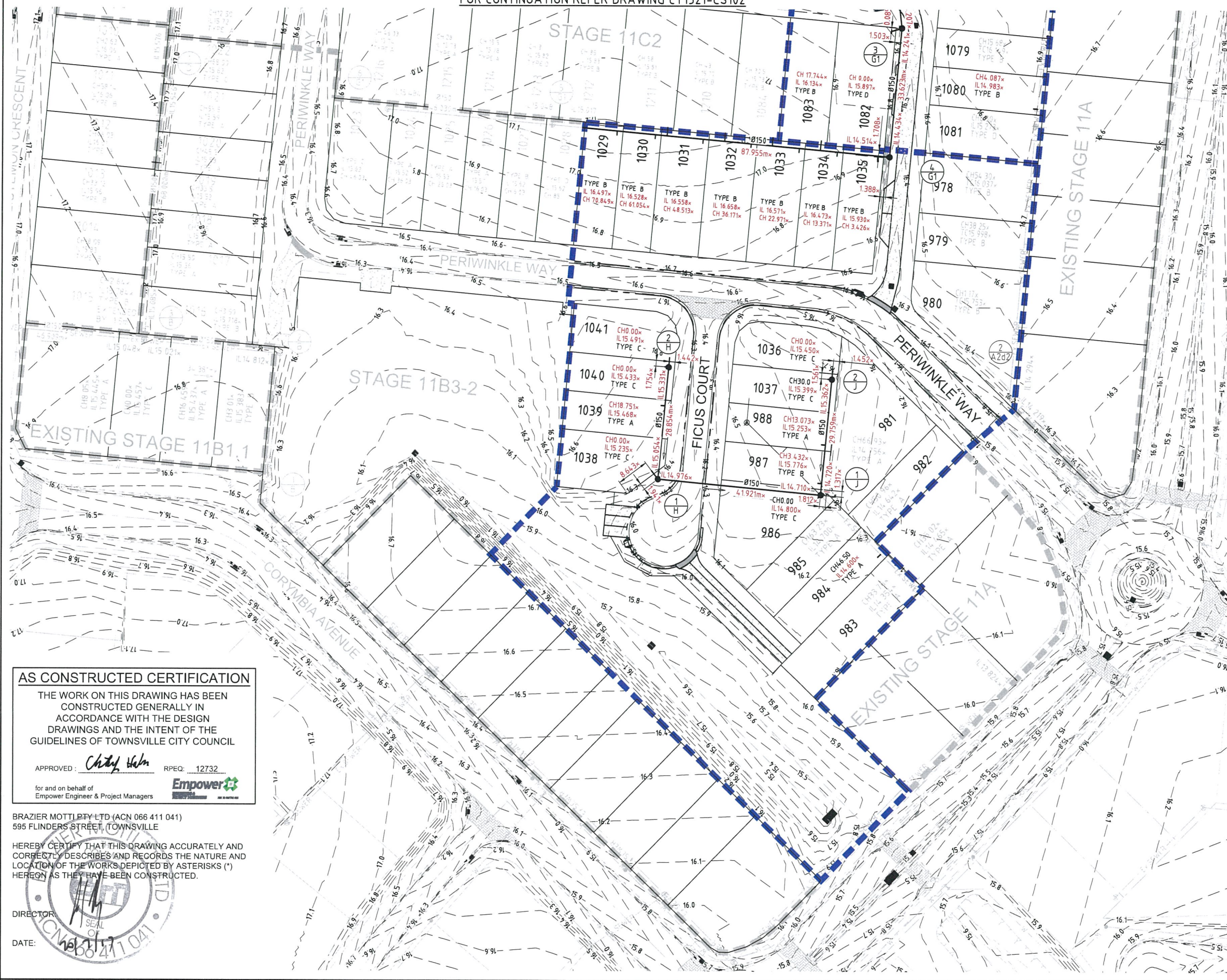


FOR CONTINUATION REFER DRAWING CT1521-CS102



#### AS CONSTRUCTED CERTIFICATION

THE WORK ON THIS DRAWING HAS BEEN CONSTRUCTED GENERALLY IN ACCORDANCE WITH THE DESIGN DRAWINGS AND THE INTENT OF THE GUIDELINES OF TOWNSVILLE CITY COUNCIL

APPROVED: *Cheryl Helm*

RPEQ: 12732

for and on behalf of  
Empower Engineer & Project Managers



BRAZIER MOTTL PTY LTD (ACN 066 411 041)  
595 FLINDERS STREET, TOWNSVILLE

HEREBY CERTIFY THAT THIS DRAWING ACCURATELY AND CORRECTLY DESCRIBES AND RECORDS THE NATURE AND LOCATION OF THE WORKS DEPICTED BY ASTERISKS (\*) HEREON AS THEY HAVE BEEN CONSTRUCTED.

DIRECTOR

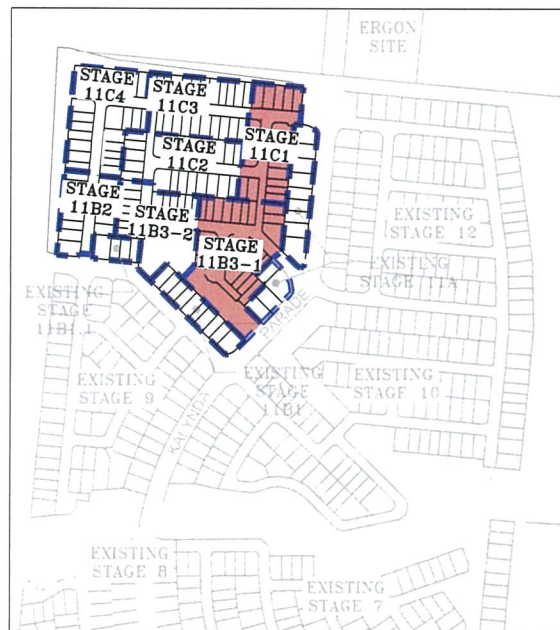
DATE: 16/11/17

#### SEWERAGE NOTES

- ALL SEWERS LESS THAN 5.7m DEEP ARE 150mm DIAMETER uPVC SN8 IN ACCORDANCE WITH STANDARD AS/NZS 1260:1999. UNLESS SHOWN OTHERWISE.
- ALL 100mm DIAMETER SEWER LINES LESS THAN 5.7m DEEP ARE uPVC SN8 IN ACCORDANCE WITH STANDARD AS/NZS 1260:1999. UNLESS SHOWN OTHERWISE.
- CONTRACTOR VERIFIED FINISHED SURFACE LEVELS ON SITE BEFORE CONSTRUCTION OF SEWERS AND PROPERTY CONNECTION BRANCHES.
- ALL WORK CONSTRUCTED IN ACCORDANCE WITH CURRENT TOWNSVILLE CITY COUNCIL STANDARD METHODS AND DRAWINGS.
- EACH ALLOTMENT SERVED BY A 100mm PROPERTY CONNECTION. THE CONTRACTOR HAD PROPERTY BOUNDARIES PEGGED AND LOCATION OF PROPERTY CONNECTIONS CONFIRMED PRIOR TO COMMENCING CONSTRUCTION OF PROPERTY CONNECTION BRANCHES.
- OBSERVATION BRANCHES LOCATED 15m FROM DOWNSTREAM ALIGNMENT.
- PROPERTY CONNECTION BRANCHES EXTEND INTO THE PROPERTY A MINIMUM OF 1.0m.
- INSTALLATION AND COMPACTION OF TRENCH BACKFILL WAS CARRIED OUT STRICTLY IN ACCORDANCE WITH THE PROJECT SPECIFICATION.
- ALL WORK ASSOCIATED WITH LIVE SEWERS OR MANHOLES CARRIED OUT BY TOWNSVILLE CITY COUNCIL AT THE CONTRACTOR'S COST.
- THE CONTRACTOR VERIFIED LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION.
- THE CONSTRUCTION OF SEWERAGE WORK SHOWN ON THIS DRAWING WAS SUPERVISED IN ACCORDANCE WITH TOWNSVILLE CITY COUNCIL REQUIREMENTS.
- PROPERTY CONNECTIONS CROSSING UNDERGROUND ELECTRICITY ALLOCATION HAVE A MINIMUM OF 1.0m COVER.
- BACKFILL ROAD CROSSINGS WITH CRUSHER DUST COMPACTED TO NOT LESS THAN 95% OF THE STANDARD MAX. DRY DENSITY TO A.S. 1289, INCLUDING FUTURE ROAD CROSSINGS.
- SEWER STRUCTURES ARE LOCATED 15m FROM THE PROPERTY BOUNDARIES UNLESS NOTED OTHERWISE.
- PIPE EMBEDMENT IN ACCORDANCE WITH 'TYPE 3 SUPPORT' AS DETAILED ON TCC STD DWG SD-461.
- TOP OF MANHOLES IN ALLOTMENTS ARE 150mm ABOVE FINISHED SURFACE LEVEL AS PER TOWNSVILLE CITY COUNCIL STANDARD DRAWINGS.
- MANHOLE COVERS EITHER TYPE B OR TYPE D IN ACCORDANCE WITH TOWNSVILLE CITY COUNCIL STANDARD DRAWINGS.

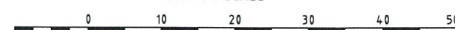
#### LEGEND

- EXISTING SEWER
- EXISTING SEWERAGE
- AS CONSTRUCTED SEWER AND MANHOLE
- STAGE BOUNDARY
- FINISHED SURFACE CONTOURS
- SEWER MANHOLE (MH) OR EZI PIT (MS)



#### LOCALITY PLAN

NOT TO SCALE



SCALE 1:500 (A1) 1:1000 (A3)  
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED

1	AS CONSTRUCTED	JT	JK	CH	Cheryl Helm	12732	17/03/17
No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
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ENGINEERS &  
PROJECT MANAGERS

ABN 23 010 743 692

Client	URBEX PTY LTD
Project	KALYNDA CHASE STAGE 11B3 AND 11C1
Title	SEWERAGE RETICULATION LAYOUT (SHEET 1 OF 2) ?

Datum AHD PSM NO.131651 RL 19.248M (MGA) COORD	AS CONSTRUCTED
Project No. CT1521-CS101	Drawing No. 1



# LEGEND

- EXISTING SEWERAGE
- AS CONSTRUCTED SEWER AND MANHOLE
- STAGE BOUNDARY
- FINISHED SURFACE CONTOURS
- SEWER MANHOLE (MH) OR EZI PIT (MS)

## AS CONSTRUCTED CERTIFICATION

THE WORK ON THIS DRAWING HAS BEEN CONSTRUCTED GENERALLY IN ACCORDANCE WITH THE DESIGN DRAWINGS AND THE INTENT OF THE GUIDELINES OF TOWNSVILLE CITY COUNCIL

APPROVED: *Cheryl Helm* RPEQ: 12732

for and on behalf of  
Empower Engineer & Project Managers



BRAZIER MOTTL PTY LTD (ACN 066 411 041)  
595 FLINDERS STREET, TOWNSVILLE

HEREBY CERTIFY THAT THIS DRAWING ACCURATELY AND CORRECTLY DESCRIBES AND RECORDS THE NATURE AND LOCATION OF THE WORKS DEPICTED BY ASTERISKS (\*) HEREON AS THEY HAVE BEEN CONSTRUCTED.

DIRECTOR: *Cheryl Helm*

DATE: 2/11/2

NOTE:-  
REFER TO DRAWING CT1521-CS101 FOR LEGEND, NOTES AND LOCALITY PLAN.

File Name: C:\p\proj\11B3\11B3\_2014.dwg User: J051 TURNGAN Date: 17/03/17 2:54:18 PM

1	AS CONSTRUCTED	JT	JK	CH	<i>Cheryl Helm</i>	12732	17/03/17
No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date

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**Empower**  
ENGINEERS & PROJECT MANAGERS  
ABN 23 010 743 692

Client: **URBEX PTY LTD**  
Project: **KALYNDIA CHASE STAGE 11B3 AND 11C1**  
Title: **SEWERAGE RETICULATION LAYOUT (SHEET 2 OF 2)**

Datum: **AHD**  
PSM NO. **131651**  
RL **19.248M**  
(MGA) COORD  
**AS CONSTRUCTED**  
Project No. **CT1521-CS102** Drawing No. **?** Rev **1**



FOR CONTINUATION REFER DRAWING CT1521-CS101

SCALE 1:500 (A1) 1:1000 (A3)  
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.



MANHOLE TYPE/DROP	MANHOLE COVER	JUNCTION LINE No.	JUNCTION DROP	HC DEPTH	HC TYPE	HC IL	HC LOT No.
	TYPE B MS600			1333	Type B	15.645	Lot 1234 IL 15.645
				1011	Type B	15.760	Lot 1235 IL 15.760
	TYPE B S1050	Line G1	Drop 0.000	131	Type D	16.375	Lot 1236 IL 16.375
	VERTICAL DROP 1.659			1139	Type B	16.200	Lot 1237 IL 16.200
				1131	Type B	16.295	Lot 1238 IL 16.295
				1163	Type B	16.437	Lot 1239 IL 16.437
	TYPE B S1050			111	Type B	16.431	Lot 1240 IL 16.431
	Drop 0.030			1175	Type B	16.434	Lot 1241 IL 16.434
				1119	Type B	16.455	Lot 1242 IL 16.455
				1162	Type B	16.449	Lot 1243 IL 16.449
	TYPE B S1050			1159	Type D	16.538	Lot 1244 IL 16.538
	Drop 0.030			1165	Type B	16.588	Lot 1245 IL 16.588
				119	Type B	16.559	Lot 1246 IL 16.559
				1128	Type B	16.717	Lot 1247 IL 16.717
				1128	Type B	16.754	Lot 1248 IL 16.754
				1132	Type B	16.787	Lot 1249 IL 16.787
				1181	Type D	16.775	Lot 1250 IL 16.775
	TYPE B S1050			1164	Type A	16.848	Lot 1251 IL 16.848
	Drop 0.030			1156	Type A	16.901	Lot 1252 IL 16.901
				1164	Type A	16.940	Lot 1253 IL 16.940
				1160	Type A	16.976	Lot 1254 IL 16.976
				1165	Type A	17.032	Lot 1255 IL 17.032
				1218	Type A	17.095	Lot 1256 IL 17.095

PROP. DESCRIPTION	LOT
DIAMETER/TYPE	Ø150uPVC SN8
GRADE (1 in)	177.370x 172.628x 149.56x 150 151 150 100
LENGTH	6.000 19.156x 23.650x 31.258x 60.000 72.000 67.500 14.500
DATUM (m)	2.0
JUNCTION INVERT LEVEL	
DEPTH BELOW F.S.L.	3.615 3.573 3.743x 3.739x 3.876x 2.223x 2.179 2.139 19.771 19.471 15.720 15.750 17.956 17.956 16.215 16.245 16.695 15.002 14.427 16.900 14.13
INVERT LEVEL	13.094 13.136 13.175x 13.283x 13.287x 13.424x 15.077x 15.286 15.376 17.681 17.681 15.720 15.750 17.956 17.956 16.215 16.245 16.695 15.002 14.427 16.900 14.13
AS CONSTRUCTED SURFACE LEVEL	16.709 17.026x 17.300x 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465 17.465
CHAINAGE	0.000 6.000x 25.156x 48.806x 80.063 140.016 210.016 277.516 292.016
LINE	A

MANHOLE TYPE/DROP	MANHOLE COVER	JUNCTION LINE No.	JUNCTION DROP	HC DEPTH	HC TYPE	HC IL	HC LOT No.
	TYPE B S1050			0.974	Type A	15.235	Lot 1038 IL 15.235
	Drop 0.000			1.079	Type A	15.468	Lot 1039 IL 15.468
				1.101	Type A	15.433	Lot 1040 IL 15.433
	TYPE B S1050			1.06	Type A	15.493	Lot 1041 IL 15.493
				1.139	Type A	15.770	Lot 987 IL 15.770
				1.131	Type A	15.253	Lot 988 IL 15.253
				1.196	Type A	15.399	Lot 1037 IL 15.399
				1.196	Type A	15.450	Lot 1036 IL 15.450

PROP. DESCRIPTION	LOT
DIAMETER/TYPE	Ø150uPVC SN8
GRADE (1 in)	157.598x 104.166x 46.354x 29.759x
LENGTH	157.598x 104.166x 46.354x 29.759x
DATUM (m)	1.0
JUNCTION INVERT LEVEL	
DEPTH BELOW F.S.L.	16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x
INVERT LEVEL	16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x
AS CONSTRUCTED SURFACE LEVEL	16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x
CHAINAGE	0.000x 4.1921x 16.370x 16.599x
LINE	H

PROP. DESCRIPTION	LOT
DIAMETER/TYPE	Ø150uPVC SN8
GRADE (1 in)	46.354x 29.759x
LENGTH	46.354x 29.759x
DATUM (m)	1.0
JUNCTION INVERT LEVEL	
DEPTH BELOW F.S.L.	16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x
INVERT LEVEL	16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x
AS CONSTRUCTED SURFACE LEVEL	16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x 16.324x 14.581x 14.710x 14.710x 14.976x 13.994x 13.16x 12.08x
CHAINAGE	0.000x 29.759x
LINE	J

# AS CONSTRUCTED CERTIFICATION

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APPROVED: *Cheryl Helm* RPEQ: 12732

for and on behalf of Empower Engineer & Project Managers



BRAZIER MOTTL PTY LTD (ACN 066 411 041)  
595 FLINDERS STREET, TOWNSVILLE

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DIRECTOR:

DATE: 2/10/17

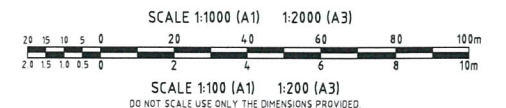
\*  
HOUSE CONNECTIONS DEEPER THAN 1.5m HAVE A VERTICAL RISER ADDED TO ENSURE MAXIMUM 1.5m DEPTH.

NOTE:-  
REFER TCC STD DWG Nos. SD-455 TO SD-475 FOR DETAILS OF SEWER MANHOLES, COVERS, FRAMES, INLETS, OUTLETS, HOUSE CONNECTIONS & PIPELINE CONSTRUCTION.

NOTE:-  
TOP OF MANHOLE RINGS SET 150mm ABOVE FSL AS PER TCC STD DWG SD-475.

MANHOLE DROP NOTE:  
INTERNAL MH. DROPS AS PER TOWNSVILLE CITY COUNCIL STANDARD DRAWING SD-474

HOUSE CONNECTION TYPES			
TYPE A DIRECT CONN. (+0.5m)	TYPE B JUMP-UP (+0.4m)	TYPE C DIRECT CONN. MH (+0.5m)	TYPE D INTERNAL DROP (+0.4m)



No.	AS CONSTRUCTED	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date
1	AS CONSTRUCTED		JT	JK	CH	<i>Cheryl Helm</i>	12732	17/03/17

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ENGINEERS & PROJECT MANAGERS  
ABN 23 010 743 692

Client  
**URBEX PTY LTD**

Project  
**KALYNDA CHASE STAGE 11B3 AND 11C1**

Title  
**SEWER RETICULATION  
LONGITUDINAL SECTION (SHEET 1 OF 2)**

Datum  
**AHD**

Project No.  
**PSM NO.131651**

Project No.  
**RL 19.248M (MGA) COORD**

Project No.  
**CT1521-CS103**

Drawing No.  
**1**

Rev  
**1**

**AS CONSTRUCTED**



MANHOLE TYPE/DROP	
MANHOLE COVER	
JUNCTION LINE No.	
JUNCTION DROP	
HC DEPTH	1.07
HC TYPE	154
HC IL	
HC LOT No.	

PROP. DESCRIPTION	LOT
DIAMETER/TYPE	Ø150uPVC SN8
GRADE (1 in)	93.366x
LENGTH	71.332x
DATUM (m)	1.0
JUNCTION INVERT LEVEL	
DEPTH BELOW F.S.L.	3.108x
INVERT LEVEL	13.814x
AS CONSTRUCTED SURFACE LEVEL	16.922x
CHAINAGE	0.000x
LINE	F

MANHOLE TYPE/DROP	TYPE B S1050 DROP 0.060
MANHOLE COVER	TYPE B S1050 DROP 0.030
JUNCTION LINE No.	Line F
JUNCTION DROP	VERTICAL DROP
HC DEPTH	1.15
HC TYPE	154
HC IL	
HC LOT No.	

PROP. DESCRIPTION	ROAD
DIAMETER/TYPE	Ø150uPVC SN8
GRADE (1 in)	165.871x
LENGTH	51.420x
DATUM (m)	0.0
JUNCTION INVERT LEVEL	
DEPTH BELOW F.S.L.	14.426x
INVERT LEVEL	13.814x
AS CONSTRUCTED SURFACE LEVEL	16.922x
CHAINAGE	51.420x
LINE	G1

## AS CONSTRUCTED CERTIFICATION

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APPROVED: *Cheryl Helm* RPEQ: 12732

for and on behalf of  
Empower Engineer & Project Managers



BRAZIER MOTTPITY LTD (ACN 066 411 041)  
595 FLINDERS STREET, TOWNSVILLE

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DIRECTOR:

DATE: 20/1/17

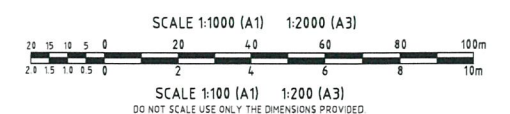
\*  
HOUSE CONNECTIONS DEEPER THAN 1.5m HAVE A VERTICAL RISER ADDED TO ENSURE MAXIMUM 1.5m DEPTH.

NOTE:-  
REFER TCC STD DWG Nos. SD-455 TO SD-475 FOR DETAILS OF SEWER MANHOLES, COVERS, FRAMES, INLETS, OUTLETS, HOUSE CONNECTIONS & PIPELINE CONSTRUCTION.

NOTE:-  
TOP OF MANHOLE RINGS SET 150mm ABOVE FSL AS PER TCC STD DWG SD-475.

MANHOLE DROP NOTE:  
INTERNAL MH. DROPS AS PER TOWNSVILLE CITY COUNCIL STANDARD DRAWING SD-474

HOUSE CONNECTION TYPES		
		TYPE A DIRECT CONN. (-0.5m)
		TYPE B JUMP-UP (-0.44m)
		TYPE C DIRECT CONN. MH (-0.5m)
		TYPE D INTERNAL DROP (-0.44m)



1	AS CONSTRUCTED	JT	JK	CH	<i>Cheryl Helm</i>	12732	17/03/17
No.	Amendments	Drawn	Design	Appd	Registered Engineer	Reg No.	Date



Client	URBEX PTY LTD	Datum	AHD
Project	KALYNDIA CHASE STAGE 11B3 AND 11C1	PSM NO.131651	RL 10.248M
Title	SEWER RETICULATION LONGITUDINAL SECTION (SHEET 2 OF 2)	(MGA) COORD	
	?	AS CONSTRUCTED	
		Project No.	CT1521-CS104
		Drawing No.	
		Rev	1