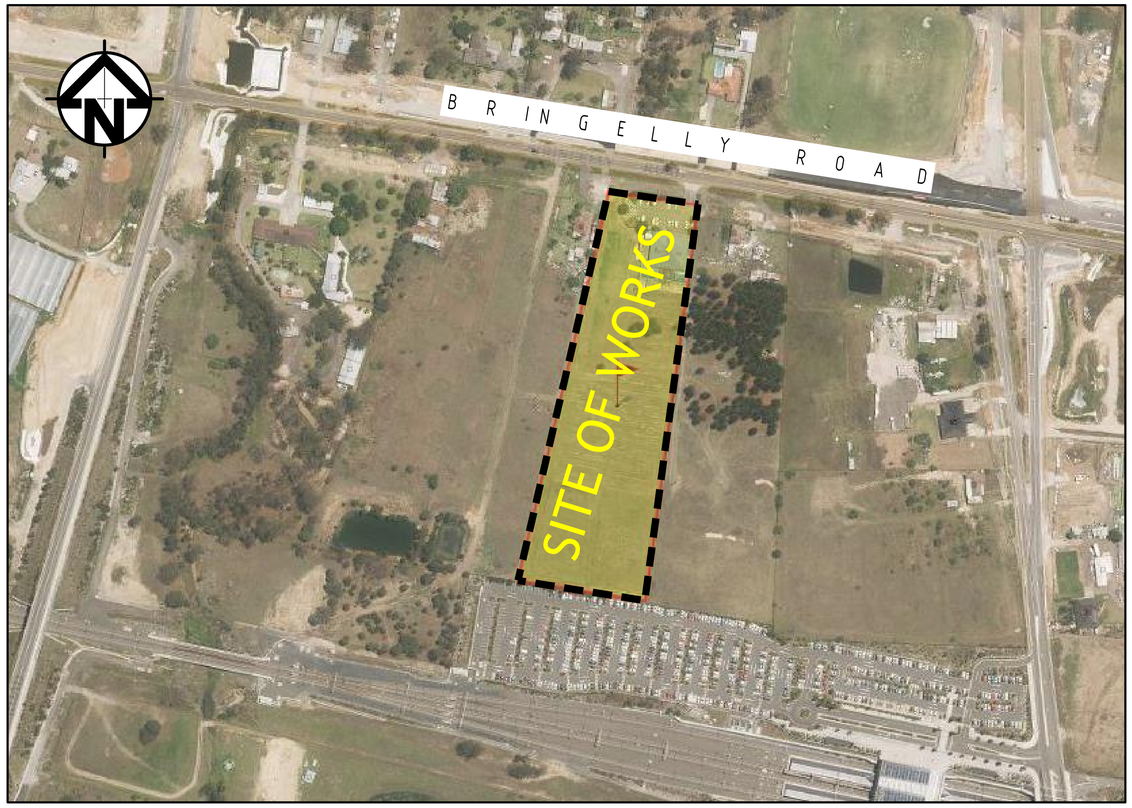
A1

SGC Reference Number: 20170269

MIXED-USE DEVELOPMENT
297 BRINGELLY ROAD, LEPPINGTON
CIVIL WORKS

DA 1 - BLDGS A & B



LOCALITY PLAN
NOT TO SCALE
COPYRIGHT OF SIX MAPS

DRAWINGS LIST			
SHEET No.	DWG No.	TITLE	REV
1	C100	COVER SHEET	G
2	C110	KEY PLAN - TEMPORARY ROAD	G
3	C111	KEY PLAN - FUTURE 25m WIDE TOWN CENTRE ROAD	G
4	C200	CIVIL WORKS - GENERAL ARRANGEMENT PLAN - TEMPORARY ROAD & SLIP LANE	G
5	C201	CIVIL WORKS - ROAD DRAINAGE LAYOUT PLAN - SHEET 1 OF 5	G
6	C202	CIVIL WORKS - ROAD DRAINAGE LAYOUT PLAN - SHEET 2 OF 5	G
7	C203	CIVIL WORKS - ROAD DRAINAGE LAYOUT PLAN - SHEET 3 OF 5	G
8	C204	CIVIL WORKS - ROAD DRAINAGE LAYOUT PLAN - SHEET 4 OF 5	G
9	C205	CIVIL WORKS - ROAD DRAINAGE LAYOUT PLAN - SHEET 5 OF 5	G
10	C206	CIVIL WORKS - GENERAL ARRANGEMENT PLAN - FUTURE TOWN CENTRE STREET - SHEET 1 OF 2	G
11	C207	CIVIL WORKS - GENERAL ARRANGEMENT PLAN - FUTURE TOWN CENTRE STREET - SHEET 2 OF 2	G
12	C300	CIVIL WORKS - ROAD LONGITUDINAL SECTION ALONG SERVICE LANE CONTROL LINE	G
13	C301	CIVIL WORKS - ROAD LONGITUDINAL SECTION ALONG FUTURE SERVICE LANE CONTROL LINE	G
14	C302	CIVIL WORKS - ROAD LONGITUDINAL SECTION ALONG BRINGELLY ROAD SLIP LANE CONTROL LINE	G
15	C303	CIVIL WORKS - ROAD LONGITUDINAL SECTION ALONG FUTURE TOWN CENTRE STREET CONTROL LINE - SHEET 1 OF 2	G
16	C304	CIVIL WORKS - ROAD LONGITUDINAL SECTION ALONG FUTURE TOWN CENTRE STREET CONTROL LINE - SHEET 2 OF 2	G
17	C351	CIVIL WORKS - ROAD TYPICAL SECTIONS & SWALE DRAIN DESIGN	G
18	C400	CIVIL WORKS - DRAINAGE LONGITUDINAL SECTION - SHEET 1 OF 3	G
19	C401	CIVIL WORKS - DRAINAGE LONGITUDINAL SECTION - SHEET 2 OF 3	G
20	C402	CIVIL WORKS - DRAINAGE LONGITUDINAL SECTION - SHEET 2 OF 3	G
21	C403	CIVIL WORKS - DRAINAGE TABLE - SHEET 1 OF 4	G
22	C404	CIVIL WORKS - DRAINAGE TABLE - SHEET 2 OF 4	G
23	C405	CIVIL WORKS - DRAINAGE TABLE - SHEET 3 OF 4	G
24	C406	CIVIL WORKS - DRAINAGE TABLE - SHEET 4 OF 4	G
25	C431	CIVIL WORKS - KERB RETUN PLAN - SHEET 1 OF 2	G
26	C432	CIVIL WORKS - KERB RETUN PLAN - SHEET 2 OF 2	G
27	C500	CIVIL WORKS - TYPICAL DETAILS	G
28	C600	CIVIL WORKS - ROAD DRAINAGE CATCHMENT PLAN	G
29	C651	CIVIL WORKS - GUTTER FLOW ANALYSIS	G
30	C652	CIVIL WORKS - EXISITNG DRAINAGE SYSTEM CAPACITY ANALYSIS	G
31	C700	CIVIL WORKS - SWEPT PATH ANALYSIS - SHEET 1 OF 2	G
32	C701	CIVIL WORKS - SWEPT PATH ANALYSIS - SHEET 2 OF 2	G

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Nominated Architects:
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Youssef El Khawaja Reg no 8933 Nicolas Toubia Reg no 9336

CLIENT :

ANTHONY & GEORGE
MOURCHED

Drawing Number: C100 Revision Number: G

DATE PLOTTED: 2 December 2020 2:43 PM BY : CLARE

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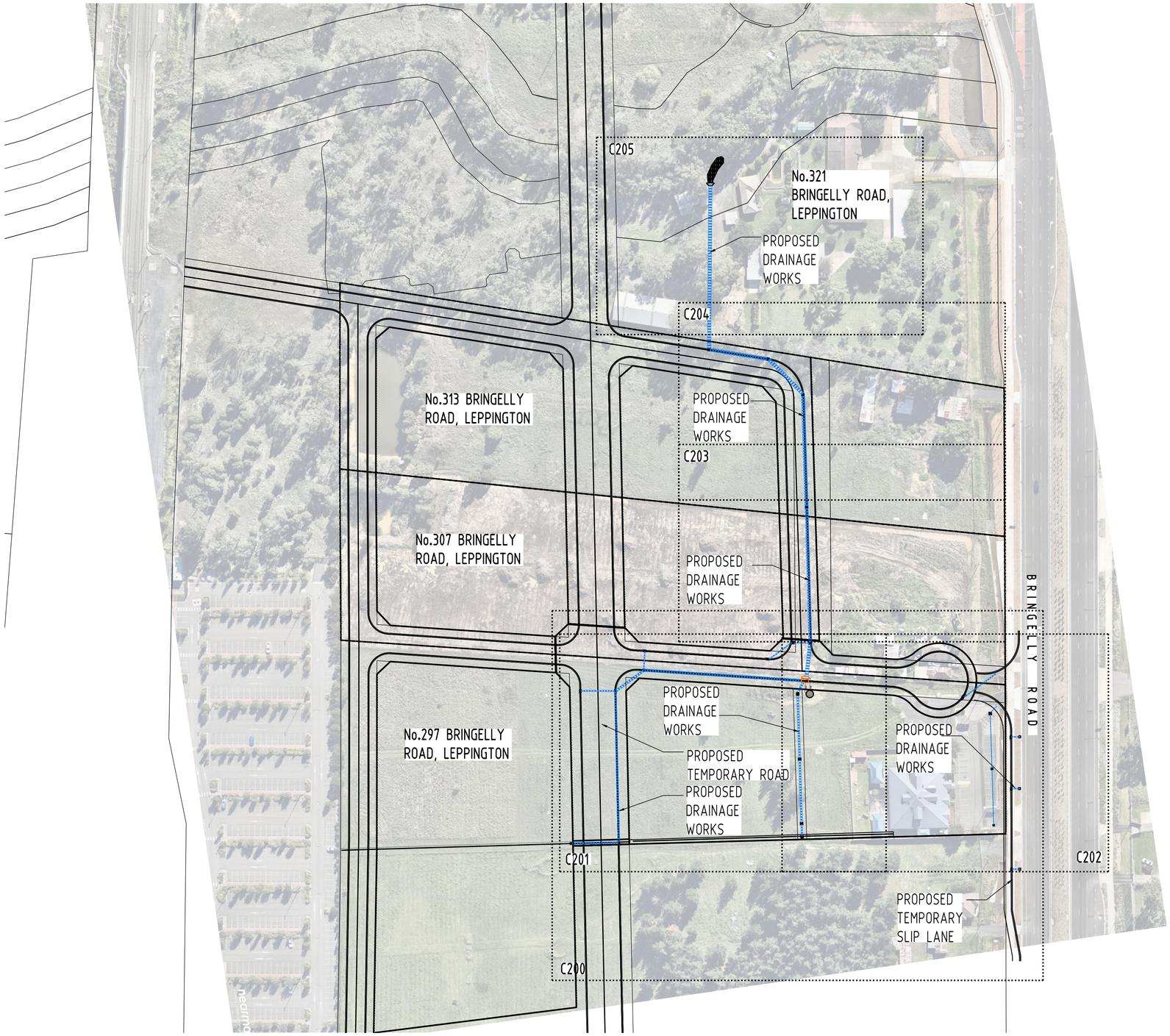

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G	ISSUE TO COUNCIL	CK	02.12.20	2	
F	ISSUE TO COUNCIL	CK	13.10.20	2	
E	ISSUE TO COUNCIL	AA	23.06.20	2	
D	ISSUE TO COUNCIL	JH	11.12.19	2	
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2	
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2	
A	ISSUE FOR DA	JH	28.02.19	2	
Issue	Last revision title	by	Date	Status	

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

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Chartered Professional Engineer
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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

0m 10 20 30 40 50
SCALE 1:1000 ON ORIGINAL SIZE

CLIENT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	2 OF 32	1:1000 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
KEY PLAN
TEMPORARY ROAD

Project No	Drawing No	Revision No
20170269	C110	G

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DATE PLOTTED: 2 December 2020 2:43 PM BY : CLARE

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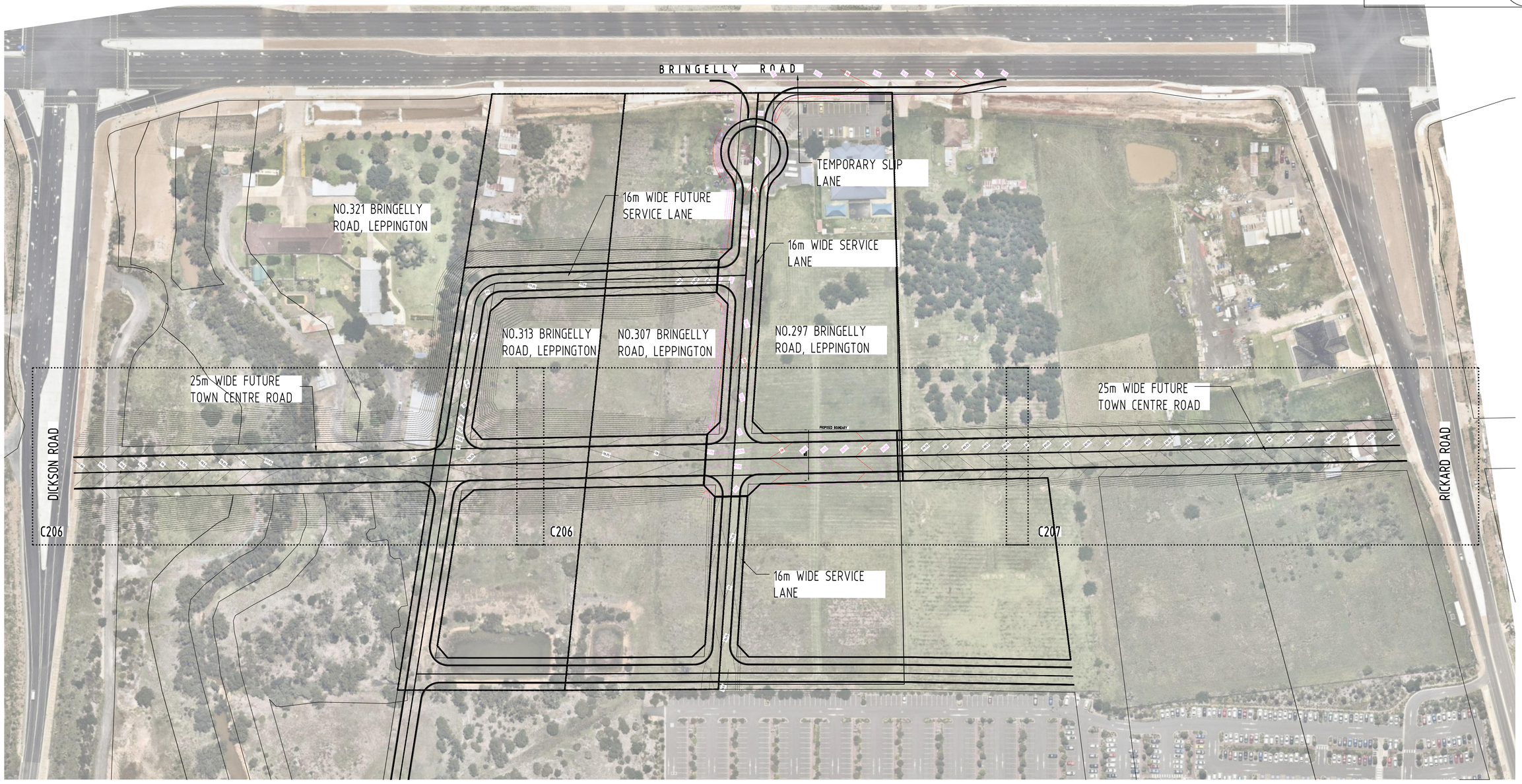

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A	ISSUE FOR DA	JH	28.02.19	2

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Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
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ELEC			
HYD			
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LANDS			
CIVIL			
SURVEY			

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Scales

0m 10 20 30 40 50
SCALE 1:1000 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	3 OF 32	1:1000 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
KEY PLAN
FUTURE 25m WIDE TOWN CENTRE ROAD

Project No	Drawing No	Revision No
20170269	C111	G

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A1

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A	ISSUE FOR DA	JH	28.02.19	2
Issue	Last revision title	by	Date	Status

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
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Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
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LANDS			
CIVIL			
SURVEY			

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Scales
SCALE 1:500 ON ORIGINAL SIZE

CLIENT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	4 OF 26	1:500 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
GENERAL ARRANGEMENT PLAN
TEMPORARY ROAD & SLIP LANE

Project No	Drawing No	Revision No
20170269	C200	G

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE
XREF's: $2
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C200.dwg

G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
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Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
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HYD			
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SURVEY			

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Scales
0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE

CLIENT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	5 OF 32	1:200 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD DRAINAGE LAYOUT PLAN
SHEET 1 OF 5

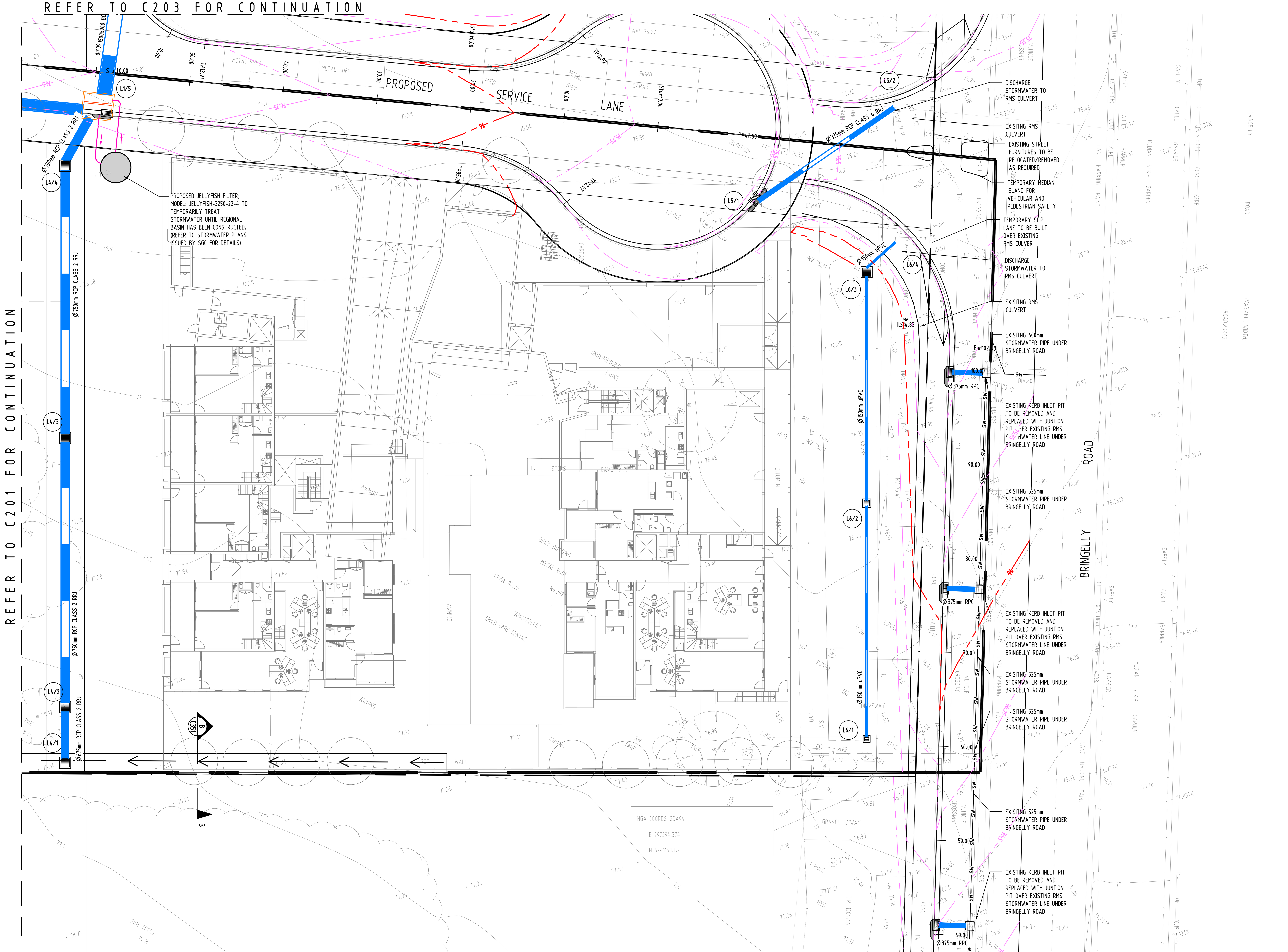
Project No	Drawing No	Revision No
20170269	C201	G

A1

REFER TO C203 FOR CONTINUATION

REFER TO C201 FOR CONTINUATION

SERVICES ON THIS DRAWING ARE SHOWN BELOW SLAB U.N.O



G	ISSUE TO COUNCIL	CK	02.12.20	2
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Issue	Last revision title	by	Date	Status

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
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Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	6 OF 32	1:200 @ A1

Drawing Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD DRAINAGE LAYOUT PLAN
SHEET 2 OF 5

Project No	Drawing No	Revision No
20170269	C202	G

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1

REFER TO C204 FOR CONTINUATION

SERVICES ON THIS DRAWING ARE SHOWN BELOW SLAB U.N.O

REFER TO C201&C202 FOR CONTINUATION

G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
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A	ISSUE FOR DA	JH	28.02.19	2
Issue	Last revision title	by	Date	Status

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
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HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

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Scales

0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	7 OF 32	1:200 @ A1

Drawing Status: FOR APPROVAL
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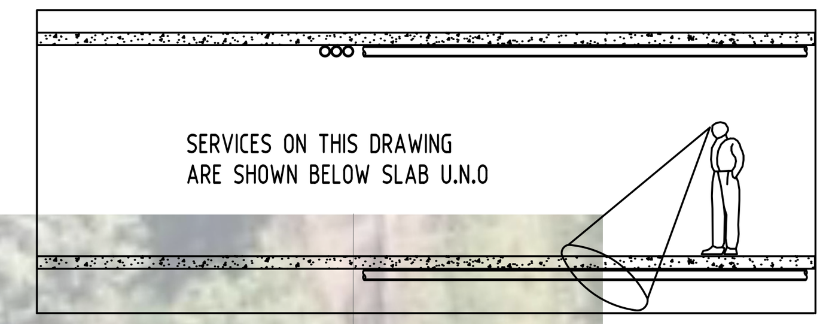
Drawing Title
CIVIL WORKS
ROAD DRAINAGE LAYOUT PLAN
SHEET 3 OF 5

Project No	Drawing No	Revision No
20170269	C203	G

C:\Revit Projects\20170269 297 Bringelly Street, Leppington\Cad\Cad\DA1 BLDGS A & B\C201-C205.dwg

A1

REFER TO C205 FOR CONTINUATION



REFER TO C203 FOR CONTINUATION

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SURVEY			

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Youssef El Khawaja Reg no 8933 Nicolas Toubia Reg no 9336

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Email: office@sgce.com.au
Web: www.sgce.com.au
A.B.N. 21 118 222 530

PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	8 OF 32	1:200 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD DRAINAGE LAYOUT PLAN
SHEET 4 OF 5

Project No	Drawing No	Revision No
20170269	C204	G

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1

REFER TO C204 FOR CONTINUATION

G	ISSUE TO COUNCIL	CK	02.12.20	2	
F	ISSUE TO COUNCIL	CK	13.10.20	2	
E	ISSUE TO COUNCIL	AA	23.06.20	2	
D	ISSUE TO COUNCIL	JH	11.12.19	2	
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2	
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2	
A	ISSUE FOR DA	JH	28.02.19	2	
Issue	Last revision title	by	Date	Status	

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

DIMENSIONS NOT SHOWN TO BE CHECKED ON SITE. DO NOT SCALE OF THIS DRAWING. POSITIONS OF AUTHORITIES MAINS AND/OR EXISTING SERVICES ARE TO BE CHECKED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE CONSULTING ENGINEER FOR DECISION/CLARIFICATION BEFORE PROCEEDING WITH THE WORK. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER CONSULTANTS' DRAWINGS.

QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

0m 2 4 6 8 10

SCALE 1:200 ON ORIGINAL SIZE

CLIENT
ANTHONY & GEORGE MOURCHED

ARCHITECT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	9 OF 32	1:200 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD DRAINAGE LAYOUT PLAN
SHEET 5 OF 5

Project No	Drawing No	Revision No
20170269	C205	G

PLOT BY: C:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLOCKS A & B\C201-C205.dwg

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing			
Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

CLIENT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	10 OF 26	1:500 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

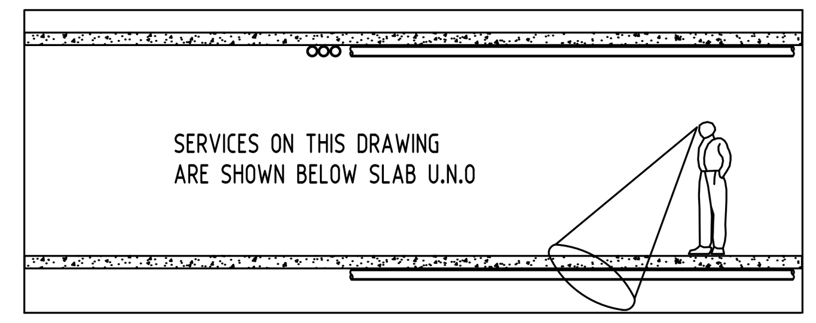
Drawing Title
CIVIL WORKS
GENERAL ARRANGEMENT PLAN
FUTURE TOWN CENTRE STREET - SHEET 1 OF 2

Project No	Drawing No	Revision No
20170269	C206	G

PRINTED AT A1
X:\Projects\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C206-C207.dwg

A1

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLAIRE



G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2
Issue	Last revision title	by	Date	Status

Issuer internal sequence and revision history
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Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

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Chartered Professional Engineer
MEMBER

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DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales
0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

CLIENT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	11 OF 32	1:500 @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

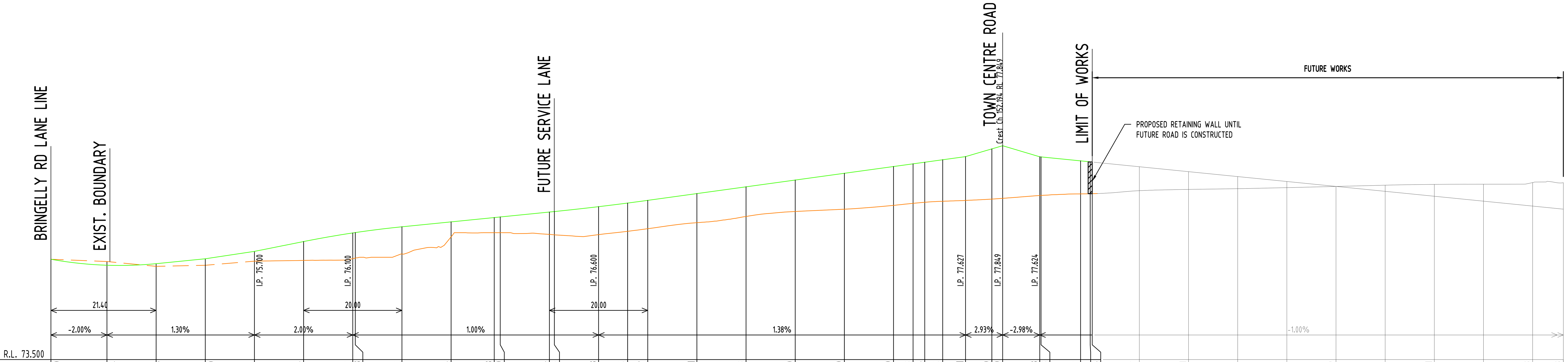
Drawing Title
CIVIL WORKS
GENERAL ARRANGEMENT PLAN
FUTURE TOWN CENTRE STREET - SHEET 2 OF 2

Project No	Drawing No	Revision No
20170269	C207	G

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C206-C207.dwg

A1

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE



CHAINAGE	EXISTING SURFACE LEVEL ALONG CONTROL LINE	DESIGN SURFACE LEVEL ALONG CONTROL LINE	CUT/FILL DEPTHS
-41.400	75.540	75.540	0.000
-30.000	75.494	75.420	-0.074
-20.000	75.394	75.451	+0.057
-10.000	75.417	75.547	+0.130
0.000	75.501	75.700	+0.199
10.000	75.516	75.900	+0.384
20.000	75.553	76.075	+0.522
20.513	75.565	76.083	+0.518
30.000	75.648	76.200	+0.552
40.000	75.996	76.300	+0.304
48.775	76.080	76.388	+0.308
50.000	76.080	76.400	+0.320
60.000	76.046	76.500	+0.454
61.011	76.037	76.510	+0.473
70.000	76.041	76.609	+0.568
75.907	76.108	76.683	+0.575
80.000	76.161	76.738	+0.577
90.000	76.284	76.875	+0.591
100.000	76.410	77.013	+0.603
110.000	76.511	77.151	+0.640
120.000	76.558	77.288	+0.730
130.000	76.636	77.426	+0.790
133.970	76.677	77.480	+0.803
136.345	76.699	77.513	+0.814
140.000	76.718	77.563	+0.845
144.645	76.736	77.627	+0.891
150.000	76.764	77.784	+1.020
152.194	76.779	77.849	+1.070
159.743	76.836	77.624	+0.788
160.000	76.838	77.621	+0.783
168.042	76.869	77.541	+0.672
170.000	76.872	77.521	+0.649
170.418	76.873	77.517	+0.644
180.000	76.934	77.421	+0.487
190.000	76.960	77.321	+0.361
200.000	76.975	77.221	+0.246
210.000	76.996	77.121	+0.125
220.000	77.021	77.021	+0.000
230.000	77.046	76.921	-0.125
240.000	77.062	76.821	-0.241
250.000	77.066	76.721	-0.345
260.000	77.099	76.621	-0.478
266.249	77.097	76.559	-0.538

ROAD LONGITUDINAL SECTION ALONG SERVICE LANE CONTROL LINE

SCALE H:1in500 V:1in50

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
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A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

XREF's: $2
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C301.dwg

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales
0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE
0m 0.5 1 1.5 2 2.5
SCALE 1:50 ON ORIGINAL SIZE

CLIENT
ANTHONY & GEORGE MOURCHED

ARCHITECT
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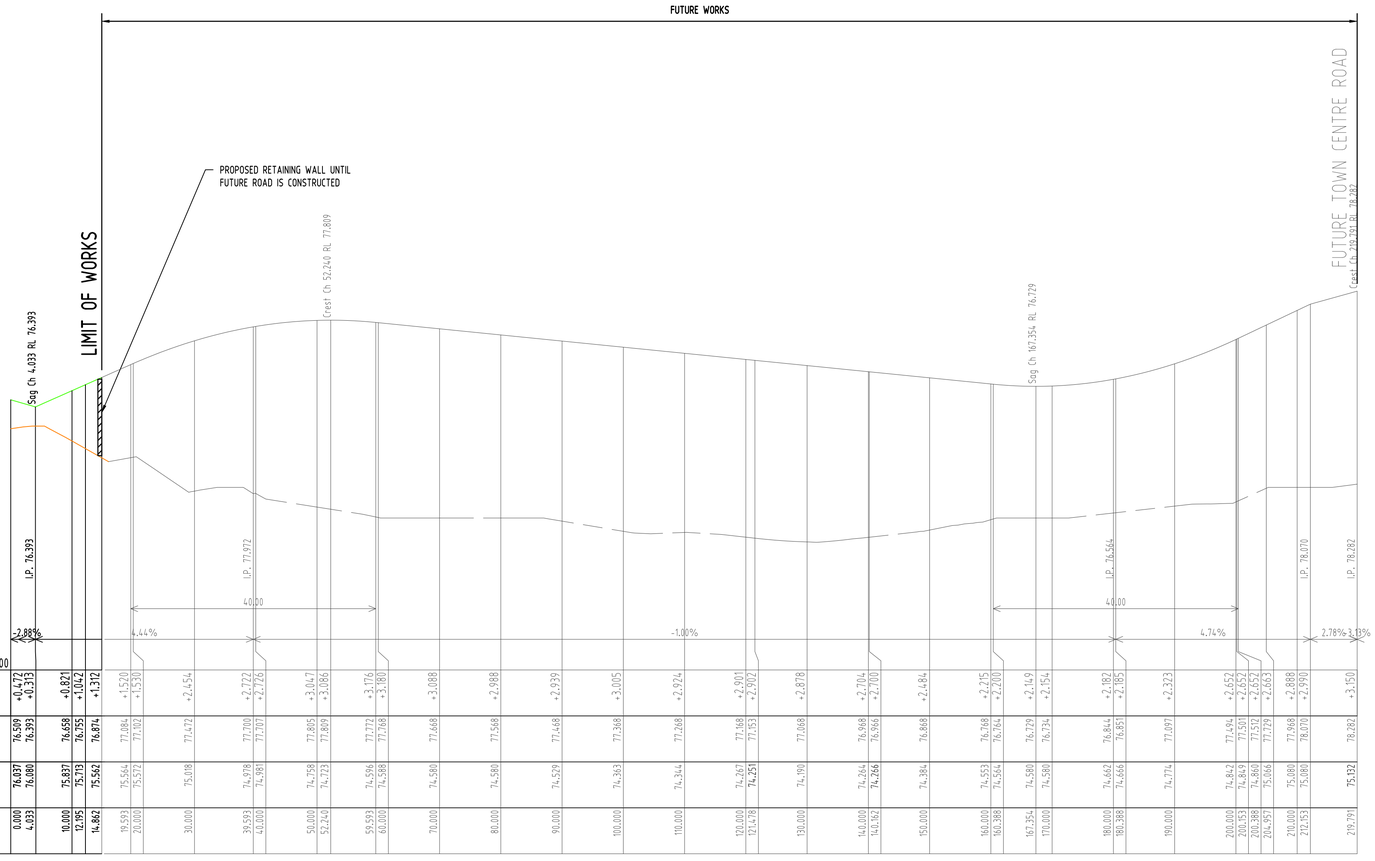
PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	12 OF 32	AS SHOWN @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD LONGITUDINAL SECTION ALONG SERVICE LANE CONTROL LINE

Project No	Drawing No	Revision No
20170269	C300	G



DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1

R.L. 72.100

CUT/FILL DEPTHS	+0.472	+0.313	+0.821	+1.042	+1.312	+1.520	+1.530	+2.454	+2.722	+2.726	+3.047	+3.086	+3.176
DESIGN SURFACE LEVEL ALONG CONTROL LINE	76.509	76.393	76.658	76.755	76.874	77.084	77.102	77.472	77.700	77.707	77.805	77.809	77.772
EXISTING SURFACE LEVEL ALONG CONTROL LINE	76.037	76.080	75.837	75.713	75.562	75.564	75.572	75.018	74.978	74.981	74.758	74.723	74.596
CHAINAGE	0.000	4.033	10.000	12.195	14.862	19.593	20.000	30.000	39.593	40.000	50.000	52.240	59.593

CUT/FILL DEPTHS	+3.180	+3.088	+2.988	+2.939	+3.005	+2.924	+2.901	+2.902	+2.878	+2.704	+2.700	+2.484	+2.215
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.768	77.668	77.568	77.468	77.368	77.268	77.168	77.153	77.068	76.968	76.966	76.868	76.768
EXISTING SURFACE LEVEL ALONG CONTROL LINE	74.588	74.580	74.580	74.529	74.363	74.344	74.267	74.251	74.190	74.264	74.266	74.384	74.553
CHAINAGE	60.000	70.000	80.000	90.000	100.000	110.000	120.000	121.478	130.000	140.000	140.162	150.000	160.000

CUT/FILL DEPTHS	+2.200	+2.149	+2.154	+2.182	+2.185	+2.323	+2.652	+2.652	+2.652	+2.663	+2.888	+2.990	+3.150
DESIGN SURFACE LEVEL ALONG CONTROL LINE	76.764	76.729	76.734	76.844	76.851	77.097	77.494	77.501	77.512	77.729	77.968	78.070	78.282
EXISTING SURFACE LEVEL ALONG CONTROL LINE	74.564	74.580	74.580	74.662	74.666	74.774	74.842	74.849	74.860	75.066	75.080	75.080	75.132
CHAINAGE	160.388	167.354	170.000	180.000	180.388	190.000	200.000	200.153	200.388	204.957	210.000	212.153	219.791

ROAD LONGITUDINAL SECTION ALONG FUTURE SERVICE LANE CONTROL LINE

SCALE H:1in500 V:1in50

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C301.dwg

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
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A	ISSUE FOR DA	JH	28.02.19	2

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Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
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ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA
Chartered Professional Engineer
MEMBER

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Scales
0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE
0m 0.5 1 1.5 2 2.5
SCALE 1:50 ON ORIGINAL SIZE

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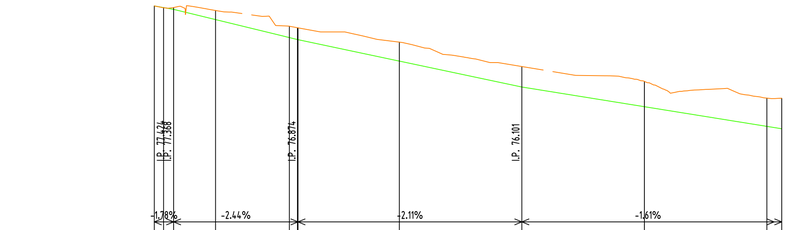
PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	13 OF 32	AS SHOWN @ A1

Drawing Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD LONGITUDINAL SECTION ALONG FUTURE SERVICE LANE CONTROL LINE

Project No	Drawing No	Revision No
20170269	C301	G



DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1

CUT/FILL DEPTHS	+0.000	+0.004	-0.030	-0.148	-0.185	-0.193	-0.193	-0.310	-0.335	-0.413	-0.461	-0.499
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.424	77.398	77.368	77.202	76.908	76.876	76.874	76.524	76.101	75.780	75.459	75.420
EXISTING SURFACE LEVEL ALONG CONTROL LINE	77.424	77.394	77.398	77.350	77.093	77.069	77.067	76.834	76.436	76.193	75.920	75.919
CHAINAGE	0.000	1.514	3.155	10.000	22.045	23.367	23.459	40.000	60.000	80.000	100.000	102.426

ROAD LONGITUDINAL SECTION ALONG BRINGELLY ROAD SLIP LANE CONTROL LINE

SCALE H:1in500 V:1in50

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
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CIVIL			
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0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

0m 0.5 1 1.5 2 2.5
SCALE 1:50 ON ORIGINAL SIZE

CLIENT
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Phone Number: +61 29745 2014
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Email: office@sgce.com.au
Web: www.sgce.com.au
A.B.N. 21 118 222 530

PROJECT
PROPOSED MIXED-USE
DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	14 OF 32	AS SHOWN @ A1

Drawing Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

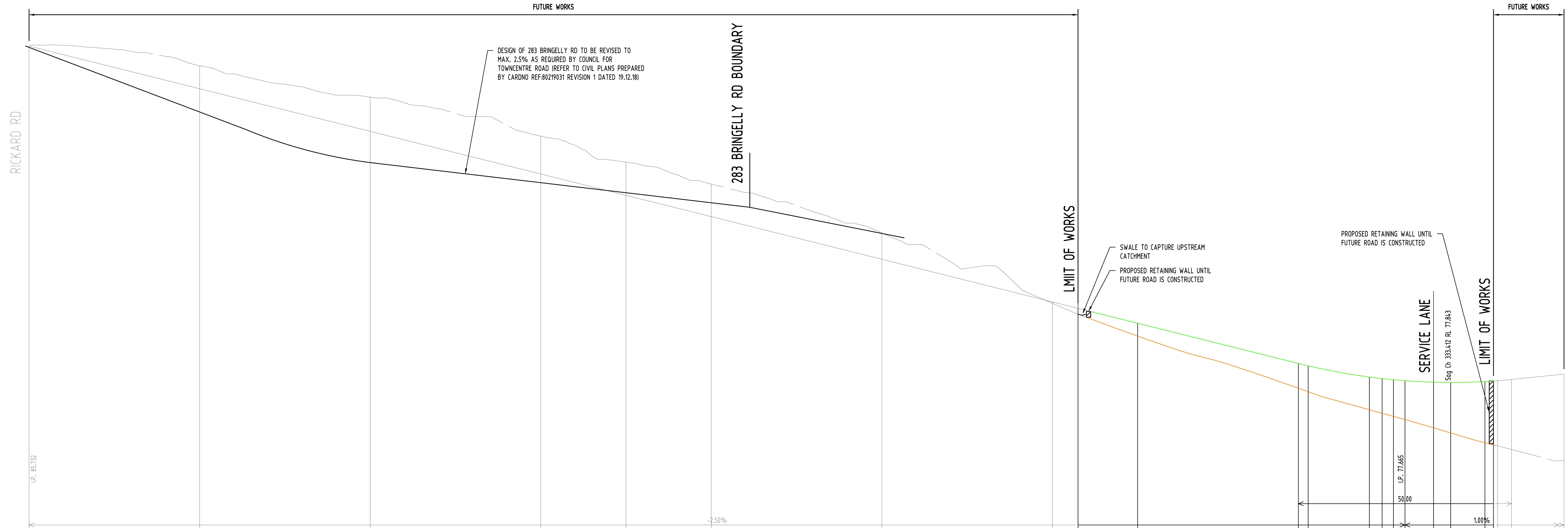
Drawing Title
CIVIL WORKS
ROAD LONGITUDINAL SECTION ALONG
BRINGELLY ROAD SLIP LANE CONTROL LINE

Project No	Drawing No	Revision No
20170269	C302	G

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C301.dwg

A1

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE



CHAINAGE	0.000	40.000	80.000	120.000	140.000	160.000	200.000	240.000	246.018	260.000	297.698
CUT/FILL DEPTHS	+0.000	-0.537	-0.804	-0.890	-0.777	-0.765	-0.618	+0.032	+0.135	+0.301	+0.583
DESIGN SURFACE LEVEL ALONG CONTROL LINE	85.732	84.732	83.732	82.732	82.232	81.732	80.732	79.732	79.582	79.232	78.290
EXISTING SURFACE LEVEL ALONG CONTROL LINE	85.732	85.269	84.536	83.622	83.009	82.497	81.350	79.700	79.447	78.931	77.707

CHAINAGE	300.000	314.350	317.336	320.000	322.698	329.395	333.412	341.454	343.460	344.440	347.698	360.000
CUT/FILL DEPTHS	+0.607	+0.767	+0.813	+0.858	+0.910	+1.070	+1.183	+1.436	+1.500	+1.532	+1.645	+2.023
DESIGN SURFACE LEVEL ALONG CONTROL LINE	78.234	77.970	77.934	77.906	77.883	77.849	77.843	77.866	77.879	77.886	77.915	78.038
EXISTING SURFACE LEVEL ALONG CONTROL LINE	77.627	77.203	77.121	77.048	76.973	76.779	76.660	76.430	76.379	76.354	76.270	76.015

ROAD LONGITUDINAL SECTION ALONG TOWN CENTRE ROAD CONTROL LINE

SCALE H:1in500 V:1in50

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C301.dwg

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

DIMENSIONS NOT SHOWN TO BE CHECKED ON SITE. DO NOT SCALE OF THIS DRAWING. POSITIONS OF AUTHORITIES MAINS AND/OR EXISTING SERVICES ARE TO BE CHECKED PRIOR TO COMMENCEMENT OF WORK. REPORT ANY DISCREPANCIES TO THE CONSULTING ENGINEER FOR DECISION/CLARIFICATION BEFORE PROCEEDING WITH THE WORK. THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS AND OTHER CONSULTANTS' DRAWINGS.

QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales
0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE
0m 0.5 1 1.5 2 2.5
SCALE 1:50 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

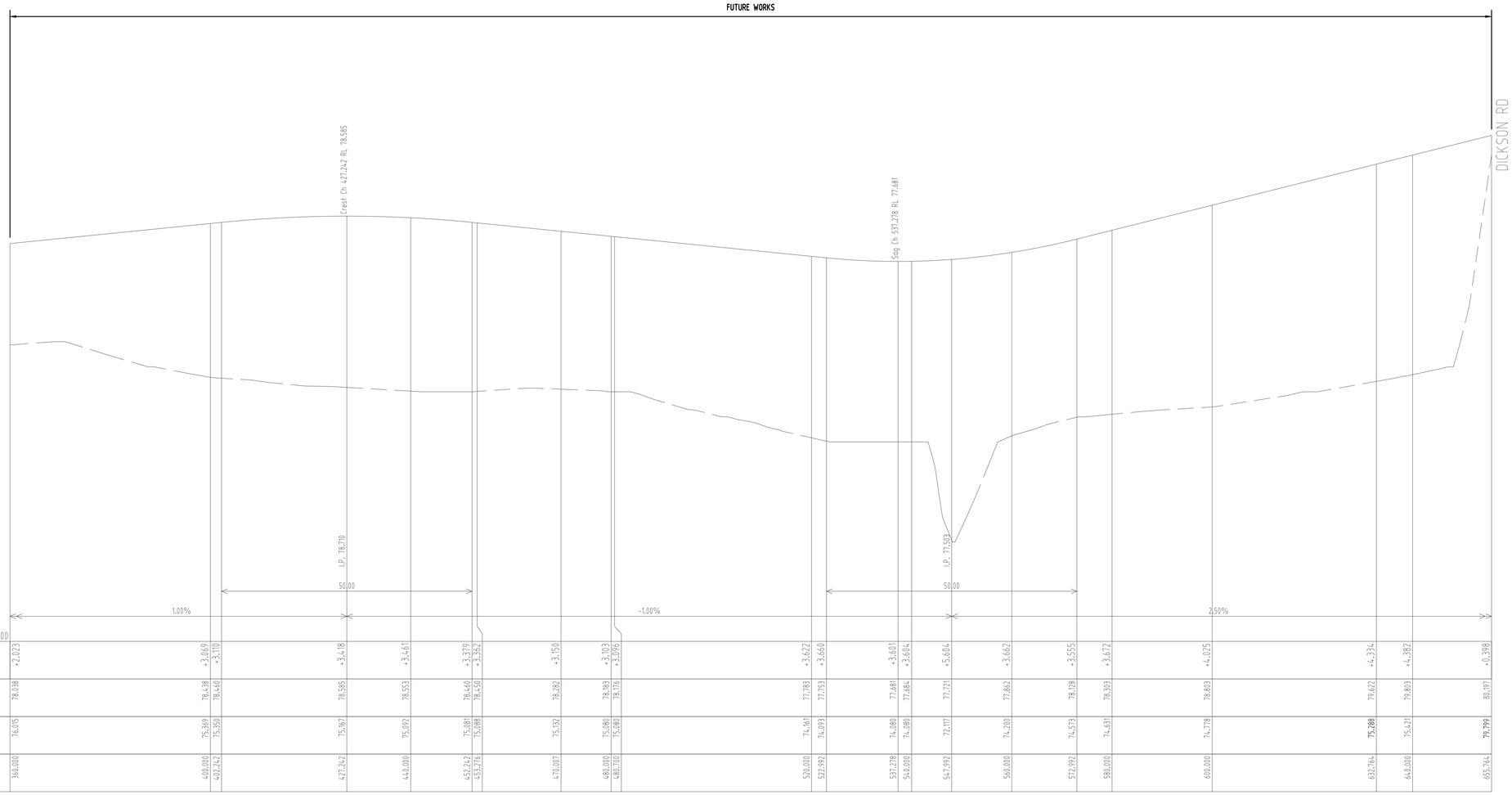
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	15 OF 32	AS SHOWN @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD LONGITUDINAL SECTION ALONG TOWN CENTRE ST. CONTROL LINE-SHEET 1 OF 2

Project No	Drawing No	Revision No
20170269	C303	G

A1



ROAD LONGITUDINAL SECTION ALONG TOWN CENTRE ROAD CONTROL LINE

SCALE H:1in500 V:1in50

G	ISSUE TO COUNCIL	CK	02.12.20	2	
F	ISSUE TO COUNCIL	CK	13.10.20	2	
E	ISSUE TO COUNCIL	AA	23.06.20	2	
D	ISSUE TO COUNCIL	JH	11.12.19	2	
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2	
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2	
A	ISSUE FOR DA	JH	28.02.19	2	
Issue	Last revision title	by	Date	Status	

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

0m 0.5 1 1.5 2 2.5
SCALE 1:50 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

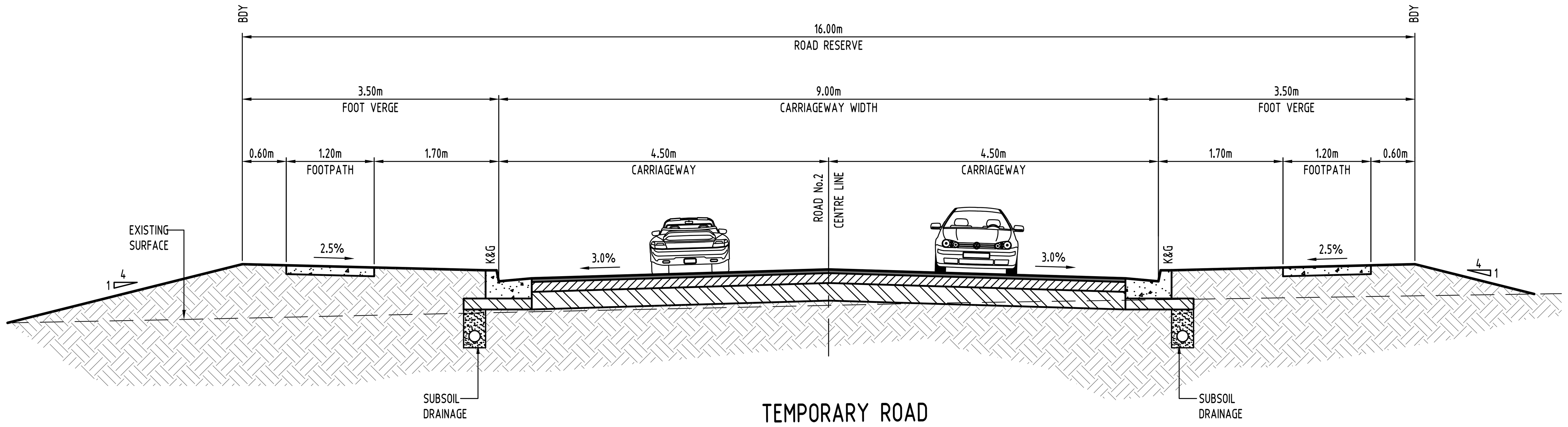
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	16 OF 32	AS SHOWN @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD LONGITUDINAL SECTION ALONG TOWN CENTRE ST. CONTROL LINE-SHEET 2 OF 2

Project No	Drawing No	Revision No
20170269	C304	G

A1



TEMPORARY ROAD SERVICE LANE

SCALE 1 : 20

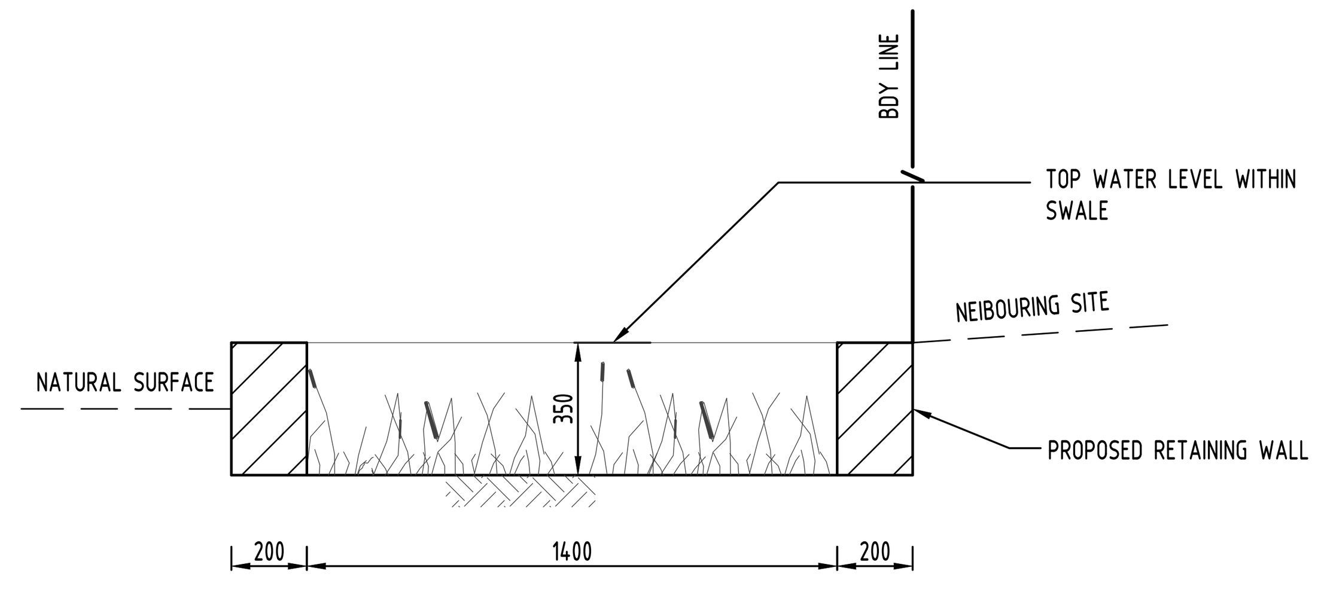
CATCHMENTS RUNOFF CALCULATIONS FOR SWALE DRAIN

UPSTREAM CATCHMENT AREA = 17444m2 (IN EXISTING CONDITION)

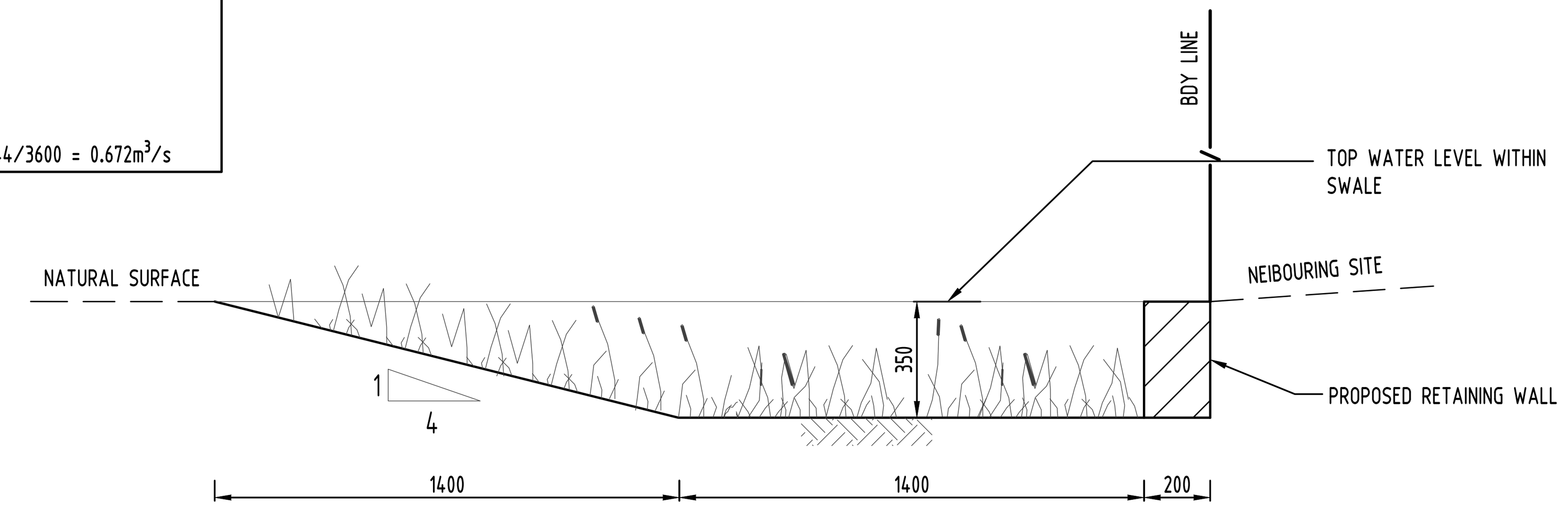
SLOPE = 0.03m/m
n = 0.06 (NORMAL RESIDENTIAL)
L = 280m (LONGEST DISTANCE OF TRAVEL)
Tc = 15mins
I_{100} = 154mm/hr

C_{100} = 0.90

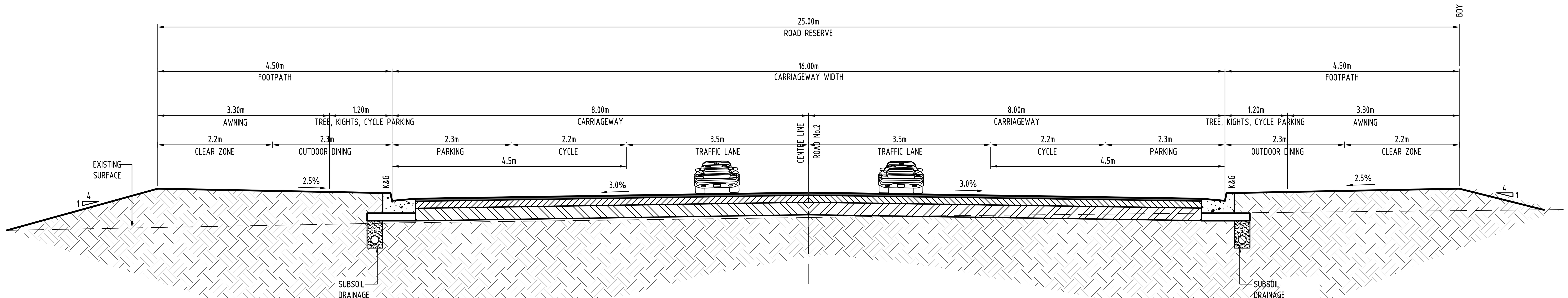
Q_{100} = 0.90x154x17444/3600 = 0.672m^3/s



B DETAIL
C201
CATCH DRAIN
NOT TO SCALE



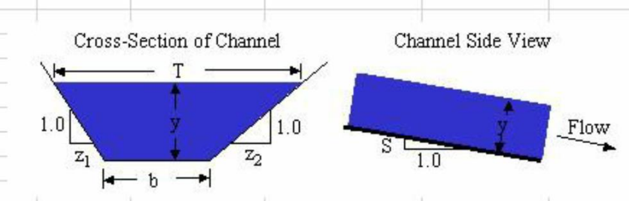
A DETAIL
C201
CATCH DRAIN
NOT TO SCALE



TEMPORARY ROAD TOWN CENTRE STREET

SCALE 1 : 20

Design Flow	Q	0.627	m^3/s
Base width	b	1.4	m
Top Width	T	1.4	m
Side 1 batter slope	Z1	0	
Side 2 batter slope	Z2	0	
Water depth	y	0.35	m
Manning's n	n	0.035	
Channel Slope	Slope	0.014	m/m
Channel flow area	A	0.49	m^2
Wetted Perimeter	P	2.10	m
Hydraulic Radius	R	0.23	m
Flow Velocity	V	1.29	m/s
Is velocity not too high or low ??		OK	
Flow velocity x Depth	V x D	0.45	m^2/s
Maximum V x D value		0.50	m^2/s
Is V x D vale at safe levels for people ??		OK	
Channel Design Flow-Rate	Q	0.634	m^3/s
Is Channel Flow-rate > Above Design flow ??		OK	



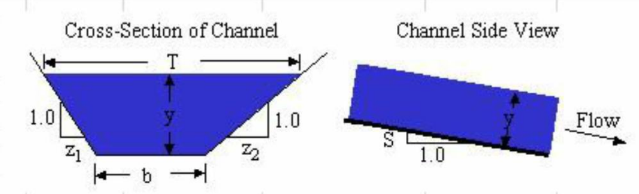
$Q=VA$ $V=\frac{k}{n}R^{2/3}S^{1/2}$ $R=\frac{A}{P}$ $A=\frac{y}{2}(b+T)$

$P=b+y\left(\sqrt{1+z_1^2}+\sqrt{1+z_2^2}\right)$ $T=b+y(z_1+z_2)$

$F=V\sqrt{\frac{T}{gA\cos\theta}}$ $\theta=Tan^{-1}(S)$

SWALE CAPACITY CALCULATIONS (RETENGULAR)

Design Flow	Q	0.627	m^3/s
Base width	b	2.8	m
Top Width	T	1.4	m
Side 1 batter slope	Z1	4	
Side 2 batter slope	Z2	0	
Water depth	y	0.35	m
Manning's n	n	0.035	
Channel Slope	Slope	0.014	m/m
Channel flow area	A	0.74	m^2
Wetted Perimeter	P	4.59	m
Hydraulic Radius	R	0.16	m
Flow Velocity	V	1.01	m/s
Is velocity not too high or low ??		OK	
Flow velocity x Depth	V x D	0.35	m^2/s
Maximum V x D value		0.50	m^2/s
Is V x D vale at safe levels for people ??		OK	
Channel Design Flow-Rate	Q	0.741	m^3/s
Is Channel Flow-rate > Above Design flow ??		OK	



$Q=VA$ $V=\frac{k}{n}R^{2/3}S^{1/2}$ $R=\frac{A}{P}$ $A=\frac{y}{2}(b+T)$

$P=b+y\left(\sqrt{1+z_1^2}+\sqrt{1+z_2^2}\right)$ $T=b+y(z_1+z_2)$

$F=V\sqrt{\frac{T}{gA\cos\theta}}$ $\theta=Tan^{-1}(S)$

SWALE CAPACITY CALCULATIONS (TRAPIZOIDAL)

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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APPROVED	JH	DATE	02.12.20

Scales

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	17 OF 32	AS NOTED @ A1

Drawing Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

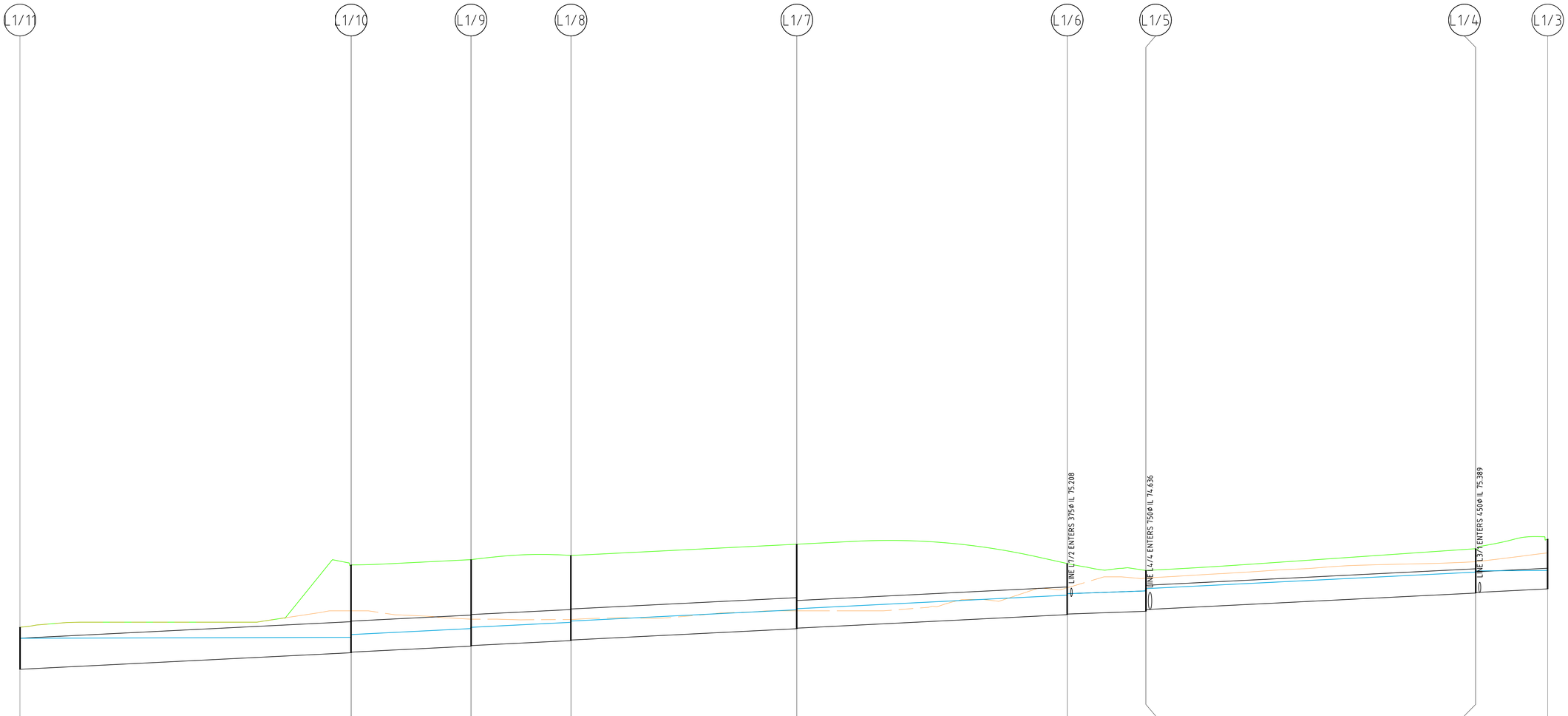
Drawing Title
CIVIL WORKS
ROAD TYPICAL SECTIONS & SWALE DRAIN DETAIL

Project No	Drawing No	Revision No
20170269	C351	G

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C351.dwg
DATE PLOTTED: 2 December 2020 2:42 PM BY : CLAIRE

DATE PLOTTED: 2 December 2020 2:43 PM BY : CLARE

A1



FLOW (l/sec)	1632	1536	1534	1411	1320	1330	916	904
VELOCITY (m/s)	3.27	3.22	3.22	3.15	3.11	2.50	2.84	2.84
PIPE DETAILS	1350Ø Class 2 RRJ	1350Ø Class 2 RRJ	1350Ø Class 2 RRJ	1350Ø Class 2 RRJ	1200Ø Class 2 RRJ	1500x900 RCBC	1050Ø Class 2 RRJ	900Ø Class 2 RRJ
SLOPE/GRADE	1.0%	1.0%	1.0%	1.0%	1.0%	0.7%	1.0%	1.0%
DATUM RL 67								
HGL	73.370	73.411 / 73.533	73.797 / 73.853	74.074 / 74.129	74.627 / 74.674	75.211 / 75.336	75.159 / 75.560	76.288 / 76.341	76.364
PIT FREEBOARD	3.196	3.196 / 3.041	3.041 / 2.949	2.949 / 2.892	2.892 / 1.396	1.396 / 0.904	0.904 / 1.033	1.033 / 1.381	1.381
DEPTH TO OBVERT	0.487	2.506 / 2.481	2.447 / 2.422	2.386 / 2.361	2.359 / 2.484	1.035 / 1.330	0.903 / 0.657	0.887 / 1.022	1.287
DEPTH TO INVERT	1.857	3.876 / 3.851	3.817 / 3.792	3.756 / 3.731	3.729 / 3.704	2.255 / 2.230	1.803 / 1.727	1.957 / 1.932	2.197
INVERT LEVEL	72.000	72.731 / 72.756	73.021 / 73.046	73.267 / 73.292	73.790 / 73.815	74.413 / 74.438	74.560 / 74.636	75.364 / 75.389	75.548
FINISHED SURFACE	73.857	76.608	76.838	77.023	77.520	76.667	76.363	77.321	77.745
EXISTING SURFACE	73.857	74.580	74.211	74.195	74.580	75.598	76.032	76.746	77.138
CHAINAGE	0.000 / 73.141	73.141 / 99.604	99.604 / 121.682	121.682 / 171.541	171.541 / 231.255	231.255 / 248.623	248.623 / 321.430	321.430 / 337.346
	73.141	26.463	22.078	49.858	59.714	17.368	72.807	15.916

DRAINAGE LONGITUDINAL SECTION FOR LINE L1

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
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LANDS			
CIVIL			
SURVEY			

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VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE

0m 1 2 3 4 5
SCALE 1:100 ON ORIGINAL SIZE

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PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	18 OF 32	AS SHOWN @ A1

Drawing Status: FOR APPROVAL
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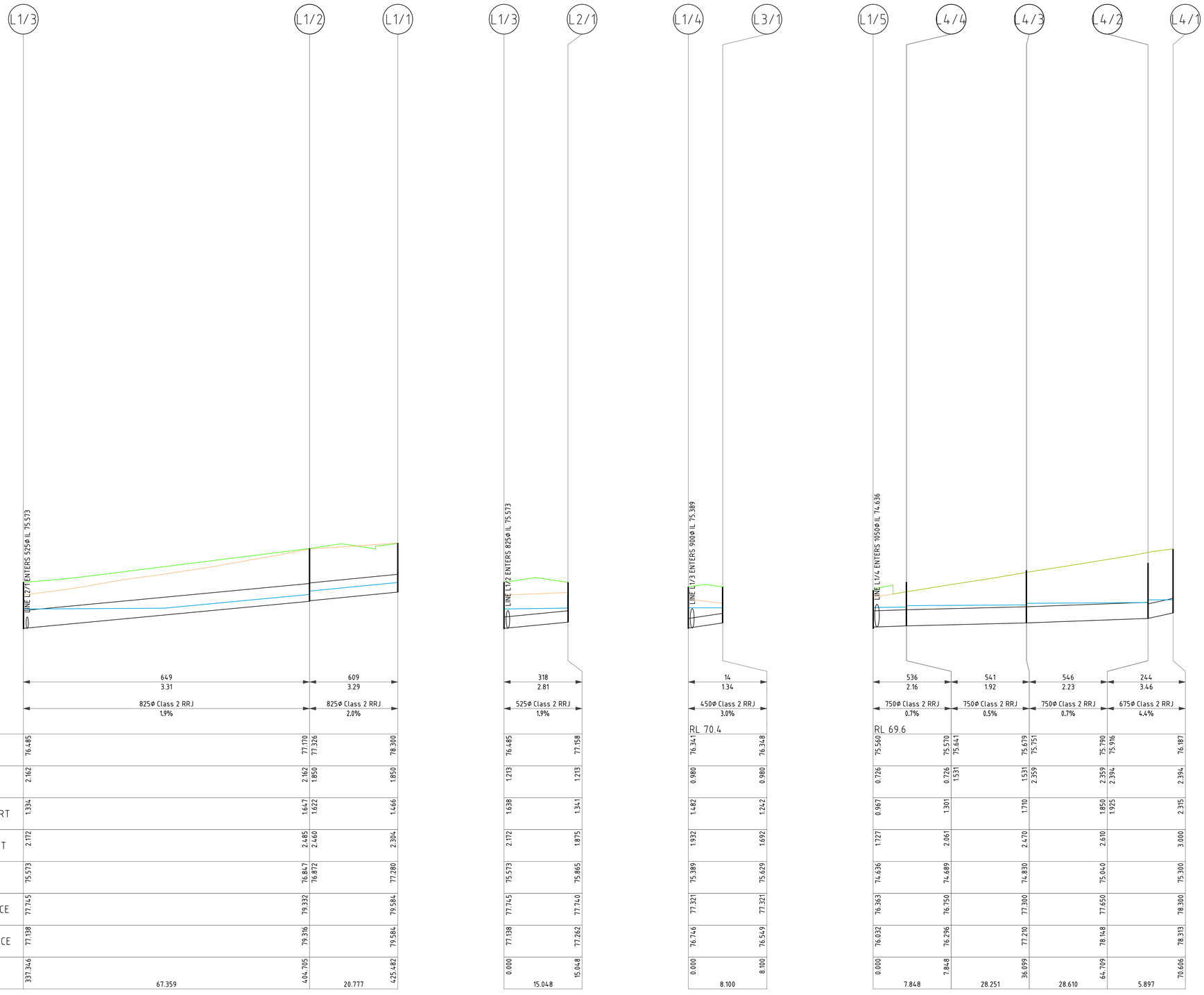
Drawing Title
CIVIL WORKS
DRAINAGE LONGITUDINAL SECTION
SHEET 1 OF 3

Project No	Drawing No	Revision No
20170269	C400	G

PLOT FILE: Z:\Production\2017\20170269 297 Bringelly Street , Leppington\Civil\cad\DA1 BLOCK A & B\C401.dwg



DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1

FLOW (l/sec)		649		609	
VELOCITY (m/s)		3.31		3.29	
PIPE DETAILS		825Ø Class 2 RRJ		825Ø Class 2 RRJ	
SLOPE/GRADE		1.9%		2.0%	
DATUM RL 70.6					
HGL	76.485		77.170 77.326		78.300
PIT FREEBOARD	2.162		2.162 1.850		1.850
DEPTH TO OBVERT	1.334		1.647 1.622		1.466
DEPTH TO INVERT	2.172		2.485 2.460		2.304
INVERT LEVEL	75.573		76.847 76.872		77.280
FINISHED SURFACE	77.745		79.332		79.584
EXISTING SURFACE	77.138		79.316		79.584
CHAINAGE	337.346	67.359	404.705	20.777	425.482

DRAINAGE LONGITUNDINAL SECTION FOR LINE L1

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

FLOW (l/sec)		318	
VELOCITY (m/s)		2.81	
PIPE DETAILS		525Ø Class 2 RRJ	
SLOPE/GRADE		1.9%	
HGL	76.485		77.158
PIT FREEBOARD	1.213		1.213
DEPTH TO OBVERT	1.638		1.341
DEPTH TO INVERT	2.172		1.875
INVERT LEVEL	75.573		75.865
FINISHED SURFACE	77.745		77.740
EXISTING SURFACE	77.138		77.262
CHAINAGE	0.000	15.048	15.048

DRAINAGE LONGITUNDINAL SECTION FOR LINE L2

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

FLOW (l/sec)		14	
VELOCITY (m/s)		1.34	
PIPE DETAILS		450Ø Class 2 RRJ	
SLOPE/GRADE		3.0%	
RL 70.4			
HGL	76.341		76.348
PIT FREEBOARD	0.980		0.980
DEPTH TO OBVERT	1.482		1.242
DEPTH TO INVERT	1.932		1.692
INVERT LEVEL	75.389		75.629
FINISHED SURFACE	77.321		77.321
EXISTING SURFACE	76.746		76.549
CHAINAGE	0.000	8.100	8.100

DRAINAGE LONGITUNDINAL SECTION FOR LINE L3

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

FLOW (l/sec)		536		541		546		244	
VELOCITY (m/s)		2.16		1.92		2.23		3.46	
PIPE DETAILS		750Ø Class 2 RRJ		750Ø Class 2 RRJ		750Ø Class 2 RRJ		675Ø Class 2 RRJ	
SLOPE/GRADE		0.7%		0.5%		0.7%		4.4%	
RL 69.6									
HGL	75.560		75.570 75.641		75.679 75.751		75.790 75.916		76.187
PIT FREEBOARD	0.726		0.726 1.531		1.531 2.359		2.359 2.394		2.394
DEPTH TO OBVERT	0.967		1.301		1.710		1.850 1.925		2.315
DEPTH TO INVERT	1.727		2.061		2.470		2.610		3.000
INVERT LEVEL	74.636		74.689		74.830		75.040		75.300
FINISHED SURFACE	76.363		76.750		77.300		77.650		78.300
EXISTING SURFACE	76.032		76.296		77.210		78.148		78.313
CHAINAGE	0.000	7.848	7.848	28.251	36.099	28.610	64.709	5.897	70.606

DRAINAGE LONGITUNDINAL SECTION FOR LINE L4

SCALES: HORIZONTAL 1:500 VERTICAL 1:100

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA
Chartered Professional Engineer
MEMBER

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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

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PROJECT
PROPOSED MIXED-USE
DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	19 OF 32	AS SHOWN @ A1

Drawing Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
DRAINAGE LONGITUDINAL SECTION
SHEET 2 OF 3

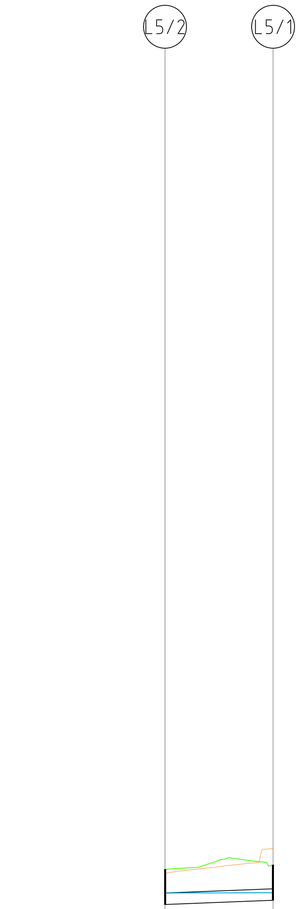
Project No	Drawing No	Revision No
20170269	C401	G

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C401.dwg

A1

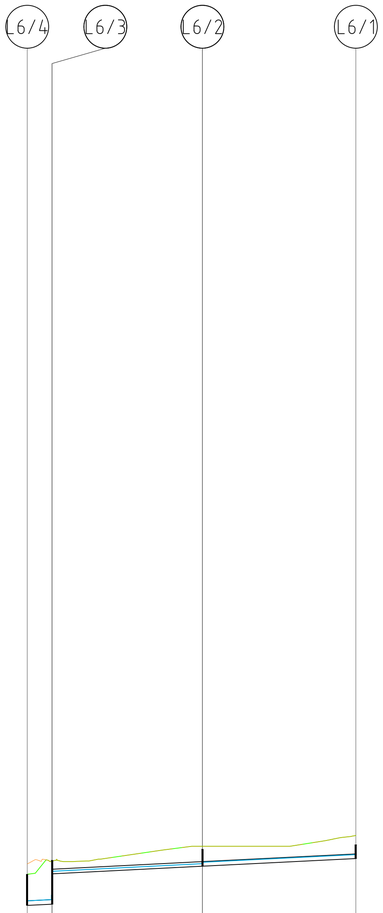
FLOW (l/sec)	109	20	
VELOCITY (m/s)	1.67	1.05	
PIPE DETAILS	375ø Class 2 RRJ	375ø Class 2 RRJ	
SLOPE/GRADE	1.0%	1.0%	
DATUM RL 70.2			
HGL	75.422	75.505	75.612	75.770
PIT FREEBOARD	1.160	1.160	0.827	0.827
DEPTH TO OBVERT	1.084	0.999	0.974	0.748
DEPTH TO INVERT	1.459	1.374	1.349	1.123
INVERT LEVEL	75.208	75.291	75.316	75.446
FINISHED SURFACE	76.667	76.665		76.569
EXISTING SURFACE	75.598	75.746		76.002
CHAINAGE	0.000	8.305	8.305	21.352
	8.305		13.047	

DRAINAGE LONGITUNDINAL SECTION FOR LINE L7
SCALES: HORIZONTAL 1:500 VERTICAL 1:100



FLOW (l/sec)	53	
VELOCITY (m/s)	1.27	
PIPE DETAILS	375ø Class 4 RRJ	
SLOPE/GRADE	0.8%	
HGL	74.575	74.726
PIT FREEBOARD	0.905	0.905
DEPTH TO OBVERT	0.771	0.777
DEPTH TO INVERT	1.146	1.152
INVERT LEVEL	74.200	74.338
FINISHED SURFACE	75.346	75.490
EXISTING SURFACE	75.224	76.023
CHAINAGE	0.000	17.642
	17.642	

DRAINAGE LONGITUNDINAL SECTION FOR LINE L5
SCALES: HORIZONTAL 1:500 VERTICAL 1:100



FLOW (l/sec)	22	13	7	
VELOCITY (m/s)	1.25	1.31	1.11	
PIPE DETAILS	150ø PVC	150ø PVC	150ø PVC	
SLOPE/GRADE	1.0%	1.0%	1.0%	
HGL	74.720	74.760	75.683	75.933	75.979	76.315
PIT FREEBOARD	1.255	1.255	0.567	0.567	0.625	0.625
DEPTH TO OBVERT	0.867	1.280	0.290	0.400		0.300
DEPTH TO INVERT	1.017	1.430	0.440	0.550		0.450
INVERT LEVEL	74.570	74.610	75.600	75.850		76.100
FINISHED SURFACE	75.587	76.040		76.400		76.550
EXISTING SURFACE	75.927	76.016		76.500		76.854
CHAINAGE	0.000	4.047	4.047	28.597	25.047	53.644
	4.047		24.550		25.047	

DRAINAGE LONGITUNDINAL SECTION FOR LINE L6
SCALES: HORIZONTAL 1:500 VERTICAL 1:100

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
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SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales
0m 5 10 15 20 25
SCALE 1:500 ON ORIGINAL SIZE
0m 1 2 3 4 5
SCALE 1:100 ON ORIGINAL SIZE

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A.B.N. 21 118 222 530

PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	20 OF 32	AS SHOWN @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
DRAINAGE TABLES
SHEET 3 OF 3

Project No	Drawing No	Revision No
20170269	C402	G

A1

CALCULATION TABLE - HYDRAULICS - 1 IN 10 YEAR ARI

PIPE ID	PIPE TYPE & CLASS	PIPE DIAMETER	PIPE LENGTH	PIPE GRADE	COLEBROOK - WHITE 'k'	PIPE D/S INVERT	PIPE U/S INVERT	U/S PIT LOSS COEFFICIENT	PIPE FLOW	PIPE VELOCITY	PIPE FRICTION LOSS	PIPE FRICTION SLOPE	PIPE D/S HGL	PIPE U/S HGL	PIT LOSS	WATER SURFACE ELEVATION	PIPE SURFACE FLOW
		(mm)	(m)	(%)	(mm)	(mRL)	(m/RL)	(ku)	(L/s)	(m/s)	(m)	(%)	(m/RL)	(m/RL)	(m)	(m/RL)	(L/s)
L1/1-L1/2	Class 2 RRJ	825	20.78	2.0	0.08	76.87	77.28	9.1	608.7	1.10	0.02	0.00	77.33	77.73	0.57	78.30	
L1/2-L1/3	Class 2 RRJ	825	67.36	1.9	0.08	75.57	76.85	2.2	649.1	1.18	0.08	0.00	76.48	77.17	0.16	77.33	0.000
L1/3-L1/4	Class 2 RRJ	900	15.92	1.0	0.08	75.39	75.55	1.2	903.7	1.39	0.02	0.00	76.34	76.36	0.12	76.48	1.873
L1/4-L1/5	Class 2 RRJ	1050	72.81	1.0	0.08	74.64	75.36	1.0	915.8	1.02	0.05	0.00	75.56	76.29	0.05	76.34	0.119
L1/5-L1/6	Default	1500x900	17.37	0.7	0.30	74.44	74.56	2.1	1329.9	0.99	0.01	0.00	75.34	75.46	0.10	75.56	0.739
L1/6-L1/7	Class 2 RRJ	1200	59.71	1.0	0.08	73.82	74.41	1.0	1319.5	1.13	0.04	0.00	74.67	75.27	0.07	75.34	0.003
L1/7-L1/8	Class 2 RRJ	1350	49.86	1.0	0.08	73.29	73.79	1.0	1411.5	0.96	0.02	0.00	74.13	74.63	0.05	74.67	0.126
L1/8-L1/9	Class 2 RRJ	1350	22.08	1.0	0.08	73.05	73.27	1.0	1533.5	1.04	0.01	0.00	73.85	74.07	0.06	74.13	1.285
L1/9-L1/10	Class 2 RRJ	1350	26.46	1.0	0.08	72.76	73.02	1.0	1536.1	1.04	0.01	0.00	73.53	73.80	0.06	73.85	0.308
L1/10-L1/11	Class 2 RRJ	1350	73.14	1.0	0.08	72.00	72.73	1.9	1632.1	1.11	0.04	0.00	73.37	73.41	0.12	73.53	
L2/1-L1/3	Class 2 RRJ	525	15.05	1.9	0.08	75.57	75.87	6.1	318.0	1.42	0.04	0.00	76.48	76.53	0.63	77.16	3.985
L3/1-L1/4	Class 2 RRJ	450	8.10	3.0	0.08	75.39	75.63	18.0	13.5	0.08	0.00	0.00	76.34	76.34	0.01	76.35	0.214
L4/1-L4/2	Class 2 RRJ	675	5.90	4.4	0.08	75.04	75.30	12.0	244.1	0.66	0.00	0.00	75.92	75.92	0.27	76.19	
L4/2-L4/3	Class 2 RRJ	750	28.61	0.7	0.08	74.83	75.04	1.7	546.4	1.20	0.04	0.00	75.75	75.79	0.13	75.92	
L4/3-L4/4	Class 2 RRJ	750	28.25	0.5	0.08	74.69	74.83	1.0	541.4	1.19	0.04	0.00	75.64	75.68	0.07	75.75	
L4/4-L1/5	Class 2 RRJ	750	7.85	0.7	0.08	74.64	74.69	1.0	535.6	1.18	0.01	0.00	75.56	75.57	0.07	75.64	
L7/1-L7/2	Class 2 RRJ	375	13.05	1.0	0.08	75.32	75.45	17.2	19.6	0.18	0.00	0.00	75.61	75.74	0.03	75.77	0.820
L7/2-L1/6	Class 2 RRJ	375	8.31	1.0	0.08	75.21	75.29	2.1	109.1	0.99	0.02	0.00	75.42	75.51	0.11	75.61	

CALCULATION TABLE - HYDRAULICS - 1 IN 100 YEAR ARI

PIPE ID	PIPE TYPE & CLASS	PIPE DIAMETER	PIPE LENGTH	PIPE GRADE	COLEBROOK - WHITE 'k'	PIPE D/S INVERT	PIPE U/S INVERT	U/S PIT LOSS COEFFICIENT	PIPE FLOW	PIPE VELOCITY	PIPE FRICTION LOSS	PIPE FRICTION SLOPE	PIPE D/S HGL	PIPE U/S HGL	PIT LOSS	WATER SURFACE ELEVATION	PIPE SURFACE FLOW
		(mm)	(m)	(%)	(mm)	(mRL)	(m/RL)	(ku)	(L/s)	(m/s)	(m)	(%)	(m/RL)	(m/RL)	(m)	(m/RL)	(L/s)
L1/1-L1/2	Class 2 RRJ	825	20.78	2.0	0.08	76.87	77.28	9.1	1235.6	2.24	0.08	0.00	77.98	78.06	2.34	80.39	
L1/2-L1/3	Class 2 RRJ	825	67.36	1.9	0.08	75.57	76.85	2.2	1318.6	2.39	0.30	0.00	77.00	77.33	0.64	77.98	
L1/3-L1/4	Class 2 RRJ	900	15.92	1.0	0.08	75.39	75.55	1.2	1833.3	2.82	0.09	0.01	76.42	76.50	0.50	77.00	6.229
L1/4-L1/5	Class 2 RRJ	1050	72.81	1.0	0.08	74.64	75.36	1.0	1864.1	2.07	0.18	0.00	76.01	76.20	0.22	76.42	1.167
L1/5-L1/6	Default	1500x900	17.37	0.7	0.30	74.44	74.56	2.1	2702.7	2.00	0.05	0.00	75.55	75.59	0.42	76.01	2.715
L1/6-L1/7	Class 2 RRJ	1200	59.71	1.0	0.08	73.82	74.41	1.0	2703.6	2.31	0.16	0.00	75.11	75.27	0.27	75.55	0.323
L1/7-L1/8	Class 2 RRJ	1350	49.86	1.0	0.08	73.29	73.79	1.0	2899.3	1.97	0.09	0.00	74.83	74.92	0.20	75.11	0.998
L1/8-L1/9	Class 2 RRJ	1350	22.08	1.0	0.08	73.05	73.27	1.0	3156.0	2.14	0.04	0.00	74.55	74.60	0.23	74.83	5.068
L1/9-L1/10	Class 2 RRJ	1350	26.46	1.0	0.08	72.76	73.02	1.0	3165.4	2.15	0.05	0.00	74.05	74.32	0.24	74.55	1.963
L1/10-L1/11	Class 2 RRJ	1350	73.14	1.0	0.08	72.00	72.73	1.9	3368.0	2.28	0.17	0.00	73.37	73.54	0.52	74.05	
L2/1-L1/3	Class 2 RRJ	525	15.05	1.9	0.08	75.57	75.87	6.1	615.9	2.75	0.15	0.01	77.00	77.15	2.37	79.52	13.154
L3/1-L1/4	Class 2 RRJ	450	8.10	3.0	0.08	75.39	75.63	18.0	28.4	0.18	0.00	0.00	76.42	76.42	0.03	76.45	1.958
L4/1-L4/2	Class 2 RRJ	675	5.90	4.4	0.08	75.04	75.30	12.0	477.1	1.29	0.01	0.00	77.33	77.34	1.03	78.37	
L4/2-L4/3	Class 2 RRJ	750	28.61	0.7	0.08	74.83	75.04	1.7	1068.5	2.36	0.14	0.00	76.71	76.85	0.48	77.33	
L4/3-L4/4	Class 2 RRJ	750	28.25	0.5	0.08	74.69	74.83	1.0	1060.4	2.34	0.14	0.00	76.30	76.43	0.28	76.71	
L4/4-L1/5	Class 2 RRJ	750	7.85	0.7	0.08	74.64	74.69	1.0	1052.4	2.32	0.04	0.00	76.01	76.05	0.27	76.32	
L7/1-L7/2	Class 2 RRJ	375	13.05	1.0	0.08	75.32	75.45	17.2	35.8	0.32	0.00	0.00	76.11	76.12	0.09	76.21	3.518
L7/2-L1/6	Class 2 RRJ	375	8.31	1.0	0.08	75.21	75.29	2.1	223.1	2.02	0.07	0.01	75.58	75.67	0.45	76.11	0.051

LINE 1-4, 7 Pit Schedule

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
L1/1	GSIP	1200	1200	825	77.280			2.304	79.584	297272.06	6240972.746	
L1/2	KIP 1.8m LINTEL	1200	1800	825	76.847	825	76.872	2.485	79.332	297274.64	6240993.362	
L1/3	KIP 1.8m LINTEL	1200	1800	900	75.548	825	75.573	2.197	77.745	297207.39	6241001.563	
						525	75.573					
L1/4	KIP 1.8m LINTEL	1200	1800	1050	75.364	900	75.389	1.957	77.321	297200.25	6241015.584	
						450	75.389					
L1/5	KIP 2.4m LINTEL	2600	3000	1500x900	74.560	1050	74.636	1.803	76.363	297215.42	6241086.794	
						750	74.636					
L1/6	KIP 1.8m LINTEL	1500	1800	1200	74.413	1500x900	74.438	2.255	76.667	297198.47	6241090.588	
						375	75.208					
L1/7	KIP 1.8m LINTEL	1500	1800	1350	73.790	1200	73.815	3.729	77.520	297139.12	6241097.223	
L1/8	KIP 1.8m LINTEL	1500	1800	1350	73.267	1350	73.292	3.756	77.023	297089.57	6241102.733	
L1/9	KIP 1.8m LINTEL	1500	1800	1350	73.021	1350	73.046	3.817	76.838	297071.70	6241089.769	
L1/10	SAG KIP 2.4m LINTEL	1500	2400	1350	72.731	1350	72.756	3.876	76.608	297063.93	6241064.474	
L1/11	HEADWALL	-	-			1350	72.000	1.857	73.857	296991.63	6241075.531	
L2/1	KIP 1.8m LINTEL	900	1800	525	75.865			1.875	77.740	297205.58	6240986.678	
L3/1	KIP 1.8m LINTEL	900	1800	450	75.629			1.692	77.321	297192.33	6241017.271	
L4/1	GSIP	900	900	675	75.300			3.000	78.300	297283.70	6241074.599	
L4/2	GSIP	900	900	750	75.040	675	75.040	2.610	77.650	297277.84	6241075.260	
L4/3	GSIP	900	900	750	74.830	750	74.830	2.470	77.300	297249.41	6241078.469	
L4/4	GSIP	900	900	750	74.689	750	74.689	2.061	76.750	297221.33	6241081.638	
L7/1	KIP 1.8m LINTEL	900	1800	375	75.446			1.123	76.569	297203.73	6241070.821	
L7/2	KIP 1.8m LINTEL	900	1800	375	75.291	375	75.316	1.374	76.665	297197.59	6241082.330	

G	ISSUE TO COUNCIL	CK	02.12.20	2	
F	ISSUE TO COUNCIL	CK	13.10.20	2	
E	ISSUE TO COUNCIL	AA	23.06.20	2	
D	ISSUE TO COUNCIL	JH	11.12.19	2	
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2	
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2	
A	ISSUE FOR DA	JH	28.02.19	2	
Issue	Last revision title	by	Date	Status	

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA
Chartered Professional Engineer
MEMBER

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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

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A.B.N. 21 118 222 530

PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	21 OF 32	NTS

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
DRAINAGE TABLES
SHEET 1 OF 4

Project No	Drawing No	Revision No
20170269	C403	G

A1

CALCULATION TABLE - HYDROLOGY - 1 IN 10 YEAR ARI

PIT ID	LOCAL CATCHMENT AREA	FRACTION IMPERVIOUS	FLOW LENGTH	FLOW SLOPE	CATCHMENT ROUGHNESS n	CRITICAL TC	RAINFALL INTENSITY	ROUGHNESS COEFFICIENT C	LOCAL PIT INFLOW	BYPASS FROM PIT	BYPASS FLOW RECIEVED	TOTAL PIT INFLOW	PIT TYPE	PIT INLET CAPACITY	BYPASS OUTFLOW	BYPASS TO PIT
	(ha)		(m)	%		(min)	(mm/hr)		(L/s)		(L/s)	(L/s)		(L/s)	(L/s)	
L1/1	2.559	0.90	258.07	2.7	0.040	14.47	101.67	0.84					1m SEP	0.00		L2/1
L1/2	0.181	0.90	136.51	2.5	0.011	14.57	101.26	0.84	0.00			0.00	SEP & Grate 1.80m	0.00	0.00	L1/3
L1/3	0.086	0.90	66.01	2.4	0.011	14.91	99.94	0.84	28.75	L1/2	0.00	28.75	SEP & Grate 1.80m	26.88	1.87	L1/4
L1/4	0.027	0.90	14.89	2.7	0.011	15.01	99.58	0.84	9.23	L1/3	1.87	11.10	SEP & Grate 1.80m	10.98	0.12	L1/5
L1/5	0.058	0.90	70.68	1.3	0.011	15.43	98.37	0.84	19.35	L1/4	0.12	19.47	SEP & Grate 1.80m	18.73		
										L4/4					0.74	L5/1
L1/6	0.030	0.90	36.85	2.6	0.011	18.70	89.09	0.84	10.16			10.16	SEP & Grate 1.80m	10.15	0.00	L5/1
L1/7	0.511	0.90				19.02	88.18	0.84	11.23			11.23	SEP & Grate 1.80m	11.10	0.13	L1/8
	0.036	0.90	18.74	0.9	0.011			0.84								
	0.475	0.90	109.52	2.2	0.040			0.84								
L1/8	0.657	0.90				19.29	87.43	0.84	23.96	L1/7	0.13	24.09	SEP & Grate 1.80m	22.80	1.29	L1/9
	0.075	0.90	45.94	1.0	0.011			0.84								
	0.582	0.90	106.41	2.7	0.040			0.84								
L1/9	0.039	0.90	19.66	0.8	0.011	19.40	87.10	0.84	13.30	L1/8	1.29	14.59	SEP & Grate 1.80m	14.28	0.31	L1/10
L1/10	0.507	0.90				19.54	86.71	0.84	36.64	L1/9	0.31	36.95	SEP & Grate 1.80m	36.95		L1/11
	0.110	0.90	38.64	2.9	0.011			0.84								
	0.397	0.90	73.13	2.1	0.040			0.84								
L1/11										L1/10			Headwall			
L2/1	1.052	0.90				7.89	130.82	0.84	41.62	L1/1		41.62	SEP & Grate 1.80m	37.64	3.99	L3/1
	0.136	0.90	67.30	2.4	0.011			0.84								
	0.916	0.90	126.29	2.5	0.040			0.84								
L3/1	0.026	0.90	19.21	2.5	0.011	5.21	145.80	0.84	8.87	L2/1	3.99	12.85	SEP & Grate 1.80m	12.64	0.21	L7/1
L4/1	0.799	0.90	146.79	3.3	0.040	7.94	130.56	0.84					1m SEP	0.00		L4/2
L4/2	0.992	0.90	74.45	1.4	0.040	7.96	130.40	0.84		L4/1			1m SEP	0.00		L4/3
L4/3						8.18	129.20			L4/2			1m SEP	0.00		L4/4
L4/4						8.42	127.83			L4/3			1m SEP	0.00		L1/5
L7/1	0.060	0.90	51.71	1.4	0.010	5.57	143.78	0.84	20.18	L3/1	0.21	20.40	SEP & Grate 1.80m	19.58		
										L7/2						
L7/2	0.463	0.90				18.62	89.32	0.84	6.27			6.27	SEP & Grate 1.80m	6.27		L7/1
	0.433	0.90	77.85	0.1	0.040			0.84								
	0.030	0.90	36.93	2.7	0.010			0.84								

CALCULATION TABLE - HYDROLOGY - 1 IN 100 YEAR ARI

PIT ID	LOCAL CATCHMENT AREA	FRACTION IMPERVIOUS	FLOW LENGTH	FLOW SLOPE	CATCHMENT ROUGHNESS n	CRITICAL TC	RAINFALL INTENSITY	ROUGHNESS COEFFICIENT C	LOCAL PIT INFLOW	BYPASS FROM PIT	BYPASS FLOW RECIEVED	TOTAL PIT INFLOW	PIT TYPE	PIT INLET CAPACITY	BYPASS OUTFLOW	BYPASS TO PIT
	(ha)		(m)	%		(min)	(mm/hr)		(L/s)		(L/s)	(L/s)		(L/s)	(L/s)	
L1/1	2.559	0.90	258.07	2.7	0.040	12.00	173.83	1.00					1m SEP	0.00		L2/1
L1/2	0.181	0.90	136.51	2.5	0.011	12.08	173.25	1.00					SEP & Grate 1.80m	0.00		L1/3
L1/3	0.086	0.90	66.01	2.4	0.011	12.37	171.38	1.00	52.83	L1/2		52.83	SEP & Grate 1.80m	46.60	6.23	L1/4
L1/4	0.027	0.90	14.89	2.7	0.011	12.45	170.84	1.00	16.93	L1/3	6.23	23.15	SEP & Grate 1.80m	21.99	1.17	L1/5
L1/5	0.058	0.90	70.68	1.3	0.011	12.81	168.49	1.00	35.56	L1/4	1.17	36.73	SEP & Grate 1.80m	34.01		
										L4/4					2.71	L5/1
L1/6	0.030	0.90	36.85	2.6	0.011	15.03	153.85	1.00	18.64			18.64	SEP & Grate 1.80m	18.32	0.32	L5/1
L1/7	0.511	0.90				15.30	152.68	1.00	21.81			21.81	SEP & Grate 1.80m	20.81	1.00	L1/8
	0.036	0.90	18.74	0.9	0.011			1.00								
	0.475	0.90	109.52	2.2	0.040			1.00								
L1/8	0.657	0.90				15.52	151.72	1.00	46.21	L1/7	1.00	47.20	SEP & Grate 1.80m	42.14	5.07	L1/9
	0.075	0.90	45.94	1.0	0.011			1.00								
	0.582	0.90	106.41	2.7	0.040			1.00								
L1/9	0.039	0.90	19.66	0.8	0.011	15.61	151.30	1.00	24.40	L1/8	5.07	29.47	SEP & Grate 1.80m	27.51	1.96	L1/10
L1/10	0.507	0.90				15.73	150.80	1.00	68.31	L1/9	1.96	70.27	SEP & Grate 1.80m	70.27		L1/11
	0.110	0.90	38.64	2.9	0.011			1.00								
	0.397	0.90	73.13	2.1	0.040			1.00								
L1/11										L1/10			Headwall			
L2/1	1.052	0.90				6.47	215.25	1.00	81.32	L1/1		81.32	SEP & Grate 1.80m	68.16	13.15	L3/1
	0.136	0.90	67.30	2.4	0.011			1.00								
	0.916	0.90	126.29	2.5	0.040			1.00								
L3/1	0.026	0.90	19.21	2.5	0.011	5.21	225.29	1.00	16.27	L2/1	13.15	29.42	SEP & Grate 1.80m	27.47	1.96	L7/1
L4/1	0.799	0.90	146.79	3.3	0.040	6.50	214.96	1.00					1m SEP	0.00		L4/2
L4/2	0.992	0.90	74.45	1.4	0.040	6.53	214.77	1.00		L4/1			1m SEP	0.00		L4/3
L4/3						6.73	213.15			L4/2			1m SEP	0.00		L4/4
L4/4						6.93	211.54			L4/3			1m SEP	0.00		L1/5
L7/1	0.060	0.90	51.71	1.4	0.010	5.57	222.40	1.00	37.07	L3/1	1.96	39.08	SEP & Grate 1.80m	35.56		
										L7/2	0.05					
L7/2	0.463	0.90				14.97	154.23	1.00	12.85			12.85	SEP & Grate 1.80m	12.80	0.05	L7/1
	0.433	0.90	77.85	0.1	0.040			1.00								
	0.030	0.90	36.93	2.7	0.010			1.00								

XREF's: $? CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C401.dwg

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
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HYD			
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LANDS			
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SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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Scales

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	22 OF 32	NTS

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
DRAINAGE TABLES
SHEET 2 OF 4

Project No	Drawing No	Revision No
20170269	C404	G

A1

CALCULATION TABLE - HYDRAULICS - 1 IN 10 YEAR ARI

PIPE ID	PIPE TYPE & CLASS	PIPE DIAMETER	PIPE LENGTH	PIPE GRADE	COLEBROOK - WHITE 'k'	PIPE D/S INVERT	PIPE U/S INVERT	U/S PIT LOSS COEFFICIENT	PIPE FLOW	PIPE VELOCITY	PIPE FRICTION LOSS	PIPE FRICTION SLOPE	PIPE D/S HGL	PIPE U/S HGL	PIT LOSS	WATER SURFACE ELEVATION	PIPE SURFACE FLOW
		(mm)	(m)	(%)	(mm)	(mRL)	(m/RL)	(ku)	(L/s)	(m/s)	(m)	(%)	(m/RL)	(m/RL)	(m)	(m/RL)	(L/s)
L5/1L5/2	Class 4 RRJ	375	17.64	0.8	0.08	74.20	74.34	12.2	52.6	0.48	0.01	0.00	74.58	74.58	0.14	74.73	

CALCULATION TABLE - HYDRAULICS - 1 IN 100 YEAR ARI

PIPE ID	PIPE TYPE & CLASS	PIPE DIAMETER	PIPE LENGTH	PIPE GRADE	COLEBROOK - WHITE 'k'	PIPE D/S INVERT	PIPE U/S INVERT	U/S PIT LOSS COEFFICIENT	PIPE FLOW	PIPE VELOCITY	PIPE FRICTION LOSS	PIPE FRICTION SLOPE	PIPE D/S HGL	PIPE U/S HGL	PIT LOSS	WATER SURFACE ELEVATION	PIPE SURFACE FLOW
		(mm)	(m)	(%)	(mm)	(mRL)	(m/RL)	(ku)	(L/s)	(m/s)	(m)	(%)	(m/RL)	(m/RL)	(m)	(m/RL)	(L/s)
L5/1L5/2	Class 4 RRJ	375	17.64	0.8	0.08	74.20	74.34	12.2	97.6	0.88	0.03	0.00	74.58	74.61	0.49	75.09	

CALCULATION TABLE - HYDROLOGY - 1 IN 10 YEAR ARI

PIT ID	LOCAL CATCHMENT AREA	FRACTION IMPERVIOUS	FLOW LENGTH	FLOW SLOPE	CATCHMENT ROUGHNESS n	CRITICAL TC	RAINFALL INTENSITY	ROUGHNESS COEFFICIENT C	LOCAL PIT INFLOW	BYPASS FROM PIT	BYPASS FLOW RECIEVED	TOTAL PIT INFLOW	PIT TYPE	PIT INLET CAPACITY	BYPASS OUTFLOW	BYPASS TO PIT
	(ha)		(m)	%		(min)	(mm/hr)		(L/s)		(L/s)	(L/s)		(L/s)	(L/s)	
L5/1	0.162	0.90	140.20	1.5	0.011	6.56	138.28	0.84	52.41	L1/6	0.00	53.15	SEP & Grate 1.80m	53.15		
										L1/5	0.74					L5/2
L5/2										L5/1			Headwall			

CALCULATION TABLE - HYDROLOGY - 1 IN 100 YEAR ARI

PIT ID	LOCAL CATCHMENT AREA	FRACTION IMPERVIOUS	FLOW LENGTH	FLOW SLOPE	CATCHMENT ROUGHNESS n	CRITICAL TC	RAINFALL INTENSITY	ROUGHNESS COEFFICIENT C	LOCAL PIT INFLOW	BYPASS FROM PIT	BYPASS FLOW RECIEVED	TOTAL PIT INFLOW	PIT TYPE	PIT INLET CAPACITY	BYPASS OUTFLOW	BYPASS TO PIT
	(ha)		(m)	%		(min)	(mm/hr)		(L/s)		(L/s)	(L/s)		(L/s)	(L/s)	
L5/1	0.162	0.90	140.20	1.5	0.011	6.56	214.54	1.00	96.54	L1/6	0.32	99.58	SEP & Grate 1.80m	99.58		
										L1/5	2.71					L5/2
L5/2										L5/1			Headwall			

LINE 5 Pit Schedule

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
L5/1	SAG PIT	900	2400	375	74.338			1.152	75.490	297232.17	6241153.987	
L5/2	OUTLET TO RMS CULVERT	-	-			375	74.200	1.146	75.346	297224.60	6241169.921	

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
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C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
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A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
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ELEC			
HYD			
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CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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Scales

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	23 OF 32	NTS

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
DRAINAGE TABLES
SHEET 3 OF 4

Project No	Drawing No	Revision No
20170269	C405	G

A1

CALCULATION TABLE - HYDRAULICS - 1 IN 10 YEAR ARI

PIPE ID	PIPE TYPE & CLASS	PIPE DIAMETER	PIPE LENGTH	PIPE GRADE	COLEBROOK - WHITE 'k'	PIPE D/S INVERT	PIPE U/S INVERT	U/S PIT LOSS COEFFICIENT	PIPE FLOW	PIPE VELOCITY	PIPE FRICTION LOSS	PIPE FRICTION SLOPE	PIPE D/S HGL	PIPE U/S HGL	PIT LOSS	WATER SURFACE ELEVATION	PIPE SURFACE FLOW
		(mm)	(m)	(%)	(mm)	(mRL)	(m/RL)	(ku)	(L/s)	(m/s)	(m)	(%)	(m/RL)	(m/RL)	(m)	(m/RL)	(L/s)
L6/1|L6/2	PVC	150	25.05	1.0	0.06	75.85	76.10	10.1	7.2	0.41	0.03	0.00	75.98	76.23	0.09	76.31	0.000
L6/2|L6/3	PVC	150	24.55	1.0	0.06	75.60	75.85	1.6	13.2	0.75	0.09	0.00	75.68	75.93	0.05	75.98	0.000
L6/3|L6/4	PVC	150	4.05	1.0	0.06	74.57	74.61	1.8	22.1	1.25	0.04	0.01	74.72	74.76	0.15	74.91	0.000

CALCULATION TABLE - HYDRAULICS - 1 IN 100 YEAR ARI

PIPE ID	PIPE TYPE & CLASS	PIPE DIAMETER	PIPE LENGTH	PIPE GRADE	COLEBROOK - WHITE 'k'	PIPE D/S INVERT	PIPE U/S INVERT	U/S PIT LOSS COEFFICIENT	PIPE FLOW	PIPE VELOCITY	PIPE FRICTION LOSS	PIPE FRICTION SLOPE	PIPE D/S HGL	PIPE U/S HGL	PIT LOSS	WATER SURFACE ELEVATION	PIPE SURFACE FLOW
		(mm)	(m)	(%)	(mm)	(mRL)	(m/RL)	(ku)	(L/s)	(m/s)	(m)	(%)	(m/RL)	(m/RL)	(m)	(m/RL)	(L/s)
L6/1|L6/2	PVC	150	25.05	1.0	0.06	75.85	76.10	10.1	13.2	0.75	0.10	0.00	76.20	76.29	0.29	76.58	
L6/2|L6/3	PVC	150	24.55	1.0	0.06	75.60	75.85	1.6	24.3	1.38	0.29	0.01	75.75	76.04	0.15	76.20	
L6/3|L6/4	PVC	150	4.05	1.0	0.06	74.57	74.61	1.8	40.7	2.30	0.13	0.03	74.72	74.85	0.49	75.34	

CALCULATION TABLE - HYDROLOGY - 1 IN 10 YEAR ARI

PIT ID	LOCAL CATCHMENT AREA	FRACTION IMPERVIOUS	FLOW LENGTH	FLOW SLOPE	CATCHMENT ROUGHNESS n	CRITICAL TC	RAINFALL INTENSITY	ROUGHNESS COEFFICIENT C	LOCAL PIT INFLOW	BYPASS FROM PIT	BYPASS FLOW RECIEVED	TOTAL PIT INFLOW	PIT TYPE	PIT INLET CAPACITY	BYPASS OUTFLOW	BYPASS TO PIT
	(ha)		(m)	%		(min)	(mm/hr)		(L/s)		(L/s)	(L/s)		(L/s)	(L/s)	
L6/1	0.021	0.90	22.21	1.4	0.040	5.00	147.00	0.84	0.00			0.00	1m SEP	0.00	0.00	L6/2
L6/2	0.018	0.90	18.33	1.0	0.040	5.38	144.89	0.84	0.00	L6/1	0.00	0.00	1m SEP	0.00	0.00	L6/3
L6/3	0.027	0.90	22.28	1.9	0.040	5.69	143.14	0.84	0.00	L6/2	0.00	0.00	1m SEP	0.00	0.00	L6/4
L6/4										L6/3	0.00		Headwall			

CALCULATION TABLE - HYDROLOGY - 1 IN 100 YEAR ARI

PIT ID	LOCAL CATCHMENT AREA	FRACTION IMPERVIOUS	FLOW LENGTH	FLOW SLOPE	CATCHMENT ROUGHNESS n	CRITICAL TC	RAINFALL INTENSITY	ROUGHNESS COEFFICIENT C	LOCAL PIT INFLOW	BYPASS FROM PIT	BYPASS FLOW RECIEVED	TOTAL PIT INFLOW	PIT TYPE	PIT INLET CAPACITY	BYPASS OUTFLOW	BYPASS TO PIT
	(ha)		(m)	%		(min)	(mm/hr)		(L/s)		(L/s)	(L/s)		(L/s)	(L/s)	
L6/1	0.021	0.90	22.21	1.4	0.040	5.00	227.00	1.00					1m SEP	0.00		L6/2
L6/2	0.018	0.90	18.33	1.0	0.040	5.32	224.43	1.00		L6/1			1m SEP	0.00		L6/3
L6/3	0.027	0.90	22.28	1.9	0.040	5.62	222.05	1.00		L6/2			1m SEP	0.00		L6/4
L6/4										L6/3			Headwall			

LINE 6 Pit Schedule

Pit No.	Pit Type	Pit Width	Pit Length	Outlet Diameter	Outlet Invert RL	Inlet Diameter	Inlet Invert RL	Pit Depth	Pit Lid Level	Easting	Northing	Comment
		(mm)	(mm)	(mm)	(m)	(mm)	(m)	(m)	(m)	(m)	(m)	
L6/1	GSIP	450	450	150	76.100			0.450	76.550	297290.73	6241159.542	
L6/2	GSIP	600	600	150	75.850	150	75.850	0.550	76.400	297265.85	6241162.352	
L6/3	GSIP	900	900	150	74.610	150	75.600	1.430	76.040	297241.45	6241165.105	
L6/4	OUTLET TO RMS CULVERT	-	-			150	74.570	1.017	75.587	297239.74	6241168.773	

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
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DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

CLIENT
ANTHONY & GEORGE MOURCHED

ARCHITECT
URBANLINK
Business Address: Level 10, 11-15 Deane Street, Burwood NSW 2134
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Phone Number: +61 29745 2014
Nominated Architects:
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Youssef El Khawaja Reg no 8933 Nicolas Toubia Reg no 9336

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Web: www.sgce.com.au
A.B.N. 21 118 222 530

PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

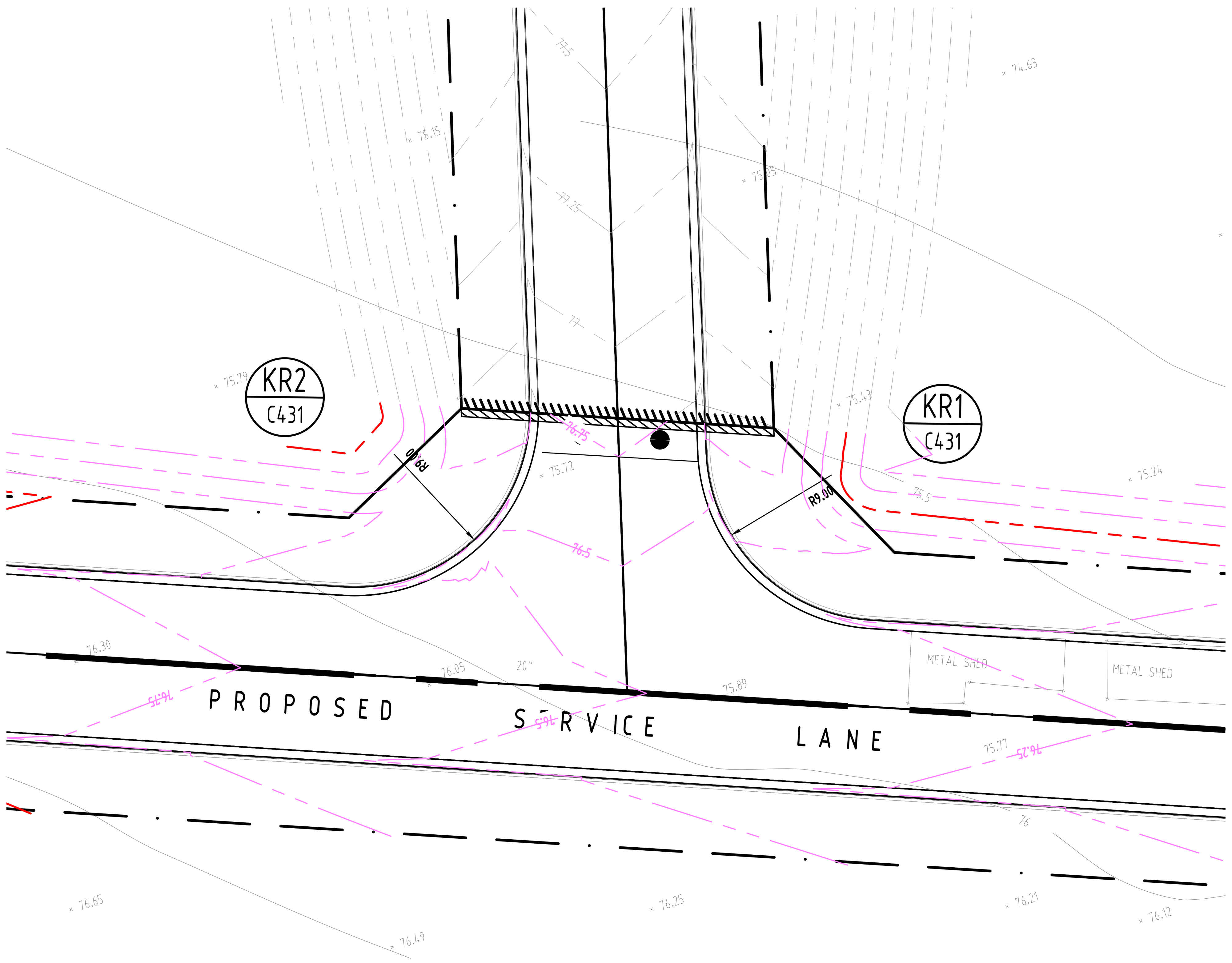
Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	24 OF 32	NTS

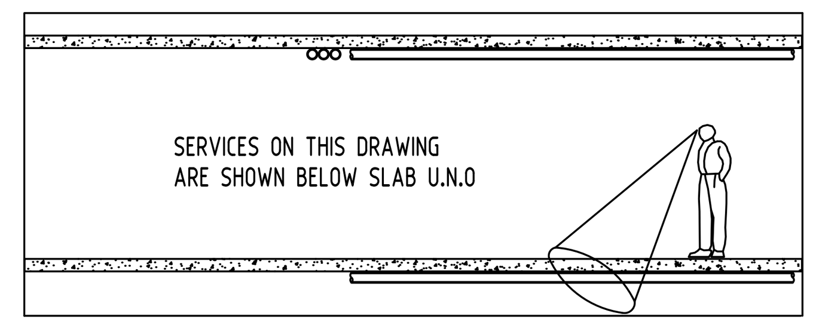
Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

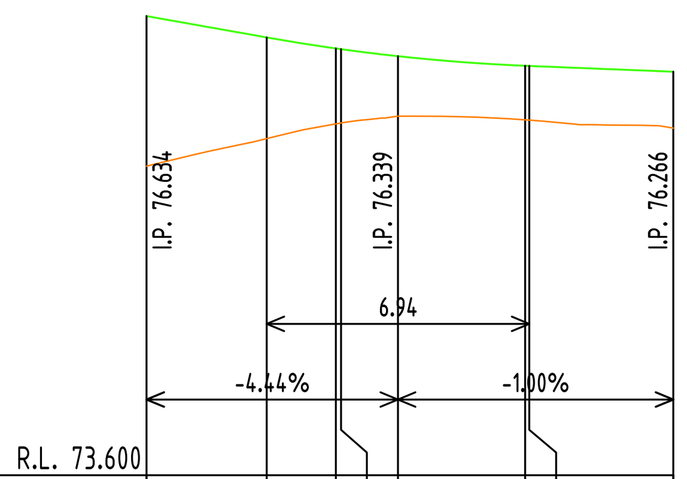
Drawing Title
CIVIL WORKS
DRAINAGE TABLES
SHEET 4 OF 4

Project No	Drawing No	Revision No
20170269	C406	G

A1



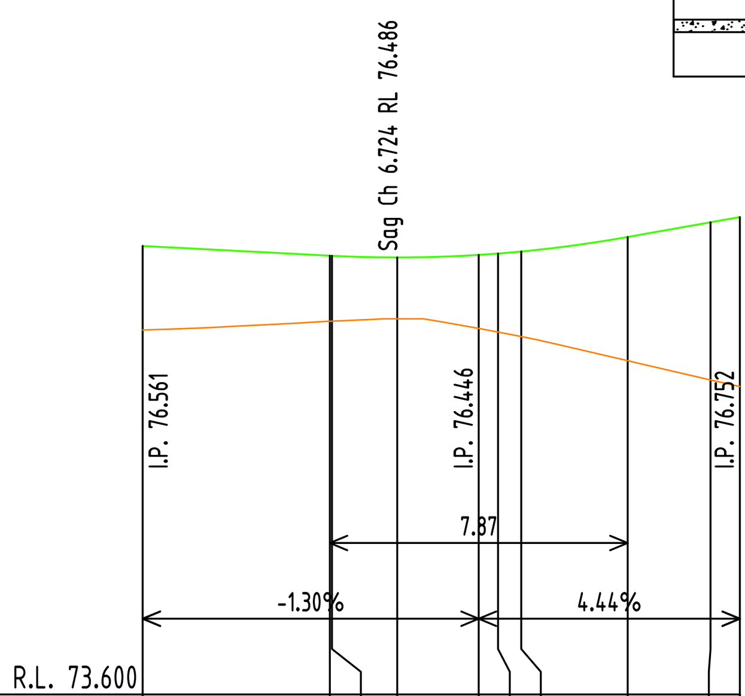




CUT/FILL DEPTHS	+0.992	+0.669	+0.498	+0.488	+0.397	+0.357	+0.358	+0.372
DESIGN SURFACE LEVEL ALONG CONTROL LINE	76.634	76.493	76.420	76.415	76.369	76.305	76.304	76.266
EXISTING SURFACE LEVEL ALONG CONTROL LINE	75.642	75.824	75.922	75.927	75.972	75.948	75.946	75.894
CHAINAGE	0.000	3.173	5.000	5.139	6.641	10.000	10.110	13.913

ROAD LONGITUDINAL SECTION ALONG KR1 CONTROL LINE

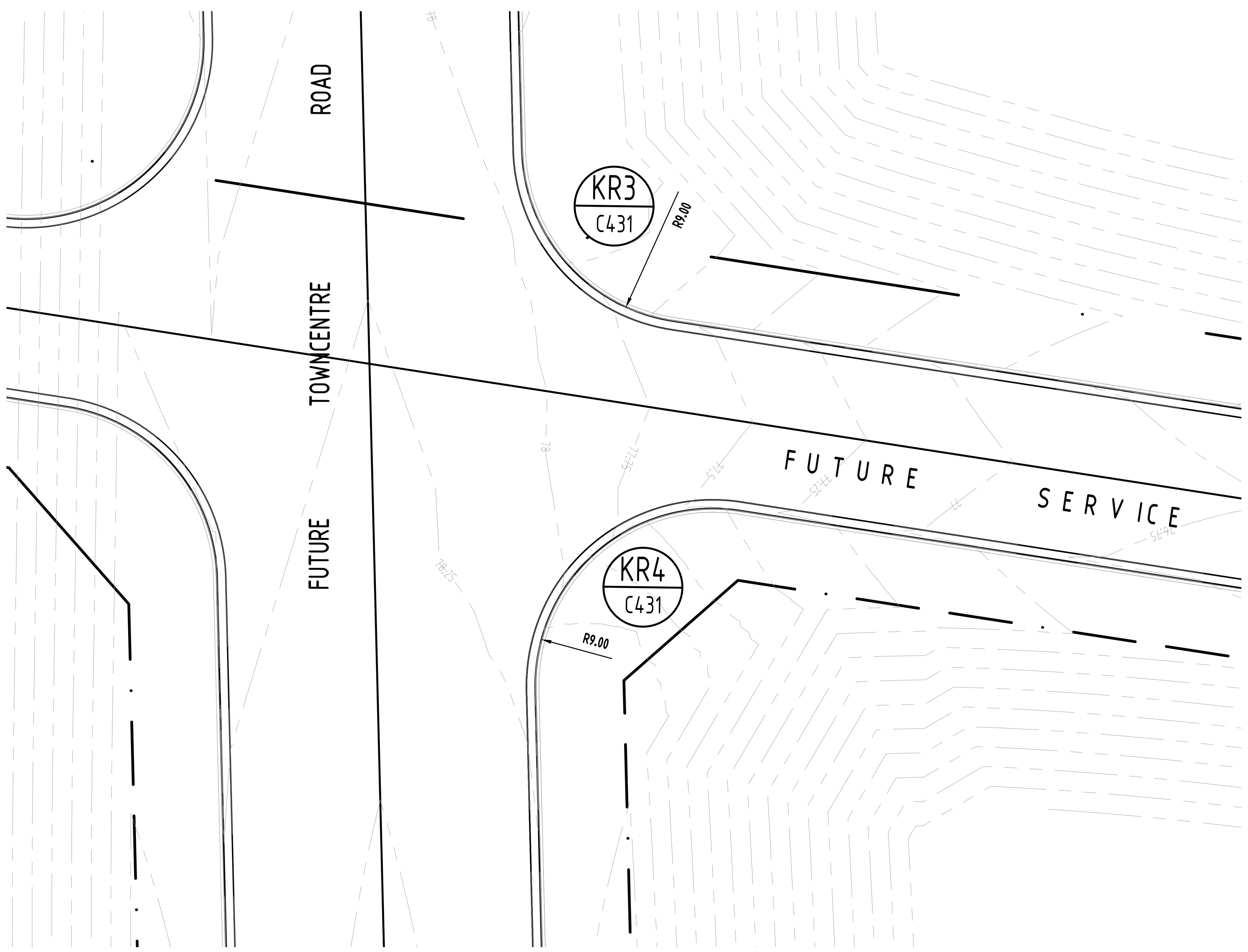
SCALE H:1in200 V:1in50

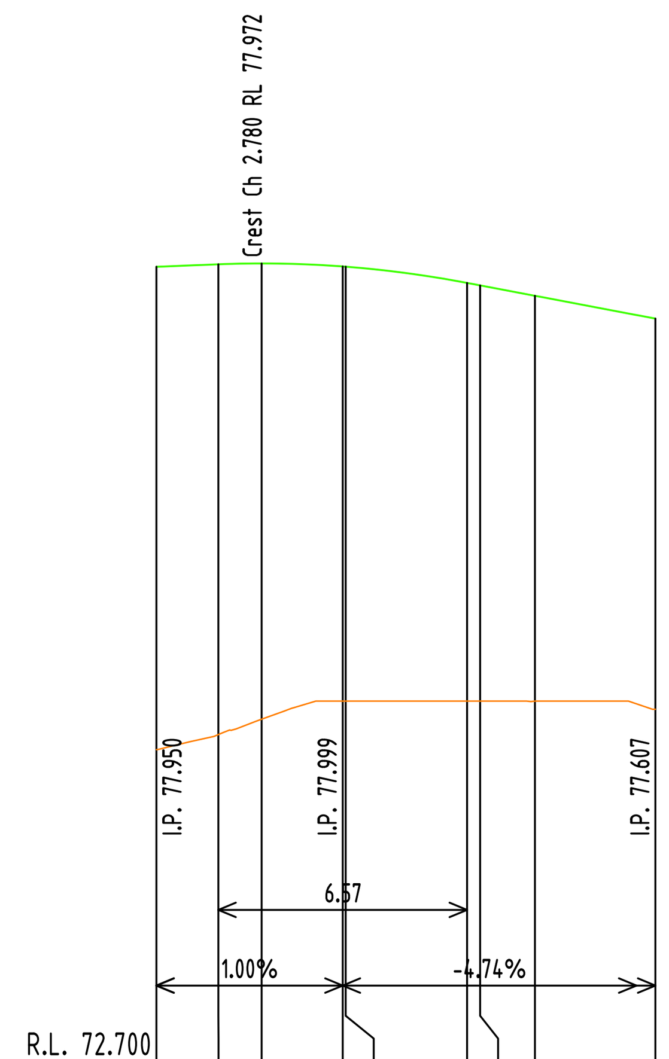


CUT/FILL DEPTHS	+0.555	+0.433	+0.431	+0.406	+0.485	+0.518	+0.562	+0.817	+1.041	+1.119
DESIGN SURFACE LEVEL ALONG CONTROL LINE	76.561	76.497	76.496	76.486	76.502	76.511	76.525	76.621	76.718	76.752
EXISTING SURFACE LEVEL ALONG CONTROL LINE	76.006	76.064	76.065	76.080	76.017	75.993	75.963	75.804	75.677	75.633
CHAINAGE	0.000	4.943	5.000	6.724	8.877	9.386	10.000	12.810	15.000	15.775

ROAD LONGITUDINAL SECTION ALONG KR2 CONTROL LINE

SCALE H:1in200 V:1in50

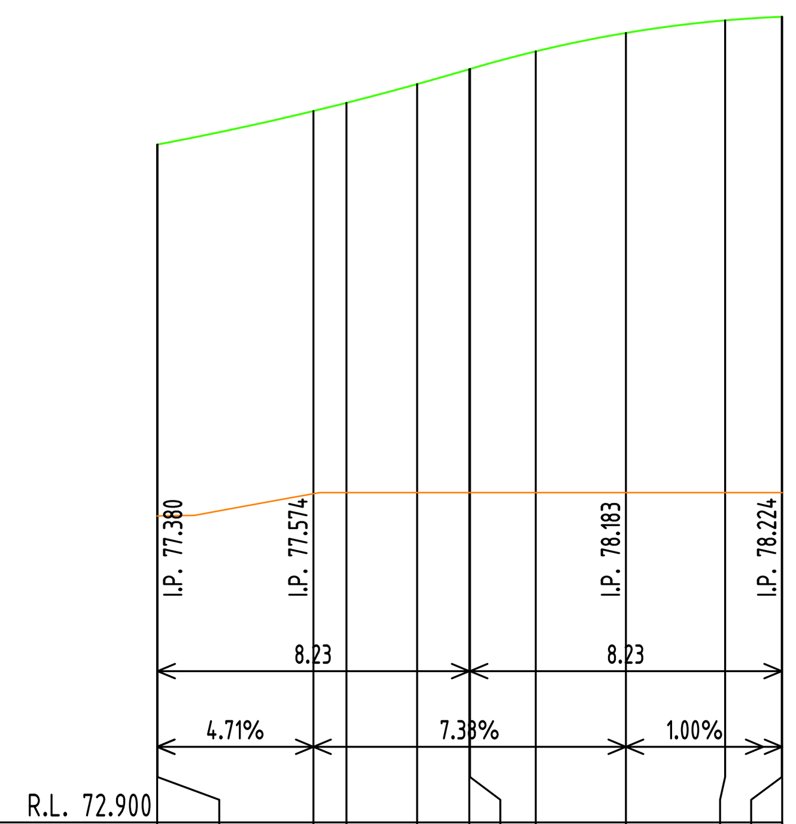




CUT/FILL DEPTHS	+3.191	+3.107	+3.012	+2.872	+2.870	+2.763	+2.747	+2.678	+2.581
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.950	77.966	77.972	77.952	77.950	77.843	77.827	77.758	77.607
EXISTING SURFACE LEVEL ALONG CONTROL LINE	74.759	74.859	74.960	75.080	75.080	75.080	75.080	75.080	75.026
CHAINAGE	0.000	1.635	2.780	4.920	5.000	8.205	8.552	10.000	13.180

ROAD LONGITUDINAL SECTION ALONG KR3 CONTROL LINE

SCALE H:1in200 V:1in50



CUT/FILL DEPTHS	+2.455	+2.454	+2.529	+2.575	+2.699	+2.798	+2.799	+2.916	+3.037	+3.120	+3.144	+3.144
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.380	77.380	77.601	77.655	77.779	77.878	77.879	77.996	78.117	78.200	78.224	78.224
EXISTING SURFACE LEVEL ALONG CONTROL LINE	74.925	74.926	75.072	75.080	75.080	75.080	75.080	75.080	75.080	75.080	75.080	75.080
CHAINAGE	0.000	0.010	4.127	5.000	6.867	8.244	8.264	10.000	12.381	15.000	16.498	16.508

ROAD LONGITUDINAL SECTION ALONG KR4 CONTROL LINE

SCALE H:1in200 V:1in50

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLAIRE
XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C431.dwg

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
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STRUCT			
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HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales
0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE
0m 0.5 1 1.5 2 2.5
SCALE 1:50 ON ORIGINAL SIZE

CLIENT
ANTHONY & GEORGE MOURCHED

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	25 OF 32	AS SHOWN @ A1

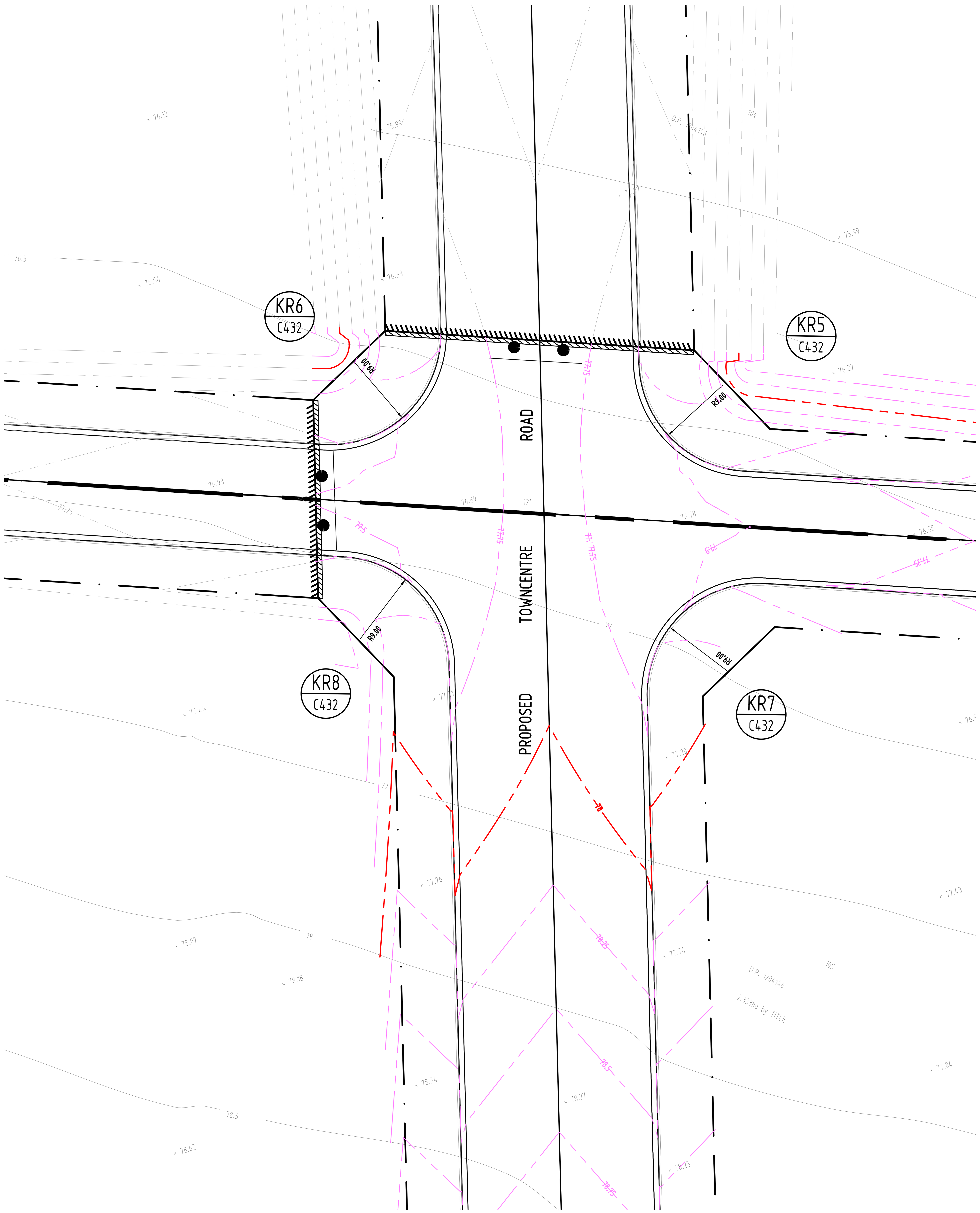
Drawing Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

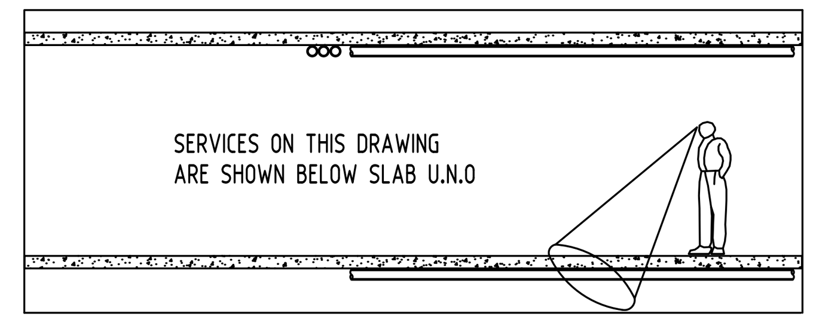
Drawing Title
CIVIL WORKS
KERB RETURN PLAN
SHEET 1 OF 2

Project No	Drawing No	Revision No
20170269	C431	G

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1





I.P. 77.640 · I.P. 77.621 · I.P. 77.440 · I.P. 77.392

6.99 · 6.99

-0.56% · -2.58% · -1.38%

R.L. 74.300

CUT/FILL DEPTHS	+1.260	+1.260	+1.137	+1.077	+0.990	+0.990	+0.918	+0.878	+0.862	+0.800	+0.800
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.640	77.640	77.603	77.576	77.530	77.530	77.487	77.461	77.450	77.392	77.392
EXISTING SURFACE LEVEL ALONG CONTROL LINE	76.380	76.380	76.466	76.499	76.540	76.540	76.569	76.583	76.588	76.592	76.592
CHAINAGE	0.000	0.010	3.504	5.000	6.997	7.017	8.806	10.000	10.511	14.005	14.015

ROAD LONGITUDINAL SECTION ALONG KR5 CONTROL LINE

SCALE H:1in200 V:1in50

I.P. 77.449 · I.P. 77.468 · I.P. 77.630 · I.P. 77.660

7.82 · 7.82

0.50% · 2.06% · 0.77%

R.L. 74.400

CUT/FILL DEPTHS	+0.693	+0.693	+0.756	+0.787	+0.834	+0.901	+0.901	+1.000	+1.079	+1.211	+1.234	+1.234
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.449	77.449	77.484	77.499	77.520	77.549	77.549	77.590	77.617	77.655	77.660	77.660
EXISTING SURFACE LEVEL ALONG CONTROL LINE	76.756	76.756	76.728	76.712	76.686	76.648	76.648	76.590	76.538	76.444	76.426	76.426
CHAINAGE	0.000	0.010	3.918	5.000	6.323	7.827	7.847	10.000	11.755	15.000	15.663	15.673

ROAD LONGITUDINAL SECTION ALONG KR6 CONTROL LINE

SCALE H:1in200 V:1in50

I.P. 77.359 · I.P. 77.413 · I.P. 77.693 · I.P. 77.745

7.82 · 7.82

1.38% · 3.57% · 1.33%

R.L. 74.700

CUT/FILL DEPTHS	+0.583	+0.583	+0.597	+0.606	+0.617	+0.633	+0.633	+0.647	+0.645	+0.616	+0.608	+0.608
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.359	77.359	77.434	77.463	77.502	77.552	77.553	77.623	77.671	77.735	77.745	77.745
EXISTING SURFACE LEVEL ALONG CONTROL LINE	76.776	76.776	76.837	76.857	76.885	76.919	76.920	76.976	77.026	77.119	77.137	77.137
CHAINAGE	0.000	0.010	3.918	5.000	6.323	7.827	7.847	10.000	11.755	15.000	15.663	15.673

ROAD LONGITUDINAL SECTION ALONG KR7 CONTROL LINE

SCALE H:1in200 V:1in50

I.P. 77.708 · I.P. 77.669 · I.P. 77.478 · I.P. 77.461

6.99 · 6.99

-1.13% · -2.72% · -0.50%

R.L. 74.900

CUT/FILL DEPTHS	+0.515	+0.516	+0.548	+0.546	+0.531	+0.531	+0.512	+0.502	+0.498	+0.474	+0.474
DESIGN SURFACE LEVEL ALONG CONTROL LINE	77.708	77.708	77.655	77.623	77.574	77.573	77.530	77.506	77.498	77.461	77.461
EXISTING SURFACE LEVEL ALONG CONTROL LINE	77.193	77.192	77.107	77.077	77.043	77.042	77.018	77.004	77.000	76.987	76.987
CHAINAGE	0.000	0.010	3.504	5.000	6.997	7.017	8.806	10.000	10.511	14.005	14.015

ROAD LONGITUDINAL SECTION ALONG KR8 CONTROL LINE

SCALE H:1in200 V:1in50

XREF's: $2
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C43.dwg

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
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ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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Scales
0m 2 4 6 8 10 SCALE 1:200 ON ORIGINAL SIZE
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ANTHONY & GEORGE MOURCHED

ARCHITECT
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A.B.N. 21 118 222 530

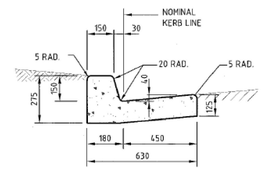
PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	26 OF 32	AS SHOWN @ A1

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
KERB RETURN PLAN
SHEET 2 OF 2

Project No	Drawing No	Revision No
20170269	C432	G



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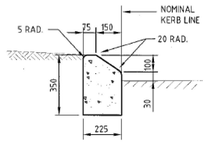

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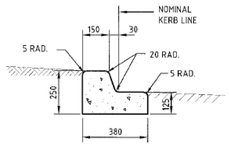

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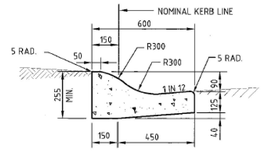
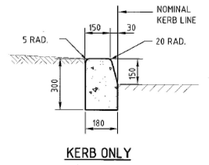
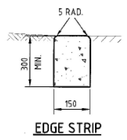


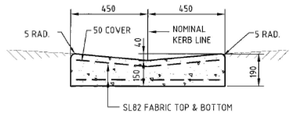
ROLL KERB



KERB ONLY



EDGE STRIP



DISH CROSSING

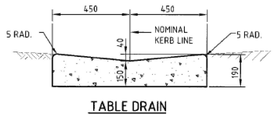


TABLE DRAIN

NOTES:

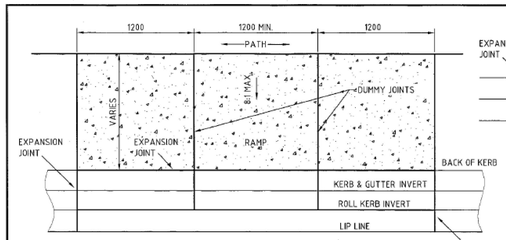
1. ROAD SUB BASE SHALL BE EXTENDED BENEATH KERBS, GUTTERS AND DISH CROSSINGS 150 BEHIND REAR OF KERB A MIN. DEPTH OF 175.
2. CONCRETE SHALL BE OF 25 MPa COMPRESSIVE STRENGTH (F'c) AT 28 DAYS WITH NO SLUMP MIX FOR KERBS AND GUTTERS, DISH CROSSINGS, KERBS AND EDGE STRIPS.
3. REINFORCEMENT PROVISIONS TO COMPLY WITH THE SPECIFICATION AND AT THE DIRECTION OF THE PCA/COUNCIL.
4. CONDUIT LOCATIONS SHALL BE MARKED ON KERB FACES WITH AN APPROVED TOOL OR AS OTHERWISE DIRECTED BY THE PCA/COUNCIL.
5. ALL DIMENSIONS ARE IN MILLIMETRES.

REVISION	DATE	DESCRIPTION	DRAWN.	APP.
A	JAN 2009	FIRST ISSUE	A.P.	C.M.

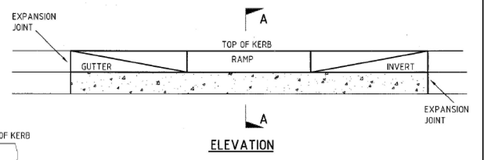
camden council

TITLE	SCALE
KERB PROFILES	NTS

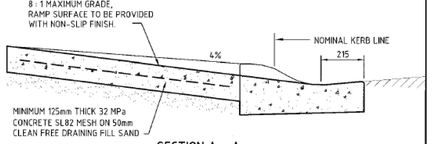
APPROVED	DATE	DRAWING No.	REV
C. McINTYRE	JAN 2009	SD02	A



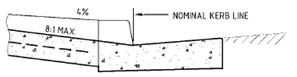
PLAN
(PATH PARALLEL TO KERB)



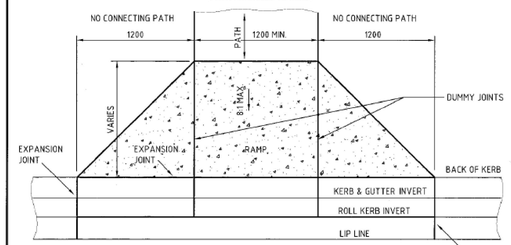
ELEVATION



SECTION A – A
(ROLL KERB)



SECTION A – A
(KERB & GUTTER)



PLAN
(PATH PERPENDICULAR TO KERB)

NOTES:

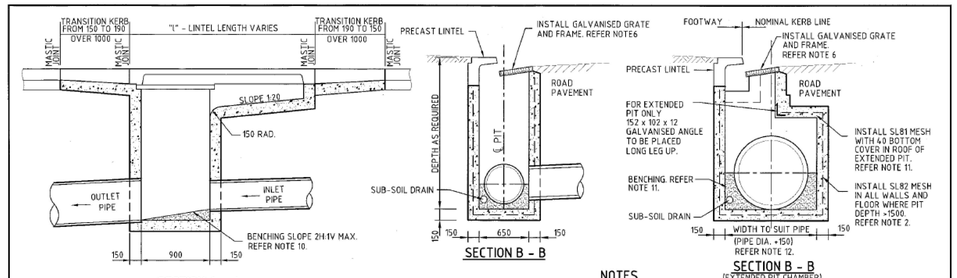
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. ALL KERB RAMPS ARE TO BE ALIGNED WITH THE DESIRED DIRECTION OF PEDESTRIAN TRAVEL AND BE A MINIMUM OF 1200 WIDE.
3. EXPANSION JOINTS TO BE PROVIDED WHERE ENDS OF KERB RAMP ABUTS KERB AND GUTTER.
4. KERB AND GUTTER TO BE SAWCUT FOR RAMPS PLACED IN EXISTING KERB.

REVISION	DATE	DESCRIPTION	DRAWN.	APP.
A	JAN 2009	FIRST ISSUE	A.P.	C.M.

camden council

TITLE	SCALE
KERB RAMP	NTS

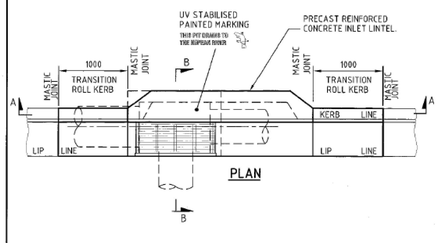
APPROVED	DATE	DRAWING No.	REV
C. McINTYRE	JAN 2009	SD03	A



SECTION A – A

SECTION B – B

SECTION B – B
(EXTENDED PIT CHAMBER)



PLAN

PRECAST LINTEL SIZES.	
NOMINAL OPENING SIZE METRES	OVERALL LENGTH "L" mm
0.9	1825
1.2	1825
1.8	2438
2.4	3048
3.0	3657
3.6	4267
4.2	4877
4.8	5486

NOTES

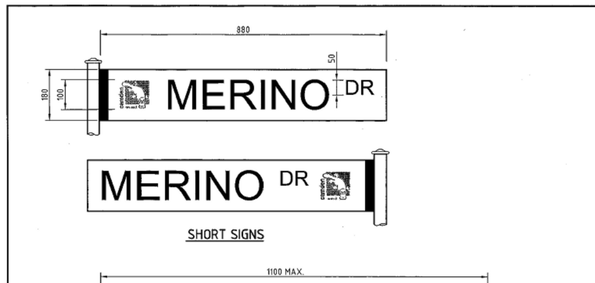
1. CONCRETE TO BE 32MPa MINIMUM AT 28 DAYS.
2. WHERE DEPTH OF PIT EXCEEDS 1500, WALLS AND BOTTOM TO BE REINFORCED IN ALL DIRECTIONS WITH SL82 MESH AT 40 COVER TO INSIDE FACE WITH N12 CORNER BARS 300 LEGS AT 400 CTRS. PITS DEEPER THAN 2000 SHALL BE DESIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER.
3. SAG PITS TO HAVE LINTEL LOCATED CENTRALLY OVER PIT.
4. BACKFILL ADJACENT TO PITS TO BE APPROVED GRANULAR MATERIAL.
5. A 3m LENGTH OF APPROVED "FILTER FABRIC" WRAPPED 100mm SUB-SOIL DRAIN OR EQUIVALENT IS TO BE PROVIDED AND CONNECTED TO THE UPSTREAM PIT WALL.
6. PIT GRATE AND FRAME TO BE "WELDLOK" GG78-50 FOR RESIDENTIAL ROADS AND GG78-42A FOR INDUSTRIAL ROADS, FITTED WITH A LOCKABLE "J" BOLT.
7. STEP IRONS WHERE THE PIT EXCEEDS 1200 IN DEPTH, AS PER SD509.
8. THE CENTRE LINES OF INTERSECTING PIPES ARE TO MEET AT THE DOWNSTREAM FACE OF THE PIT WHERE POSSIBLE.
9. WHERE ENTERING PIPE EXCEEDS 525 IN DIAMETER, EXTENDED PIT CHAMBER, AS SHOWN
10. FLOOR OF PIT TO BE BENCHED TO MID POINT OF OUTLET PIPE WHERE OUTLET PIPE IS +600 DIAMETER
11. WHERE EXTENDED CHAMBER WIDTH EXCEEDS 1200, ROOF REINFORCEMENT TO BE DESIGNED BY A PROFESSIONAL STRUCTURAL ENGINEER.
12. CONTRACTOR TO ENSURE CLEARANCE BETWEEN LINTEL AND OPENED GRATE.
13. ALL DIMENSIONS IN MILLIMETRES UNLESS NOTED OTHERWISE.
14. PITS IN AREAS OF SALINITY HAZARD SHALL BE APPROPRIATELY DESIGNED
15. PIT MARKING STENCILS ARE AVAILABLE FROM COUNCIL
16. LIFTING LUGS TO BE FILLED AFTER INSTALLATION

REVISION	DATE	DESCRIPTION	DRAWN.	APP.
A	JAN 2009	FIRST ISSUE	A.P.	C.M.

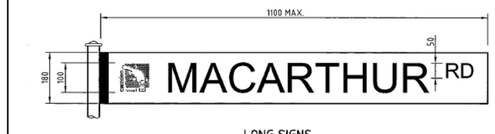
camden council

TITLE	SCALE
GRATED GULLY PIT	NTS

APPROVED	DATE	DRAWING No.	REV
C. McINTYRE	JAN 2009	SD12	A



SHORT SIGNS



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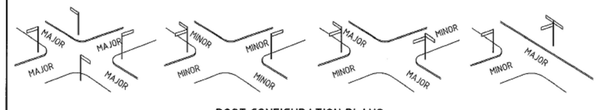
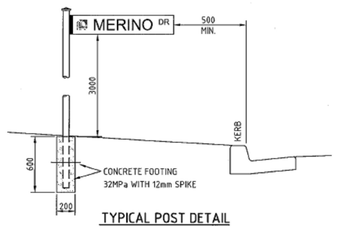


POST CONFIGURATION PLANS



TYPICAL POST DETAIL

NOTES:

1. ALL COLOURS TO MATCH CAMDEN COUNCILS CORPORATE COLOURS – BLUE – PMS PROCESS BLUE, GREEN – PMS 348C, RED – PMS202C
2. ALL TEXT AND BACKGROUNDS TO BE REFLECTIVE
3. FONT TO BE ARIAL BOLD FOR SHORT NAMES ARIAL BOLD CONDENSED FOR LONG NAMES
4. CAMDEN COUNCIL LOGO TO ALWAYS BE POSITIONED CLOSEST TO THE POLE
5. PANELS TO BE 880 OR 1100 LONG, BUT NO LONGER
7. LOWER EDGE OF SIGNS TO BE 3000mm ABOVE GROUND LEVEL.
8. SIGNS TO BE BOLTED TO POST THROUGH STRENGTHENING BARS WITH CADMIUM PLATED BOLTS AND NUTS.
9. ALL POSTS ARE TO BE GALVANISED

REVISION	DATE	DESCRIPTION	DRAWN.	APP.
A	JAN 2009	FIRST ISSUE	A.P.	C.M.

camden council

TITLE	SCALE
STREET NAME SIGNAGE	NTS

APPROVED	DATE	DRAWING No.	REV
C. McINTYRE	JAN 2009	SD27	A

Reference Coordination Drawing

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA
Chartered Professional Engineer
MEMBER

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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	27 OF 32	1500 @ A1

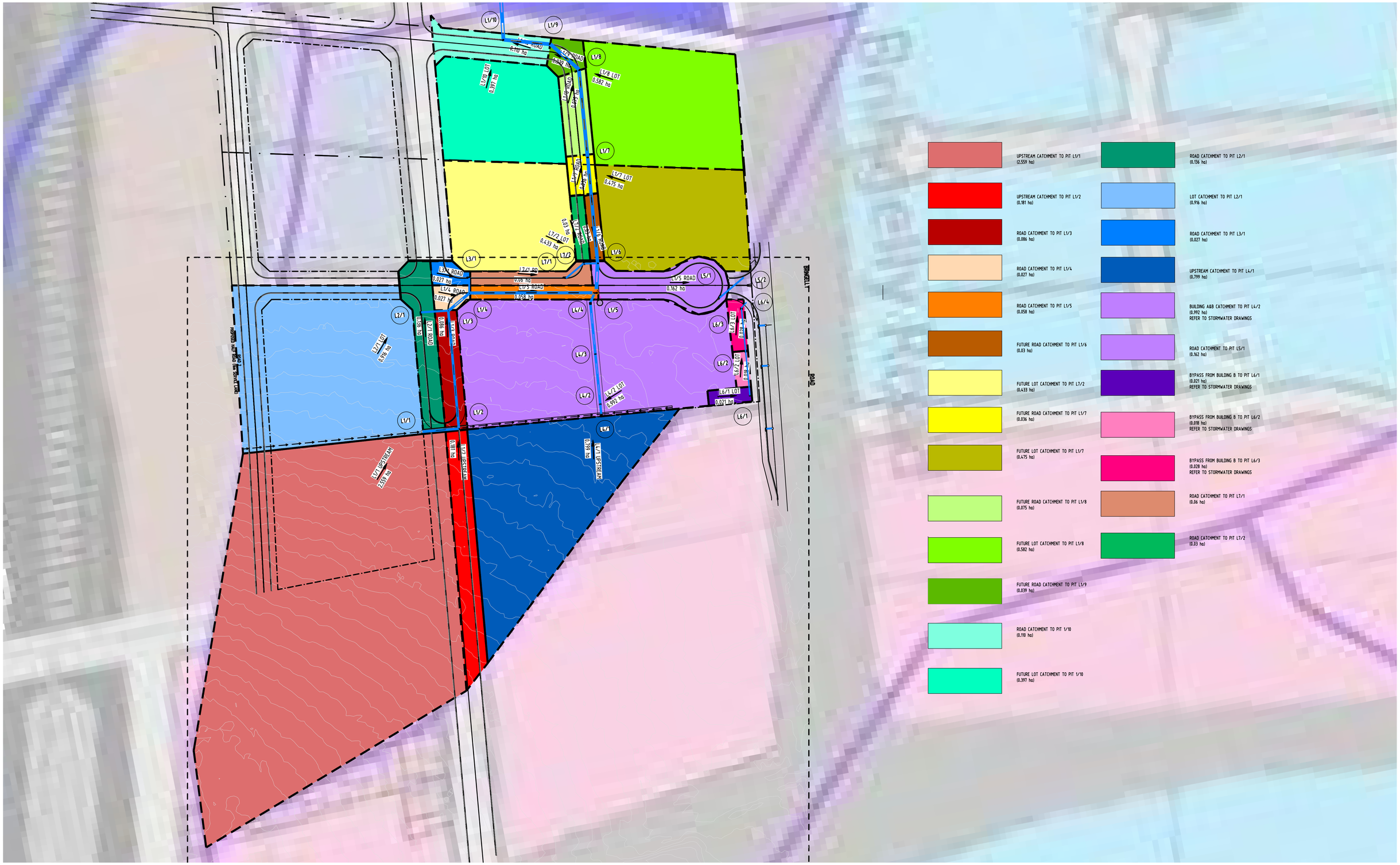
Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
TYPICAL DETAILS

Project No	Drawing No	Revision No.
20170269	C500	G

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1



UPSTREAM CATCHMENT TO PIT L1/1 (2.559 ha)

UPSTREAM CATCHMENT TO PIT L1/2 (0.181 ha)

ROAD CATCHMENT TO PIT L1/3 (0.086 ha)

ROAD CATCHMENT TO PIT L1/4 (0.027 ha)

ROAD CATCHMENT TO PIT L1/5 (0.058 ha)

FUTURE ROAD CATCHMENT TO PIT L1/6 (0.03 ha)

FUTURE LOT CATCHMENT TO PIT L7/2 (0.433 ha)

FUTURE ROAD CATCHMENT TO PIT L1/7 (0.036 ha)

FUTURE LOT CATCHMENT TO PIT L1/7 (0.475 ha)

FUTURE ROAD CATCHMENT TO PIT L1/8 (0.075 ha)

FUTURE LOT CATCHMENT TO PIT L1/8 (0.582 ha)

FUTURE ROAD CATCHMENT TO PIT L1/9 (0.039 ha)

ROAD CATCHMENT TO PIT 1/10 (0.110 ha)

FUTURE LOT CATCHMENT TO PIT 1/10 (0.397 ha)

ROAD CATCHMENT TO PIT L2/1 (0.136 ha)

LOT CATCHMENT TO PIT L2/1 (0.916 ha)

ROAD CATCHMENT TO PIT L3/1 (0.027 ha)

UPSTREAM CATCHMENT TO PIT L4/1 (0.799 ha)

BUILDING A&B CATCHMENT TO PIT L4/2 (0.992 ha) REFER TO STORMWATER DRAWINGS

ROAD CATCHMENT TO PIT L5/1 (0.162 ha)

BYPASS FROM BUILDING B TO PIT L6/1 (0.021 ha) REFER TO STORMWATER DRAWINGS

BYPASS FROM BUILDING B TO PIT L6/2 (0.018 ha) REFER TO STORMWATER DRAWINGS

BYPASS FROM BUILDING B TO PIT L6/3 (0.028 ha) REFER TO STORMWATER DRAWINGS

ROAD CATCHMENT TO PIT L7/1 (0.06 ha)

ROAD CATCHMENT TO PIT L7/2 (0.03 ha)

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales

0m 10 20 30 40 50

SCALE 1:1000 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	28 OF 32	1:1000 @ A1

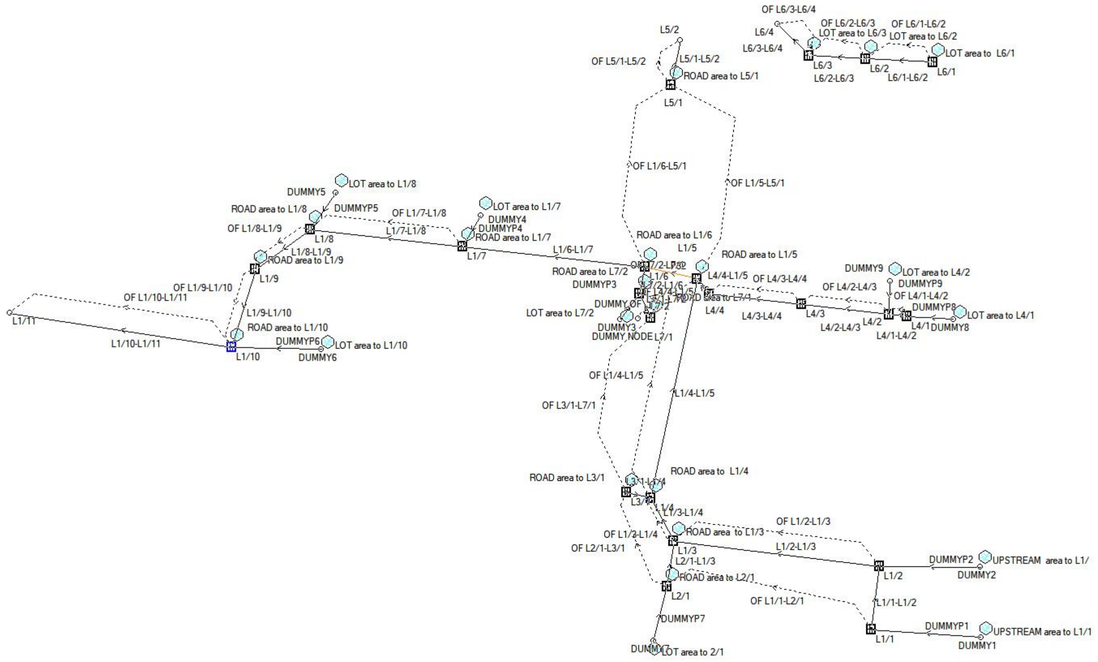
Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
ROAD DRAINAGE CATCHMENT PLAN

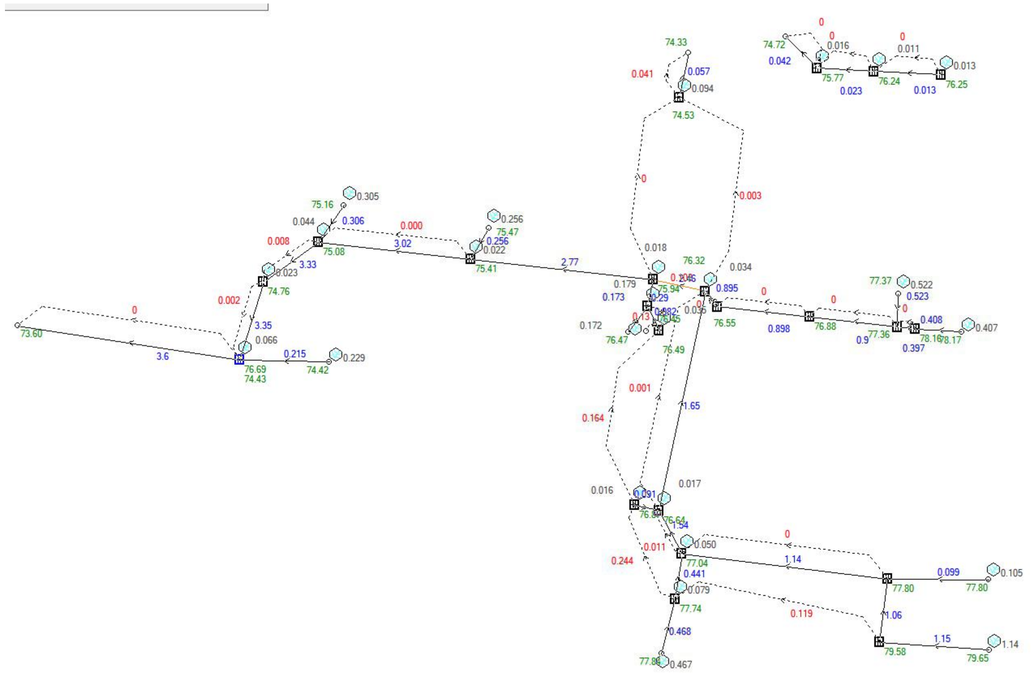
Project No	Drawing No	Revision No
20170269	C600	G

PLOT BY: C:\Production\2017\20170269 297 Bringelli Street, Leppington\Civil\cad\DA1 BLOCS A & B\C600.dwg

A1



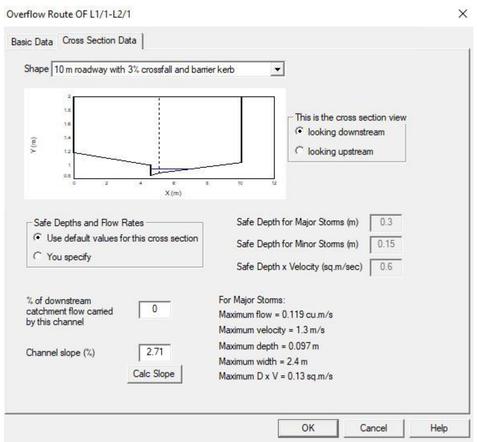
DRAINS MODEL SET UP ON EXTERNAL DRAINAGE



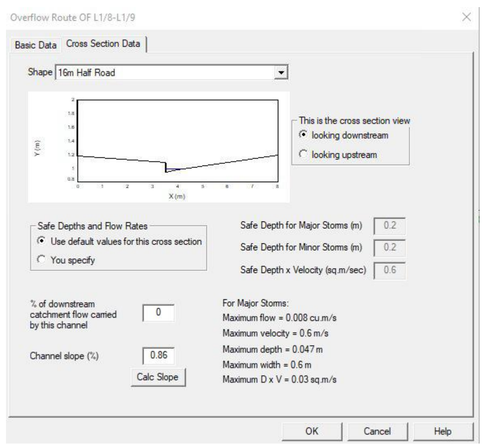
DRAINS MODEL RESULT (100yr ARI)

NOTE:

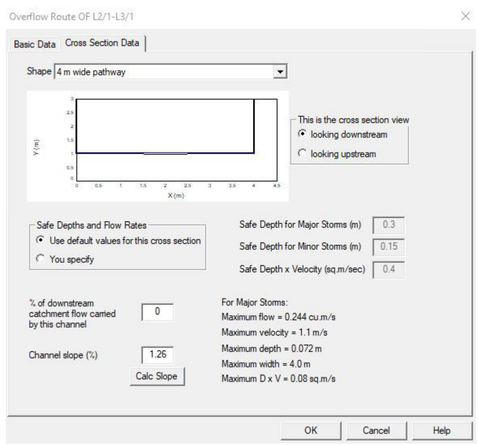
BASED ON THE RESULT FROM THE GUTTER FLOW ANALYSIS USING DRAINS, THE OVERLAND FLOWS HAS BEEN FULLY CONVEYED FROM A 100yr (1%) ARI) STORM WITHIN THE ROAD RESERVE. ALSO, THE HYDRAULIC HAZARD IS LESS THAN 0.4m2/s AND FLOW GUTTER DEPTH IS LESS THAN 200mm ANYWHERE WITHIN THE ROAD RESERVE.



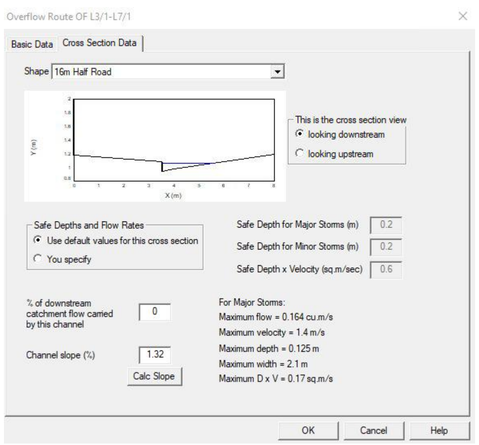
OVERFLOW ROUTE 1 RESULT (100yr ARI)



OVERFLOW ROUTE 2 RESULT (100yr ARI)



OVERFLOW ROUTE 3 RESULT (100yr ARI)



OVERFLOW ROUTE 4 RESULT (100yr ARI)

						Reference Coordination Drawing		
G	ISSUE TO COUNCIL	CK	02.12.20	2	Discipline	Drawing Title and Number	Date	Rev.
F	ISSUE TO COUNCIL	CK	13.10.20	2	ARCH			
E	ISSUE TO COUNCIL	AA	23.06.20	2	ARCH			
D	ISSUE TO COUNCIL	JH	11.12.19	2	STRUCT			
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2	MECH			
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2	ELEC			
A	ISSUE FOR DA	JH	28.02.19	2	HYD			
Issue	Last revision title	by	Date	Status	FIRE			
					LANDS			
					CIVIL			
					SURVEY			

Issuer internal sequence and revision history

1-preliminary 2-development application 3-construction certificate 4-tender 5-construction 6-other

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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APPROVED	JH	DATE	02.12.20

Scales

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	29 OF 32	NTS

Drawing Status: FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
GUTTER FLOW ANALYSIS

Project No	Drawing No	Revision No
20170269	C651	G

A1

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLAIRE

EXISTING DRAINAGE SYSTEM CAPACITY ANALYSIS

EXISTING AREAS DRAINING INTO RMS DRAINAGE SYSTEM = 2473m2
(95% IMPERVIOUS)

$C_5 = 0.80$
$Q_5 = C * I * A / 3600$
$= 0.8 * 124 * 2473 / 3600$
$= 68L/s$

$C_{100} = 1.00$
$Q_{100} = C * I * A / 3600$
$= 1 * 227 * 2473 / 3600$
$= 156L/s$

PROPOSED AREAS DRAINING INTO RMS DRAINAGE SYSTEM = 1278m2
(65% IMPERVIOUS)

$C_5 = 0.67$
$Q_5 = C * I * A / 3600$
$= 0.67 * 124 * 1278 / 3600$
$= 30L/s$

$C_{100} = 0.84$
$Q_{100} = C * I * A / 3600$
$= 0.84 * 227 * 1278 / 3600$
$= 68L/s$

BASED ON THE CALCULATION ABOVE, THE STORMWATER RUNOFF DRAINING INTO RMS DRAINAGE SYSTEM FROM THE POST-DEVELOPMENT SCENARIO IS LESS THAN THE ONE IN THE PRE-DEVELOPMENT SCENARIO FOR ALL STORM EVENTS INCLUDING 5yr & 100yr ARI STORM. THEREFORE, THERE WILL BE NO ADVERSE IMPACT ON THE EXISTING RMS DRAINAGE SYSTEM ALONG BRINGELLY ROAD.

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
D	ISSUE TO COUNCIL	JH	11.12.19	2
C	AMENDED DA DRAWINGS AS PER COUNCIL'S COMMENTS	JH	13.08.19	2
B	AMENDED DRAWINGS AS PER COUNCIL'S COMMENTS	JH	16.07.19	2
A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

XREF's: $2
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C652.dwg

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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QUALITY CONTROL

DRAWN	CK	DATE	02.12.20
CHECKED	SH	DATE	02.12.20
DESIGNED	CK	DATE	02.12.20
VERIFIED	SH	DATE	02.12.20
APPROVED	JH	DATE	02.12.20

Scales
0m 2 4 6 8 10
SCALE 1:200 ON ORIGINAL SIZE

CLIENT
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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	30 OF 32	1:200 @ A1

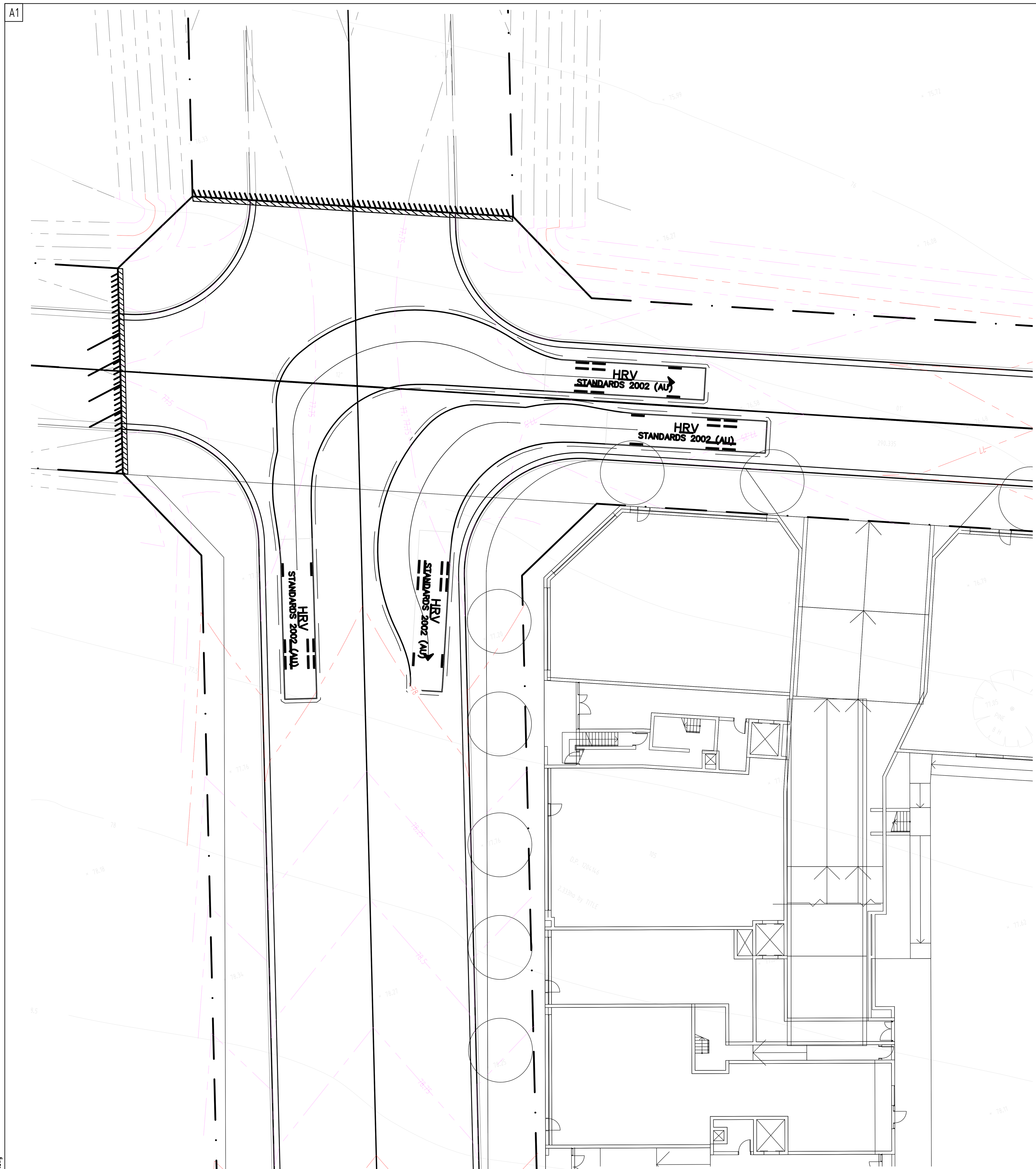
Drawing Status FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
EXISITNG DRAINAGE SYSTEM CAPACITY ANALYSIS

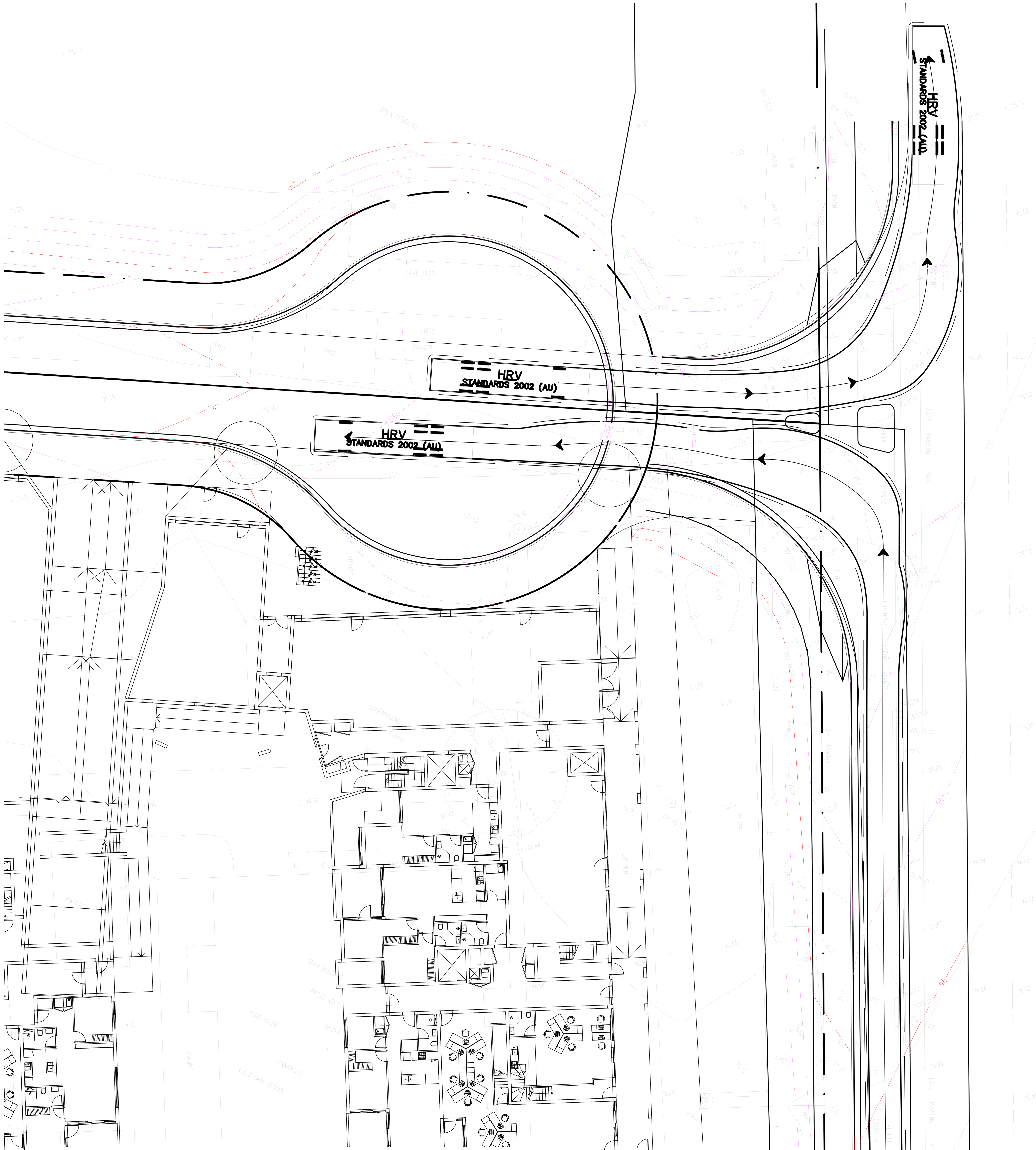
Project No	Drawing No	Revision No
20170269	C652	G

DATE PLOTTED: 2 December 2020 2:42 PM BY : CLARE

A1



TWO HRV 12.5m TRUCK PASSING EACH OTHER AT KERB RETURN



HRV 12.5m TRUCK COMING IN FROM SLIP LANE AND GOING OUT TO BRINGELLY ROAD

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
E	ISSUE TO COUNCIL	AA	23.06.20	2
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A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history
1-preliminary 2-development application 3-construction certificate
4-tender 5-construction 6-other

XREF's: $?
CAD FILE: Z:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C700.dwg

Reference Coordination Drawing

Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
MECH			
ELEC			
HYD			
FIRE			
LANDS			
CIVIL			
SURVEY			

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Scales
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SCALE 1:200 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

Grid	Datum	Sheet	Scale (at original size)
-	A.H.D.	31 OF 32	1:200 @ A1

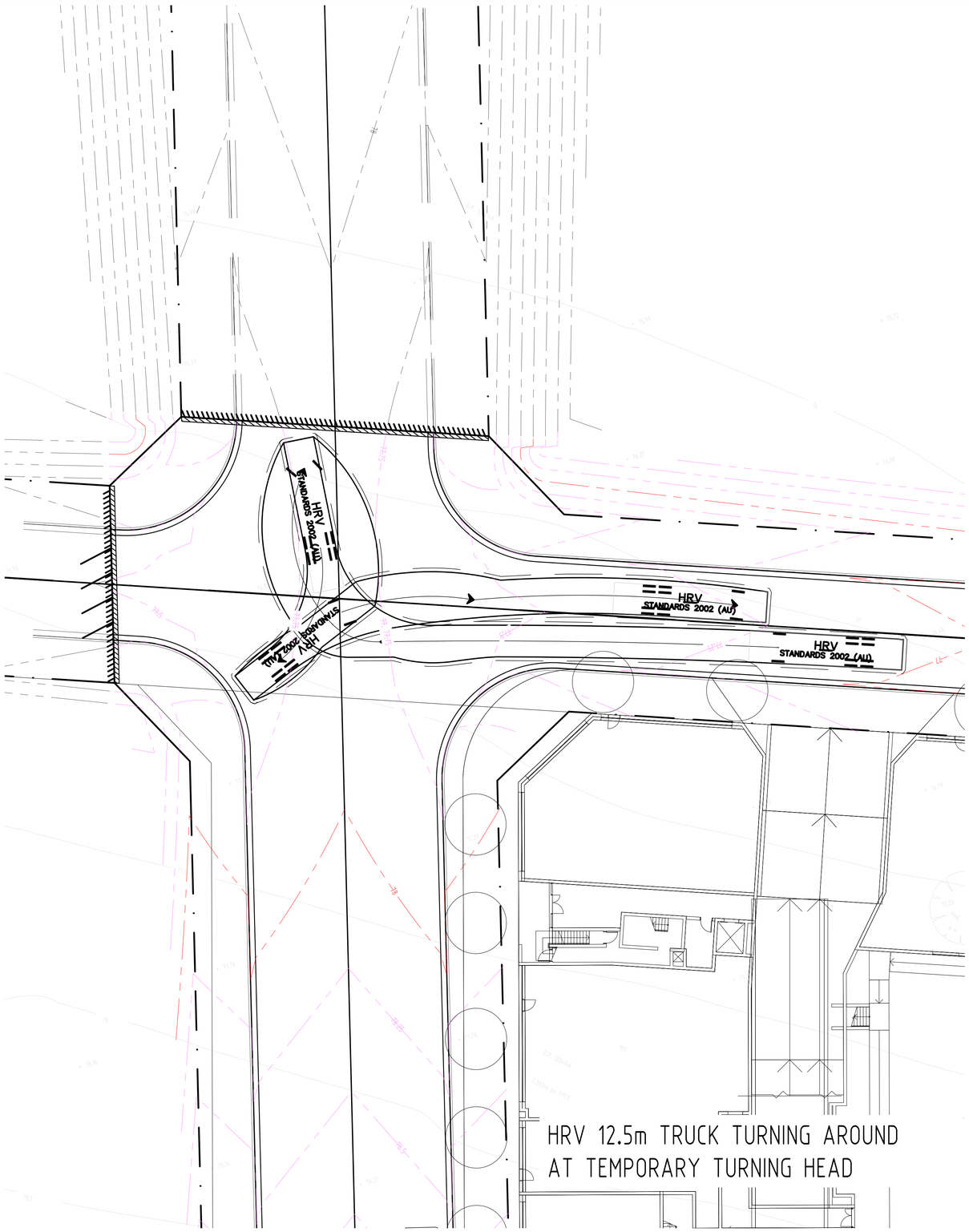
Drawing Status
FOR APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Drawing Title
CIVIL WORKS
SWEPT PATH ANALYSIS
SHEET 1 OF 2

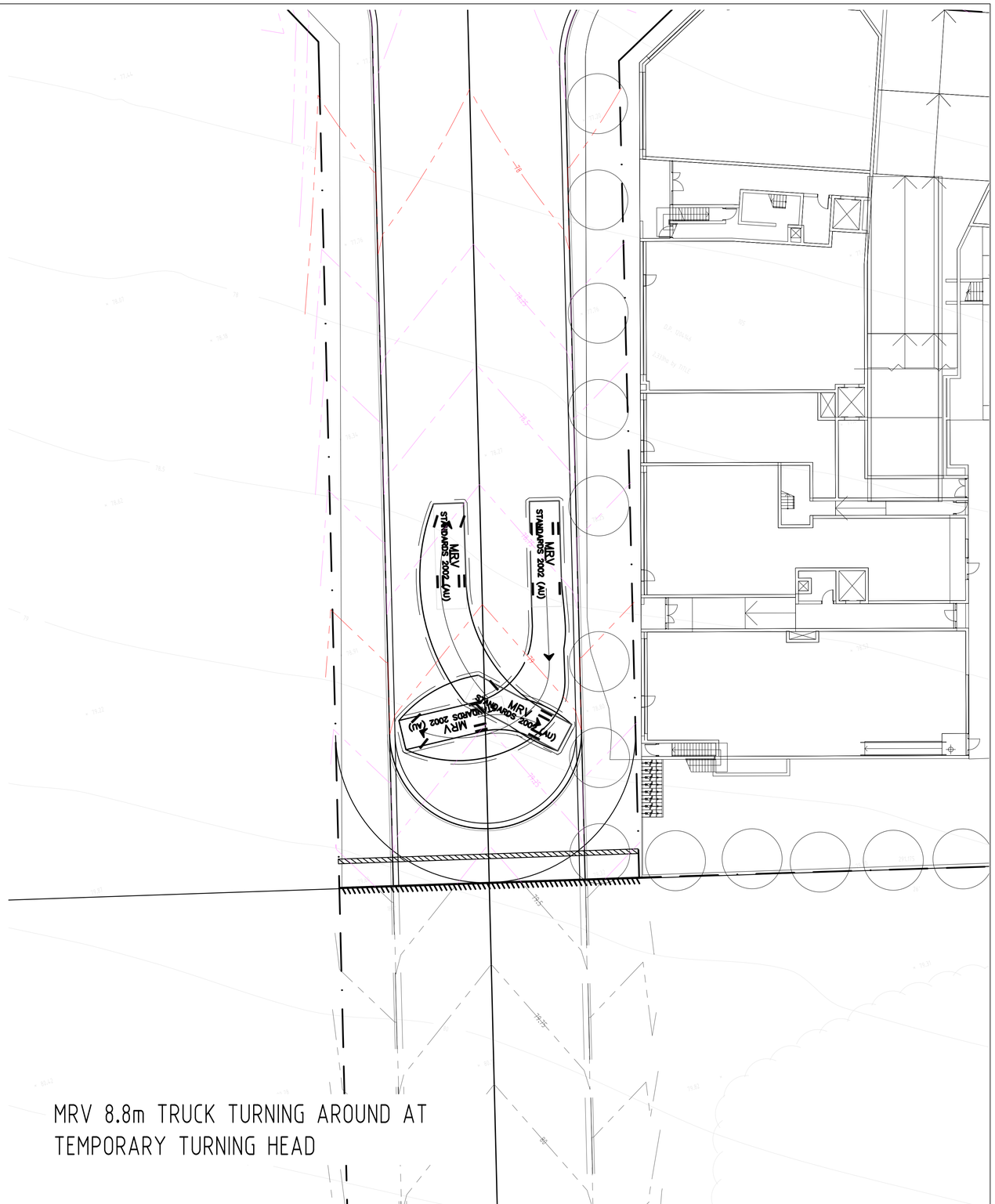
Project No	Drawing No	Revision No
20170269	C700	G

DATE PLOTTED: 2 December 2020 2:43 PM BY : CLARE

A1



HRV 12.5m TRUCK TURNING AROUND AT TEMPORARY TURNING HEAD



MRV 8.8m TRUCK TURNING AROUND AT TEMPORARY TURNING HEAD

Issue	Last revision title	by	Date	Status
G	ISSUE TO COUNCIL	CK	02.12.20	2
F	ISSUE TO COUNCIL	CK	13.10.20	2
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A	ISSUE FOR DA	JH	28.02.19	2

Issuer internal sequence and revision history

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Discipline	Drawing Title and Number	Date	Rev.
ARCH			
ARCH			
STRUCT			
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HYD			
FIRE			
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ENGINEERS AUSTRALIA Chartered Professional Engineer MEMBER

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SCALE 1:200 ON ORIGINAL SIZE

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PROJECT
PROPOSED MIXED-USE DEVELOPMENT - DA1
297 BRINGELLY ROAD
LEPPINGTON

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-	A.H.D.	32 OF 32	1:200 @ A1

Drawing Status: FOR APPROVAL
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Drawing Title
CIVIL WORKS
SWEPT PATH ANALYSIS
SHEET 2 OF 2

Project No	Drawing No	Revision No
20170269	C701	G

PLOT FILE: X:\Production\2017\20170269 297 Bringelly Street, Leppington\Civil\cad\DA1 BLDGS A & B\C700.dwg