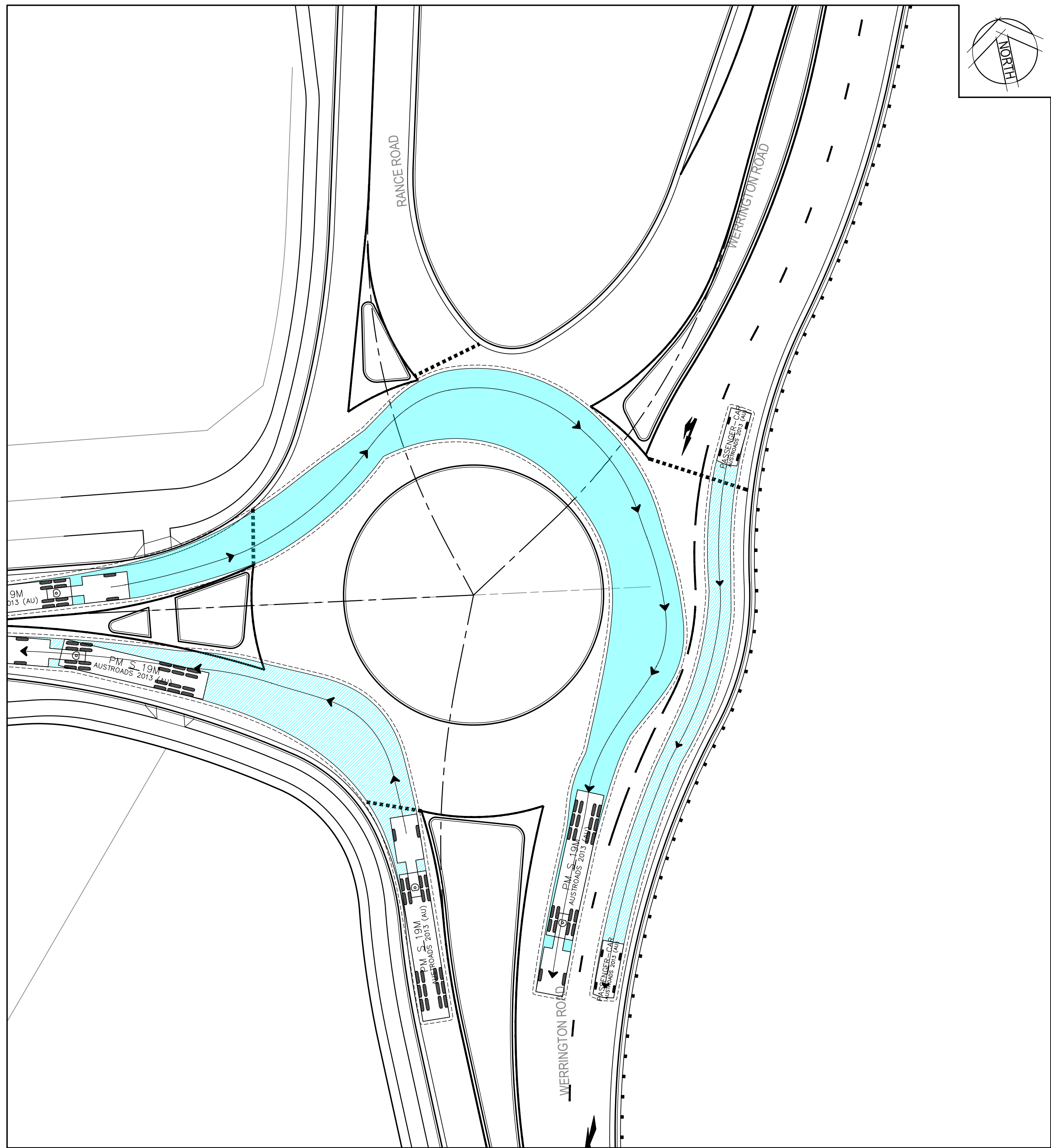
Cardno®
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

Client	LENDEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	TURN PATH PLANS
	SHEET 2 OF 5

Status					FOR APPROVAL				
NOT TO BE USED FOR CONSTRUCTION PURPOSES									
Datum		Date		Scale		Size			
A.H.D		Oct' 2019		AS SHOWN		A1			
Drawing Number							Revision		
80219053-001-CI-3002							3		



PASSENGER-CAR

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.6

PM S 19M

	meters		
Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 27.8
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		

3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	A/JG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		
Rev.	Date	Description	Des.	Verif.	Appd.



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the
benefit of and use by the client in accordance with the
terms of the retainer. Cardno Limited does not and shall not
assume any responsibility or liability whatsoever to any third
party arising out of any use or reliance by third party on the
content of this document.



Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2065
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

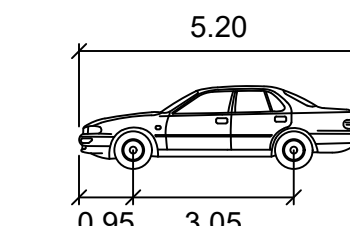
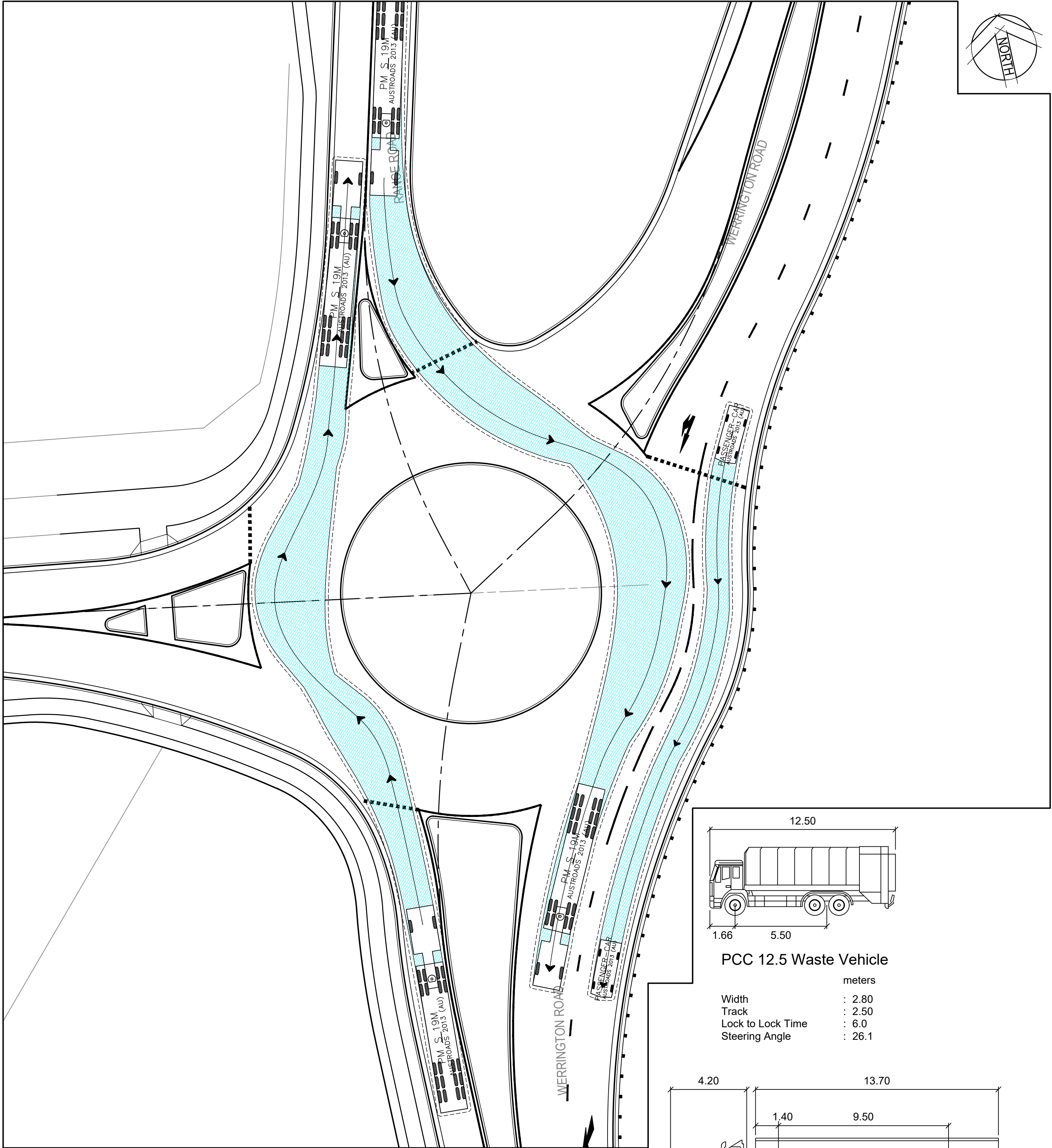
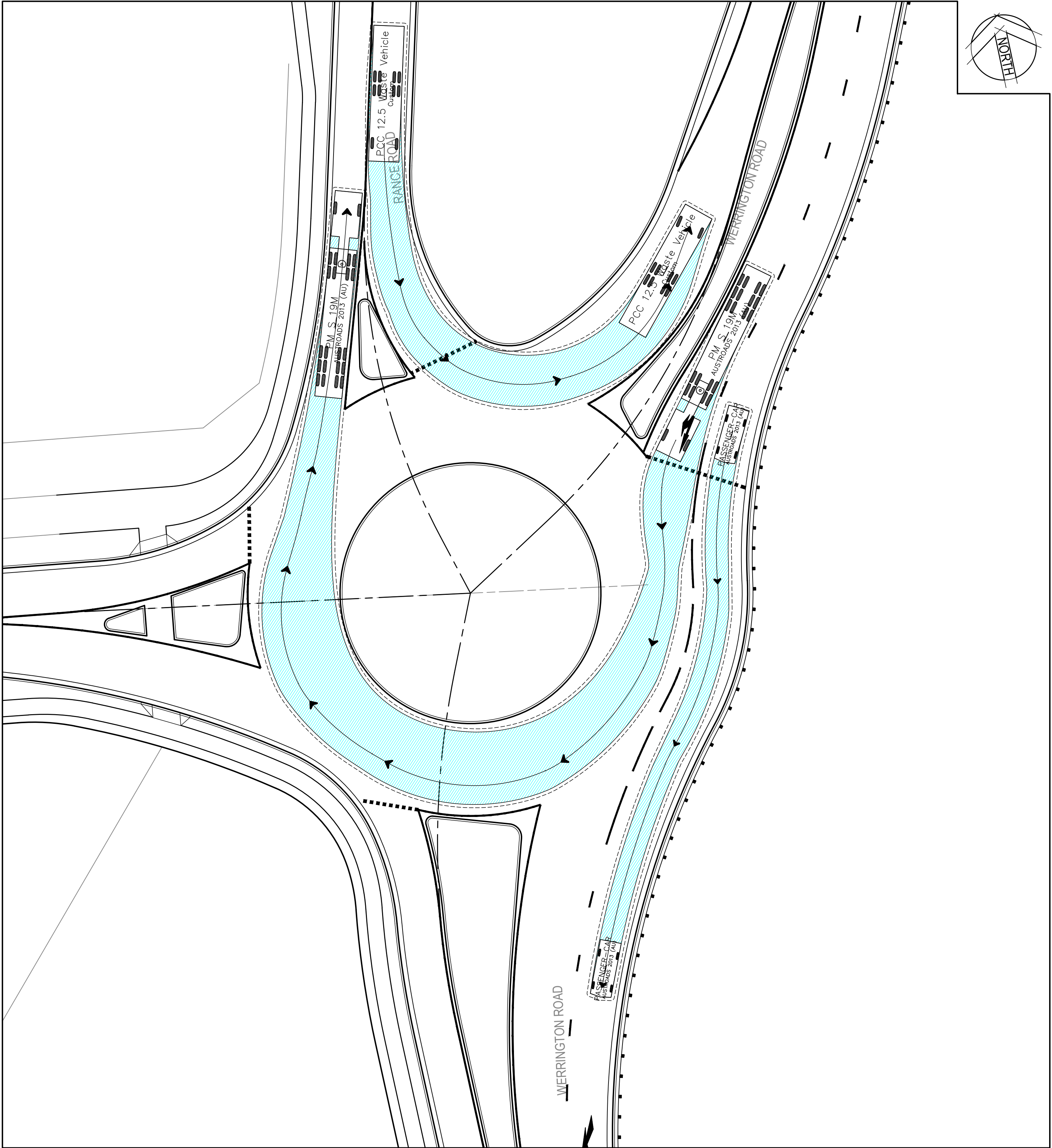
Drawn	Date
YNL	1/10/2019
Checked	Date
PL	1/10/2019
Designed	Date
HLD	1/10/2019
Verified	Date
PL	1/10/2019
Approved	
AJG	1/10/2019

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON CIVIL WORKS DEVELOPMENT APPLICATION
Title	TURN PATH PLANS SHEET 3 OF 5

Status			
FOR APPROVAL			
NOT TO BE USED FOR CONSTRUCTION PURPOSES			
Date	Date	Scale	Size
A.H.D	Oct' 2019	1:250	A1
Drawing Number			Revision
80219053-001-CI-3003			3

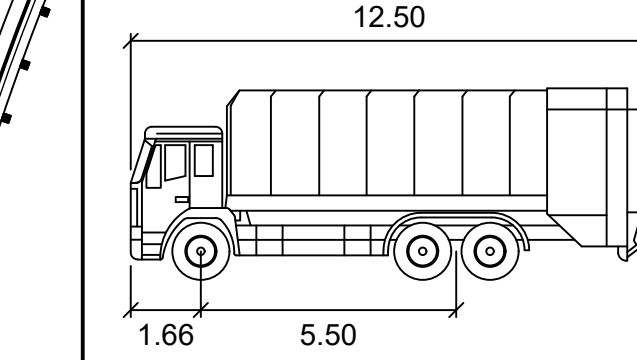
XREFs: XR-80219053-CH-BOUNDARY; XR-80219053-CH-LOT LAYOUT; XR-80219053-CH-ROAD; XR-80219053-CI-CONTROL; XR-80219053-CI-SIGNAGE AND LINEMARKING; XR-80219053-CH-ROUNDABOUT; SW Base Opble RECONFIGURE 190008
CAD File: \\cardno.cop\global\AU\NSW\Director\Drawings\Build\001 CIVIL WORKS\80219053-001-CI-3001-3005 TURN PATH PLANS.dwg

DATE PLOTTED: 1 October 2019 5:33 PM BY: YIN NWE LWN



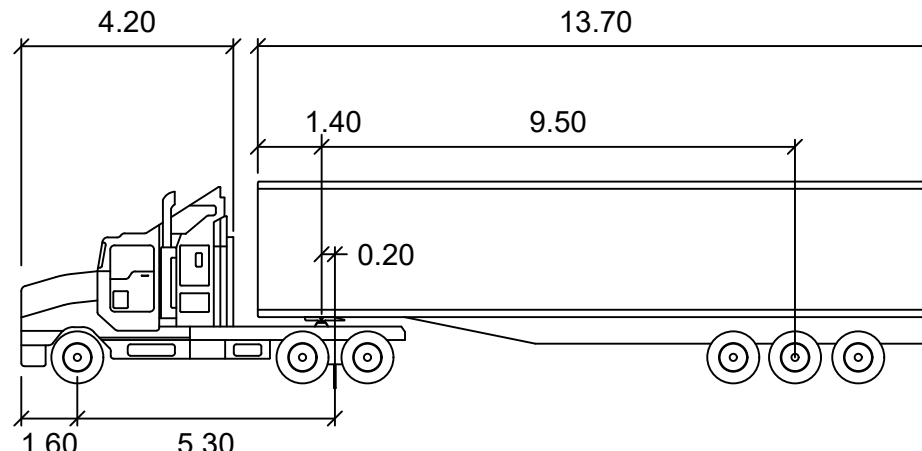
PASSENGER-CAR

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.6



PCC 12.5 Waste Vehicle

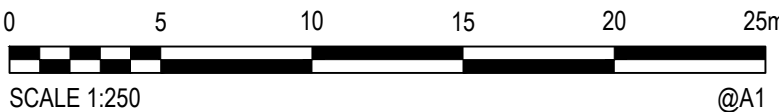
	meters
Width	: 2.80
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 26.1



PM S 19M

	meters
Tractor Width	: 2.50
Tractor Width	: 2.50
Tractor Track	: 2.50
Tractor Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 27.8
Articulating Angle	: 70.0

Rev.	Date	Description	Des.	Verif.	Appd.
3	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
2	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		
1	9/08/2019	ISSUED FOR INFORMATION (50% DA)	HLD		



© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno
Shaping the Future
Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

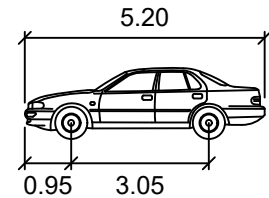
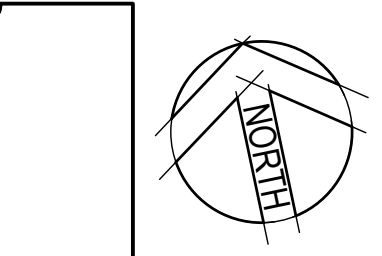
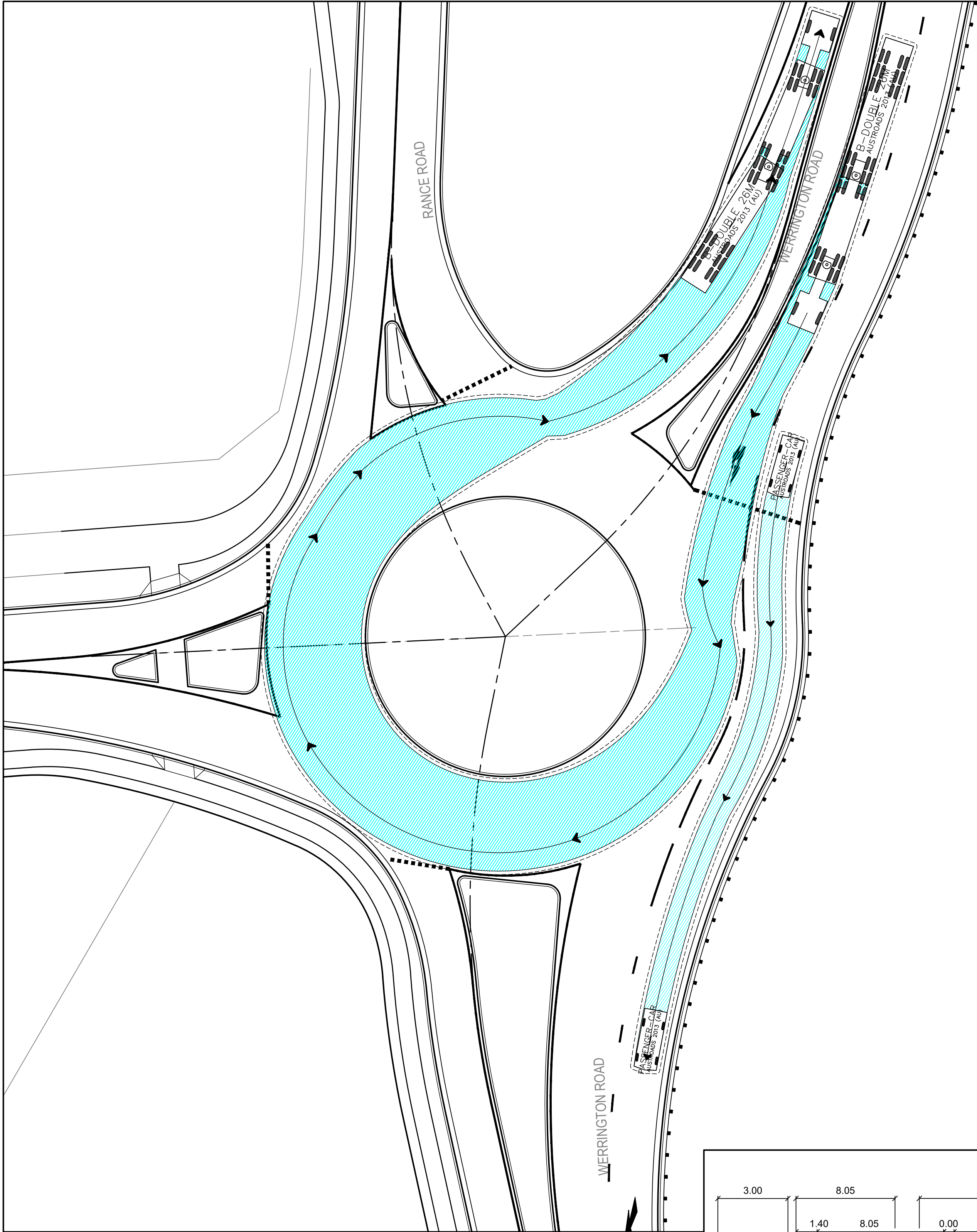
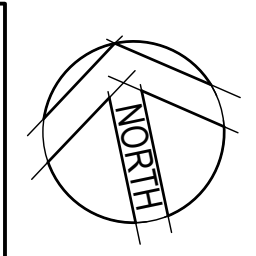
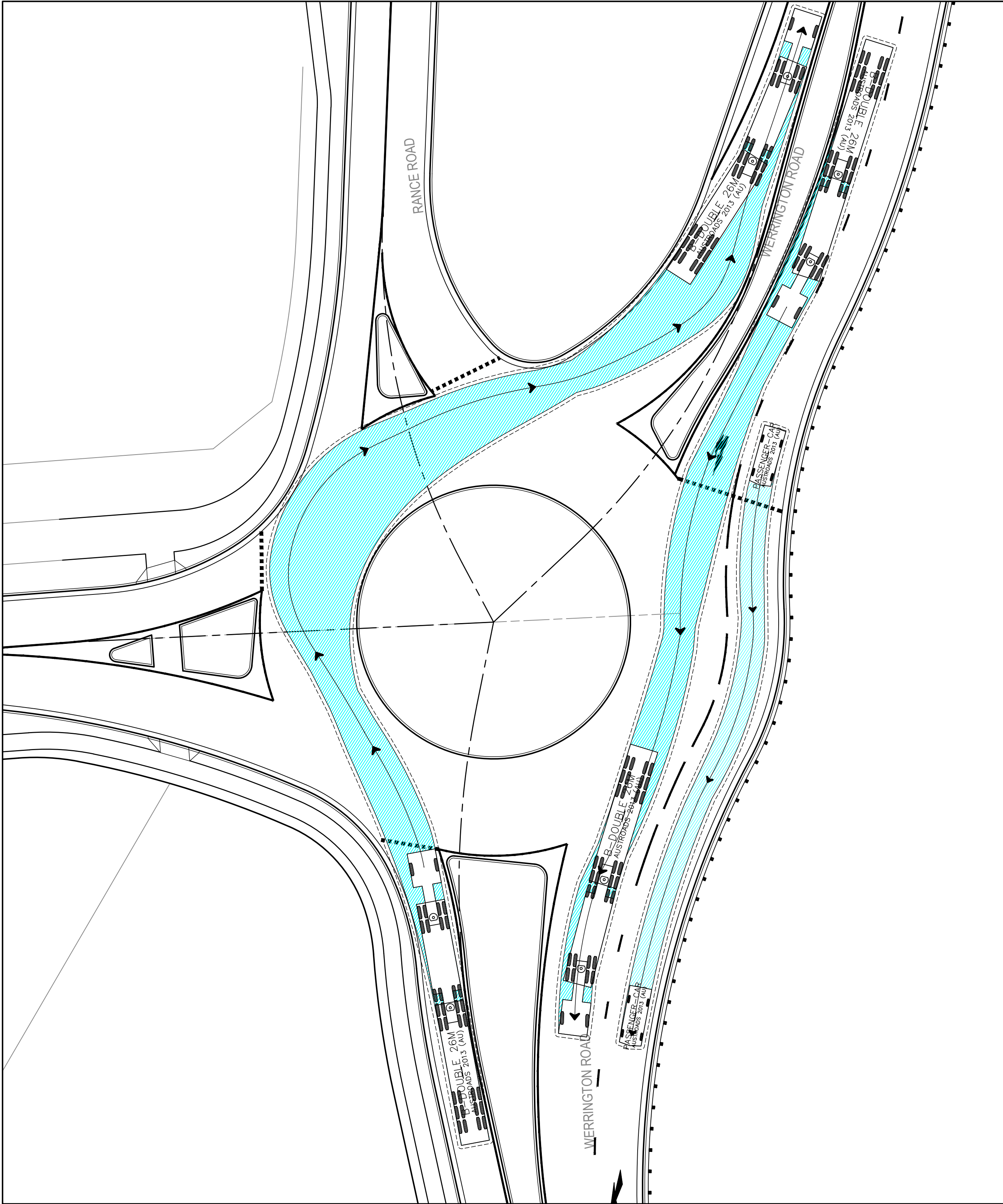
Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved	AJG	Date	1/10/2019

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	TURN PATH PLANS
	SHEET 4 OF 5

Status				FOR APPROVAL	
NOT TO BE USED FOR CONSTRUCTION PURPOSES					
Datum		Date	Scale	Size	
A.H.D		Oct' 2019	1:250	A1	
Drawing Number				Revision	
80219053-001-CI-3004				3	

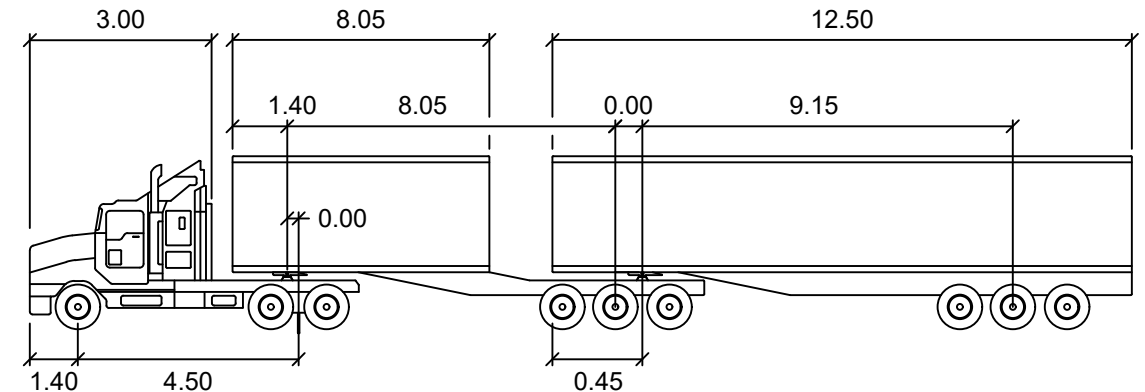
XREFs: XR-80219053-CH-BOUNDARY; XR-80219053-CH-LOT LAYOUT; XR-80219053-CH-ROAD; XR-80219053-CH-CONTROL; XR-80219053-CH-SIGNAGE AND LINE MARKING; XR-80219053-CH-ROUNDABOUT; SW Base Option RECONFIGURE 190008
CAD File: \\cardno-corp\global\AU\NSW\Drawings\Build\001 CIVIL WORKS\80219053-001-CI-3001-3005 TURN PATH PLANS.dwg

DATE PLOTTED: 1 October 2019 5:33 PM BY: YIN NWE LWN



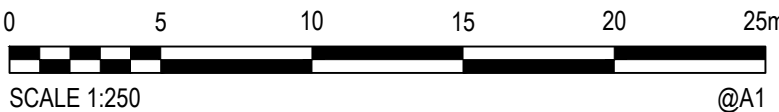
PASSENGER-CAR

Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.6



B-DOUBLE 26M

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 2.50	Steering Angle	: 23.4
Tractor Track	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		



Rev.	Date	Description	Des.	Verif.	Appd.
2	1/10/2019	ISSUED FOR DA APPROVAL	HLD	PL	AJG
1	27/09/2019	ISSUED FOR INFORMATION (90% DA)	HLD		

© Cardno Limited All Rights Reserved.
This document is produced by Cardno Limited solely for the benefit of and use by the client in accordance with the terms of the retainer. Cardno Limited does not and shall not assume any responsibility or liability whatsoever to any third party arising out of any use or reliance by third party on the content of this document.

Cardno
Shaping the Future

Cardno (NSW/ACT) Pty Ltd | ABN 95 001 145 035
Level 9, The Forum, 203 Pacific Highway
St. Leonards, NSW 2055
Tel: 02 9496 7700 Fax: 02 9439 5170
Web: www.cardno.com.au

Drawn	YNL	Date	1/10/2019
Checked	PL	Date	1/10/2019
Designed	HLD	Date	1/10/2019
Verified	PL	Date	1/10/2019
Approved			
AJG		1/10/2019	

Client	LENLEASE COMMUNITIES
Project	CHAPMAN STREET WERRINGTON
	CIVIL WORKS
	DEVELOPMENT APPLICATION
Title	TURN PATH PLANS
	SHEET 5 OF 5

Status	FOR APPROVAL
Datum	A.H.D
Date	Oct 2019
Scale	1:250
Size	A1
Drawing Number	80219053-001-CI-3005
Revision	2