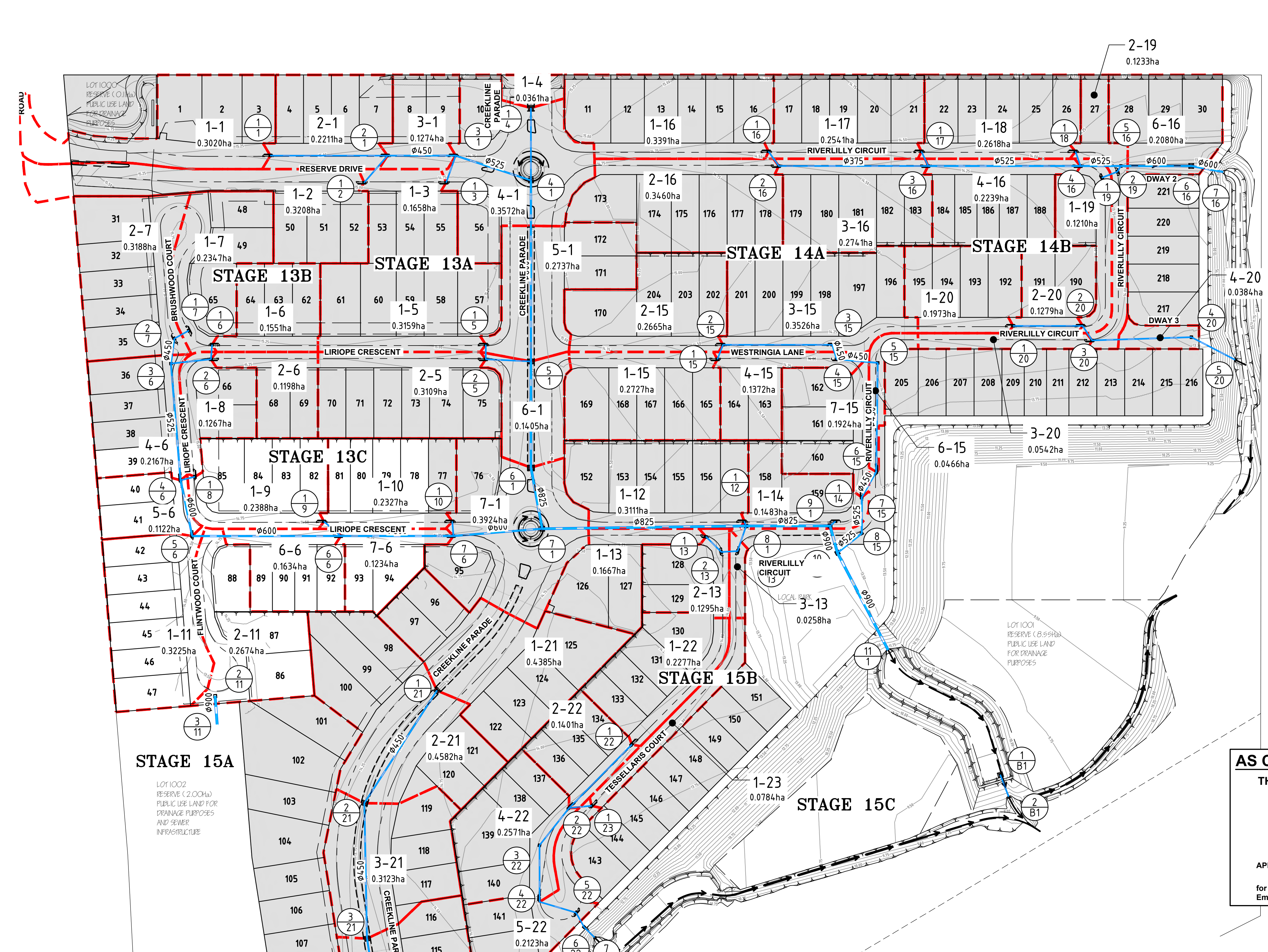


Catchment	Area (Ha)
1-1	0.3020ha
1-10	0.2327ha
1-11	0.3225ha
1-12	0.3111ha
1-13	0.1667ha
1-14	0.1483ha
1-15	0.2727ha
1-16	0.3391ha
1-17	0.2541ha
1-18	0.2618ha
1-19	0.1210ha
1-2	0.3208ha
1-20	0.1973ha
1-21	0.4385ha
1-22	0.2277ha
1-23	0.0784ha
1-3	0.1658ha
1-4	0.0361ha
1-5	0.3159ha
1-6	0.1551ha
1-7	0.2347ha
1-8	0.1267ha
1-9	0.2388ha
2-1	0.2211ha
2-11	0.2674ha
2-13	0.1295ha
2-15	0.2665ha
2-16	0.3460ha
2-19	0.1233ha
2-20	0.1279ha
2-21	0.4582ha
2-22	0.1401ha
2-5	0.3109ha
2-6	0.1198ha
2-7	0.3188ha
3-1	0.1274ha
3-13	0.0258ha
3-15	0.3526ha
3-16	0.2741ha
3-20	0.0542ha
3-21	0.3123ha
4-1	0.3572ha
4-15	0.1372ha
4-16	0.2239ha
4-20	0.0384ha
4-21	0.4134ha
4-22	0.2571ha
4-6	0.2167ha
5-1	0.2737ha
5-21	0.3333ha
5-22	0.2123ha
5-6	0.1122ha
6-1	0.1405ha
6-15	0.0466ha
6-16	0.2080ha
6-6	0.1634ha
7-1	0.3924ha
7-15	0.1924ha
7-6	0.1234ha

LEGEND

- FINISHED SURFACE CONTOURS (0.25m INTERVALS)
- LOT BOUNDARY
- STORMWATER MAINTENANCE HOLE
- STORMWATER CATCHPITS
- STORMWATER HEADWALL
- STORMWATER FIELD INLET
- STORMWATER DRAINAGE (375mm DIA RCP UNLESS NOTED OTHERWISE)
- EXISTING STORMWATER DRAINAGE
- STORMWATER CATCHMENT
- ULTIMATE STORMWATER CATCHMENT
- STORMWATER STRUCTURE NUMBER
- BARRIER TYPE KERB AND CHANNEL
- MOUNTABLE TYPE KERB AND CHANNEL
- EDGE OF SURFACING
- OPEN CHANNEL

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 SBQ No. 6702

SURVEYING SOLUTIONS AUSTRALIA

ABN: 78 632 363 319 M: (+61) 428 258 517

49 Goicoechea Drive Bushland Beach, QLD, 4818

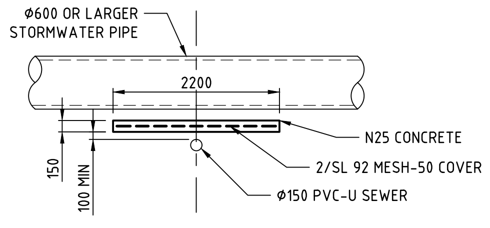
AS CONSTRUCTED CERTIFICATION

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 : [signature] RPEQ: 12732

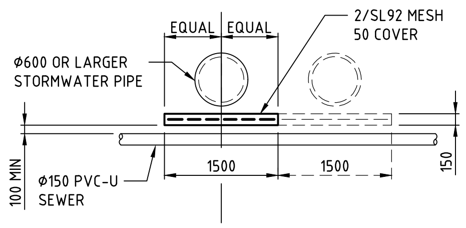
for and on behalf of Empower Engineer & Project Managers

Accepted As Constructed



BRIDGING SLAB ELEVATION

SCALE 1:50 (A1)



BRIDGING SLAB END ELEVATION

SCALE 1:50 (A1)

SCALE 1:50 (A1) 1:100 (A3)

DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

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

AS CONSTRUCTED

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

Registered Engineer 29/3/2023 (Date) 12732 (Register)

ENGINEERING CERTIFICATION

THE Reserve — From the developers of Kalynda Chase — urbex

Empower ENGINEERS & PROJECT MANAGERS ABN 23 010 743 692

Client: URBEX PTY LTD

Project: THE RESERVE - STAGE 13C

Title: Q2 STORMWATER DRAINAGE CATCHMENT PLAN

Datum: AHD PSM 200645 RL 14.410 (MGA) COORD

AS CONSTRUCTED

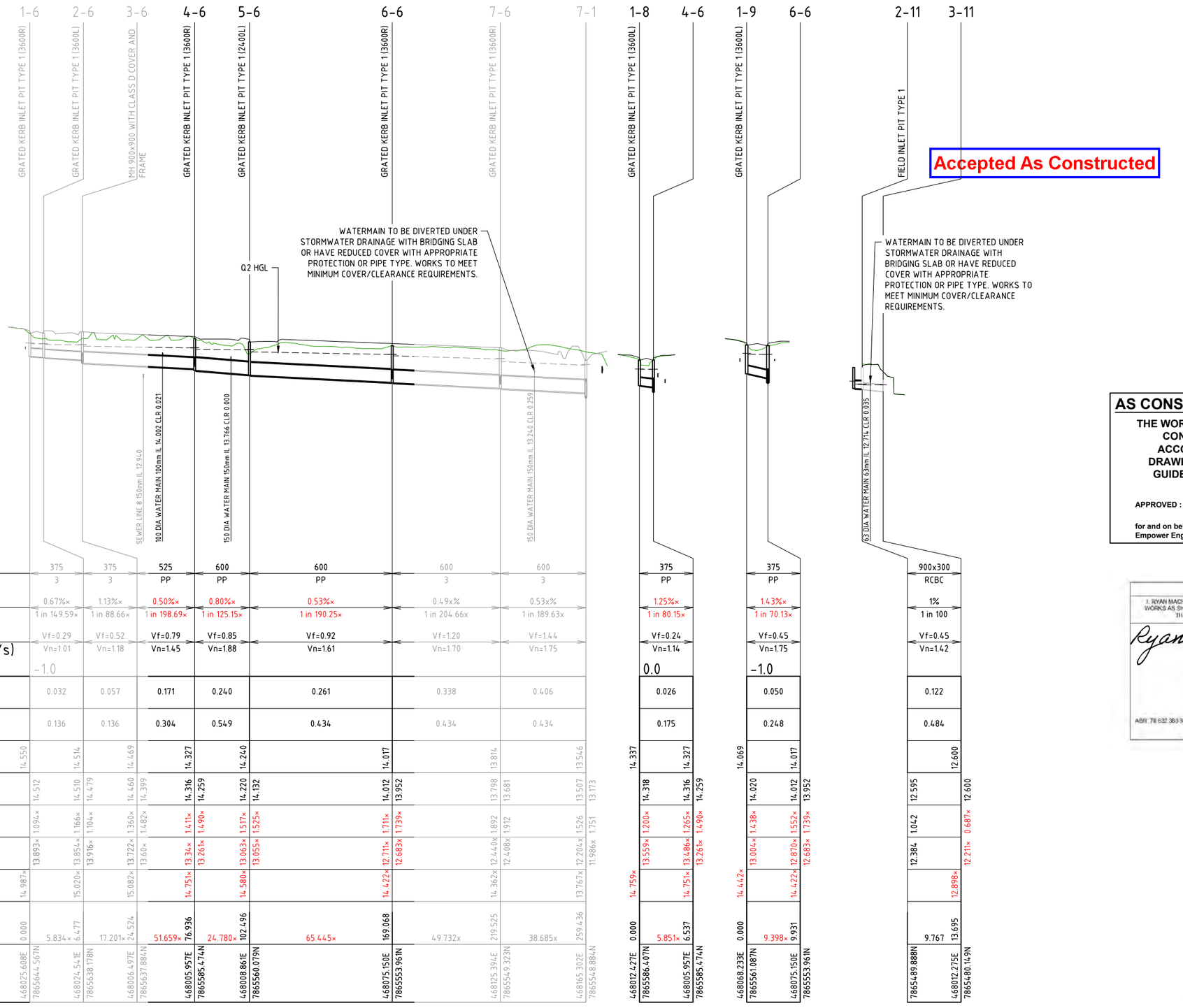
Project No. / Drawing No.: B00393-CD301 Rev 0

NOTE:

1. ALL DRAINAGE PIPES ARE 375 UNLESS NOTED OTHERWISE.
2. ALL DRAINAGE PIPES ARE CLASS 3 RCP UNLESS NOTED OTHERWISE
3. ALL REINFORCED CONCRETE PIPES ARE RUBBER RING JOINTED UNLESS NOTED OTHERWISE.
4. REFER TCC STANDARD DRAWING NUMBER SD-205 FOR MANHOLE DETAILS.
5. REFER TCC STANDARD DRAWING NUMBER SD-200 FOR GULLY PIT DETAILS.
6. REFER TCC STANDARD DRAWING NUMBER SD-200 FOR PRECAST LINTEL DETAILS.
7. REFER TCC STANDARD DRAWING NUMBER SD-215 FOR FIELD INLET DETAILS.
8. REFER TCC STANDARD DRAWING NUMBER SD-085 FOR KERB ADAPTOR DETAILS.
9. ALL MANHOLES WERE BENCHED TO TCC REQUIREMENTS.

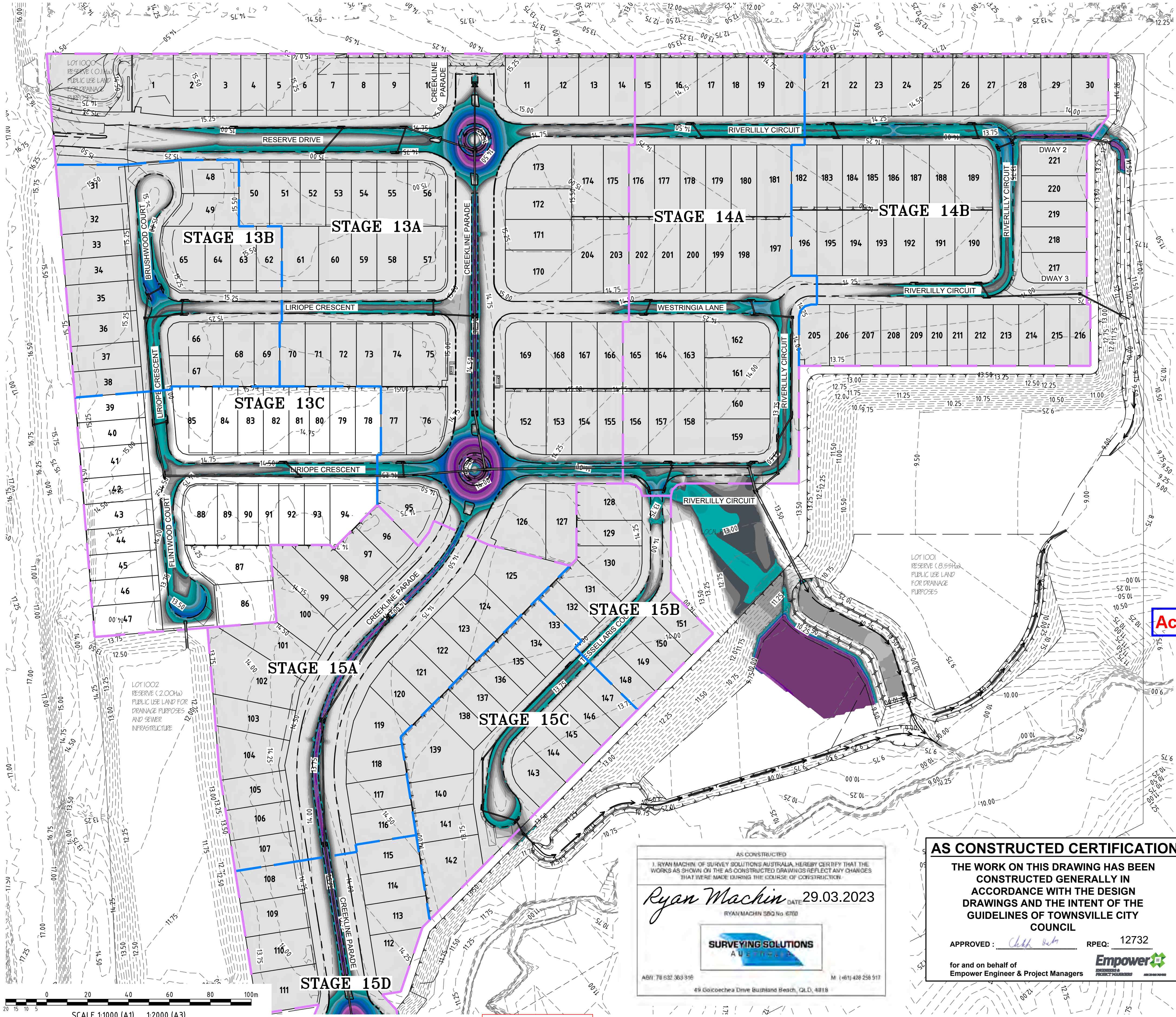
EXISTING SERVICES LOCATIONS SHOWN ARE APPROXIMATE ONLY. THEY HAVE BEEN DERIVED FROM TYPICAL SERVICE LEVEL DEPTHS.

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



Accepted As Constructed

| | | |



SCALE 1:1000 (A1) 1:2000 (A3)
DO NOT SCALE USE ONLY THE DIMENSIONS PROVIDED.

JOINS A-A ABOVE

LEGEND

- STAGE BOUNDARY
- SUBSTAGE BOUNDARY
- LOT BOUNDARY
- TOP OF BATTER
- BARRIER TYPE KERB AND CHANNEL
- MOUNTABLE TYPE KERB AND CHANNEL
- STORMWATER DRAINAGE (375mm DIA RCP UNLESS NOTED OTHERWISE)
- ESTIMATED EXTENT OF Q100 STORM EVENT

DEPTH COLOURING NOTES

1. THE DEPTH COLOURING SHOWN HAS BEEN DERIVED USING XPSTORM SOFTWARE.
2. THE COLOURING SHOWN REPRESENTS THE RESULTS ONLY WHERE A CONCENTRATION OF FLOWS ACROSS THE PROPOSED DESIGN PROFILE WILL OCCUR, IGNORING SHALLOW SHEET FLOWS AT TOP OF CATCHMENTS.
3. THE FLOWS USED TO DETERMINE DEPTHS ARE CALCULATED TOTAL Q100 CATCHMENT FLOWS MINUS Q2 PIPED FLOWS. THIS IS CONSERVATIVE, AS PIT AND PIPE FLOWS WILL CONVEY MORE THAN Q2 DURING HIGHER A Q100 EVENT. CONSERVATIVELY, FLOWS USED IN THE MODELLING ARE PEAK FLOWS AND ARE NOT CALCULATED USING HYDROGRAPHS FOR THE DIFFERING CATCHMENTS.
4. BASED ON PREVIOUS FLOOD MODELLING BY OTHERS, Q100 FLOOD LEVELS SOUTH OF THE SITE IN THREE MILE CREEK VARY FROM RL 13.3m (WESTERN SIDE) TO RL 13.2m (EASTERN SIDE)

Q100 FLOOD DEPTH RANGE

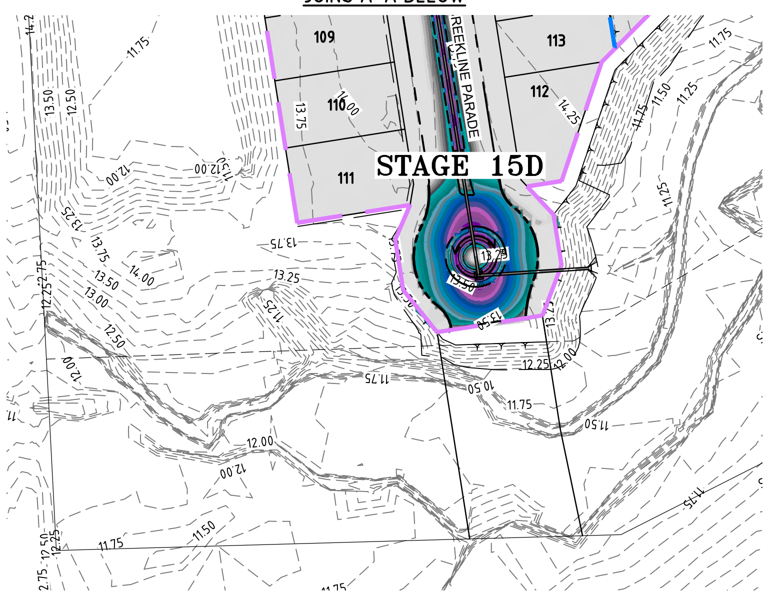
FLOOD WATER DEPTH (WIDTHS AS SHOWN)

- <0.02m
- 0.02m - 0.04m
- 0.04m - 0.06m
- 0.06m - 0.08m
- 0.08m - 0.10m
- 0.10m - 0.12m
- 0.12m - 0.14m
- 0.14m - 0.16m
- 0.16m - 0.18m
- 0.18m - 0.20m
- 0.20m - 0.22m
- 0.22m - 0.24m
- 0.24m - 0.26m
- 0.26m - 0.28m
- 0.28m - 0.30m
- 0.30m - 0.32m
- 0.32m - 0.34m
- 0.34m - 0.36m
- 0.36m - 0.38m
- 0.38m - 0.40m
- >0.40m

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

Accepted As Constructed

JOINS A-A BELOW



AS CONSTRUCTED

1. 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 SSQ No. 6700

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49 Golcoechea Drive Bushland Beach, QLD, 4818

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APPROVED : [signature] RPEQ: 12732

for and on behalf of
Empower Engineer & Project Managers

AS CONSTRUCTED

Registered Engineer: [signature]
29/3/2023 — Register: 12732
ENGINEERING CERTIFICATION

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

THE Reserve — From the developers of Kalynda Chase — urbex

Empower ENGINEERS & PROJECT MANAGERS — ABN 23 010 743 692

Client: URBEX PTY LTD
Project: THE RESERVE - STAGE 13C
Title: ESTIMATED EXTENT OF Q100 STORMWATER EVENT PLAN

Datum: AHD
PSM 200645
RL 14.410
(MGA) COORD

AS CONSTRUCTED

Project No.	Drawing No.	Rev
B00393-CD303		0