

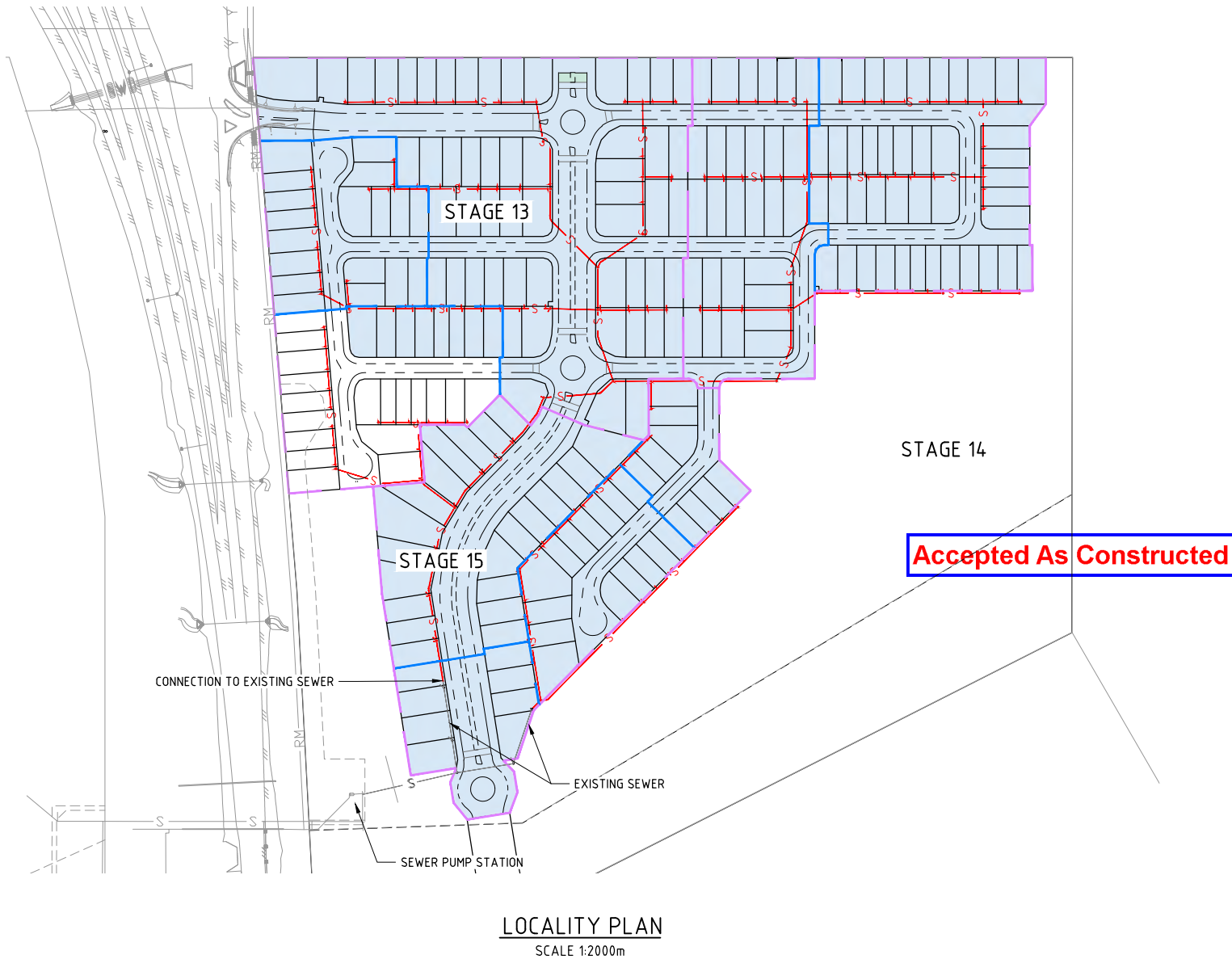
SEWER NOTES:

1. ALL WORK AND MATERIALS ARE IN ACCORDANCE WITH CURRENT TOWNSVILLE CITY COUNCIL SPECIFICATIONS, STANDARD DRAWINGS AND RELEVANT AUSTRALIAN STANDARDS.
2. uPVC SEWERS ARE CLASS SN10 (ø100) & SN8 (ø150/225/300) TO A.S.1260.
3. THE CONSTRUCTION OF SEWERAGE WORK SHOWN ON THIS DRAWING HAS BEEN SUPERVISED BY AN ENGINEER WHO HAS RPEQ/NER REGISTRATION.
4. EACH ALLOTMENT IS SERVED BY A ø100mm PROPERTY CONNECTION.
5. OBLIQUE JUNCTION BRANCHES ARE LOCATED 1.5m FROM THE DOWNSTREAM PROPERTY ALIGNMENT UNLESS NOTED OTHERWISE.
6. PROPERTY CONNECTION BRANCHES SHALL EXTEND INTO THE ADJACENT PROPERTY A MINIMUM OF 1.0m.
7. WHERE SEWERS HAVE A GRADE OF 1 IN 6 OR STEEPER, BULKHEADS HAVE BEEN CONSTRUCTED. REFER TO TOWNSVILLE CITY COUNCIL STD DRG SD-482.
8. MAINTENANCE HOLE LIDS HAVE BEEN FINISHED TO THE HEIGHTS ABOVE FSL AS SHOWN ON TOWNSVILLE CITY COUNCIL STDDWG SD-475.
9. INSTALLATION AND COMPACTION OF TRENCH BACKFILL WAS CARRIED OUT STRICTLY IN ACCORDANCE WITH THE PROJECT SPECIFICATION.
10. PROPERTY CONNECTIONS CROSSING UNDERGROUND ELECTRICITY ALLOCATION HAVE A MINIMUM OF 1.0m COVER.
11. ROAD CROSSINGS WERE BACKFILLED WITH CRUSHER DUST COMPACTED TO NOT LESS THAN 95% OF THE STANDARD MAX. DRY DENSITY TO A.S. 1289.
12. SEWER STRUCTURES ARE LOCATED 1.5m FROM THE PROPERTY BOUNDARIES UNLESS NOTED OTHERWISE.
13. PIPE EMBEDMENT IS IN ACCORDANCE WITH 'TYPE 3 SUPPORT' AS DETAILED ON TCC STD DWG SD-461.
14. MANHOLE COVERS ARE EITHER TYPE B OR TYPE D IN ACCORDANCE WITH TOWNSVILLE CITY COUNCIL STANDARD DRAWINGS.

PROPERTY CONNECTION POINTS AT THE ENDS OF PROPERTY CONNECTION SEWERS ARE MARKED WITH A 50mm x 40mm x 200mm YELLOW PAINTED PEG LOCATED ABOVE THE PROPERTY CONNECTION END CAP WITH THE TOP OF THE MARKER PEG 50mm ABOVE THE FINISH SURFACE LEVEL. AN APPROVED BROWN PLASTIC TAPE 50mm WIDE IS ATTACHED TO THE END CAP AND BROUGHT VERTICALLY TO THE SURFACE AND STAPLED TO THE MARKER PEG.

HOUSE CONNECTION TYPES

	TYPE A DIRECT CONN. (<0.5m)
	TYPE B SLOPE-UP (>0.46m)
	TYPE D JUMP-UP (>0.46m)
	TYPE V DIRECT CONN. MH (<200mm)
	TYPE W DIRECT CONN. MH (200-460mm)
	TYPE X INTERNAL DROP (>600mm)



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: *Chad Webb* RPEQ: 12732

for and on behalf of
Empower Engineer & Project Managers

AS CONSTRUCTED

I, RYAN MACHIN, OF SURVEY SOLUTIONS AUSTRALIA, HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE AS CONSTRUCTED DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

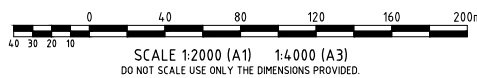
Ryan Machin DATE: 29.03.2023

RYANMACHIN 5502 No. 4700

SURVEY SOLUTIONS AUSTRALIA

ABN: 78 632 363 316 M: (08) 428 258 517
49 Golcochea Drive Bushland Beach, QLD, 4818

NOTE:-
THIS AS CONSTRUCTED CERTIFICATION IS RELEVANT TO STAGE 13C ONLY.

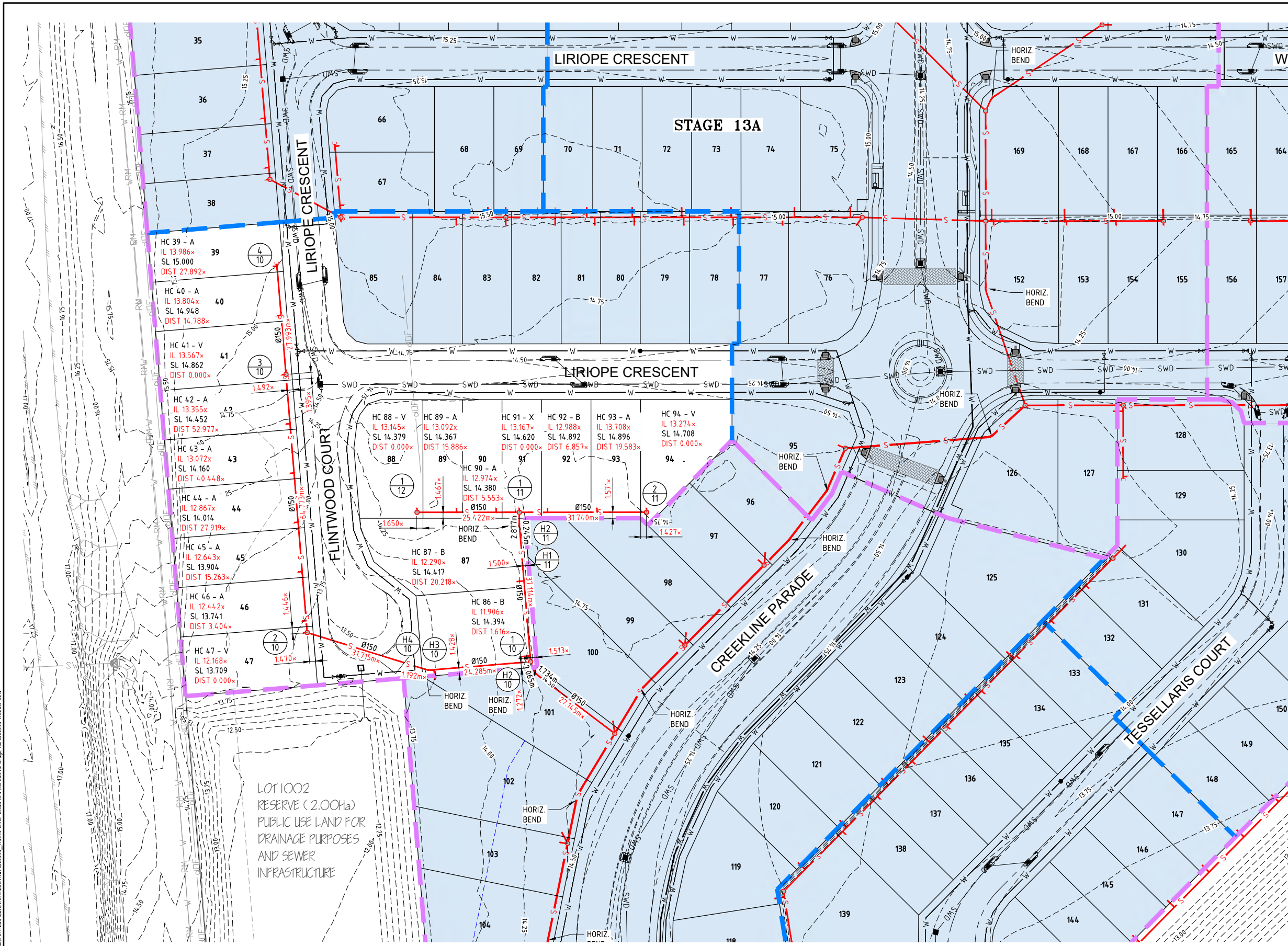


AS CONSTRUCTED

<i>Chad Webb</i>	Registered Engineer	12732
29/3/2023	Date	Register
ENGINEERING CERTIFICATION		
No.	Amendments	Drawn Design Design Chk Appd Date



Client	URBEX PTY LTD	Datum	AHD
Project	THE RESERVE - STAGE 13C	PSM	200645
Title	SEWER RETICULATION LOCALITY AND NOTES	RL	14.410
		(MGA) COORD	
		AS CONSTRUCTED	
		Project No.	Drawing No.
		B00393-CS300	0



- LEGEND**
- STAGE BOUNDARY
 - SUBSTAGE BOUNDARY
 - LOT BOUNDARY
 - - - BARRIER TYPE KERB AND CHANNEL
 - - - MOUNTABLE TYPE KERB AND CHANNEL
 - S — SEWERAGE RETICULATION
 - S — EXISTING SEWER RETICULATION
 - MAINTENANCE HOLE
 - SWD — STORMWATER DRAINAGE
 - W — WATER RETICULATION
 - W — TRUNK WATER RETICULATION BY OTHERS NOT PART OF SUBDIVISION WORKS

AS CONSTRUCTED CERTIFICATION

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APPROVED: *[Signature]* RPEQ: 12732

for and on behalf of Empower Engineer & Project Managers

AS CONSTRUCTED

I, RYAN MACHIN, OF SURVEY SOLUTIONS AUSTRALIA, HEREBY CERTIFY THAT THE WORKS AS SHOWN ON THE AS CONSTRUCTED DRAWINGS REFLECT ANY CHANGES THAT WERE MADE DURING THE COURSE OF CONSTRUCTION.

Ryan Machin DATE: 29.03.2023

RYAN MACHIN SQ0 No. 6760

ABN: 78 632 363 916 M 1401 428 258 517
49 Gairocheva Drive Bushland Beach, QLD, 4818

NOTE:-
THIS AS CONSTRUCTED CERTIFICATION IS RELEVANT TO STAGE 13C ONLY.

0 10 20 30 40 50m
SCALE 1:500 (A1) 1:1000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

AS CONSTRUCTED

[Signature]
Registered Engineer 12732
Date 29/3/2023
Register

ENGINEERING CERTIFICATION

No. Amendments Drawn Design Design Chk Appd Date

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Client **URBEX PTY LTD**

Project **THE RESERVE - STAGE 13C**

Title **SEWER RETICULATION LAYOUT**

Datum **AHD PSM 200645 RL 14.410 (MS) COORD**

AS CONSTRUCTED

Project No. Drawing No. Rev
B00393-CS301 0

User: WILLIAM GRIFFITH File Name: C:\Users\wgriffith\Documents\13314_Civil_DWG\13314_Stage 13C\B00393-ASCON-SEW Date: 27/03/2023 4:41:38 PM

MH/MS No.	8-1	H1.10	(H2.10)	1-10	(H3.10)	(H4.10)	2-10	3-10	4/10
MH/MS TYPE/DROP	S1200	BEND TP	BEND TP	S1050	BEND TP	BEND TP	S1050	S1050	END
MH/MS COVER TYPE	B			B			B	B	END
BRANCH LINE No.				11					
BRANCH DROP				V					
HC DEPTH			IL 12.253	Type A	1.492	IL 12.668	Type V	1.541x	
HC TYPE				Type A	1.299x	Type A	1.261x	Type A	1.147x
HC IL									
HC LOT No.		Lot 101		Lot 47	Lot 46	Lot 45	Lot 44	Lot 43	Lot 39
HC CHAINAGE		24.5		31.449	3	15.5	28	40.5	27.5

MAINTENANCE HOLE TYPES:
 (SEQ-SEW-1101-2)
 P1-P3=PRE-CAST CONCRETE
 A=1000φ CONCRETE B=1200φ CONCRETE
 C=1500φ CONCRETE

MAINTENANCE SHAFTS:
 (SEQ-SEW-1314-1) G=φ225 uPVC

NOTE:

- FOR MANHOLE DROP TYPES REFER SEQ-SEW-1303-1 (INTERNAL DROPS ONLY)
- FOR COVER TYPES REFER SEQ-SEW-1308-1 (DIMENSION H TO BE 150mm FOR NEW SUBDIVISIONS)
- IN-LINE BENDS REFER SEQ-SEW-1314-3
- FOR HC TYPES AND DROPS REFER SEQ-SEW-1104-1 & SEQ-SEW-1105-1
- HC TYPES INTO MANHOLES NOMINATED AS PER MANHOLE DROP TYPES

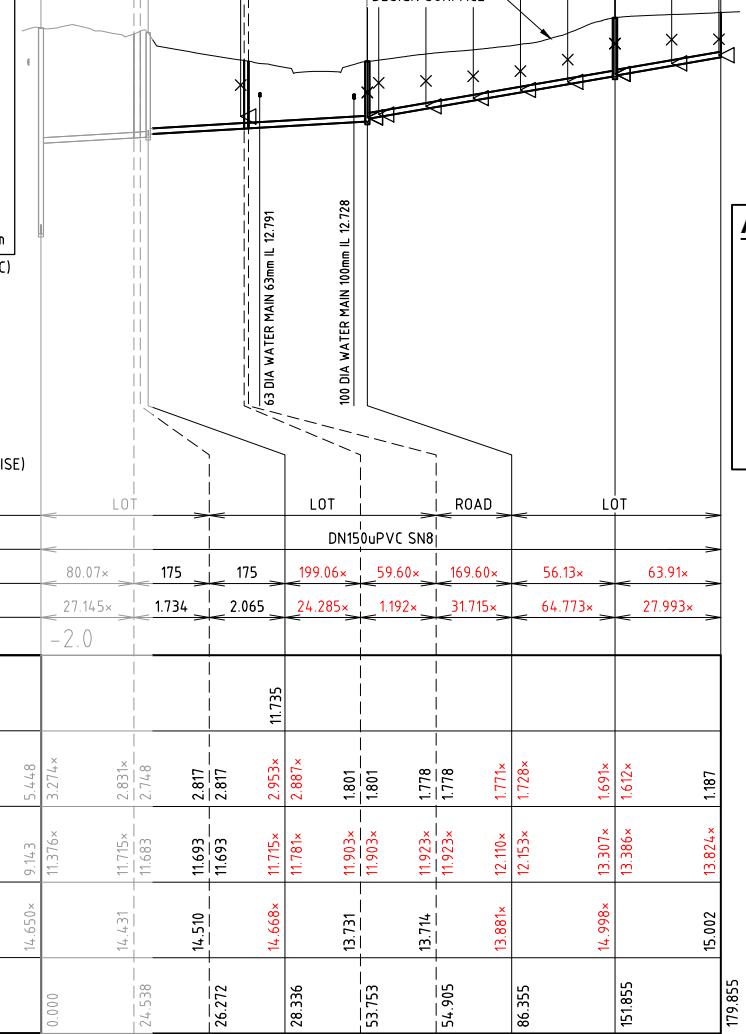
* DEPTHS SHOWN ARE OVER SEWER MAIN, DEPTHS AT END OF HC CHECKED TO BE <1.5m

(CTM CODE DRAWING LIST NOTES SPECIFIC TO CTC)

LEGEND

- X ALLOTMENT CONTROL LEVEL
- ∇ HOUSE CONNECTION
- Bolt BOLT DOWN COVER

PIPE EMBEDMENT TYPE 3 (UNLESS GEOTECH CONDITIONS REQUIRE OTHERWISE)



MH/MS No.	1-10	H1.11	(H2.11)	1-11	2-11			
MH/MS TYPE/DROP	S1050	BEND TP	BEND TP	S1050	S1050			
MH/MS COVER TYPE	B			B	B			
BRANCH LINE No.								
BRANCH DROP								
HC DEPTH		IL 11.906x	Type B	12.888x	IL 12.291x	Type B	2.271x	
HC TYPE				Type B	Type X	1.453x	Type B	1.904x
HC IL								
HC LOT No.	Lot 86	Lot 87	Lot 91	Lot 92	Lot 93	Lot 94		
HC CHAINAGE	15	20.518	28.77	7.63	19.643	32.886		

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: *Chk. Wh* RPEQ: 12732

for and on behalf of Empower Engineer & Project Managers

Empower
ENGINEERS & PROJECT MANAGERS

LINE	11	12
DIAMETER/TYPE	DN150uPVC SN8	DN150uPVC SN8
GRADE (1 in X)		
LENGTH	49.42x	47.34x
DATUM (m)	-1.0	0.0
BRANCH INVERT LEVEL		
DEPTH BELOW F.S.L.	11.715x	12.479x
INVERT LEVEL	11.728x	12.557x
MH LID	14.688x	14.714x
CHAINAGE	0.000	0.000

MH/MS No.	1-11	1-12	
MH/MS TYPE/DROP	S1050	S1050	
MH/MS COVER TYPE	B	B	
BRANCH LINE No.			
BRANCH DROP			
HC DEPTH	IL 12.974x	Type A	1.406x
HC TYPE	Type A	Type A	1.275x
HC IL			
HC LOT No.	Lot 90	Lot 89	Lot 88
HC CHAINAGE	5.857	15.857	25.857

AS CONSTRUCTED CERTIFICATION

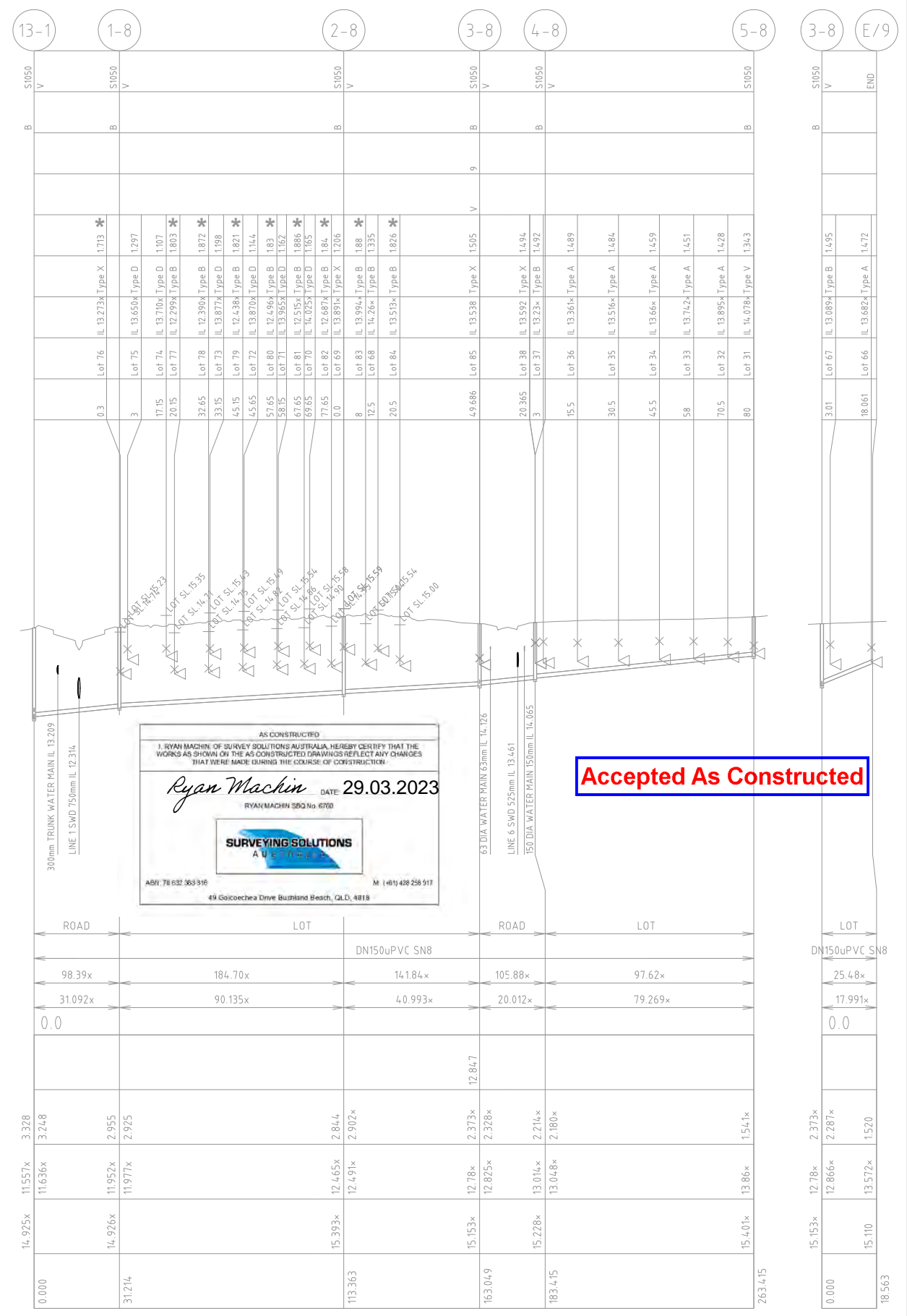
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APPROVED: *Chk. Wh* RPEQ: 12732

for and on behalf of Empower Engineer & Project Managers

Empower
ENGINEERS & PROJECT MANAGERS

LINE	12
DIAMETER/TYPE	DN150uPVC SN8
GRADE (1 in X)	
LENGTH	47.34x
DATUM (m)	0.0
BRANCH INVERT LEVEL	
DEPTH BELOW F.S.L.	12.479x
INVERT LEVEL	12.557x
MH LID	14.714x
CHAINAGE	0.000



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: *Ryan Machin* DATE: 29.03.2023
 RYANMACHIN SQC No 6700

SURVEYING SOLUTIONS AUSTRALIA
 49 Goicoechea Drive Bushland Beach, QLD, 4818

Accepted As Constructed

NOTE:-
 THIS AS CONSTRUCTED CERTIFICATION IS RELEVANT TO STAGE 13C ONLY.

AS CONSTRUCTED

Chk. Wh
 Registered Engineer
 29/3/2023
 Date Register
 12732

EMPLOYER CERTIFICATION
 Drawn Design Design Chk Appd Date

THE Reserve
From the developers of Kalynda Chase

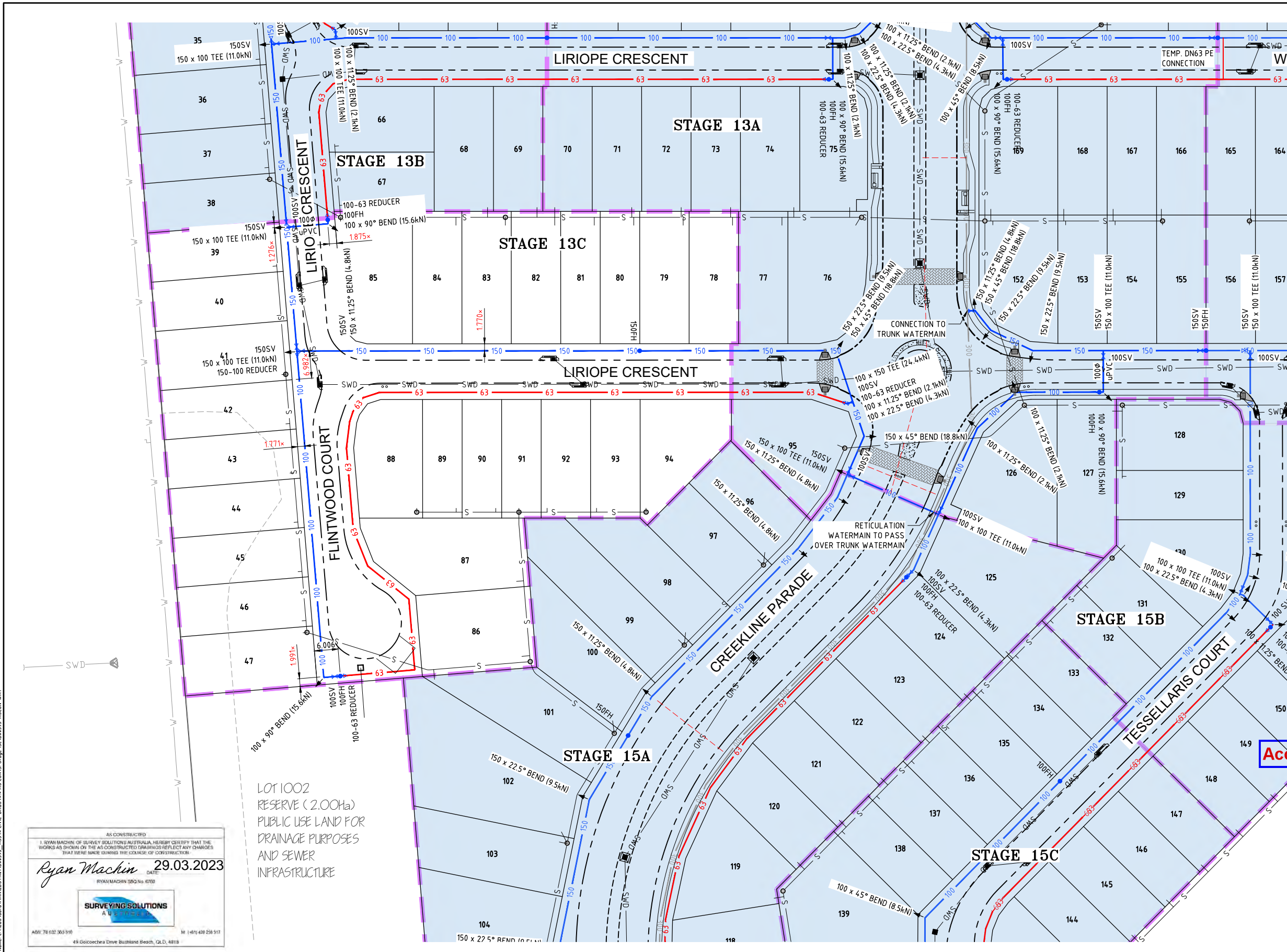
urbex designed for life

Empower
ENGINEERS & PROJECT MANAGERS
ABN 23 010 743 692

Client	URBEX PTY LTD	Da'um	AHD PSM 200645
Project	THE RESERVE - STAGE 13C	RL	14.410 (MGA) COORD
Title	SEWER RETICULATION LONGITUDINAL SECTIONS	AS CONSTRUCTED	
Project No.	B00393-CS302	Drawing No.	0
Rev	0		

0	AS CONSTRUCTED	JT	PDW	OR	OR	27/03/23
No.	Amendments	Drawn	Design	Design Chk	Appd	Date

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- LEGEND**
- STAGE BOUNDARY
 - SUBSTAGE BOUNDARY
 - LOT BOUNDARY
 - BARRIER TYPE KERB AND CHANNEL
 - MOUNTABLE TYPE KERB AND CHANNEL
 - 63 DN63 PE WATER MAIN
 - 100 DN100 uPVC WATER MAIN
 - 150 DN150 uPVC WATER MAIN
 - 300 DN300 TRUNK WATER MAIN BY OTHERS NOT PART OF SUBDIVISION WORKS
 - 355 DN355 TRUNK WATER MAIN BY OTHERS NOT PART OF SUBDIVISION WORKS
 - 375 DN375 TRUNK WATER MAIN BY OTHERS NOT PART OF SUBDIVISION WORKS
 - IRRIGATION ENVELOPE CONDUIT AS PER LANDSCAPE DRAWINGS
 - SWD STORMWATER DRAINAGE
 - H STORMWATER MAINTENANCE HOLE
 - S STORMWATER CATCHPITS
 - S SEWER RETICULATION

- SYMBOLS**
- HYDRANT TEE FH
 - ISOLATION VALVE SV
 - GATE VALVE SGV
 - END CAP
 - THRUST BLOCK ▶

- WATER NOTES**
1. ALL WATER MAINS ARE LOCATED 1.8m ALIGNMENT OFFSET FROM PROPERTY BOUNDARIES UNLESS SHOWN OTHERWISE.
 2. THIS DRAWING IS READ IN CONJUNCTION WITH TOWNSVILLE CITY COUNCIL STANDARD DRAWINGS (WATER).
 3. ALL uPVC MAINS ARE SERIES 2, PN16 TO AS/NZS 1477 RUBBER RING JOINTED, WITH SOCKETED D.I.C.L. FITTINGS UNLESS NOTED OTHERWISE.
 4. CONNECTION TO EXISTING WATER MAINS ARE CARRIED OUT BY TOWNSVILLE CITY COUNCIL AT THE CONTRACTOR'S COST.
 5. CONTRACTOR TO VERIFY ALL UNDERGROUND SERVICES WITH THE RELATIVE AUTHORITIES PRIOR TO ANY EXCAVATION.
 6. WHERE REQUIRED uPVC WATER MAINS ARE DIVERTED UNDER STORMWATER LINES BY WAY OF 4x45° BENDS OR BY PIPE DEFLECTION IN Ø63 POLY PIPE.

Accepted As Constructed

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: *Chad Webb* RPEQ: 12732

for and on behalf of Empower Engineer & Project Managers

NOTE:-
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AS CONSTRUCTED

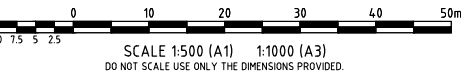
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Ryan Machin 29.03.2023

RYAN MACHIN SQD No. 6702

SURVEYING SOLUTIONS
A U S T R A L I A

ABN: 78 032 363 918 M: (07) 428 258 517
49 Golcochea Drive Bushland Beach, QLD, 4818



AS CONSTRUCTED

Chad Webb
Registered Engineer
29/3/2023 12732
Date Register
ENGINEERING CERTIFICATION



Client **URBEX PTY LTD**
Project **THE RESERVE - STAGE 13C**
Title **WATER RETICULATION LAYOUT**

Datum **AHD PSM 200645 RL 14.410 (MGA) COORD**

AS CONSTRUCTED

Project No. Drawing No. Rev
B00393-CW301 0

No.	Amendments	JT	PDW	OR	OR	27/03/23	DATE
0	AS CONSTRUCTED						29/03/2023

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