

- NOTES
- EARTHWORKS CUT AND FILL VOLUMES CONSIDER MATERIAL COMPACTED IN PLACE AND DO NOT INCLUDE A BULKING FACTOR FOR TRANSPORTATION.
 - CONTOURS AND DESIGN LEVELS SHOWN REPRESENT THE DESIGN FINISHED SURFACE LEVELS. CONTOUR INTERVALS ARE AT 0.5m.
 - 0.14m OF TOPSOIL STRIPPING HAS BEEN ALLOWED FOR IN THE EARTHWORKS MODELLING FOR ALL AREAS AS PER THE RECOMMENDATIONS OF SGS GEOTECHNICAL REPORT.
 - AN ALLOWANCE OF 0.540m HAS BEEN MADE IN THE BULK EARTHWORKS MODELLING TO ACCOUNT FOR ANTICIPATED FUTURE PAVEMENT BOX-OUT AND DETAILED CIVIL WORKS SURFACE GRADING, WITH LEVELS TO BE CONFIRMED.
 - THE DESIGN SURFACE LEVELS HAVE BEEN BOXED OUT BY 0.10m IN ROAD RESERVES TO ALLOW FOR VERGE WORKS. SIMILARLY, 0.10m BOX OUT HAS BEEN TAKEN OFF LOT AREAS TO ALLOW FOR TOPSOIL REPLACEMENT.

BULK EARTHWORKS SCHEDULE		
CUT / FILL	ITEM	VOLUME (M³)
FILL	TOTAL FILL	106228
CUT	TOTAL CUT	84411
	EXCESS OF FILL OVER CUT	21817

- NOTES
- ALL EARTHWORKS BATTERS SHOWN ARE 1V IN 1.5H (FOR SHORT TERM GLOBAL SLOPE STABILITY) WITH 1.0m WIDE BENCHES INCORPORATED AT 2.0m HEIGHT INTERVALS.
 - A RETAINING WALL IS PROPOSED AS PART OF THE BASIN EMBANKMENT DESIGN TO REDUCE IMPACT ON VEGETATION.
 - NO ALLOWANCE IS MADE FOR UNSUITABLE MATERIAL IN THE FILLING OF THE EXISTING DAM.
 - THE BIO-RETENTION AND DETENTION BASINS HAVE BEEN SIZED USING DRAINS HYDROLOGICAL AND HYDRAULIC MODELLING.
 - NO ALLOWANCE HAS BEEN MADE FOR THE 'BOXING OUT' OF BIO-RETENTION BASIN ZONES FOR FILTER MEDIA AND DRAINAGE LAYERS.
 - ALL PROPOSED ALLOTMENTS ARE GRADED AT 1 IN 150 MINIMUM FALL TO THE ROAD RESERVE. IT IS ASSUMED THAT THE ACCESS LOCATION FOR DRIVEWAYS IS APPROXIMATELY MID-LOT FRONTAGE UNLESS NOTED OTHERWISE.
 - THE ROAD CROSS SECTION ELEMENTS ARE DESIGNED AS AN INDUSTRIAL ACCESS STREET (24m WIDE).
 - ALL ALLOTMENTS ACHIEVE A MINIMUM 2,000m² TOTAL AREA.
 - NO ALLOWANCE HAS BEEN MADE FOR MATERIAL 'WON' FROM TRENCH SPOIL.
 - EXISTING BASE SURVEY PROVIDED BY CLIENT IS POSITIONED ON AN ARBITRARY COORDINATE SYSTEM, NOT MGA94 OR GDA2020

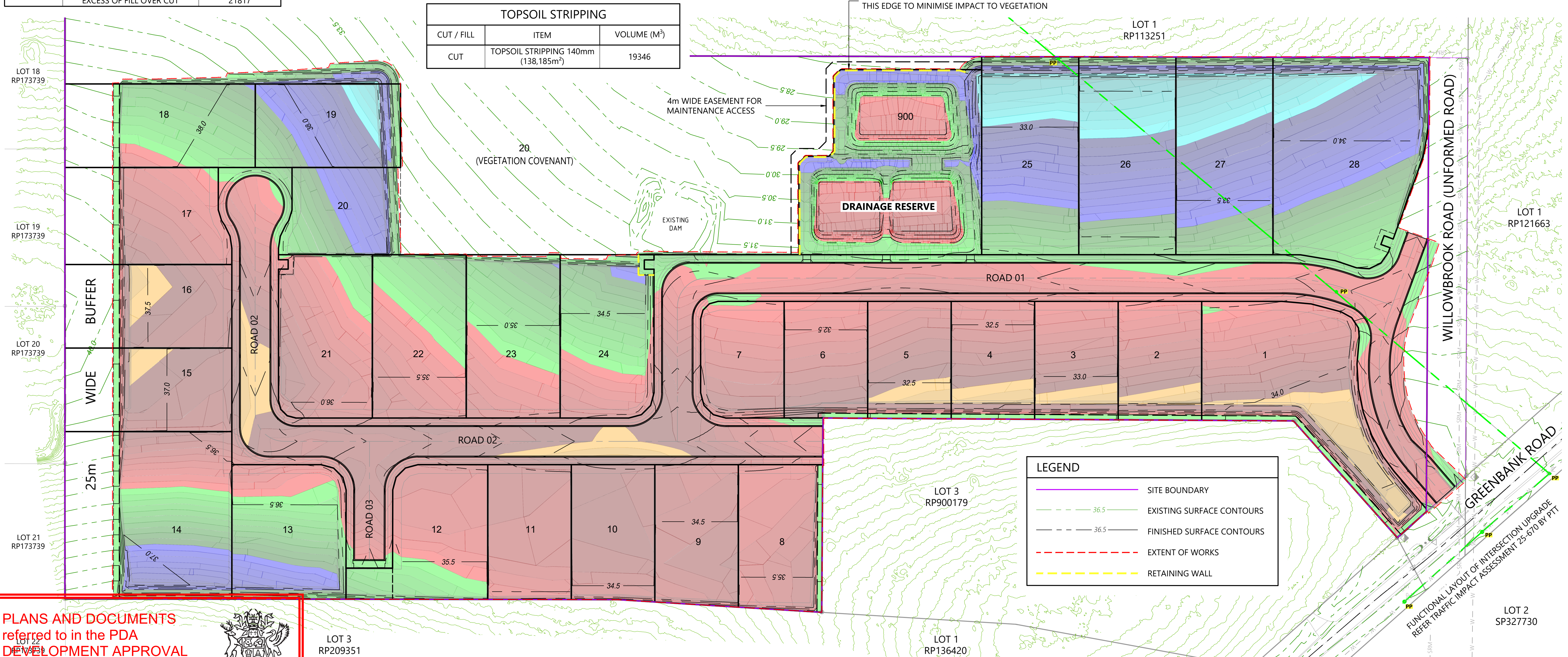
BULK EARTHWORKS LEGEND				
FILL	4.0	to	4.2	m
	4.2	to	4.4	m
	4.4	to	4.6	m
	4.6	to	4.8	m
	4.8	to	5.0	m
	5.0	to	5.2	m
	5.2	to	5.4	m
	5.4	to	5.6	m
	5.6	to	5.8	m
	5.8	to	30	m

BULK EARTHWORKS LEGEND				
FILL	2.0	to	2.2	m
	2.2	to	2.4	m
	2.4	to	2.6	m
	2.6	to	2.8	m
	2.8	to	3.0	m
	3.0	to	3.2	m
	3.2	to	3.4	m
	3.4	to	3.6	m
	3.6	to	3.8	m
	3.8	to	4.0	m

BULK EARTHWORKS LEGEND				
FILL	0.0	to	0.2	m
	0.2	to	0.4	m
	0.4	to	0.6	m
	0.6	to	0.8	m
	0.8	to	1.0	m
	1.0	to	1.2	m
	1.2	to	1.4	m
	1.4	to	1.6	m
	1.6	to	1.8	m
	1.8	to	2.0	m

BULK EARTHWORKS LEGEND				
CUT	-2.0	to	-1.8	m
	-1.8	to	-1.6	m
	-1.6	to	-1.4	m
	-1.4	to	-1.2	m
	-1.2	to	-1.0	m
	-1.0	to	-0.8	m
	-0.8	to	-0.6	m
	-0.6	to	-0.4	m
	-0.4	to	-0.2	m
	-0.2	to	0.0	m

BULK EARTHWORKS LEGEND				
CUT	-4.0	to	-3.8	m
	-3.8	to	-3.6	m
	-3.6	to	-3.4	m
	-3.4	to	-3.2	m
	-3.2	to	-3.0	m
	-3.0	to	-2.8	m
	-2.8	to	-2.6	m
	-2.6	to	-2.4	m
	-2.4	to	-2.2	m
	-2.2	to	-2.0	m



PLANS AND DOCUMENTS referred to in the PDA DEVELOPMENT APPROVAL

Approval no: DEV2025/1661

Date: 27 November 2025



ISSUE	DESCRIPTION	AUTHOR	DATE
02	FOR DA APPROVAL	IG	29.09.25
01	FOR DA APPROVAL	IG	11.07.25

FOR DA APPROVAL NOT FOR CONSTRUCTION

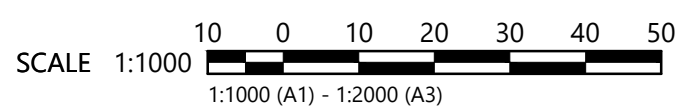
R.P.E.Q No:	CERTIFIED
HEIGHT DATUM	AHD
GRID	LOCAL
ORIGINAL SIZE	A1

SURVEYOR



59 Anderson Street
Fortitude Valley QLD 4006
JENSEN BOWERS

SCALE



BULK EARTHWORKS PLAN
SCALE 1:1000

CLIENT

NORHART

ARCHITECT

24 Cansdale Street
Yeronga QLD 4104

MICHAEL BALE & ASSOCIATES
Structural and Civil Engineering Consultancy
Level 3, 18 Orchard Avenue,
Surfers Paradise
PO BOX 1715, Surfers Paradise 4217
Ph: 07 5538 0431
mail@michaelbale.com.au

PROJECT TITLE:

FLAGSTONE INDUSTRIAL PARK
820 GREENBANK ROAD
NORTH MACLEAN

DRAWING TITLE:

BULK EARTHWORKS
PLAN

NOTES:

THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.

DRAWING No.	PROJECT No.	REVISION
DA04	G24079	02

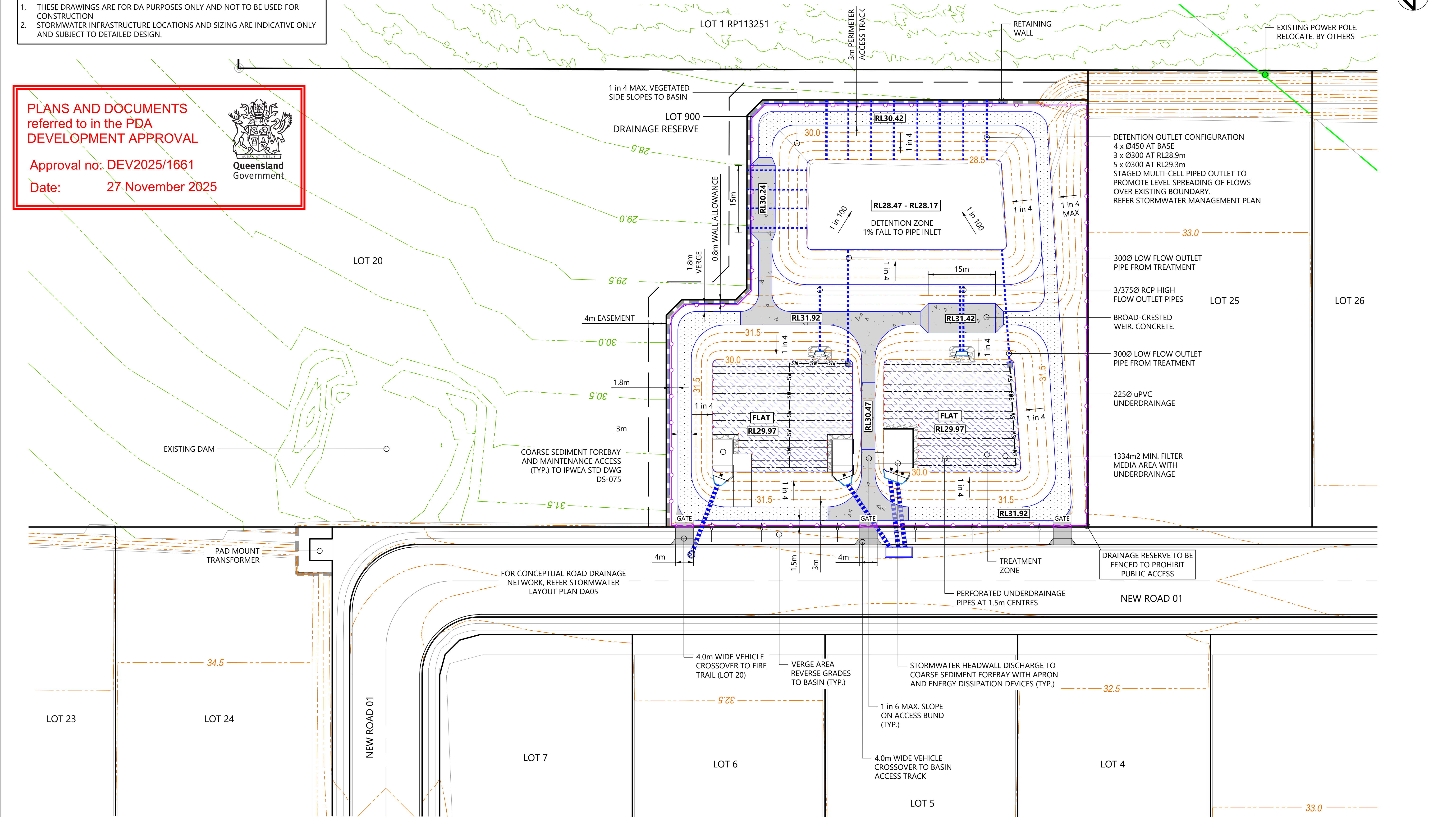
NOTES / WARNINGS

- THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION
- STORMWATER INFRASTRUCTURE LOCATIONS AND SIZING ARE INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN.

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1661

Date: 27 November 2025



BIO-RETENTION AND DETENTION BASIN PLAN

SCALE 1:1000

				STATUS				SURVEYOR				CLIENT				PROJECT TITLE:				NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.											
				FOR DA APPROVAL NOT FOR CONSTRUCTION				 JENSEN BOWERS				 NORHART				24 Cansdale Street Yeronga QLD 4104								24 Cansdale Street Yeronga QLD 4104				FLAGSTONE INDUSTRIAL PARK 820 GREENBANK ROAD NORTH MACLEAN			
				R.P.E.Q No : CERTIFIED																											
				HEIGHT DATUM				AHD				DESIGNER				IG								SCALE				ARCHITECT			
				GRID				LOCAL				CHECKER				MB								SCALE 1:400				Level 3, 18 Orchid Avenue, Surfers Paradise PO BOX 1715, Surfers Paradise 4217 Ph: 07 5538 0431 mail@michaelbale.com.au			
				ORIGINAL SIZE				A1				APPROVER				MB								1:400 (A1) - 1:800 (A3)							
02				FOR DA APPROVAL				DB				29.09.25																			
01				FOR DA APPROVAL				IG				11.07.25																			
ISSUE				DESCRIPTION				AUTHOR				DATE												DRAWING TITLE:							
																								BIO-RETENTION AND DETENTION BASIN PLAN							
																								DRAWING No. PROJECT No. REVISION							
																								DA06 - G24079 - 02							

LEGEND

SITE BOUNDARY

EX. WATER (GREENBANK RD)

EX. WATER MAIN (WILLOWBROOK RD)

EX. SEWER RISING MAIN

DN300 WATER MAIN

FUTURE DN300 WATER MAIN

DN200 WATER MAIN

DN150 WATER MAIN

NOTES / WARNINGS

1.

THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION.

2.

DMA FEED / PRV AND FLOW METER GENERAL ARRANGEMENT SHOWN ONLY. FINAL DETAILS TO BE CONFIRMED AT DETAILED DESIGN.

3.

CUT IN CONNECTION AND OFFTAKE TEE ARRANGEMENT SHOWN INDICATIVELY. SUBJECT TO DETAILED DESIGN AND FURTHER SERVICES INVESTIGATION.

INSET A SCALE 1:40

DN300 CUT IN CONNECTION

AS PER:
SEQ-WAT-1105-1 AND
SEQ-WAT-1105-2

PROPOSED DN300
DICL WATER MAIN TO
WILLOWBROOK ROAD

LONG TYPE GIBAULT
MECHANICAL
COUPLING

EXISTING TRUNK
WATER MAIN

DN300 FL-FL HYDRANT

PROVIDE 600mm MIN.
LENGTH DN300 DICL SHORT

DN300 FL-FL VALVE WITH
THRUST RESTRAINT

REFER NOTE 3

EXISTING TRUNK
WATER MAIN

LONG TYPE GIBAULT
MECHANICAL
COUPLING

MASS CONCRETE
THRUST
RESTRAINT

DN300 DICL
SOC-SOC-FL TEE

INSET B SCALE 1:40

PROVISION OF DN200 TEE

AS PER:
SEQ-WAT-1303-1

PROPOSED DN300
DICL WATER MAIN

MASS CONCRETE
THRUST
RESTRAINT

600mm MIN.
LENGTH DN300
DICL SHORT

FL-FL HYDRANT

END
BLOCK

DN200 FL-FL VALVE WITH
THRUST RESTRAINT

DN300-DN200 DICL
SOC-SOC-FL
REDUCING TEE

INSET C SCALE 1:40

DMA FEED (FLOW METER)

SCALE 1:40

0.4 0 0.4 0.8 1.2 1.6 2.0

1:40 (A1) - 1:80 (A3)

SECTION A

GENERAL ARRANGEMENT
SHOWN IN ACCORDANCE
WITH SEQ-WAT-1310-5-A
PROVIDED BY EDQ

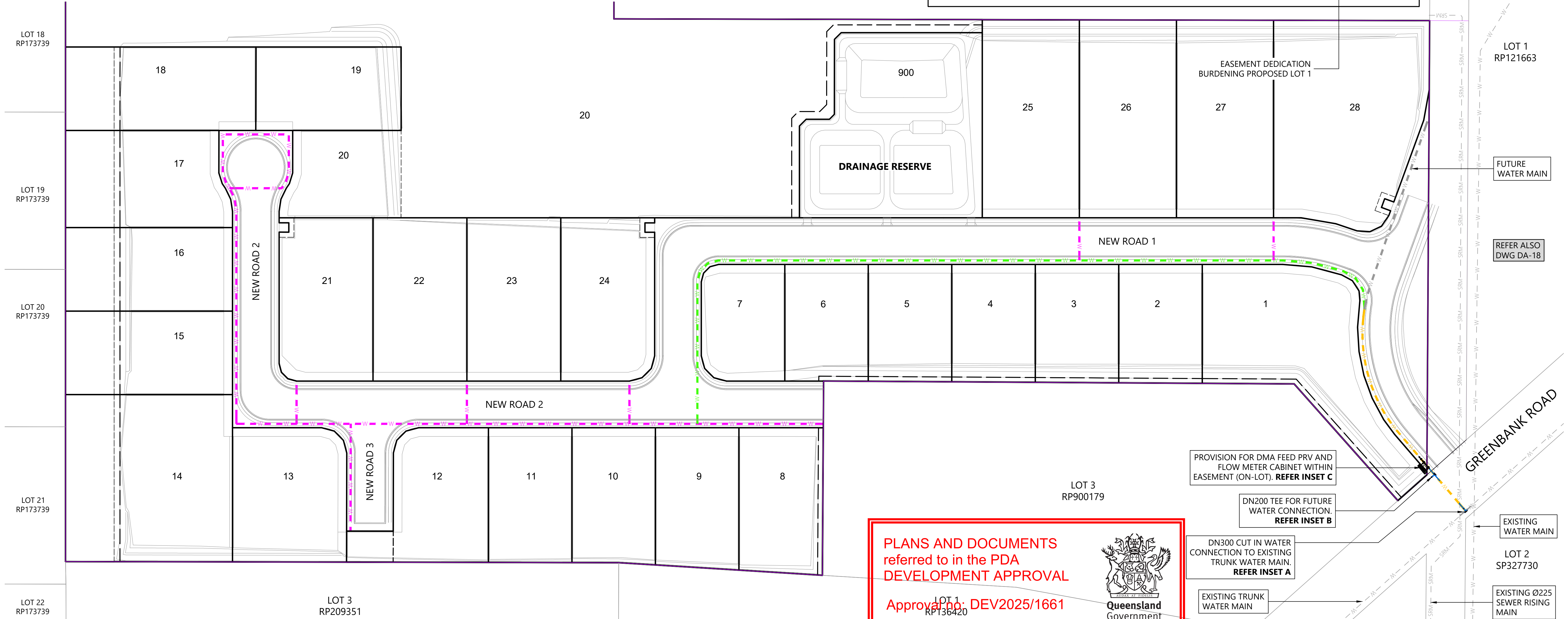
REFER NOTE 2

WILLOWBROOK

ROAD

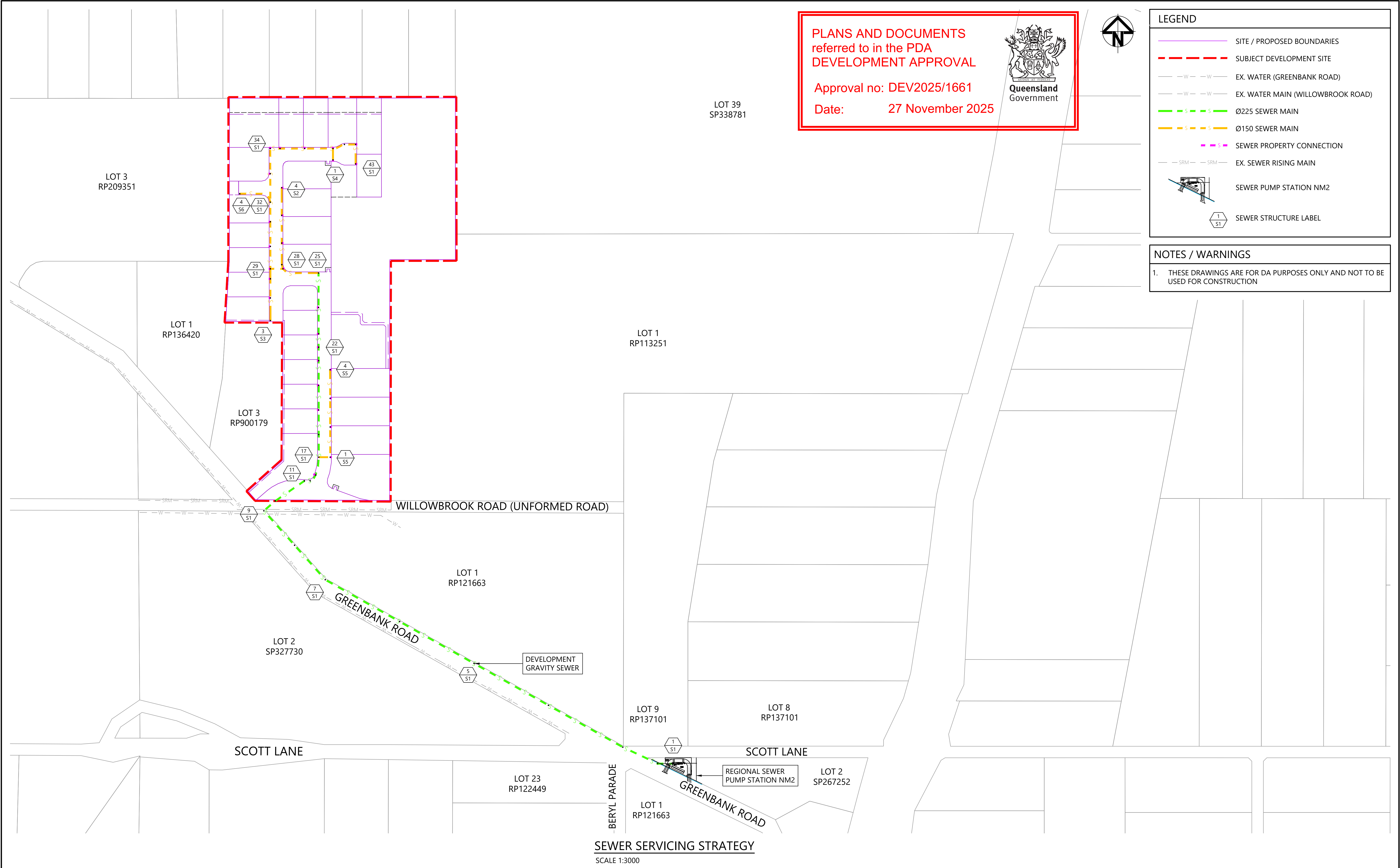
RP BDY

EMT



WATER LAYOUT PLAN
SCALE 1:3000

				STATUS				SURVEYOR		CLIENT		PROJECT TITLE:		NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.	
				FOR DA APPROVAL NOT FOR CONSTRUCTION				JENSEN BOWERS		NORHART		FLAGSTONE INDUSTRIAL PARK 820 GREENBANK ROAD NORTH MACLEAN			
				R.P.E.Q No : CERTIFIED				SCALE		ARCHITECT		DRAWING TITLE:			
				HEIGHT DATUM AHD DESIGNER IG				10 0 10 20 30 40 50 SCALE 1:1000 1:1000 (A1) - 1:2000 (A3)				WATER LAYOUT PLAN			
02	FOR DA APPROVAL	IG	29.09.25	GRID	LOCAL	CHECKER	MB			Level 3, 18 Orchid Avenue, Surfers Paradise PO BOX 1715, Surfers Paradise 4217 Ph: 07 5538 0431 mail@michaelbale.com.au				DRAWING No. PROJECT No. REVISION	
01	FOR DA APPROVAL	SB	11.07.25	ORIGINAL SIZE	A1	APPROVER	MB							DA07 - G24079 - 02	
ISSUE		DESCRIPTION		AUTHOR		DATE									



PLANS AND DOCUMENTS referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2025/1661
Date: 27 November 2025

Queensland Government

LEGEND

- SITE / PROPOSED BOUNDARIES
- SUBJECT DEVELOPMENT SITE
- EX. WATER (GREENBANK ROAD)
- EX. WATER MAIN (WILLOWBROOK ROAD)
- Ø225 SEWER MAIN
- Ø150 SEWER MAIN
- SEWER PROPERTY CONNECTION
- EX. SEWER RISING MAIN
- SEWER PUMP STATION NM2
- SEWER STRUCTURE LABEL

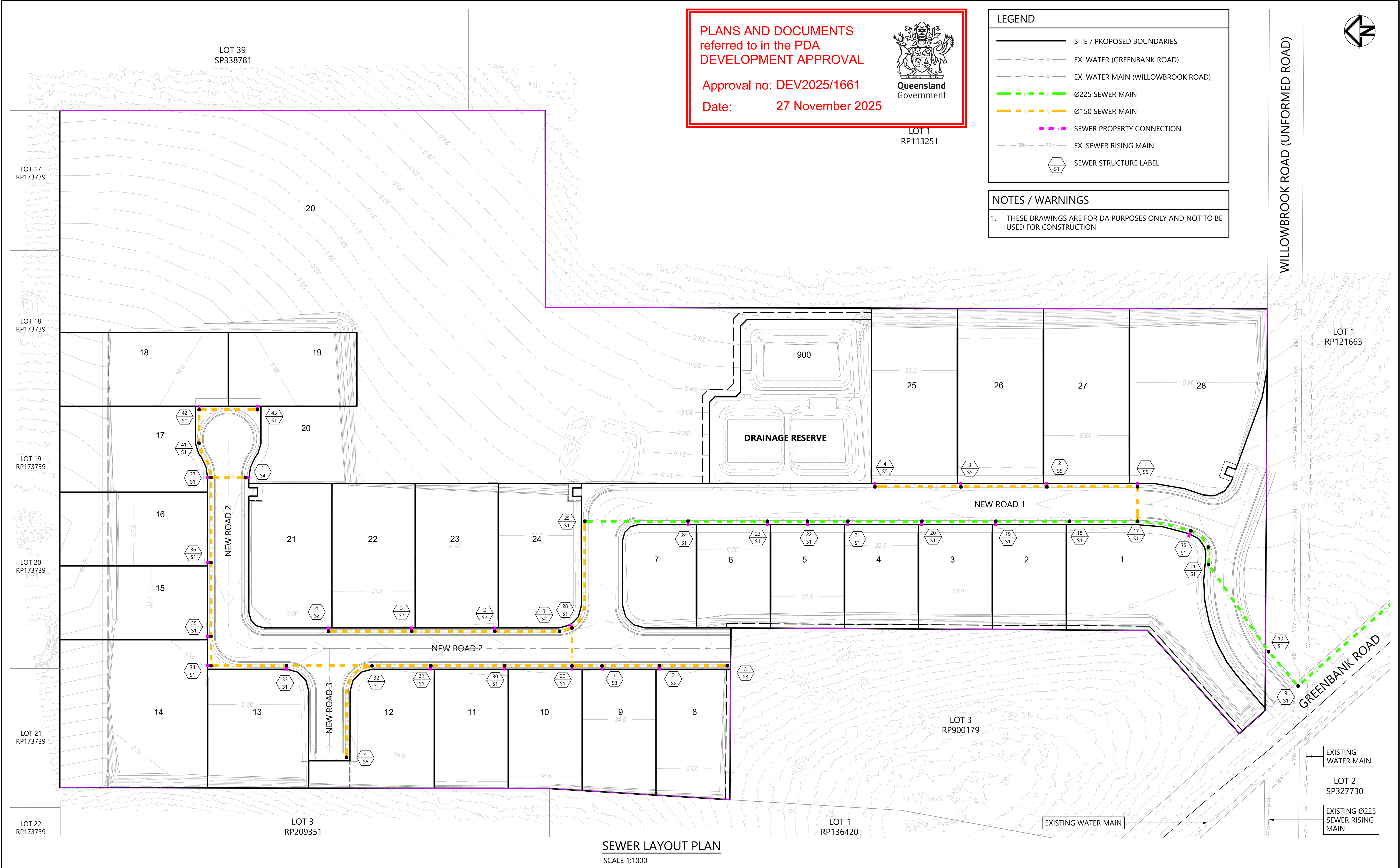
NOTES / WARNINGS

1. THESE DRAWINGS ARE FOR DA PURPOSES ONLY AND NOT TO BE USED FOR CONSTRUCTION

SEWER SERVICING STRATEGY
SCALE 1:3000

				STATUS				SURVEYOR		CLIENT		PROJECT TITLE:		NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.				
				FOR DA APPROVAL NOT FOR CONSTRUCTION				 JENSEN BOWERS		 NORHART		FLAGSTONE INDUSTRIAL PARK 820 GREENBANK ROAD NORTH MACLEAN						
				R.P.E.Q No : CERTIFIED				SCALE		ARCHITECT		DRAWING TITLE:						
				HEIGHT DATUM AHD DESIGNER IG				50 0 50 100 150 SCALE 1:3000 1:3000 (A1) - 1:6000 (A3)		Level 3, 18 Orchid Avenue, Surfers Paradise PO BOX 1715, Surfers Paradise 4217 Ph: 07 5538 0431 mail@michaelbale.com.au		SEWER SERVICING STRATEGY						
02	FOR DA APPROVAL	IG	29.09.25	GRID		LOCAL	CHECKER	MB							DRAWING No.	PROJECT No.	REVISION	
01	FOR DA APPROVAL	SB	11.07.25	ORIGINAL SIZE		A1	APPROVER	MB							DA08	G24079	02	
ISSUE		DESCRIPTION		AUTHOR		DATE												

29/09/2025 1:23:31 PM



				STATUS		FOR DA APPROVAL NOT FOR CONSTRUCTION		SURVEYOR		59 Anderson Street Fortitude Valley QLD 4006 JENSEN BOWERS		CLIENT		24 Cansdale Street Yeronga QLD 4104 NORHART		 MICHAEL BALE & ASSOCIATES Structural and Civil Engineering Consultancy		PROJECT TITLE:		FLAGSTONE INDUSTRIAL PARK 820 GREENBANK ROAD NORTH MACLEAN		NOTES: THESE DRAWINGS REMAIN THE PROPERTY OF MICHAEL BALE & ASSOCIATES PTY LTD. AND MUST NOT BE USED OR REPRODUCED WITHOUT WRITTEN PERMISSION. THESE DRAWINGS HAVE BEEN PREPARED FOR EXCLUSIVE USE BY OUR CLIENT. NO RESPONSIBILITY IS TAKEN FOR ANY THIRD PARTY THAT RELIES UPON OR USES THIS INFORMATION. THIS DRAWING MUST NOT BE USED FOR CONSTRUCTION UNLESS NOTED OR INSTRUCTED OTHERWISE BY MICHAEL BALE & ASSOCIATES. EXISTING SERVICES ARE SHOWN FOR INFORMATION ONLY AND NO RESPONSIBILITY IS TAKEN FOR THE ACCURACY OF THIS INFORMATION. ALL EXISTING SERVICES IN THE VICINITY OF THE SITE SHALL BE LOCATED BY CONTRACTOR PRIOR TO COMMENCING CONSTRUCTION.	
				R.P.E.Q No :		CERTIFIED		SCALE				ARCHITECT						DRAWING TITLE:		SEWER LAYOUT PLAN		DRAWING No. PROJECT No. REVISION	
02 FOR DA APPROVAL		IG 29.09.25		GRID		LOCAL		CHECKER		MB												DA09 - G24079 - 02	
01 FOR DA APPROVAL		SB 11.07.25		ORIGINAL SIZE		A1		APPROVER		MB													
ISSUE		DESCRIPTION		AUTHOR		DATE																	

29/09/2025 1:32 PM