

Cardno (Qld) Pty Ltd | ABN 57 051 074 992

Level 1, 520 Flinders Street

Townsville, QLD 4810

Tel: 07 4772 1166 Fax: 07 4721 2508

Web: www.cardno.com.au

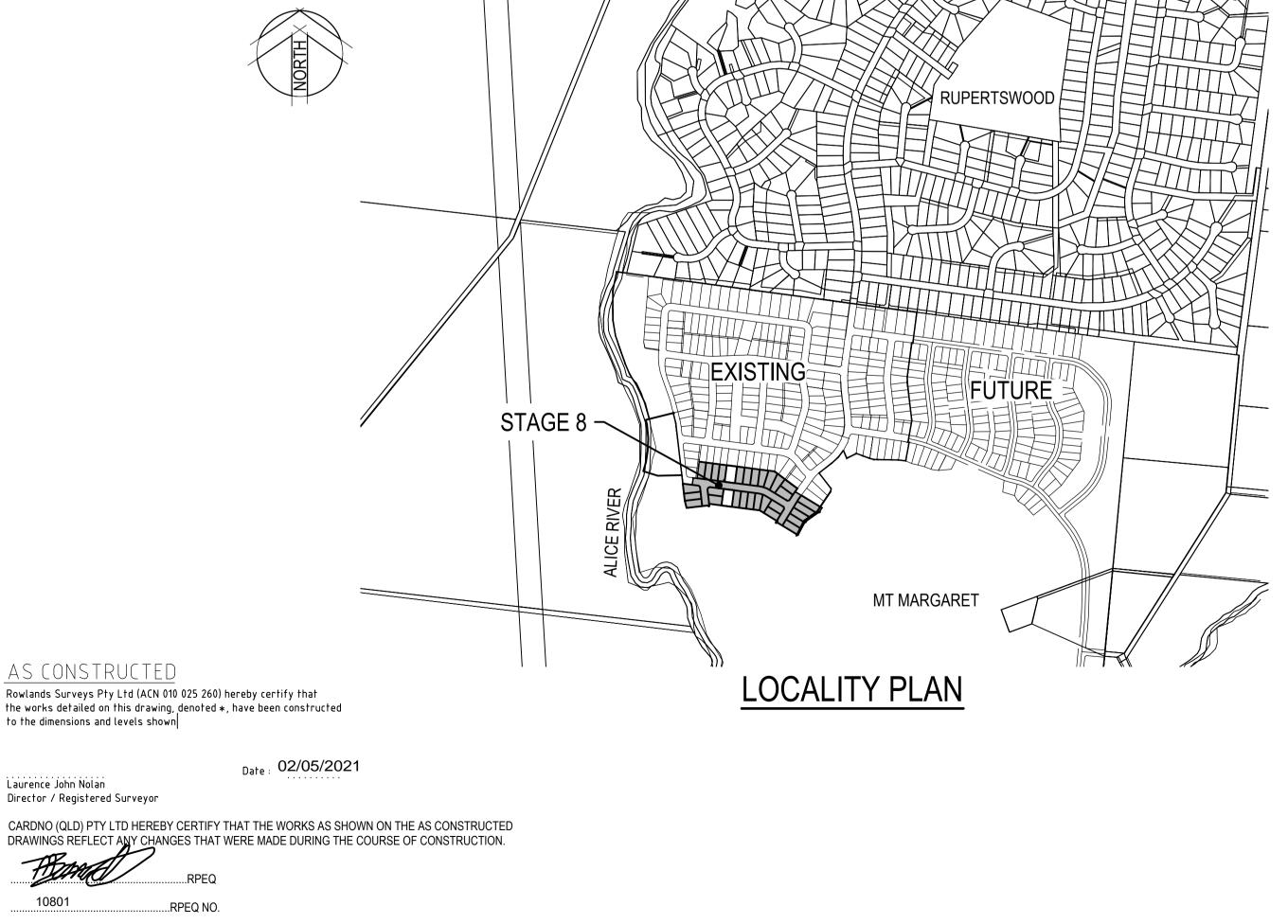
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MOUNT MARGARET DEVELOPMENTS PTY LTD

MOUNT MARGARET, ALICE RIVER STAGE 8 AS - CONSTUCTED





DATE FLOTTED: 29 July 2021 2:38 PM BT : LACHLAN LAND 1 CAD File: \\AUTOWCFS02\Data\PROJECTS\TOWNSVILLE OFFICE\9600\9671\9671-92 - Mount Margaret\ENGIN

967192-CI-1800

Drawing Number

Revision

SOIL EROSION & SEDIMENT CONTROL PLAN SHEET 3 OF 3

GENERAL

1. IF IN DOUBT ASK.

967192-CI-1829

- 2. PROJECT COMPLETED ON PSM121521, LEVEL DATUM AHD (DER) REDUCED LEVEL 50.627, AZIMUTH MGA'94
- 3. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND ALL INFORMATION ISSUED BY THE SUPERINTENDENT DURING THE COURSE OF THE CONTRACT.
- 4. DRAWINGS SHALL NOT BE SCALED
- 5. ALL DIMENSIONS RELEVANT TO SETTING OUT, SURFACE LEVELS AND INVERT LEVELS SHALL BE VERIFIED BY THE CONTRACTOR PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL REPORT ANY DISCREPANCIES TO THE SUPERINTENDENT.
- 6. THE CONTRACTOR SHALL ENSURE THAT ALL WORKS ARE MAINTAINED IN A SAFE AND STABLE CONDITION AND THAT ADEQUATE PROTECTION AGAINST EROSION AND SILTATION IS IN PLACE
- 7. WORKMANSHIP AND MATERIALS ARE TO BE IN ACCORDANCE WITH THE RELEVANT CURRENT AUSTRALIAN STANDARDS AND THE REQUIREMENTS OF TOWNSVILLE CITY COUNCIL AND OTHER AUTHORITIES AS REQUIRED

SAFETY IN DESIGN AND CONSTRUCTION

- ALL EXCAVATIONS SHALL BE CARRIED OUT BY EXPERIENCED CONTRACTORS. ANY EXCAVATION SHALL BE ADEQUATELY SHORED IN ACCORDANCE WITH WORK PLACE STANDARDS WITH SUITABLE BARRICADES PLACED AROUND THE EXCAVATION.
- 2. CONSTRUCTION ACTIVITY CAN BE HAZARDOUS. POTENTIAL SAFETY HAZARDS CONSIDERED BY THE DESIGNERS TO HAVE A HIGHER RISK THAN NORMAL CONSTRUCTION ACTIVITY ARE IDENTIFIED WITH APPROPRIATE NOTES ON THESE DRAWINGS. IT SHOULD BE NOTED THAT DESIGNERS HAVE A LOWER LEVEL OF UNDERSTANDING OF THE RISKS INVOLVED IN CONSTRUCTION COMPARED TO THAT OF A COMPETENT CONTRACTOR. IT IS THEREFORE ESSENTIAL THAT AN ADEQUATE SAFETY PLAN IS PREPARED BY THE CONTRACTOR FOR THE WORKS. SAFETY PLANS ARE TO BE PREPARED IN COMPLIANCE WITH THE STATUTORY REQUIREMENTS. THE DESIGNERS MAY NOT BE AWARE OF ALL SAFETY RISKS AND HAZARDS INVOLVED IN THIS PROJECT AND THE ABSENCE OF COMMENT DOES NOT IMPLY THAT THERE ARE ONLY LOW LEVEL RISKS OR HAZARDS INVOLVED IN THIS PROJECT. APPROPRIATE WORK METHOD STATEMENTS ARE TO BE PREPARED FOR HIGH RISK ACTIVITY BY THE CONTRACTOR. THE DESIGNERS ARE AVAILABLE TO BE CONSULTED WHEN REQUIRED CONCERNING THEIR AREA OF CONTROL WITH REGARDS TO SAFETY PLANS.



1 21/07/2021 AS CONSTRUCTED JN MB MB
Rev. Date Description Des. Verif. Appd.



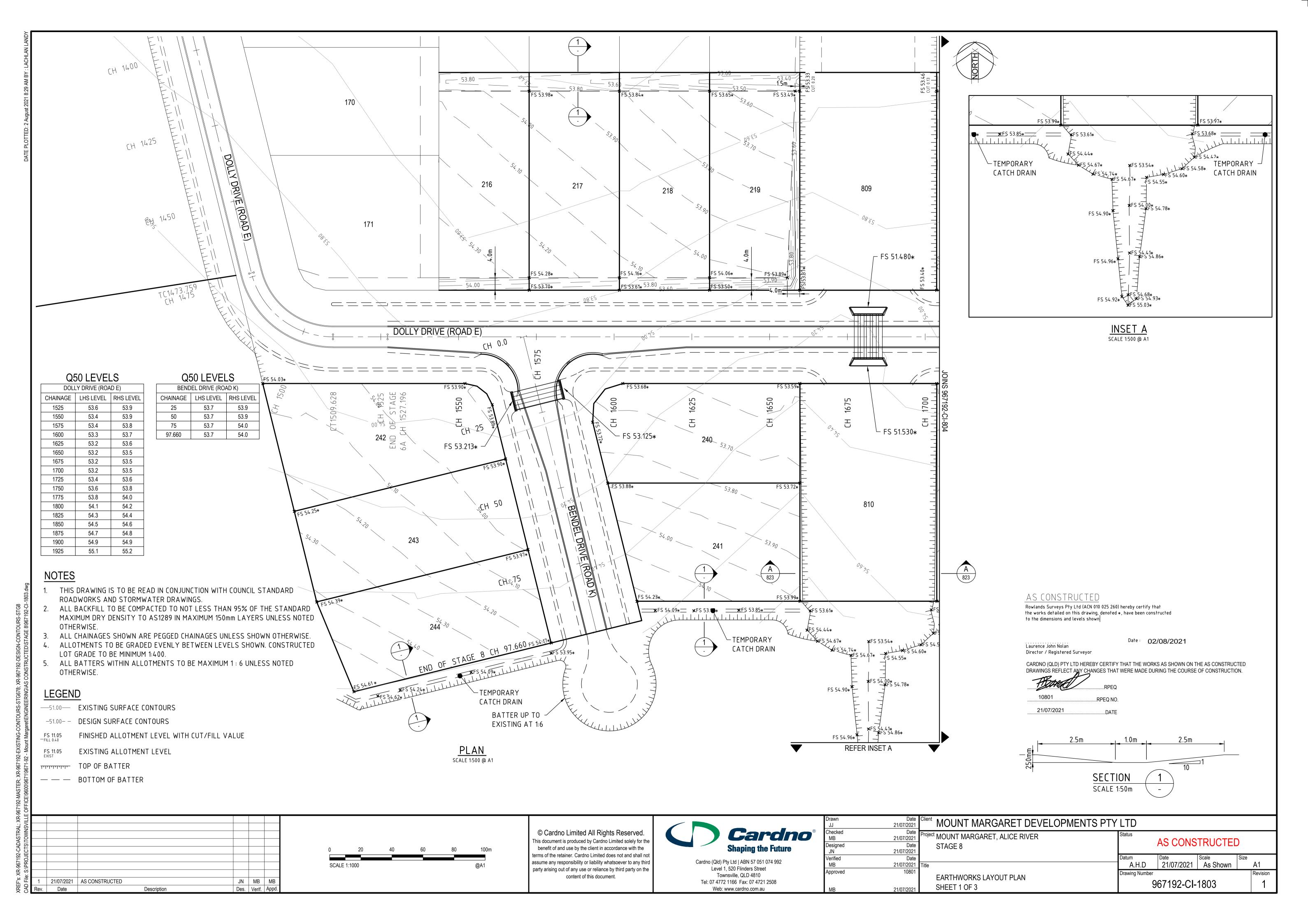
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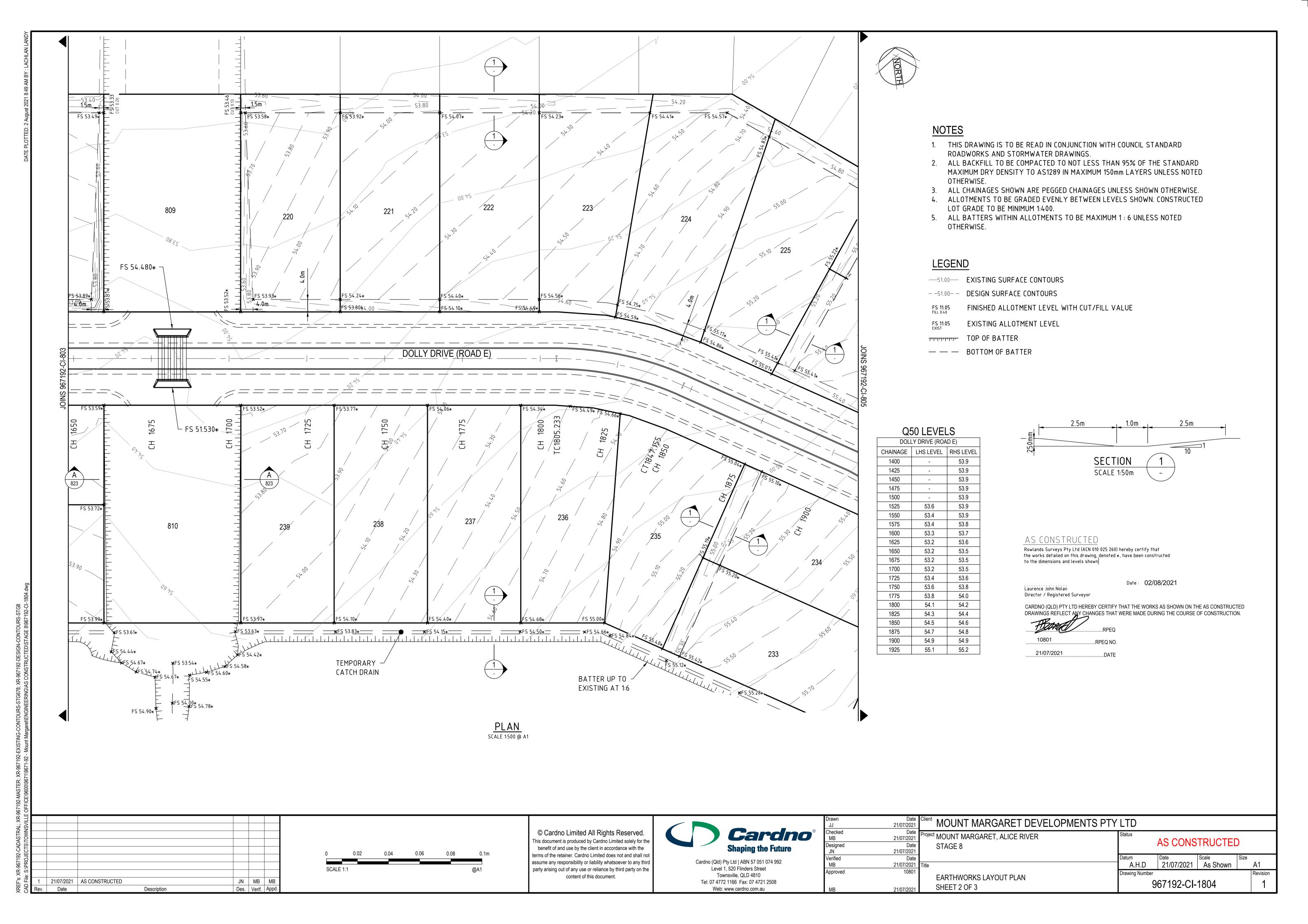
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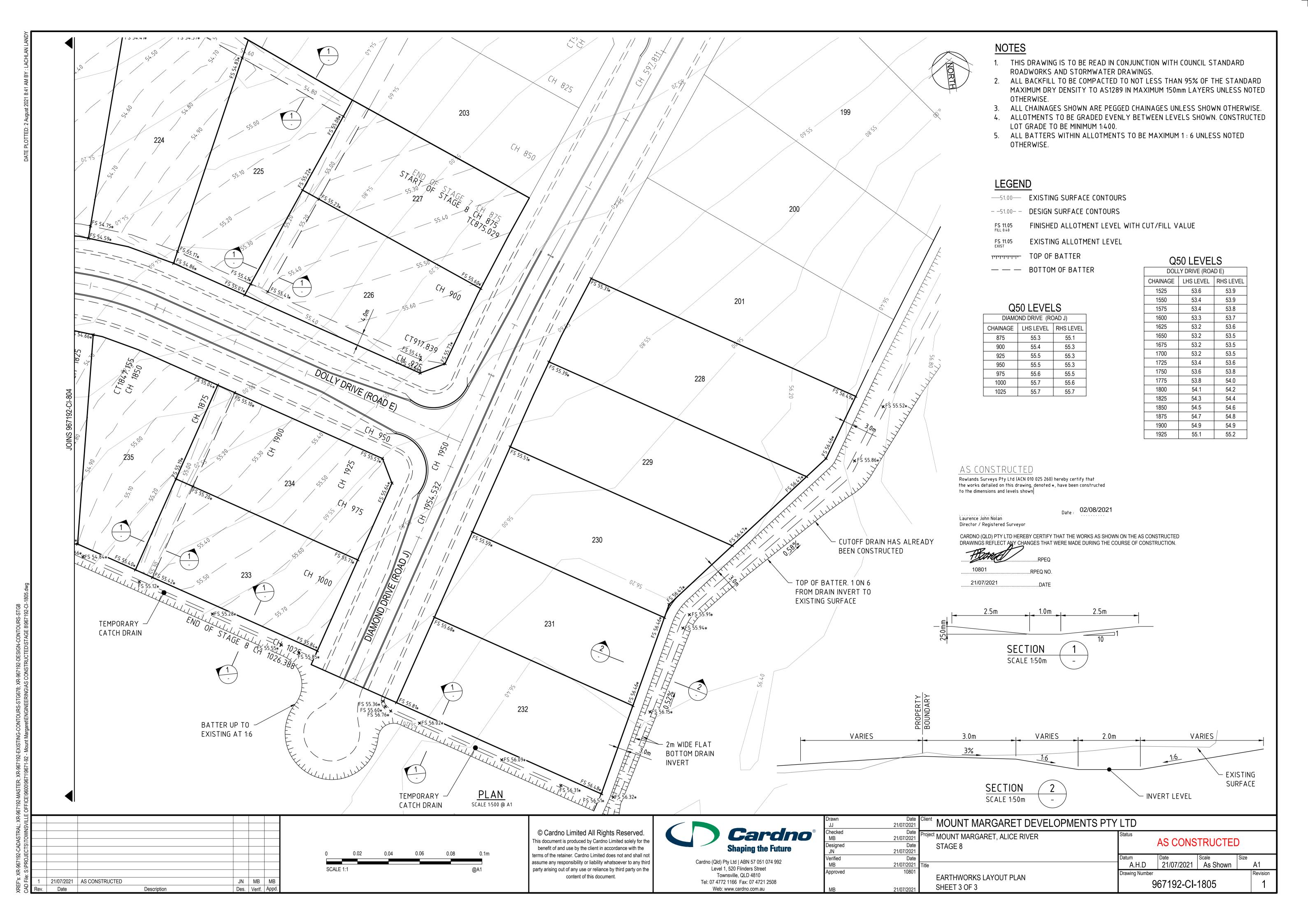


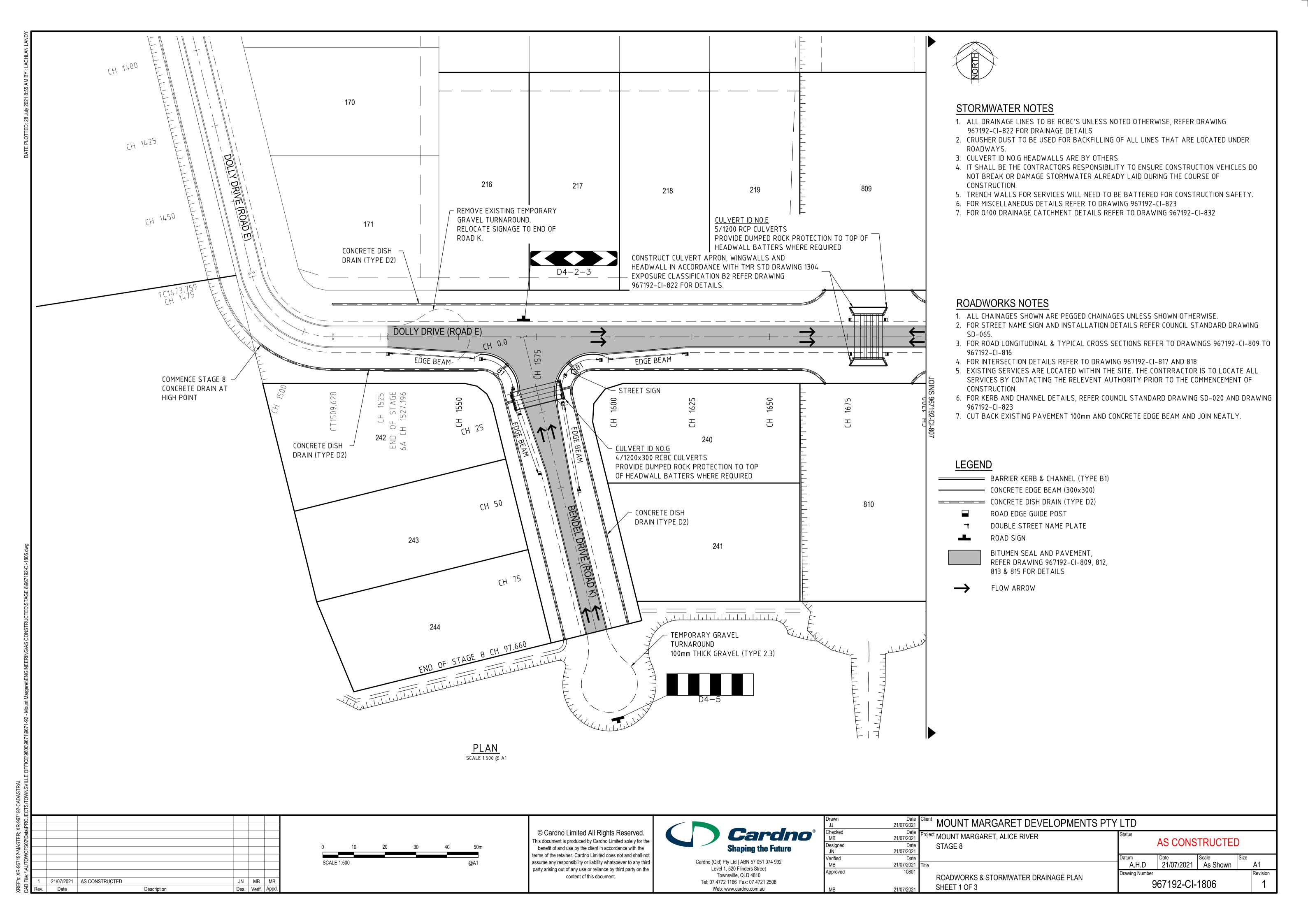
Cardno (Qld) Pty Ltd | ABN 57 051 074 992 Level 1, 520 Flinders Street Townsville, QLD 4810 Tel: 07 4772 1166 Fax: 07 4721 2508 Web: www.cardno.com.au

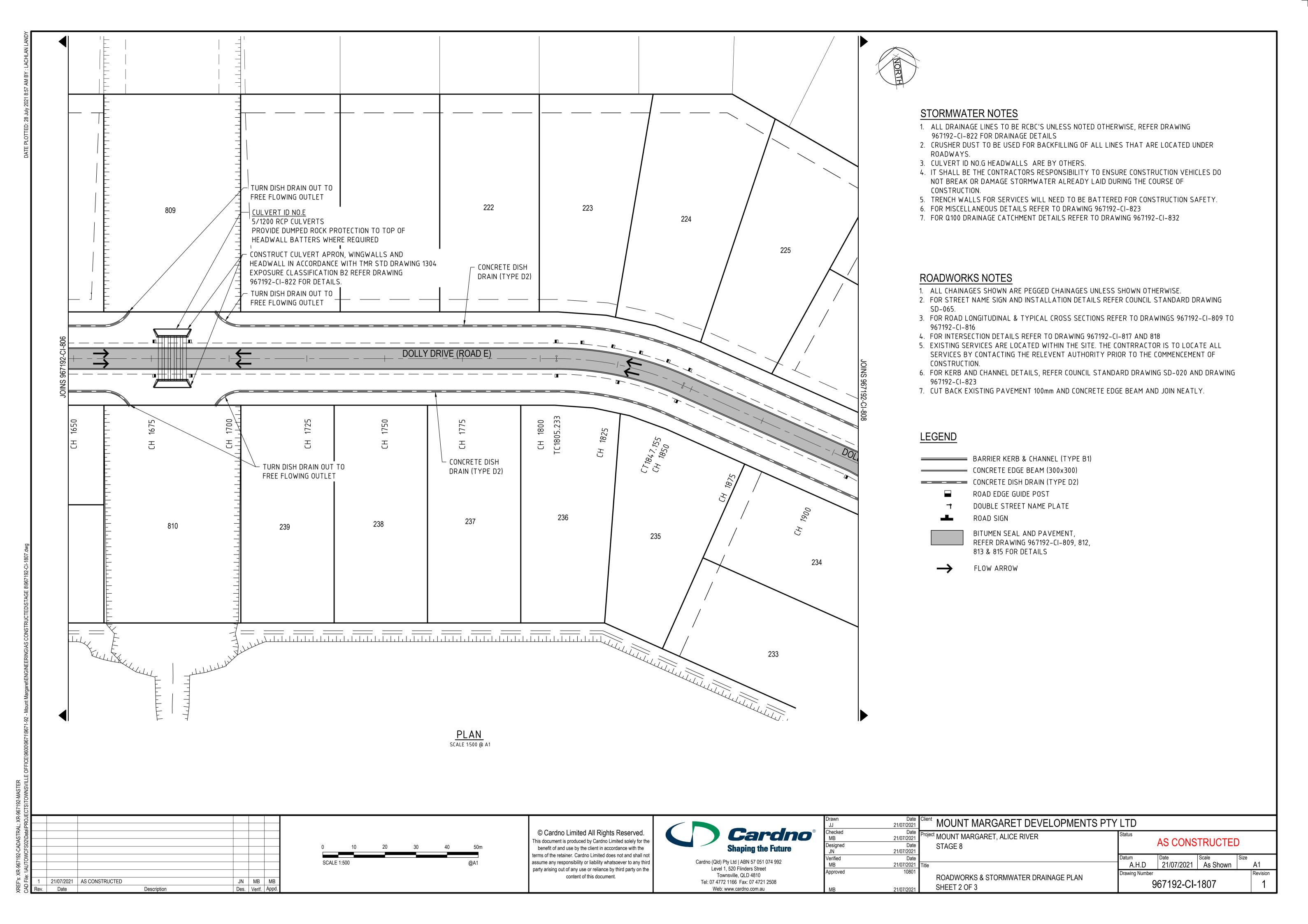
wn	Date 21/07/2021	Client MOUNT MARGARET DEVELOPMENTS F	PTY LTD				
cked 3	D - 1 -	Project MOUNT MARGARET, ALICE RIVER	Status	VS CONS	TDUCTE		
igned I	Date 21/07/2021	STAGE 8		AS CONSTRUCTED			
fied 3	Date 21/07/2021	Title	Datum A.H.D	Date 21/07/2021	Scale As Shown	Size	A1
roved	10801	DRAWING INDEX & ALLOTMENT LAYOUT PLAN	Drawing Number	•			Revision
3	21/07/2021	DRAWING INDEX & ALLOTWENT LATOUT PLAN	!	967192-CI-1801			

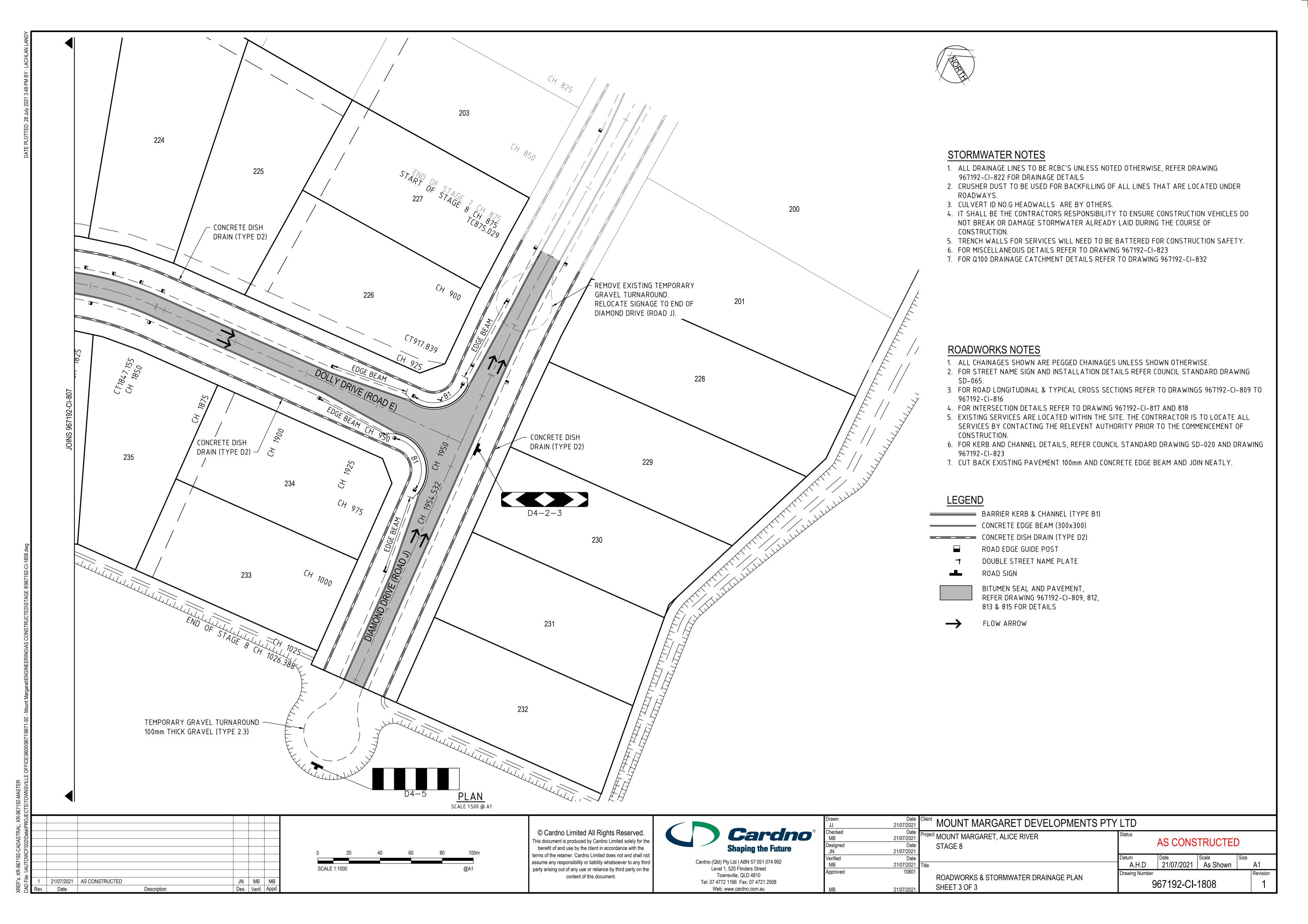


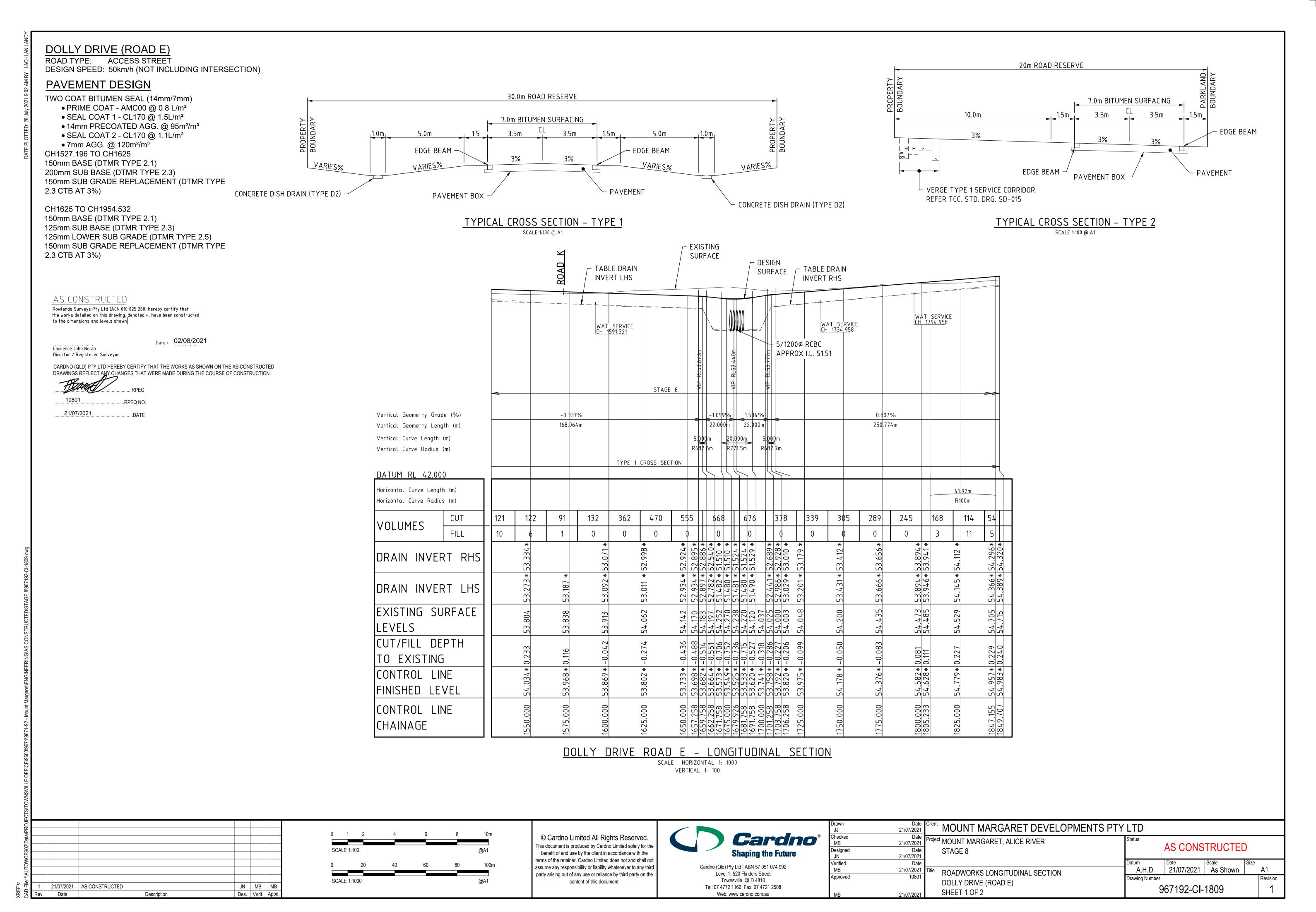












DOLLY DRIVE (ROAD E) ROAD TYPE: ACCESS STREET

DESIGN SPEED: 50km/h (NOT INCLUDING INTERSECTION)

PAVEMENT DESIGN

TWO COAT BITUMEN SEAL (14mm/7mm)

- PRIME COAT AMC00 @ 0.8 L/m²
- SEAL COAT 1 CL170 @ 1.5L/m²
- 14mm PRECOATED AGG. @ 95m²/m³ • SEAL COAT 2 - CL170 @ 1.1L/m²
- 7mm AGG. @ 120m²/m³

CH1527.196 TO CH1625

150mm BASE (DTMR TYPE 2.1) 200mm SUB BASE (DTMR TYPE 2.3)

150mm SUB GRADÈ REPLACEMENT (DTMR TYPE

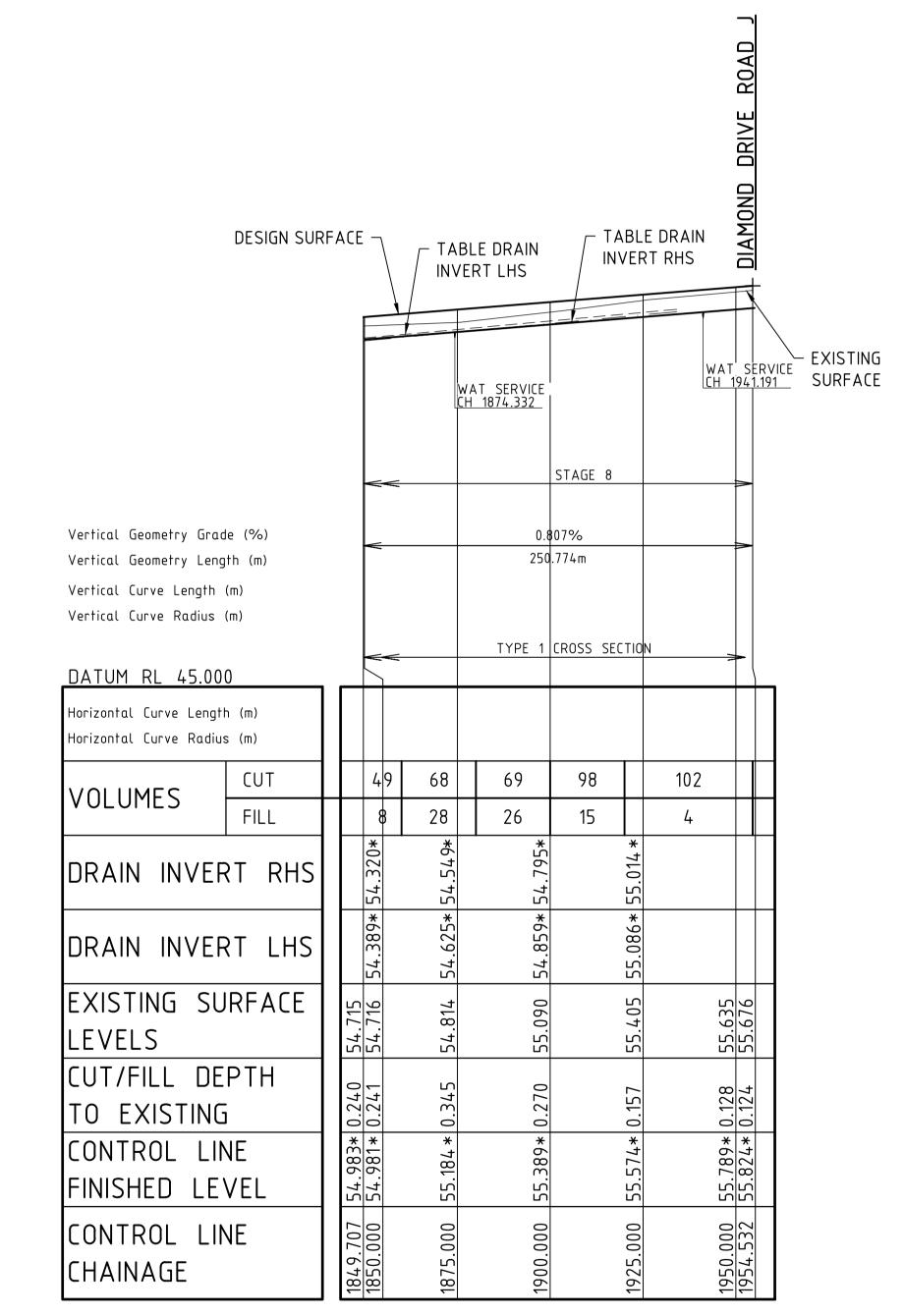
2.3 CTB AT 3%)

CH1625 TO CH1954.532 150mm BASE (DTMR TYPE 2.1)

125mm SUB BASE (DTMR TYPE 2.3) 125mm LOWER SUB GRADE (DTMR TYPE 2.5)

150mm SUB GRADE REPLACEMENT (DTMR TYPE

2.3 CTB AT 3%)



DOLLY DRIVE ROAD E - LONGITUDINAL SECTION

SCALE HORIZONTAL 1: 1000 VERTICAL 1: 100

AS CONSTRUCTED

Rowlands Surveys Pty Ltd (ACN 010 025 260) hereby certify that the works detailed on this drawing, denoted *, have been constructed to the dimensions and levels shown

Date: 02/08/2021

Laurence John Nolan Director / Registered Surveyor

CARDNO (QLD) PTY LTD HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE AS CONSTRUCTED DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

10801 .RPEQ NO.

21/07/2021DATE

1	21/07/2021	AS CONSTRUCTED	JN	MB	MB
Rev.	Date	Description	Des.	Verif.	Appd.

0 1	1 2	4	6	8	10m
SCALE	1:100				@A1
0	20	40	60	80	100m

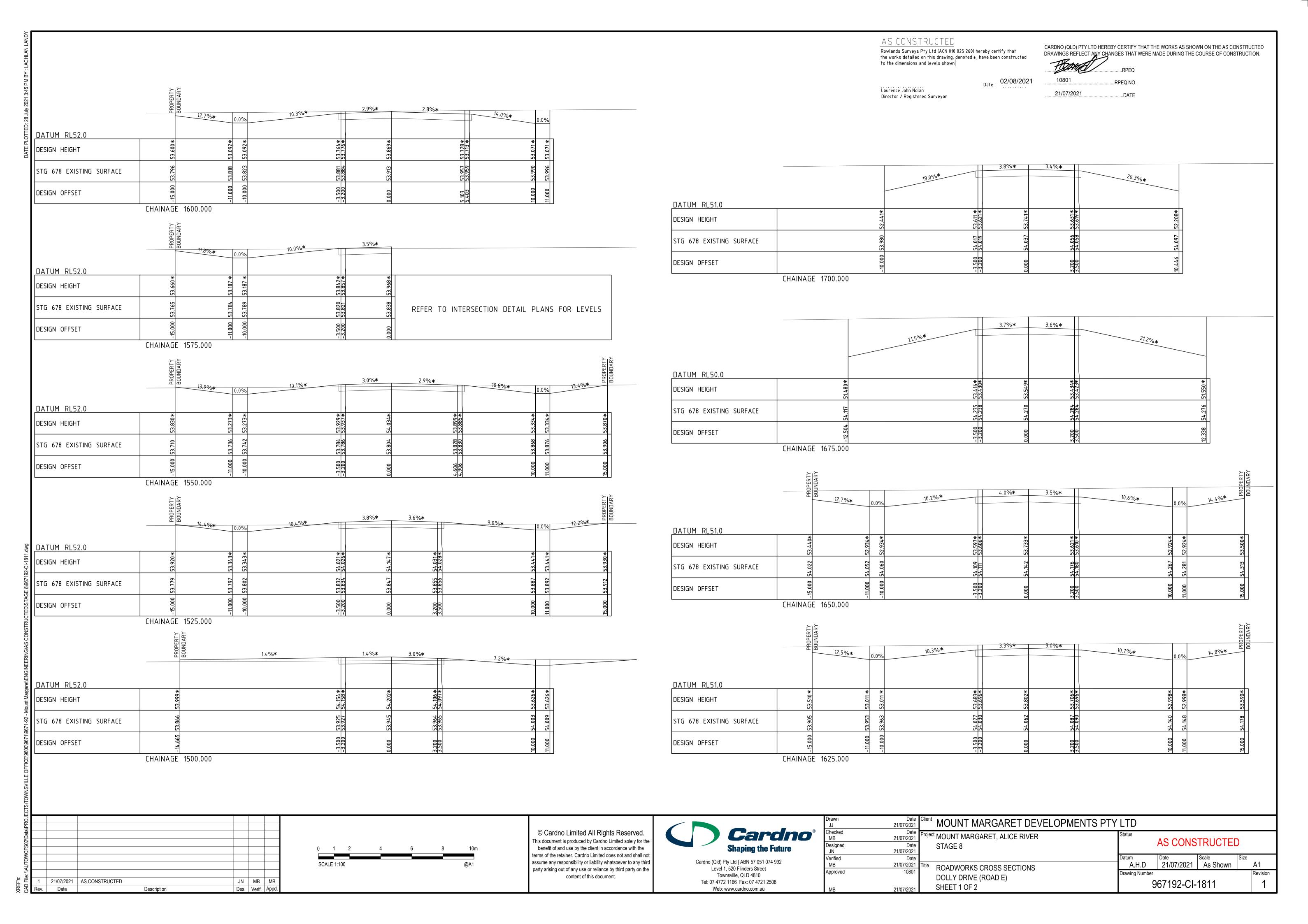
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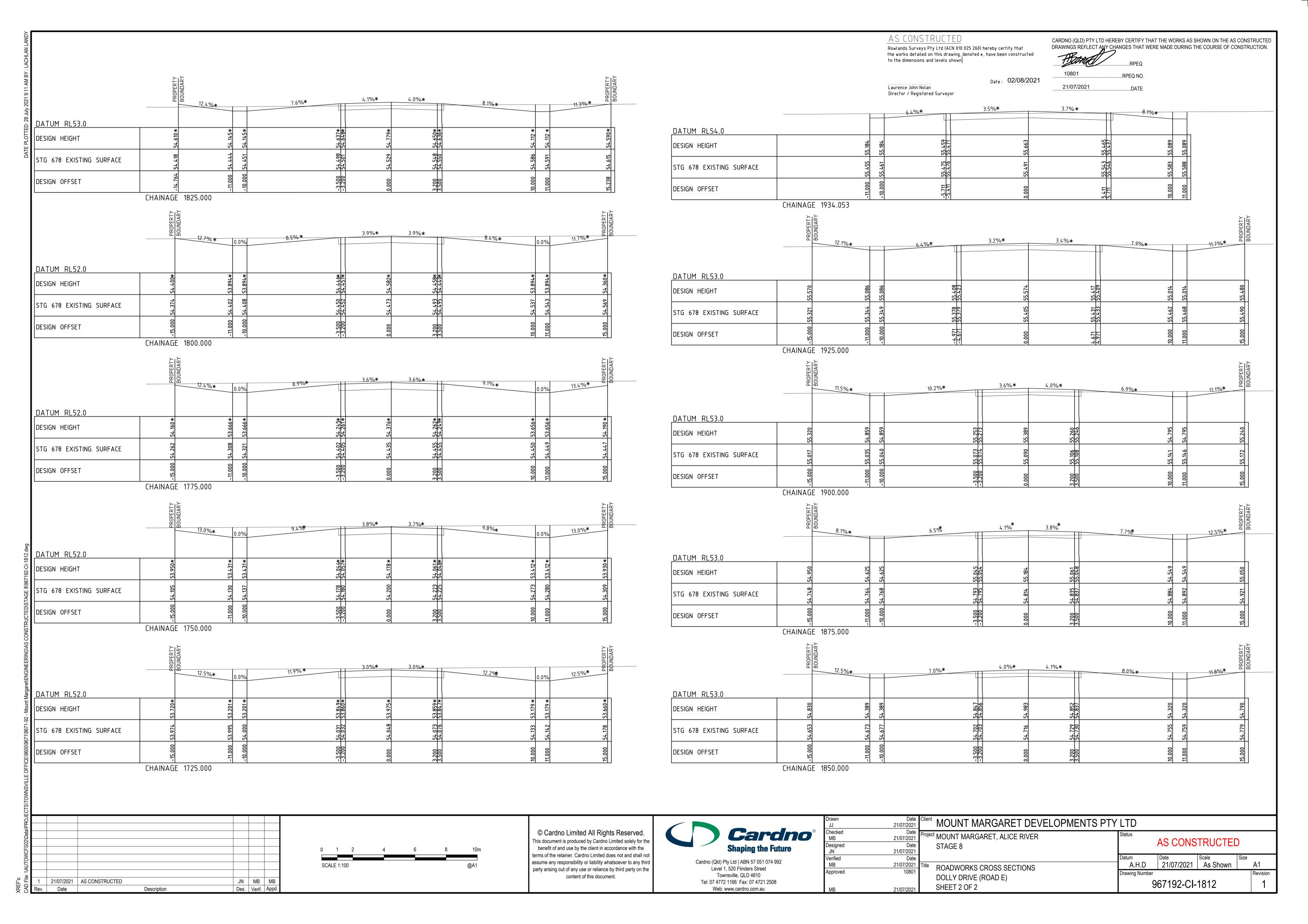
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Web: www.cardno.com.au

	Drawn JJ	Date 21/07/2021	Client	MOUNT MARGARET DEVE
	Checked MB	Date 21/07/2021	Projec	^t MOUNT MARGARET, ALICE RIVER
	Designed JN	Date 21/07/2021		STAGE 8
	Verified	Date		
ı	MB	21/07/2021	Title	ROADWORKS LONGITUDINAL SECTI
ı	Approved	10801		
ı				DOLLY DRIVE (ROAD E)
	MB	21/07/2021		SHEET 2 OF 2

С	MOUNT MARGARET DEVELOPMENTS PTY	LTD				
P	Project MOUNT MARGARET, ALICE RIVER STAGE 8	Status	AS CONS	TRUCTE)	
L		Datum	Date	Scale	Size	
 T	itle ROADWORKS LONGITUDINAL SECTION	A.H.D	21/07/2021	As Shown		A1
	DOLLY DRIVE (ROAD E)	Drawing Number				Revision
	SHEET 2 OF 2	g	967192-CI-	1810		1





DIAMOND DRIVE (ROAD J)

ROAD TYPE: ACCESS STREET DESIGN SPEED: 50km/h (NOT INCLUDING INTERSECTION)

PAVEMENT DESIGN

TWO COAT BITUMEN SEAL (14mm/7mm)

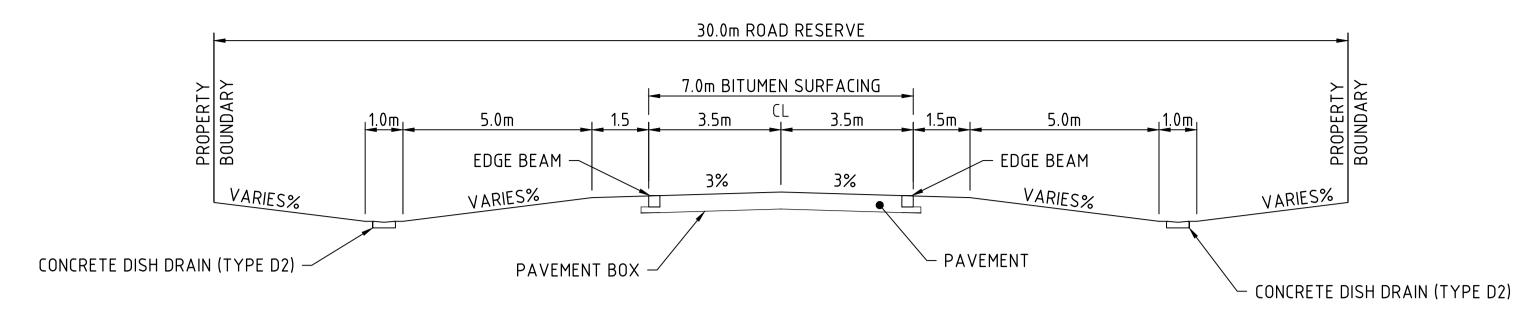
- PRIME COAT AMC00 @ 0.8 L/m²
- SEAL COAT 1 CL170 @ 1.5L/m²
- 14mm PRECOATED AGG. @ 95m²/m³
- SEAL COAT 2 CL170 @ 1.1L/m² • 7mm AGG. @ 120m²/m³

150mm BASE (DTMR TYPE 2.1)

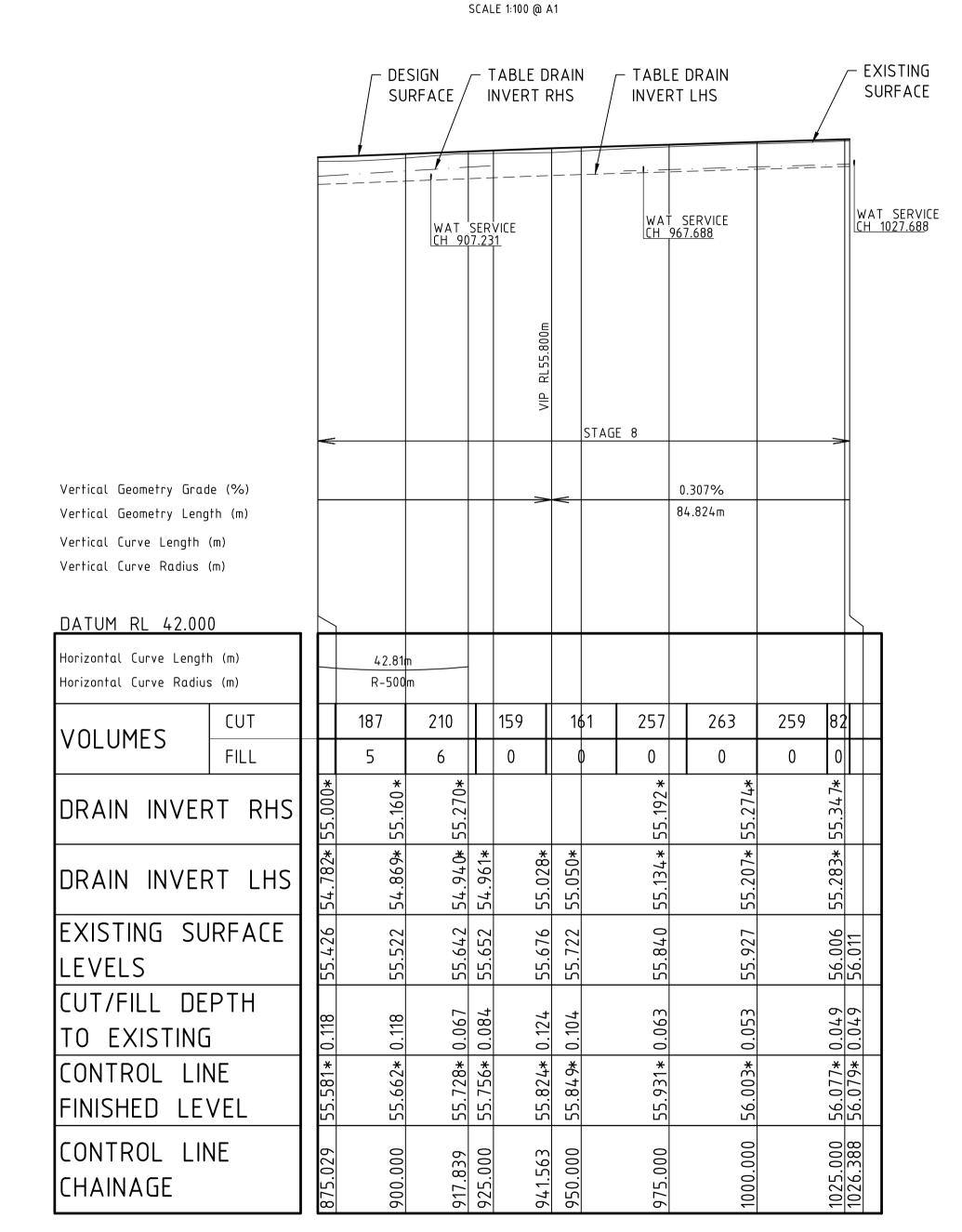
125mm SUB BASE (DTMR TYPE 2.3)

125mm LOWER SUB BASE (DTMR TYPE 2.5) 150mm SUB GRADE REPLACEMENT (DTMR TYPE

2.3 CTB AT 3%)



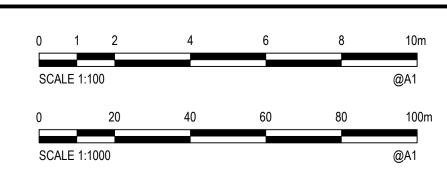
TYPICAL CROSS SECTION



<u>DIAMOND DRIVE ROAD J - LONGITUDINAL SECTION</u> SCALE HORIZONTAL 1: 1000

VERTICAL 1: 100

21/07/2021 AS CONSTRUCTED JN MB MB Date Description Des. Verif. Appd.



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Level 1, 520 Flinders Street	
Townsville, QLD 4810	
Tel: 07 4772 1166 Fax: 07 4721 2508	
Web: www.cardno.com.au	

Drawn	Date
JJ	21/07/2021
Checked	Date
MB	21/07/2021
Designed	Date
JN	21/07/2021
Verified	Date
MB	21/07/2021
Approved	10801

e 1	Client MOUNT MARGARET DEVELO
e 1	Project MOUNT MARGARET, ALICE RIVER
е 1	STAGE 8
e	
1	Title
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mount margaret developments Pi	YLTD				
ject MOUNT MARGARET, ALICE RIVER STAGE 8	Status	AS CONS	STRUCTE	D	
	Datum	Date	Scale	Size	
9	A.H.D	21/07/2021	As Shown		A1
ROADWORKS LONGITUDINAL SECTION	Drawing Numbe	r			Revision
DIAMOND DRIVE (ROAD J)		967192-CI-	1813		1

AS CONSTRUCTED

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Date: 02/08/2021

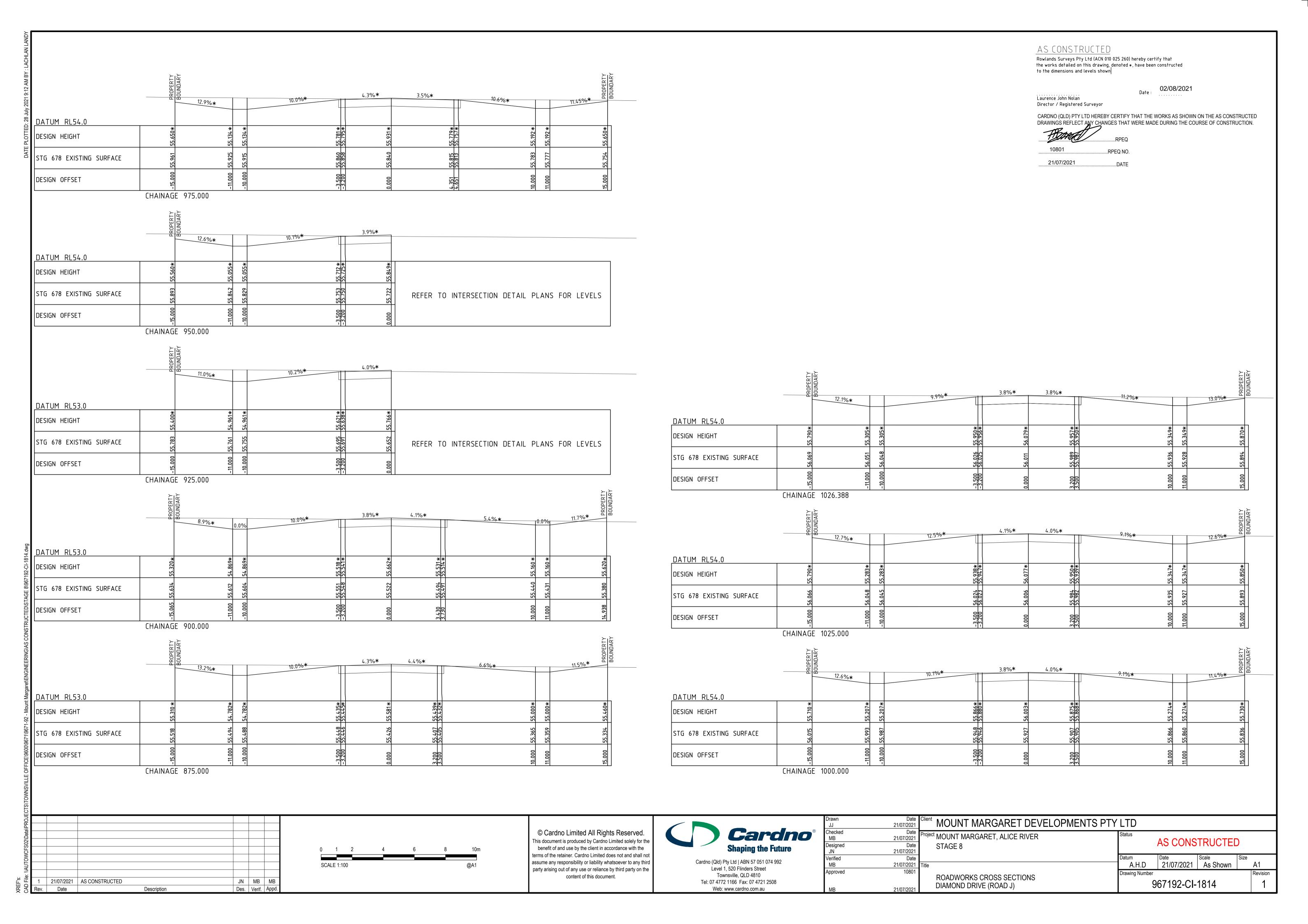
Director / Registered Surveyor

Laurence John Nolan

CARDNO (QLD) PTY LTD HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE AS CONSTRUCTED DRAWING'S REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

...DATE

..RPEQ NO. 21/07/2021



BENDEL DRIVE (ROAD K)

ROAD TYPE: ACCESS STREET DESIGN SPEED: 50km/h (NOT INCLUDING INTERSECTION)

PAVEMENT DESIGN

TWO COAT BITUMEN SEAL (14mm/7mm)

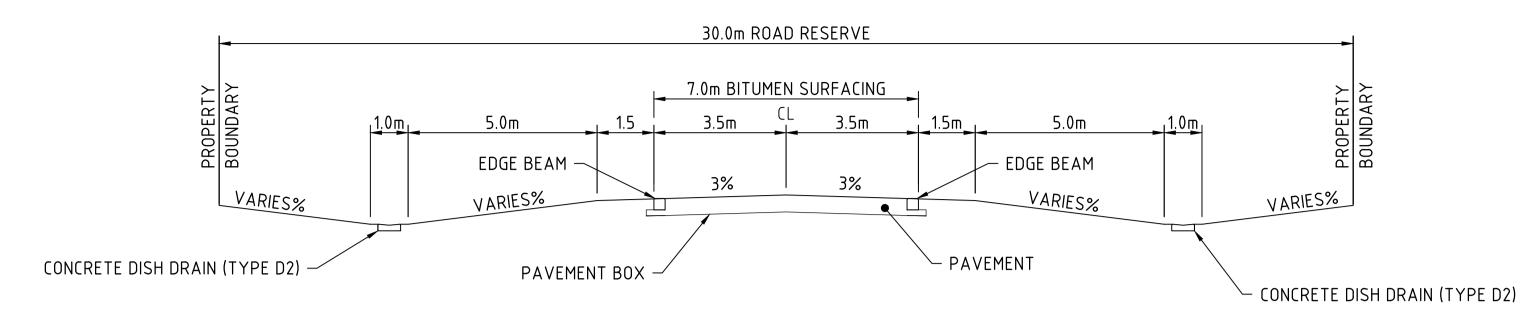
- PRIME COAT AMC00 @ 0.8 L/m²
- SEAL COAT 1 CL170 @ 1.5L/m²
- 14mm PRECOATED AGG. @ 95m²/m³
- SEAL COAT 2 CL170 @ 1.1L/m²

• 7mm AGG. @ 120m²/m³ 150mm BASE (DTMR TYPE 2.1)

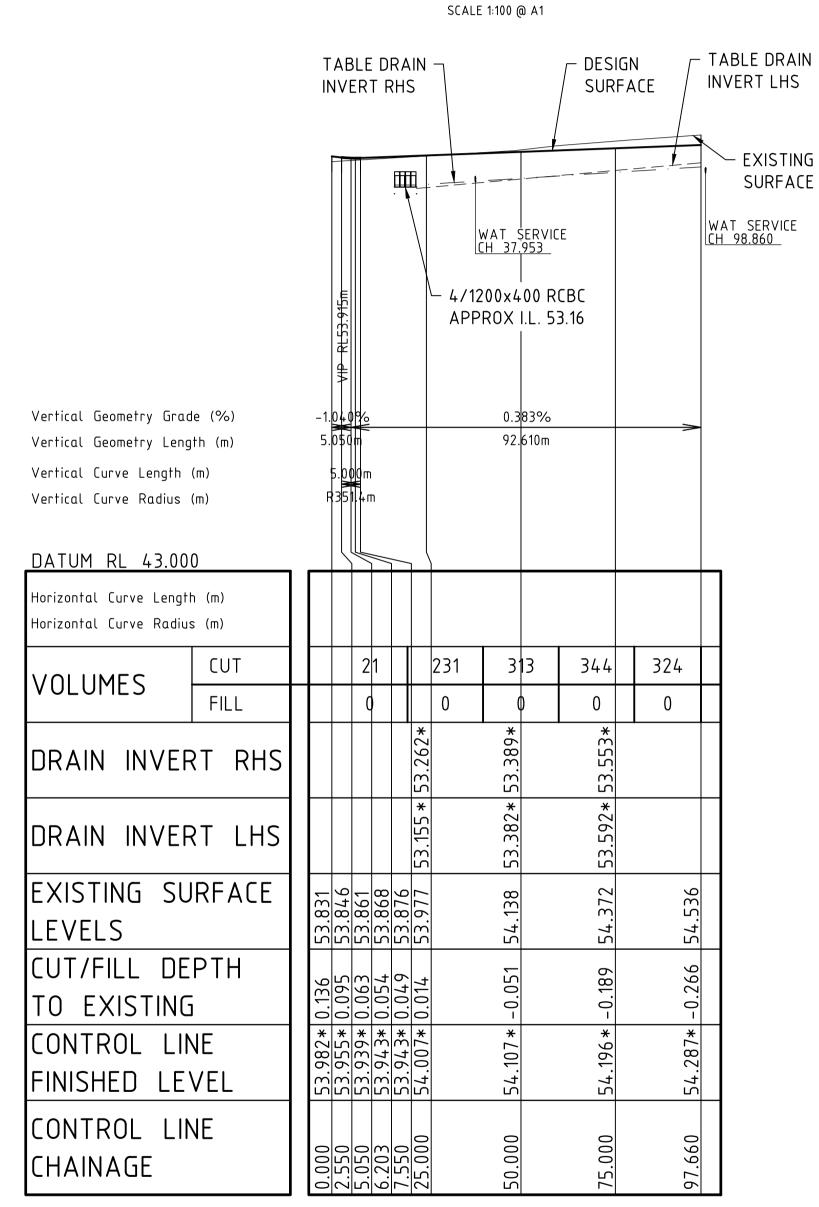
190mm SUB GRADE (DTMR TYPE 2.3 CTB)

150mm SUB GRADE REPLACEMENT (DTMR TYPE

2.3 CTB AT 3%)



TYPICAL CROSS SECTION



ROAD K - LONGITUDINAL SECTION SCALE HORIZONTAL 1: 1000 VERTICAL 1: 100

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967192-CI-1815

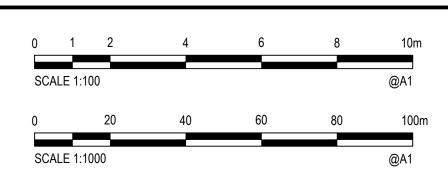
Laurence John Nolan Director / Registered Surveyor

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10801

..RPEQ NO. 21/07/2021 ...DATE

21/07/2021 AS CONSTRUCTED JN MB MB Date Description Des. Verif. Appd.



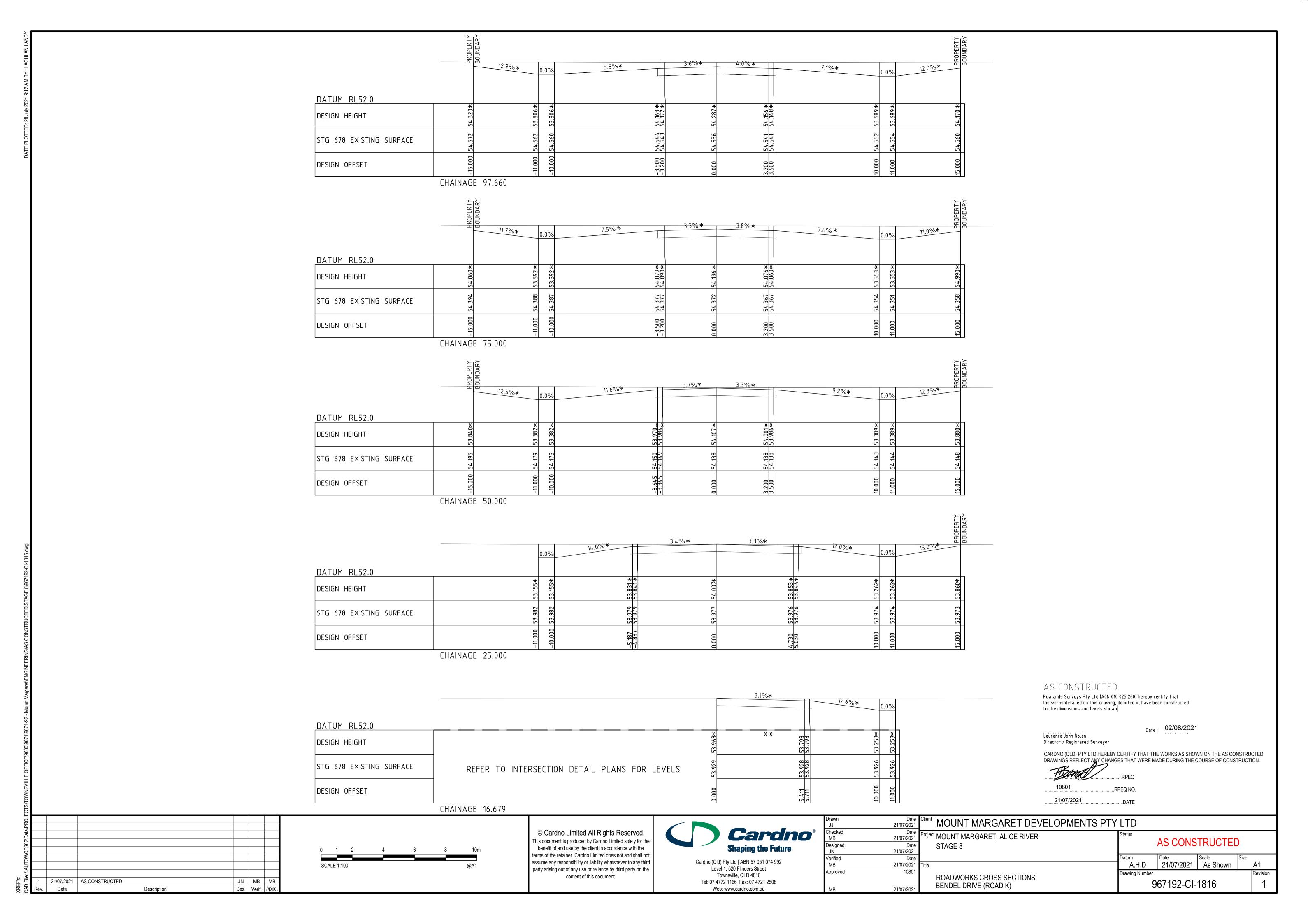
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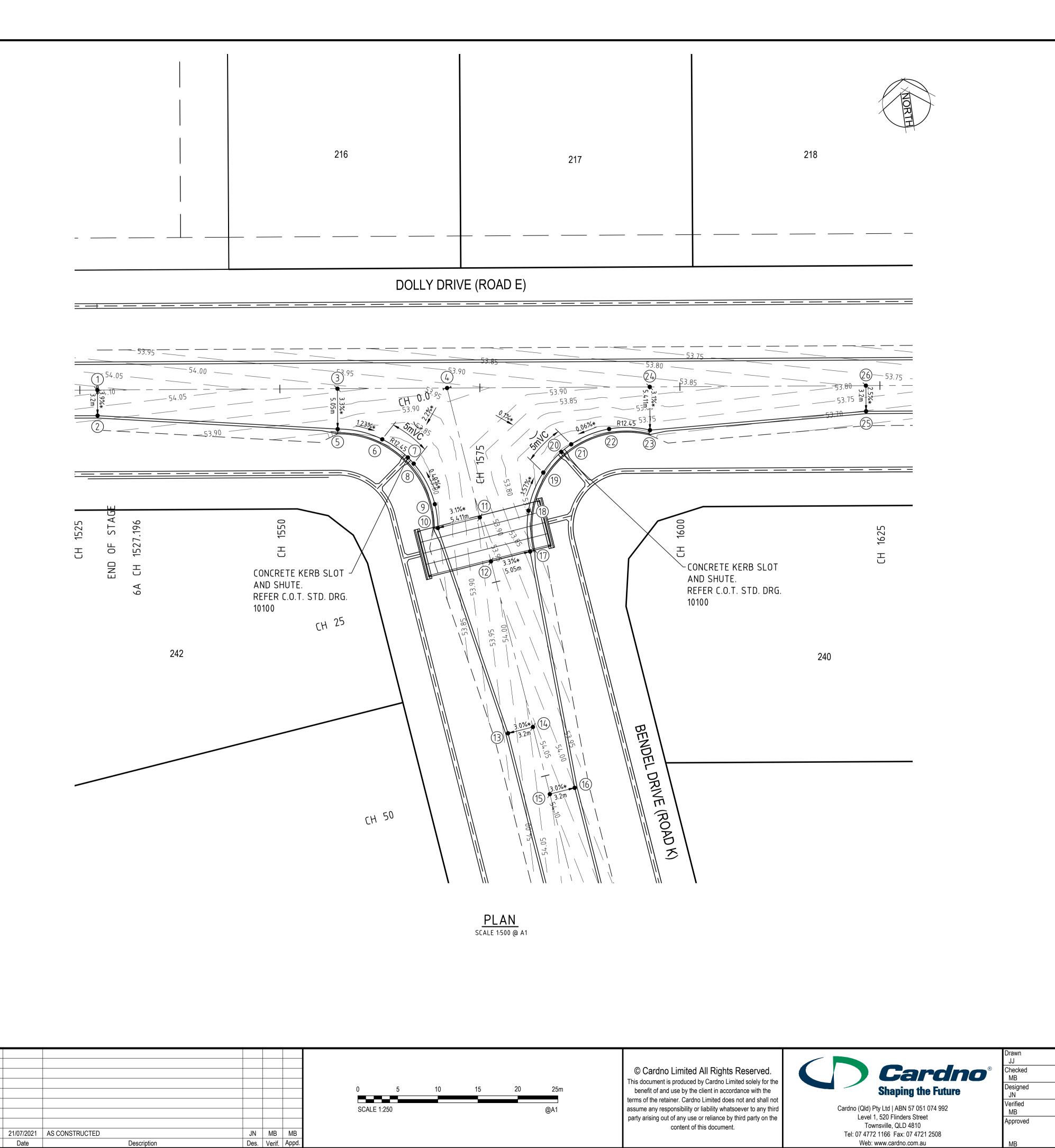


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Townsville, QLD 4810 Tel: 07 4772 1166 Fax: 07 4721 2508	
Web: www.cardno.com.au	ME

21/07/2021	MOUNT MARGARET DEVELO
Date 21/07/2021	Project MOUNT MARGARET, ALICE RIVER
Date 21/07/2021	STAGE 8
Date	
21/07/2021	Title
10801 21/07/2021	ROADWORKS LONGITUDINAL SECTION BENDEL DRIVE (ROAD K)

Client MOUNT MARGARET DEVELOPMENTS PT	Y LTD				
Project MOUNT MARGARET, ALICE RIVER STAGE 8	Status	AS CONSTRUC			
	Datum	Date	Scale	Si	
Title	A.H.D	21/07/2021	As Shown		





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0801RPEQ NO.

21/07/2021 DATE

SETOUT POINTS **EASTING** NORTHING RL. 57068.845 54.138* 861006.774 57068.434 861003.600 54.014* 54.030* 57098.597 861002.919 53.982* 57112.184 861001.159 57097.948 53.862* 5 860997.911 53.791* 57103.298 860995.894 57106.167 860993.219 53.763* 57106.783 860992.355 53.764* 57108.718 860986.974 53.787* 9 57108.696 860983.974 53.798* 11 57114.073 860984.587 53.968* 57114.715 860978.950 53.997* 13 57113.954 860957.377 53.970* 57117.133 860957.739 54.068* 57118.113 860949.143 54.119* 57121.292 860949.506 54.002 57119.733 860979.522 53.828* 18 57120.208 860984.609 53.755* 57122.686 860989.076 53.674* 57125.261 860991.334 53.637* 57126.619 53.651* 860992.109 57131.569 860993.371 53.682* 53.722* 860997.905 57137.305 53.890*

<u>LEGEND</u>

BARRIER KERB & CHANNEL (TYPE B1)

860991.259

860994.433

53.713*

53.794*

CONCRETE EDGE BEAM (300x300)

CONCRETE DISH DRAIN (TYPE D2)

SETOUT POINT

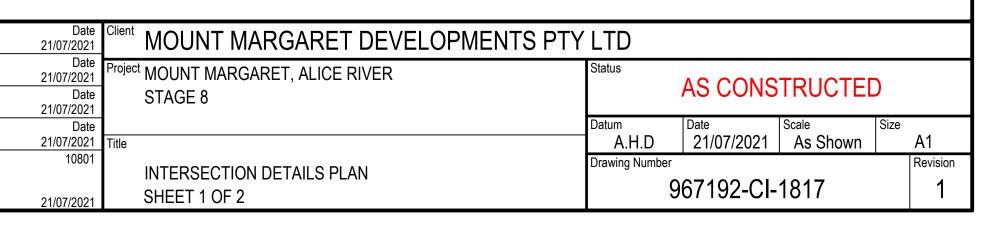
57163.691

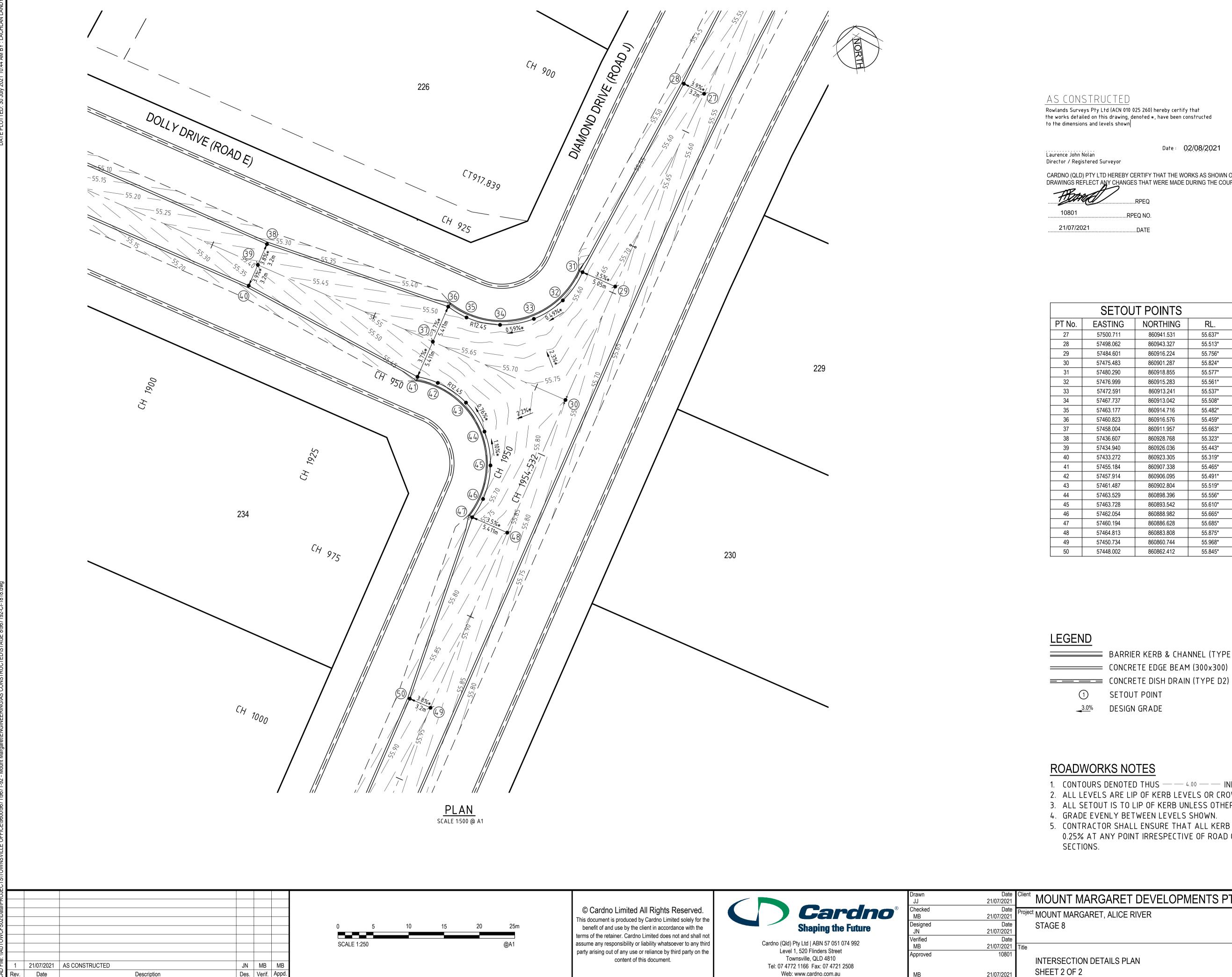
57164.103

3.0% DESIGN GRADE

ROADWORKS NOTES

- 1. CONTOURS DENOTED THUS — 4.00 — INDICATE GROUND FINISHED SURFACE LEVELS.
- 2. ALL LEVELS ARE LIP OF KERB LEVELS OR CROWN LEVELS.
- 3. ALL SETOUT IS TO LIP OF KERB UNLESS OTHERWISE NOTED.
- 4. GRADE EVENLY BETWEEN LEVELS SHOWN.
- 5. CONTRACTOR SHALL ENSURE THAT ALL KERB AND CHANNEL GRADES SHALL NOT FALL BELOW 0.25% AT ANY POINT IRRESPECTIVE OF ROAD CENTRELINE GRADING SHOWN ON LONGITUDINAL SECTIONS.





Date

Description

Des. Verif. Appd.

Date: 02/08/2021

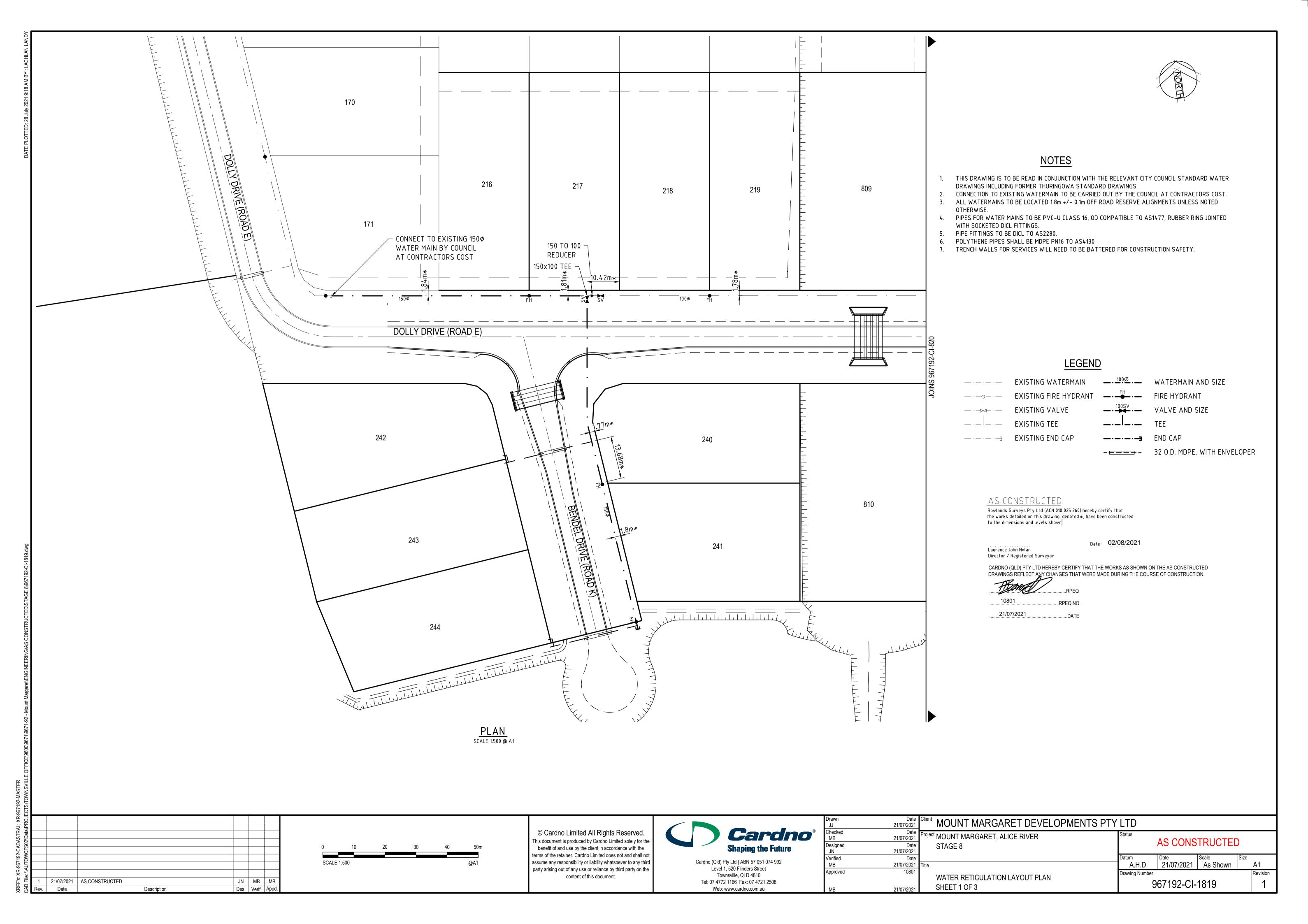
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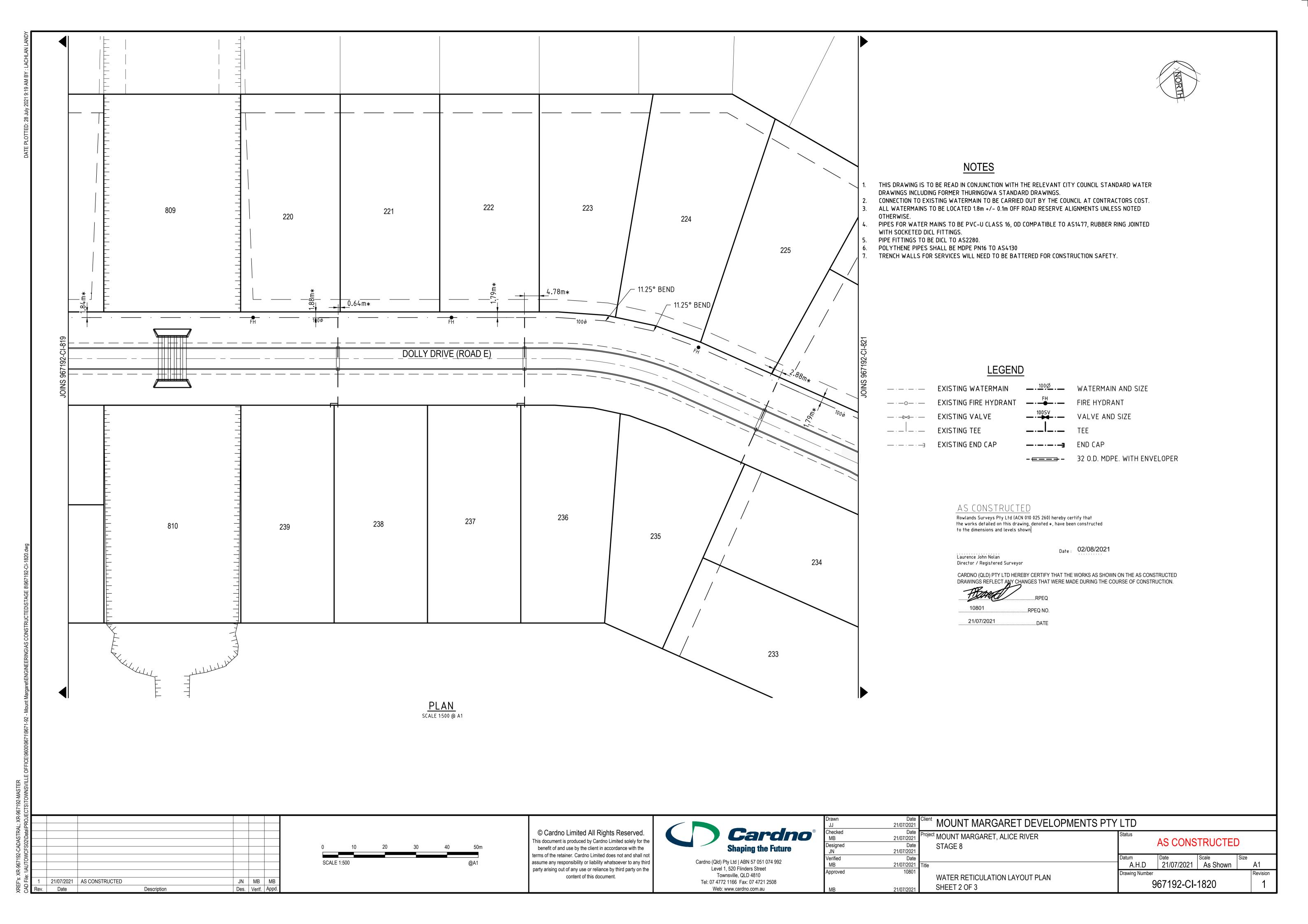
PT No.	EASTING	NORTHING	RL.
27	57500.711	860941.531	55.637*
28	57498.062	860943.327	55.513*
29	57484.601	860916.224	55.756*
30	57475.483	860901.287	55.824*
31	57480.290	860918.855	55.577*
32	57476.999	860915.283	55.561*
33	57472.591	860913.241	55.537*
34	57467.737	860913.042	55.508*
35	57463.177	860914.716	55.482*
36	57460.823	860916.576	55.459*
37	57458.004	860911.957	55.663*
38	57436.607	860928.768	55.323*
39	57434.940	860926.036	55.443*
40	57433.272	860923.305	55.319*
41	57455.184	860907.338	55.465*
42	57457.914	860906.095	55.491*
43	57461.487	860902.804	55.519*
44	57463.529	860898.396	55.556*
45	57463.728	860893.542	55.610*
46	57462.054	860888.982	55.665*
47	57460.194	860886.628	55.685*
48	57464.813	860883.808	55.875*
49	57450.734	860860.744	55.968*
		000000 446	

BARRIER KERB & CHANNEL (TYPE B1)

- 1. CONTOURS DENOTED THUS — 4.00 — INDICATE GROUND FINISHED SURFACE LEVELS.
- 2. ALL LEVELS ARE LIP OF KERB LEVELS OR CROWN LEVELS.
- 3. ALL SETOUT IS TO LIP OF KERB UNLESS OTHERWISE NOTED.
- 5. CONTRACTOR SHALL ENSURE THAT ALL KERB AND CHANNEL GRADES SHALL NOT FALL BELOW 0.25% AT ANY POINT IRRESPECTIVE OF ROAD CENTRELINE GRADING SHOWN ON LONGITUDINAL

0	Drawn JJ	Date 21/07/2021	Client MOUNT MARGARET DEVELOPMENTS P	Y LTD				
	Checked MB		Project MOUNT MARGARET, ALICE RIVER	Status	AS CONS	TDIICTEI	<u> </u>	
	Designed JN	Date 21/07/2021	STAGE 8		AS CONS	TRUCTL		
	Verified	Date		Datum	Date	Scale	Size	
	MB	21/07/2021	Title	A.H.D	21/07/2021	As Shown	A1	
	Approved	10801	INTERSECTION DETAILS PLAN	Drawing Number			Revi	isio
	MB	21/07/2021	SHEET 2 OF 2		967192-CI-	-1818		1







NOTES

- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE RELEVANT CITY COUNCIL STANDARD WATER DRAWINGS INCLUDING FORMER THURINGOWA STANDARD DRAWINGS.
- CONNECTION TO EXISTING WATERMAIN TO BE CARRIED OUT BY THE COUNCIL AT CONTRACTORS COST. ALL WATERMAINS TO BE LOCATED 1.8m +/- 0.1m OFF ROAD RESERVE ALIGNMENTS UNLESS NOTED
- PIPES FOR WATER MAINS TO BE PVC-U CLASS 16, OD COMPATIBLE TO AS1477, RUBBER RING JOINTED WITH SOCKETED DICL FITTINGS.
- PIPE FITTINGS TO BE DICL TO AS2280.
- POLYTHENE PIPES SHALL BE MDPE PN16 TO AS4130
- TRENCH WALLS FOR SERVICES WILL NEED TO BE BATTERED FOR CONSTRUCTION SAFETY.

LEGEND

<u> </u>	EXISTING WATERMAIN		WATERMAIN AND SIZE
<u> </u>	EXISTING FIRE HYDRANT	—·—	FIRE HYDRANT
1	EXISTING VALVE	•	VALVE AND SIZE
	EXISTING TEE	l	TEE
—·—·—	EXISTING END CAP		END CAP
		- -	32 O.D. MDPE. WITH ENVELOPER

AS CONSTRUCTED

Rowlands Surveys Pty Ltd (ACN 010 025 260) hereby certify that the works detailed on this drawing, denoted *, have been constructed to the dimensions and levels shown

....DATE

02/08/2021

Laurence John Nolan

Director / Registered Surveyor

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Date 21/07/2021

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Date 21/07/2021 Client MOUNT MARGARET DEVELOPMENTS PTY LTD Project MOUNT MARGARET, ALICE RIVER AS CONSTRUCTED STAGE 8 A.H.D 21/07/2021 As Shown WATER RETICULATION LAYOUT PLAN 967192-CI-1821 SHEET 3 OF 3



21/07/2021 AS CONSTRUCTED

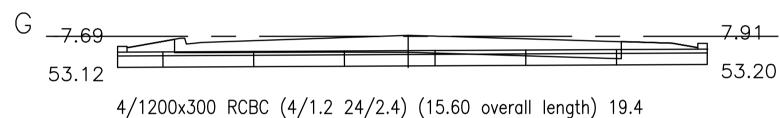
Description

Date

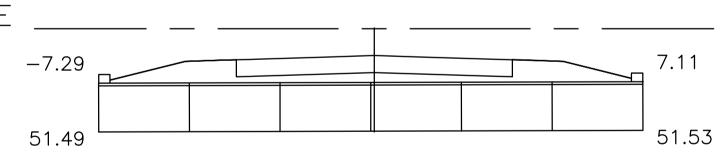
JN MB MB

Des. Verif. Appd.

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Culvert		Wingwalls	EndWalls / Wingwalls		Concrete	Concrete Bases			Apror	าร			Fv	Excavation (m3)			Fill / Bo	ackfill			OLM = Overlay Material
Culvert		Lengths	Lilawalis / Willywalis		Re	einforcing	Ro	ock Wire	Matt.	Reinforce	ed	Mass Cu		Cavation (1113)		тш / вс	uckilli	No	Reo.	FBM = Fill / Backfill /Side Material BHM = Bedding / Haunch Material
	Drainage Structure		nc. (R)Conc. Reinforcing	Conc.	51.4040		. Ar	rea Area	Think Cond	Rein	forcing	Conc. Of			Inlet				Fines Conc.	Bar Mass	BSP = Bedding Steel Pipes
No. Chainage		$\begin{bmatrix} \mathbf{R} & \mathbf{J} & \mathbf{W} & \mathbf{W} \\ \mathbf{e} & \mathbf{p} & \mathbf{W} & \mathbf{m} \end{bmatrix} \begin{bmatrix} \mathbf{W} & \mathbf{W} & \mathbf{W} \\ \mathbf{w} & \mathbf{e} & \mathbf{m} \end{bmatrix} \begin{bmatrix} \mathbf{W} & \mathbf{W} & \mathbf{W} \\ \mathbf{m} & \mathbf{w} \end{bmatrix}$	(m^3) (m^2) (mesh)	(m³)	RL1218 (m²)	N12 Ni (m) (n	, (II	m²) (m²)	Thick (m³)	(m²)	(mesh)	(m³) Wal	S Culv.	Ends	Outlet	OLM (m³)	FBM (m³)	BHM BSP (m³)	Block	(kg)	Remarks
G 19.40	4/1200x300 RCBC (4/1.2 24/2.4)	0	0.7	16.7	92.5	449.0			0.7	9.5	SL62	0.9)					7.1		424	4/1200x300 RCBC
E 1681.75	5/1200 RCP (30/2.4)	0 1 2.6 2.6 12.7	7						6.7	53.6	SL62	1.6	5				2.9	45.0	8		5/1200 RCP
		Total Quantities 12.		16.7	92.5	449			7.4			2.4	-				2	52	8	424	Mesh quantities are net only No allowances made for laps etc.
		Total Mesh 9	2.5/RL1218 63.2/SL62																		<u> </u>

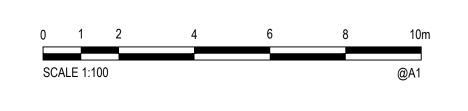


4/1200x300 RCBC (4/1.2 24/2.4) (15.60 overall length) 19.4
Base Slab Conc. 16.7m³
Endwalls (R)Conc. 0.7m³
Reinforced Conc. Apron (Type 3) Conc. 0.7m³, C/O Wall Conc. 0.9m³, Length 450mm
Backfill Material 33.8m³, Bedding/Haunch Material 7.1m³
Standard Drawings — 1174, 1316, 1318, 1359
External Box Wd. 1384mm, Internal Ht. 304mm, Deck Thick. 102mm
Leg Thick. 79mm, Headwall Ht. 150mm, Baseslab Thick. 180mm



5/1200 RCP (30/2.4) (Class 2, Butt Joint) (14.40 overall length) 1681.75 Wingwall Type 1 (W1,W2 2.6) (U)Conc. 12.7m³ Reinforced Conc. Apron (Type 3) Conc. 6.7m³, C/O Wall Conc. 1.6m³ Overlay Material 151.9m³, Backfill Material 2.9m³ Bedding/Haunch Material 45.0m³ (H2) Standard Drawings — 1304, 1305, 1306, 1359 Exposure Classification B2 External Dia. 1359mm, Pipe Thick. 70mm, Headwall Ht. 230mm

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CAD	Rev.	Date	Description	Des.	Verif.	Appo



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ecked IB			Status	AS CONS	TDLICTE	<u> </u>		
signed N	Date 21/07/2021	STAGE 8		AS CONS				
rified	Date		Datum	Date	Scale	Size	۸.4	
IB ·		Title	A.H.D	21/07/2021	As Shown	1	A1	
proved	10801	CHIVEDT DETAILS	Drawing Number	ig Number				
1B	21/07/2021	CULVERT DETAILS	9	67192-CI-1822			1	

