Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
D	ARTIST IMPRESSION UPDATED	27.11.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE

PROPOSED LARGE FORMAT RETAIL DEVELOPMENT ROCKHAMPTON, QLD

TOWN PLANNING APPLICATION

D

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

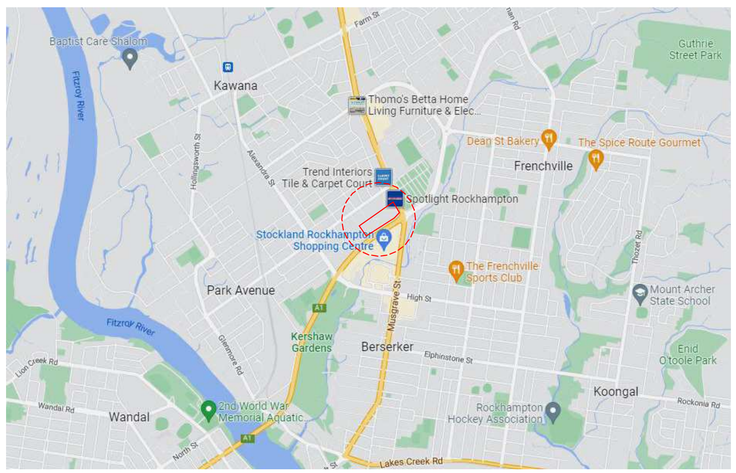
These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

TOWN PLANNING SHEET LIST

Sheet Number	Sheet Name	Revision
DA001	COVER SHEET, SHEET LIST & LOCALITY PLAN	E
DA015	EXISTING CONDITIONS PLAN	D
DA020	SITE PLAN	E
DA100	GROUND FLOOR PLAN - ANACONDA	D
DA101	GROUND FLOOR PLAN - LFR 3-5	E
DA102	GROUND FLOOR PLAN - LFR 1-2	C
DA110	OVERALL ROOF PLAN	E
DA150	ELEVATIONS - ANACONDA	D
DA151	ELEVATIONS - LFR - SHEET 1	E
DA152	ELEVATIONS - LFR - SHEET 2	C
DA160	SECTIONS - SHEET 1	E
DA161	SECTIONS - SHEET 2	C
DA200	SHADOW DIAGRAMS - SHEET 1	E
DA201	SHADOW DIAGRAMS - SHEET 2	E
DA300	STREETSCAPE ELEVATION	E
DA400	PYLON SIGNAGE	D
DA401	SIGNAGE DETAILS	D
DA500	ARTIST IMPRESSIONS - SHEET 1	E
DA501	ARTIST IMPRESSION - SHEET 2	E



LOCALITY PLAN

COVER SHEET, SHEET LIST & LOCALITY PLAN

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE NTS @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT '22
DRAWN: AQA
DWG NO. DA001
REV. E

LEFFLER SIMES ARCHITECTS

ROCKHAMPTON REGIONAL COUNCIL

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18 March 2025

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A	TOWN PLANNING ISSUE	18.11.22	SJE
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C	TOWN PLANNING ISSUE	16.02.24	SJE
D	TOWN PLANNNING ISSUE	22.01.25	SJE

1 / A152 **EXISTING CONDITION AND DEMOLITION PLAN**

Scale: 1 : 500

EXISTING CONDITIONS PLAN

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

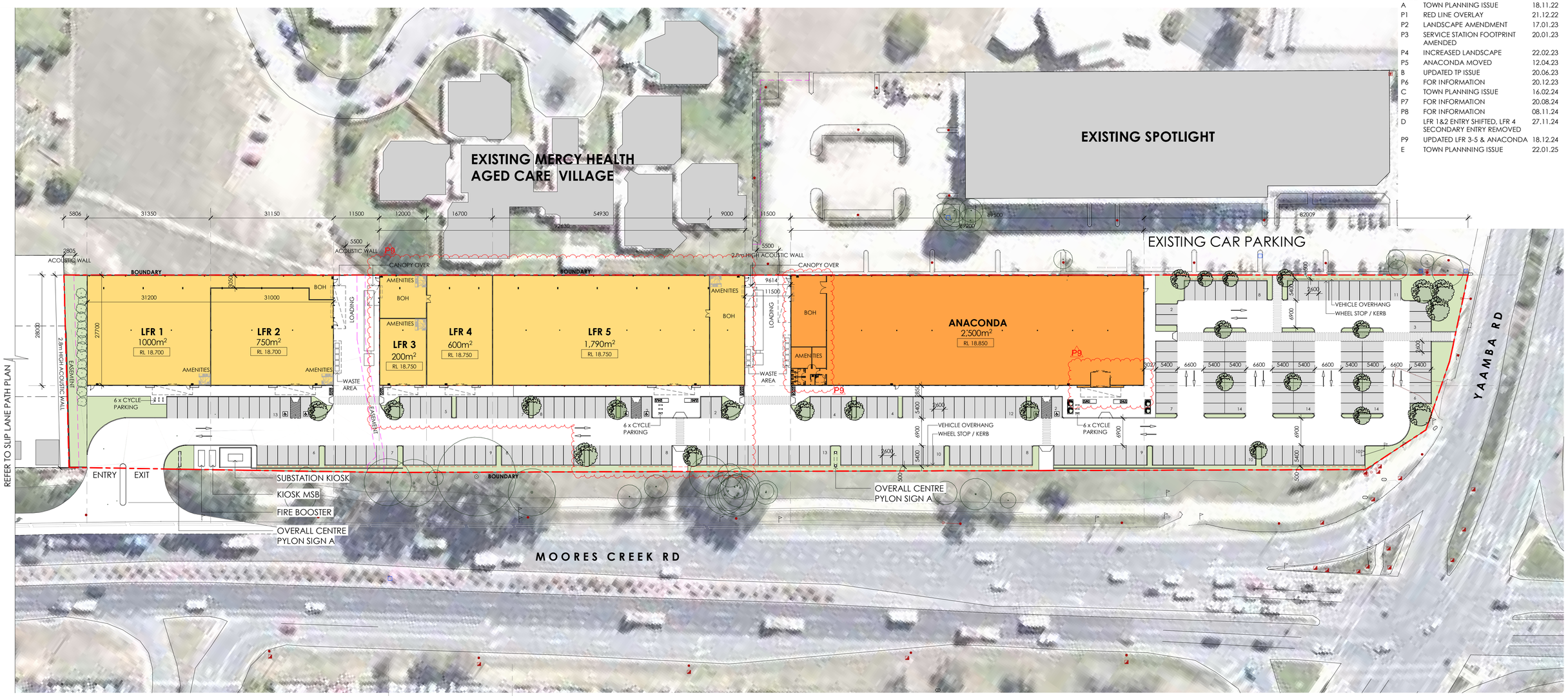
0 10 20 30 40 50 SCALE 1:500 @ A1

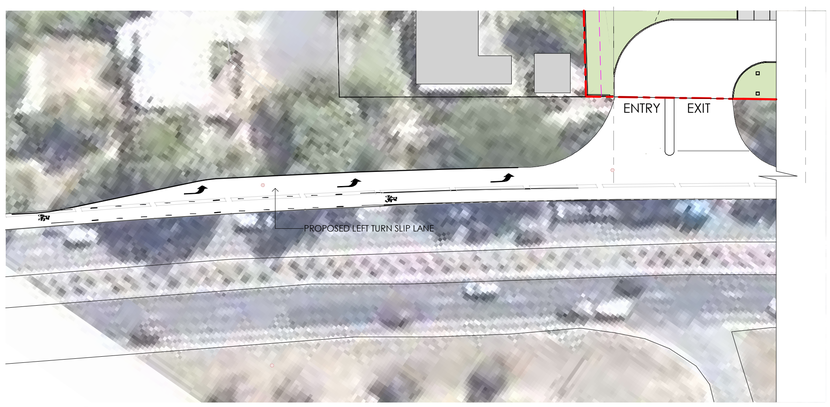
PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT '22
DRAWN: AQA
DWG NO. DA015
REV. D

LEFFLER SIMES ARCHITECTS

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
P1	RED LINE OVERLAY	21.12.22	SJE
P2	LANDSCAPE AMENDMENT	17.01.23	SJE
P3	SERVICE STATION FOOTPRINT AMENDED	20.01.23	SJE
P4	INCREASED LANDSCAPE	22.02.23	SJE
P5	ANACONDA MOVED	12.04.23	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
P6	FOR INFORMATION	20.12.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
P7	FOR INFORMATION	20.08.24	SJE
P8	FOR INFORMATION	08.11.24	SJE
D	LFR 1&2 ENTRY SHIFTED, LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P9	UPDATED LFR 3-5 & ANACONDA	18.12.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE





2 **SLIP LANE PATH PLAN**

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

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Development Permit No.: D/155-2022

Dated: 27 May 2024

LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES

AREA SUMMARY

SITE AREA	17,203 m²
LFR 1	1000m²
LFR 2	750m²
LFR 3	200m²
LFR 4	600m²
LFR 5	1,790m²
ANACONDA	2,500m²
TOTAL NEW BUILD AREA GFA	**6,840m²**
SITE COVERAGE PERCENTAGE	**39.78%**
LANDSCAPE AREA	1451.47m²
LANDSCAPE AREA COVERAGE PERCENTAGE	**8.43%**

CAR PARKING SUMMARY

CAR SPACES	230
DISABLED SPACES	6
TOTAL CAR SPACES	**236**
PARKING RATIO	3.5 PER 100 SQM

SITE PLAN

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:500 @ A1

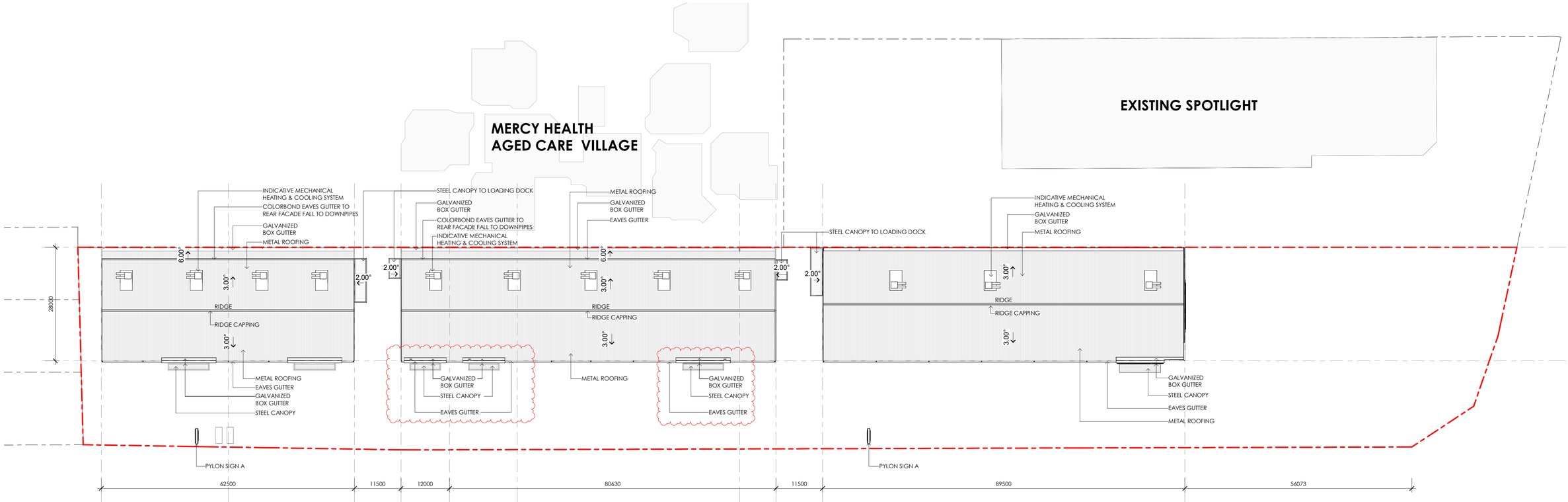
PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: SEP 22
DRAWN: AQA
DWG NO. DA020
REV. E

LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
D	LFR 1&2 ENTRY SHIFTED, LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P1	LFR 3-5 ENTRY LOCATION UPDATED	18.12.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE



ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

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Development Permit No.: D/155-2022

Dated: 27 May 2024

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SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:500 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT 22
DRAWN: AQA

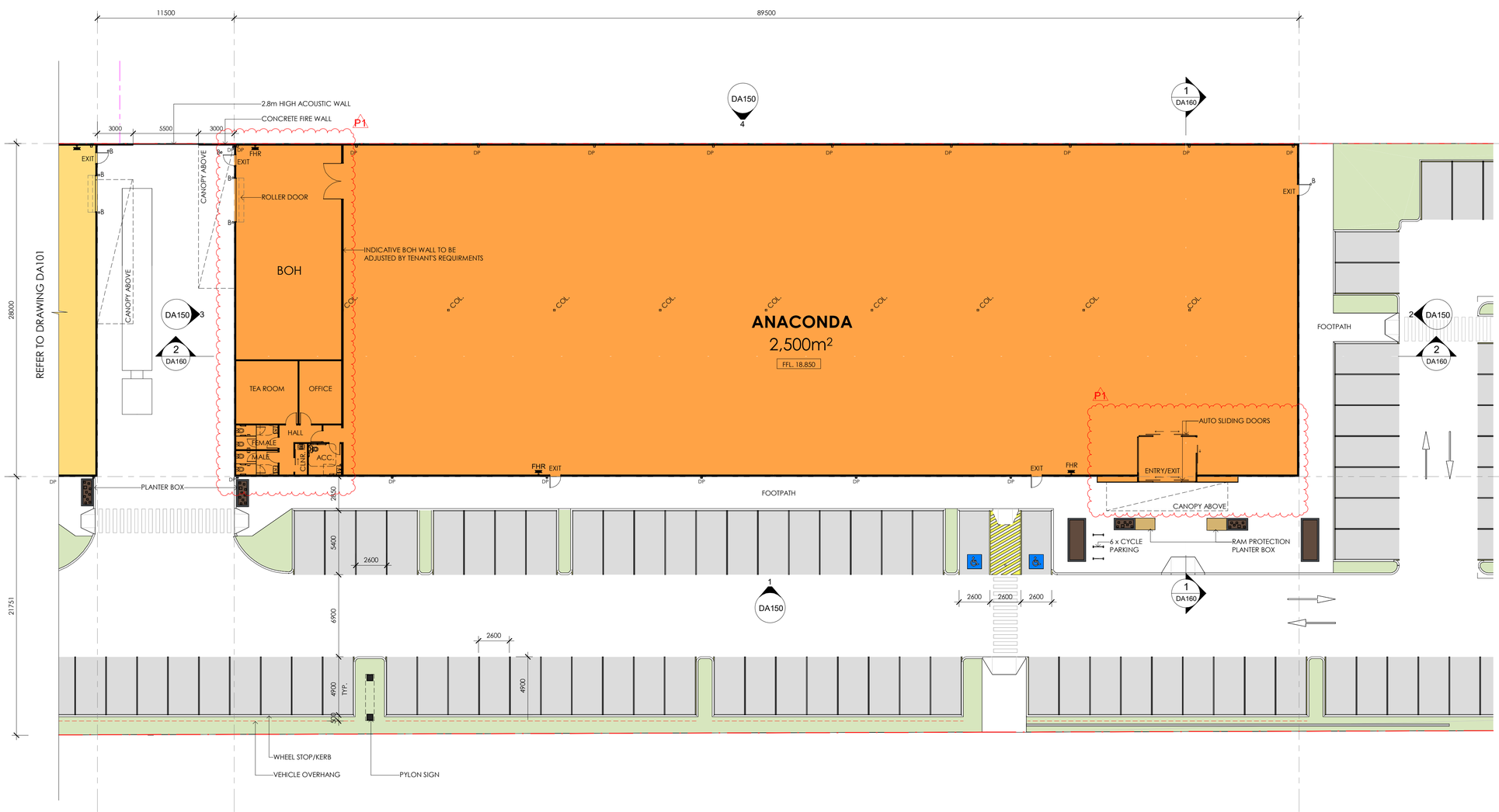
DWG NO. DA110

REV. E

OVERALL ROOF PLAN

LEFFLER SIMES ARCHITECTS

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
P1	ANACONDA ENTRY AND BOH UPDATED	18.12.24	SJE
D	TOWN PLANNNING ISSUE	22.01.25	SJE



ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

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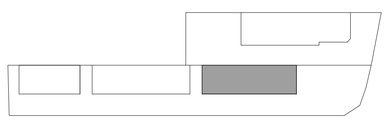
Development Permit No.: **D/155-2022**

Dated: **27 May 2024**

LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES



KEY PLAN

GROUND FLOOR PLAN - ANACONDA

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au

SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:200 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT 22
DRAWN: AQA

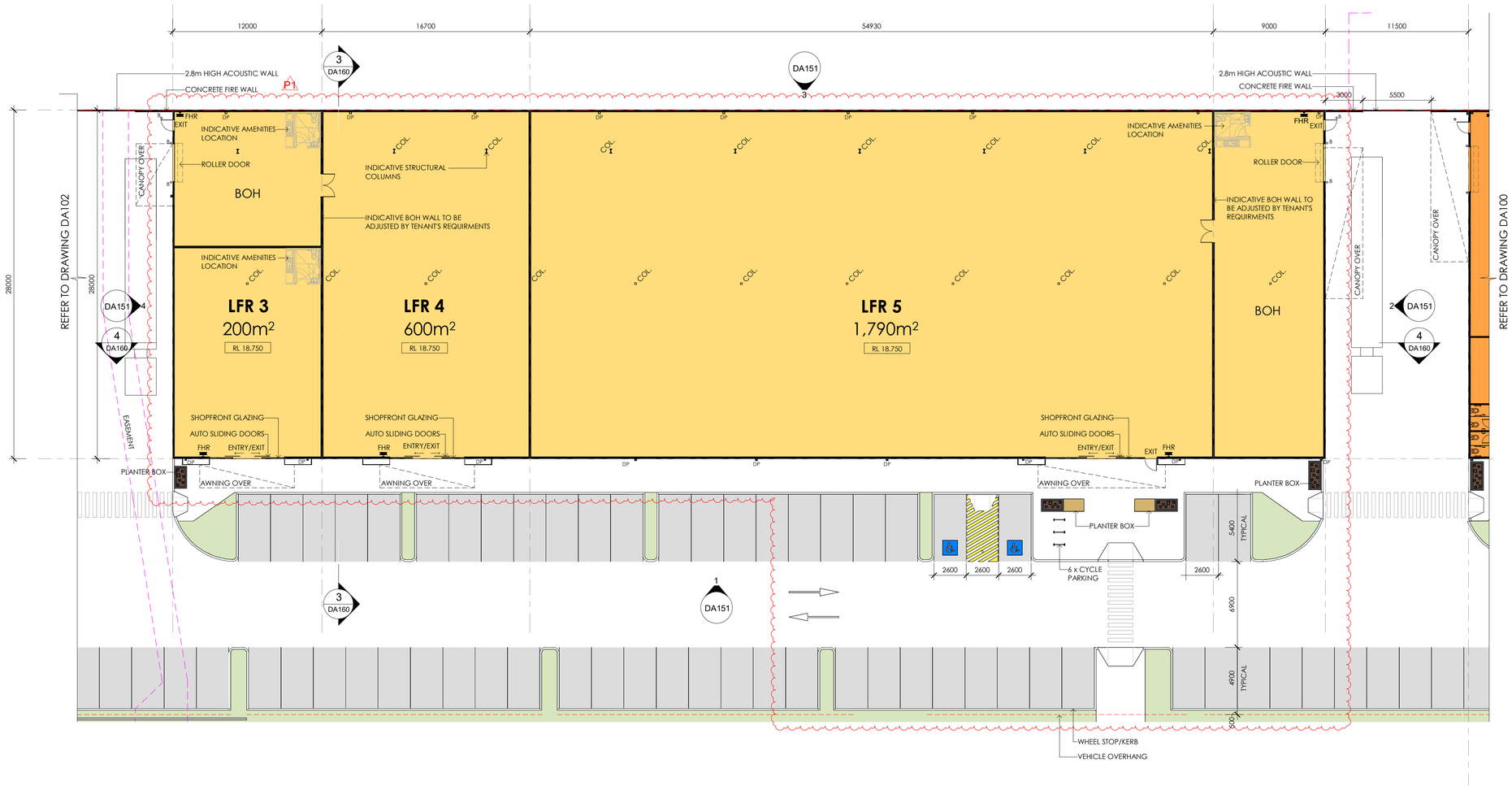
DWG NO. DA100

REV. D

LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
D	LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P1	LFR 3-5 TENANCY ENTRY AND LAYOUT UPDATED, CARPARK LAYOUT UPDATED	18.12.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE



ROCKHAMPTON REGIONAL COUNCIL

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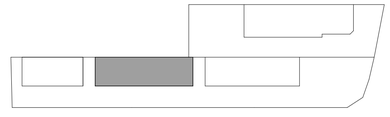
LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES



KEY PLAN

GROUND FLOOR PLAN - LFR 3-5

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:200 @ A1

0 4 8 12 16 20

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

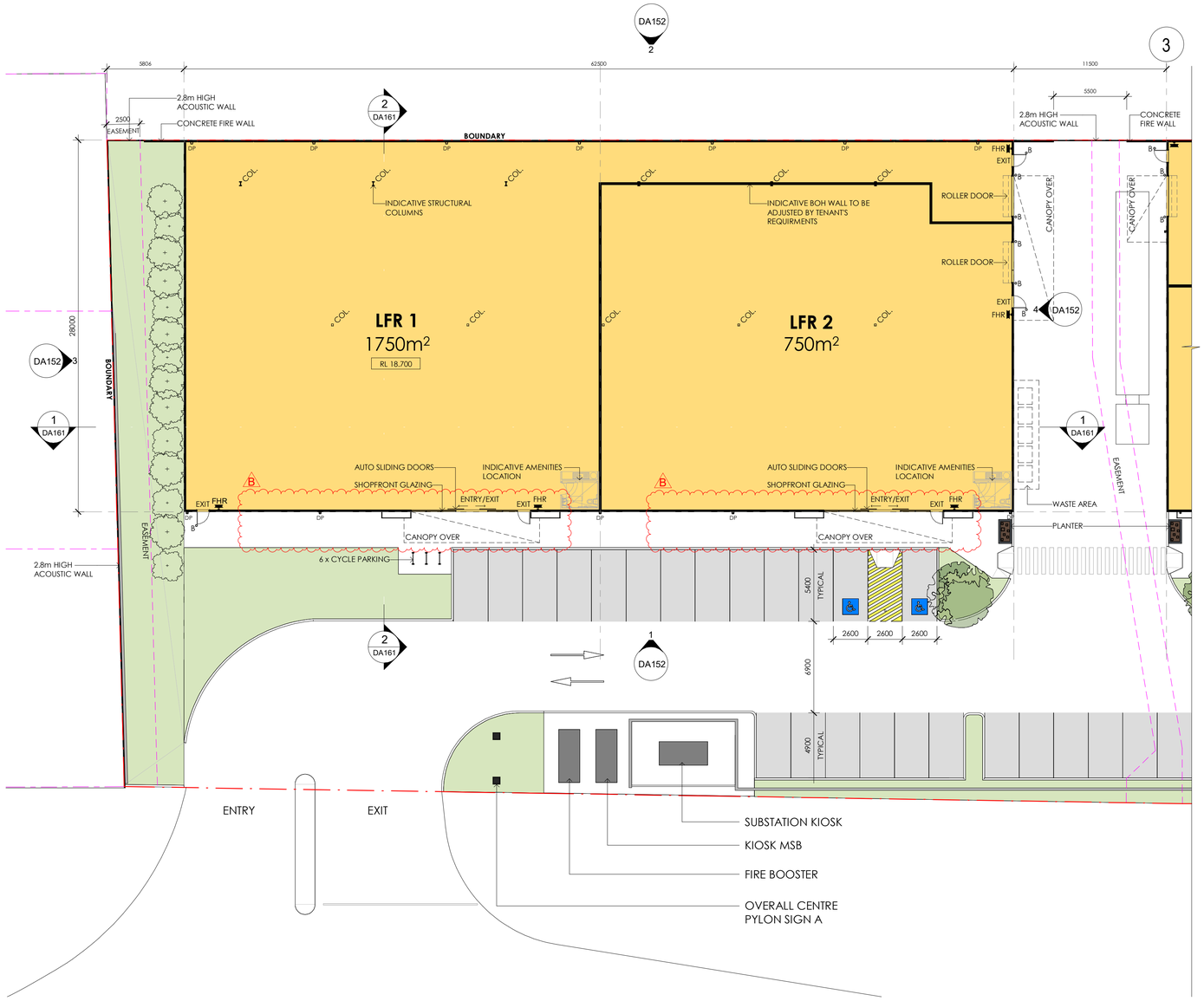
JOB NO: 5150
DATE: OCT 22
DRAWN: AQA

DWG NO. DA101

REV. E

LEFFLER SIMES ARCHITECTS

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	16.02.24	SJE
B	LFR 1&2 ENTRY SHIFTED	27.11.24	SJE
C	TOWN PLANNNING ISSUE	22.01.25	SJE



ROCKHAMPTON REGIONAL COUNCIL

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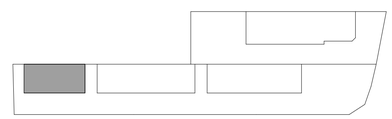
Dated: **27 May 2024**

LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES



KEY PLAN

GROUND FLOOR PLAN - LFR 1-2

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au

SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:200 @ A1

0 4 8 12 16 20

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT 22
DRAWN: AQA

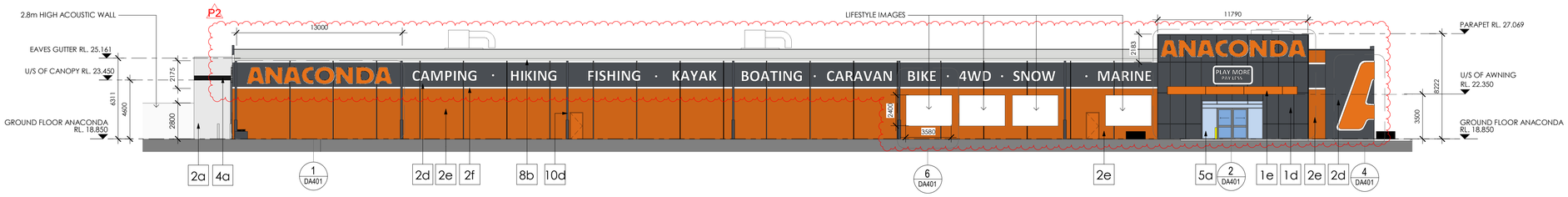
DWG NO. DA102

REV. C

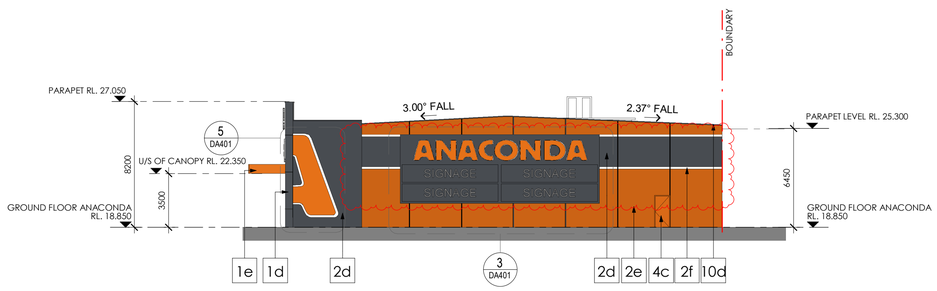
LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

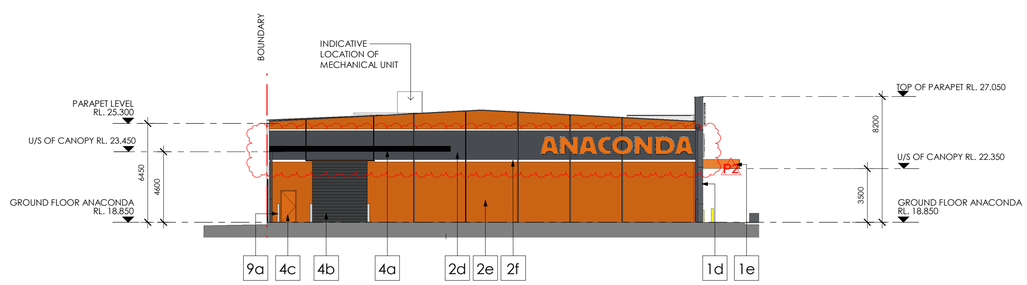
ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
P1	ANACONDA MOVED	12.04.23	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	27.11.24	SJE
P2	ANACONDA ENTRY AND SIGNAGE LOCATION UPDATED	18.12.24	SJE
D	TOWN PLANNNING ISSUE	22.01.25	SJE



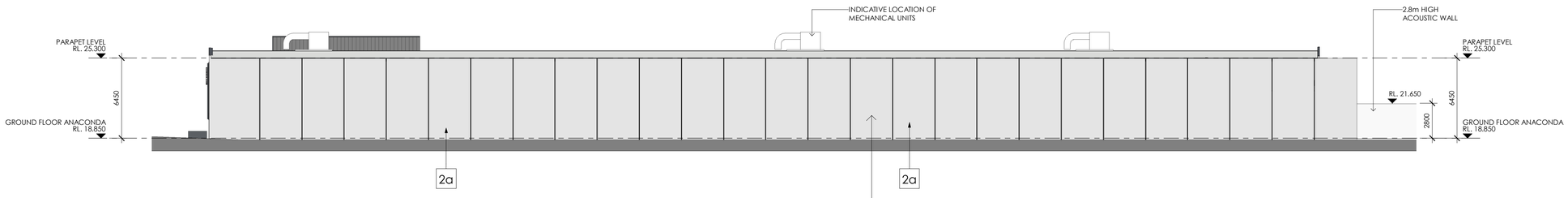
1 DA100 SOUTH ELEVATION
Scale: 1 : 200



2 DA100 EAST ELEVATION
Scale: 1 : 200

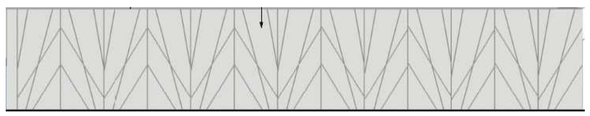


3 DA100 WEST ELEVATION
Scale: 1 : 200

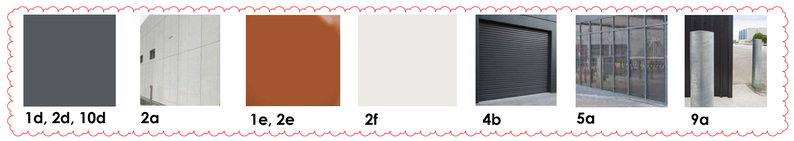


4 DA100 NORTH ELEVATION
Scale: 1 : 200

PRECAST WALL PATTERN TO NORTH BOUNDARY WALL (INDICATIVE DESIGN, FINAL PATTERN TBC)



MATERIAL SCHEDULE:



MATERIAL SCHEDULE	
CODE	DESCRIPTION
1d	PAINTED FC SHEET CLADDING - 'AN IRONSTONE'
1e	PAINTED FC SHEET CLADDING - 'AN GARFIELD'
2a	UNPAINTED CONCRETE PANEL - NATURAL CONCRETE FINISH WITH CONCRETE SEALER
2d	PAINTED CONCRETE PANEL - 'AN IRONSTONE' TEXTURED FINISH
2e	PAINTED CONCRETE PANEL - 'AN GARFIELD' TEXTURED FINISH
2f	PAINTED CONCRETE PANEL - 'AN WHITE' TEXTURED FINISH
4a	PAINTED METAL - 'BLACK'
4b	METAL ROLLER DOOR - 'DARK GREY'
4c	METAL - EXIT DOOR TO MATCH WALL COLOUR
5a	ALUMINIUM FRAMED WINDOW WITH CLEAR GLAZING - 'NATURAL ANODIZED'
8b	COLORBOND EAVES GUTTER - 'GREY'
9a	STEEL GALVANISED BOLLARDS
10d	COLORBOND CAPPING - 'AN IRONSTONE'

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

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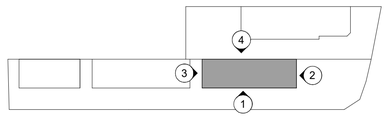
Dated: 27 May 2024



KEY PLAN

ELEVATIONS - ANACONDA

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:200 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT' 22
DRAWN: AQA

DWG NO. DA150

REV. D

LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
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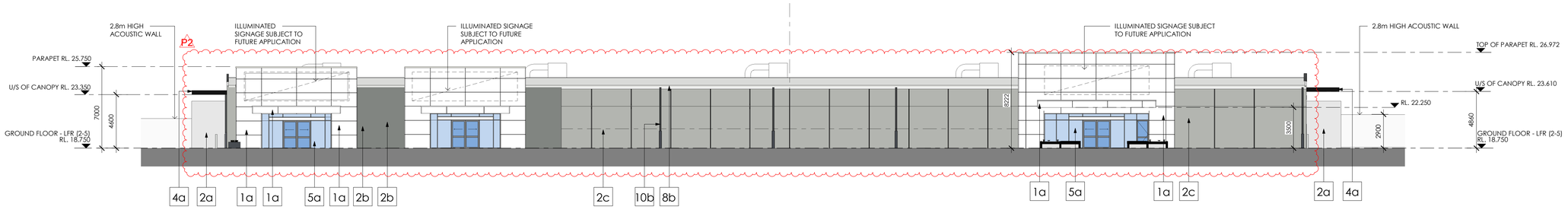
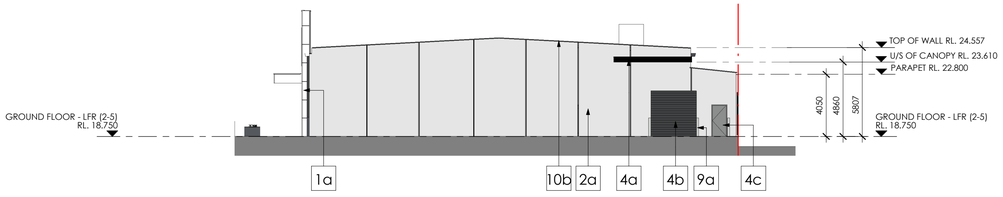
P1	FOR INFORMATION	08.11.24	SJE
D	LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P2	LFR 3-5 ENTRY LOCATION UPDATED	18.12.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE



1 DA101 **SOUTH ELEVATION**
Scale: 1 : 200



2 DA101 **EAST ELEVATION**
Scale: 1 : 200

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

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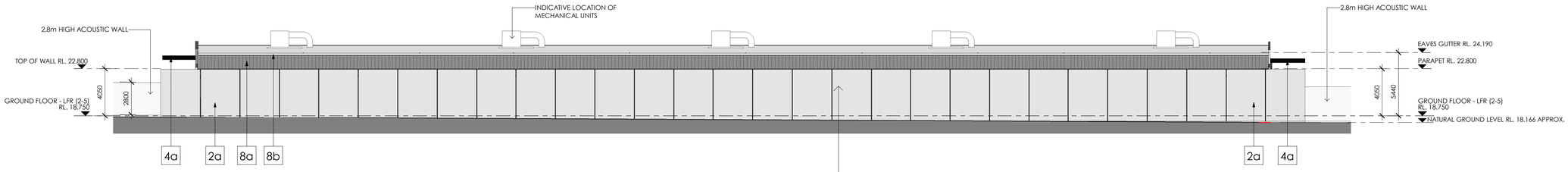
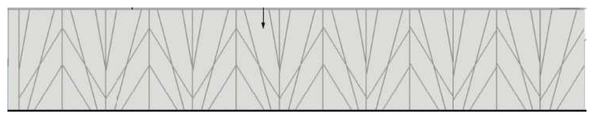
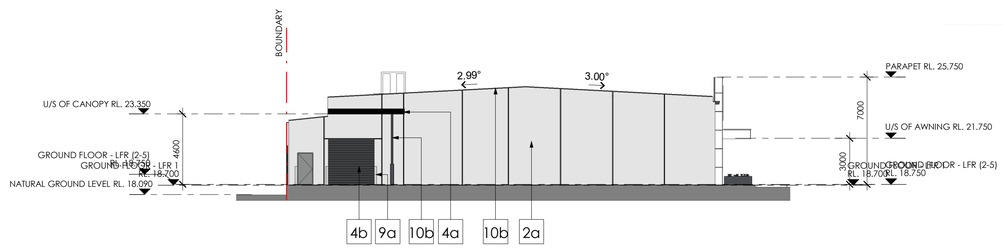


3 DA100 **NORTH ELEVATION**
Scale: 1 : 200

PRECAST WALL PATTERN TO NORTH BOUNDARY WALL (INDICATIVE DESIGN, FINAL PATTERN TBC)

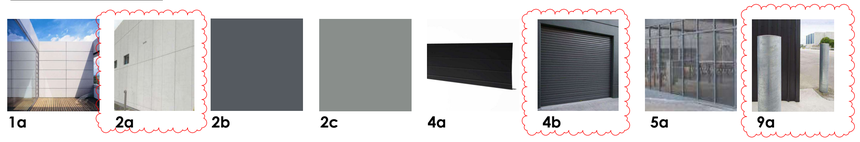


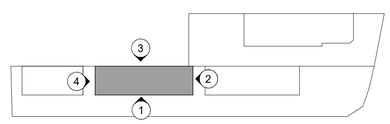


4 DA101 **WEST ELEVATION**
Scale: 1 : 200

MATERIAL SCHEDULE	
CODE	DESCRIPTION
1a	PAINTED FC SHEET CLADDING - 'WHITE'
2a	UNPAINTED CONCRETE PANEL - NATURAL CONCRETE FINISH WITH CONCRETE SEALER
2b	PAINTED CONCRETE PANEL - 'DARK GREY' TEXTURED FINISH
2c	PAINTED CONCRETE PANEL - 'LIGHT GREY' TEXTURED FINISH
4a	PAINTED METAL - 'BLACK'
4b	METAL ROLLER DOOR - 'DARK GREY'
4c	METAL - EXIT DOOR TO MATCH WALL COLOUR
5a	ALUMINIUM FRAMED WINDOW WITH CLEAR GLAZING - 'NATURAL ANODIZED'
8a	METAL ROOF SHEETING - COLORBOND FINISH - SHALE GREY (SA 0.44/SRI 66)
8b	COLORBOND EAVES GUTTER - 'GREY'
9a	STEEL GALVANISED BOLLARDS
10b	COLORBOND CAPPING - 'MATCH WALL FINISH'

MATERIAL SCHEDULE:





KEY PLAN

ELEVATIONS - LFR - SHEET 1

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:200 @ A1 (0 4 8 12 16 20)

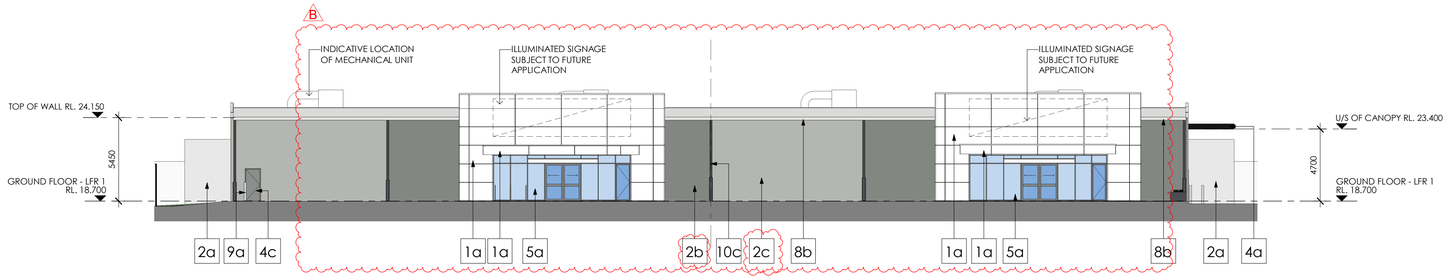
PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT 22
DRAWN: AQA
DWG NO. DA151
REV. E

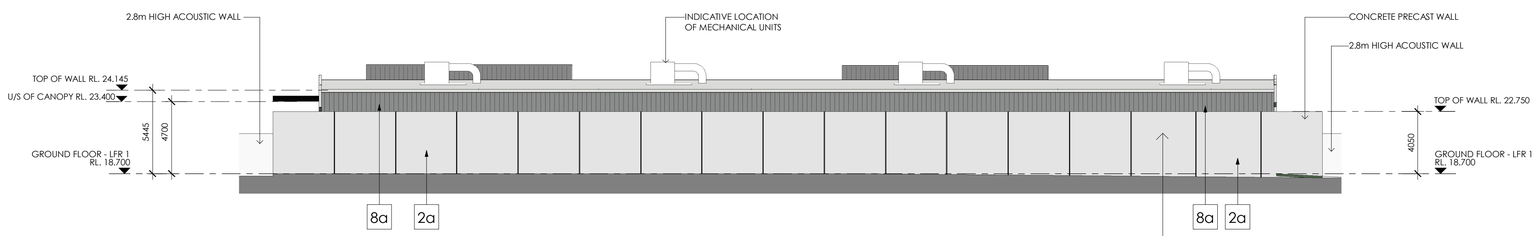
LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	16.02.24	SJE
P1	FOR INFORMATION	08.11.24	SJE
B	LFR 1&2 ENTRY SHIFTED	27.11.24	SJE
C	TOWN PLANNNING ISSUE	22.01.25	SJE



1 DA101 **SOUTH ELEVATION**
Scale: 1 : 200



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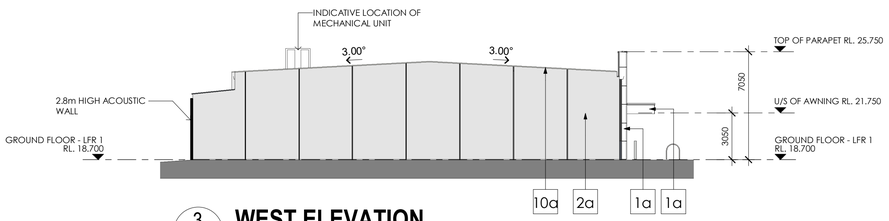

3 DA102 **WEST ELEVATION**
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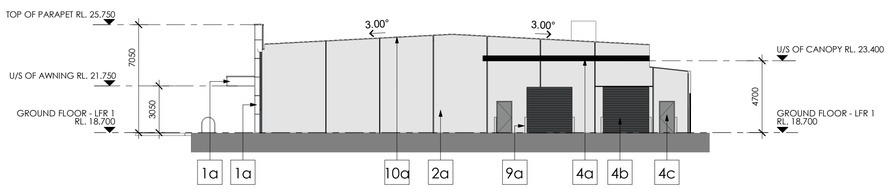

4 DA102 **EAST ELEVATION**
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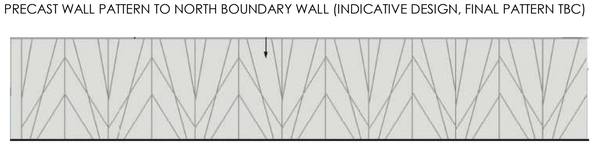

PRECAST WALL PATTERN TO NORTH BOUNDARY WALL (INDICATIVE DESIGN, FINAL PATTERN TBC)

MATERIAL SCHEDULE	
CODE	DESCRIPTION
1a	PAINTED FC SHEET CLADDING - 'WHITE'
2a	UNPAINTED CONCRETE PANEL - NATURAL CONCRETE FINISH WITH CONCRETE SEALER
2b	PAINTED CONCRETE PANEL - 'DARK GREY' TEXTURED FINISH
2c	PAINTED CONCRETE PANEL - 'LIGHT GREY' TEXTURED FINISH
4a	PAINTED METAL - 'BLACK'
4b	METAL ROLLER DOOR - 'DARK GREY'
4c	METAL - EXIT DOOR TO MATCH WALL COLOUR
5a	ALUMINIUM FRAMED WINDOW WITH CLEAR GLAZING - 'NATURAL ANODIZED'
8a	METAL ROOF SHEETING - COLORBOND FINISH - SHALE GREY (SA 0.44/SRI 66)
8b	COLORBOND EAVES GUTTER - 'GREY'
9a	STEEL GALVANISED BOLLARDS
10a	COLORBOND CAPPING - 'GREY'
10c	COLORBOND DOWNPIPE - 'DARK GREY'

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

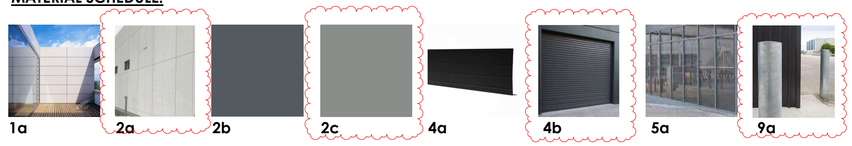
DATE

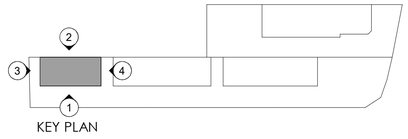
These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

MATERIAL SCHEDULE:





KEY PLAN

ELEVATIONS - LFR - SHEET 2

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:200 @ A1 (0 4 8 12 16 20)

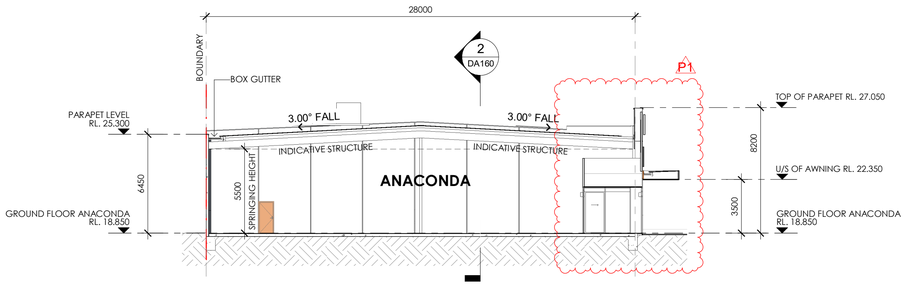
PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: SEP '22
DRAWN: JNO
DWG NO. DA152
REV. C

LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
D	LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P1	UPDATED LFR 3-5 & ANACONDA	18.12.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE



1 DA100 **SECTION AA**
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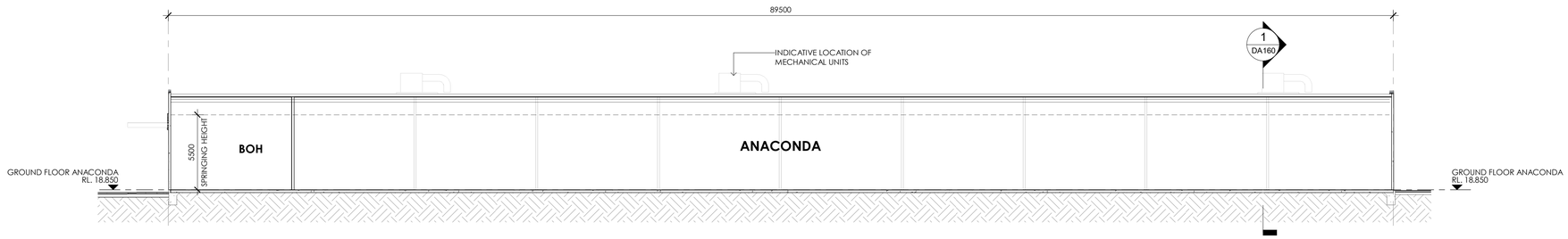

2 DA100 **SECTION BB**
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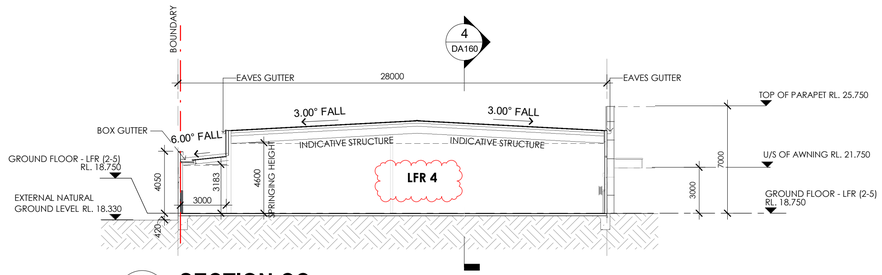

3 DA101 **SECTION CC**
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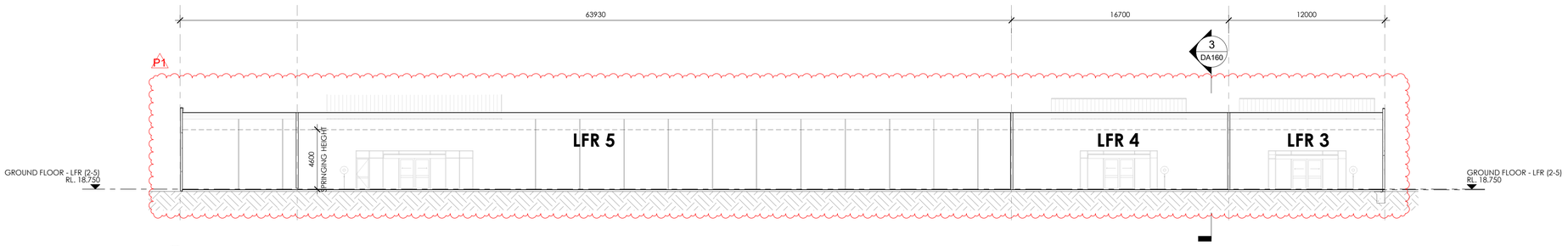


4 DA101 **SECTION DD**
Scale: 1 : 200

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

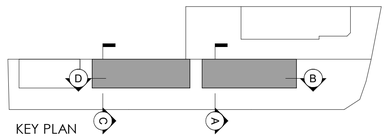
18 March 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024



SECTIONS - SHEET 1

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

0 4 8 12 16 20 SCALE 1:200 @ A1

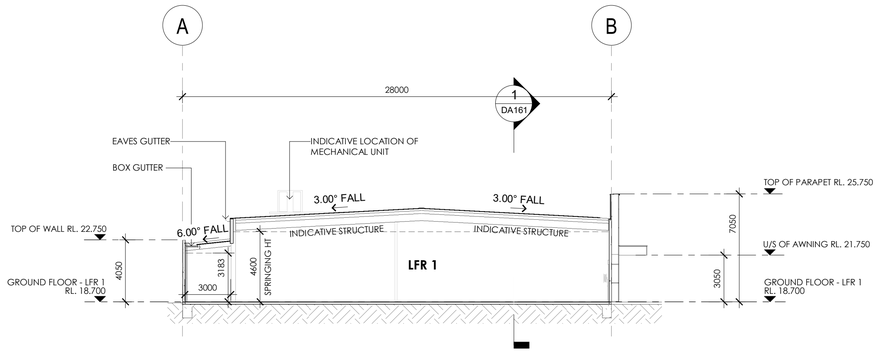
PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: SEP '22
DRAWN: JNO
DWG NO. DA160
REV. E

LEFFLER SIMES ARCHITECTS

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	16.02.24	SJE
B	LFR 1&2 ENTRY SHIFTED	27.11.24	SJE
C	TOWN PLANNNING ISSUE	22.01.25	SJE



2 A150 **SECTION EE**
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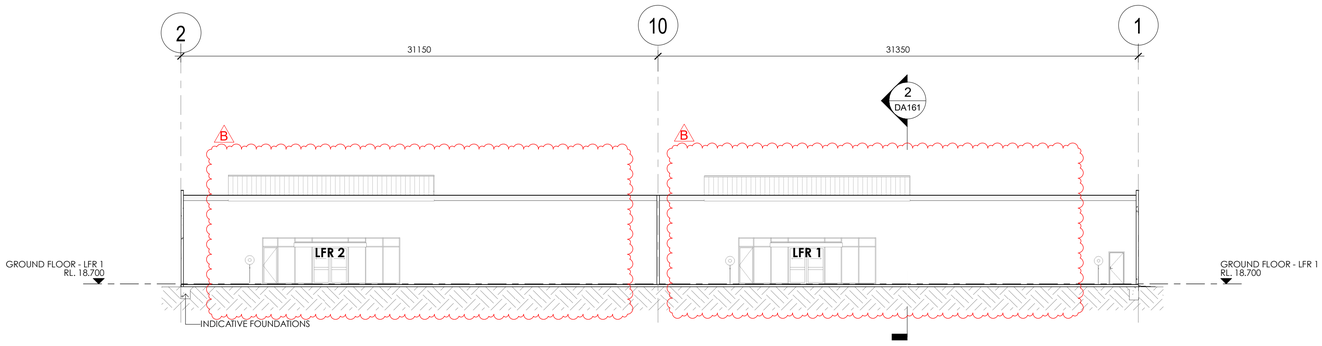


1 DA102 **SECTION FF**
Scale: 1 : 200

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

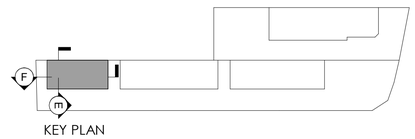
18 March 2025

DATE

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024



KEY PLAN

SECTIONS - SHEET 2

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

0 4 8 12 16 20 SCALE 1:200 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: SEP '22
DRAWN: JNO
DWG NO. DA161
REV. C

LEFFLER SIMES ARCHITECTS

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

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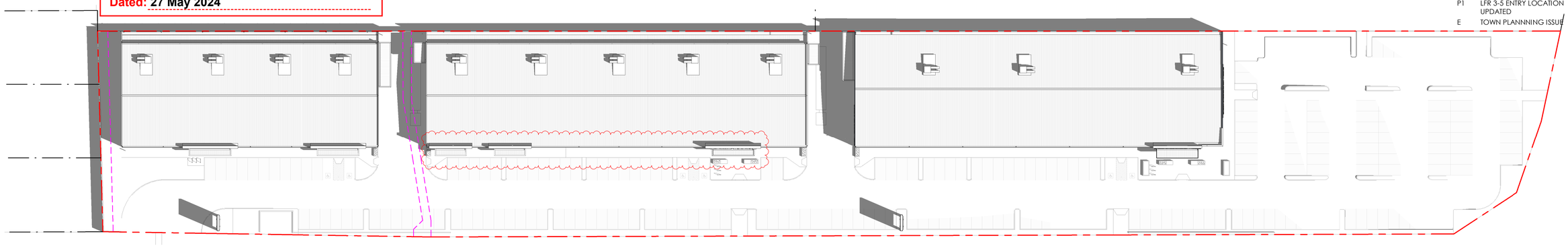
Development Permit No.: D/155-2022

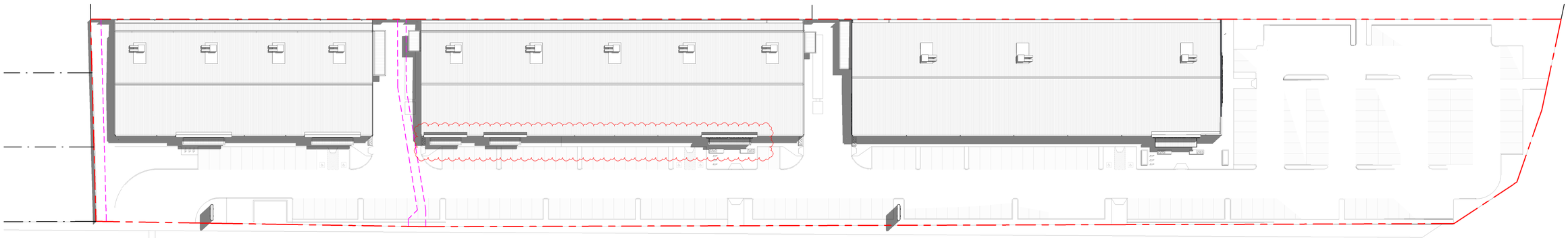
Dated: 27 May 2024

Member Australian Institute of Architects

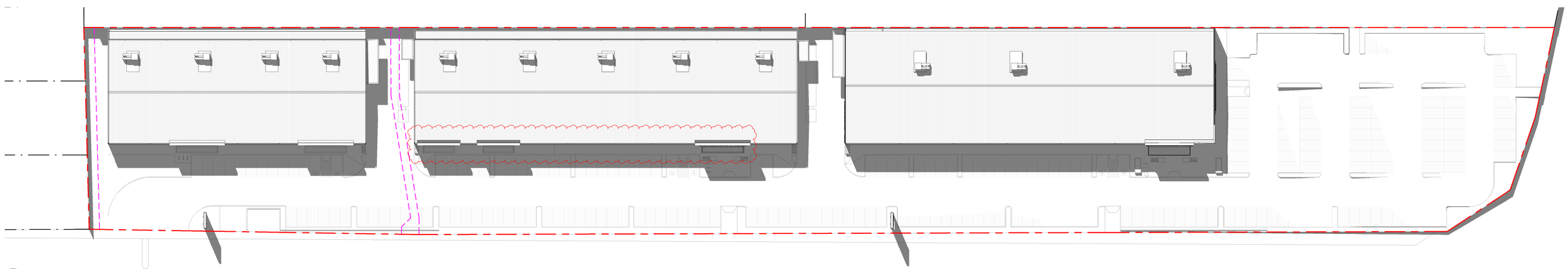
ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
D	LFR 1&2 ENTRY SHIFTED, LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P1	LFR 3-5 ENTRY LOCATION UPDATED	18.12.24	SJE
E	TOWN PLANNNING ISSUE	22.01.25	SJE



1 **SHADOW DIAGRAM - 21st Mar 9am**
Scale: 1 : 500



2 **SHADOW DIAGRAM - 21st Mar 12pm**
Scale: 1 : 500



3 **SHADOW DIAGRAM - 21st Mar 3pm**
Scale: 1 : 500

SHADOW DIAGRAMS - SHEET - 1

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

0 10 20 30 40 50 SCALE 1:500 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT' 22
DRAWN: AQA
DWG NO. DA200
REV. E

LEFFLER SIMES ARCHITECTS

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

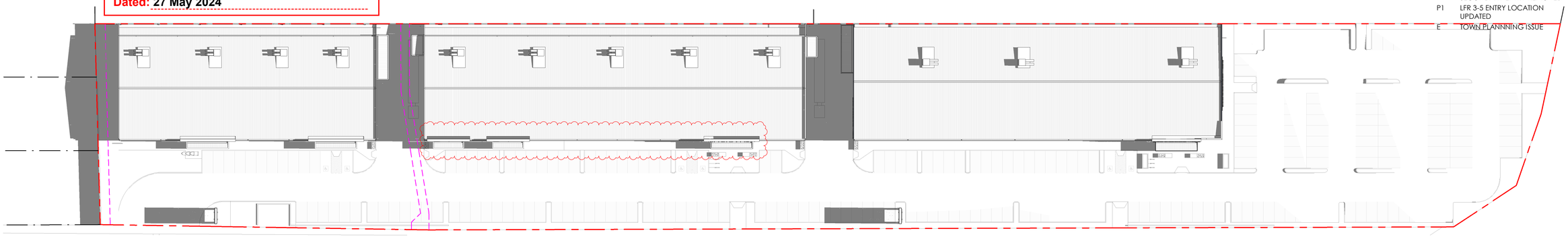
These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
C	TOWN PLANNING ISSUE	16.02.24	SJE
D	LFR 1&2 ENTRY SHIFTED, LFR 4 SECONDARY ENTRY REMOVED	27.11.24	SJE
P1	LFR 3-5 ENTRY LOCATION UPDATED	18.12.24	SJE
E	TOWN PLANNING ISSUE	22.01.25	SJE



1 **SHADOW DIAGRAM - 21st Jun 9am**
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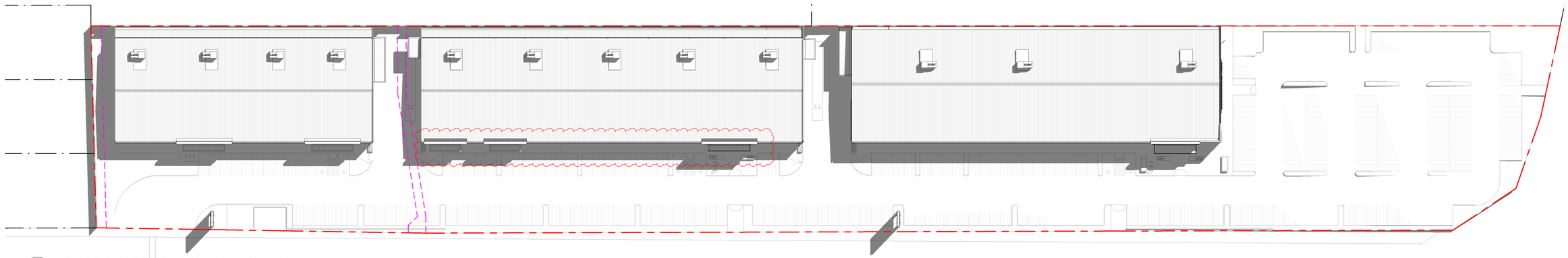
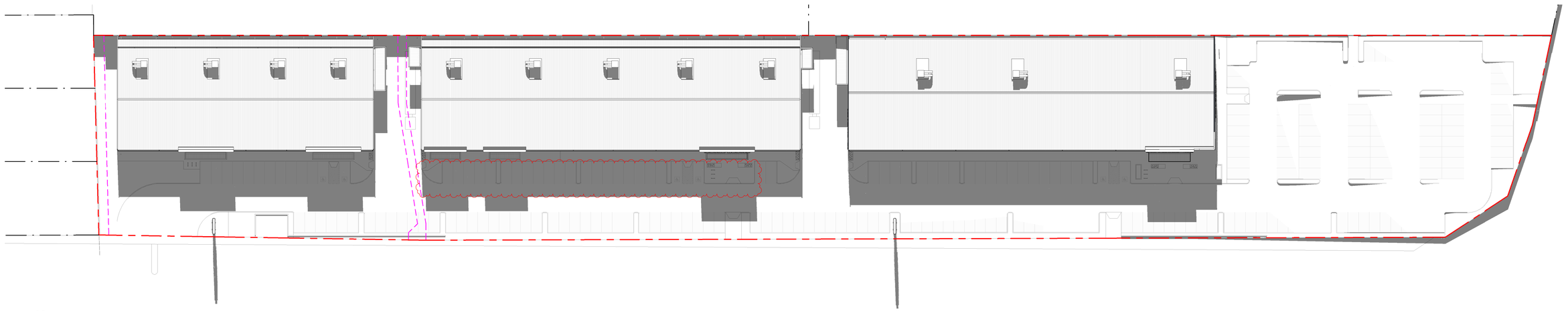


2 **SHADOW DIAGRAM - 21st Jun 12pm**
Scale: 1 : 500



3 **SHADOW DIAGRAM - 21st Jun 3pm**
Scale: 1 : 500

SHADOW DIAGRAMS - SHEET 2

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE 1:500 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT 22
DRAWN: AQA
DWG NO. DA201
REV. E

LEFFLER SIMES ARCHITECTS

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

18 March 2025

DATE

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Development Permit No.: D/155-2022

Dated: 27 May 2024

Member Australian Institute of Architects

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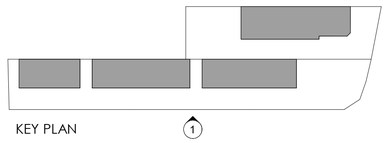
E	TOWN PLANNNING ISSUE	22.01.25	SJE

LARGE FORMAT RETAIL (1-2) | LARGE FORMAT RETAIL (3-5) | ANACONDA



STREETSCAPE ELEVATION

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
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SYDNEY SUITE 8.01, 140 ARTHUR ST, NORTH SYDNEY, NSW 2060 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344

SCALE NTS @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: OCT '22
DRAWN: AQA
DWG NO. DA300
REV. E

LEFFLER SIMES ARCHITECTS

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

RETAIL DEVELOPMENT

337-341 Yaamba Road, Park Avenue, QLD 4701

LANDSCAPE CONCEPT DESIGN REPORT

Client
SPG Developments Pty Ltd

Project Address
337-341 Yaamba Road,
Park Avenue, QLD 4701

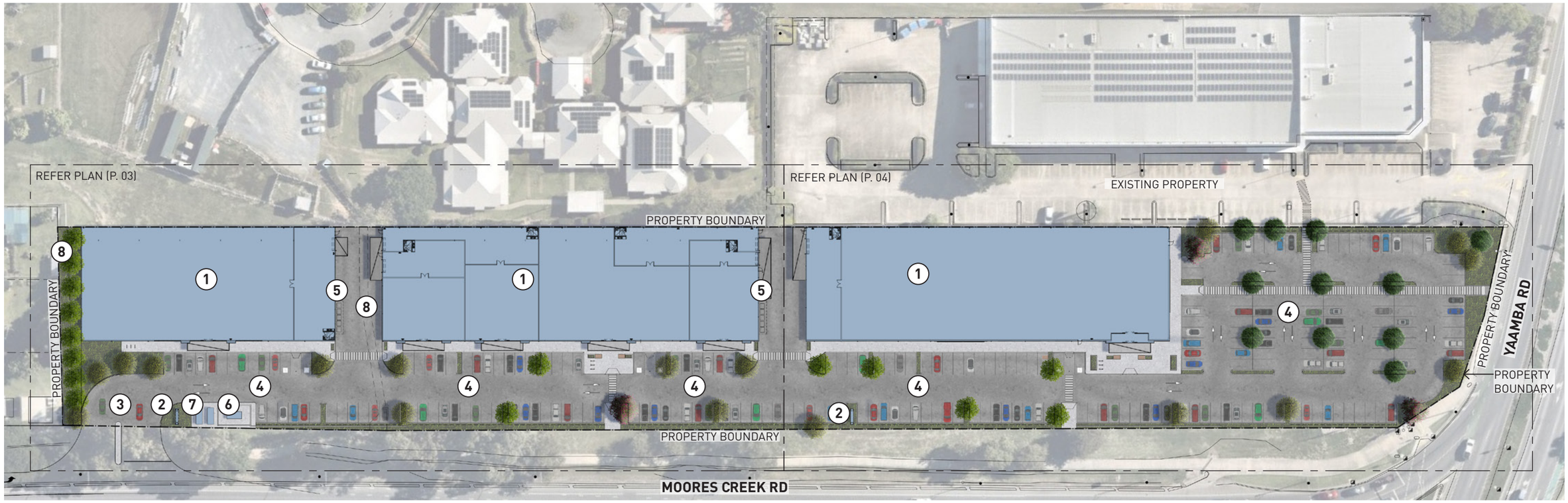
Contact
O2 Landscape Architecture
(07) 3831 0681

Document Number
634_SD_LR001_F
Date: 22/02/2024

Contents

Plans

Site Landscape Concept Plan



LEGEND

1. Proposed Building
2. Signage
3. Entry/ Exit
4. Carparking
5. Waste Area
6. Substation & MSB
7. Fire Booster
8. Drainage Easement

KEY

- Medium Canopy Feature Trees
- Small Trees
- Dense Screen Planting - Small Trunk Diameter Trees
- Understorey Planting

DESIGN INTENT

The landscape treatments throughout the site provide shade and visually soften built form. Key design elements are as follows:

- Carpark islands incorporated to break the scale of, and enable tree canopies to overhang hardstand
- Canopy trees at regular spacing throughout the carpark, providing shade whilst also enabling sightlines to signage
- Primary pedestrian connection to the site from Yaamba Road is shaded by medium canopy trees.
- Along the interface with Moores Road, the hardstand of carparks is shortened to 4.9m, thereby enabling the provision of trees and maximizing soil volume for planting beds. Where carparks overhang planting beds, groundcover planting is proposed
- Buffer planting provided at the south western-corner (along the residential boundaries), comprising small screening trees
- Mass understorey planting throughout all planting beds, visually softening built form whilst ensuring clear sightlines for safety

1:1000 - A3 0 5 10 20 50 75m

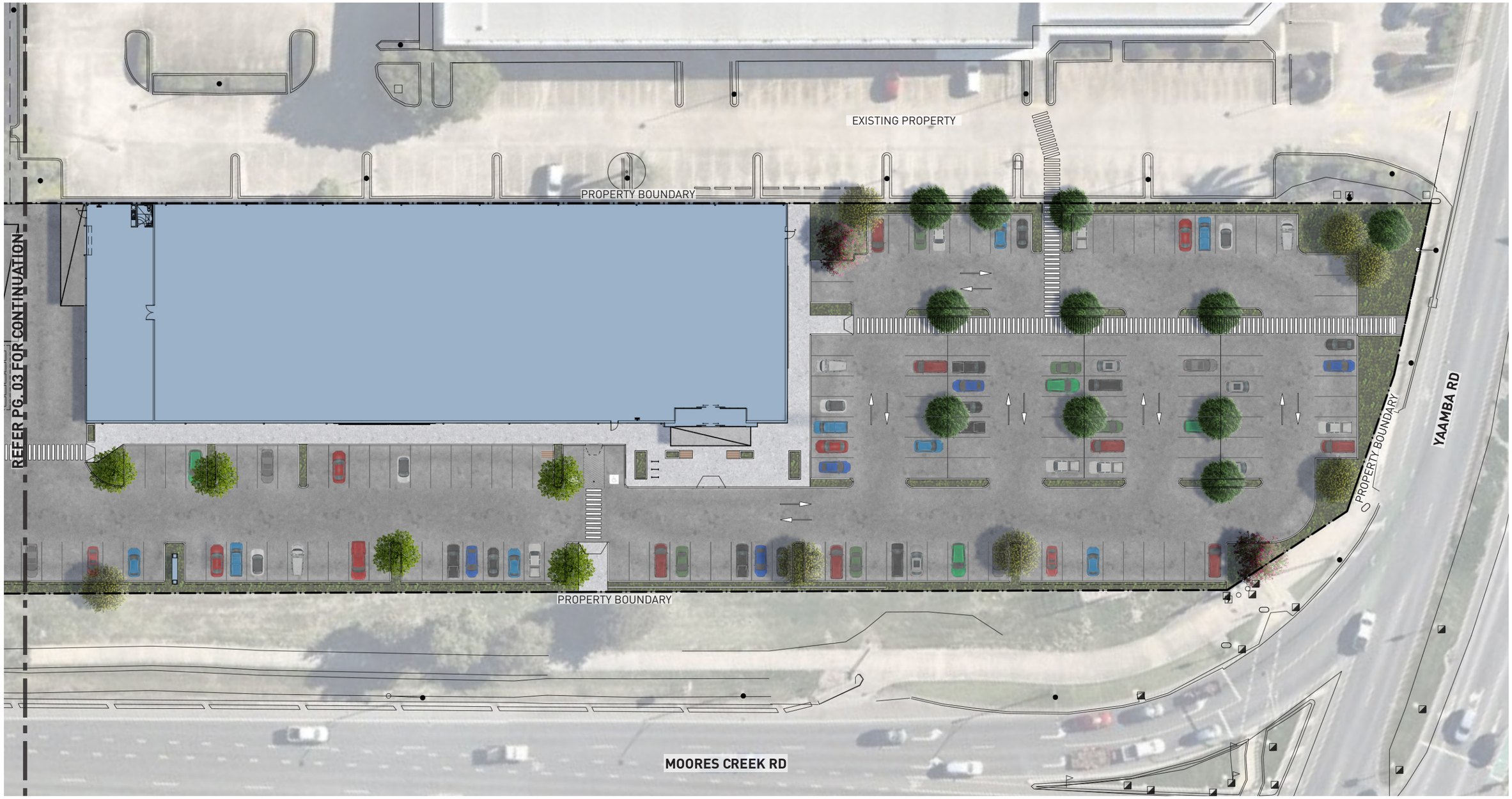
Plans

Landscape Concept Plan South-West

1:500 - A3
0 2 5 10 20 35m

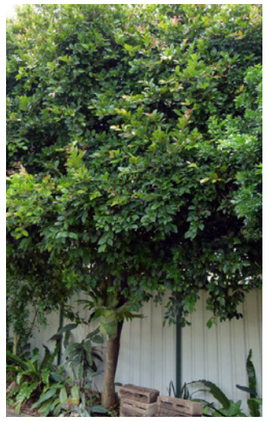
Plans

Landscape Concept Plan North-East



Soft Works Character

Tree Species Palette



ALECTRYON coriaceus
H: 4-5m | W: 2-3m

BACKHOUSIA citriodora
H: 6-8m | W: 3-4m

BARKLYA syringifolia
H: 8-20m | W: 4-5m

ELAEOCARPUS eumundii
H: 8-10m | W: 3-5m

FLINDERSIA brayleyana
H: 8-12m | W: 6-8m

HARPULLIA pendula
H: 6-8m | W: 6-10m

Soft Works Character

Understorey Species Palette


ALOCASIA macrorrhizos


ALPINIA mutica


ALPINIA nutans


ALPINIA zerumbet 'Variegata'


BLECHNUM 'Silver Lady'


CALLISTEMON 'Little John'


CORDYLINE fruticosa 'Negra'


CORDYLINE fruticosa 'Pink Diamond'


CORDYLINE petiolaris


CORDYLINE 'Purple Prince'


CORDYLINE 'Rubra'


CORDYLINE stricta


DIETES grandiflora


GARDENIA radicans


GAZANIA rigens


HELICONIA 'Golden Torch'


LIRIOPE 'Evergreen Giant'


LIRIOPE 'Stripey White'


LOMANDRA longifolia


MOLINERIA capitulata


MONSTERA deliciosa


MYOPORUM ellipticum


PHILODENDRON 'Rojo Congo'


PHILODENDRON 'Xanadu'


PITTOSPORUM tobira 'Miss Muffet'

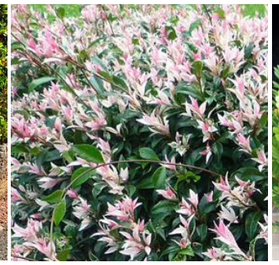

SCAEVOLA calendulacea


STRELITZIA reginae


SYZYGIUM 'Cascade'


SYZYGIUM 'Pinnacle'


SYZYGIUM 'Tiny Trev'


TRACHELOSPERMUM jasminoides 'Tricolor'


ZAMIA furfuracea

02 Landscape Architecture
ABN 22 704 400 505

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Industry Affiliations

Australian Institute of
Landscape Architects

Proposed Development
Moores Creek Road, Park Avenue

TRAFFIC IMPACT ASSESSMENT REPORT

Prepared for: SPG Developments Pty Ltd
Date: 09 February 2024
File Ref: 20240209_10653_TIA

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/155-2022
Dated: 27 May 2024

Project / Report Details

Document Title:	Traffic Impact Assessment Report
Principal Author:	Margaret Mak
Client:	SPG Developments Pty Ltd
Ref. No.	20240209_10653_TIA

Document Status

Issue	***Description***	***Date***	***Author***	***Reviewer***
1	Traffic Report	09 February 2024	Margaret Mak	Noel Kay RPEQ#26424

Distribution Record

Recipient	***Distribution Method***

Traffic & Transport Plus ABN: 54 619 700 239

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Qld 4064
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Table of Contents

Table of Contents

TABLES

FIGURES

Appendices

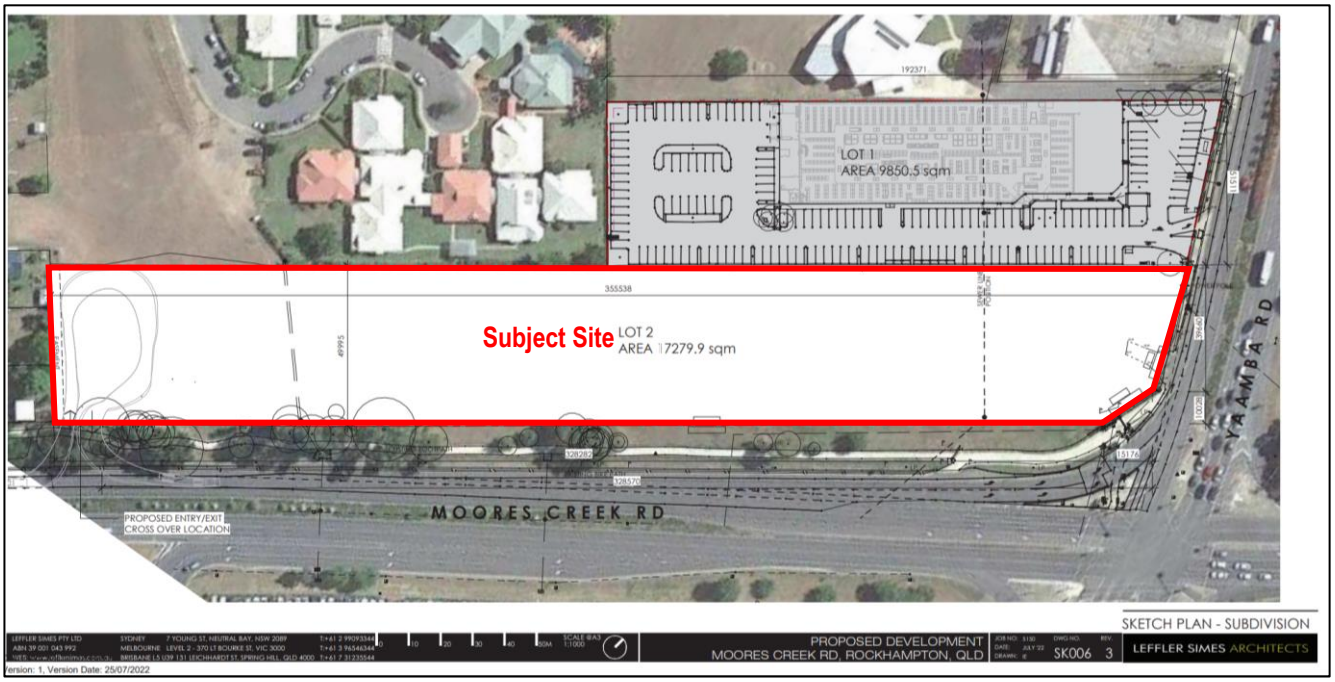
1 Introduction

SPG Developments Pty Ltd (**SPG**) has commissioned Traffic & Transport Plus (**TTPlus**) to prepare a traffic impact assessment of a development application for a proposed large format retail development located at 337-341 Yaamba Road, Park Avenue, properly described as Lot 24 on SP191047 (**Subject Site**).

In 2022, SPG applied for a development application for reconfiguring a lot (**ROL**) (one lot into two lots) and Rockhampton Regional Council (**Council**) approved the development application for ROL on 19 September 2022 (**2022 ROL Approval**).

The approved lot plan (Lot 1 and Lot 2) is duplicated as Figure 1-1.

Figure 1–1 – Approved Lot Plan (2022 ROL Approval)



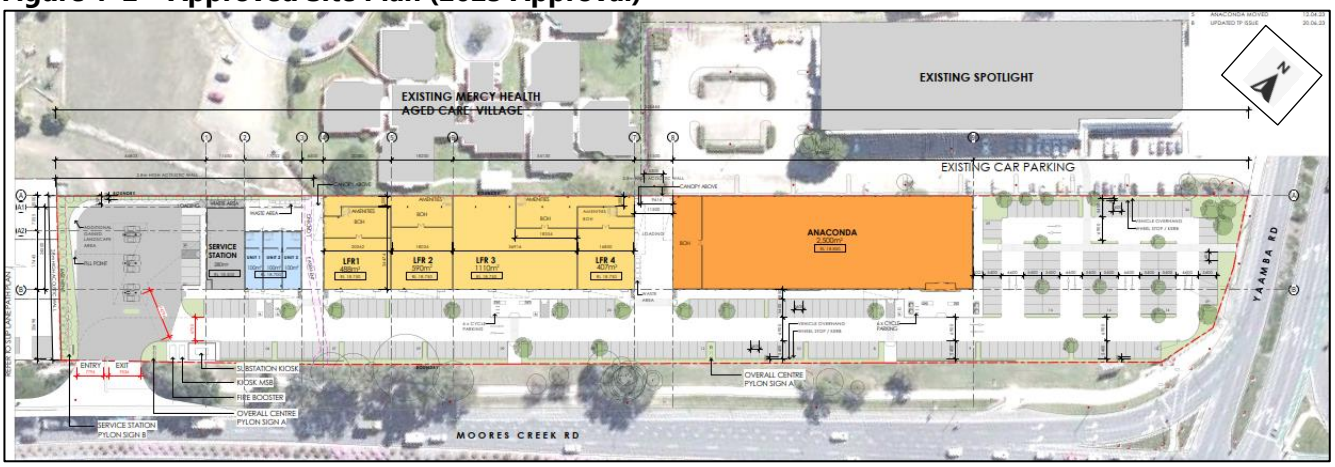
[annotations 7added by TTPlus]

In 2023, SPG lodged a development application for a mixed-use development at Lot 2. Council approved the development application on 30 August 2023 (**2023 Approval**).

The approved site plan of the 2023 Approval is duplicated as Figure 1-2. The approved mixed-use development consists of the following land uses and GFAs:

- Service station:.....280m^2
- Shop (Units 1 – 3):.....300m^2
- Large format retail (**LFR**) / Bulky goods (LFR 1 – 4 and Anaconda):..... 5,095m^2
- Total:..... 5,675m^2

Figure 1–2 – Approved Site Plan (2023 Approval)



**The existing bulky good (Spotlight) is located on Lot 1. Lot 1 (existing Spotlight) was not included in the 2023 Approval and the new development application as it relates to Lot 2 only after Council approved the development application for ROL on 19 September 2022. The approved lot plan is duplicated as Figure 1-1. [Northpoint added by TTPlus]*

In this new development application (**new DA**), three small shops (Units 1 – 3) and a service station, that were included in the 2023 Approval, are proposed to be replaced by a single 1750m^2 LFR building and associated loading facilities and car parking. There is no change to the access arrangements proposed.

The proposed site plan of the new DA is included within Appendix A of this report. The proposed LFR development consists of the following land uses and GFAs:

- LFR / Bulky goods (LFR 1 – 5 and Anaconda):..... 6,845m^2

This report addresses the following traffic–related issues in relation to the new DA:

- The access arrangements;
- The car parking supply;
- The bicycle parking supply;
- The car park layout design;
- The servicing arrangements;
- Trips associated with the new DA;
- Traffic impacts associated with the new DA on the adjacent external road network, and
- The necessary upgrading works as a result of the new DA.

A summary of the findings is provided in Section 5 of this report.

2 Subject Site

2.1 Site Location

The Subject Site is located at the northwest corner of Moores Creek Road and Yaamba Road, Park Avenue. Figure 2-1 illustrates the location of the Subject Site relative to Moores Creek Road and Yaamba Road.

The Subject Site has previously operated as a caravan park but is currently unoccupied. Access to the Subject Site was previously available approximately midway along the Yaamba Road site frontage with no existing access points to Moores Creek Road.

Figure 2–1 – Locality Map

Source: https://qldglobe.information.qld.gov.au [annotations added by TTPlus]

2.2 Existing Road Network

The hierarchical classification and characteristics of the roads in the vicinity of the Subject Site are described in Table 2–1 below.

Table 2–1 – Existing Road Hierarchy

Road	Description	Authority	Speed Limit*
Moores Creek Road	Divided sealed carriageway (4-lane) with cycle lanes. Parking is not permitted on either side.	The Department of Transport and Main Roads (**DTMR**)	70km/h
Yaamba Road	Divided sealed carriageway (2 northbound lanes and 3 southbound lanes)	DTMR	70km/h**

**Speed limits have been identified using Google Street View.*

***Yaamba Road south is 70/60km/h.*

2.3 Public Transport

There are bus stops on Yaamba Road near the Subject Site, which are serviced by 8× bus routes. This includes local Rockhampton routes 401, 403, 407, 410 & 411 and Yeppoon routes 440 & 442. There is a northbound bus stop on Yaamba Road adjacent to the Subject Site (bus stop id: 860056 "Yaamba Road at Moores Creek Road") that is serviced by most of the aforementioned bus routes. There is also a bus stop pair on Yaamba Road north of the Subject Site (bus stop ids: 860237 and 860332 "Yaamba Road at Emmaus College") and another pair south of the Subject Site (bus stop ids: 860481 and 860482 "Musgrave Street at Shopping Fair") — both of which are within the 400*m* walk catchment recommended by the State's Public Transport Infrastructure Manual (**PTIM**).

The overall routes and frequencies indicate that this Subject Site has excellent public transport provision within Rockhampton.

2.4 Pedestrian and Cyclist Network

There are existing footpaths along the site frontages on Moores Creek Road and Yaamba Road, these existing footpaths will be maintained.

There are cycle lanes on both sides of Moores Creek Road near the Subject Site. The Subject Site is well located regarding the existing cycle network.

The increasing trend of eScooter use in Queensland is likely to continue, and the subject site is well located to take advantage of this takeup. eScooters are available to purchase at a number of accessible retail stores such as JB Hi Fi & Harvey Norman. It is noted that hireable eScooters, provided by Neuron, are available in Rockhampton. Since the previous application the Subject Site has been included with an expanded Neuron eScooters zone, — so eScooters can be hired by site users directly.

3 Review of the Site Layout

3.1 Site Access Arrangements

The traffic-related referral agency conditions of the 2023 Approval, stated in the SARA Response dated 19 July 2023, are duplicated below. The permitted road access location is on Moores Creek Road (south-western corner of the Subject Site) and no access is permitted to be provided at the Yaamba Road site frontage.

1.	(a) The permitted road access location to Moores Creek Road is to be located at TMR Chainage 4.00km (Lat: -23.353028; Long: 150.521404) and generally in accordance with the Site Plan, prepared by Leffler Simes Architects, dated 20.06.23, reference DA020, revision B, as amended in red by SARA. (b) Road access works (at the permitted road access location specified in part (a) of this condition) must be provided generally in accordance with the Site Plan, prepared by Leffler Simes Architects, dated 20.06.23, reference DA020, revision B, as amended in red by SARA and consist of a full Auxiliary Left-turn (AUL) treatment in accordance with Figure 8.6 of the Austroads Guide to Road Design – Part 4A (2021) with consideration of a splitter island at the access to channelise entering and exiting streams of traffic and incorporate a cycle lane not shared with the left turning lane. (c) The road access works must be designed and constructed in accordance with the Department of Transport and Main Roads Road Planning and Design Manual, 2nd Edition.	(a) At all times. (b) and (c) Prior to the commencement of use.
2.	Direct access is not permitted between Yaamba Road and Moores Creek Road (the state-controlled roads), and the subject site at any location other than the permitted access location as outlined in Condition 1.	At all times.

A left-in / left-out access with a full auxiliary left-turn (**AUL**) treatment is proposed to be provided on Moores Creek Road and no direct access is proposed to be provided on Yaamba Road — these proposed site access arrangements are also consistent with the conditions stated in the SARA Response of the 2023 Approval dated 19 July 2023.

A concept plan of the proposed (conditioned) AUL turn lane treatment is illustrated as Figure 2 within Appendix B — the proposed AUL treatment has been designed in accordance with Figure 8.6 of the Austroads' "*Guide to Road Design – Part 4A (2021)*"; and the proposed AUL treatment can fit within the existing road reserve.

3.2 Sight Distances

Available sight distances related to the proposed Moores Creek Road site access have been assessed.

The typically sought safe intersection sight distances (**SISD**) and approach sight distances (**ASD**) as per the requirements identified in Austroads' "*Guide to Road Design Part 4A: Unsignalised and Signalised Intersection, 2021*" (Ref.1), and whether the sight distances available comply with the Austroads' requirements are summarised in Table 3-1.

Table 3–1 – Review of Sight Distances at the Moores Creek Road Site Access

Intersection	Leg of Intersection	Design Speed of Major Road*	Austroads' Recommended SISD	Austroads' Recommended ASD	Available Sight Distance complies with Austroads' Provision	
					SISD	ASD
Moores Creek Road Site Access	Southwest	80km/h	181m	114m	Yes	Yes

**The analysis has adopted a design speed allowance of 10km/h above the posted speed limit.*

The Google Maps Streetview image from Moores Creek Road proximate to the site access, looking southwest, along Moores Creek Road is illustrated as Figure 3-1.

Figure 3–1 – Looking Southwest along Moores Creek Road

Source: Google Maps [annotations added by TTPlus]

[1] *"Guide to Road Design Part 4A: Unsignalised and Signalised Intersection", Austroads, 2021.*

The typically sought SISD (181m) related to the site access and the general contours proximate are illustrated on Figure 3-2. Based on a review of the Google Maps streetview imagery, available aerial imagery and contours on Queensland Globe (refer to Figure 3-2), it is evident that Moores Creek Road is relatively straight and flat proximate to the Moores Creek Road site access, therefore the sight distances available at the Moores Creek Road site access would comply with Austroads' required sight distances.

This would also be verified at the detailed design stage.

Figure 3–2 – Contour Map and Sight Distance

Source: https://qldglobe.information.qld.gov.au/ [annotations and sight distances added by TTPlus]

3.3 Car Parking Supply

Based on a review of the site layout plan (refer to Appendix A), the new DA includes 246 car parking spaces (including 6 PWD parking spaces).

The car parking requirements included in the Rockhampton Regional Planning Scheme – Access, Parking and Transport Code (**APT Code**) and the proposed car parking supply are outlined in Table 3-2.

Table 3–2 – Car Parking Requirements and Supply

Land Use	APT Code Requirements		Proposed Supply
	Rate	Minimum Spaces	Spaces
LFR / Bulky Goods (showroom) (6,845m^2)	*Minimum of one space per f 40 square metres or part thereof of GFA*	172 (= 6,845 ÷ 40)	246 spaces

The proposed car parking supply (246 car parking spaces) exceeds the minimum APT Code recommendations (172 car parking spaces) and therefore complies with the appropriate Acceptable Outcome.

3.4 Bicycle Parking Supply

The car parking requirements included in the Rockhampton Regional Planning Scheme – Bicycle Network Planning Scheme Policy are outlined in Table 3-3.

Table 3–3 – Bicycle Parking Requirements

Land Use	Bicycle Network Planning Scheme Policy Requirements	
	Minimum Rate	Spaces
LFR / Bulky Goods (showroom) (6,845m^2)	Staff: 1 per 750m^2 GFA	Staff: 10
	Visitor: 1 per 750m^2 GFA	Visitor: 10

Twelve (12) bicycle parking spaces have been shown on the proposed site layout plan (refer to Appendix A). TPPlus recommends providing eight (8) more bicycle parking spaces; and considers that there is sufficient space on-site to provide eight (8) more bicycle parking spaces. If approved, bicycle parking provisions can be a matter of conditions.

3.5 Car Park Layout

APT Code requires the car parking layout to be designed in accordance with Australian/New Zealand Standard Parking facilities Part 1: Off-street car parking (**AS2890.1**).

TTPlus has undertaken a dimension check of the site layout plan. The dimension check has been included as Figure 1 within Appendix B. The dimensions of the site layout (Figure 1 within Appendix B) are generally as follows:

- General car parking spaces are 2.6m × 5.4m with aisles with 6.60m min. wide;
- Car parking spaces(next to the landscaping areas) are 2.6m × 5.4m (= 4.9m plus 0.5m overhang) with aisles with 6.90m wide, and
- PWD parking spaces are 2.6m × 5.4m with a ≥ 2.4m × 5.4m shared space, with aisles with 6.6m min. wide.

The above car and PWD parking space and aisle dimensions generally comply with AS2890.1 requirements. In broad terms, the car parking layout would function safely and efficiently.

3.6 Servicing Arrangements

Two (2) loading areas suitable for parking of semi-trailers and large rigid vehicles (**LRV**s) are proposed to be provided between the LFR 1 building & LFR 2 building and the Anaconda building & the LFR 5 building.

TTPlus has been advised that semi-trailers will be used during the set-up phase of the store(s), and the largest service vehicle used by the Subject Site during the operational stage is an LRV.

The swept paths of the semi-trailer (to only be used during store setup) have been illustrated on Figure 3 and Figure 6 within Appendix B. It is noted that approximately 8 car parking spaces near the loading areas are required to be temporarily marked as unavailable for parking (pink shaded car parking spaces on Figure 3 and Figure 6 within Appendix B) during the set-up phase of store(s) to allow for the semi-trailers manoeuvring.

The swept paths of LRVs servicing the loading areas have been illustrated on Figures 4, 5, 7 and 8 within Appendix B. All design vehicles are able to enter and exit the Subject Site in a forward gear.

As illustrated in swept path diagrams (Figure 3 to Figure 8), service vehicles require to reverse in or reverse out the loading areas. In order to enhance the safety of pedestrians, the following safety measure is proposed to be provided near two (2) loading areas:

- Install pedestrian warning systems – the service vehicle drivers could activate the pedestrian warning system (flashing light and warning voice) when they need to reverse in or reverse out the loading areas, so that pedestrians can be made aware of the reversing vehicles. The warning voice will be well adjusted so that the impacts to the nearby aged care village (east of the subject site) could be minimised.

  An example of the pedestrian warning system could be found at the loading area of 124 Adelaide Street, Brisbane City, QLD (as illustrated in Figure 3-3). There is insufficient space for service vehicles to turn around within the loading area of 124 Adelaide Street, with service vehicles being required to reverse back onto busy Adelaide Street.

Figure 3–3 – Pedestrian Warning System

4 Traffic Impact Assessment

A number of development permits / approvals of the Subject Site were issued by Council in the past. The most recent development approval is the 2023 Approval.

A comparison of the proposed land uses of the new DA and the approved land uses of the 2023 Approval are summarised in Table 4-1. The corresponding changes in trip generation are summarised in Table 4-2.

Table 4–1 – Changes in Floor Area of Approved and Proposed Land Uses

Land Use	GFA		
	2023 Approval	New DA	Net Change
Service Station	280m²	0m²	-280m²
Shop	300m²	0m²	-300m²
Bulky Goods	5,095m²	6,845²	+1,750m²

Table 4–2 – Changes in Trip Generation

Land Use	Trip Generation Rate*		Trip Generation of Approved Land Uses of the 2023 Approval (vph)		Trip Generation of Proposed Land Uses of the New DA (vph)		Net Change in Trip Generation (vph)	
	Weekday PM	Saturday Noon	Weekday PM	Saturday Noon	Weekday PM	Saturday Noon	Weekday PM	Saturday Noon
Service Station	0.66vph per m²	0.66vph per m²	185	185	0	0	-185	-185
Shop	12.5vph per 100m²	16.3vph per 100m²	38	49	0	0	-38	-49
Bulky Goods	2.5vph per 100m²	6.6vph per 100m²	127	336	171	452	+44	+116
Total / Net Change			350	570	171	452	-179	-118

**Trip generation rates are sourced from RTA's Guide to Traffic Generating Developments, 2002.*

Based on the net change in trip generation included in Table 4-2, the new DA would generate significantly less trips than the approved land uses. Therefore, the new DA will generate significantly less traffic impacts on the external road network (including the Moores Creek Road site access) compared to the 2023 Approval.

Hence, the conditioned roadworks for the 2023 Approval (providing a full AUL treatment at the Moores Creek Road site access) are considered to be more than sufficient for the new DA. Therefore, no additional external upgrading works are required to be provided.

5 Summary of Findings

SPG Developments Pty Ltd has commissioned Traffic & Transport Plus to prepare a traffic impact assessment of a development application for a proposed large format retail development located at 337-341 Yaamba Road, Park Avenue, properly described as Lot 24 on SP191047 (**Subject Site**).

SPG applied for a development application for reconfiguring a lot (**ROL**) (one lot into two lots) and Rockhampton Regional Council (**Council**) approved the development application for ROL on 19 September 2022.

In 2023, SPG lodged a development application for a mixed-use development at Lot 2. Council approved the development application on 30 August 2023 (**2023 Approval**).

In this new development application (**new DA**), three small shops (Units 1 – 3) and a service station, that were included in the 2023 Approval, are proposed to be replaced by a single 1750m² LFR building and associated loading facilities and car parking. There is no change to the access arrangements proposed.

The proposed site plan of the new DA is included within Appendix A of this report.

Site Access

- A left-in / left-out site access is proposed to be provided on Moores Creek Road (south-western corner of the Subject Site) and no access is proposed or permitted to be provided at the Yaamba Road site frontage — these proposed site access arrangements are also consistent with the conditions stated in the SARA Response of the 2023 Approval dated 19 July 2023.

- An auxiliary left-turn lane (**AUL**) treatment is proposed to be provided at the Moores Creek Road site access; the proposed left turn lane treatment can fit within the existing road reserve. The concept plan of the proposed AUL turn lane treatment is illustrated as Figure 2 within Appendix B. The design of the proposed AUL turn lane treatment is in accordance with Figure 8.6 of the Austroads' "*Guide to Road Design – Part 4A (2021)*".

- Based on the results of the sight distance assessment (refer to Section 0), the sight distances available at the Moores Creek Road site access would comply with Austroads' required sight distances. This would also be verified at the detailed design stage.

Car Park Layout

- The proposed car parking supply (246 car parking spaces) exceeds the minimum APT Code recommendations (172 car parking spaces) and therefore complies with the appropriate Acceptable Outcome.

- Twelve (12) bicycle parking spaces have been shown on the site layout plan (refer to Appendix A). TPPlus recommends providing eight (8) more bicycle parking spaces; and considers that there is sufficient space on-site to provide eight (8) more bicycle parking spaces. If approved, bicycle parking provisions can be a matter of conditions.

- Car and PWD parking space and aisle dimensions generally comply with the AS2890.1 requirements. In broad terms, the car parking layout would function safely and efficiently.

- The proposed loading arrangements are appropriate and will provide for safe and efficient access by all design vehicles. All design vehicles are able to enter and exit the site in a forward gear.

- In order to enhance the safety of pedestrians, pedestrian warning systems are proposed to be installed near the loading areas between the LFR 1 building & LFR 2 building and the Anaconda building & the LFR 5 building.

Traffic Impact Assessment

The new DA is expected to generate significantly less traffic than the currently approved use of the Subject Site and therefore the new DA would not generate significant traffic impacts to the external road network, when compared to the 2023 Approval.

Hence, the conditioned roadworks for the 2023 Approval (providing a full AUL treatment at the Moores Creek Road site access) is considered to be more than sufficient for the new DA. Therefore, no additional external upgrading works are required to be provided.

All traffic engineering aspects of the new DA are satisfactory and provide a suitable outcome for the Subject Site.

Conclusion

Based on the assessment and recommendations within this report, the new DA can be approved from a traffic engineering perspective, subject to reasonable and relevant conditions.

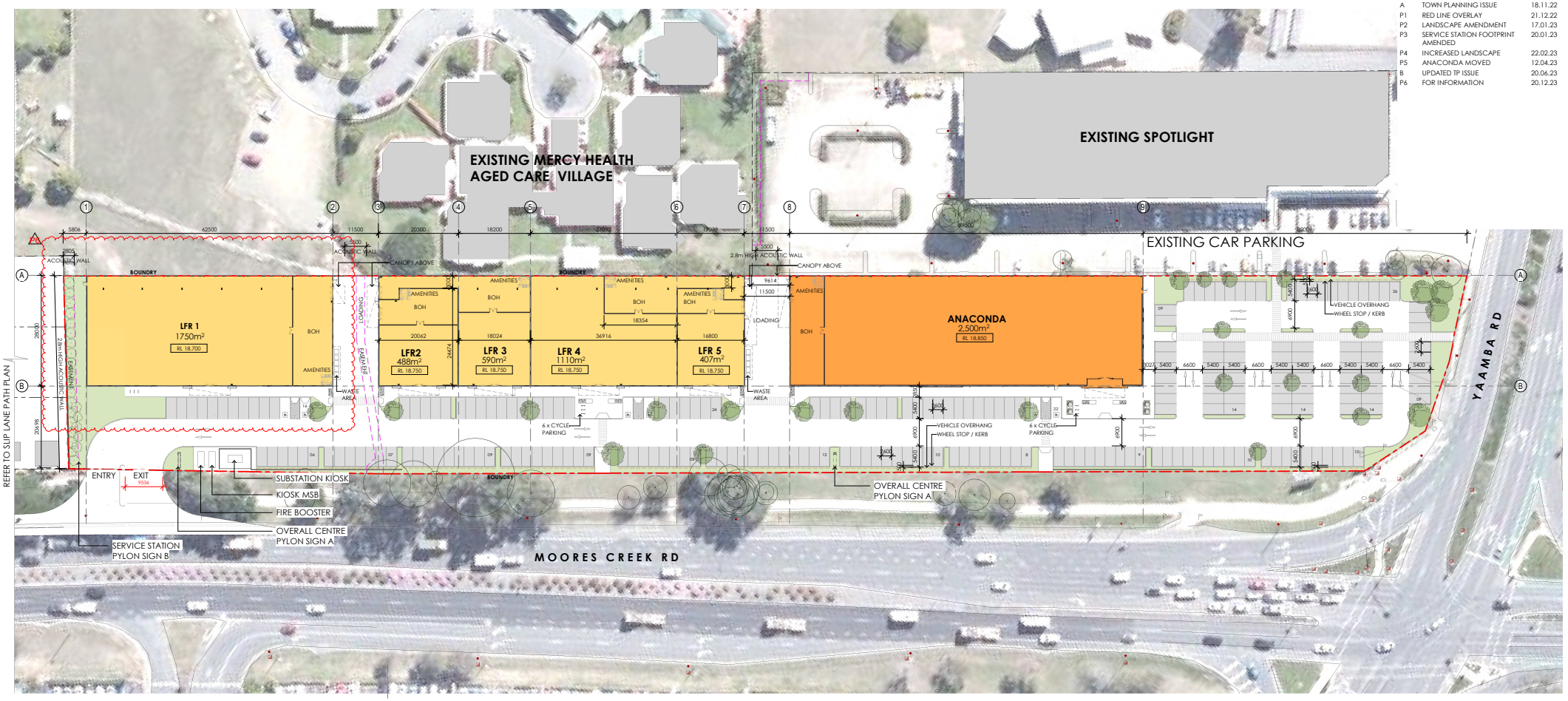
Appendix A

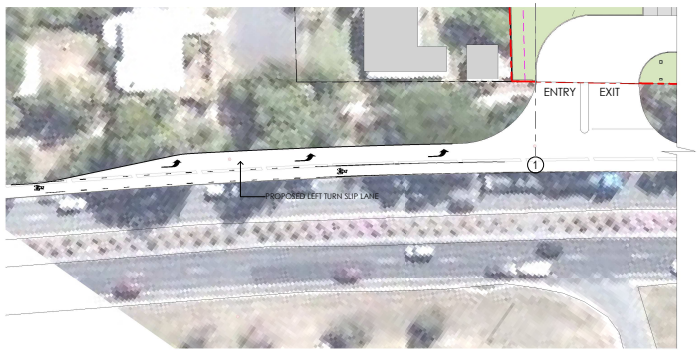
Site Layout Plan

Green Building Council Australia Member

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
P1	RED LINE OVERLAY	21.12.22	SJE
P2	LANDSCAPE AMENDMENT	17.01.23	SJE
P3	SERVICE STATION FOOTPRINT AMENDED	20.01.23	SJE
P4	INCREASED LANDSCAPE	22.02.23	SJE
P5	ANACONDA MOVED	12.04.23	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
P6	FOR INFORMATION	20.12.23	SJE





2 **SLIP LANE PATH PLAN**

LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES

AREA SUMMARY

LFR 1	1750m²
LFR 2	488m²
LFR 3	590m²
LFR 4	1,110m²
LFR 5	407m²
ANACONDA	2,500m²
TOTAL NEW BUILD AREA GFA	**6,845m²**

CAR PARKING SUMMARY

CAR SPACES	240
DISABLED SPACES	6
TOTAL CAR SPACES	**246**
PARKING RATIO	3.6 PER 100 SQM

SITE PLAN

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY 7 YOUNG ST, NEUTRAL BAY, NSW 2089 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344
BRISBANE L5 U39 131 LEICHHARDT ST, SPRING HILL, QLD 4000 T:+61 7 31235544

SCALE 1:500 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

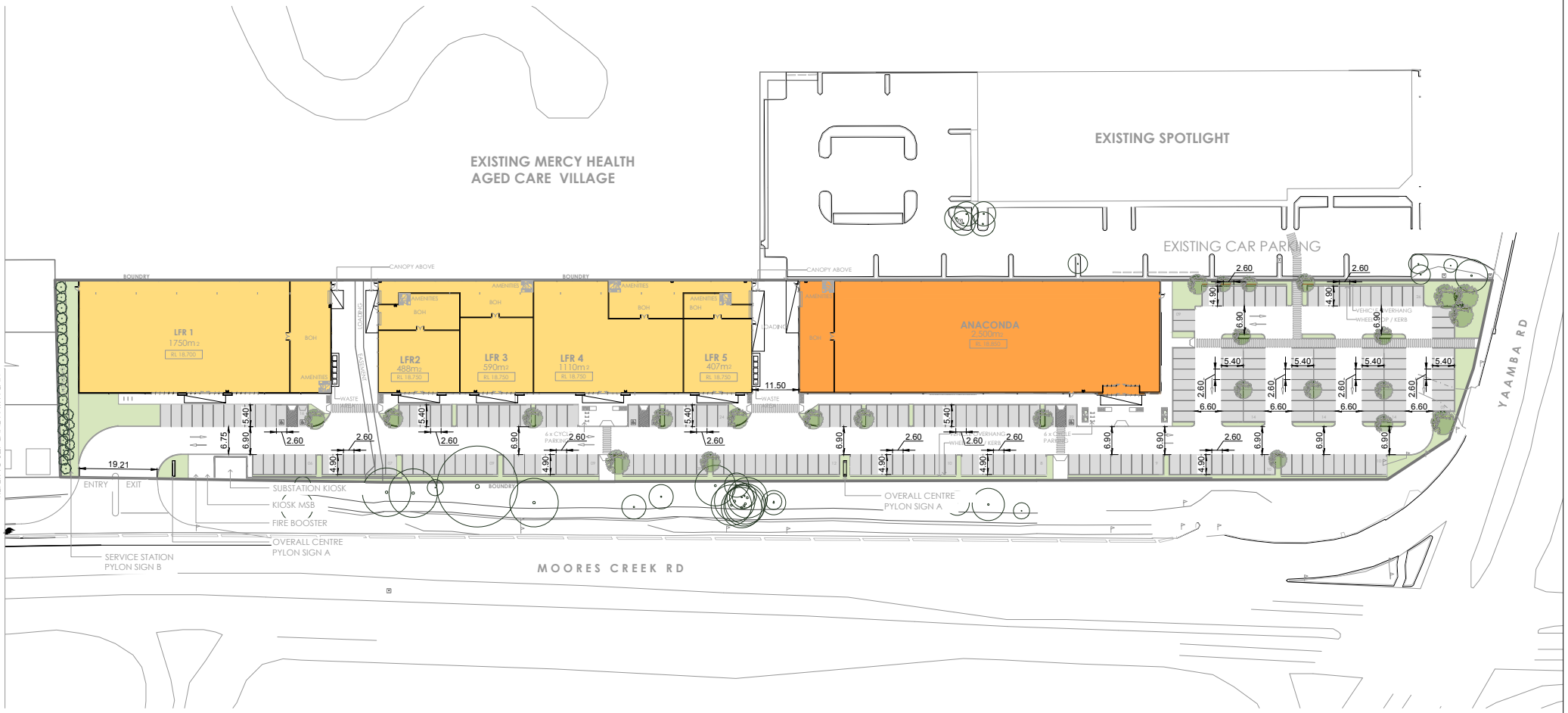
JOB NO: 5150
DATE: SEP 22
DRAWN: AQA

DWG NO. DA020 REV. P6

LEFFLER SIMES ARCHITECTS

Appendix B

Dimension Check and Swept Path Analysis



REV	DESCRIPTION	DATE	BY
F	Updated site layout plan and layout review	15-06-2023	JHV
G	Updated site layout plan and layout review	21-08-2023	JHV
H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Dimension Check

TRAFFIC TRANSPORT PLUS
Ph: +61 7 3871 0411
www.TTPLUS.com.au

SCALE: 1:1,000 When Printed On A3 — 0 — 20m
DRAWING NUMBER: FIGURE 1
REVISION: H
DRAWN: JHV
CHECKED: BT
COORDINATE SYSTEM: GDA94 / AHD / MGA56
JOB CODE: 10653

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REV	DESCRIPTION	DATE	BY
F	Updated site layout plan and layout review	15-06-2023	JHV
G	Updated site layout plan and layout review	21-08-2023	JHV
H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography: © 2022 Nearmap, 2022-07-10
Topography:
Cadastre:
Ecosystem:
LiDAR:

CREATED: 8 February 2024 JOB SUB #
FILE NAME: C:\Users\robert.langer\OneDrive\02. Job Data\01. TTP\tab10000-10661-10700\10653 - Moores Creek Road, Rockhampton\Cad\10653-SWEPT PATHS.dwg

PROJECT:
Proposed Development
Moores Creek Road, Rockhampton

CLIENT:
SPG Developments Pty Ltd

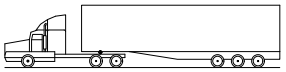
TITLE:
Auxiliary Left-turn Lane Treatment
at the Moores Creek Road Site Access

TRAFFIC TRANSPORT PLUS
Ph: +61 7 3871 0411
www.TTPLUS.com.au

SCALE: 1:600 When Printed On A3
0 12m
DRAWING NUMBER: FIGURE 2
REVISION: H
DRAWN: JHV
CHECKED: BT
COORDINATE SYSTEM: GDA94 / AHD / MGA56
JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicles Used for Analysis:



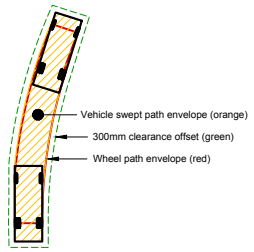
Semi-trailer

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

BOUNDRY

CANOPY ABOVE

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LOADING

EASEMENT

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

WASTE AREA

REFER TO SLIP LANE PATH PLAN

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

FILE NAME: C:\Users\robert.langer\OneDrive\02. Job Data\01. TIPlus\10000-10681-10700\10653 - Moores Creek Road, Rockhampton\Cad\10653-SWEPT PATHS.dwg

CREATED: 8 February 2024 JOB SUB #:

REV	DESCRIPTION	DATE	BY
F	Updated site layout plan and layout review	15-06-2023	JHV
G	Updated site layout plan and layout review	21-08-2023	JHV
H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

Legend:

Proposed Changes

PROJECT: Proposed Development Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Swept paths - Semi-trailer (Temporary Set-up Phase)

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DRAWING NUMBER: FIGURE 3

REVISION: H

DRAWN: JHV

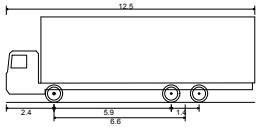
CHECKED: BT

COORDINATE SYSTEM: GDA94 / AHD / MGA56

JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



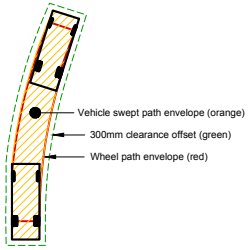
LRV - Large Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

BOUNDRY

CANOPY ABOVE

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LOADING

EASEMENT

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

WASTE AREA

REFER TO SLIP LANE PATH PLAN

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

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H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Swept Paths - LRV

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DRAWING NUMBER: FIGURE 4

REVISION: H

DRAWN: JHV

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COORDINATE SYSTEM: GDA94 / AHD / MGA56

JOB CODE: 10653

CREATED: 8 February 2024

JOB SUB #:

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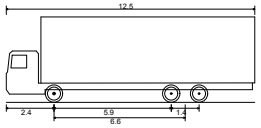
VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



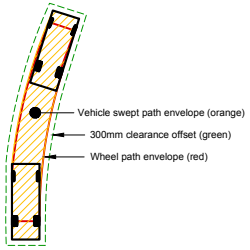
LRV - Large Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

BOUNDRY

CANOPY ABOVE

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LOADING

EASEMENT

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

WASTE AREA

REFER TO SLIP LANE PATH PLAN

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

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LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

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TITLE: Swept Paths - LRV

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DRAWING NUMBER: FIGURE 5

REVISION: H

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COORDINATE SYSTEM: GDA94 / AHD / MGA56

JOB CODE: 10653

CREATED: 8 February 2024

JOB SUB #:

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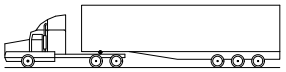
VEHICLE TURNING SUMMARY

Vehicles Used for Analysis:



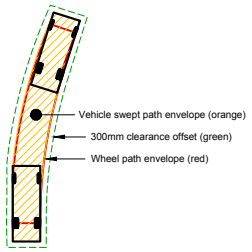
Semi-trailer

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.301m
Min Body Ground Clearance	0.418m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

BOUNDRY

CANOPY ABOVE

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

LOADING

WASTE AREA

6 x CYCLE PARKING

REFER TO SLIP LANE PATH PLAN

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

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H	ORIGINAL ISSUE	5-02-2024	BD

Data Sources:
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Legend:

Proposed Changes

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DRAWING NUMBER: FIGURE 6

REVISION: H

DRAWN: JHV

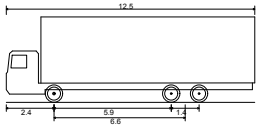
CHECKED: BT

COORDINATE SYSTEM: GDA94 / AHD / MGA56

JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



LRV - Large Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

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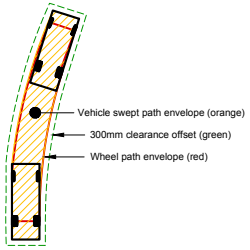
TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

CANOPY ABOVE

BOUNDRY

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

LOADING

WASTE AREA

6 x CYCLE PARKING

REFER TO SLIP LANE PATH PLAN

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

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H	ORIGINAL ISSUE	5-02-2024	BD

Data Sources:
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Ecosystem:
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DRAWING NUMBER: FIGURE 7

REVISION: H

DRAWN: JHV

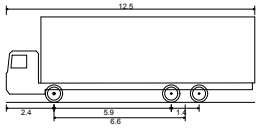
CHECKED: BT

COORDINATE SYSTEM: GDA94 / AHD / MGA56

JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



LRV - Large Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
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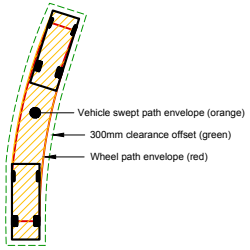
TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

BOUNDRY

CANOPY ABOVE

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

DINING

EASEMENT

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

LOADING

WASTE AREA

6 x CYCLE PARKING

REFER TO SLIP LANE PATH PLAN

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

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DRAWING NUMBER: FIGURE 8

REVISION: H

DRAWN: JHV

CHECKED: BT

COORDINATE SYSTEM: GDA94 / AHD / MGA56

JOB CODE: 10653

Disclaimer

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Document Control

Parameter	Description
Prepared for:	SPG Developments (Manager) Pty Ltd
Project Name:	Spotlight Property Group, Rockhampton
Site Address:	337-341 Yaamba Road, Park Avenue QLD
Project Number:	BN221936
File Reference:	BN221936_SBSMP001_C_Spotlight
Current Revision:	C
Date:	5.2.2024
Approved:	Sam Killoran (RPEQ 25874)
Approver Signature:	

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

Revisions

Rev	Date	Description	Prepared	Reviewed	Approved
A	21.11.2022	Issued for Approval	H.Jawad	A.Tatham	S.Killoran (RPEQ)
B	20.6.2023	Issued for Approval (RFI Response)	A.Tatham	A.Tatham	S.Killoran (RPEQ)
C	5.2.2024	Issued for Approval	A.Tatham	A.Tatham	S.Killoran (RPEQ)
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

Table of Contents

Figures

Tables

Appendices

Glossary

Term	Definition
ADP	Area Development Plan
AEP	Annual Exceedance Probability
ARI	Average Recurrence Interval
ESR	Engineering Services Report
EY	Exceedances per year
IECA	International Erosion Control Association
kL	Kilolitres
MCU	Material Change of Use
ML	Megalitres
MUSIC	Model for Urban Stormwater Improvement Conceptualisation
QUDM	Queensland Urban Drainage Manual
ROL	Reconfiguring of a Lot
SBSMP	Site Based Stormwater Management Plan
SPP	State Planning Policy
SQID	Stormwater Quality Improvement Device
WQO	Water Quality Object
WSUD	Water Sensitive Urban Design

Executive Summary

Northrop Consulting Engineers Pty Ltd (Northrop) have been engaged by SPG Developments (Manager) Pty Ltd to prepare a Site Based Stormwater Management Plan (SBSMP) for Development Application submission to Rockhampton Regional Council (Council). The proposed Commercial Development is located at 337-341 Yaamba Road, Park Avenue QLD and will deliver a multiple retail buildings including associated car parking, access, drainage and services infrastructure and earthworks/retaining.

This SBSMP addresses the stormwater management strategy for the proposed development and demonstrates that the proposed development can be constructed and operated in accordance with all stormwater objectives required for the development. The primary outcomes of this SBSMP are as follows:

Lawful Point of Discharge

The existing lawful point of discharge for the site is stormwater infrastructure within Moores Creek. The southern portion of the site currently has no internal stormwater infrastructure and all flows generated on the site flow overland towards the adjacent swales to the south of the site. The existing developed portion (existing Spotlight building) drains to internal pit and pipe systems which drain to stormwater infrastructure within Yaamba Road and Mercy Health Aged Care Village. It is proposed to maintain the existing lawful point of discharge in the post development case.

Stormwater Quantity

The stormwater quantity objective was to demonstrate non-worsening in peak discharges from the subject site for all storm events up to and including the 100-year. The purpose is to ensure that the existing infrastructure and/or downstream properties are not adversely affected.

To achieve non-worsening, the proposed development requires a total detention volume of 580 m^3 which has been achieved via two underground tanks. Tank 1 (185m^3) and Tank 2 (395 m^3) has been sized for Catchments D1 and D2, respectively. The design of the tanks was undertaken using DRAINS modelling software. The tank has been sized to mitigate post development flows to pre-development flows for all rainfall events up to and including the 1% AEP.

Stormwater Quality

Stormwater quality infrastructure has been included in the design to achieve the water quality objectives for South East Queensland specified in the State Planning Policy 2017, namely, the removal of gross pollutants, suspended solids, nitrogen and phosphorus. The proposed treatment train was modelling using MUSIC modelling software and includes the following SQID's:

- 17 x Ocean Protect OceanGuard 200micron filter baskets to all stormwater inlet pits within the site;
- Tank 1 – 18 x Ocean Protect Stormfilter 690 Psorb Cartridges located within a 9.5m^2 Stormfilter Chamber
- Tank 2 – 13 x Ocean Protect Stormfilter 690 Psorb Cartridges located within a 9.5m^2 Stormfilter Chamber

Erosion and Sediment Control

Construction phase ESCP measures are to be implemented during construction in accordance with the relevant requirements.

1. Introduction

Northrop Consulting Engineers Pty Ltd (Northrop) have been engaged by SPG Developments (Manager) Pty Ltd to develop a Site Based Stormwater Management Plan (SBSMP) in support of a Development Application submission to Rockhampton Regional Council (Council) and any nominated referral agency. The proposed Commercial Development is located at 337-341 Yaamba Road, Park Avenue QLD (Lot 24 SP191047), the full site details are summarised in Table 1-1 below. The proposed development will deliver a multiple retail buildings including associated car parking, access, drainage and services infrastructure and earthworks/retaining.

Table 1-1 - Property Details

Category	Description
Site Address	337-341 Yaamba Road, Park Avenue QLD
Lot Title	Lot 24 SP191047
Total Site Area	2.686 Ha
Proposed Land Use	Commercial Development

This primary objectives of this SBSMP is to define the following:

- Lawful point of discharge
- Stormwater Conveyance and Flood Management
- Stormwater Quantity management strategy
- Stormwater Quality management strategy
- Erosion and Sediment Control strategy.

1.1. Related Reports and Documents

This report is to be read in conjunction with the following reference documents:

- Civil Design Drawings by Northrop. Drawings No C00-001 to C00-322 (Revision 3)

2. Site Context and Existing Characteristics

The subject site is located at 337-341 Yaamba Road, Park Avenue QLD and is within Rockhampton Regional Council jurisdiction. The site is located adjacent to Mercy Health Age Care Village in the north-west.

The site is currently bound by:

- Yaamba Road to the east;
- Moores Creek Road to the south; and
- Mercy Health Aged Care Village to the north-west

The northern portion of the site comprises of a single commercial building (Spotlight) and associated car park which will be retained. The balance of the site comprises of undeveloped vegetated area which grades towards Moores Creek Road. Moores Creek is located approximately 130m south-east of the site. Figure 2-1 below illustrates the site's locality and existing site characteristics.

Figure 2-1 - Site Locality (SOURCE: QLD Globe, 2023)

2.1. Existing Site Characteristics

The northern portion of the site comprises of a single commercial building (Spotlight) and associated car park which will be retained. The balance of the site comprises of undeveloped vegetated area which grades towards Moores Creek Road.

The stormwater management strategy for the overall development will require the site to adopt an on-site stormwater quantity and quality measures to achieve the council requirements.

The developable portion of the site (southern portion) consists of two existing catchments (E1 & E2) that generally falls southwards towards swale drain in the northern verge of Moores Creek Road at grades of approximately 1-6 % (refer to Appendix C). The site is unaffected by upstream catchments.

2.2. Existing Lawful Point of Discharge

The following existing stormwater infrastructure has been identified in the vicinity of the site using site survey information (refer to Appendix C):

- Drainage swale located in the northern verge of Moores Creek;
- A stormwater manhole located within Mercy Health Aged Care to the north of the site;
- Two 450mm diameter drainage pipe located within an easement in the site directs flows south between the abovementioned manhole and a manhole located within the site near the southern boundary;
- A 750x450mm RCBC conveys the abovementioned flows to inlets located in the norther verge of Moores Creek Road; and
- A 1200x450mm RCBC and a 600x400 mm RCBCs located within Moores Creek Road conveys flows from the abovementioned inlets to stormwater pipes located to the south of Moores Creek Road before discharging to Moores Creek.

The existing lawful point of discharge for the site is the stormwater infrastructure within Moores Creek Road. The southern portion of the site currently has no internal stormwater infrastructure and all flows generated on the site flow overland towards the adjacent swales to the south of the site. The existing developed portion (existing Spotlight building) drains to internal pit and pipe systems which drain to stormwater infrastructure within Yaamba Road and Mercy Health Aged Care Village. It is proposed to maintain the existing lawful point of discharge in the post development case.

3. Proposed Development

The proposed development is a Commercial Development that involves construction of multiple retail buildings including associated car parking, access, drainage and services infrastructure and earthworks/retaining.

The proposed architectural layout of the development prepared by Leffler Simes Architects is shown below in Figure 3-1. Full Architectural drawings are included in Appendix D.

Figure 3-1 - Proposed Development (Leffler Simes Architects, 2024)

3.1. Proposed Stormwater Management Strategy

The proposed development will introduce a new internal pit and pipe system and connect into the existing lawful point of discharge defined in Section 2.1.

Runoff generated from the site will be captured and conveyed through the proposed stormwater quantity and quality control devices. A small portion of the site will bypass the tanks and discharge towards the existing roadside channel, similar to the existing conditions.

The site will connect directly to the pit and pipe system downstream of the headwall within the verge of the road reserve (Moores Creek Road).

A schematic of the proposed stormwater strategy is presented below in Figure 3-2.

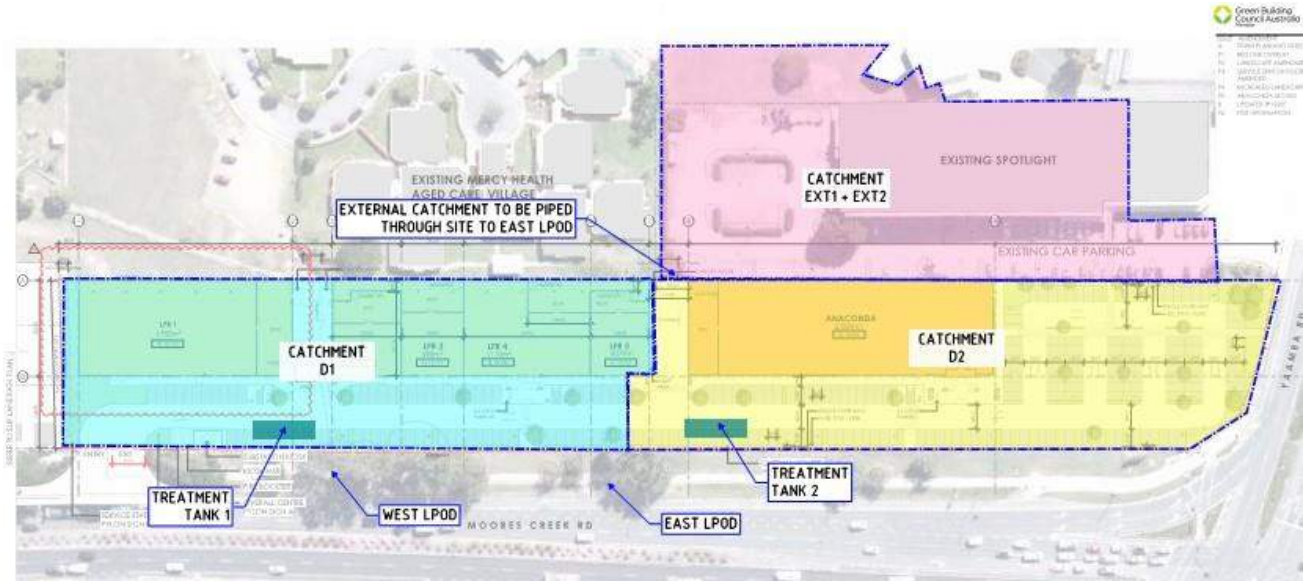

Figure 3-2 - Schematic of Proposed Stormwater Management Strategy

4. Flood Management

The subject site is located approximately 130m north-west of Moores Creek and 2km east of Fitzroy River. Moores Creek is a tributary of Fitzroy River.

The updated 'Lower Fitzroy River Floodplain' report prepared by AECOM for the Department of Transport and Main Road (TMR) models the extent of flooding caused by Fitzroy River using all storm events up to and including the 1% AEP storm event. Results of model demonstrates the existing site is unaffected by flooding of Fitzroy River during 1%AEP storm event.

'The Moores Creek Local Catchment Study' also prepared by AECOM for RRC, indicates minor localised ponding within the site and in the drainage swale within the northern verge of Moores Creek Road during 1% AEP storm event. However, the site remains unaffected by flooding of Moores Creek during 1% AEP storm event.

5. Stormwater Management Objectives

5.1. Development Control Plan Objectives

Stormwater management for the proposed development has been designed in accordance with the following documents:

- Rockhampton Regional Council Planning Scheme
- Capricorn Municipal Development Guidelines
- State Planning Policy (SPP), 2017
- Environmental Protection (Water) Policy, 2009)
- Queensland Urban Drainage Manual (QUDM) Fourth Edition, 2016
- Water By Design MUSIC Modelling Guidelines, Version 3.0, 2018
- Water by Design - Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands V1.1, 2010
- Plumbing and Drainage Code AS3500.3
- Australian Rainfall and Runoff Guideline (ARR)
- International Erosion Control Association – Best Practise Erosion and Sediment Control, 2008

The stormwater management objectives for the development are summarised below:

- Development should not result in water being diverted onto land that is not normally subject to overland flow
- Define a lawful point of discharge that will not cause an actionable nuisance in accordance with QUDM
- Ensure that the development does not create adverse flood impacts to upstream or adjacent properties
- No increase in post development flows for all rainfall events up to and including 1% AEP event
- Stormwater quality to achieve the minimum design requirements of the State Planning Policy (2017) and achieve water quality objectives in accordance with Environmental Protection (Water) Policy (2009), as follows in Table 5-1 below.

Table 5-1 - Water Quality Objectives

Pollutant	Percent Reduction
Gross Pollutants (>5mm), GP	90%
Total Suspended Solids, TSS	80%
Total Phosphorous, TP	60%
Total Nitrogen, TN	45%

6. Stormwater Quantity Management

6.1. Existing Drainage Scenario

The southern area of the site for the proposed works does not have any internal drainage systems, flows generated on the site overland flow to existing stormwater infrastructure along the southern boundary of the site located within the northern verge of Moores Creek Road.

The existing Spotlight building and associated car park is presently serviced by internal pit and pipe systems which drain to the existing stormwater infrastructure within Yaamba Road to the east with majority of the Spotlight site discharging to the Mercy Health Aged Care Facility via pipe and overland flow (DN300 pipe connection, refer to Appendix C for Survey). Flows from the Aged Care Facility will discharge to the existing dual DN450 pipes which traverse the site.

There is one external catchment north of the site which consists of grassed area within the Rockhampton Seventh Day Adventist Church site which overland flows over the boundary into the western portion of the Spotlight Carpark (Catchment EXT2), refer to Figure 5-2. During a minor event these flows will discharge to the Aged Care Site via pipe and overland flow. The existing DN300 pipe connection to the aged Care Facility has been assessed and found that flows ponding in the Spotlight site will overtop the existing kerb during the 10% AEP into the southern portion of the site. These flows have been considered in the design of the site and sizing of the detention tanks.

Figure 6-1 below shows the approximate breakdown of the internal and external catchments in relation to the site.

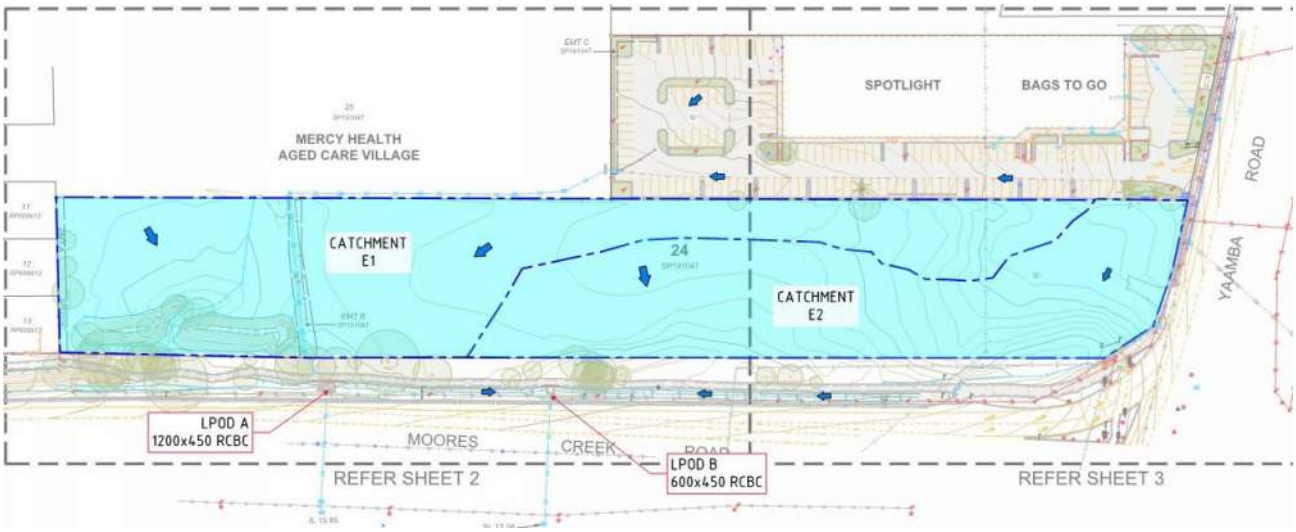

Figure 6-1 - Existing Internal Site Catchment

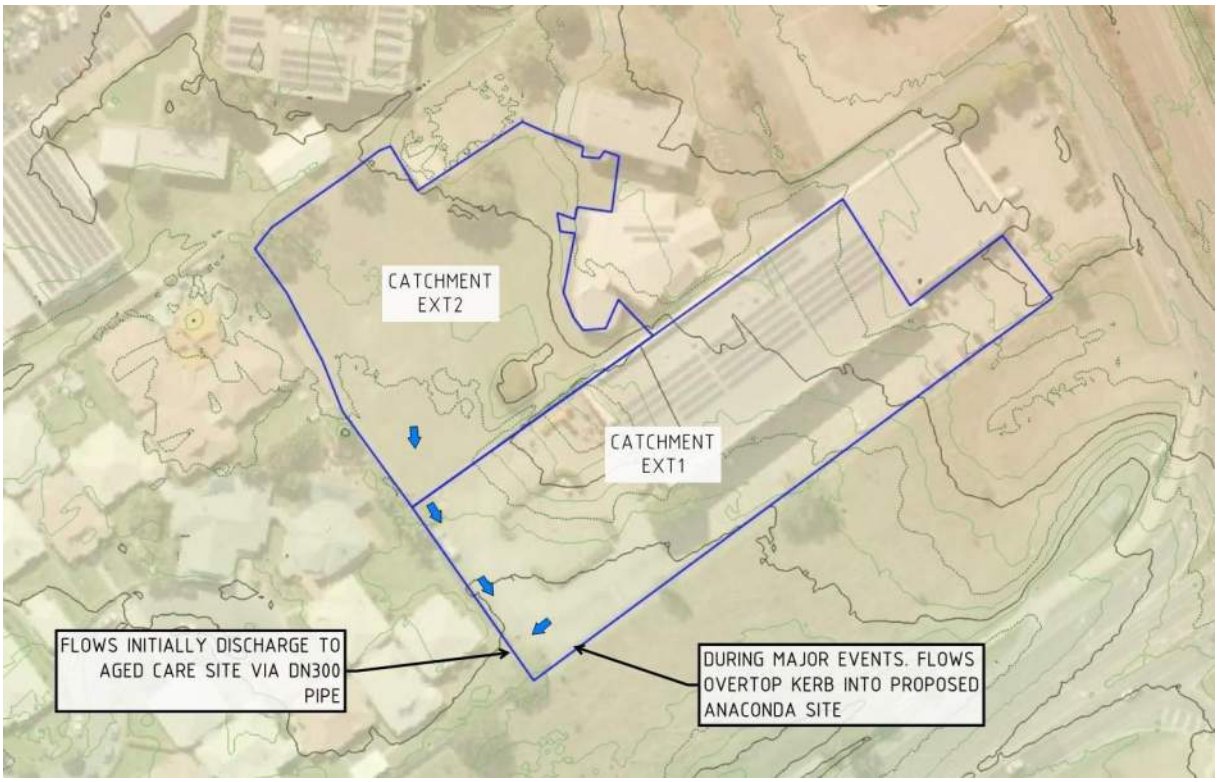

Figure 6-2 - Upstream External Catchment

6.2. Stormwater Conveyance Management

The development consists of two catchments (D1 & D2) which will discharge to the proposed On-site Detention (OSD) tanks contained within the boundary of the site before discharging to the downstream lawful point of discharge.

Flows from the external Spotlight/Church Site to the north which overtop the kerb in the existing scenario will be piped through the site. The external flows will be pipes to the downstream East LPOD similar to existing conditions. Tank 2 has been sized to cater for the piped external catchment to ensure non-worsening is achieved at the Eastern LPOD.

During the 100% blocked scenario, external flows will overtop the kerb and overland flow through the eastern loading dock. In this scenario, flows will continue through the site to the Moores Creek Rd verge without inundating the building pads.

6.3. Rational Method Calculations

Existing and developed rational method calculations have been prepared in accordance with QUDM for the 1, 2, 5, 10, 20, 50, and 100-year rainfall events. All of the parameters used for the rational method calculations are summarised below in Table 6-1, and Table 6-2. Refer to Appendix B for full rational method calculations.

Table 6-1 - Catchment Details

Catchment ID	Catchment Description	Area (ha)	Slope (%)	Fraction Impervious[1]	Runoff Coefficient (C_{10})[2]	Time of Concentration (min)
E1	Existing Undeveloped site	1.012	5%	0.00	0.70	16.2
E2	Existing Undeveloped site	0.715	2%	0.00	0.7	19.4
D1	Developed Site	0.7974	1%	0.90	0.88	6
D2	Developed Site	0.8594	3%	0.90	0.88	8
D3	Developed Site, Bypass	0.013	1%	0.53	0.75	5
EXT1	External Catchment – Spotlight Carpark	0.735	1%	0.95	0.89	18
EXT2	External Catchment Seventh Day Adventist Site	0.532	0.5%	0.0	0.7	6.3

[1]Fraction impervious taken from Survey and Proposed Development
[2]Runoff coefficient taken from QUDM – Table 4.5.3 and Table 4.5.4

Table 6-2 - Rational Method Peak Flow Rates

Catchment ID	Peak Flow (m^3/s)						
	Q1	Q2	Q5	Q10	Q20	Q50	Q100
E1	0.126	0.149	0.221	0.274	0.330	0.428	0.499
E2	0.082	0.097	0.144	0.179	0.216	0.278	0.326
D1	0.173	0.205	0.306	0.377	0.455	0.579	0.645
D2	0.187	0.221	0.330	0.406	0.491	0.624	0.696
EXT1	0.160	0.189	0.282	0.347	0.420	0.533	0.595
EXT2	0.070	0.083	0.123	0.153	0.184	0.238	0.278

Table 6-2 above indicates an increase in peak flows for the site as a result of the development. Detailed hydrological modelling using a storage routing model has been prepared to analyse flow attenuation requirements listed in the stormwater quantity objectives in Section 4.

6.4. Hydrological Modelling (DRAINS)

Hydrological modelling of the existing and developed site has been modelled using DRAINS software. The IL/CL hydrological model was adopted as the hydrological model to allow for comparison against the traditional rational method in accordance with QUDM.

The DRAINS model was setup using the same parameters used in the traditional rational method listed in Table 6-1. The hydrological model parameters used in DRAINS are shown in Table 6-3. Comparison of the DRAINS model is summarised in Table 6-4 and demonstrate the general compatibility between the two hydrological models (Refer to Appendix B for full Rational Method calculations).

Table 6-3 - IL-CL Hydrological Model Parameters

Parameter	Value[1]
Impervious Area Initial Loss (mm)	1
Impervious Area Continuing Loss (mm)	0
Pervious Area Initial Loss (mm)	25
Pervious Area Continuing Loss (mm)	2
IFD Data	2019 Rainfall Depths from ARR Data Hub using site coordinates
Time of Concentration	Kinematic Wave Equation using detailed catchment parameters

[1] Development parameters adopted from previously approved Stormwater Management Plan prepared by Cardno

Table 6-4 - Rational Method Comparison Summary

ARI (years)	E1	E1 (DRAINS)	% Difference	D1	D1 (DRAINS)	% Difference
1	0.126	0.116	-8.82%	0.173	0.203	14.53%
2	0.149	0.146	-2.24%	0.205	0.253	18.93%
5	0.221	0.194	-13.66%	0.306	0.31	1.32%
10	0.274	0.257	-6.69%	0.377	0.357	-5.60%
20	0.330	0.326	-1.37%	0.455	0.418	-8.89%
50	0.428	0.39	-9.62%	0.579	0.496	-16.64%
100	0.499	0.468	-6.72%	0.645	0.563	-14.64%

6.5. On-Site Detention (OSD) System Design

An OSD system has been designed to achieve the stormwater quantity objectives listed in Section 4. The tank parameters are summarised below in Table 6-5.

The detention tank has been sized to ensure post development flows do not exceed pre-development flows for the entire catchment. The external catchment has been included in the tank design to allow for the change in catchment runoff characteristics that occur when piping a catchment.

The results in Table 6-7 summarises that the site post-development flows are restricted to the pre-development flows for all storm events up to and including the 1% AEP Event.

Engineering drawings in Appendix A provide more details on the tank arrangement and locality.

Table 6-5 – OSD Tank Parameters

OSD Parameters	Tank 1 (West)	Tank 2 (East)
Required Tank Volume	185 m^3	395 m^3
Tank Base Area	170 m^2	380 m^2
Maximum Water Depth	1090 mm	1040 mm
Orifice 1	300x250mmmm @ base of tank	300x200mm @ base of tank
Orifice 3	1.2m Weir @ 820mm from base of tank	2m Weir @ 900mm from base of tank

Table 6-6 - West Catchment Comparison of Pre and Post Development Flows

ARI (years)	E1 Existing - Unmitigated	D1 Total Developed - Unmitigated	D1 Total Developed - Mitigated
1	0.116	0.203	0.115
2	0.146	0.253	0.138
5	0.195	0.31	0.163
10	0.257	0.357	0.211
20	0.325	0.418	0.302
50	0.394	0.496	0.385
100	0.474	0.563	0.461

Table 6-7 - Comparison of Pre and Post Development Flows

ARI (years)	E2+EXT1+EXT2 Existing - Unmitigated	D1+EXT1+EXT2 Total Developed - Unmitigated	D1+D2+EXT1 Total Developed - Mitigated
1	0.077	0.215	0.072
2	0.098	0.267	0.086
5	0.135	0.328	0.109
10	0.195	0.4	0.193
20	0.256	0.491	0.24
50	0.356	0.644	0.267
100	0.445	0.761	0.301

7. Stormwater Quality Management - Construction Phase

7.1. Erosion and Sediment Control

Prior to construction commencing, it is the principal contractor's responsibility to ensure adequate erosion and sediment control measures are installed around the subject site to minimise disturbance and ensure the quality of runoff discharging from the site is of an acceptable standard.

An erosion and sediment control plan (ESCP) will be included in a future Operational Works Application. The ESCP will be prepared in accordance with the Best Practice Erosion and Sediment Control Manual (ICEA 2009) based on Type 1 techniques. Erosion and sediment control techniques used for the site will include:

- Sediment barriers to be installed on all entrances to stormwater inlet pits
- Construction entry and exit shakedown areas
- Sediment fences are to be installed on the downstream boundaries of the subject site
- Construction of temporary bunds at the top of all earthworks batters to ensure runoff is directed away from exposed batters
- Construction of temporary diversion drains to divert water to sediment basins and around any stockpiles
- Sediment fences to be installed on the downstream side of any stockpiles
- Stabilisation of all batters upon reaching the finished earthworks levels
- Dust control measures which includes covering stockpiles, maintain site fences and watering exposed areas
- Sediment basin in accordance with IECA Best Practice Erosion and Sediment Control

8. Stormwater Quality Management - Operational Phase

8.1. Proposed Stormwater Quality Improvement Devices (SQID's)

During the operational phase of the development, is it proposed to construct the following stormwater quality improvement devices (SQID's) to achieve the stormwater quality objectives summarised in Section 5.1:

- 17 x Ocean Protect OceanGuard 200micron filter baskets to all stormwater inlet pits within the site;
- Tank 1 – 18 x Ocean Protect Stormfilter 690 Psorb Cartridges located within a 9.5m^2 Stormfilter Chamber (West)
- Tank 2 – 13 x Ocean Protect Stormfilter 690 Psorb Cartridges located within a 9.5m^2 Stormfilter Chamber (East)

Engineering drawings in Appendix A provide more details on the tank arrangement and locality.

8.1.1. Ocean Protect OceanGuard (200 micron)

The OceanGuard 200 inserts will be used as a pre-treatment for stormwater runoff to capture litter and coarse sediment surface flows on the site. OceanGuard inserts are to be installed on all surface inlet pits within the development.

The 200 Oceanguards consist of a steel frame and a cage. Within the cage a screening bag is attached to capture litter, debris, sediment and other pollutants from stormwater flows. The mesh size of the screening bag proposed for each OceanGuard within the site is 200 micro-meters. The mesh size is small enough to capture heavy metals and hydrocarbons associated with solids in the stormwater flows.

8.1.2. Ocean Protect StormFilter 690 PSorb

The Stormfilter 690 Psorb cartridges will be installed in the OSD tank (refer to section 0).

The Ocean Protect StormFilter system is a passive stormwater filter that cleans stormwater through a patented passive filtration system, effectively removing pollutants to meet the most stringent regulatory requirements. The StormFilter stormwater treatment system uses rechargeable, self-cleaning, media-filled cartridges to absorb and retain the most challenging pollutants from stormwater runoff including total suspended solids, hydrocarbons, nutrients, soluble heavy metals, and other common pollutants.

8.2. Stormwater Quality Modelling (MUSIC) Methodology

Stormwater quality modelling for the site was prepared using 'Model for Urban Stormwater Improvement Conceptualisation' (MUSIC) Version 6.3. The model has been built to assess the adequacy of the proposed SQID's and to ensure that the quality of stormwater meets the WQO's for the development. A diagrammatic layout of the MUSIC Model is presented in Figure 8-1 below.

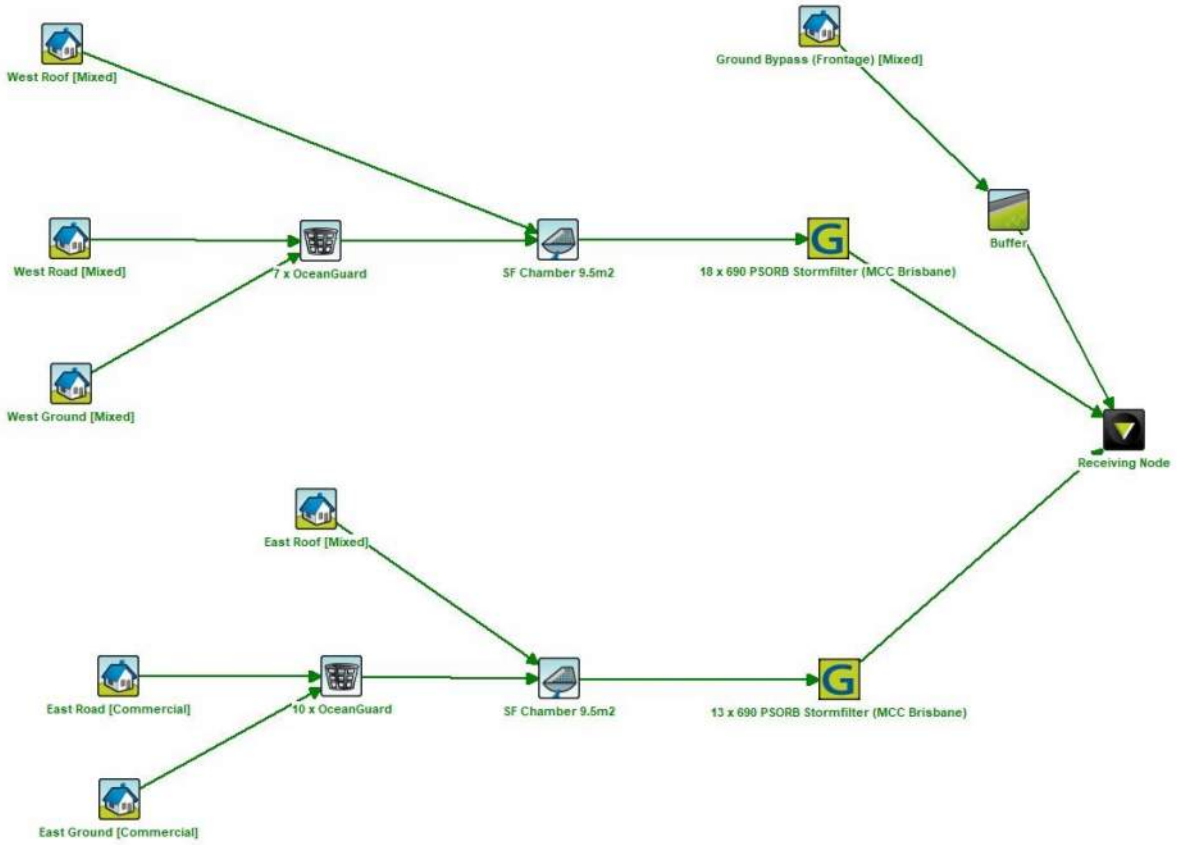

Figure 8-1 - MUSIC Link and Node Diagram

For the analysis of the MUSIC modelling, Meteorological data (average potential evapotranspiration (PET) and Rainfall Station) was based on the recommendations listed in WBD MUSIC Modelling Guidelines for SEQ. The rainfall data was obtained from the Bureau of Meteorology for Station No. 39083, Rockhampton. The analysis was undertaken using a 6 min time step for the period 01/01/1980 to 31/12/1989.

The following rainfall and runoff parameters shown in Table 8-1 have been utilised.

Table 8-1 - Rainfall Runoff Parameters

Parameter	Value*
Land Use Category	Commercial and Industrial
Rainfall Threshold (mm/day)	1
Soil Storage Capacity (mm)	18
Initial Storage (% of Capacity)	10
Field Capacity (mm)	80
Infiltration Capacity Coefficient – a	243
Infiltration Capacity Exponent – b	0.6
Initial Depth (mm)	50
Daily Recharge Rate (%)	0
Daily Base flow Rate (%)	31
Daily Deep Seepage Rate (%)	0

** Parameter values taken from WBD – MUSIC Modelling Guidelines for SEQ, V3.0 (2018), Table A1.2*

The catchments used for MUSIC modelling were broken down into land use category to accurately model the pollutant runoff characteristics for all land-use categories. The Source node catchments are summarised below in Table 8-2.

Table 8-2 - Catchment Source Node Summary

Catchment ID	MUSIC Source Nodes	Catchment Area (Ha)	Impervious %
Tank 1 (West)	Roof	0.433	100%
	Road	0.274	100%
	Ground	0.093	47%
Tank 2 (East)	Roof	0.249	100%
	Road	0.509	100%
	Ground	0.102	51%
D3 (Bypass Tank)	Ground	0.013	71%

The pollutant concentration parameters used in the model were based on information provided in Water By Design – MUSIC Modelling Guidelines for South East Queensland V3.0 (2018). The parameters are listed in Table 8-3 below:

Table 8-3 - Water Quality Parameters for MUSIC Source Nodes

Land- Use Category		Log TSS (mg/L)		Log TP (mg/L)		Log TN (mg/L)	
		Storm Flow	Base flow	Storm Flow	Base Flow	Storm Flow	Base Flow
Roof Areas (Commercial)	Mean	1.30	N/A	-0.89	N/A	0.37	N/A
	Std Dev	0.38	N/A	0.34	N/A	0.34	N/A
Roads (Commercial)	Mean	2.43	0.78	-0.30	-0.60	0.37	0.32
	Std Dev	0.38	0.39	0.34	0.50	0.34	0.30
Ground Level (Commercial)	Mean	2.16	0.78	-0.39	-0.60	0.37	0.32
	Std Dev	0.38	0.39	0.34	0.50	0.34	0.30

**Parameter values taken from WBD – MUSIC Modelling Guidelines for SEQ, V3.0 (2018), Table 3.9.*

Table 8-4 - MUSIC Model Results

Pollutant	Annual Loads (kg/yr)		% Reduction		Compliance
	Source	Residual	Actual	Target	
TSS	2440	222	90.9	80	OK
TP	4.91	1.56	68.4	60	OK
TN	34.7	19.1	45	45	OK
GP	281	1.94	99.3	90	OK

The modelling results shown in Table 8-4 demonstrates that the treatment train will achieve the water quality targets set out in Table 5-1.

9. Maintenance

All the stormwater quantity and quality infrastructure detailed in this document are contained within the subject site and will remain an asset of the development's property owner, Body Corporate or similar internal authority.

Maintenance of the all SQIDs will be the responsibility of body corporate for the development / property owner. The maintenance should be carried out in accordance with the manufacturer's recommendations and as a minimum shall include the following:

- Ocean Protect 'Stormfilter'

Maintenance to be carried out by manufacturer's maintenance staff including but not limited to de-silting of cartridges. Refer to Appendix E for further information regarding the maintenance of the proposed StormFilter.

- Ocean Protect 'OceanGuards'

Maintenance to be carried out by manufacturer's maintenance staff including but not limited to inspection of basket and removal and lawful disposal of trapped litter/sediment. Refer to Appendix E for further information regarding the maintenance of the proposed OceanGuards.

10. Conclusion

Northrop Consulting Engineers has prepared this SBSMP for the proposed Commercial Development at 337-341 Yaamba Road, Park Avenue QLD. Based on investigations, analyses and designs, it has been demonstrated that the proposed development can be constructed and operated in accordance with all stormwater objectives listed in Section 4. The primary outcomes of this SBSMP are as follows:

- **Lawful Point of Discharge** - The existing lawful point of discharge (stormwater infrastructure within Moores Creek) will be maintained with a majority of the site flows being captured for stormwater quantity and quality treatment. A small portion of site frontage will bypass the internal collection system as overland flow, being directed towards the existing stormwater channel, however the combined site runoff achieves all stormwater quantity and quality objectives
- **Stormwater Quantity** – Two underground detention tanks of 185m^3 (Tank 1) and 395m^3 (Tank 2) have been sized using the DRAINS modelling software. The tanks have been sized to mitigate post development flows to pre-development flows for all rainfall events up to and including the 1% AEP Event. The sizing of the tanks have considered all external and bypass catchments.
- **Stormwater Quality -** The proposed treatment train was modelling using MUSIC modelling software and includes the following SQID's:

    - 17 x Ocean Protect OceanGuard 200micron filter baskets to all stormwater inlet pits
    - Tank 1 – 18 x Ocean Protect Stormfilter 690 Psorb Cartridges
    - Tank 2 – 13 x Ocean Protect Stormfilter 690 Psorb Cartridges

- **Erosion and Sediment Control** - Construction phase ESCP measures are to be implemented during construction in accordance with the relevant requirements of the State Planning Policy and IECA Best Practice Erosion and Sediment Control

Appendix A – Civil Engineering Plans

PROPOSED COMMERCIAL DEVELOPMENT

MOORES CREEK ROAD, NORMAN GARDENS QLD 4701
CIVIL ENGINEERING WORKS PACKAGE

SOURCE : GOOGLE EARTH.COM.AU (©2022)

LOCALITY PLAN
NTS

DRAWING SCHEDULE

DWG NUMBER	DWG TITLE
C-001	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
C-020	EXISTING FEATURES PLAN
C-101	BULK EARTHWORKS LAYOUT PLAN SHEET 1 OF 3
C-102	BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 3
C-103	BULK EARTHWORKS LAYOUT PLAN SHEET 3 OF 3
C-111	BULK EARTHWORKS SECTIONS SHEET 1 OF 2
C-112	BULK EARTHWORKS SECTIONS SHEET 2 OF 2
C-211	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN SHEET 1 OF 3
C-212	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN SHEET 2 OF 3
C-213	ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN SHEET 3 OF 3
C-311	STORMWATER CATCHMENT LAYOUT PLAN
C-321	STORMWATER LONGITUDINAL SECTION SHEET 1 OF 2
C-322	STORMWATER LONGITUDINAL SECTION SHEET 2 OF 2

COUNCIL DA REFERENCE # D/155-2022

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R.P.E.Q. No: 25874
VERIFIER:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

FOR APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR APPROVAL	CL	MB	HJ	18.11.22
2	ISSUED FOR APPROVAL	CL	SK	SK	04.05.23
3	ISSUED FOR APPROVAL	CL	SK	SK	19.05.23
4	ISSUED FOR APPROVAL	CL	SK	SK	22.06.23
5	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

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ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

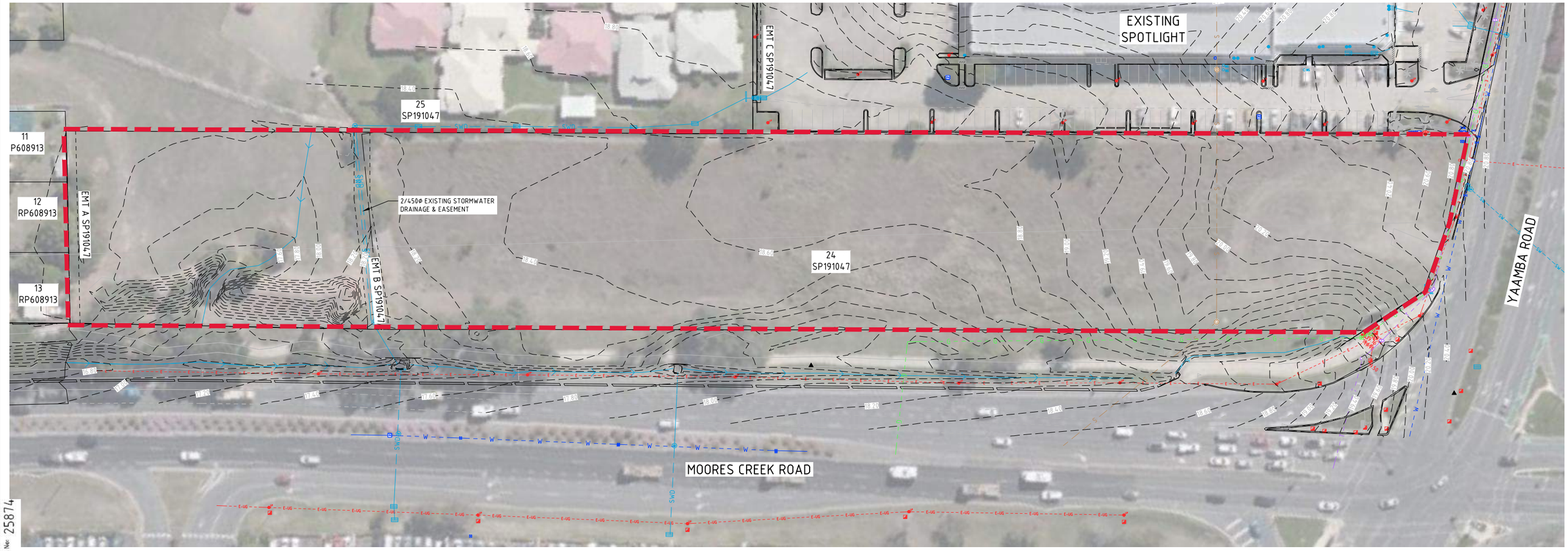
DRAWING TITLE
CIVIL ENGINEERING PACKAGE
COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE

JOB NUMBER
BN221936

DRAWING NUMBER
C-001

REVISION
5

DRAWING SHEET SIZE = A1



R.P.E.Q. No: 25874

VERIFIED:

JOB MANAGER: S.KILLORAN

DESIGNED: R.MITCHELL

DRAWN: C.LOPEZ

EXISTING FEATURES LEGEND:

- EXISTING MAJOR CONTOUR
- EXISTING MINOR CONTOUR
- EXISTING WATER MAIN
- EXISTING WATER FITTINGS
- EXISTING WATER METER
- EXISTING SEWER PIPE
- EXISTING SEWER HOUSE CONNECTION
- EXISTING SEWER MANHOLE
- EXISTING SEWER FITTING
- EXISTING SEWER MAINTENANCE SHAFT
- EXISTING STORM WATER DRAINAGE PIPE CL
- EXISTING STORM WATER DRAINAGE PIT
- EXISTING STORM WATER DRAINAGE HEADWALL
- EXISTING STORM WATER DRAINAGE MANHOLE
- EXISTING STORM WATER KERB ADAPTER
- EXISTING STORM WATER DRAINAGE SWALE INVERT
- EXISTING ELECTRICITY
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING GAS
- EXISTING TELSTRA

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SPECIFICATION & MANDATORY REFERENCES

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1	ISSUED FOR APPROVAL	CL	MB	HJ	18.11.22
2	ISSUED FOR APPROVAL	CL	SK	SK	04.05.23
3	ISSUED FOR APPROVAL	CL	SK	SK	19.05.23
4	ISSUED FOR APPROVAL	CL	SK	SK	22.06.23
5	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

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0 5 10 15 20 25m

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ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD,
NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
EXISTING FEATURES PLAN

JOB NUMBER
BN221936

DRAWING NUMBER
C-020

REVISION
5

DRAWING SHEET SIZE = A1

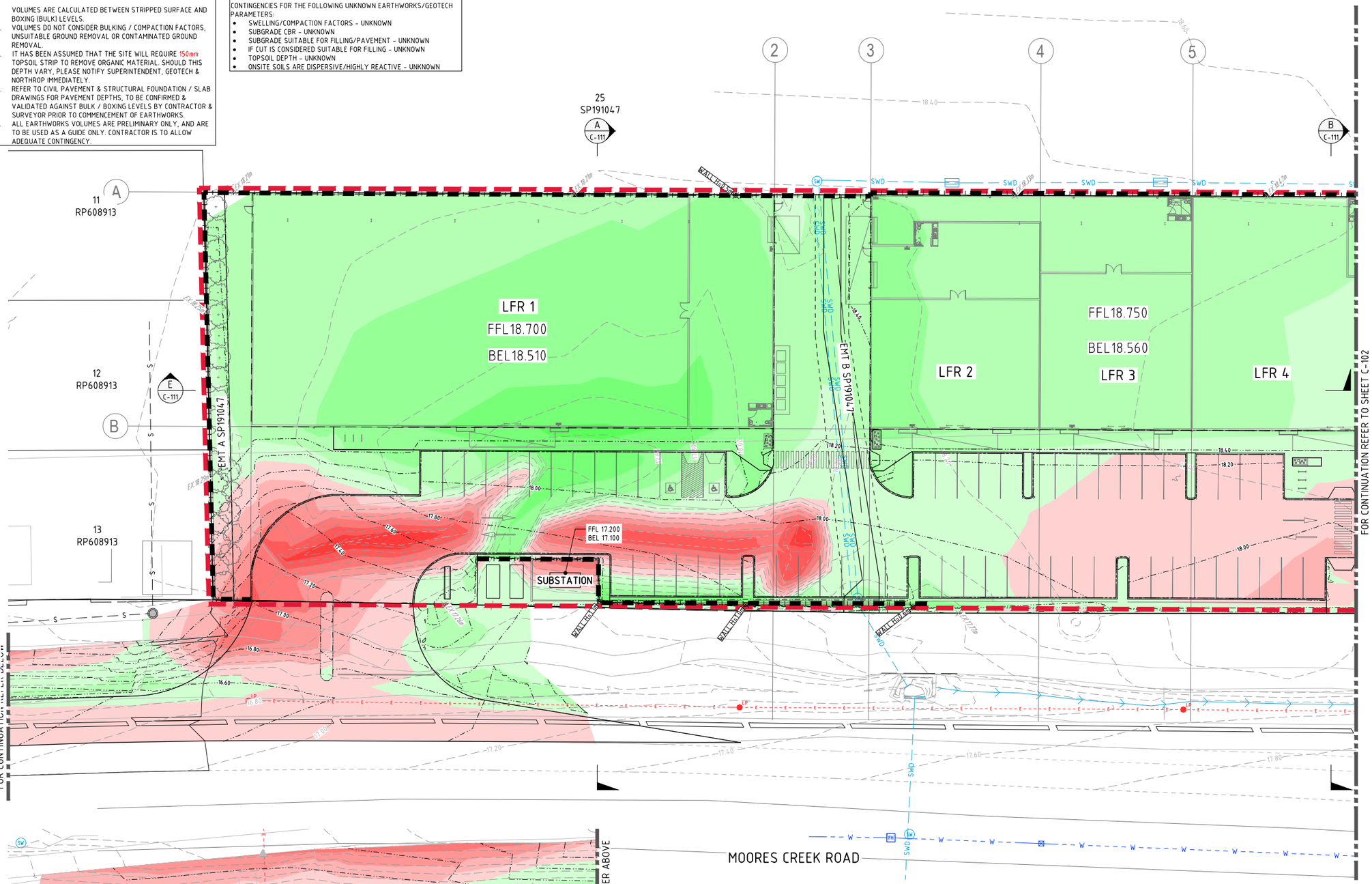
VOLUME NOTES:

1. VOLUMES ARE CALCULATED BETWEEN STRIPPED SURFACE AND BOXING (BULK) LEVELS.
2. VOLUMES DO NOT CONSIDER BULKING / COMPACTION FACTORS, UNSUITABLE GROUND REMOVAL OR CONTAMINATED GROUND REMOVAL.
3. IT HAS BEEN ASSUMED THAT THE SITE WILL REQUIRE 150mm TOPSOIL STRIP TO REMOVE ORGANIC MATERIAL. SHOULD THIS DEPTH VARY, PLEASE NOTIFY SUPERINTENDENT, GEOTECH & NORTHROP IMMEDIATELY.
4. REFER TO CIVIL PAVEMENT & STRUCTURAL FOUNDATION / SLAB DRAWINGS FOR PAVEMENT DEPTHS, TO BE CONFIRMED & VALIDATED AGAINST BULK / BOXING LEVELS BY CONTRACTOR & SURVEYOR PRIOR TO COMMENCEMENT OF EARTHWORKS.
5. ALL EARTHWORKS VOLUMES ARE PRELIMINARY ONLY, AND ARE TO BE USED AS A GUIDE ONLY. CONTRACTOR IS TO ALLOW ADEQUATE CONTINGENCY.

UNKNOWN GEOTECH PARAMETERS

THE CONTRACTORS IS TO ALLOW ADEQUATE PROVISIONAL AMOUNTS FOR CONTINGENCIES FOR THE FOLLOWING UNKNOWN EARTHWORKS/GEOTECH PARAMETERS:

- SWELLING/COMPACTION FACTORS - UNKNOWN
- SUBGRADE CBR - UNKNOWN
- SUBGRADE SUITABLE FOR FILLING/PAVEMENT - UNKNOWN
- IF CUT IS CONSIDERED SUITABLE FOR FILLING - UNKNOWN
- TOPSOIL DEPTH - UNKNOWN
- ONSITE SOILS ARE DISPERSIVE/HIGHLY REACTIVE - UNKNOWN



LEGEND

- PROPOSED SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- SPOT LEVEL (EXISTING)
- PAD LEVEL (BULK EARTHWORKS)
- BUILDING PAD
- PROPOSED RETAINING WALL BLOCKWORK
- EXISTING RETAINING WALL CONCRETE SLEEPER
- EXISTING RETAINING WALL BLOCKWORK
- EXISTING WATER MAIN
- EXISTING SEWER PIPE
- EXISTING STORM WATER DRAINAGE
- EXISTING ELECTRICITY
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING GAS
- EXISTING TELSTRA
- WORKS BOUNDARY

CUT AND FILL RANGE

DEPTH OF CUT

- - 999m TO - 2.0m
- - 2.0m TO - 1.5m
- - 1.5m TO - 1.25m
- - 1.25m TO - 1.0m
- - 1.0m TO - 0.75m
- - 0.75m TO - 0.5m
- - 0.5m TO - 0.25m
- - 0.25m TO - 0.0m

DEPTH OF FILL

- 0.0m TO 0.25m
- 0.25m TO 0.5m
- 0.5m TO 0.75m
- 0.75m TO 1.0m
- 1.0m TO 1.25m
- 1.25m TO 1.5m
- 1.5m TO 2.0m
- 2.0m TO 999m

WARNING

UNDERGROUND SERVICES

UNDERGROUND SERVICES EXIST IN THIS AREA. UNDERGROUND SERVICE LOCATIONS AND DEPTHS TO BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.

FIRE ANT TREATMENT ZONE

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FOR APPROVAL

LEVELS & SETOUT NOTES

1. EARTHWORKS LEVELS SHOWN ARE BULK SURFACE LEVELS (UNDERSIDE OF PAVEMENT AND TOPSOIL LAYERS)
2. EARTHWORKS LEVELS ALLOW DRIVEWAY / CAR PARK SLAB THICKNESS AND BUILDING SLAB THICKNESS AS PER STRUCTURAL ENGINEERING DRAWINGS. REFER TO FINAL 'FOR CONSTRUCTION' STRUCTURAL DESIGN DRAWINGS FOR FINAL PAD THICKNESS AND CROSS-CHECK/VERIFY THE ASSOCIATED FINAL CIVIL BULK PAD LEVELS PRIOR TO CONSTRUCTION SETOUT.
3. FLOOD IMMUNITY - NEARBY 100 YR ARI OVERLAND FLOW FLOOD LEVEL = 19.8-19m AHD (SOURCED FROM ROCKHAMPTON CITY COUNCIL RECORDS).
ENSURE THE MINIMUM FINISHED FLOOR LEVELS FOR HABITABLE BUILDINGS CAN BE CONSTRUCTED AT Q100 LEVEL AHD OR ABOVE.
4. ALL RETAINING WALL HEIGHT LABELS ARE CALCULATED TO FINISHED SURFACE LEVELS INCLUDING TOPSOIL (AND TO NEAREST 200mm HEIGHT). FINAL RETAINING WALL DESIGNS AND DETAILED STEPPING IS SUBJECT TO STRUCTURAL DESIGN BY OTHERS.
5. REFER TO ARCHITECTURAL DRAWINGS FOR BUILDING SETOUT INFORMATION.
6. CONTRACTOR TO CONFIRM SITE SURVEY STATION LOCATION AND BUILDING/PAD SETOUT LOCATIONS IN RELATION TO BOUNDARIES PRIOR TO CONSTRUCTION AND ADVISE SUPERINTENDENT IF ANY DISCREPANCIES/ANOMALIES FOUND.

PRELIMINARY BULK EARTHWORKS VOLUMES

CUT	FILL	BALANCE
3,876m³	2,983m³	893m³ (CUT)

STRIP VOLUMES

AREA	DEPTH	VOLUME
18,880m²	150mm (TBC)	2,832m³

R.P.E.Q. No: 25874
VERIFIED:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR APPROVAL	CL	MB	HJ	18.11.22
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6	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

CLIENT

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ARCHITECT

LEFFLER SIMES ARCHITECTS

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SCALE 1:250@A1

0 2 4 6 8 10 12m

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ABN 81 094 433 100

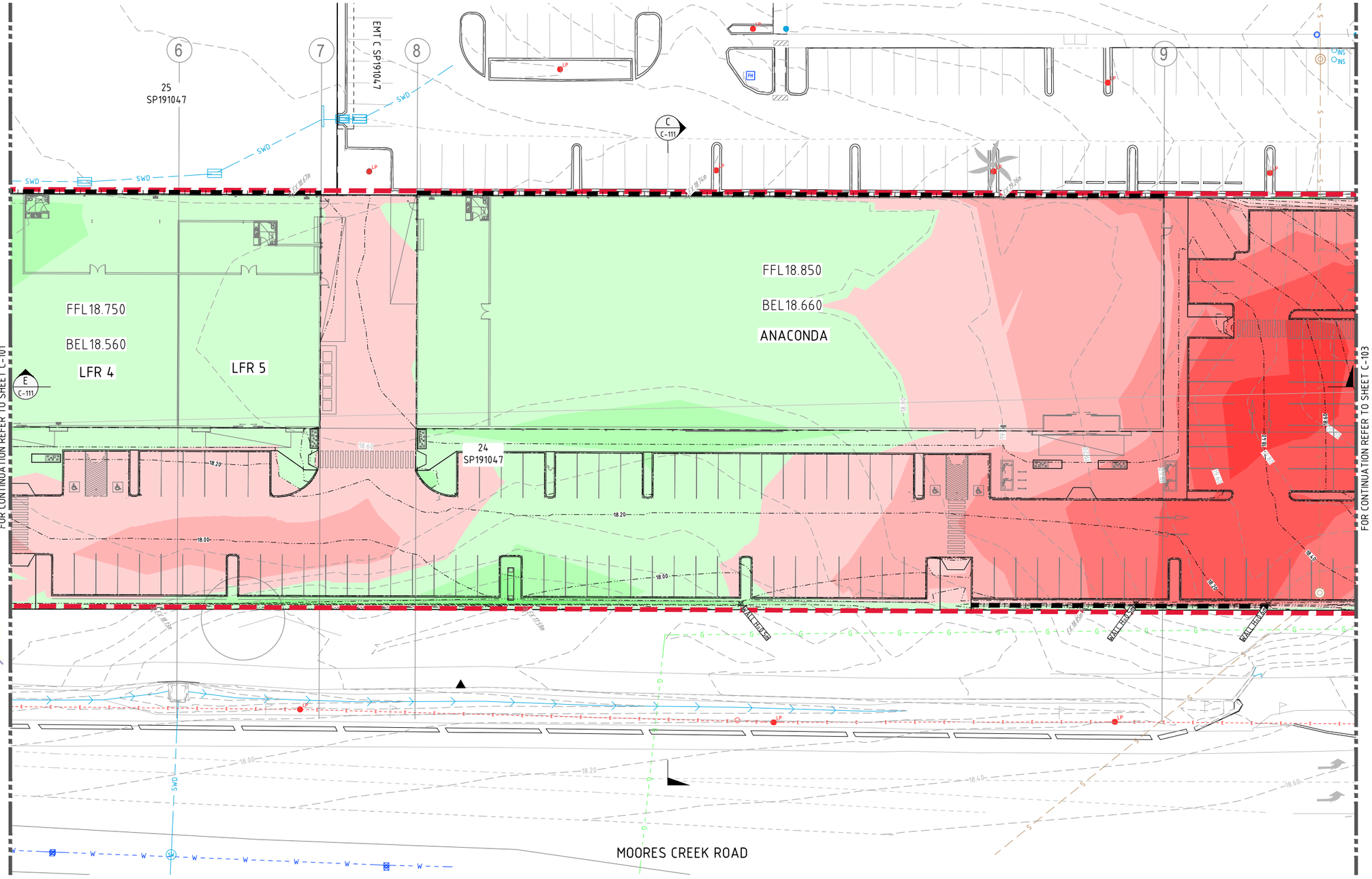
PROJECT
MOORES CREEK ROAD,
NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
BULK EARTHWORKS
LAYOUT PLAN SHEET 1 OF 3

JOB NUMBER
BN221936

DRAWING NUMBER	REVISION
C-101	6

DRAWING SHEET SIZE = A1



R.P.E.D. No: 25874

VERIFIER:

JOB MANAGER: S.KILLORAN

DESIGNED: R.MITCHELL

DRAWN: C.LOPEZ

LEGEND

- PROPOSED SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- SPOT LEVEL (EXISTING) — EX 76.00m
- PAD LEVEL (BULK EARTHWORKS) — BEL 76.00
- BUILDING PAD
- PROPOSED RETAINING WALL BLOCKWORK
- EXISTING RETAINING WALL CONCRETE SLEEPER
- EXISTING RETAINING WALL BLOCKWORK
- W — EXISTING WATER MAIN
- S — EXISTING SEWER PIPE
- SWD — EXISTING STORM WATER DRAINAGE
- E — EXISTING ELECTRICITY
- E-UG — EXISTING ELECTRICITY (UNDERGROUND)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- WORKS BOUNDARY

CUT AND FILL RANGE

DEPTH OF CUT

- - 999m TO - 2.0m
- - 2.0m TO - 1.5m
- - 1.5m TO - 1.25m
- - 1.25m TO - 1.0m
- - 1.0m TO - 0.75m
- - 0.75m TO - 0.5m
- - 0.5m TO - 0.25m
- - 0.25m TO - 0.0m

DEPTH OF FILL

- 0.0m TO 0.25m
- 0.25m TO 0.5m
- 0.5m TO 0.75m
- 0.75m TO 1.0m
- 1.0m TO 1.25m
- 1.25m TO 1.5m
- 1.5m TO 2.0m
- 2.0m TO 999m

WARNING

UNDERGROUND SERVICES

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NOTES

PRELIMINARY BULKEARTHWORKS VOLUMES AND NOTES REFER TO DRG NO C-101.

FOR APPROVAL

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6	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

CLIENT

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ARCHITECT

LEFFLER SIMES ARCHITECTS

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SCALE 1:250@A1 — 0 2 4 6 8 10 12m

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(07) 3365 0400 brisbane@northrop.com.au
ABN 81 094 433 100

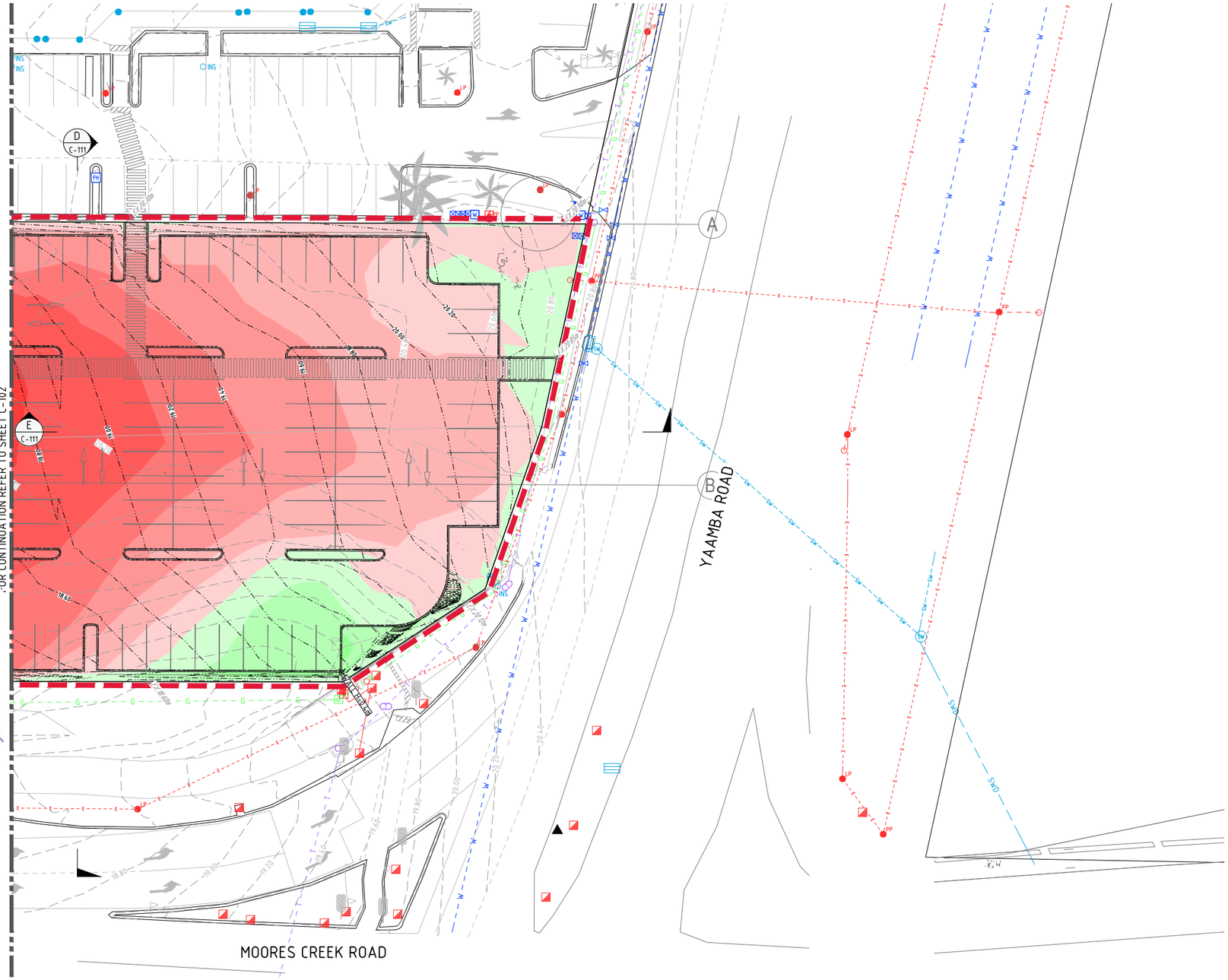
PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
BULK EARTHWORKS LAYOUT PLAN SHEET 2 OF 3

JOB NUMBER **BN221936**

DRAWING NUMBER **C-102** | REVISION **6**

DRAWING SHEET SIZE = A1



NOTES

PRELIMINARY BULKEARTHWORKS VOLUMES AND NOTES REFER TO DRG NO C-101.

LEGEND

- XX.XX — PROPOSED SURFACE CONTOURS
- XX.XX — EXISTING SURFACE CONTOURS
- EX 76.00m — SPOT LEVEL (EXISTING)
- BEL 76.00 — PAD LEVEL (BULK EARTHWORKS)
- BUILDING PAD
- PROPOSED RETAINING WALL BLOCKWORK
- EXISTING RETAINING WALL CONCRETE SLEEPER
- EXISTING RETAINING WALL BLOCKWORK
- W — EXISTING WATER MAIN
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- T — EXISTING TELSTRA
- WORKS BOUNDARY

CUT AND FILL RANGE

DEPTH OF CUT

- - 999m TO - 2.0m
- - 2.0m TO - 1.5m
- - 1.5m TO - 1.25m
- - 1.25m TO - 1.0m
- - 1.0m TO - 0.75m
- - 0.75m TO - 0.5m
- - 0.5m TO - 0.25m
- - 0.25m TO - 0.0m

DEPTH OF FILL

- 0.0m TO 0.25m
- 0.25m TO 0.5m
- 0.5m TO 0.75m
- 0.75m TO 1.0m
- 1.0m TO 1.25m
- 1.25m TO 1.5m
- 1.5m TO 2.0m
- 2.0m TO 999m

WARNING

UNDERGROUND SERVICES

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FOR APPROVAL

R.P.E.Q. No: 25874
VERIFIER:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

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ARCHITECT

LEFFLER SIMES ARCHITECTS

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SCALE 1:250@A1

0 2 4 6 8 10 12m

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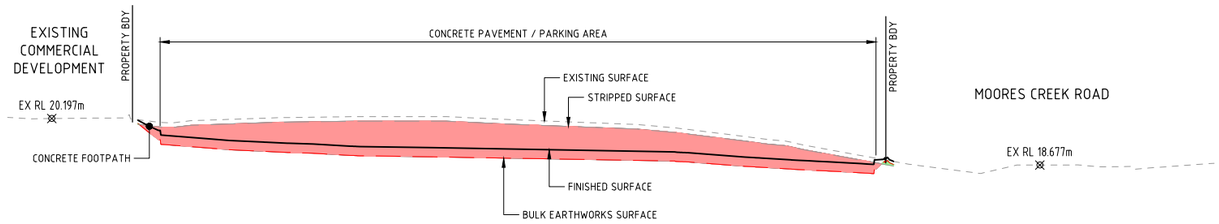
ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

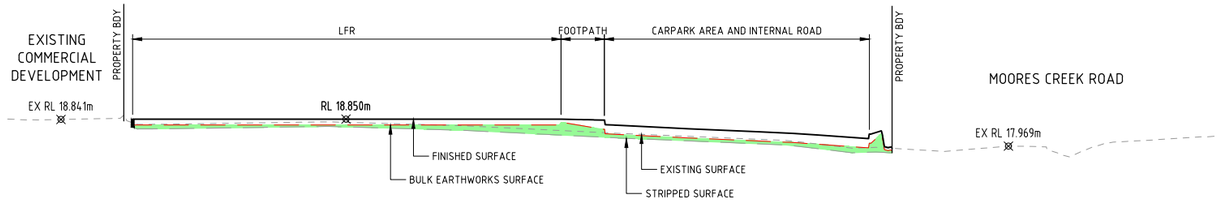
DRAWING TITLE
CIVIL ENGINEERING PACKAGE
BULK EARTHWORKS LAYOUT PLAN SHEET 3 OF 3

JOB NUMBER: **BN221936**
DRAWING NUMBER: **C-103**
REVISION: **6**
DRAWING SHEET SIZE = A1



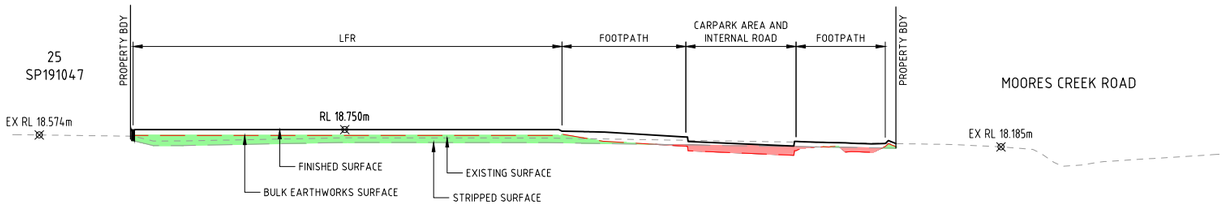
DATUM 14.000

SECTION D - SCALE 1:200m H SCALE 1:100m V



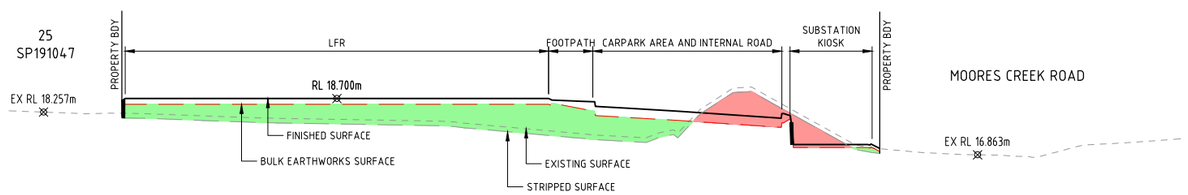
DATUM 14.000

SECTION C - SCALE 1:200m H SCALE 1:100m V



DATUM 14.000

SECTION B - SCALE 1:200m H SCALE 1:100m V



DATUM 14.000

SECTION A - SCALE 1:200m H SCALE 1:100m V

LEGEND - SECTIONS

- FINISHED SURFACE
- EXISTING SURFACE
- STRIPPED SURFACE
- BULK EARTHWORKS SURFACE
- EARTHWORK AREA OF CUT
- EARTHWORK AREA OF FILL
- PROPOSED RETAINING WALL (TYPE TBC) - BY OTHERS

LAYOUT & NOTES REFERENCE

FOR EARTHWORKS LAYOUT PLAN & REFERENCE NOTES
REFER DWG No C-101

R.P.E.Q. No: 25874
VERIFIER:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

FOR APPROVAL

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6	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

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ARCHITECT

LEFFLER SIMES ARCHITECTS

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SCALE 1:100 @ A1 0 1 2 3 4 5m
SCALE 1:200@ A1 0 2 4 6 8 10m

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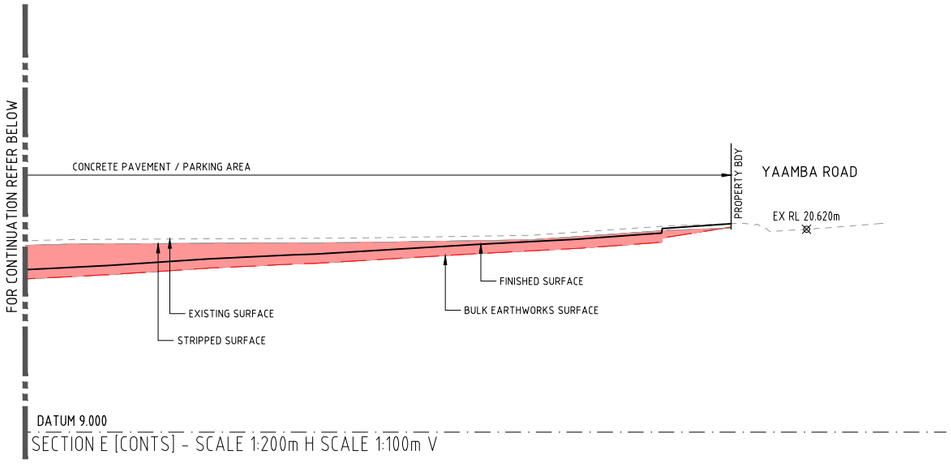
ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
BULK EARTHWORKS SECTIONS SHEET 1 OF 2

JOB NUMBER **BN221936**
DRAWING NUMBER **C-111**
REVISION **6**
DRAWING SHEET SIZE = A1



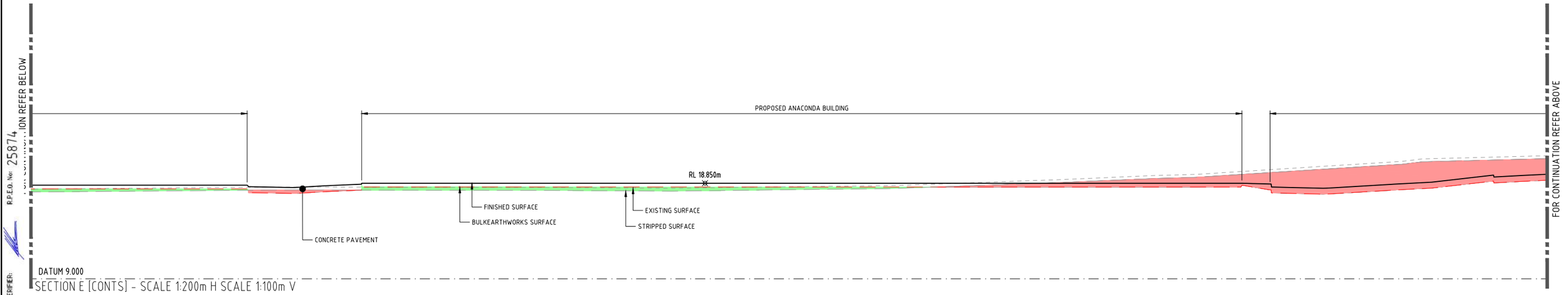
SECTION E [CONTS] - SCALE 1:200m H SCALE 1:100m V

LEGEND - SECTIONS

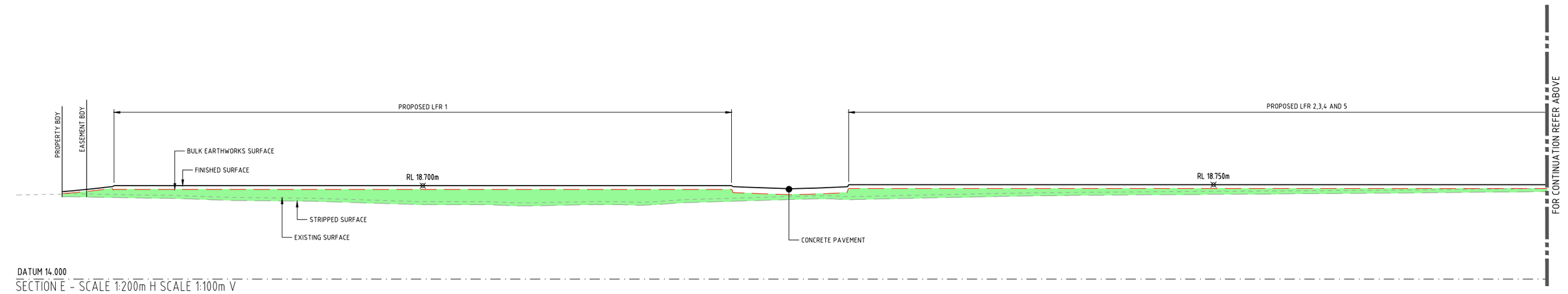
- FINISHED SURFACE
- EXISTING SURFACE
- STRIPPED SURFACE
- BULK EARTHWORKS SURFACE
- EARTHWORK AREA OF CUT
- EARTHWORK AREA OF FILL
- PROPOSED RETAINING WALL (TYPE TBC) - BY OTHERS

LAYOUT & NOTES REFERENCE

FOR EARTHWORKS LAYOUT PLAN & REFERENCE NOTES
REFER DWG No C-101



SECTION E [CONTS] - SCALE 1:200m H SCALE 1:100m V



SECTION E - SCALE 1:200m H SCALE 1:100m V

FOR APPROVAL

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SCALE 1:100 @ A1 — 0 1 2 3 4 5m
SCALE 1:200@ A1 — 0 2 4 6 8 10m

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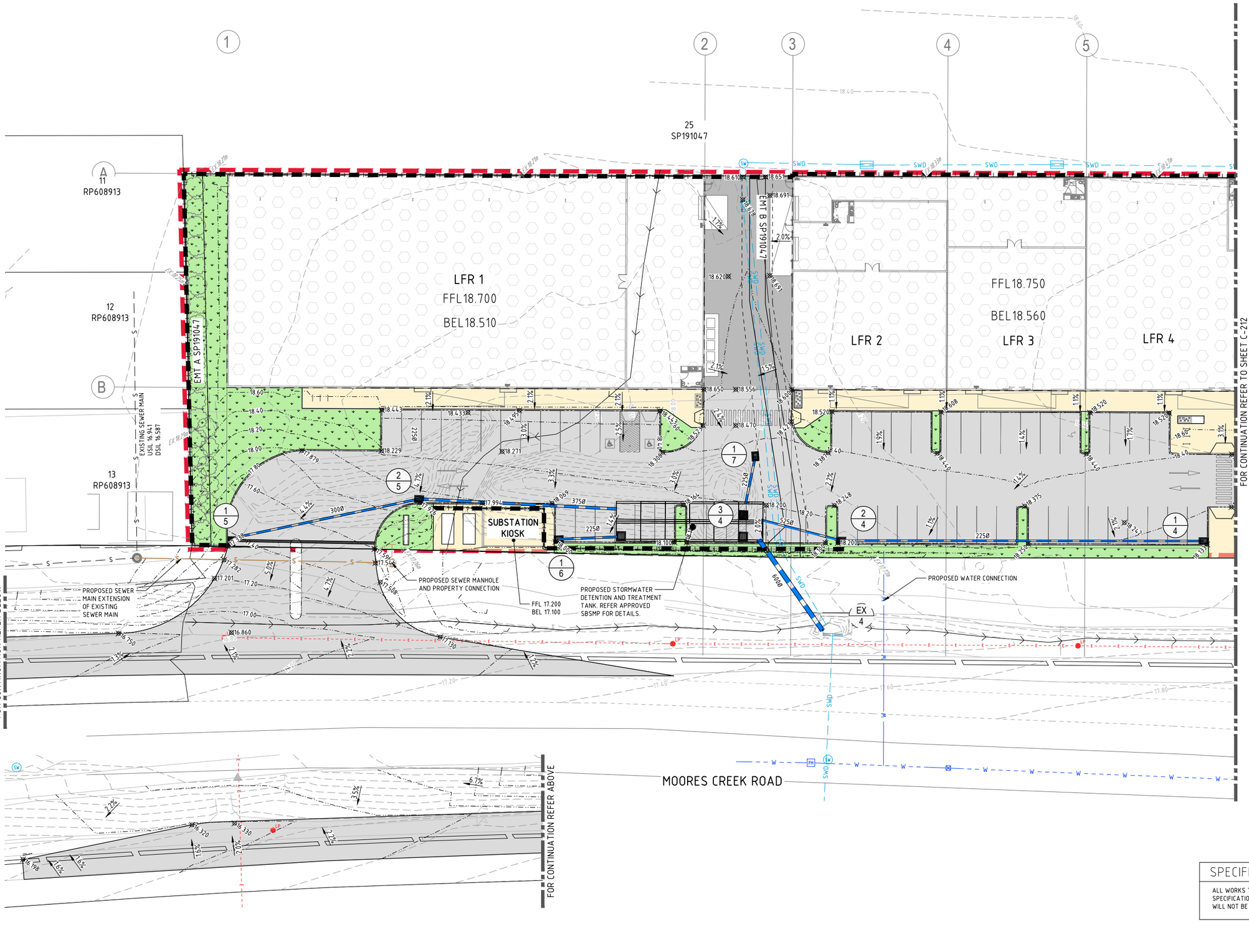
ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
BULK EARTHWORKS SECTIONS SHEET 2 OF 2

JOB NUMBER **BN221936**
DRAWING NUMBER **C-112**
REVISION **6**
DRAWING SHEET SIZE = A1



LEGEND

- PROPOSED SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- PROPOSED BARRIER KERB
- PROPOSED FLUSH KERB
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWERAGE RETICULATION
- PROPOSED WATER RETICULATION
- EXISTING STORMWATER DRAINAGE
- EXISTING SEWERAGE RETICULATION
- EXISTING WATER RETICULATION
- EXISTING ELECTRICITY
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING GAS
- EXISTING TELSTRA
- PROPOSED RETAINING WALL BLOCKWORK
- EXISTING RETAINING WALL
- WORKS BOUNDARY
- PROPOSED ASHPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- LANDSCAPE
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

THRESHOLD NOTES:

1. PROVIDE A 50mm LEVEL DIFFERENCE BETWEEN THE INTERNAL AND EXTERNAL SLABS AT ALL ROLLER SHUTTER DOORS UNDER AWNINGS.
2. PROVIDE A 100mm LEVEL DIFFERENCE BETWEEN THE INTERNAL AND EXTERNAL SLABS OF THE WAREHOUSE ALONG OTHER EDGES.
3. PROVIDE A 30mm LEVEL DIFFERENCE BETWEEN THE INSIDE AND OUTSIDE SLABS AT THE OFFICES AND ALL DDA COMPLIANT DOORS.
4. REFER TO ARCHITECT DRAWINGS FOR LOCATION OF DDA COMPLIANT DOORS.

WARNING

UNDERGROUND SERVICES

UNDERGROUND SERVICES EXIST IN THIS AREA. UNDERGROUND SERVICE LOCATIONS AND DEPTHS TO BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.

SPECIFICATION & MANDATORY REFERENCES

ALL WORKS TO BE CARRIED OUT STRICTLY IN ACCORDANCE WITH NORTHROP SPECIFICATION NOTES FOUND WITHIN C-010 SERIES DRAWINGS. NORTHROP WILL NOT BE HELD LIABLE FOR NON-COMPLIANT WORKS.

FOR APPROVAL

R.P.E.O. No: 25874
VERIFIER:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

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6	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

CLIENT

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ARCHITECT

LEFFLER SIMES ARCHITECTS

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SCALE 1:250@ A1 (0 2 4 6 8 10 12m)

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ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN SHEET 1 OF 3

JOB NUMBER **BN221936**
DRAWING NUMBER **C-211**
REVISION **6**
DRAWING SHEET SIZE = A1

EXISTING SPOTLIGHT

FFL18.750
BEL18.560
LFR 4

FFL18.850
BEL18.660
ANACONDA

25
SP191047

24
SP191047

EMT C SP191047

SWD

EXISTING DN150 CONCRETE SEWER MAIN
OSL 18.602
DSIL 17.427

PROPOSED STORMWATER DETENTION AND TREATMENT TANK. REFER APPROVED SBSMP FOR DETAILS.

PROPOSED SEWER PROPERTY CONNECTION
IL 17.086

FOR CONTINUATION REFER TO SHEET C-211

FOR CONTINUATION REFER TO SHEET C-213

MOORES CREEK ROAD

EXISTING DN150 CONCRETE SEWER MAIN
OSL 18.602
DSIL 16.316

INTERNAL ROAD

ROLLER DOOR

LFR UNIT 5
RL 18.750m

UPSTREAM FLOW DEPTH - 100% BLOCKED SCENARIO

RL 18.660m

ROLLER DOOR

ANACONDA
RL 18.850m

EXISITNG SURFACE

FINISHED SURFACE

DATUM 17.000

SECTION A - SCALE 1:50 H SCALE 1:25 V

SCALE 1:50@A1 0.0 0.5 1.0 1.5 2.0 2.5m

SCALE 1:25@A1 0.0 0.2 0.4 0.6 0.8 1.0 1.2m

LEGEND

- PROPOSED SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- PROPOSED BARRIER KERB
- PROPOSED FLUSH KERB
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWERAGE RETICULATION
- PROPOSED WATER RETICULATION
- EXISTING STORMWATER DRAINAGE
- EXISTING SEWERAGE RETICULATION
- EXISTING WATER RETICULATION
- EXISTING ELECTRICITY
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING GAS
- EXISTING TELSTRA
- PROPOSED RETAINING WALL BLOCKWORK
- EXISTING RETAINING WALL
- WORKS BOUNDARY
- PROPOSED ASHPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- LANDSCAPE
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

NOTES

FOR ROADWORKS & STORMWATER DRAINAGE NOTES REFER DRG NO C-211

WARNING

UNDERGROUND SERVICES

UNDERGROUND SERVICES EXIST IN THIS AREA. UNDERGROUND SERVICE LOCATIONS AND DEPTHS TO BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS.

FOR APPROVAL

R.P.E.No: 25874
VERIFIED:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
1	ISSUED FOR APPROVAL	CL	MB	HJ	18.11.22
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4	ISSUED FOR APPROVAL	CL	SK	SK	19.05.23
5	ISSUED FOR APPROVAL	CL	SK	SK	22.06.23
6	ISSUED FOR APPROVAL	CL	SK	SK	06.02.24

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SCALE 1:250@A1 0 2 4 6 8 10 12m

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ABN 81 094 433 100

PROJECT
**MOORES CREEK ROAD,
NORMAN GARDENS QLD 4701**

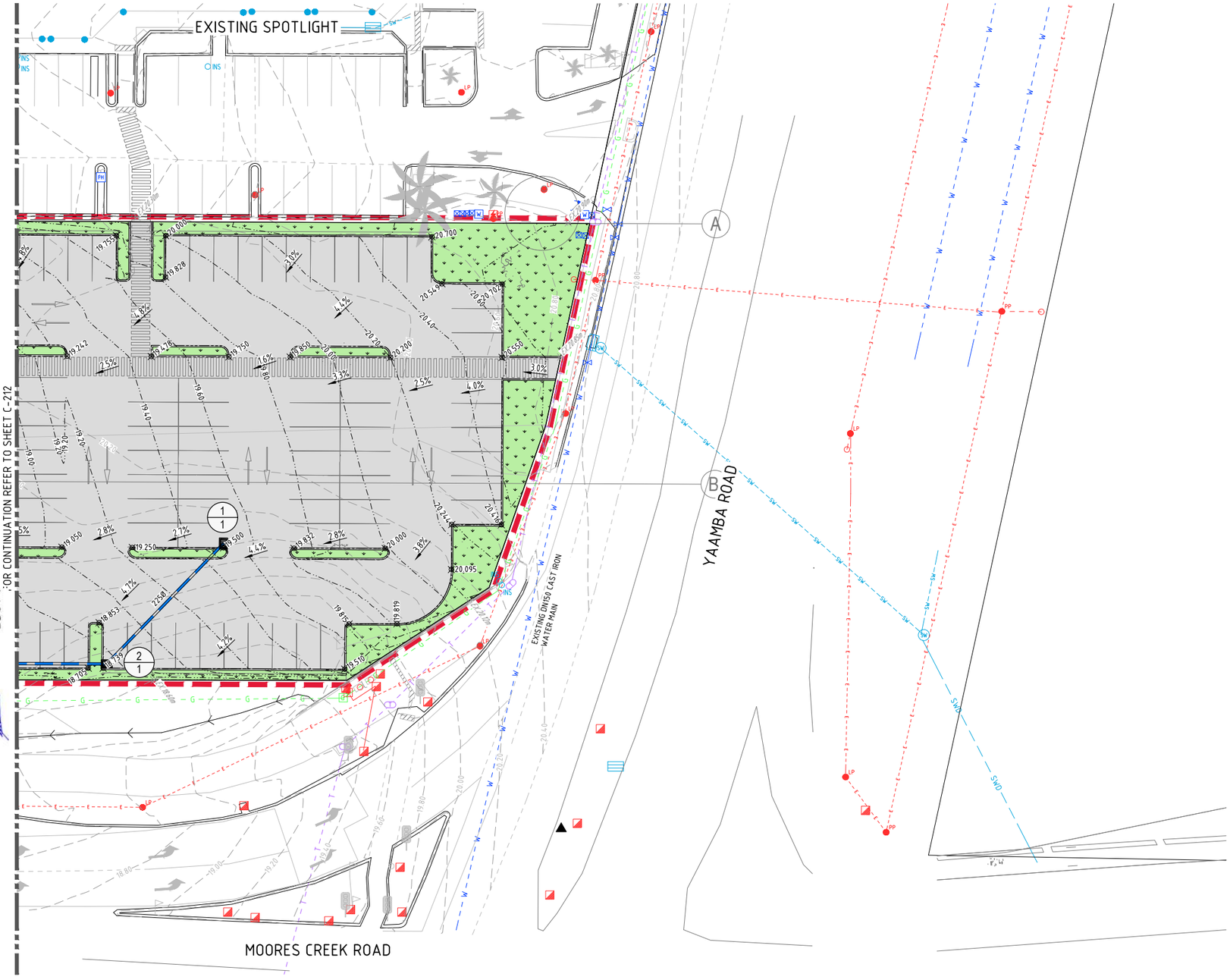
DRAWING TITLE
CIVIL ENGINEERING PACKAGE
**ROADWORKS &
STORMWATER DRAINAGE
LAYOUT PLAN SHEET 2 OF 3**

JOB NUMBER
BN221936

DRAWING NUMBER
C-212

REVISION
6

DRAWING SHEET SIZE = A1



LEGEND

- PROPOSED SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- PROPOSED BARRIER KERB
- PROPOSED FLUSH KERB
- PROPOSED STORMWATER DRAINAGE
- PROPOSED SEWERAGE RETICULATION
- PROPOSED WATER RETICULATION
- EXISTING STORMWATER DRAINAGE
- EXISTING SEWERAGE RETICULATION
- EXISTING WATER RETICULATION
- EXISTING ELECTRICITY
- EXISTING ELECTRICITY (UNDERGROUND)
- EXISTING GAS
- EXISTING TELSTRA
- PROPOSED RETAINING WALL BLOCKWORK
- EXISTING RETAINING WALL
- WORKS BOUNDARY
- PROPOSED ASHPHALT PAVEMENT
- PROPOSED CONCRETE PAVEMENT
- PROPOSED CONCRETE FOOTPATH
- LANDSCAPE
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

NOTES

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JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

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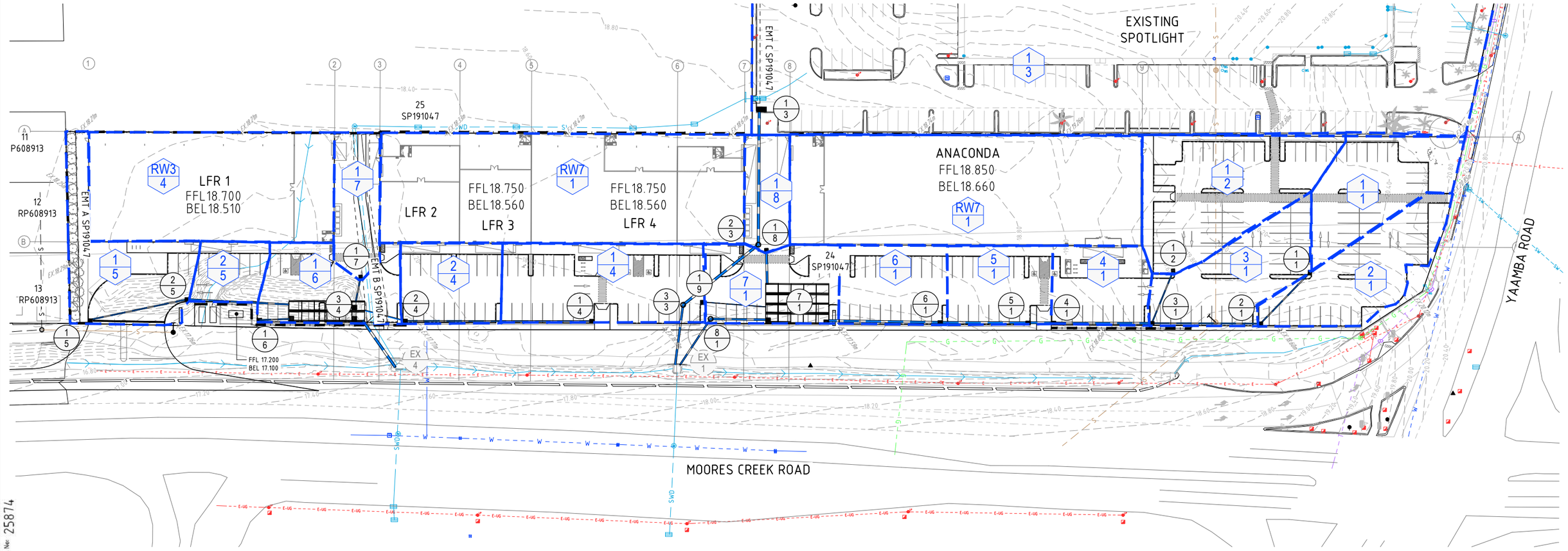
ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
ROADWORKS & STORMWATER DRAINAGE LAYOUT PLAN SHEET 3 OF 3

JOB NUMBER **BN221936**
DRAWING NUMBER **C-213**
REVISION **6**
DRAWING SHEET SIZE = A1



R.P.E.D. No: 25874

VERIFIED:

JOB MANAGER: S.KILLORAN

DESIGNED: R.MITCHELL

DRAWN: C.LOPEZ

CATCHMENT TABLE

Pit No.	Catchment Area
	(Ha)
1/1	0.070
1/2	0.112
2/1	0.069
3/1	0.068
4/1	0.049
5/1	0.053
6/1	0.055
1/3	1.115
1/4	0.104
2/4	0.053
1-5	0.061
2-5	0.027
1-6	0.063
1-7	0.041
1-8	0.033
7-1	0.068

LEGEND

- PROPOSED SURFACE CONTOURS
- EXISTING SURFACE CONTOURS
- PROPOSED STORMWATER DRAINAGE
- SWD — EXISTING STORMWATER DRAINAGE
- S — EXISTING SEWERAGE RETICULATION
- W — EXISTING WATER RETICULATION
- E — EXISTING ELECTRICITY
- E-UG — EXISTING ELECTRICITY (UNDERGROUND)
- G — EXISTING GAS
- T — EXISTING TELSTRA
- PROPOSED CATCHMENT BOUNDARY
- PROPOSED CATCHMENT NUMBER
- PROPOSED STRUCTURE NUMBER
- EXISTING STRUCTURE NUMBER

FOR APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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SCALE 1:500@A1

0 5 10 15 20 25m

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ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
STORMWATER CATCHMENT LAYOUT PLAN

JOB NUMBER **BN221936**

DRAWING NUMBER **C-311**

REVISION **5**

DRAWING SHEET SIZE = A1

CO-ORDINATES	E246839.584 N7415415.293	E246837.062 N7415397.438	E246814.688 N7415381.278	E246794.458 N7415366.647	E246789.225 N7415362.868	E246771.147 N7415349.811	E246747.556 N7415333.851
STRUCTURE NAME	1/1	2/1	3/1	4/1	5/1	6/1	7/1
STRUCTURE DESCRIPTION	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT OVER DETENTION TANK. REFER DETAIL
PIPE GRADE % PIPE SLOPE 1in X	3.74% 1:26.73	0.50% 1:200.00	0.40% 1:250.00	0.30% 1:333.33	0.30% 1:333.33	0.25% 1:400.00	
PIPE SIZEmm (CLASS)	225Ø HDPE PN100 SN8	300Ø HDPE PN100 SN8	375Ø HDPE PN100 SN8	450Ø HDPE PN100 SN8	450Ø HDPE PN100 SN8	525Ø HDPE PN100 SN8	
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.281	0.387	0.598	0.586	0.748	0.659	
HYDRAULIC GRADE LEVEL	18.497	17.809	17.652	17.614	17.567	17.533	
PIPE FLOW (L/S)	10.960	26.272	64.633	88.242	112.706	136.710	
PIPE CAPACITY AT GRADE (L/S)	126.252	91.635	150.374	200.089	200.089	276.912	
DEPTH TO INVERT	1.165 1.090	1.161 0.995	1.134 1.080	1.099 1.036	1.056 1.101	1.121 1.327	
INVERT LEVEL OF DRAIN	18.340 17.665	17.594 17.456	17.317 17.217	17.197 17.178	17.158 17.091	17.071 17.000	
DESIGN SURFACE LEVEL	19.505 18.755	18.451 18.297	18.214 18.192	18.327			
RUNNING CHAINAGE	0.000 18.032	18.032 45.632	27.600 70.598	24.966 77.053	6.455 99.353	22.300 127.836	28.483

LINE1

SCALES: HORIZONTAL 1:500 VERTICAL 1:50

CO-ORDINATES	E246811.313 N7415395.132	E246814.688 N7415381.278
STRUCTURE NAME	1/2	3/1
STRUCTURE DESCRIPTION	900x900 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL
PIPE GRADE % PIPE SLOPE 1in X	0.53% 1:190.13	
PIPE SIZEmm (CLASS)	225Ø HDPE PN100 SN8	
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.377	
HYDRAULIC GRADE LEVEL	17.680	
PIPE FLOW (L/S)	14.720	
PIPE CAPACITY AT GRADE (L/S)	45.384	
DEPTH TO INVERT	1.095 1.086	
INVERT LEVEL OF DRAIN	17.440 17.365	
DESIGN SURFACE LEVEL	18.535 18.451	
RUNNING CHAINAGE	0.000 14.260	14.260

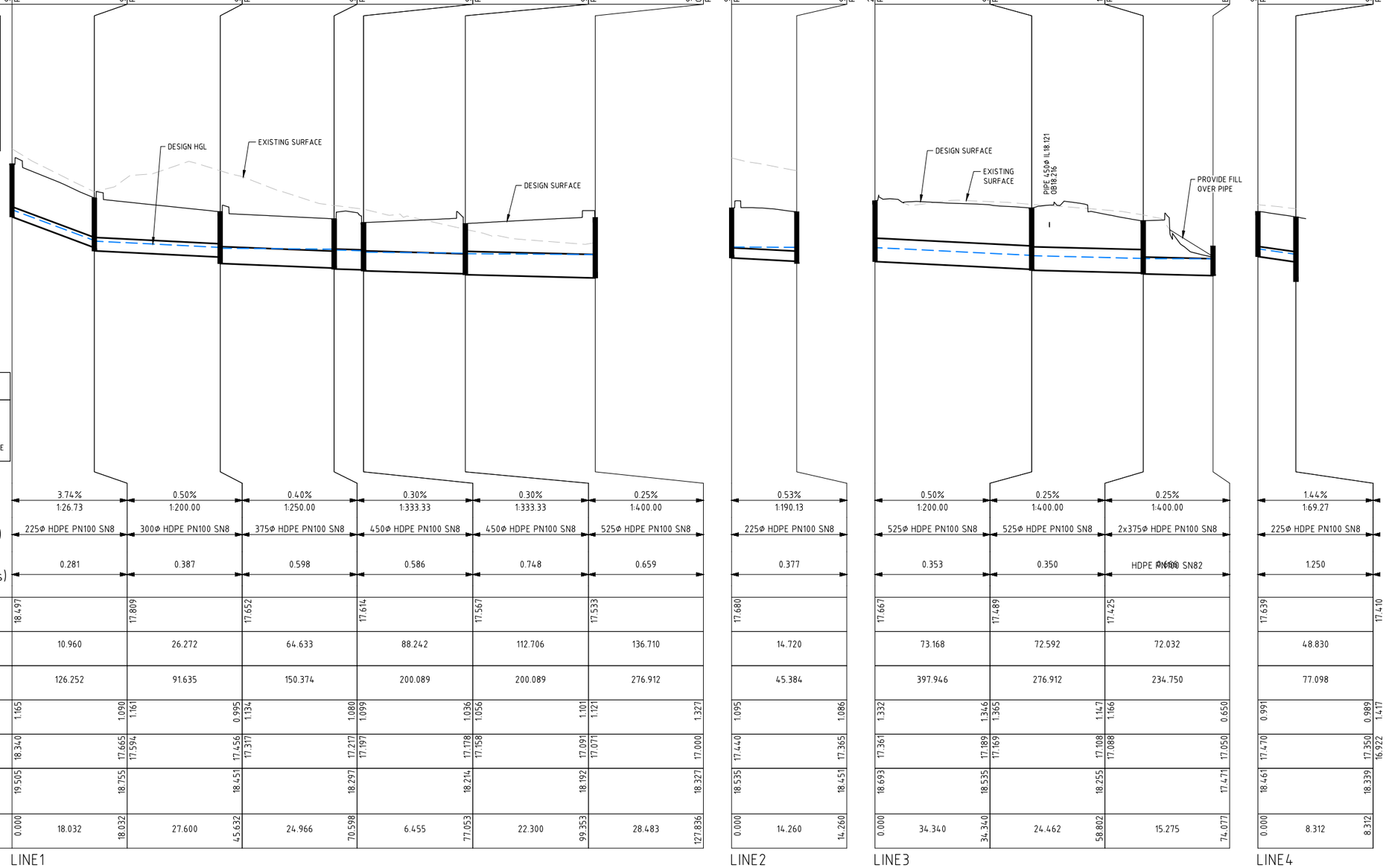
LINE2

CO-ORDINATES	E246722.996 N7415301.511	E246724.746 N7415338.497	E246729.921 N7415331.992
STRUCTURE NAME	EX/1	1/4	2/4
STRUCTURE DESCRIPTION	EXISTING STRUCTURE	900x600 GRATED PIT REFER DETAIL	900x900 GRATED PIT REFER DETAIL
PIPE GRADE % PIPE SLOPE 1in X	0.25% 1:400.00	1.44% 1:69.27	
PIPE SIZEmm (CLASS)	2x375Ø HDPE PN100 SN8	225Ø HDPE PN100 SN8	
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	HDPE PN100 SN8	1.250	
HYDRAULIC GRADE LEVEL	17.425	17.639	17.410
PIPE FLOW (L/S)	72.032	48.830	
PIPE CAPACITY AT GRADE (L/S)	234.750	77.098	
DEPTH TO INVERT	1.166 0.650	0.991 0.989	1.417
INVERT LEVEL OF DRAIN	17.088 17.050	17.470 17.350	16.922
DESIGN SURFACE LEVEL	18.255 17.471	18.461 18.339	
RUNNING CHAINAGE	58.802 15.275	74.077	0.000 8.312 8.312

LINE3

LINE4

STORMWATER GRATED PITS	
DEPTH	MIN SIZE
0-1m	600x600 Grated Pit
1m-1.5m	900x600 Grated Pit
1.5-2m	900x900 Grated Pit
Over 2m	900x600 Grate over MH



LEGEND

- Q10 HGL
- DESIGN SURFACE
- EXISTING SURFACE

R.P.E.Q. No: 25874

VERIFIER:

JOB MANAGER: S.KILLORAN

DESIGNED: R.MITCHELL

DRAWN: C.LOPEZ

FOR APPROVAL

REVISION	DESCRIPTION	ISSUED	VER'D	APP'D	DATE
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2	ISSUED FOR APPROVAL	CL	SK	SK	19.05.23
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ABN 81 094 433 100

PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
STORMWATER LONGITUDINAL SECTION SHEET 1 OF 2

JOB NUMBER **BN221936**

DRAWING NUMBER **C-321** REVISION **4**

DRAWING SHEET SIZE = A1

CO-ORDINATES	E246596.478 N7415222.969		E246613.079 N7415241.939		E246634.607 N7415256.036
STRUCTURE NAME	1/5		2/5		3/4
STRUCTURE DESCRIPTION	900x900 GRATED PIT REFER DETAIL		900x900 GRATED PIT REFER DETAIL		DETENTION TANK
PIPE GRADE % PIPE SLOPE 1in X	0.50% 1:200.00		0.40% 1:250.00		
PIPE SIZEmm (CLASS)	300Ø HDPE PN100 SN8		375Ø HDPE PN100 SN8		
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.143		0.188		
HYDRAULIC GRADE LEVEL	16.682		16.678		
PIPE FLOW (L/S)	9.700		20.321		
PIPE CAPACITY AT GRADE (L/S)	91.635		150.374		
DEPTH TO INVERT	1.065	1.773	1.793		2.054
INVERT LEVEL OF DRAIN	16.300	16.174	16.154		16.051
DESIGN SURFACE LEVEL	17.365	17.947			18.105
RUNNING CHAINAGE	0.000	25.208 25.208	25.733		50.941

LINE5

CO-ORDINATES	E246630.978 N7415248.455		E246636.822 N7415253.070
STRUCTURE NAME	1/6		3/4
STRUCTURE DESCRIPTION	900x900 GRATED PIT REFER DETAIL		DETENTION TANK
PIPE GRADE % PIPE SLOPE 1in X	0.50% 1:200.00		
PIPE SIZEmm (CLASS)	225Ø HDPE PN100 SN8		
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.256		
HYDRAULIC GRADE LEVEL	17.097		
PIPE FLOW (L/S)	10.000		
PIPE CAPACITY AT GRADE (L/S)	44.185		
DEPTH TO INVERT	0.999		1.086
INVERT LEVEL OF DRAIN	17.010		16.973
DESIGN SURFACE LEVEL	18.009		18.059
RUNNING CHAINAGE	0.000	7.446 7.446	7.446

LINE6

CO-ORDINATES	E246645.405 N7415272.389		E246648.670 N7415265.214
STRUCTURE NAME	1/7		3/4
STRUCTURE DESCRIPTION	900x600 GRATED PIT REFER DETAIL		DETENTION TANK
PIPE GRADE % PIPE SLOPE 1in X	2.56% 1:39.03		
PIPE SIZEmm (CLASS)	225Ø HDPE PN100 SN8		
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.181		
HYDRAULIC GRADE LEVEL	17.398		
PIPE FLOW (L/S)	7.067		
PIPE CAPACITY AT GRADE (L/S)	103.853		
DEPTH TO INVERT	1.000		1.018
INVERT LEVEL OF DRAIN	17.350		17.148
DESIGN SURFACE LEVEL	18.350		18.166
RUNNING CHAINAGE	0.000	7.883 7.883	7.883

LINE7

CO-ORDINATES	N7415297.991 E246699.411		E246661.000 N7415270.088		E246648.670 N7415265.214		E246665.930 N7415259.197
STRUCTURE NAME	1-8		7/1		8/1		EX-1
STRUCTURE DESCRIPTION	900x900 GRATED PIT REFER DETAIL		DETENTION TANK		1050 DIA MANHOLE		EXTENT EXISTING HEADWALL & PROVIDE EROSION PROTECTION
PIPE GRADE % PIPE SLOPE 1in X	0.50% 1:200.32		0.50% 1:200.00		0.75% 1:133.85		
PIPE SIZEmm (CLASS)	225Ø HDPE PN100 SN8		2x225Ø HDPE PN100 SN8		375Ø HDPE PN100 SN8		
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.435		HDPE PN100 SN82		0.591		
HYDRAULIC GRADE LEVEL	17.435		17.159		16.175		
PIPE FLOW (L/S)	17.001		25.427		63.879		
PIPE CAPACITY AT GRADE (L/S)	44.148		88.371		208.503		
DEPTH TO INVERT	0.825	1.125	1.145	1.172	2.240		0.398
INVERT LEVEL OF DRAIN	17.317	17.080	17.060	16.994	15.926		15.789
DESIGN SURFACE LEVEL	18.142	18.205		18.166			16.187
RUNNING CHAINAGE	0.000	47.477 47.477	13.258	60.735	18.279		79.014

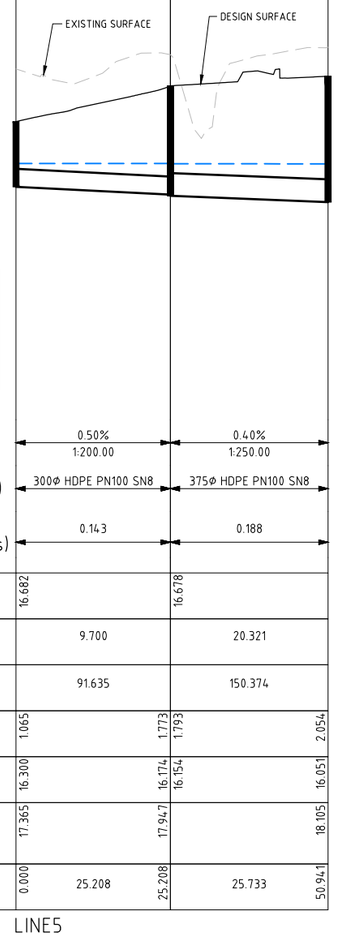
LINE8

CO-ORDINATES	E246719.327 N7415318.480		E246733.263 N7415327.072
STRUCTURE NAME	1/9		7/1
STRUCTURE DESCRIPTION	900x600 GRATED PIT REFER DETAIL		DETENTION TANK
PIPE GRADE % PIPE SLOPE 1in X	0.50% 1:200.00		
PIPE SIZEmm (CLASS)	225Ø HDPE PN100 SN8		
FULL PIPE FLOW VELOCITY (m/s) DATUM10.000m AHD	0.360		
HYDRAULIC GRADE LEVEL	17.421		
PIPE FLOW (L/S)	14.044		
PIPE CAPACITY AT GRADE (L/S)	44.185		
DEPTH TO INVERT	0.999		1.058
INVERT LEVEL OF DRAIN	17.270		17.188
DESIGN SURFACE LEVEL	18.269		18.247
RUNNING CHAINAGE	0.000	16.371 16.371	

LINE9

STORMWATER GRATED PITS

DEPTH	MIN SIZE
0-1m	600x600 Grated Pit
1m-1.5m	900x600 Grated Pit
1.5-2m	900x900 Grated Pit
Over 2m	900x600 Grate over MH



LEGEND
- Q10 HGL
- DESIGN SURFACE
- EXISTING SURFACE

R.P.E.Q. No: 25874
VERIFIER:
JOB MANAGER: S.KILLORAN
DESIGNED: R.MITCHELL
DRAWN: C.LOPEZ

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PROJECT
MOORES CREEK ROAD, NORMAN GARDENS QLD 4701

DRAWING TITLE
CIVIL ENGINEERING PACKAGE
STORMWATER LONGITUDINAL SECTION SHEET 2 OF 2

JOB NUMBER **BN221936**

DRAWING NUMBER **C-322**

REVISION **4**

DRAWING SHEET SIZE = A1

Appendix B – Rational Method Calculations

DESIGNED BY:	HJ
DATE:	23/09/2022
PROJECT NAME:	Spotlight Property Group
JOB No:	BN221936

RATIONAL METHOD SUMMARY CALCULATIONS

Catchment ID:	E1	
Description:	Existing Catchment 1	
Catchment Area, **A** :	1.01	Ha
Overland Sheet Flow Path Length, **L** :	100	m
Hortons Surface Roughness Factor, **n** :	0.045	
Slope of surface, **S** :	5	%
Time of Concentration, **t** :	16.2	minutes
Impervious Fraction, f_i :	0	
Land Description (Only use if f_i <0.2)	Low Density Bushland - MED Soil Permeability	
10year Discharge Coefficient, C_{10} :	0.7	

BOM IFD's:	2019

Surface Type	n
Pavement	0.015
Soil	0.0275
Poor Grass	0.035
Average Grass	0.045
Dense Grass	0.06

Event	Rainfall Intensity	Runoff Coefficient	Discharge
	mm/h	*C*	m^3/s
1 EY	80.22	0.56	0.126
0.5 EY	89.28	0.60	0.149
0.2 EY	118.00	0.67	0.220
10%	139.40	0.70	0.274
5%	160.00	0.74	0.330
2%	189.00	0.81	0.427
1%	211.60	0.84	0.499

QUDM, Table 4.5.2

Frequency Factor, Fy	
1 year ARI:	0.8
2 years ARI:	0.85
5 years ARI:	0.95
10 years ARI:	1
20 years ARI:	1.05
50 years ARI:	1.15
100 years ARI:	1.2

QUDM, Table 4.5.3 - Table of C_{10} values

Intensity (mm/hr)	Fraction Impervious, f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	0.88	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

QUDM, Table 4.5.4 - C_{10} value for zero fraction impervious

Land Description	High Density Bush			Medium density bush: good grass cover, high density pasture, zero tillage cropping			Low density bush: poor grass cover, low density pasture, low cover bare fallows		
Intensity (mm/hr)	Soil Permeability			Soil Permeability			Soil Permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39-44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45-49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50-54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55-59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60-64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65-69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	**0.70**	0.70
70-90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

DESIGNED BY:	HJ
DATE:	23/09/2022
PROJECT NAME:	Spotlight Property Group
JOB No:	BN221936

RATIONAL METHOD SUMMARY CALCULATIONS

Catchment ID:	E2	
Description:	Existing Catchment 2	
Catchment Area, **A** :	0.71	Ha
Overland Sheet Flow Path Length, **L** :	100	m
Hortons Surface Roughness Factor, **n** :	0.045	
Slope of surface, **S** :	2	%
Time of Concentration, **t** :	19.4	minutes
Impervious Fraction, f_i :	0	
Land Description (Only use if f_i <0.2)	Low Density Bushland - MED Soil Permeability	
10year Discharge Coefficient, C_{10} :	0.7	

BOM IFD's:	2019

Surface Type	n
Pavement	0.015
Soil	0.0275
Poor Grass	0.035
Average Grass	0.045
Dense Grass	0.06

Event	Rainfall Intensity	Runoff Coefficient	Discharge
	mm/h	*C*	m^3/s
1 EY	73.98	0.56	0.082
0.5 EY	82.32	0.60	0.097
0.2 EY	109.00	0.67	0.143
10%	128.60	0.70	0.178
5%	148.00	0.74	0.215
2%	174.00	0.81	0.276
1%	195.40	0.84	0.324

QUDM, Table 4.5.2

Frequency Factor, Fy	
1 year ARI:	0.8
2 years ARI:	0.85
5 years ARI:	0.95
10 years ARI:	1
20 years ARI:	1.05
50 years ARI:	1.15
100 years ARI:	1.2

QUDM, Table 4.5.3 - Table of C_{10} values

Intensity (mm/hr)	Fraction Impervious, f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	0.88	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

QUDM, Table 4.5.4 - C_{10} value for zero fraction impervious

Land Description	High Density Bush			Medium density bush: good grass cover, high density pasture, zero tillage cropping			Low density bush: poor grass cover, low density pasture, low cover bare fallows		
Intensity (mm/hr)	Soil Permeability			Soil Permeability			Soil Permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39-44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45-49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50-54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55-59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60-64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65-69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	**0.70**	0.70
70-90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

DESIGNED BY:	AT
DATE:	15/03/2023
PROJECT NAME:	Spotlight Property Group
JOB No:	BN221936

RATIONAL METHOD SUMMARY CALCULATIONS

Catchment ID:	**D1**	
Description:	**West Catchment**	
Catchment Area, **A** :	**0.7974**	Ha
Overland Sheet Flow Path Length, **L** :	**11**	m
Hortons Surface Roughness Factor, **n** :	**0.015**	
Slope of surface, **S** :	**1**	%
Time of Concentration, **t** :	**6.0**	minutes
Impervious Fraction, f_i :	**0.9**	
Land Description (Only use if f_i <0.2)		
10year Discharge Coefficient, C_{10} :	**0.88**	

BOM IFD's:	2019

Surface Type	n
Pavement	0.015
Soil	0.0275
Poor Grass	0.035
Average Grass	0.045
Dense Grass	0.06

Event	Rainfall Intensity	Runoff Coefficient	Discharge
	mm/h	*C*	m^3/s
1 EY	**111.26**	**0.70**	**0.173**
0.5 EY	**123.80**	**0.75**	**0.205**
0.2 EY	**165.20**	**0.84**	**0.306**
10%	**193.40**	**0.88**	**0.377**
5%	**222.40**	**0.92**	**0.455**
2%	**261.20**	**1.00**	**0.579**
1%	**291.40**	**1.00**	**0.645**

QUDM, Table 4.5.2

Frequency Factor, Fy	
1 year ARI:	0.8
2 years ARI:	0.85
5 years ARI:	0.95
10 years ARI:	1
20 years ARI:	1.05
50 years ARI:	1.15
100 years ARI:	1.2

QUDM, Table 4.5.3 - Table of C_{10} values

Intensity (mm/hr)	Fraction Impervious, f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	**0.88**	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

QUDM, Table 4.5.4 - C_{10} value for zero fraction impervious

Land Description	High Density Bush			Medium density bush: good grass cover, high density pasture, zero tillage cropping			Low density bush: poor grass cover, low density pasture, low cover bare fallows		
Intensity (mm/hr)	Soil Permeability			Soil Permeability			Soil Permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39-44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45-49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50-54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55-59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60-64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65-69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	0.70	0.70
70-90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

DESIGNED BY:	AT
DATE:	15/03/2023
PROJECT NAME:	Spotlight Property Group
JOB No:	BN221936

RATIONAL METHOD SUMMARY CALCULATIONS

Catchment ID:	**D2**	
Description:	**East Catchment**	
Catchment Area, **A** :	**0.86**	Ha
Overland Sheet Flow Path Length, **L** :	**53.4**	m
Hortons Surface Roughness Factor, **n** :	**0.015**	
Slope of surface, **S** :	**2.5**	%
Time of Concentration, **t** :	**6.3**	minutes
Impervious Fraction, f_i :	**0.9**	
Land Description (Only use if f_i <0.2)		
10year Discharge Coefficient, C_{10} :	**0.88**	

BOM IFD's:	2019

Surface Type	n
Pavement	0.015
Soil	0.0275
Poor Grass	0.035
Average Grass	0.045
Dense Grass	0.06

Event	Rainfall Intensity	Runoff Coefficient	Discharge
	mm/h	*C*	m^3/s
1 EY	**111.26**	**0.70**	**0.187**
0.5 EY	**123.80**	**0.75**	**0.221**
0.2 EY	**165.20**	**0.84**	**0.330**
10%	**193.40**	**0.88**	**0.406**
5%	**222.40**	**0.92**	**0.491**
2%	**261.20**	**1.00**	**0.624**
1%	**291.40**	**1.00**	**0.696**

QUDM, Table 4.5.2

Frequency Factor, Fy	
1 year ARI:	0.8
2 years ARI:	0.85
5 years ARI:	0.95
10 years ARI:	1
20 years ARI:	1.05
50 years ARI:	1.15
100 years ARI:	1.2

QUDM, Table 4.5.3 - Table of C_{10} values

Intensity (mm/hr)	Fraction Impervious, f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	**0.88**	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

QUDM, Table 4.5.4 - C_{10} value for zero fraction impervious

Land Description	High Density Bush			Medium density bush: good grass cover, high density pasture, zero tillage cropping			Low density bush: poor grass cover, low density pasture, low cover bare fallows		
Intensity (mm/hr)	Soil Permeability			Soil Permeability			Soil Permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39-44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45-49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50-54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55-59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60-64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65-69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	0.70	0.70
70-90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

DESIGNED BY:	AT
DATE:	15/03/2023
PROJECT NAME:	Spotlight Property Group
JOB No:	BN221936

RATIONAL METHOD SUMMARY CALCULATIONS

Catchment ID:	**EXT1**	
Description:	**Spotlight Catchment**	
Catchment Area, **A** :	**0.74**	Ha
Overland Sheet Flow Path Length, **L** :	**36**	m
Hortons Surface Roughness Factor, **n** :	**0.015**	
Slope of surface, **S** :	**1**	%
Time of Concentration, **t** :	**6.3**	minutes
Impervious Fraction, f_i :	**0.95**	
Land Description (Only use if f_i <0.2)		
10year Discharge Coefficient, C_{10} :	**0.88**	

BOM IFD's:	2019

Surface Type	n
Pavement	0.015
Soil	0.0275
Poor Grass	0.035
Average Grass	0.045
Dense Grass	0.06

Event	Rainfall Intensity	Runoff Coefficient	Discharge
	mm/h	*C*	m^3/s
1 EY	**111.26**	**0.70**	**0.160**
0.5 EY	**123.80**	**0.75**	**0.189**
0.2 EY	**165.20**	**0.84**	**0.282**
10%	**193.40**	**0.88**	**0.347**
5%	**222.40**	**0.92**	**0.420**
2%	**261.20**	**1.00**	**0.533**
1%	**291.40**	**1.00**	**0.595**

QUDM, Table 4.5.2

Frequency Factor, Fy	
1 year ARI:	0.8
2 years ARI:	0.85
5 years ARI:	0.95
10 years ARI:	1
20 years ARI:	1.05
50 years ARI:	1.15
100 years ARI:	1.2

QUDM, Table 4.5.3 - Table of C_{10} values

Intensity (mm/hr)	Fraction Impervious, f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	**0.88**	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

QUDM, Table 4.5.4 - C_{10} value for zero fraction impervious

Land Description	High Density Bush			Medium density bush: good grass cover, high density pasture, zero tillage cropping			Low density bush: poor grass cover, low density pasture, low cover bare fallows		
Intensity (mm/hr)	Soil Permeability			Soil Permeability			Soil Permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39-44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45-49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50-54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55-59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60-64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65-69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	0.70	0.70
70-90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

DESIGNED BY:	AT
DATE:	15/03/2023
PROJECT NAME:	Spotlight Property Group
JOB No:	BN221936

RATIONAL METHOD SUMMARY CALCULATIONS

Catchment ID:	**EXT2**	
Description:	**Spotlight Catchment**	
Catchment Area, **A** :	**0.53**	Ha
Overland Sheet Flow Path Length, **L** :	**50**	m
Hortons Surface Roughness Factor, **n** :	**0.0275**	
Slope of surface, **S** :	**0.5**	%
Time of Concentration, **t** :	**14.4**	minutes
Impervious Fraction, f_i :	**0**	
Land Description (Only use if f_i <0.2)	**Low Density Bushland - MED Soil Permeability**	
10year Discharge Coefficient, C_{10} :	**0.7**	

BOM IFD's:	2019

Surface Type	n
Pavement	0.015
Soil	0.0275
Poor Grass	0.035
Average Grass	0.045
Dense Grass	0.06

Event	Rainfall Intensity	Runoff Coefficient	Discharge
	mm/h	*C*	m^3/s
1 EY	**85.10**	**0.56**	**0.070**
0.5 EY	**94.68**	**0.60**	**0.083**
0.2 EY	**125.20**	**0.67**	**0.123**
10%	**147.80**	**0.70**	**0.153**
5%	**169.60**	**0.74**	**0.184**
2%	**200.40**	**0.81**	**0.238**
1%	**224.20**	**0.84**	**0.278**

QUDM, Table 4.5.2

Frequency Factor, Fy	
1 year ARI:	0.8
2 years ARI:	0.85
5 years ARI:	0.95
10 years ARI:	1
20 years ARI:	1.05
50 years ARI:	1.15
100 years ARI:	1.2

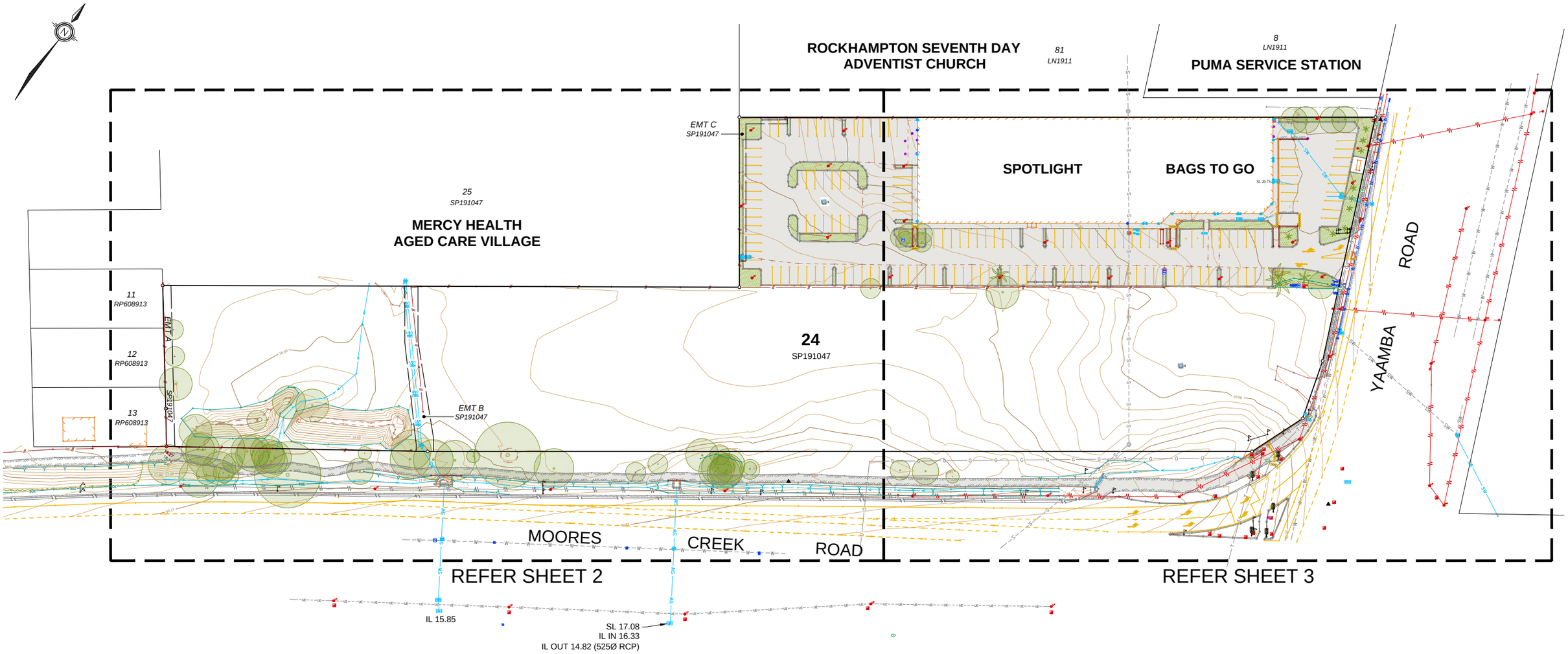
QUDM, Table 4.5.3 - Table of C_{10} values

Intensity (mm/hr)	Fraction Impervious, f_i						
	0.00	0.20	0.40	0.60	0.80	0.90	1.00
39-44	Refer to Table 4.5.4	0.44	0.55	0.67	0.78	0.84	0.90
45-49		0.49	0.60	0.70	0.80	0.85	0.90
50-54		0.55	0.64	0.72	0.81	0.86	0.90
55-59		0.60	0.68	0.75	0.83	0.86	0.90
60-64		0.65	0.72	0.78	0.84	0.87	0.90
65-69		0.71	0.76	0.80	0.85	0.88	0.90
70-90		0.74	0.78	0.82	0.86	0.88	0.90

QUDM, Table 4.5.4 - C_{10} value for zero fraction impervious

Land Description	High Density Bush			Medium density bush: good grass cover, high density pasture, zero tillage cropping			Low density bush: poor grass cover, low density pasture, low cover bare fallows		
Intensity (mm/hr)	Soil Permeability			Soil Permeability			Soil Permeability		
	High	Med	Low	High	Med	Low	High	Med	Low
39-44	0.08	0.24	0.32	0.16	0.32	0.40	0.24	0.40	0.48
45-49	0.10	0.29	0.39	0.20	0.39	0.49	0.29	0.49	0.59
50-54	0.12	0.35	0.46	0.23	0.46	0.58	0.35	0.58	0.69
55-59	0.13	0.40	0.53	0.27	0.53	0.66	0.40	0.66	0.70
60-64	0.15	0.44	0.59	0.30	0.59	0.70	0.44	0.70	0.70
65-69	0.17	0.50	0.66	0.33	0.66	0.70	0.50	**0.70**	0.70
70-90	0.18	0.53	0.70	0.35	0.70	0.70	0.53	0.70	0.70

Appendix C – Site Survey Plan



LEGEND

- Subject Lot Boundary
- Adjoining Lot Boundary
- Easement Boundary
- Contour Line
- Retaining Wall
- Fence
- Bottom of Bank
- Top of Bank
- Change of Grade
- Stormwater Line
- Sewer Line
- Sewer Line Approx
- Overhead Electrical
- Overhead Electrical Approx
- Underground Electrical
- Underground Electrical Approx
- Stay Wire
- Drainage Flow Line
- Edge of Building
- Eave Line
- Edge of Bitumen
- Edge of Concrete
- Line Marking - Solid
- Line Marking - Dashed
- Non-Slip Matting
- Water Main
- Water Main Approx
- Edge of Track
- Telecom Line Approx
- Gas Main Approx
- Electrical Pillar
- Light Pole
- Power Pole
- Fire Hydrant
- Sluice Valve
- Tapping Band
- Tap
- Water Meter
- Irrigation Control Box
- Sewer Mahole
- Power Box
- Electrical Pit
- Telstra Pit
- Stormwater Gully Trap
- Stormwater Manhole
- Stormwater Downpipe
- Inspection Opening
- Gas Supply
- Bollard
- Building Floor Level
- Road Sign
- Traffic Signal
- 360° Panoramic Image (Click to Open Link)
- Site Photo
- Tree
- Palm
- Garden / Landscaped Area

IMPORTANT NOTE
UNDERGROUND SERVICES IN VICINITY PLOTTED FROM VISIBLE FEATURES ONLY

Scale 1:600 - Lengths are in Metres.

10 0 10 20 30 40 50 60

DATUM INFORMATION

Horizontal Datum:	MGA 94 Zone 56
Vertical Datum:	AHD
Origin:	OPM57372
DERM Registered Coordinates:	E 246887.038 N 7415411.895 RL 20.562
Horizontal Order:	Class A / 1st Order
Vertical Order:	Class D / 4th Order
The Coordinate System is a Plane Projection Centred at:	OPM 57372
Scale Factor Used to Convert MGA to Plane Distances:	0.99960866

SURVEY CONTROL TABLE

I.D.	Easting	Northing	RL	Type
OPM57372	246887.038	7415411.895	20.562	Permanent Survey Mark
STN9004	246831.423	7415515.242	21.251	O.Plug in Concrete Path
STN9008	246750.967	7415321.493	17.735	O.Nail in Concrete Path

Rev	Description	Drawn	Checked	Date
C	Additional survey	AD	CH	16/02/2018
B	Update road signage	AD	CH	07/02/2018
A	Original issue	AD	CH	29/01/2018

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PLAN OF CONTOUR & DETAIL SURVEY

PROJECT: SPOTLIGHT ROCKHAMPTON

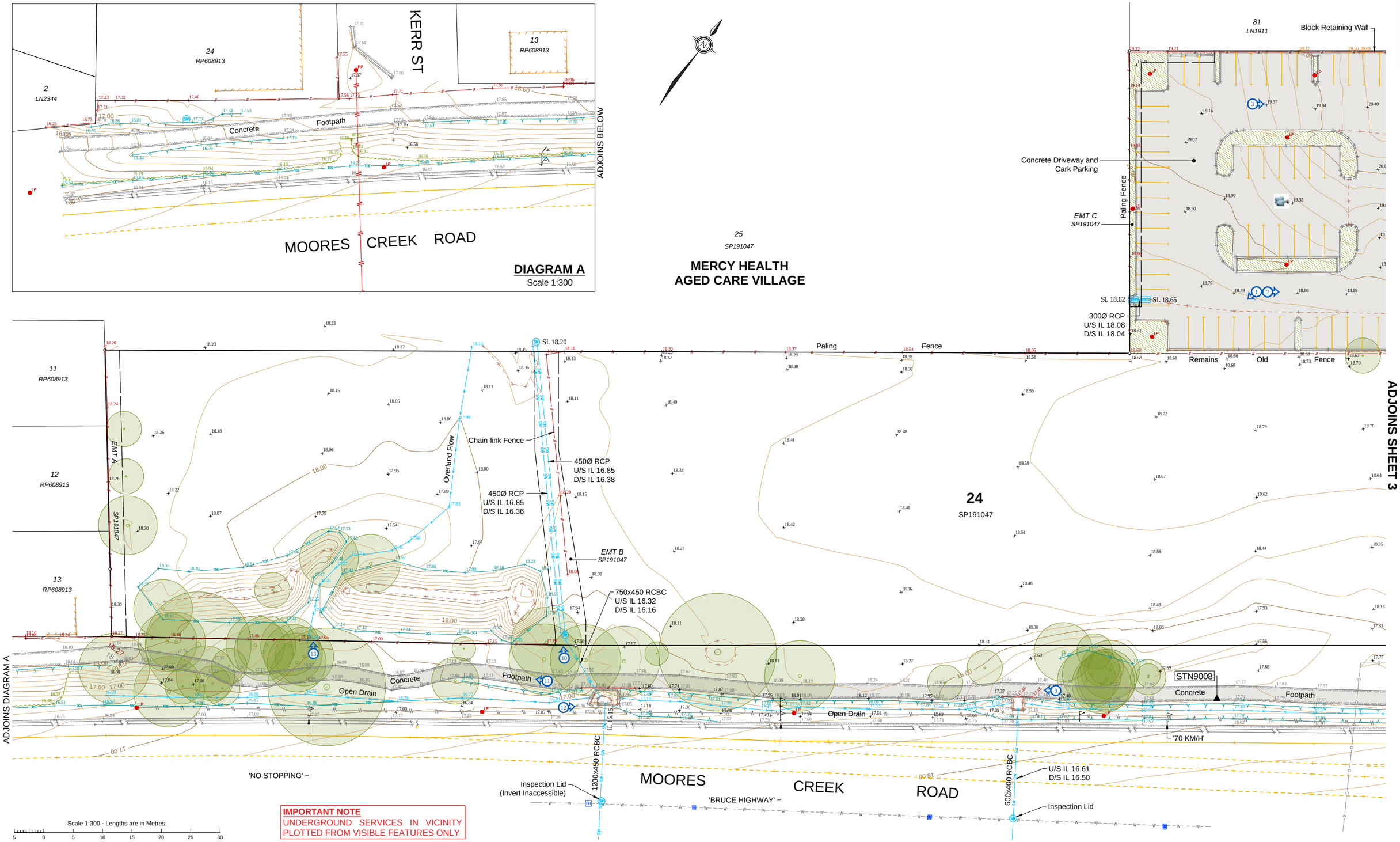
LOCATION: MOORES CREEK ROAD & YAAMBA ROAD, PARK AVENUE

Real Property Description: LOT 24 ON SP191047

CLIENT: GLENWAYE PTY LTD

Horizontal Datum:	MGA 94 ZONE 56 (REFER TABLE)	Scale:	1 : 600 @ A1
Vertical Datum:	AHD VIDE OPM57372	Drawn:	AD
Local Authority:	ROCKHAMPTON REGIONAL	Surveyor:	CH
Contour Interval:	0.2m	Drawing No:	18031-CD1
		Sheet:	1 of 3
		Revision:	C

VISION SURVEYS
Airlie Beach | Mackay | Townsville | Rockhampton | Brisbane | Gold Coast
E : admin@visionsurveysqld.com.au P : 13000VISION



Scale 1:300 - Lengths are in Metres.

5 0 5 10 15 20 25 30

IMPORTANT NOTE
UNDERGROUND SERVICES IN VICINITY PLOTTED FROM VISIBLE FEATURES ONLY

Rev	Description	Drawn	Checked	Date
C	Additional survey	AD	CH	16/02/2018
B	Update road signage	AD	CH	07/02/2018
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This plan is prepared from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose. The title boundaries shown hereon were not marked by the author at the time of survey and have been determined by plan dimensions only and not by field measurement. Services shown hereon have been located where possible by field survey. If not able to be located, services may have been plotted from the records of relevant authorities where available. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services. This note is an integral part of this plan.

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Vertical Datum: AHD VIDE OPM57372

Local Authority: ROCKHAMPTON REGIONAL

Contour Interval: 0.2m

VISION SURVEYS
Airlie Beach | Mackay | Townsville | Rockhampton | Brisbane | Gold Coast
E : admin@visionsurveysqld.com.au P : 13000VISION

Scale:	1 : 300 @ A1
Drawn:	AD
Surveyor:	CH
Drawing No:	18031-CD1
Sheet:	2 of 3
Revision:	C

ROCKHAMPTON SEVENTH DAY ADVENTIST CHURCH

81 LN1911

8 LN1911

ADJOINS SHEET 2

Block Retaining Wall

Awning Above

Deliveries

FL20.91

IMPORTANT NOTE
UNDERGROUND SERVICES IN VICINITY PLOTTED FROM VISIBLE FEATURES ONLY

SPOTLIGHT

BAGS TO GO

STN9004

300Ø PVC
D/S IL 20.22

Awning Above

300Ø PVC
U/S IL 20.21
D/S IL 20.08

SL 20.74

Substation

'BUS ZONE'

'70 KM/H'

SL 20.73
IL 20.12

175x600 RCBC
U/S IL 20.06

SL 20.82
IL 20.08

SL 21.00
(Stormwater Manhole Inaccessible)

'NO STOPPING'

'SPOTLIGHT'

225Ø PVC
U/S IL 20.25
D/S IL 20.22

Non-Slip Matting

Seat

Trolley Collection

Sewer Manhole Inaccessible

FL20.92

SL 20.67

SL 20.72

Non-Slip Matting

Non-Slip Matting

Concrete Driveway and Car Parking

Remains Old Wheel Stops

Fence

1500 Water Main

2 x A/G Water Mains

ROAD

21.00

450Ø RCP
IL 19.93

Obvert 150Ø Water Main
Visible in Pit

Stormwater Manhole
Inaccessible

'NO STOPPING'

24
SP191047

YAAMBA

Gravel Access

'BIKE / PEDESTRIAN PATH'

'10F 3 TMR'

'SPOTLIGHT'

Gas Valve

Non-Slip Matting

235
LN2505

1200Ø RCP
IL 18.33

U/S IL 18.31
D/S IL 18.24
1200Ø RCP

Grated Linear Drain
U/S IL 18.35
D/S IL 18.24

'BIKE / PEDESTRIAN PATH'

Open Drain

Concrete Footpath

Open Drain

'NO BIKES'

'BIKE / PEDESTRIAN PATH'

SL 20.59
Base RL 19.96
(Lid Unable to be Opened)

OPM57372

MOORES CREEK ROAD

Traffic Island

Traffic Island

Scale 1:300 - Lengths are in Metres.

5 0 5 10 15 20 25 30

PHOTO 1

PHOTO 2

PHOTO 3

PHOTO 4

PHOTO 5

PHOTO 6

PHOTO 7

PHOTO 8

PHOTO 9

PHOTO 10

PHOTO 11

PHOTO 12

PHOTO 13

Rev	Description	Drawn	Checked	Date
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Airlie Beach | Mackay | Townsville | Rockhampton | Brisbane | Gold Coast

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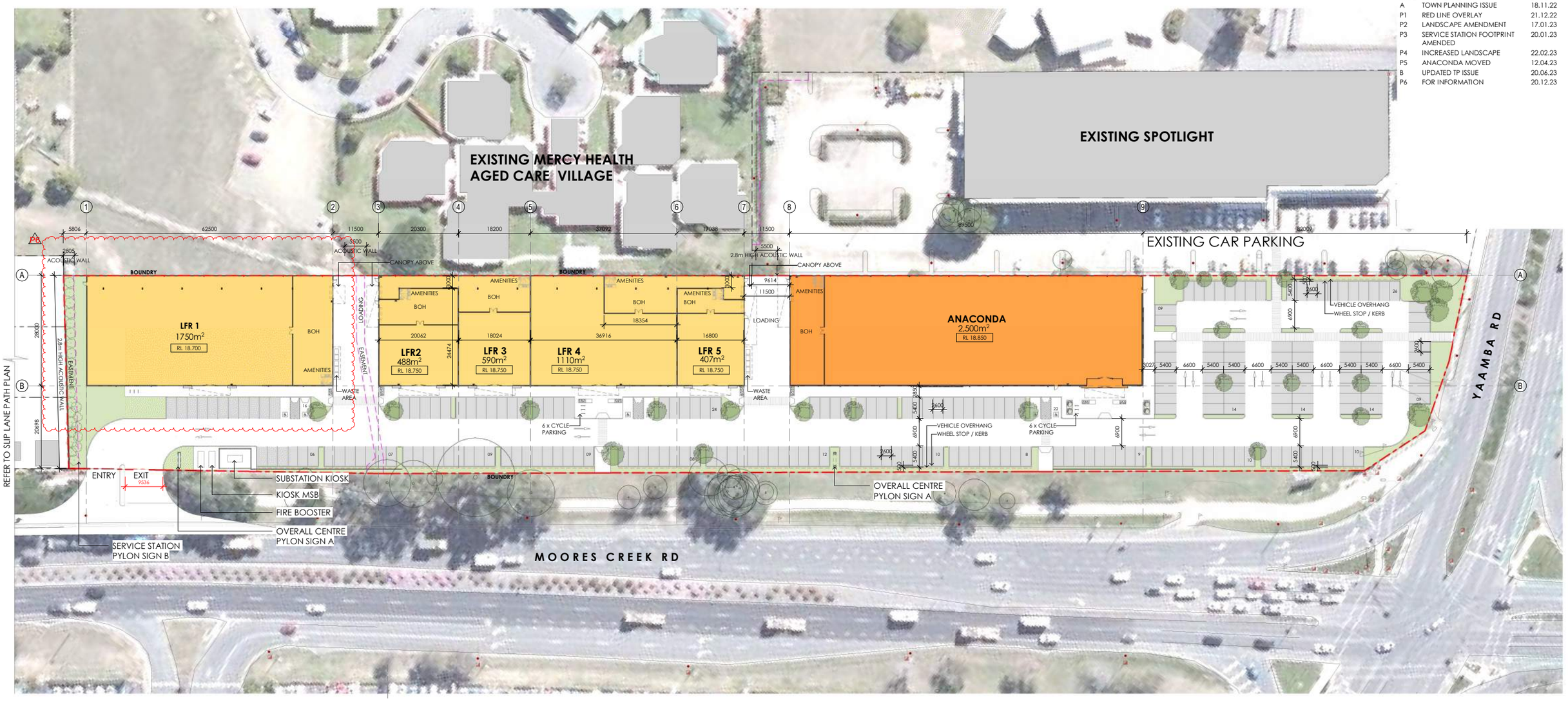
Horizontal Datum:	MGA 94 ZONE 56 (REFER TABLE)	Scale:	1 : 300 @ A1	Drawing No: 18031-CD1
Vertical Datum:	AHD VIDE OPM57372	Drawn:	AD	Sheet: 3 of 3
Local Authority:	ROCKHAMPTON REGIONAL (Contour Interval: 0.2m)	Surveyor:	CH	Revision: C

Appendix D – Architectural Drawings

Green Building Council Australia Member

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
P1	RED LINE OVERLAY	21.12.22	SJE
P2	LANDSCAPE AMENDMENT	17.01.23	SJE
P3	SERVICE STATION FOOTPRINT AMENDED	20.01.23	SJE
P4	INCREASED LANDSCAPE	22.02.23	SJE
P5	ANACONDA MOVED	12.04.23	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
P6	FOR INFORMATION	20.12.23	SJE



2 SLIP LANE PATH PLAN

LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES

AREA SUMMARY

LFR 1	1750m²
LFR 2	488m²
LFR 3	590m²
LFR 4	1,110m²
LFR 5	407m²
ANACONDA	2,500m²
TOTAL NEW BUILD AREA GFA	**6,845m²**

CAR PARKING SUMMARY

CAR SPACES	240
DISABLED SPACES	6
TOTAL CAR SPACES	**246**
PARKING RATIO	3.6 PER 100 SQM

SITE PLAN

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
WEB: www.lefflersimes.com.au
SYDNEY 7 YOUNG ST, NEUTRAL BAY, NSW 2089 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344
BRISBANE L5 U39 131 LEICHHARDT ST, SPRING HILL, QLD 4000 T:+61 7 31235544

SCALE 1:500 @ A1

PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150
DATE: SEP 22
DRAWN: AQA
DWG NO. DA020
REV. P6

LEFFLER SIMES ARCHITECTS

Appendix E – Ocean Protect Maintenance Information

StormFilter

Operations & Maintenance Manual

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

Table of Contents

Introduction

The primary purpose of stormwater treatment devices is to capture and prevent pollutants from entering waterways, maintenance is a critical component of ensuring the ongoing effectiveness of this process. The specific requirements and frequency for maintenance depends on the treatment device and pollutant load characteristics of each site. This manual has been designed to provide details on the cleaning and maintenance processes for the StormFilter as recommended by the manufacturer.

The StormFilter is designed and sized to meet stringent regulatory requirements. It removes the most challenging target pollutants (including fine solids, soluble heavy metals, oil, and soluble nutrients) using a variety of media. For more than two decades, StormFilter has helped clients meet their regulatory needs and, through ongoing product enhancements, the design continues to be refined for ease of use and improved performance.

Why do I need to perform maintenance?

Adhering to the inspection and maintenance schedule of each stormwater treatment device is essential to ensuring that it functions properly throughout its design life.

During each inspection and clean, details of the mass, volume and type of material that has been collected by the device should be recorded. This data will assist with the revision of future management plans and help determine maintenance interval frequency. It is also essential that qualified and experienced personnel carry out all maintenance (including inspections, recording and reporting) in a systematic manner.

Maintenance of your stormwater management system is essential to ensuring ongoing at-source control of stormwater pollution. Maintenance also helps prevent structural failures (e.g. prevents blocked outlets) and aesthetic failures (e.g. debris build up), but most of all ensures the long term effective operation of the StormFilter.

Health and Safety

Access to a StormFilter unit requires removing heavy access covers/grates, and it is necessary to enter into a confined space. Pollutants collected by the StormFilter will vary depending on the nature of your site. There is potential for these materials to be harmful. For example, sediments may contain heavy metals, carcinogenic substances or objects such as broken glass and syringes. For these reasons, all aspects of maintaining and cleaning your StormFilter require careful adherence to Occupational Health and Safety (OH&S) guidelines.

It is important to note that the same level of care needs to be taken to ensure the safety of non-work personnel. As a result, it may be necessary to employ traffic/pedestrian control measures when the device is situated in, or near areas with high vehicular/pedestrian activity.

Personnel health and safety

Whilst performing maintenance on the StormFilter, precautions should be taken in order to minimise (or, if possible, prevent) contact with sediment and other captured pollutants by maintenance personnel. The following personal protective equipment (PPE) is subsequently recommended:

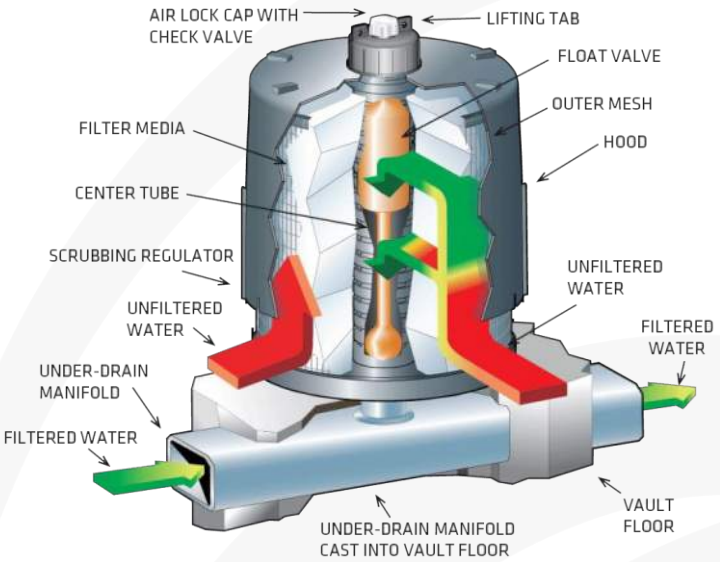
- Puncture resistant gloves
- Steel capped safety boots
- Long sleeve clothing, overalls or similar skin protection
- Eye protection
- High visibility clothing or vest

During maintenance activities, it may be necessary to implement traffic control measures. Ocean Protect recommend that a separate site-specific traffic control plan is implemented as required to meet the relevant governing authority guidelines.

Whilst some aspects of StormFilter maintenance can be performed from surface level, there will be a need to enter the StormFilter system (confined space) during a major service. It is recommended that all maintenance personnel evaluate their own needs for confined space entry and compliance with relevant industry regulations and guidelines. Ocean Protect maintenance personnel are fully trained and carry certification for confined space entry applications.

How does it Work?

Stormwater enters the cartridge chamber, passes through the filtration media and begins filling the cartridge center tube. When water reaches the top of the cartridge the float valve opens and filtered water is allowed to drain at the designed flow rate. Simultaneously, a one-way check valve closes activating a siphon that draws stormwater evenly throughout the filter media and into the center tube. Treated stormwater is then able to discharge out of the system through the underdrain manifold pipework.



As the rain event subsides, the water level outside the cartridge drops and approaches the bottom of the hood, air rushes through the scrubbing regulators releasing the water column and breaking the siphon. The turbulent bubbling action agitates the surface of the cartridge promoting trapped sediment to drop to the chamber floor. After a rain event, the chamber is able to drain dry by way of an imperfect seal at the base of the float valve.

Maintenance Procedures

To ensure optimal performance, it is advisable that regular maintenance is performed. Typically, the StormFilter requires an inspection every 6 months with a minor service at 12 months. Additionally, as the StormFilter cartridges capture pollutants the media will eventually become occluded and require replacement (expected media life is 1-3 years).

Primary Types of Maintenance

The table below outlines the primary types of maintenance activities that typically take place as part of an ongoing maintenance schedule for the StormFilter.

	Description of Typical Activities	Frequency
Inspection	Visual Inspection of cartridges & chamber Remove larger gross pollutants Perform minimal rectification works (if required)	Every 6 Months
Minor Service	Evaluation of cartridges and media Removal of accumulated sediment (if required) Wash-down of StormFilter chamber (if required)	Every 12 Months
Major Service	Replacement of StormFilter cartridge media	As required

Maintenance requirements and frequencies are dependent on the pollutant load characteristics of each site. The frequencies provided in this document represent what the manufacturer considers to be best practice to ensure the continuing operation of the device is in line with the original design specification.

Inspection

The purpose of the inspecting the StormFilter system is to assess the condition of the StormFilter chamber and cartridges. When inspecting the chamber, particular attention should be taken to ensure all cartridges are firmly connected to the connectors. It is also an optimal opportunity to remove larger gross pollutants and inspect the outlet side of the StormFilter weir.

Minor Service

This service is designed to ensure the ongoing operational effectiveness of the StormFilter system, whilst assessing the condition of the cartridge media.

1. Establish a safe working area around the access point(s)
2. Remove access cover(s)
3. Evaluate StormFilter cartridge media (if exhausted schedule major service within 6 months)
4. Measure and record the level of accumulated sediment in the chamber
   (if sediment depth is less than 100 mm skip to step 9)
5. Remove StormFilter cartridges from the chamber
6. Use vacuum unit to removed accumulated sediment and pollutants in the chamber
7. Use high pressure water to clean StormFilter chamber
8. Re-install StormFilter cartridges
9. Replace access cover(s)

Major Service (Filter Cartridge Replacement)

For the StormFilter system a major service is reactionary process based on the outcomes from the minor service, specifically the evaluation of the cartridge media.

Trigger Event	Maintenance Action
Cartridge media is exhausted[1]	Replace StormFilter cartridge media[2]

[1] Multiple assessment methods are available, contact Ocean Protect for assistance
[2] Replacement filter media and components are available for purchase from Ocean Protect.

This service is designed to return the StormFilter device back to optimal operating performance

1. Establish a safe working area around the access point(s)
2. Remove access cover(s)
3. By first removing the head cap, remove each individual cartridge hood to allow access to the exhausted media.
4. Utilise a vacuum unit to remove exhausted media from each cartridge
5. Use vacuum unit to remove accumulated sediment and pollutants in the chamber
6. Use high pressure water to clean StormFilter chamber
7. Inspect each empty StormFilter cartridges for any damage, rectify damage as required
8. Re-fill each cartridge with media in line with project specifications
9. Re-install replenished StormFilter cartridges
10. Replace access cover(s)

Additional Types of Maintenance

Occasionally, events on site can make it necessary to perform additional maintenance to ensure the continuing performance of the device.

Hazardous Material Spill

If there is a spill event on site, the StormFilter unit should be inspected and cleaned. Specifically, all captured pollutants and liquids from within the unit should be removed and disposed in accordance with any additional requirements that may relate to the type of spill event. Additionally, it will be necessary to inspect the filter cartridges and assess them for contamination, depending on the type of spill event it may be necessary to replace the filtration media.

Blockages

In the unlikely event that flooding occurs upstream of the StormFilter system the following steps should be undertaken to assist in diagnosing the issue and determining the appropriate response.

1. Inspect the upstream diversion structure (if applicable) ensuring that it is free of debris and pollutants
2. Inspect the StormFilter unit checking the underdrain manifold as well as both the inlet and outlet pipes for obstructions (e.g. pollutant build-up, blockage), which if present, should be removed.

Major Storms and Flooding

In addition to the scheduled activities, it is important to inspect the condition of the StormFilter after a major storm event. The focus is to inspect for damage and higher than normal sediment accumulation that may result from localised erosion. Where necessary damaged components should be replaced and accumulated pollutants should be removed and disposed.

Disposal of Waste Materials

The accumulated pollutants found in the StormFilter must be handled and disposed of in a manner that is in accordance with all applicable waste disposal regulations. When scheduling maintenance, consideration must be made for the disposal of solid and liquid wastes. If the filter media has been contaminated with any unusual substance, there may be additional special handling and disposal methods required to comply with relevant government/authority/industry regulations.

Maintenance Services

With over a decade and a half of maintenance experience Ocean Protect has developed a systematic approach to inspecting, cleaning and maintaining a wide variety of stormwater treatment devices. Our fully trained and professional staff are familiar with the characteristics of each type of system, and the processes required to ensure its optimal performance.

Ocean Protect has several stormwater maintenance service options available to help ensure that your stormwater device functions properly throughout its design life. In the case of our StormFilter system we offer long term pay-as-you-go contracts, pre-paid once off servicing and replacement media for cartridges.

For more information please visit www.OceanProtect.com.au

Appendix F – DBYD

Important notes:

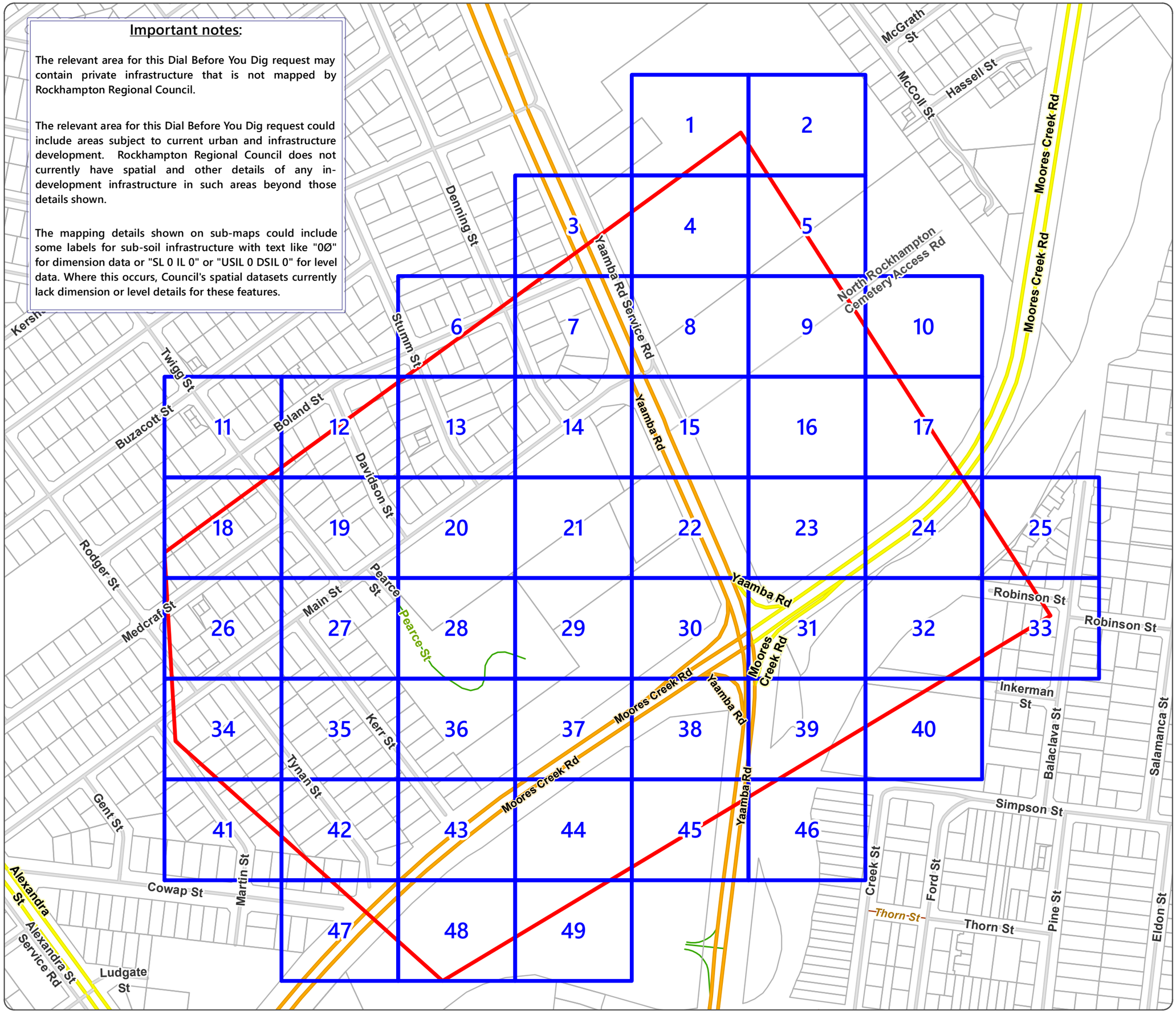
The relevant area for this Dial Before You Dig request may contain private infrastructure that is not mapped by Rockhampton Regional Council.

The relevant area for this Dial Before You Dig request could include areas subject to current urban and infrastructure development. Rockhampton Regional Council does not currently have spatial and other details of any in-development infrastructure in such areas beyond those details shown.

The mapping details shown on sub-maps could include some labels for sub-soil infrastructure with text like "0Ø" for dimension data or "SL 0 IL 0" or "USIL 0 DSIL 0" for level data. Where this occurs, Council's spatial datasets currently lack dimension or level details for these features.

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Index/key to maps



Scale: 1:4,000 at A3

0 40 80 160 m

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

392-394

150ø Concrete
USIL 0 DSIL 0

150ø Concrete
USIL 0 DSIL 0

Lot: 2
RP607681

362

Lot: 1
RP607187

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 1 of 49

Scale:
1:500 at A3

0 5 10 20 m

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
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- Sluice Bypass Valve
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- Subsoil Clean-Out pit
- Stormwater Jump ups
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- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

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- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
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- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 2 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 108
RP613396

34

36

150ø PVC
USIL 23.281
DSIL 22.754

Lot: 107
RP613396

Lot: 106
RP613396

38

Lot: 2
RP607681

362

475ø MSCL

360

350-360

Water
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- Ball Cock, Stop Cock
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- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 3 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 1
RP607187

Lot: 2
RP607681

Lot: 6
RP869470

Lot: 10
RP606374

Lot: 11
RP606374

Lot: 12
RP606374

Lot: 13
RP606374

Lot: 14
RP606374

Lot: 36
RP869470

Lot: 37
RP607265

Lot: 38
RP607265

Lot: 39
RP607265

Lot: 40
RP607265

379
23
21
375
19
17
369
15
13
362
367

150ø Concrete
USIL 20.628
DSIL 20.246

150ø Concrete
USIL 20.266
DSIL 19.767

150ø UPVC

150ø Asbestos Cement

Yaamba Rd

Yaamba Rd Service Rd

1050 RCP
USIL 20.489
DSIL 19.719

600ø MSCL

200ø UPVC

1050 RCP
USIL 0
DSIL 0

1050 RCP
USIL 19.719
DSIL 19.459

150ø Concrete
USIL 20.385
DSIL 20.17

150ø Concrete
USIL 20.08 DSIL 19.67

150ø Concrete
USIL 19.865
DSIL 19.681

150ø Concrete
USIL 19.628
DSIL 19.196

Boland St

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
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- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

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- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

Lot: 1
RP607187

Lot: 2
RP607681

362

1050 RCP
USIL 19.719
DSIL 19.459

600ø MSCL

600ø MSCL

475ø MSCL

Lot: 235
LN2505

350-360

360

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 4 of 49

Scale:
1:500 at A3

0 5 10 20 m

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Water Service
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- Treatment Plant
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Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
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- Pollution Trap Private
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Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
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- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
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- Overflow Chamber
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- Sewer Mains Abandoned

Private Sewer
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- Sewer Valves Private
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- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

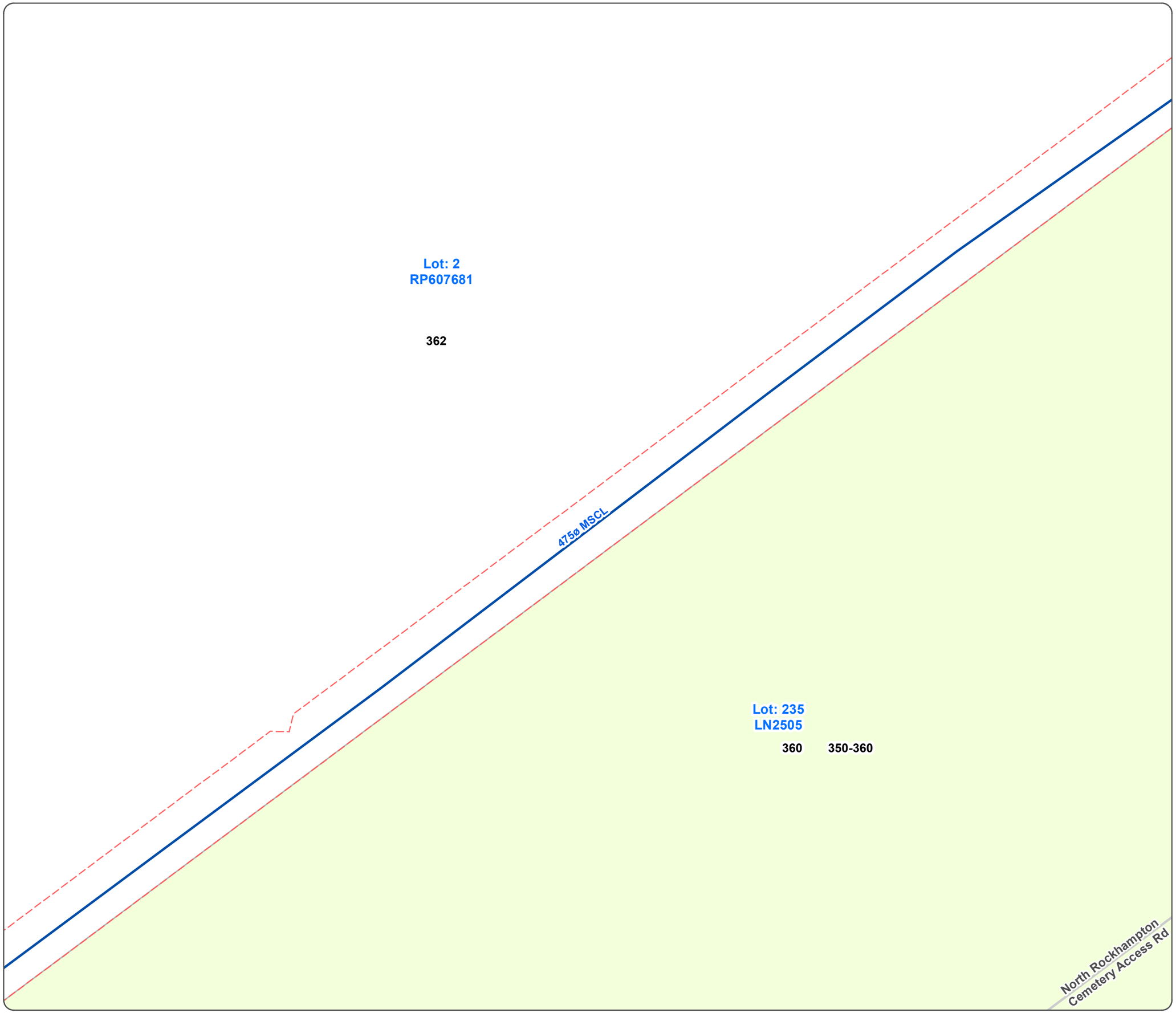
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 5 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
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- Scour Valve
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- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
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- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
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- Treatment Plant
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- Sewer Rising Mains
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- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

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- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 6 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 80 RP610874
Lot: 81 RP610874
Lot: 82 RP610874
Lot: 83 RP610874
Lot: 84 RP610874
Lot: 85 RP610874
Lot: 50 RP607265
Lot: 51 RP607265
Lot: 62 SP230818
Lot: 64 SP230818
Lot: 63 SP230818
Lot: 39 RP607265
Lot: 40 RP607265
Lot: 41 RP607265
Lot: 54 RP607265
Lot: 55 RP607265
Lot: 56 RP607265
Lot: 57 RP607265
Lot: 88 RP610874
Lot: 87 RP610874
Lot: 86 RP610874
Lot: 89 RP610874
Lot: 90 RP610874
Lot: 168 RP610874
Lot: 226 RP610874
Lot: 227 RP610874

150ø Concrete USIL 19.865 DSIL 19.681
150ø Concrete USIL 19.628 DSIL 19.196
150ø Concrete USIL 19.151 DSIL 18.496
150ø Concrete USIL 18.535 DSIL 18.13
150ø Concrete USIL 18.094 DSIL 17.887
150ø Concrete USIL 17.864 DSIL 17.512
100ø MPVC
100ø Asbestos Cement
Denning St
Boland St
Stumm St
375 RCP USIL 0 DSIL 0
525 RCP USIL 0 DSIL 0
100ø UPVC
150ø Concrete USIL 17.931 DSIL 17.753
150ø Concrete USIL 18.371 DSIL 17.968
150ø Concrete USIL 19.225 DSIL 18.761
150ø Concrete USIL 17.73 DSIL 17.566
150ø Concrete USIL 17.544 DSIL 17.309

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Raw Water Main
- Scour Line
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- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
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- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
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- Sewer Rising Mains Private
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- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 7 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 39
RP607265
15
150ø Concrete
USIL 19.865
DSIL 19.681
150ø Concrete
USIL 19.628
DSIL 19.196
Lot: 14
RP606374
369
13
Lot: 40
RP607265
Boland St
362
Lot: 2
RP607681
1050 RCP
USIL 19.719
DSIL 19.459
1050 RCP
USIL 0
DSIL 0
600ø MSCL
200ø UPVC
600ø MSCL
Yaamba Rd Service Rd
1200 RCP
USIL 19.329
DSIL 19.169
150ø Asbestos Cement
367
Lot: 2
RP856271
Lot: 41
RP607265
11
Yaamba Rd
Yaamba Rd
200ø
Asbestos
Cement
600ø
MSCL
200ø Asbestos Cement
600ø MSCL
12
Lot: 42
RP607265
9
150ø Concrete
USIL 19.989
DSIL 19.691
361-363
Lot: 1
SP191852
Denning St
100ø MPVC
7
Lot: 43
RP607265
150ø Concrete
USIL 19.531
DSIL 19.342
Lot: 55
RP607265
150ø Concrete
USIL 19.316
DSIL 19.24
Lot: 44
RP607265
5
359
Lot: 19
RP606374
Lot: 56
RP607265
8
150ø Concrete
USIL 19.225
DSIL 19.005
Lot: 20
RP606374
188
150ø Asbestos Cement
150ø Cast Iron
Main St
Lot: 57
RP607265
6
Lot: 21
RP606374

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
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- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
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- Effluent Structures
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Sewer
- Pump Station
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- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

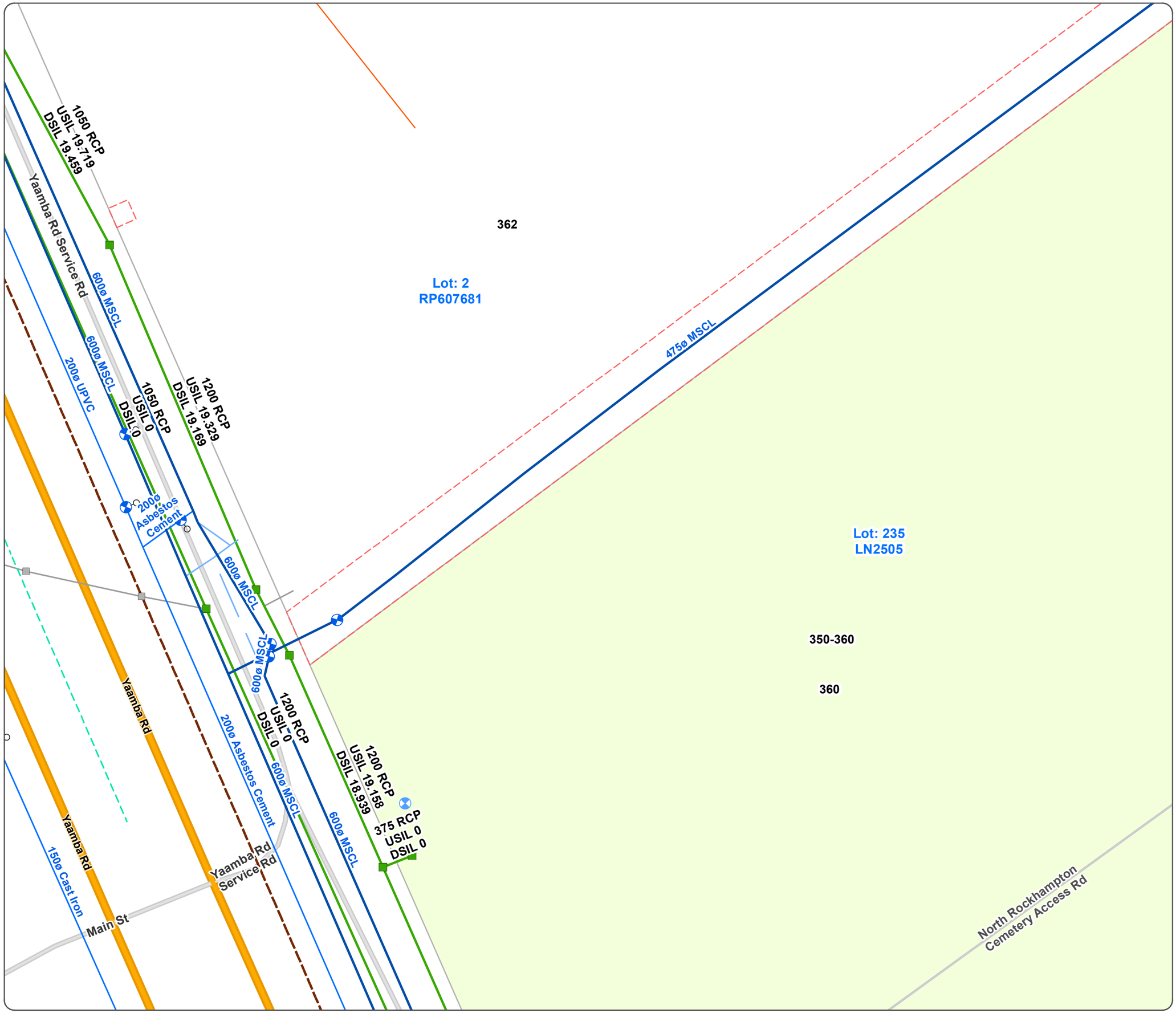
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 8 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
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Private Water
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Stormwater
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- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

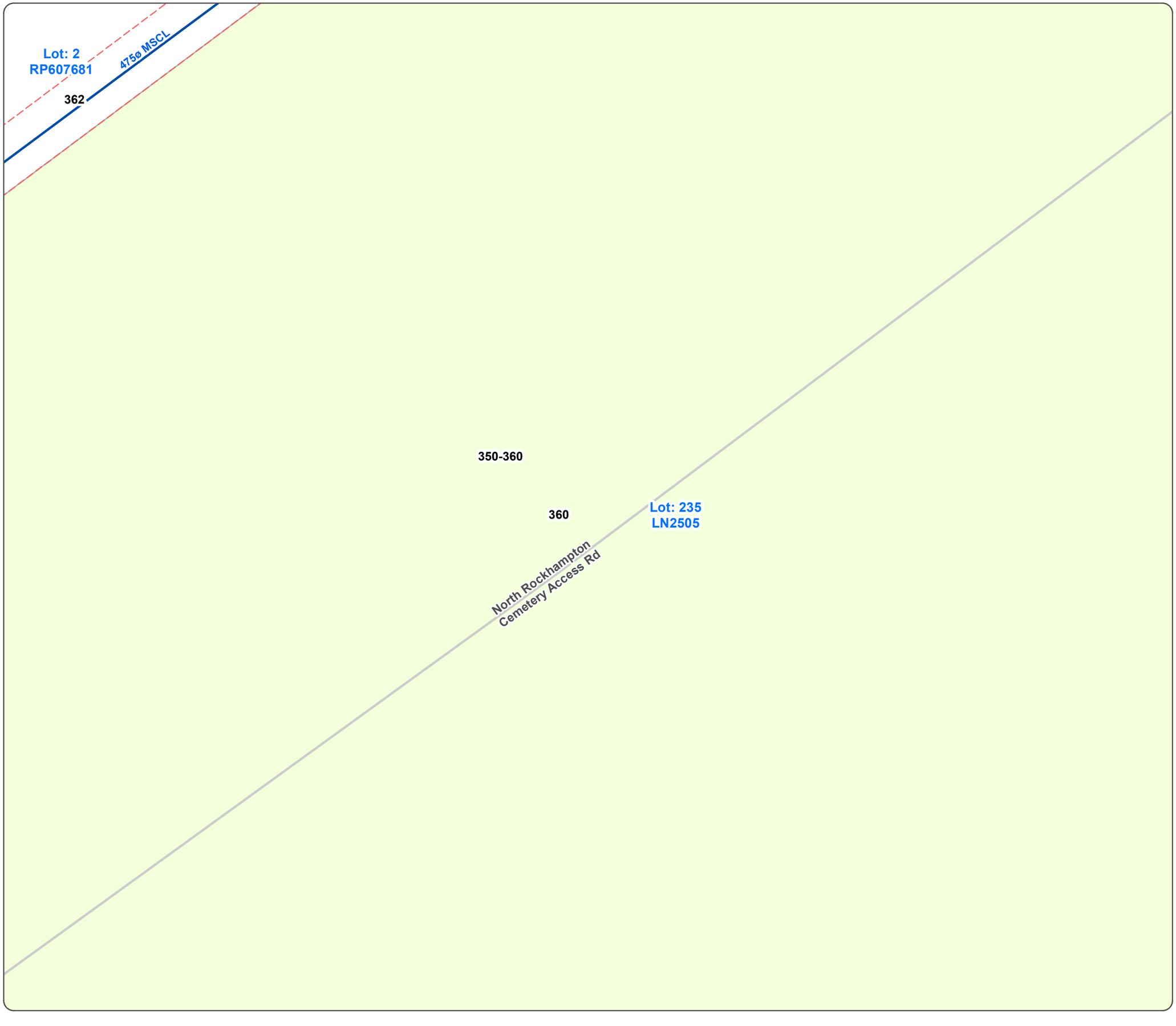
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 9 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
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- Water Service
- Hydrants
- Reservoirs
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- Treatment Plant
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- Private Water Valves
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- Flood Mitigation Devices
- Culverts
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- Abandoned Culverts
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Private Stormwater
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- Sewer Valves Private
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- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

North Rockhampton Cemetery Access Rd

350-360

360

Lot: 235
LN2505

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 10 of 49

Scale:
1:500 at A3

0 5 10 20 m

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Closed - Zone
- Valve Normally Open
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- Private Water Mains
- Private Water Abandoned Mains

Stormwater
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- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 11 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 121 RP613154
Lot: 16 RP613627
Lot: 0 SP214938
Lot: 158 RP613154
Lot: 157 RP613154
Lot: 156 RP613154
Lot: 172 RP613154
Lot: 155 RP613154
Lot: 173 RP613154
Lot: 154 RP613154
Lot: 174 RP613154
Lot: 175 RP613154
Lot: 17 RP613627
Lot: 0 SP245217
Lot: 176 RP613154
Lot: 18 RP613627
Lot: 1 RP614146
Lot: 217 RP613154
Lot: 19 RP613627
Lot: 216 RP613154
Lot: 32 RP613627
Lot: 215 RP613154
Lot: 31 RP613627
Lot: 214 RP613154
Lot: 219 RP613154
Lot: 30 RP613627
Lot: 34 RP613627

Buzacott St
Twigg St
Boland St

150ø Asbestos Cement
100ø Asbestos Cement
450 RCP USIL 0 DSIL 0
525 RCP USIL 0 DSIL 0
150ø Concrete USIL 16.633 DSIL 16.029
150ø Concrete USIL 15.567 DSIL 14.953
150ø Concrete USIL 14.941 DSIL 14.26
Combined Main
100ø MPVC
300 RCP USIL 0 DSIL 0
525 RCP USIL 15.989 DSIL 15.939
600 RCP USIL 0 DSIL 0
750 RCP USIL 0 DSIL 0
100ø UPVC
150ø MPVC
150ø Concrete USIL 16.285 DSIL 15.594

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 12 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 158 RP613154
Lot: 1 GTP60096
Lot: 2 GTP60096
Lot: 169 RP613154
Lot: 170 RP613154
Lot: 172 RP613154
Lot: 173 RP613154
Lot: 174 RP613154
Lot: 226 RP610874
Lot: 227 RP610874
Lot: 224 RP613154
Lot: 228 RP610874
Lot: 225 RP613154
Lot: 301 RP613154
Lot: 218 RP613154
Lot: 302 RP613154
Lot: 217 RP613154
Lot: 216 RP613154
Lot: 219 RP613154
Lot: 215 RP613154
Lot: 220 RP613154
Lot: 221 RP613154
Lot: 6 RP607833
Lot: 5 RP607833
Lot: 7 RP607833
Lot: 8 RP607833
Lot: 9 RP607833
Lot: 10 RP607833
Lot: 2 RP607833
Lot: 34 SP131818
Lot: 229 RP610874
Lot: 0 BUP60015
Lot: 29 RP606374

1/99 2/99 91 93 95 97 99 100 101 103 105 92 94 96 104 110 14 15 12 13 10 11 8 9 7 5 18 16 12-14 30 32 34 6 168 170

150ø Concrete USIL 16.633 DSIL 16.029
100ø Asbestos Cement
525 RCP USIL 0 DSIL 0
375 RCP USIL 0 DSIL 0
150ø Concrete USIL 17.544 DSIL 17.309
150ø Concrete USIL 17.197 DSIL 16.927
150ø Concrete USIL 17.484 DSIL 17.232
150ø Concrete USIL 17.914 DSIL 17.51
150ø Concrete USIL 17.855 DSIL 17.51
150ø Concrete USIL 17.496 DSIL 17.073
600 RCP USIL 0 DSIL 0
150ø Concrete USIL 16.904 DSIL 16.295
150ø Concrete USIL 16.285 DSIL 15.594
150ø Concrete USIL 17.398 DSIL 17.08
150ø Concrete USIL 17.044 DSIL 16.809
Boland St
Davidson St

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 13 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 226 RP610874
Lot: 227 RP610874
Lot: 228 RP610874
Lot: 229 RP610874
Lot: 6 RP607833
Lot: 7 RP607833
Lot: 8 RP607833
Lot: 9 RP607833
Lot: 10 RP607833
Lot: 86 RP610874
Lot: 87 RP610874
Lot: 89 RP610874
Lot: 90 RP610874
Lot: 91 RP610874
Lot: 92 RP610874
Lot: 55 RP607265
Lot: 56 RP607265
Lot: 57 RP607265
Lot: 22 RP606374
Lot: 23 RP606374
Lot: 24 RP606374
Lot: 25 RP606374
Lot: 26 RP606374
Lot: 27 RP606374
Lot: 28 RP606374
Lot: 29 RP606374
Lot: 0 BUP60015
Lot: 1 BUP60015
Lot: 2 BUP60015
Lot: 231 RP610874
Lot: 2 RP605623

110 13 112 11 8 14 9 6 15 12 10 7 2 182 5 180 178 176 174 172 170 168 185

150ø Concrete USIL 17.73 DSIL 17.566
150ø Concrete USIL 17.931 DSIL 17.753
150ø Concrete USIL 19.225 DSIL 18.761
150ø Concrete USIL 18.371 DSIL 17.968
150ø Concrete USIL 17.544 DSIL 17.309
150ø Concrete USIL 18.751 DSIL 18.42
150ø Concrete USIL 17.484 DSIL 17.232
150ø Concrete USIL 18.913 DSIL 18.427
150ø Concrete USIL 17.914 DSIL 17.51
150ø Concrete USIL 18.385 DSIL 18.087
150ø Concrete USIL 17.855 DSIL 17.51
150ø Concrete USIL 17.496 DSIL 17.073
150ø Concrete USIL 17.823 DSIL 17.16

100ø UPVC
100ø Asbestos Cement
100ø MPVC
150ø Asbestos Cement
200ø Asbestos Cement

Stumm St
Main St

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 14 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 56
RP607265

8

Lot: 44
RP607265

5

Lot: 19
RP606374

359

Lot: 57
RP607265

6

Lot: 20
RP606374

188

Lot: 21
RP606374

Lot: 22
RP606374

2

Lot: 23
RP606374

182

Lot: 24
RP606374

180

178

Lot: 1
RP605623

Lot: 1
LIV401228

353

Lot: 2
RP605623

185

Lot: 8
LN1911

351

150ø Concrete
USIL 19.225
DSIL 19.005

150ø Concrete
USIL 19.005
DSIL 18.946

150ø Concrete
USIL 18.751
DSIL 18.42

150ø Concrete
USIL 18.913
DSIL 18.427

150ø Concrete
USIL 18.385
DSIL 18.087

150ø Concrete
USIL 19.136
DSIL 18.651

100ø MPVC

Denning St

Main St

Yaamba Rd

150ø Asbestos Cement

150ø Cast Iron

200ø Asbestos Cement

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
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- Closed - Zone
- Valve Normally Open
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- Reticulation Main
- Raw Water Main
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- Other Main Type
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- Hydrants
- Reservoirs
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Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
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- Bio-Retention Swale
- Subsoil Drain
- Weirs
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- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
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- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

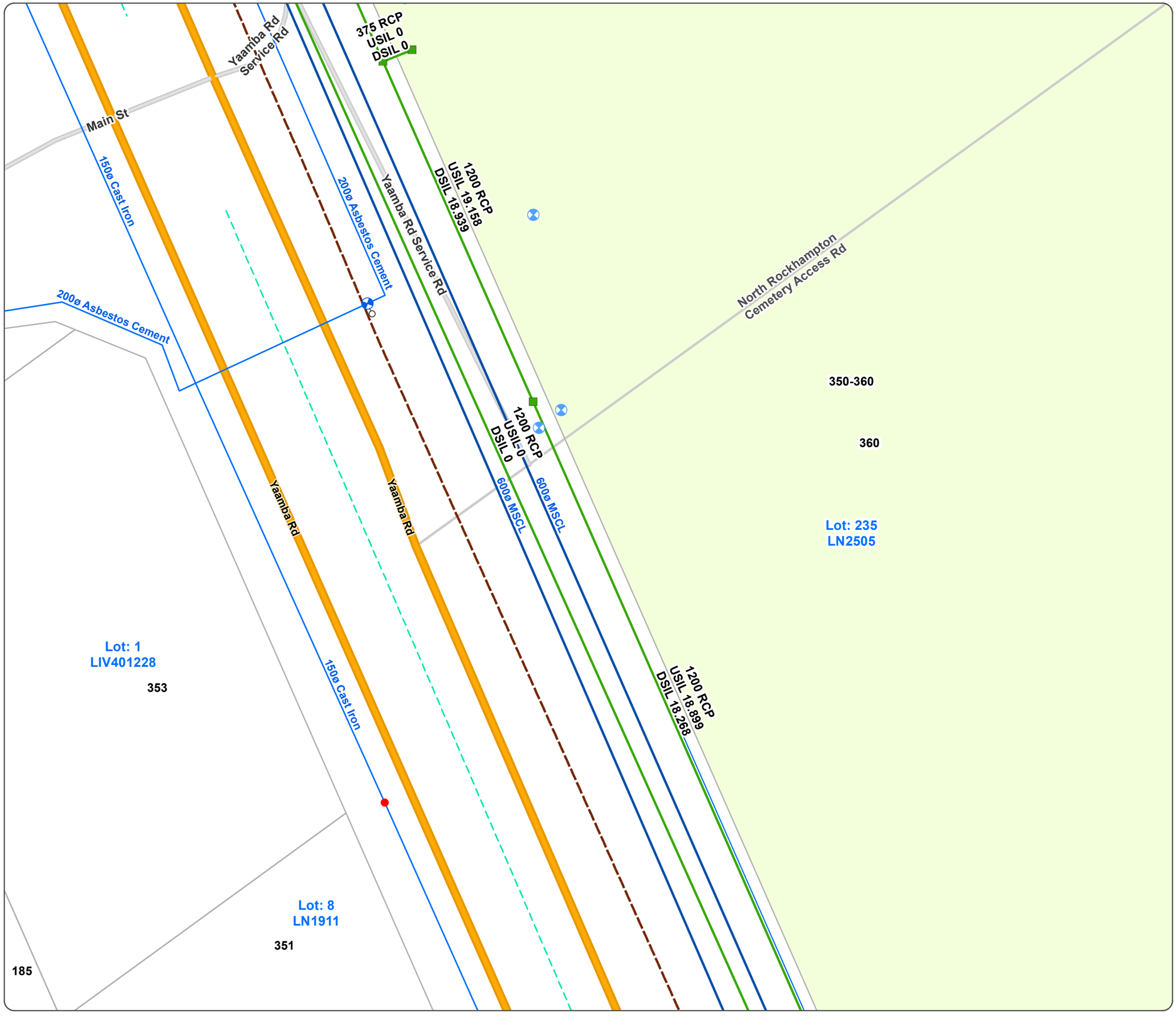
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 15 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
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- Valve Normally Open
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- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
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- Stormwater Junctions Private
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Effluent
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- Effluent Valves
- Effluent Mains

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Private Sewer
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- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

North Rockhampton Cemetery Access Rd

360

Lot: 235
LN2505

350-360

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 16 of 49

Scale:
1:500 at A3

0 5 10 20 m

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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Private Water
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- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
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- Pollution Trap
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- Batter Chute; Open Channel
- Bio-Retention Swale
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- Abandoned Culverts
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- Sewer Gravity Mains
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- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
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- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

N

Rockhampton Regional Council

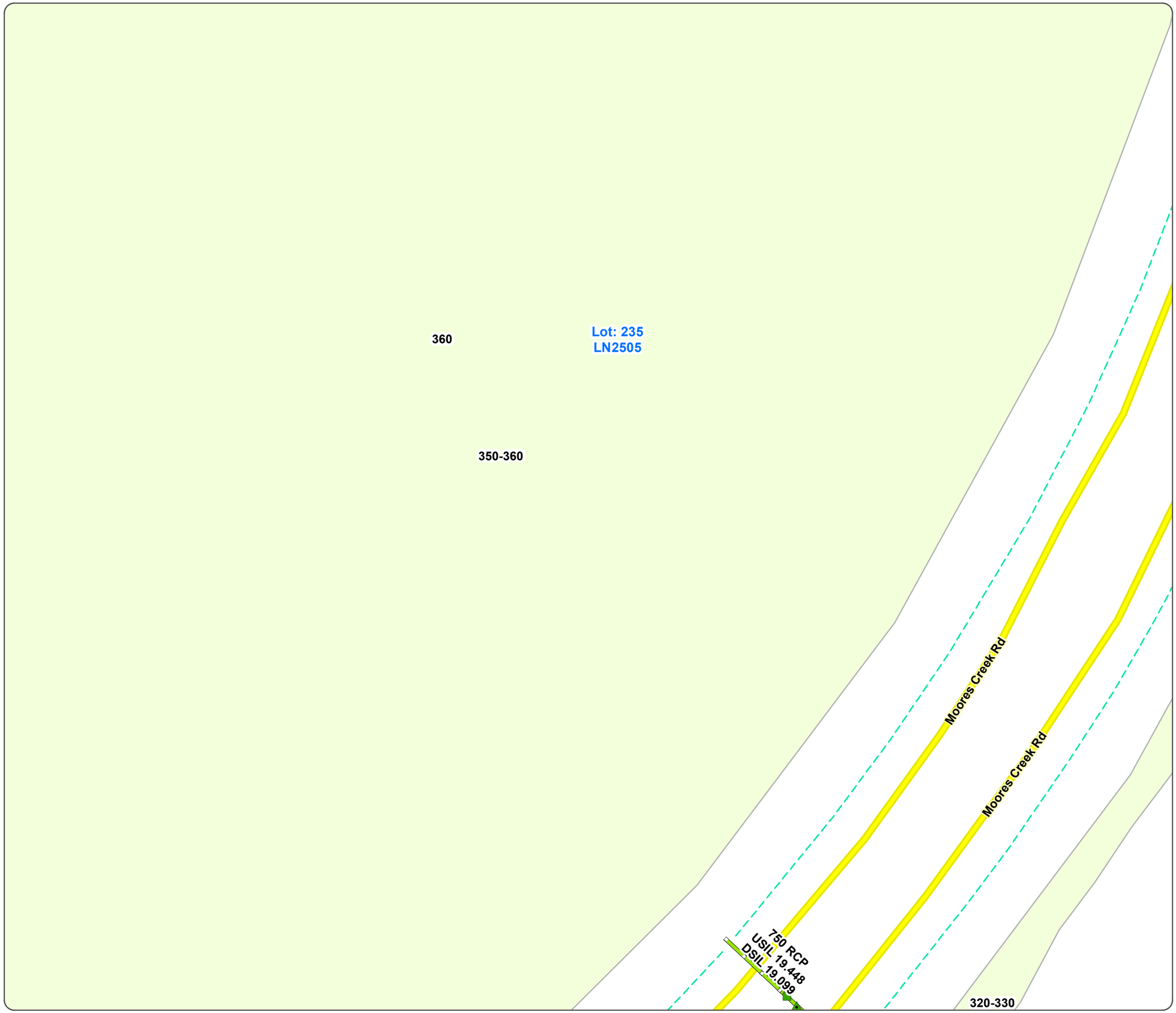
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 17 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
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- Other Valve Type
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- Valve Normally Open
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- Other Main Type
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- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
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- Stormwater Junctions
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- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
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- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 18 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 32 RP613627
Lot: 31 RP613627
Lot: 30 RP613627
Lot: 214 RP613154
Lot: 215 RP613154
Lot: 219 RP613154
Lot: 220 RP613154
Lot: 34 RP613627
Lot: 35 RP613627
Lot: 232 RP613154
Lot: 36 RP613627
Lot: 50 RP613627
Lot: 37 RP613627
Lot: 49 RP613627
Lot: 38 RP613627
Lot: 48 RP613627
Lot: 39 RP613627
Lot: 47 RP613627
Lot: 46 RP613627
Lot: 51 RP613627
Lot: 271 RP613154
Lot: 45 RP613627
Lot: 44 RP613627
Lot: 52 RP613627
Lot: 53 RP613627
Lot: 54 RP613627
Lot: 55 RP613627
Lot: 5 RP607923
Lot: 4 RP607923

37 83 81 79 88 35 92 94 34 32 30 86A 33 86 77 75 78 73 76 71 69 74 67 65 8 31 82 80 3 148 146 144

750 RCP USIL 0 DSIL 0
375 RCP USIL 0 DSIL 0
100ø UPVC
Boland St
750 RCP USIL 14.759 DSIL 13.588
150ø Concrete USIL 16.285 DSIL 15.594
Twigg St
150ø MPVC
150ø Concrete USIL 15.469 DSIL 14.767
100ø UPVC
150ø Concrete USIL 14.753 DSIL 14.003
Combined Main
Combined Main
Medcraf St
100ø UPVC
150ø Concrete USIL 15.594 DSIL 15.177
150ø Concrete USIL 16.482 DSIL 15.92

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
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- Stormwater Main Private
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- Effluent Valves
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- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
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- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

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343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 19 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 215 RP613154
Lot: 219 RP613154
Lot: 220 RP613154
Lot: 221 RP613154
Lot: 222 RP613154
Lot: 223 RP613154
Lot: 232 RP613154
Lot: 271 RP613154
Lot: 51 RP613627
Lot: 52 RP613627
Lot: 5 RP607923
Lot: 4 RP607923
Lot: 3 RP607923
Lot: 2 RP607923
Lot: 1 RP607923
Lot: 5 RP607833
Lot: 34 SP131818
Lot: 2 RP607833
Lot: 1 RP607833
Lot: 32 RP606374
Lot: 9 RP607833
Lot: 10 RP607833
Lot: 29 RP606374
Lot: 30 RP606374
Lot: 31 RP606374
Lot: 71 RP606991
Lot: 2 RP605623

92 94 16 12-14 34 32 30 33 28 26 31 82 80 148 146 144 9 7 5 170 168 4 6 166 164 152 3 150 137 135 185

150ø Concrete USIL 17.044 DSIL 16.809
150ø Concrete USIL 16.484 DSIL 16.093
150ø Concrete USIL 17.031 DSIL 16.48
150ø Concrete USIL 16.057 DSIL 15.607
150ø Concrete USIL 15.594 DSIL 15.177
150ø Concrete USIL 17.496 DSIL 17.073
100ø Asbestos Cement
100ø UPVC
150ø MPVC
200ø Asbestos Cement
200ø MPVC
100ø MPVC
100ø MPVC

Medcraf St
Twigg St
Davidson St
Main St
Pearce St

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
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- Treatment Plant
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Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
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- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
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- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
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- Stormwater Main Private
- Open Channel Private
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- Effluent Valves
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- Sewer Access Chambers Abandoned Private

Administrative
- Easements
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Disclaimer:

Rockhampton Regional Council

N

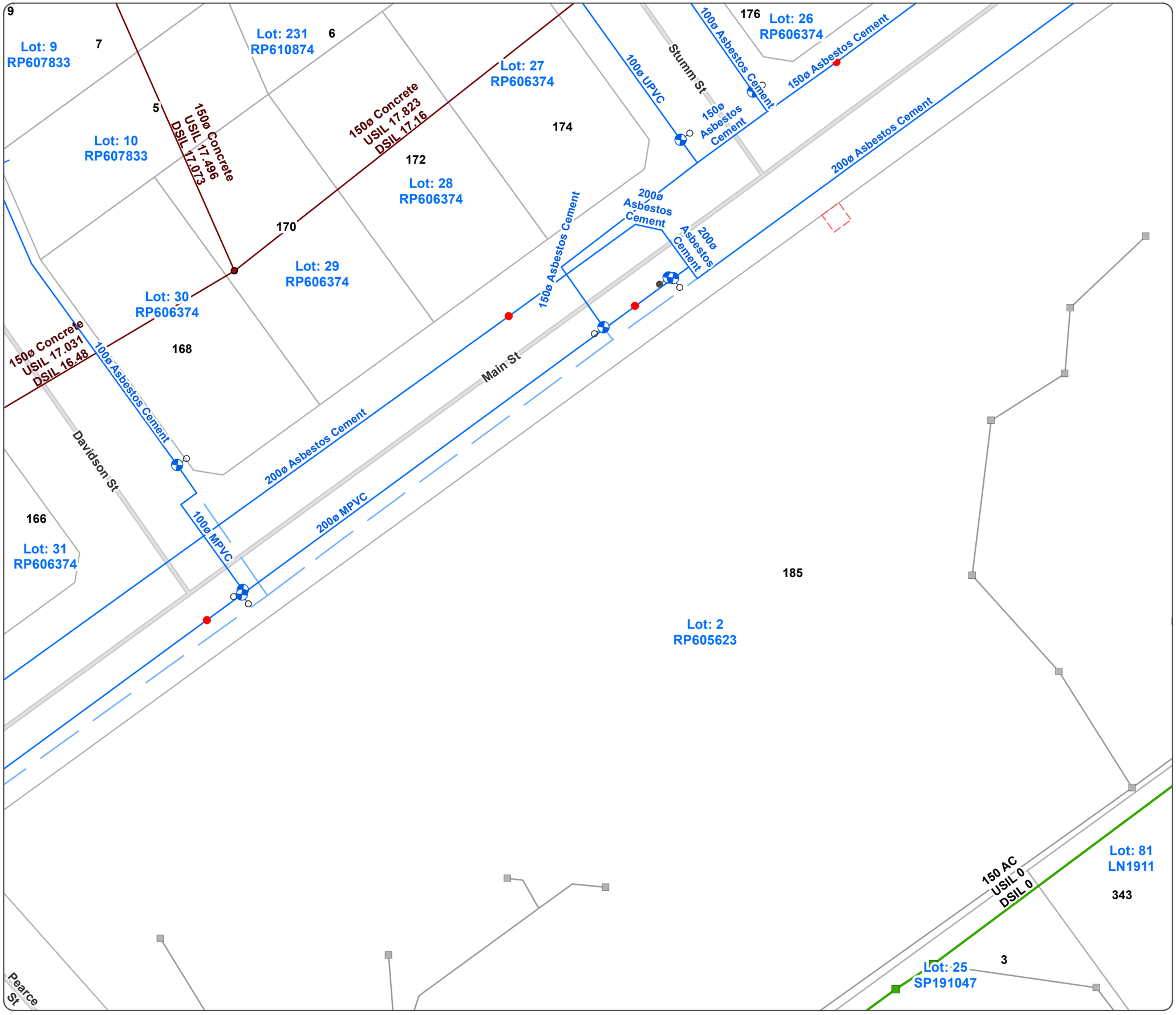
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 20 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
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- Ball Valve
- Motor Sluice Valve
- Non Return Valve
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- Water Service
- Hydrants
- Reservoirs
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- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
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- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

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- Sewer Mains Abandoned

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- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

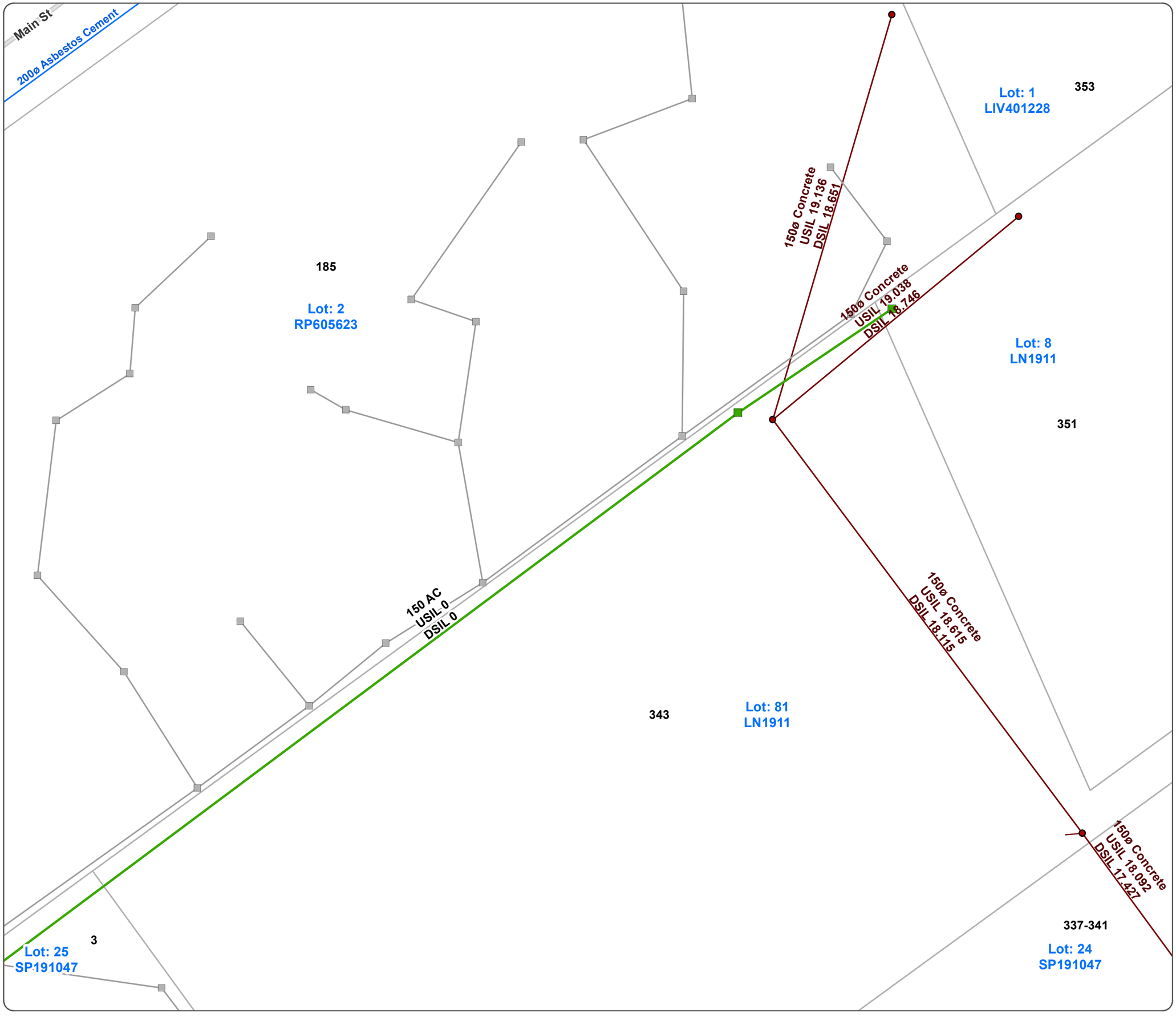
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 21 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
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- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
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- Stormwater Junctions
- Pollution Trap
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- Stormwater Jump ups
- Connector; Reticulation Main
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- Inter-Allotment
- Low Flow Pipe
- Other
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- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
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- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Disclaimer:

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 22 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 1
LIV401228

353

185

Lot: 8
LN1911

351

Lot: 235
LN2505

360

350-360

150ø Cast Iron

Yaamba Rd

Yaamba Rd

600ø MSCL

600ø MSCL

1200 RCP
USIL 0
DSIL 0

1200 RCP
USIL 18.899
DSIL 18.268

150ø Concrete
USIL 18.615
DSIL 18.115

343

Lot: 81
LN1911

150ø Concrete
USIL 18.092
DSIL 17.427

Lot: 24
SP191047

337-341

150ø Cast Iron

Yaamba Rd

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
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- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
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- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
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- Bio-Retention Swale
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- Bio-Retention
- Detention/Retention
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- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

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Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

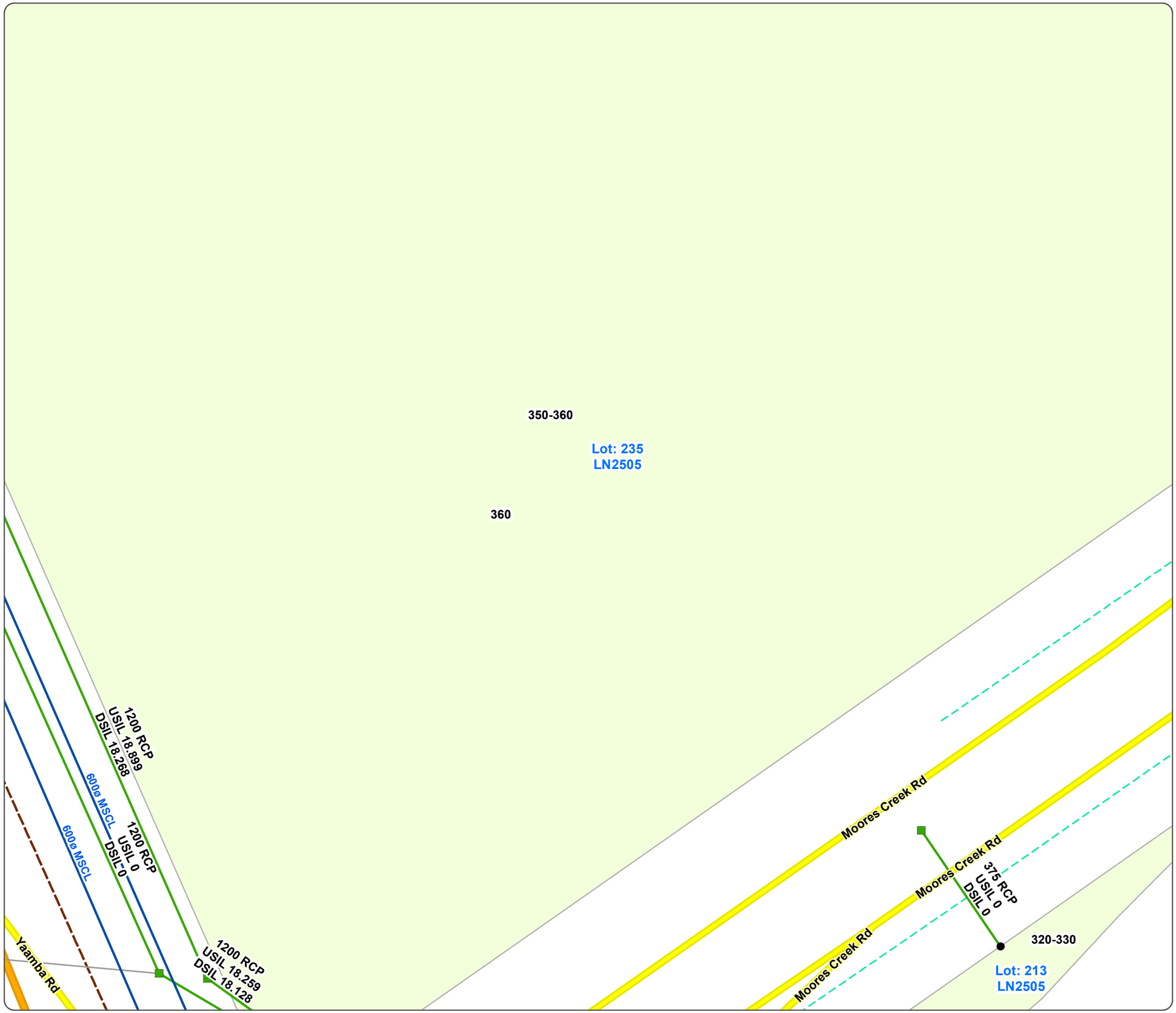
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 23 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
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Rockhampton Regional Council

N

Date: 14/09/2022

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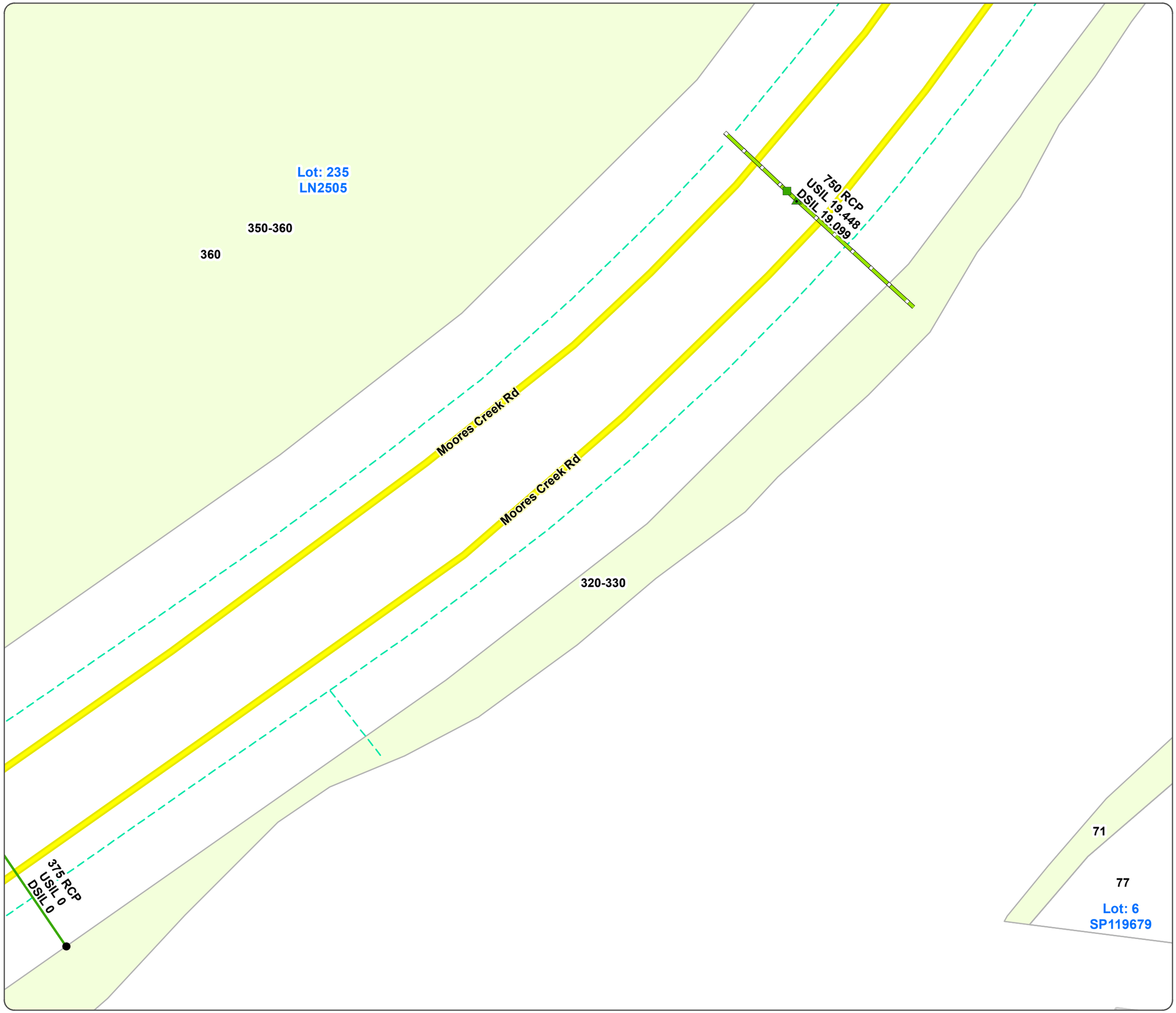
Map 24 of 49

Scale:
1:500 at A3

0 5 10 20 m



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Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
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343 Yaamba Road,
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User ref.: 343 Yaamba Road.

Map 25 of 49

Scale:
1:500 at A3

0 5 10 20 m

Moores Creek Rd
320-330
71
Lot: 1 SP132030
1/333
Lot: 2 SP132030
2/333
Lot: 3 SP132030
3/333
Lot: 4 SP132030
4/333
Lot: 0 SP132030
333
Lot: 5 SP145952
5/333
Lot: 6 SP145952
6/333
Lot: 7 SP153687
7/333
Lot: 8 SP153687
8/333
Lot: 9 SP153687
9/333
Lot: 10 SP153687
10/333
Lot: 11 SP145952
11/333
Lot: 12 SP145952
12/333
Lot: 6 SP119679
77
79
Lot: 2 RP619527
81
Lot: 5 SP119679
329
Lot: 4 SP119679
Lot: 3 SP166184
344
342
Lot: 2 SP166174
Lot: 1 SP166174
340
338
Lot: 2 SP258705
336
Lot: 1 SP258705
Lot: 3 RP603397
334
332
Lot: 2 RP603397
Lot: 4 SP116016
330
Lot: 1 SP116016
328
91
Balaclava St
450 RCP USIL 18.219 DSIL 18.068
375 RCP USIL 18.869 DSIL 18.399
150ø PVC USIL 18.637 DSIL 18.439
150ø PVC USIL 19.127 DSIL 18.623
100ø UPVC
150ø PVC USIL 19.25 DSIL 18.08
150ø UPVC
375 RCP USIL 19.209 DSIL 18.899
100ø UPVC
375 RCP USIL 19.478 DSIL 19.239
150ø PVC USIL 18.408 DSIL 17.939
375 RCP USIL 19.788 DSIL 19.509
150ø PVC USIL 17.919 DSIL 17.663
150ø Concrete USIL 18.463 DSIL 18.289
150ø Concrete USIL 17.605 DSIL 17.225
63ø HDPE
300 RCP USIL 0 DSIL 0
100ø UPVC
150ø UPVC
150ø Earthenware USIL 22.369 DSIL 0
150ø Earthenware USIL 22.169 DSIL 0

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 26 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 46 RP613627
71
Lot: 45 RP613627
69
Lot: 44 RP613627
67
Lot: 43 RP613627
65
8
Medcraf St
100ø UPVC
Lot: 53 RP613627
80
Lot: 52 RP613627
82
Lot: 51 RP613627
150ø Concrete USIL 16.482 DSIL 15.92
150ø Concrete USIL 15.594 DSIL 15.177
Lot: 4 RP607923
78
76
Lot: 54 RP613627
148
Combined Main
146
Lot: 5 RP607923
74
Lot: 55 RP613627
144
Lot: 6 RP607923
2/72
1/72
72
150ø Concrete USIL 15.893 DSIL 15.279
150ø Concrete USIL 15.167 DSIL 14.709
142
Lot: 7 RP607923
Lot: 0 SP224432
70
Lot: 57 RP613627
140
450 RCP USIL 13.888 DSIL 13.799
450 RCP USIL 13.649 DSIL 13.638
Lot: 58 RP613627
68
Combined Main
150ø Concrete USIL 15.116 DSIL 14.959
138
Lot: 8 RP607923
Lot: 9 RP607923
136
Lot: 10 RP607923
134
150ø Concrete USIL 14.705 DSIL 14.627
4
Lot: 12 RP607923
Lot: 11 RP607923
200ø Asbestos Cement
129
Lot: 67 RP606991
Lot: 2 GTP104304
2/132
Main St
200ø MPVC
Lot: 66 RP606991
5
Lot: 59 RP613627
Rodger St
63ø UPVC
Lot: 1 GTP104304
1/132
127
Lot: 65 RP606991
150ø Concrete USIL 14.614 DSIL 14.133
132
125
150ø Concrete USIL 16.482 DSIL 16.029
3
Lot: 14 RP607923
Lot: 64 RP606991
100ø MPVC
Tynan St
150ø PVC USIL 0 DSIL 0
123
Combined Main
1
Lot: 15 RP607923
200ø Cast Iron
100ø MPVC
2
Lot: 53 RP606991
Lot: 63 RP606991
121

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 27 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 51 RP613627
Lot: 52 RP613627
Lot: 2 RP607923
Lot: 3 RP607923
Lot: 4 RP607923
Lot: 5 RP607923
Lot: 6 RP607923
Lot: 2 RP605623
Lot: 71 RP606991
Lot: 70 RP606991
Lot: 69 RP606991
Lot: 68 RP606991
Lot: 25 SP191047
Lot: 1 RP608913
Lot: 2 RP608913
Lot: 3 RP608913
Lot: 4 RP608913
Lot: 5 RP608913
Lot: 66 RP606991
Lot: 67 RP606991
Lot: 65 RP606991
Lot: 36 RP608913
Lot: 35 RP608913
Lot: 53 RP606991

82 80 152 185 148 150 146 144 142 137 135 133 131 3 129 127 125 123 2 4 6 8 10 12 1 5

Twigg St
Pearce St
Main St
Kerr St

100ø MPVC
150ø MPVC
200ø Asbestos Cement
200ø MPVC
150ø MPVC
150ø Concrete USIL 15.594 DSIL 15.177
Combined Main
150ø Concrete USIL 17.459 DSIL 17.003
150ø Concrete USIL 16.725 DSIL 16.067
150ø Concrete USIL 16.482 DSIL 16.029
150ø PVC USIL 0 DSIL 0
150ø PVC USIL 0 DSIL 0
150ø Concrete USIL 15.447 DSIL 14.976
150 AC USIL 0 DSIL 0

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Valve Normally Open
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- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Disclaimer:

Rockhampton Regional Council

N

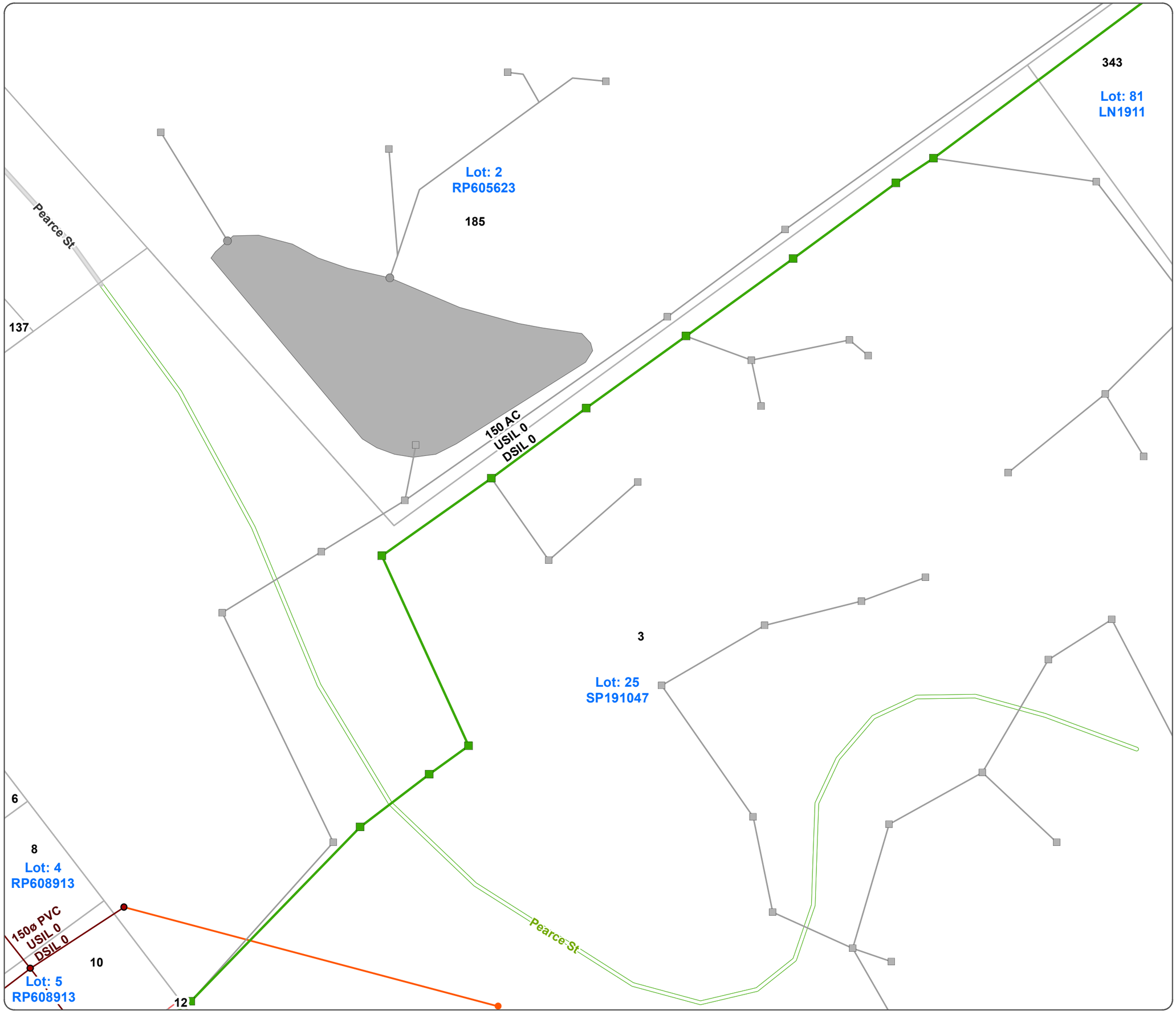
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 28 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

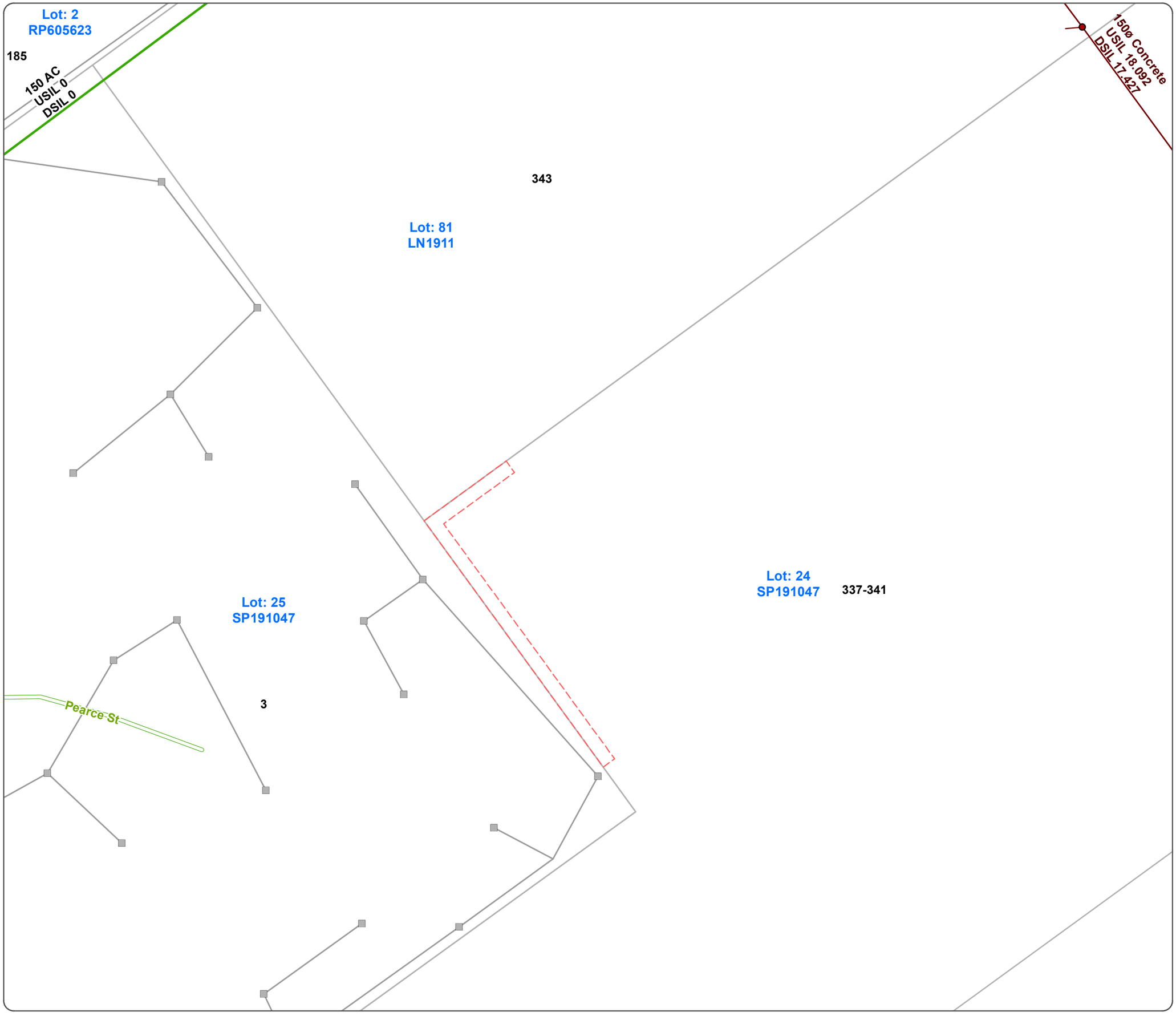
Administrative
- Easements
- Property Parcels

Disclaimer:

Rockhampton Regional Council

N

Date: 14/09/2022



DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 29 of 49

Scale:
1:500 at A3

0 5 10 20 m

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Disclaimer:

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 30 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 81
LN1911

343

150ø Concrete
USIL 18.092
DSIL 17.427

Lot: 24
SP191047

337-341

150ø Concrete
USIL 18.092
DSIL 17.427

150ø Concrete
USIL 17.086
DSIL 16.316

150ø Cast Iron

350-360

360

1200 RCP
USIL 0
DSIL 0

1200 RCP
USIL 18.899
DSIL 18.268

600ø MSCL

600ø MSCL

Yaamba Rd

Yaamba Rd

Yaamba Rd

Yaamba Rd

150ø Cast Iron

Moores Creek Rd

Moores Creek Rd

Moores Creek Rd

Moores Creek Rd

Moores Creek Rd

Moores Creek Rd

Moores Creek Rd

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Other Valve Type
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- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 31 of 49

Scale:
1:500 at A3

0 5 10 20 m

1200 RCP
USIL 18.899
DSIL 18.268

1200 RCP
USIL 0
DSIL 0

1200 RCP
USIL 18.259
DSIL 18.128

375 RCP
USIL 0
DSIL 0

1350 RCP
USIL 17.869
DSIL 17.158

1350 RCP
USIL 17.869
DSIL 17.158

600ø MSCL

600ø MSCL

150ø Cast Iron

350-360

360

320-330

76

309

Lot: 235
LN2505

Lot: 213
LN2505

Lot: 10
LN2923

Lot: 281
LN2168

Lot: 16
RP612559

Yewdale
Park

Moores Creek Rd

Yaamba Rd

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
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- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
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Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
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- Sewer Rising Mains
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- Sewer Mains Abandoned

Private Sewer
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- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 32 of 49

Scale:
1:500 at A3

0 5 10 20 m

Moores Creek Rd

375 RCP
USIL 0
DSIL 0

320-330

Lot: 213
LN2505

71

Lot: 6
SP119679

77

1050 RCP
USIL 17.978
DSIL 17.498

Lot: 15
RP612559

309

150ø Concrete
USIL 16.959
DSIL 16.789

150ø Concrete
USIL 17.732
DSIL 17.211

150ø Concrete
USIL 16.779
DSIL 16.378

76

Lot: 281
LN2168

Yewdale Park

900 RCP
USIL 17.119
DSIL 16.709

Lot: 16
RP612559

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
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- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 33 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 6 SP119679
Lot: 2 RP619527
Lot: 5 SP119679
Lot: 4 SP119679
Lot: 2 RP603397
Lot: 4 SP116016
Lot: 1 SP116016
Lot: 2 SP116016
Lot: 3 RP612559
Lot: 2 RP612559
Lot: 1 RP612559
Lot: 15 RP612559
Lot: 4 RP612559
Lot: 5 RP612559
Lot: 7 RP612559
Lot: 6 RP612559
Lot: 281 LN2168
Lot: 1 RP607273
Lot: 2 RP607273
Lot: 3 RP607273
Lot: 2 RP606745
Lot: 3 RP606745
Lot: 1 RP607205

71 77 79 81 333 329 332 330 328 91 87 76 78 309 323 326 90 324 322 320 318 319 80 317

63ø HDPE
100ø UPVC
150ø UPVC
300 RCP USIL 0 DSIL 0
1050 RCP USIL 17.978 DSIL 17.498
150ø Concrete USIL 17.605 DSIL 17.225
1050 RCP USIL 18.038 DSIL 17.989
900 RCP USIL 19.259 DSIL 18.388
900 RCP USIL 20.518 DSIL 19.669
150ø MPVC
150ø Concrete USIL 17.203 DSIL 16.982
150ø Concrete USIL 16.959 DSIL 16.789
150ø Concrete USIL 17.732 DSIL 17.211
150ø Concrete USIL 16.779 DSIL 16.378
150ø Concrete USIL 18.615 DSIL 18.26
150ø Concrete USIL 18.246 DSIL 17.85

Robinson St
Robinson St
Balaclava St
Yewdale Park

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
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Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
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- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
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- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
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Private Sewer
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- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
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343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 34 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 14 RP607923
Lot: 15 RP607923
Lot: 16 RP607923
Lot: 1 GTP104304
Lot: 10 RP606050
Lot: 11 RP606050
Lot: 12 RP606050
Lot: 13 RP606050
Lot: 31 RP606991
Lot: 32 RP606991
Lot: 36 RP606991
Lot: 37 RP606991
Lot: 38 RP606991
Lot: 39 RP606991
Lot: 43 RP606991
Lot: 44 RP606991
Lot: 45 RP606991
Lot: 46 RP606991
Lot: 47 RP606991
Lot: 48 RP606991
Lot: 53 RP606991
Lot: 54 RP606991
Lot: 55 RP606991
Lot: 63 RP606991
Lot: 64 RP606991
Lot: 65 RP606991
Lot: 66 RP606991

Rodger St
Main St
Martin St
Tynan St

150ø Concrete USIL 14.614 DSIL 14.133
63ø UPVC
200ø Asbestos Cement
100ø MPVC
Combined Main
200ø Cast Iron
200ø MPVC
150ø Concrete USIL 15.628 DSIL 15.241
100ø MPVC
100ø Cast Iron
375 RCP USIL 14.928 DSIL 14.888
375 RCP USIL 14.888 DSIL 14.399
150ø Concrete USIL 13.947 DSIL 13.51
150ø Concrete USIL 14.807 DSIL 14.288
150ø Concrete USIL 15.567 DSIL 15.114
150ø Concrete USIL 13.981 DSIL 13.753
150ø Concrete USIL 13.719 DSIL 13.301
150ø Concrete USIL 14.426 DSIL 13.991
150ø Concrete USIL 14.947 DSIL 14.427
375 RCP USIL 15.619 DSIL 15.408
150ø PVC USIL 0 DSIL 0
150ø Concrete USIL 16.482 DSIL 16.029
150ø Concrete USIL 15.785 DSIL 15.262
100ø MPVC

1/132 2/132 132 127 125 123 121 119 117 115 113 111 128 1 2 3 4 5 6 7 8 9 10 11

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
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- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
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- Pollution Trap
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- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
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- Stormwater Main Private
- Open Channel Private
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Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
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- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
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- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 35 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 65 RP606991
Lot: 66 RP606991
Lot: 53 RP606991
Lot: 54 RP606991
Lot: 55 RP606991
Lot: 56 RP606991
Lot: 45 RP606991
Lot: 46 RP606991
Lot: 47 RP606991
Lot: 48 RP606991
Lot: 57 RP606991
Lot: 58 RP606991
Lot: 59 RP606991
Lot: 60 RP606991
Lot: 36 RP608913
Lot: 35 RP608913
Lot: 34 RP608913
Lot: 33 RP608913
Lot: 32 RP608913
Lot: 31 RP608913
Lot: 30 RP608913
Lot: 29 RP608913
Lot: 28 RP608913
Lot: 27 RP608913
Lot: 3 RP608913
Lot: 4 RP608913
Lot: 5 RP608913
Lot: 6 RP608913
Lot: 7 RP608913
Lot: 8 RP608913
Lot: 25 SP191047

150ø Concrete USIL 16.482 DSIL 16.029
150ø PVC USIL 0 DSIL 0
150ø Concrete USIL 16.725 DSIL 16.067
150ø PVC USIL 0 DSIL 0
150 AC USIL 0 DSIL 0
150ø Concrete USIL 15.684 DSIL 15.489
150ø Concrete USIL 16.635 DSIL 16.127
150ø Concrete USIL 15.447 DSIL 14.975
150ø Concrete USIL 16.177 DSIL 15.691
150ø Concrete USIL 15.785 DSIL 15.262
150ø Concrete USIL 14.948 DSIL 14.709
450 RCP USIL 15.658 DSIL 0
150ø MPVC
Kerr St
525 RCP USIL 16.088 DSIL 15.018
150ø Concrete USIL 15.036 DSIL 14.502
150ø Concrete USIL 14.426 DSIL 13.991
375 RCP USIL 15.619 DSIL 15.408
Tynan St
100ø MPVC
750 RCP USIL 14.899 DSIL 13.239
150ø Concrete USIL 15.872 DSIL 15.545
150ø Concrete USIL 16.116 DSIL 15.508
150ø Concrete USIL 16.635 DSIL 15.906
150ø Concrete USIL 14.947 DSIL 14.427
100ø Cast Iron
150ø MPVC
150ø MPVC

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 19 21
123 125 127 129

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
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Private Stormwater
- Culverts Private
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Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
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- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
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- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
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- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

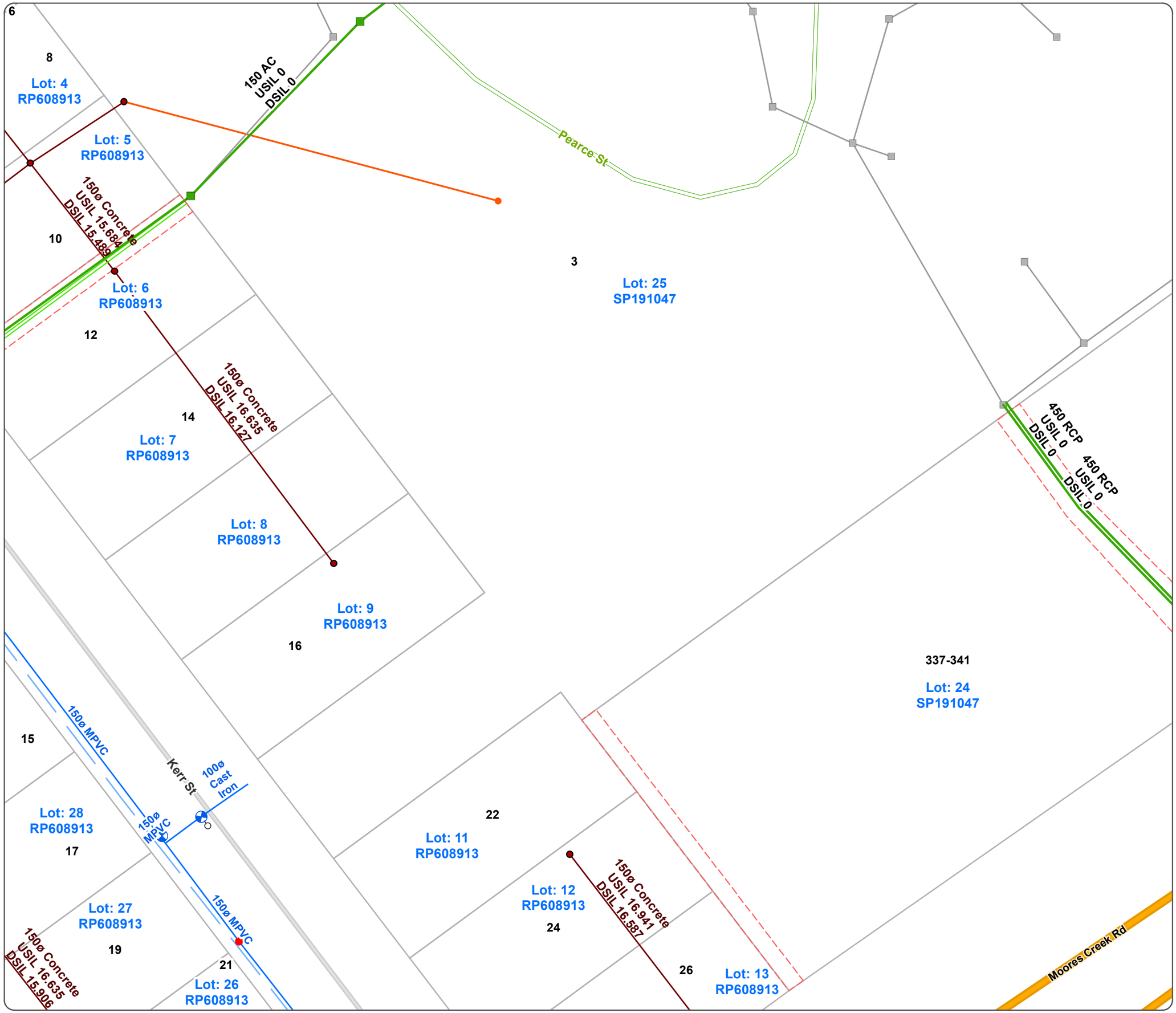
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 36 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
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- Ball Valve
- Motor Sluice Valve
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- RPZ Valve
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- Sluice Bypass Valve
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- Low Flow Pipe
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Administrative
- Easements
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Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 37 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 25
SP191047

3

Lot: 24
SP191047

337-341

Moores Creek Rd

Moores Creek Rd

450 RCP
USIL 0
DSIL 0

450 RCP
USIL 0
DSIL 0

375 RCP
USIL 16.8
DSIL 16.537

450ø MSCL

525 RCP
USIL 14.588
DSIL 14.469

Lot: 201
SP236447

331

600 RCP
USIL 14.288
DSIL 13.959

375 RCP
USIL 16.051
DSIL 15.969

750 RCP
USIL 14.404
DSIL 0

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
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- Other
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- Bio-Retention
- Detention/Retention
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- Abandoned Headwalls
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Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
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343 Yaamba Road,
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User ref.: 343 Yaamba Road.

Map 38 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 24
SP191047

337-341

Lot: 201
SP236447

331

Moores Creek Rd

Yaamba Rd

150ø Concrete
USIL 17.086
DSIL 16.316

450ø MSCL

150ø Concrete
USIL 16.01
DSIL 14.862

150ø Cast Iron

225ø Concrete
USIL 14.489
DSIL 14.344

225ø Concrete
USIL 14.33
DSIL 14.155

375 RCP
USIL 16.8
DSIL 16.537

600ø MSCL

200ø UPVC

Water
- Gate, Sluice, Butterfly
- Air Valve
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- Ball Valve
- Motor Sluice Valve
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Rockhampton Regional Council

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343 Yaamba Road,
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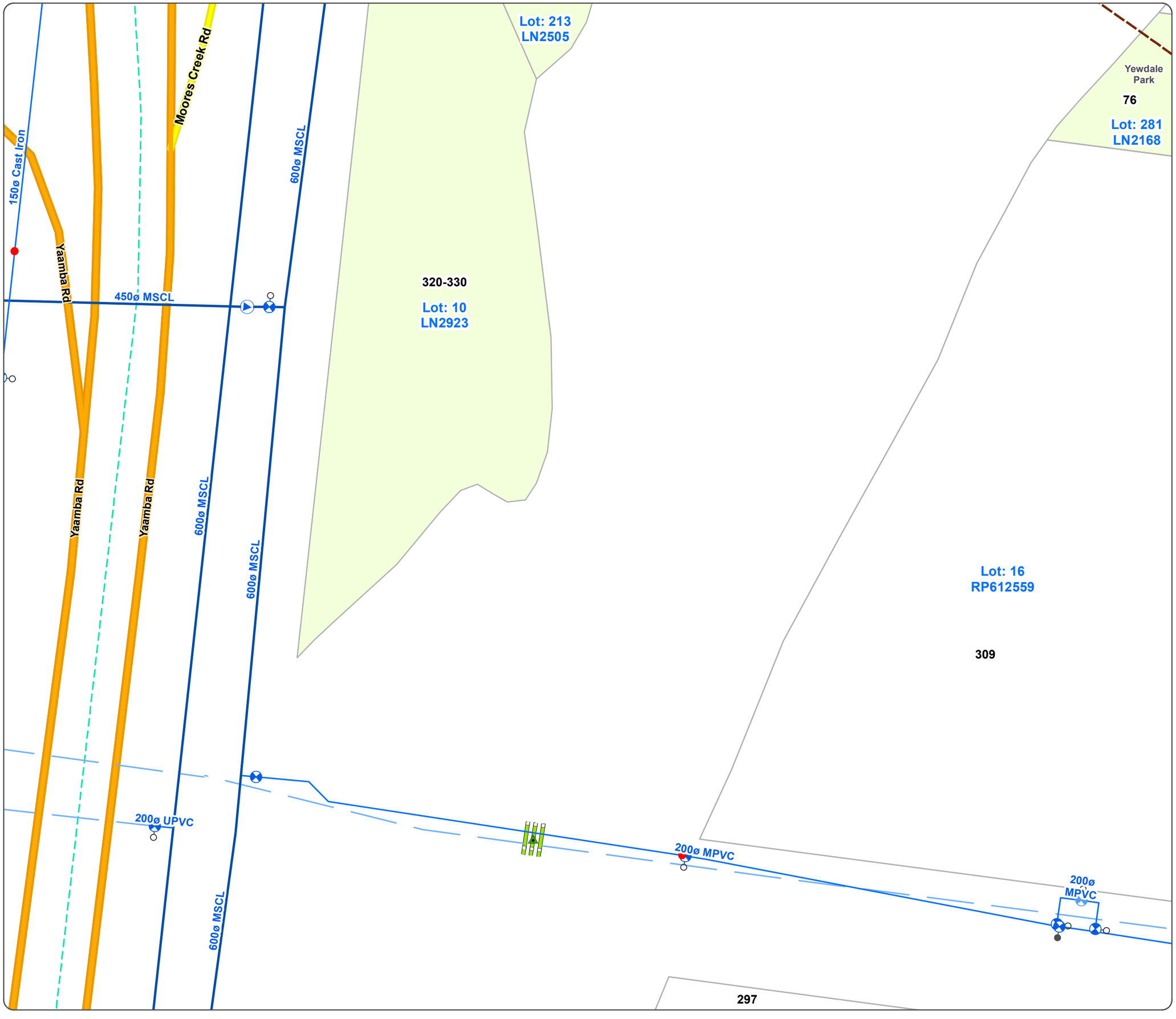
User ref.: 343 Yaamba Road.

Map 39 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
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- Motor Sluice Valve
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- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
- Pump Station
- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Disclaimer:

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 40 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 15
RP612559

Lot: 281
LN2168

76

Yewdale Park

150ø Concrete
USIL 16.779
DSIL 16.378

900 RCP
USIL 17.119
DSIL 16.709

79

150ø Concrete
USIL 17.398
DSIL 16.762

Lot: 16
RP612559

309

311

150ø Concrete
USIL 16.366
DSIL 16.128

150ø Concrete
USIL 16.094
DSIL 15.667

150ø Concrete
USIL 16.758
DSIL 16.213

150ø Concrete
USIL 15.616
DSIL 14.913

200ø
MPVC

200ø MPVC

100ø
UPVC

Simpson St

81

Lot: 14
RP612559

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
- Open - Dialysis
- Closed - Zone
- Valve Normally Open
- Valve Normally Closed
- Trunk Main
- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
- Headwalls Private
- Stormwater Junctions Private
- Pollution Trap Private
- Subsoil Clean-Out pit Private
- Stormwater Jump Up Private
- Stormwater Main Private
- Open Channel Private
- Subsoil Drain Private
- Retention Basins Private

Effluent
- Effluent Structures
- Effluent Valves
- Effluent Mains

Sewer
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- Treatment Plant
- Sewer Gravity Mains
- Sewer Rising Mains
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- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
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- Treatment Plant
- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 41 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 31 RP606991
Lot: 32 RP606991
Lot: 37 RP606991
Lot: 38 RP606991
Lot: 39 RP606991
Lot: 40 RP606991
Lot: 41 RP606991
Lot: 46 RP606991
Lot: 47 RP606991
Lot: 48 RP606991
Lot: 49 RP606991
Lot: 29 RP606050
Lot: 30 RP606050
Lot: 33 RP606991
Lot: 34 RP606991
Lot: 35 RP606991
Lot: 42 RP606991
Lot: 18 RP606050
Lot: 19 RP606050
Lot: 20 RP606050
Lot: 21 RP606050
Lot: 22 RP606050
Lot: 23 RP606050
Lot: 24 RP606050
Lot: 25 RP606050

150ø Concrete USIL 13.947 DSIL 13.51
150ø Concrete USIL 14.807 DSIL 14.288
150ø Concrete USIL 13.981 DSIL 13.753
375 RCP USIL 14.888 DSIL 14.399
375 RCP USIL 14.498 DSIL 14.388
150ø Concrete USIL 13.719 DSIL 13.301
150ø Concrete USIL 14.947 DSIL 14.427
150ø Concrete USIL 14.045 DSIL 13.712
150ø Concrete USIL 13.497 DSIL 13.32
100ø Cast Iron
Martin St
375 RCP USIL 14.399 DSIL 14.009
150ø Concrete USIL 13.295 DSIL 13.101
150ø Concrete USIL 14.35 DSIL 13.788
150ø Concrete USIL 13.091 DSIL 12.808
375 RCP USIL 14.009 DSIL 13.509
150ø Concrete USIL 13.288 DSIL 12.96
150ø Concrete USIL 12.934 DSIL 12.78
150ø Cast Iron
375 RCP USIL 14.209 DSIL 13.989
450 RCP USIL 13.279 DSIL 13.198
450 RCP USIL 13.198 DSIL 12.799
Cowap St

111 113 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 17 19 21 23 27 29 31

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
- Tap
- Other Valve Type
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- Valve Normally Open
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- Reticulation Main
- Raw Water Main
- Scour Line
- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
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- Private Water Mains
- Private Water Abandoned Mains

Stormwater
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- Culverts
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- Pollution Trap
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- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
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- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs

- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
- Culverts Private
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- Stormwater Junctions Private
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- Effluent Structures
- Effluent Valves
- Effluent Mains

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- Pump Station
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- Sewer Gravity Mains
- Sewer Rising Mains
- Roll Over
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- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

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- Sewer Valves Private
- Sewer Gravity Mains Private
- Sewer Rising Mains Private
- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 42 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 46 RP606991
Lot: 47 RP606991
Lot: 48 RP606991
Lot: 49 RP606991
Lot: 50 RP606991
Lot: 41 RP606991
Lot: 42 RP606991
Lot: 51 RP606991
Lot: 52 RP606991
Lot: 58 RP606991
Lot: 59 RP606991
Lot: 60 RP606991
Lot: 61 RP606991
Lot: 62 RP606991
Lot: 29 RP608913
Lot: 28 RP608913
Lot: 27 RP608913
Lot: 26 RP608913
Lot: 25 RP608913
Lot: 24 RP608913
Lot: 3 RP608474
Lot: 2 LN2344
Lot: 24 RP606050
Lot: 25 RP606050
Lot: 26 RP606050
Lot: 27 RP606050
Lot: 28 RP606050

7 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 27 29 31 33 35 37

150ø Concrete USIL 14.947 DSIL 14.427
150ø Concrete USIL 15.366 DSIL 14.959
150ø Concrete USIL 13.288 DSIL 12.96
150ø Concrete USIL 12.934 DSIL 12.78
150ø Concrete USIL 16.116 DSIL 15.508
150ø Concrete USIL 16.635 DSIL 15.906
150ø Concrete USIL 15.955 USIL 13.116
150ø Concrete USIL 13.066 DSIL 12.753
750 RCP USIL 14.899 DSIL 13.239
750 RCP USIL 12.969 DSIL 12.309
225ø Concrete USIL 11.879 DSIL 11.574
450 RCP USIL 13.198 DSIL 12.799
150ø Cast Iron
100ø MPVC
150ø MPVC
Tynan St
Moores Creek Rd
Moores Creek Rd

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
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- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

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- Flood Mitigation Devices
- Culverts
- Headwalls
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- Pollution Trap
- Subsoil Clean-Out pit
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- Connector; Reticulation Main
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- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
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- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

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- Overflow Chamber
- Access Chambers
- Sewer Valves
- Sewer Jump Ups
- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

Private Sewer
- Pump Station
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- Sewer Access Chambers Private
- Sewer Joints Private
- Sewer Valves Private
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- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

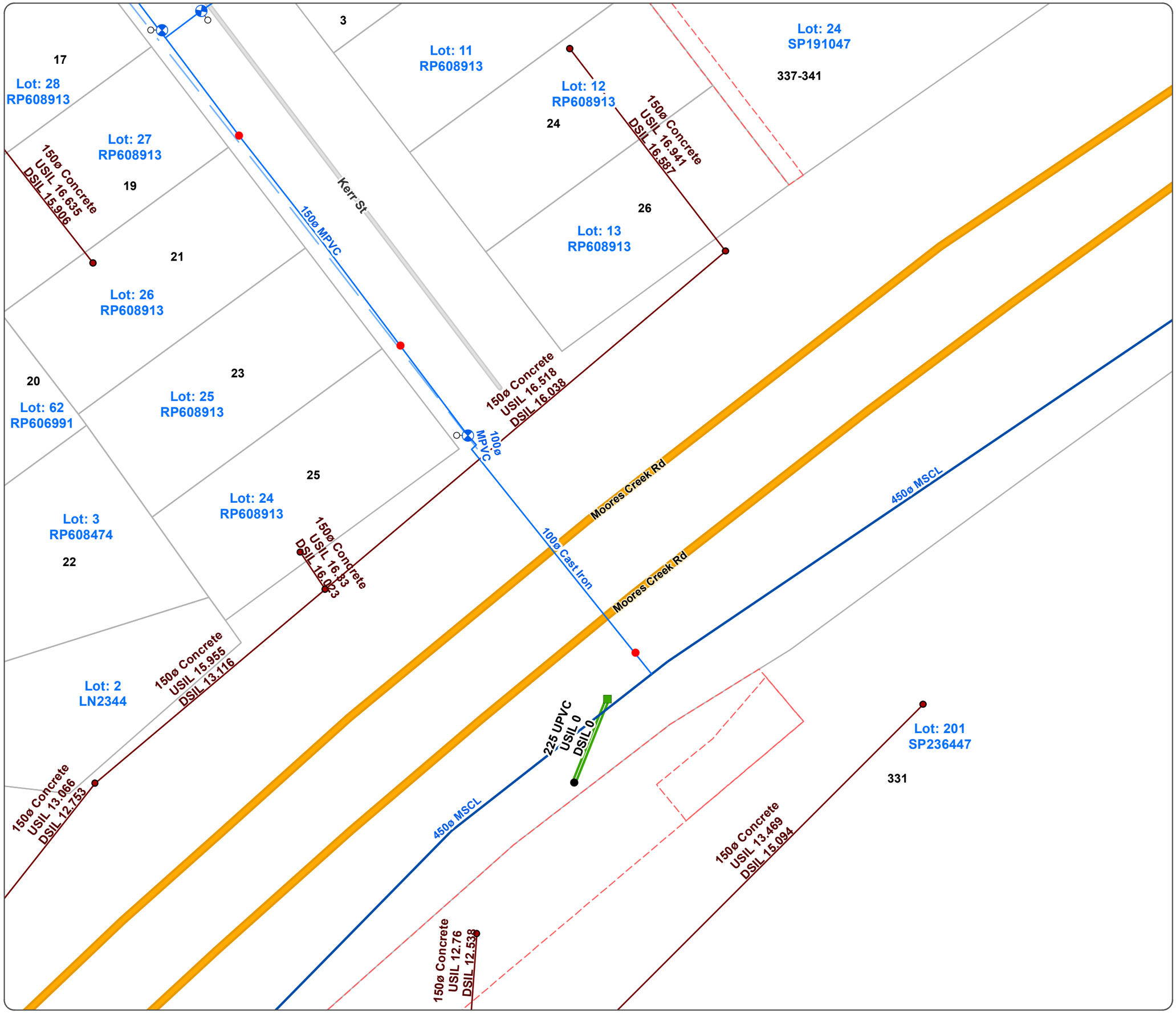
Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 43 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
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- Other Main Type
- Water Service
- Hydrants
- Reservoirs
- Intake
- Pump Station
- Treatment Plant
- Unknown
- Abandoned Mains

Private Water
- Private Water Hydrants
- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

Stormwater
- Flood Mitigation Devices
- Culverts
- Headwalls
- Stormwater Junctions
- Pollution Trap
- Subsoil Clean-Out pit
- Stormwater Jump ups
- Connector; Reticulation Main
- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
- Other
- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
- Bio-Retention
- Detention/Retention
- Abandoned Mains
- Abandoned Headwalls
- Abandoned Culverts
- Abandoned Junctions

Private Stormwater
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- Subsoil Drain Private
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- Effluent Structures
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- Overflow Chamber
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- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

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- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 44 of 49

Scale:
1:500 at A3

0 5 10 20 m

337-341

Moores Creek Rd

Moores Creek Rd

450ø MSCL

375 RCP
USIL 16.051
DSIL 15.969

750 RCP
USIL 13.959
DSIL 13.818

600 RCP
USIL 14.288
DSIL 13.959

825 RCP
USIL 13.728
DSIL 13.529

900 RCP
USIL 13.448
DSIL 13.198

Lot: 201
SP236447

331

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Private Water Valves
- Private Water Mains
- Private Water Abandoned Mains

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- Low Flow Pipe
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- Sewer Access Chambers Abandoned Private

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Rockhampton Regional Council

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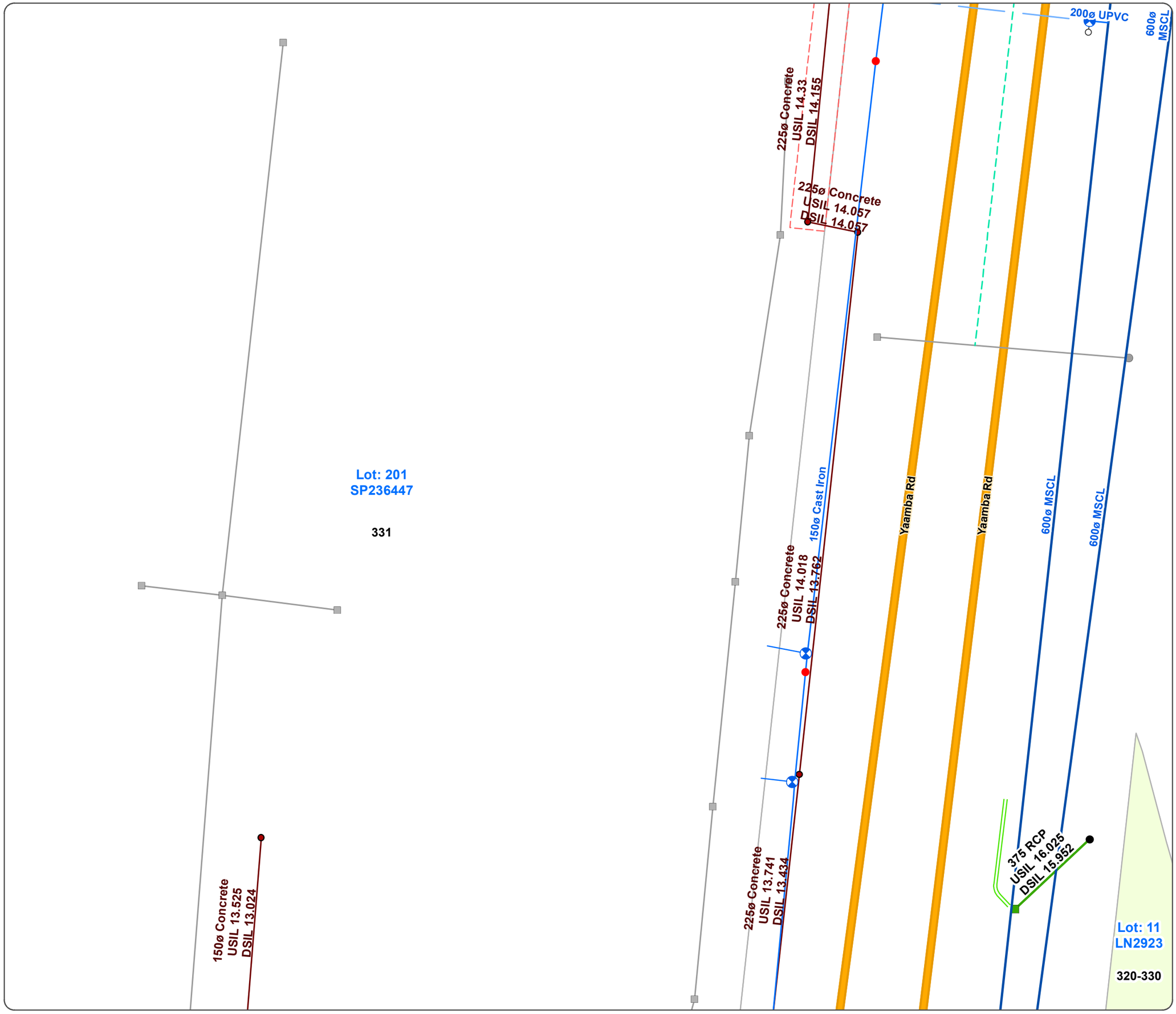
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 45 of 49

Scale:
1:500 at A3

0 5 10 20 m



Water
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- Low Flow Pipe
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- Weirs
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Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 46 of 49

Scale:
1:500 at A3

0 5 10 20 m

200ø UPVC
600ø MSCL
Yaamba Rd
200ø MPVC
309
Lot: 16
RP612559
297
Lot: 1
RP603400
295D
Lot: 2
RP603400
295C
Lot: 3
RP603400
150ø Concrete
USIL 14.959
DSIL 14.655
295B
Lot: 4
RP603400
Lot: 5
RP603400
295A
150ø Concrete
USIL 14.877
DSIL 14.441
295
Lot: 6
RP603400
375 RCP
USIL 0
DSIL 0
Creek St
150ø Concrete
USIL 14.405
DSIL 13.85
293
Lot: 7
RP603400
Lot: 8
RP603400
291
289
Lot: 9
RP603400
287
Lot: 10
RP603400
290
100ø UPVC
375 RCP
USIL 16.025
DSIL 15.952
320-330
Lot: 11
LN2923

Water
- Gate, Sluice, Butterfly
- Air Valve
- Ball Cock, Stop Cock
- Ball Valve
- Motor Sluice Valve
- Non Return Valve
- Pressure Reducing Valve
- RPZ Valve
- Reflux Valve
- Scour Valve
- Sluice Bypass Valve
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- Culvert Pipe; LinkSlab
- Inter-Allotment
- Low Flow Pipe
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- Stormwater Drop Structures
- Batter Chute; Open Channel
- Bio-Retention Swale
- Subsoil Drain
- Weirs
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- Effluent Valves
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- Sewer Rising Mains
- Roll Over
- Lamp Hole | Inspection Opening
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- Sewer Access Chambers Abandoned
- Sewer Mains Abandoned

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- Sewer Jump Ups Private
- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

DBYD JOB: 32724322,
SEQ: 215964421,
343 Yaamba Road,
Park Avenue 4701, Qld.,
User ref.: 343 Yaamba Road.

Map 47 of 49

Scale:
1:500 at A3

0 5 10 20 m

Lot: 24 RP606050
Lot: 25 RP606050
Lot: 26 RP606050
Lot: 27 RP606050
Lot: 28 RP606050
Lot: 28 RP607789
Lot: 27 RP607789
Lot: 26 RP607789
Lot: 29 RP607789
Lot: 1 RP613011
Lot: 1 RP612250
Lot: 2 GTP60143
Lot: 201 SP236447

27 29 31 33 35 37 30 32 34 36 20 6 331 2/5

150ø Concrete USIL 12.934 DSIL 12.78
450 RCP USIL 13.198 DSIL 12.799
225ø Concrete USIL 11.552 DSIL 11.466
150ø Cast Iron
450 RCP USIL 12.799 DSIL 12.309
225ø Concrete USIL 11.879 DSIL 11.574
100ø MPVC
Tynan St
750 RCP USIL 12.969 DSIL 12.309
150ø Concrete USIL 13.066 DSIL 12.753
525 RCP USIL 12.228 DSIL 12.088
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150ø Cast Iron
450ø MSCL
150ø Cast Iron
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225ø Concrete USIL 11.441 DSIL 11.114
375 RCP USIL 53.698 DSIL 53.647
Cowap St
900 RCP USIL 0 DSIL 11.309
150ø Concrete USIL 11.733 DSIL 11.517
Moores Creek Rd
450 RCP USIL 14.23 DSIL 14.104
375 RCP USIL 14.129 DSIL 14.104
100ø MPVC
100ø Asbestos Cement
450ø MSCL
150ø Concrete USIL 12.058 DSIL 11.769
Combined Main
Combined Main
150ø Concrete USIL 12.489 DSIL 12.156
900 RCP USIL 11.318 DSIL 11.259
150ø Concrete USIL 13.313 DSIL 12.6
900 RCP USIL 10.959 DSIL 10.809
100ø Asbestos Cement
150ø Concrete USIL 12.774 DSIL 12.503
900 RCP USIL 10.818 DSIL 10.369
L 6

Water
- Gate, Sluice, Butterfly
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Private Water
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Stormwater
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Sewer
- Pump Station
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N

Date: 14/09/2022

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Map 48 of 49

Scale:
1:500 at A3

0 5 10 20 m

Moores Creek Rd
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450ø MSCL
150ø Cast Iron
150ø Cast Iron
150ø Cast Iron
150ø Cast Iron
100ø Asbestos Cement
450ø MSCL
450 RCP
USIL 14.23
DSIL 14.104
150ø Concrete
USIL 12.76
DSIL 12.538
150ø Concrete
USIL 13.469
DSIL 15.094
225ø Concrete
USIL 12.189
DSIL 11.962
225ø Concrete
USIL 12.462
DSIL 12.199
225ø Concrete
USIL 12.619
DSIL 12.475
331
Lot: 201
SP236447
150ø Concrete
USIL 12.911
DSIL 12.538
900 RCP
USIL 12.998
DSIL 12.748
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DSIL 12.059
150ø Concrete
USIL 13.323
DSIL 12.948
900 RCP
USIL 12.059
DSIL 11.628
100ø Asbestos Cement

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- Pump Station
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- Treatment Plant
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User ref.: 343 Yaamba Road.

Map 49 of 49

Scale:
1:500 at A3

0 5 10 20 m

900 RCP
USIL 13.448
DSIL 13.198

900 RCP
USIL 13.158
DSIL 13.099

900 RCP
USIL 0
DSIL 13.099

225ø Concrete
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DSIL 12.199

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DSIL 12.475

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225ø Concrete
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DSIL 12.869

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DSIL 13.024

Lot: 201
SP236447

900 RCP
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DSIL 12.748

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USIL 12.911
DSIL 12.538

900 RCP
USIL 12.748
DSIL 12.059

900 RCP
USIL 12.059
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DSIL 12.802

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DSIL 12.948

150ø Concrete
USIL 13.545
DSIL 13.14

Lot: 1
SP203617

Water
- Gate, Sluice, Butterfly
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- Ball Cock, Stop Cock
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- Effluent Valves
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- Treatment Plant
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- Sewer Mains Abandoned Private
- Sewer Access Chambers Abandoned Private

Administrative
- Easements
- Property Parcels

Rockhampton Regional Council

N

Date: 14/09/2022

Appendix G – RRC Mapping

Map Title

Spatial reference

GDA2020_MGA_Zone_56

N

A4 Page scale at 1: 4,000.00

Date printed 21/11/22

Legend

- Sewer Gravity Mains
  - Combination Main
  - Reticulation Main
  - Trunk Main
- Sewer Rising Mains
- Sewer Access Chambers
  - Access Chambers
  - Roll Over
  - Lamp Hole | Inspection Opening
  - Overflow Chambers
- Hydrants
- Water Valves
  - Other Valve Type
  - Gate, Sluice, Butterfly
  - Air Valve
  - Ball Cock, Stop Cock
  - Ball Valve
  - Motor Sluice Valve
  - Non Return Valve
  - Pressure Reducing Valve
  - RPZ Valve
  - Reflux Valve
  - Scour Valve
  - Sluice Bypass Valve
  - Tap
- Water Mains
  - Other Main Type
  - Trunk Main
  - Reticulation Main
  - Raw Water Main
  - Scour Line
- Culverts
- Stormwater Junctions
  - Inlets
  - Access Chambers
- Stormwater Pipes
  - Open Channel

GDA 2020

Rockhampton Regional Council

Map Title

Spatial reference:
GDA2020_MGA_Zone_56

N

A3 Page scale at 1: 9,409.55

Date printed: 14/09/22

Legend

- Culverts
- Stormwater Junctions
  - Inlets
  - Access Chambers
- Stormwater Pipes
  - Open Channel
  - Mains
  - Culvert Pipes
  - Inter-allotment
  - Other
- Subsoil Pipes
- Subsoil Clean Out pits
- Population centres
- Easements
- Property Parcels
- Council Boundary
- Roads2
  - Main roads
  - Major council roads
  - Standard council roads
  - Access roads
  - Private roads
- Reserves and Forests
  - National Park
  - Reserves
  - State Forest
- Rivers
- DCDB Water Areas

GDA 2020

Rockhampton Regional Council

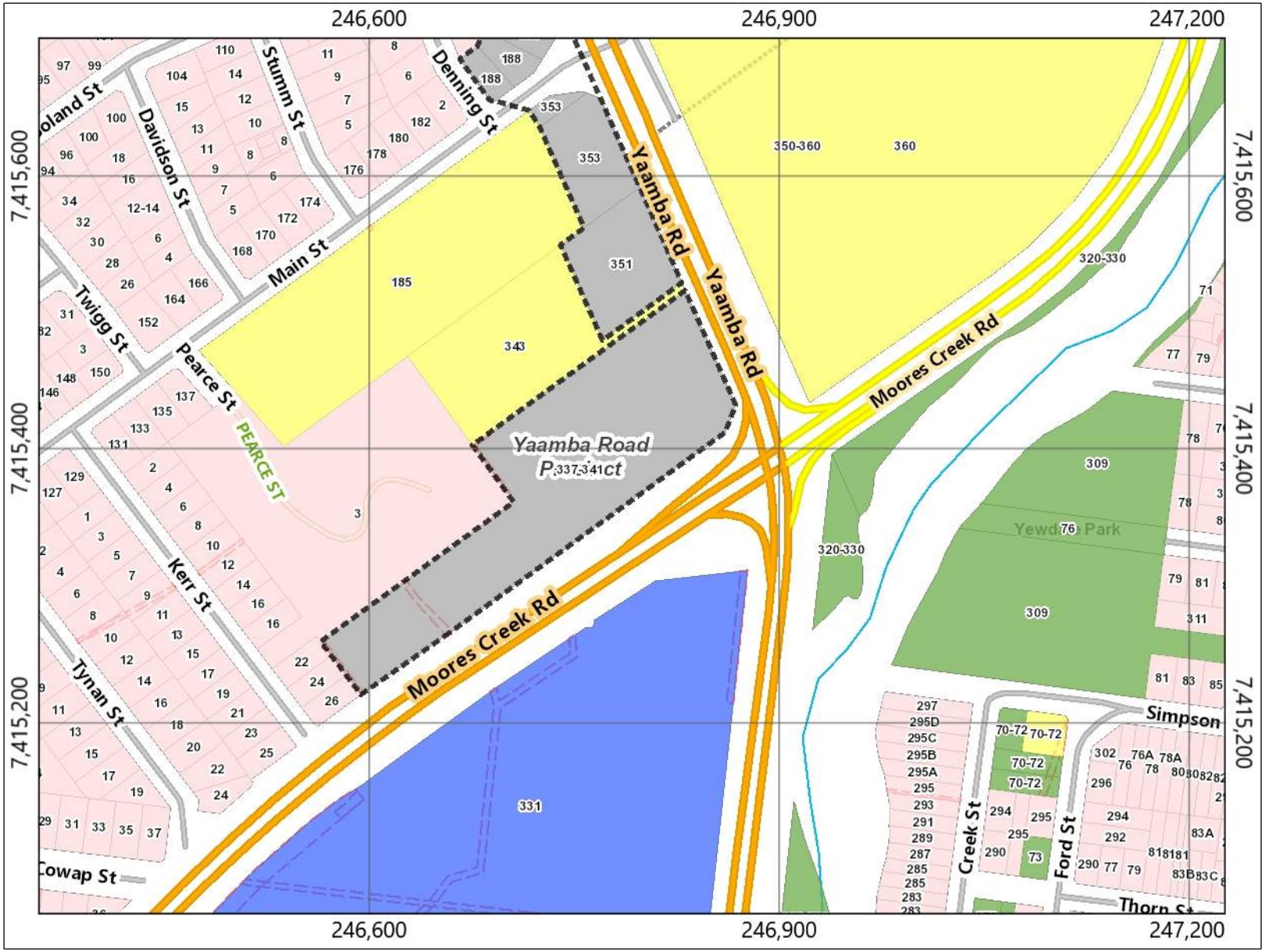
RichTextBox1

Spatial reference

GDA2020_MGA_Zone_56

A4 Page scale at 1: 4,325.91

Printed from RRPS on 14/09/22



Legend

- RRC Mask
- RRC Mask
- Precincts Text
- Precincts
- Sub Precincts
- Zones
  - Low density residential
  - Low-medium density residential
  - High density residential
  - Principal centre
  - Major centre
  - District centre
  - Local centre
  - Neighbourhood centre
  - Sport and recreation
  - Open space
  - Environmental management and conservation
  - Low impact industry
  - Medium impact industry
  - High impact industry
  - Special industry
  - Waterfront and marine industry
  - Community facilities
  - Emerging community
  - Limited development (constrained land)
  - Rural
  - Rural residential
  - Special purpose
  - Specialised centre
  - Township
- Priority Development Area
- Strategic Port Land
- Roads2
  - Main roads
  - Major council roads
  - Standard council roads
  - Access roads
  - Private roads
- Easements
- Property Parcels
- Ocean
- Rivers
- DCDB Parks
- CQ LGA Boundaries

GDA 2020

Rockhampton Regional Council

PROPOSED COMMERCIAL DEVELOPMENT

MOORES CREEK ROAD, ROCKHAMPTON

WASTE MANAGEMENT PLAN

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

SALT³

PROPOSED COMMERCIAL DEVELOPMENT, MOORES CREEK ROAD, ROCKHAMPTON
Client: SPG Developments (Manager) Pty Ltd
Report Reference: 23129W
File Path: Y:\2023\23129W – Spotlight Property Group Rockhampton\08 Reports\23129WREP01F02.docx

Friday, February 16, 2024

Document Control

Version:	Prepared By:	Position:	Date:	Reviewed By:	Position:	Date:
F01	Jasreena Kaur	Project Environmental Scientist	22 June 2023	Tom Bloomfield	Associate Director – Waste & Environment	22 June 2023
F02	Jasreena Kaur	Senior Environmental Consultant	16 February 2024	Jo Garretty	Managing Director	16 February 2024

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www.salt3.com.au

EXECUTIVE SUMMARY

SALT has been engaged by SPG Developments (Manager) Pty Ltd to prepare a Waste Management Plan (WMP) for a proposed commercial development located at Moores Creek Road, Rockhampton.

SALT understands that the proposal involves the development of 4,345m^2 of large format retail (LFR) outlets and a 2,500m^2 Anaconda outlet.

Waste generated within LFRs 1 to 3 will be stored together on-site within the waste enclosure located between LFR 1 and 2. This waste will be collected by a private contractor, with the following:

- 3 x 1,100L garbage bins collected three times per week; and
- 1 x 1,100L commingled recycling bins collected twice per week.

Waste generated within LFRs 4 and 5 will be stored together within the waste enclosure located adjacent to LFR 5. This waste will be collected by a private contractor, with the following:

- 2 x 1,100L garbage bins collected twice per week; and
- 1 x 1,100L commingled recycling bin collected once per week.

Waste generated within Anaconda will be stored within Anaconda's waste enclosure located adjacent to LFR 4. Waste from the Anaconda outlet would be collected by private contractor, with:

- 4 x 1,100L garbage bins collected twice per week; and
- 1 x 1,100L commingled recycling bins collected twice per week.

Waste vehicles would prop safely within the loading zones to perform collections. Vehicle operators would ferry waste bins from the waste enclosures to the collection vehicle and return upon emptying.

In the opinion of SALT, the enclosed Waste Management Plan would provide efficient waste management for the proposed development. This report must be read in detail prior to implementation of the waste management strategy.

CONTENTS

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 INTRODUCTION

SALT has been requested by SPG Developments (Manager) Pty Ltd to prepare a Waste Management Plan for a proposed commercial development located at the intersection of Moores Creek Road and Yaamba Road in Rockhampton.

This Waste Management Plan (WMP) has been prepared based on industry best practice and Rockhampton Regional Council's *Local Law No 8 Waste Management* 2018. In the circumstance that the development plans are amended or new legal requirements are introduced, a revision of the enclosed WMP may be required by the Responsible Authority. The developer would be responsible in engaging with a waste consultant or engineer to prepare the updated report accordingly.

Generation rates have been adopted based on commercial waste generation rates enclosed in the Sustainability Victoria *Better Practice Guide for Waste Management and Recycling in Multiunit Developments* 2019.

Rockhampton Regional Council's Development Engineering Unit has confirmed that the proposed site will need to be serviced by a private waste contractor thus this report has been prepared to accommodate for a private service.

Sustainability Victoria's guidelines have been referred to in preparation of this report due the lack of a similar Queensland or Council waste management guidelines which specifies waste generation rates and operational requirements to manage waste efficiently in commercial developments that are to be serviced by a private contractor.

2 INCLUDED IN THIS REPORT

Enclosed is the Waste Management Plan for the proposed development at Moores Creek Road, Rockhampton. Included are details regarding:

- Land use;
- Waste generation;
- Waste systems;
- Bin quantity, size and colour;
- Collection frequency;
- Bin storage area;
- Signage;
- Waste collection;
- Responsibilities;
- Ventilation, washing and vermin-prevention;
- Noise reduction;
- DDA compliance;
- Supplier contact information; and
- Scaled waste management drawings.

3 LAND USE

Planning application number: to be allocated

Land Zone: L2 Specialised Centre

Land use type: Commercial

Number of levels: 1

Commercial Spaces:

- 4,345m² large format retail outlets; and
- 2,500m² anaconda outlet.

4 COMMERCIAL WASTE MANAGEMENT PLAN

4.1 WASTE GENERATION

Commercial waste generation rates are shown in Table 1. Calculations are based on 7 days per week operation for all uses.

As discussed above, the waste generation rates have been adopted based on commercial waste generation rates enclosed in the Sustainability Victoria *Better Practice Guide for Waste Management and Recycling in Multiunit Developments* 2019.

The generation rates adopted are considered appropriate for a commercial development located within Rockhampton Regional Council. These Victorian rates have been adopted given the lack of waste generation rates available from the Queensland State Government or Rockhampton Regional Council.

Showroom waste generation rates have been adopted for the large format retail (LFR) spaces and the Anaconda outlet. These rates were adopted as they were found to be the most appropriate rates based on the proposed uses.

Table 1 Waste Generation Rates

Use	Garbage (L/100m²/week)	Commingled Recycling (L/100m²/week)
Showrooms	280	70

Commercial waste generation assessments are provided in Table 2 to Table 4 below.

Table 2 Waste Generation Assessment for LFRs 1 to 3

Use	Area	Waste Per Week	
		Garbage	Recycling
Showrooms	2,828m²	7,918L	1,980L
Total Waste Generated per Week		**7,918L**	**1,980L**

Table 3 Waste Generation Assessment for LFRs 4 and 5

Use	Area	Waste Per Week	
		Garbage	Recycling
Showrooms	1,517m²	4,248L	1,062L
Total Waste Generated per Week		**4,248L**	**1,062L**

Table 4 Waste Generation Assessment for Anaconda

Use	Area	Waste Per Week	
		Garbage	Recycling
Showrooms	2,500m²	7,000L	1,750L
Total Waste Generated per Week		**7,000L**	**1,750L**

4.2 WASTE SYSTEMS

Waste would be sorted on-site by staff and cleaners as appropriate into the following streams:

- Garbage (General Waste);
- Commingled Recycling;
- Garden Organics; and
- Hard Waste

4.2.1 BIN STATIONS

Based on Method *Westpac NZ Case Study*, the use of bin stations throughout their office spaces have reduced waste to landfill by 40%. The case study discusses the significance of accountability in ensuring diversion of waste from landfill. It is therefore recommended that bin stations are provided throughout the commercial and public spaces.

Each bin station should be equipped with one bin for each waste stream. This would encourage the user to make a conscious decision before depositing their waste product into a specific bin and encourage appropriate segregation especially when bins are placed within a public space.

An example bin station with vertical signage is shown in Figure 1. The vertical signage is recommended to be implemented at each bin station to educate the users on the appropriate separation methods. This would allow for maximum diversion of waste from landfill and recovery of the respective waste streams to be achieved.

Figure 1 Example Bin Station with vertical signage

4.2.2 GARBAGE (GENERAL WASTE)

The commercial spaces would be furnished with plastic lined bins for the temporary holding of garbage waste, to have the following minimum cumulative capacity of 40 litres per 100m^2 of floor area.

This capacity is based on the transfer of waste to the bin enclosures occurring once per day.

Staff/cleaners would dispose of waste from these bins directly into the appropriate 1,100L garbage bin provided within the ground level bin enclosures, accessed via the internal or external accessways (refer to Appendix 1).

Please refer to the waste transfer path attached in APPENDIX 2.

Garbage is to be disposed of bagged.

4.2.3 COMMINGLED RECYCLING

The commercial spaces would be furnished with unlined bins for the temporary holding of recyclables, to have the following minimum cumulative capacity of 10 litres per 100m^2 of floor area.

This capacity is based on the transfer of recyclables to the bin enclosures occurring once per day.

Staff/cleaners would dispose of recyclables from these bins directly into the appropriate 1,100L commingled recycling bin provided within the ground level bin enclosures, accessed via internal or external accessways (refer to Appendix 1).

Please refer to the waste transfer path attached in APPENDIX 2.

Commingled recyclables would be disposed of loosely.

4.2.4 FOOD AND GARDEN ORGANICS

It is anticipated that only minimal volumes of food organics would be generated within the commercial spaces thus any food waste generated can be disposed of into the general waste bins provided.

Green waste generated by the maintenance of communal landscaped areas would be disposed of via the engaged landscaper.

4.2.5 HARD WASTE

Hard waste will be managed independently by the respective commercial tenants. Hard waste will be temporarily stored within the respective tenancies prior to when collections occur.

Commercial tenants would arrange for hard waste collections to occur via a private contractor, as required.

4.3 BIN QUANTITY, SIZE AND COLLECTION FREQUENCY

The bin quantity, size and the frequency of collection are shown below in Table 6 to Table 8 below.

Three collections per week is recommended for the garbage stream given the volume and nature of this waste stream.

Table 5 Bin Size and Collection Frequency for LFRs 1 to 3

Waste Stream	Collections per Week	Bin Size	No. Bins	Weekly Capacity	Weekly Volume
Garbage	3	1,100L	3	9,900L	7,918L
Commingled Recycling	2	1,100L	1	2,200L	1,980L

Table 6 Bin Size and Collection Frequency for LFRs 4 and 5

Waste Stream	Collections per Week	Bin Size	No. Bins	Weekly Capacity	Weekly Volume
Garbage	2	1,100L	2	4,400L	4,248L
Commingled Recycling	1	1,100L	1	1,100L	1,062L

Table 7 Bin Size and Collection Frequency for Anaconda

Waste Stream	Collections per Week	Bin Size	No. Bins	Weekly Capacity	Weekly Volume
Garbage	2	1,100L	4	8,800L	7,000L
Commingled Recycling	2	1,100L	1	2,200L	1,750L

Table 8 Typical Waste Bin Dimensions

Capacity (L)	Width (mm)	Depth (mm)	Height (mm)	Area (m^2)
1,100	1240	1070	1330	1.33
240	585	730	1060	0.43

Note: The above dimensions are based on SULO's flat lid bin specifications

4.4 BIN COLOUR AND SUPPLIER

All bins would be provided by private supplier. The below bin colours are specified by Australian Standard AS4123.7–2006, however due the private nature of the collection, these are only recommendations and are not mandatory:

- Garbage (general waste) shall have red lids with dark green or black body; and
- Recycle shall have yellow lids with dark green or black body.

Note, private contractors often supply bins for collection.

4.5 WASTE STORAGE AREA

Table 9 demonstrates the cumulative space requirements and provision of waste areas in the proposed development.

Please refer to scaled drawing shown in Appendix 1.

Table 9 Waste Area Space Requirements for LFRs 1 to 3

Stream	Space Required (excluding circulation)	Space Provided
General Waste	3.99m²	20.00m²
Commingled Recycling	1.33m²	
TOTAL	5.32m²	20.00m²

Table 10 Waste Area Space Requirements for LFRs 4 and 5

Stream	Space Required (excluding circulation)	Space Provided
General Waste	2.66m²	20.00m²
Commingled Recycling	1.33m²	
TOTAL	3.99m²	20.00m²

Table 11 Waste Area Space Requirements for Anaconda

Stream	Space Required (excluding circulation)	Space Provided
General Waste	5.32m²	16.20m²
Commingled Recycling	1.33m²	
TOTAL	6.65m²	16.20m²

Waste management would be overseen by building management.

4.6 WASTE COLLECTION

Commercial waste would be collected by private contractor as follows:

Waste generated from LFRs 1 to 3 would be collected by a private contractor, with the following:

- 3 x 1,100L garbage bins collected three times per week; and
- 1 x 1,100L commingled recycling bins collected twice per week.

Waste generated from LFR 4 and 5 would be collected by a private contractor, as follows:

- 2 x 1,100L garbage bins collected twice per week; and
- 1 x 1,100L commingled recycling bin collected once per week.

Waste generated from Anaconda would be collected by a private contractor as follows:

- 4 x 1,100L garbage bins collected twice per week; and
- 1 x 1,100L commingled recycling bins collected twice per week.

Hard waste would be collected as required.

All waste bins would be stored on-site in the bin enclosures provided at ground level.

Waste collections would occur between 7am to 6pm on Mondays to Fridays, in accordance with the subject site's Decision Notice issued by Council. This is to ensure minimal noise impacts to the neighboring properties

General waste collections would occur via an 8.8m medium rigid vehicle.

Hard waste collections would be performed by a utility vehicle or AustRoads B99 design vehicle equivalent.

Waste collection vehicles would enter the subject site via a forward motion from Moores Creek Road.

Waste collection vehicles would prop safely within the loading docks adjacent to each bin enclosure, to perform collections.

Vehicle operators would ferry waste bins from the bin enclosures and return upon emptying.

Waste collection vehicles would exit the subject site in a forward direction onto Moores Creek Road.

Please refer to the swept path analysis attached in APPENDIX 3. The swept path analysis confirms access by a 12.5m large rigid vehicle to the waste areas which therefore confirms that access would be available to an 8.8m medium rigid vehicle.

Building management would ensure that waste vehicle operators are able to access the bin enclosures.

Commercial waste bins would not be presented to street kerb at any point.

5 RESPONSIBILITIES

Building management would be responsible for overseeing waste management within the development. Responsibilities would include:

- Provide commercial tenants with a waste management handbook which would include information on bin storage areas, transfer paths and waste management methods onsite;
- Ensure that all bins throughout the site and the bin enclosures are equipped with appropriate signages to guide users on appropriate segregation methods for their waste and recyclables;
- Inspecting waste stores;
- Reviewing contamination within bins;
- Investigating incidents of inappropriate waste storage (or aggregation).

Building management would ensure anyone found responsible for inappropriate waste disposal would be appropriately educated and made aware of correct waste disposal techniques.

It is recommended that building management conducts a waste audit if waste is found to be inappropriately deposited by users or if the bin capacities need to be reviewed.

6 SIGNAGE

Waste storage areas and bins would be clearly marked and signed with the industry standard signage approved by Sustainability Victoria or equivalent. The typical Sustainability Victoria signage is illustrated in Figure 2.

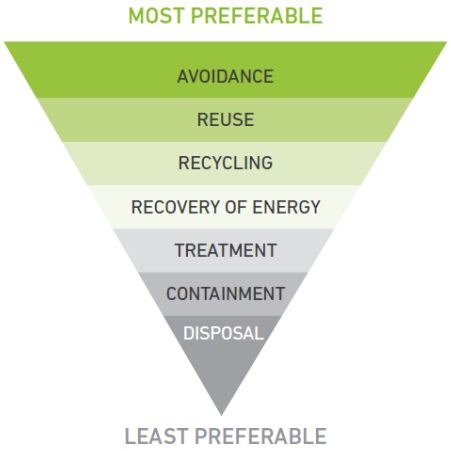
Figure 2 Sustainability Victoria Signage

7 SUSTAINABILITY ACTION PLAN AND INITIATIVES

The importance of restructuring the institutional waste management methods in developments is becoming more apparent as we experience the adverse impacts of increasing waste volumes and declining recycling rates. Developments such as the proposed subject site can contribute towards the prevention and reduction of nationwide waste generation volumes as well as to promote a local circular economy system.

Building management should encourage users by demonstrating a commitment towards waste avoidance and minimisation initiatives. The waste hierarchy as detailed in the *Environmental Protection Act* 2017 should be observed in order of preference (refer to Figure 3).

Figure 3 Waste Hierarchy



In addition to the waste management strategy detailed in the enclosed report, building management can establish landfill diversion and recycling targets and conduct periodic waste audits to monitor contamination levels in recycling bins. The results of the audit could be shared with commercial tenants to encourage them to continue or to improve their waste separation efforts. The audit may also be beneficial from a cost perspective as it would inform building management of opportunities to reduce bin numbers or collection frequencies.

Commercial tenants should be inducted on on-site waste management practices and on the development's sustainability action plan via the provision of a handbook or in-person training, as deemed necessary. Commercial tenancies should be encouraged to minimise single use packaging and promote re-use by providing opportunities to consumers to utilise their own reusable containers or bags.

8 WASTE AREA DESIGN REQUIREMENTS

8.1 VENTILATION

Ventilation would be provided in accordance with Australian Standard AS1668.

The waste enclosures will be equipped with tight fitting doors and impervious flooring. Any openings within the waste enclosures will be fitted with vermin-proof mesh.

8.2 LITTER MANAGEMENT, WASHING AND STORMWATER POLLUTION PREVENTION

An appropriately drained wash down area would be provided within the bin enclosure in which each bin is to be washed regularly by building management. Bin washing areas or bin wash bays must discharge to a litter trap. Bin wash areas should not discharge into stormwater drainage.

Alternatively, a third-party bin washing service can be engaged to perform this service. Bin washing suppliers must retain all waste water to within their washing apparatus so as to not impact on the drainage provisions of the site.

Building management and cleaners would be responsible in ensuring the following to prevent or minimise the dispersion of litter throughout the site:

- Prevent overfilling of bins by ensuring bin lids are closed at all times;
- Require waste contractor to remove any spillage that may occur during waste collections; and
- Ensure anyone found responsible for inappropriate waste disposal or dumping would be appropriately educated and made aware of correct waste disposal techniques.

8.3 NOISE REDUCTION

All waste areas would meet EPA, BCA and AS2107 acoustic requirements as appropriate within operational hours assigned to minimise acoustic impact on surrounding premises.

Waste collection timings in accordance with the subject site's Decision Notice have been stipulated in the waste collection section above.

Waste contractors should also abide by the following regulations to ensure minimal noise impacts to the neighboring properties:

- Compaction only to be carried while on the move;
- Bottles should not be broken up at the point of collection
- Routes that service entirely residential areas should be altered to reduce early morning disturbances; and
- Noisy verbal communication between operators should be avoided where possible.

8.4 DDA COMPLIANCE

All waste areas to be accessed by commercial staff would comply with AS1428.1:2009.

9 RISK AND HAZARD ANALYSIS

Table 12 shows the potential risks, severity and suggested control methods that could be considered to avoid the risks from occurring during waste collections.

Note that this is a preliminary risk assessment and does not replace the need for the building management and collection contractors to complete their respective OHS assessment for waste collections.

The information provided below have been adopted from WorkSafe Victoria *Non-Hazardous Waste and Recyclable Materials* (2003). The severity of each risk has been determined based on the risk rating table enclosed in Department of the Environment *Environmental Management Plan Guidelines* 2014.

Table 12 Potential Risks and Control Methods During Waste Collections

Area	Risk	Severity	Suggested controls
Waste collection	Incidents during waste collection vehicle ingress or egress movements	Low	Vehicle operators would be trained in ensuring the following Tailgate is closed after clearing waste area Move vehicle slowly when tailgate or body is raised Clear waste from tailgate seal and from rear of machine before departure from the subject site Ensure tailgate is locked after unloading operation Vehicle operators should not exit the vehicle body unless engine is switched off, ignition key is removed, safety prop is in position and the vehicle body is well ventilated. Regular safety checks and inspection of vehicles should be conducted.
	Incidents during manual handling of bins	High	Vehicle should meet relevant Australian Design Rules. Ensure that vehicles with low bowl height are used to avoid lifting of bins above shoulder height. Vehicle operator should be clear of the equipment before activation of packing or tipping controls.
	Slip and trip hazards in moving into and out of the vehicle	Medium	Maintain sufficient and frequent communication between driver and runner. The hose should not be used as handholds when mounting or dismounting.
	Slips and trips while transporting bins	Low	As the loading areas are at the same grade with that of the waste storage areas, there are no hazards presented from the presence of slopes or steps. The car parking and waste storage area would also be well lit at all times to ensure good visibility to staff/vehicle operators. However, to ensure that any other potential risks are mitigated, frequent communication should be maintained between the driver and runner and the runner should only transfer one bin at a time.
Surrounding traffic	Conflict with other vehicle operators within the car park during collection	Medium	Ensure that collection is to occur only at off-peak hours. The collection area should also be well-lit to allow for better visibility of oncoming traffic and pedestrians.
Pedestrians	Conflict with pedestrians and staff moving in the vicinity of the collection zones.	High	Path of travel access for the waste collection vehicles requires reversing across a pedestrian zebra crossing. The safety aspects of this should be investigated.
Waste bins	Type of wastes handled – risk associated in contact with unknown hazardous substances or sharp objects	Medium	Commercial tenants should be educated on safe disposal of hazardous substances and sharp objects. Waste vehicle operators should be trained and informed on safe handling of unknown substances. Operators could be provided with PPE to avoid infections and to assist in handling of waste bins.
Waste Bins	Overflowing bins affecting the transport of bins to the waste collection vehicle or presenting as a trip hazard.	Low	The recommended number of bins enclosed in this WMP provides larger capacities than the volumes generated for all waste streams hence there would be a low likelihood of this occurring.

10 SUPPLIER CONTACT INFORMATION

Table 13 provides a list of equipment specified by this waste management plan.

Below is a complimentary listing of contractors and equipment suppliers. You are not obligated to procure goods/services from these companies. This is not, nor is it intended to be, a complete list of available suppliers.

SALT does not warrant (or make representations for) the goods/services provided by these suppliers.

Table 13 High Level Purchasing Schedule

Item	Quantity	Supplier	Notes
1,100L Bins	12	Private Supplier*	3 x 1,100L garbage bins for LFRs 1 to 3 2 x 1,100L garbage bins for LFRs 4 and 5 4 x 1,100L garbage bins for Anaconda 1 x 1,100L commingled recycling bin for LFRs 1 to 3 1 x 1,100L commingled recycling bin for LFR 4 and 5 1 x 1,100L commingled recycling bin for Anaconda
Bin Station	As required	Private Supplier	Internal and external bin stations. Each bin station will contain one bin per waste stream.
*Private waste collection contractors often supply their own bins for collection.			

10.1 EQUIPMENT SUPPLIERS

10.1.1 BIN SUPPLIER

- Sulo MGB Australia (wheelie bin) – 1300 364 388
- Method Recycling (bin stations) – 0477 630 220 / 0412 001 686
- Source Separation System (wheelie bin and bin stations) – 1300 739 913

10.2 WASTE COLLECTORS

10.2.1 GARBAGE AND RECYCLING

- Cleanaway – 13 13 39
- JJ Richards – 07 4124 9695
- SUEZ Environment – 13 13 35
- VISY Waste Management – 13 84 79

10.3 BIN WASHING SERVICES

- BinCare Australia – 07 3458 0446
- Jim's Bin Cleaning – 0407 101 883/131 546
- Wheelie Wheelie Clean – 0420 926 830

11 PURPOSE AND LIMITATIONS

This Waste Management Plan has been prepared to form a part of the development application. The report is prepared to:

- Demonstrate that an effective waste management system is compatible with the design of the development. An effective waste management system comprises of a system that is hygienic, clean, tidy, minimises waste being landfilled and maximises recycling and resource recovery;
- Ensure stakeholders are well informed of the design, roles and responsibilities required to implement the system;
- Provide supporting scaled drawings to confirm that the final design and construction is compliant with the report;

- Define the relevant stakeholders involved in ensuring the implementation of the waste management system; and
- Ensure tenants are not disadvantaged in access to recycling and other sustainable waste management options.

The following should be noted regarding the enclosed information:

- The waste generation volumes provided are estimates based on the best available waste generation rates. The actual waste volumes generated on-site may differ slightly from that estimated as it would depend on the occupancy rate of the development;
- The report does not discuss management of construction and demolition waste for the proposed development hence a separate report discussing the management of these waste streams would be required; and
- The equipment specifications and any information provided regarding the recommended equipment are provided for reference purposes only and should not be relied upon for procurement. SALT recommends that the developer attains the latest specifications of the required equipment and service provisions from the respective contractor(s) prior to engaging them or purchasing the relevant equipment.
- The report should be updated if the development plans are amended or if new legal requirements are introduced.

APPENDIX 1 DESIGN DRAWINGS

Green Building Council Australia Member

Member Australian Institute of Architects

ISSUE	AMENDMENT	DATE	CHK'D
A	TOWN PLANNING ISSUE	18.11.22	SJE
P1	RED LINE OVERLAY	21.12.22	SJE
P2	LANDSCAPE AMENDMENT	17.01.23	SJE
P3	SERVICE STATION FOOTPRINT AMENDED	20.01.23	SJE
P4	INCREASED LANDSCAPE	22.02.23	SJE
P5	ANACONDA MOVED	12.04.23	SJE
B	UPDATED TP ISSUE	20.06.23	SJE
P6	FOR INFORMATION	20.12.23	SJE
C	TOWN PLANNING ISSUE	05.02.24	SJE

EXISTING MERCY HEALTH AGED CARE VILLAGE

EXISTING SPOTLIGHT

EXISTING CAR PARKING

5806 62500 11500 20300 18200 37092 17038 11500 89500 82009

2805 ACOUSTIC WALL

5500 ACOUSTIC WALL

CANOPY ABOVE

5500 2.8m HIGH ACOUSTIC WALL

CANOPY ABOVE

BOUNDRY

BOUNDRY

LFR 1 1750m² RL 18.700

62200 27650 BOH AMENITIES

LOADING

EASEMENT

WASTE AREA

LFR2 488m² RL 18.750

AMENITIES BOH 20062 24474

LFR 3 590m² RL 18.750

AMENITIES BOH 18024

LFR 4 1110m² RL 18.750

AMENITIES BOH 36916 18354

LFR 5 407m² RL 18.750

AMENITIES BOH 16800

9614 11500 LOADING WASTE AREA

ANACONDA 2,500m² RL 18.850

AMENITIES BOH 89054

VEHICLE OVERHANG WHEEL STOP / KERB

6900 5400 2600

6 x CYCLE PARKING

6 x CYCLE PARKING

6 x CYCLE PARKING

VEHICLE OVERHANG WHEEL STOP / KERB

YAAMBA RD

REFER TO SLIP LANE PATH PLAN

28000 20698 2.8m HIGH ACOUSTIC WALL EASEMENT

ENTRY EXIT

SUBSTATION KIOSK

KIOSK MSB

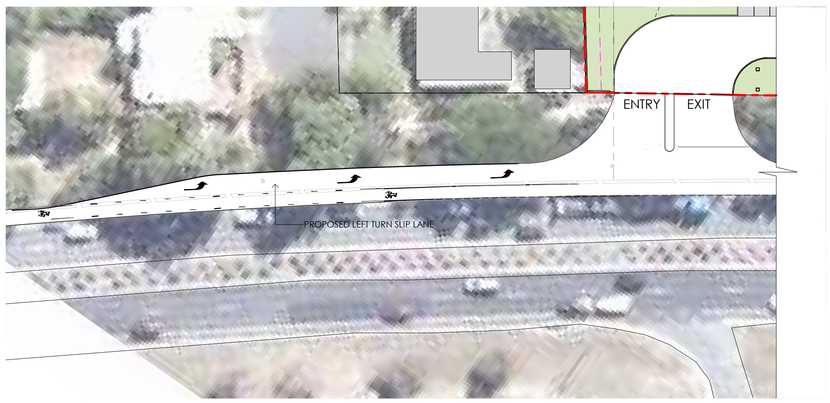
FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

BOUNDRY

OVERALL CENTRE PYLON SIGN A

MOORES CREEK RD



2 **SLIP LANE PATH PLAN**

LEGEND

- PROPERTY BOUNDARIES
- EASEMENTS
- LANDSCAPING
- CARSPACES

AREA SUMMARY

LFR 1	1750m²
LFR 2	488m²
LFR 3	590m²
LFR 4	1,110m²
LFR 5	407m²
ANACONDA	2,500m²
TOTAL NEW BUILD AREA GFA	**6,845m²**

CAR PARKING SUMMARY

CAR SPACES	240
DISABLED SPACES	6
TOTAL CAR SPACES	**246**
PARKING RATIO	3.6 PER 100 SQM

SITE PLAN

LEFFLER SIMES PTY LTD
ABN 39 001 043 992
SYDNEY 7 YOUNG ST, NEUTRAL BAY, NSW 2089 T:+61 2 99093344
MELBOURNE LEVEL 2 - 370 LT BOURKE ST, VIC 3000 T:+61 3 96546344
WEB: www.lefflersimes.com.au BRISBANE L5 U39 131 LEICHHARDT ST, SPRING HILL, QLD 4000 T:+61 7 31235544

SCALE 1:500 @ A1

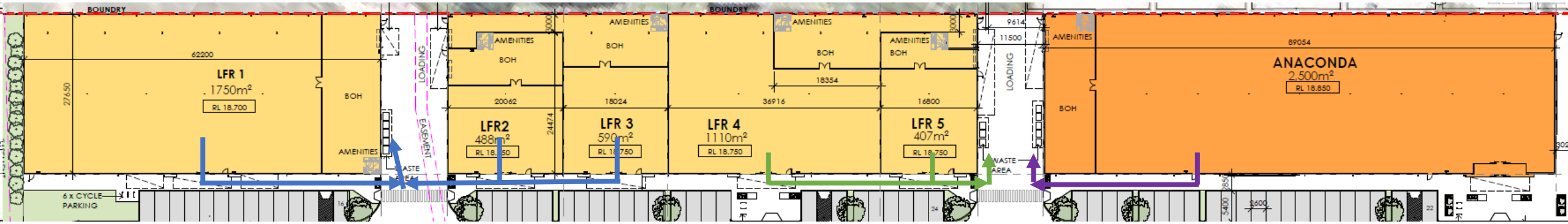
PROPOSED DEVELOPMENT
MOORES CREEK RD, ROCKHAMPTON, QLD

JOB NO: 5150 DATE: SEP 22 DRAWN: AQA

DWG NO. DA020 REV. C

LEFFLER SIMES ARCHITECTS

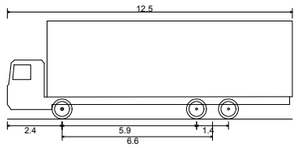
APPENDIX 2 WASTE TRANSFER PATH


BOUNDRY
62200
27650
LFR 1
1750m²
RL 18.700
BOH
AMENITIES
LOADING
EASEMENT
WASTE AREA
6 x CYCLE PARKING
AMENITIES
BOH
20062
2000
2474
LFR2
488m²
RL 18.750
18024
LFR 3
590m²
RL 18.750
36916
18354
LFR 4
1110m²
RL 18.750
16800
LFR 5
407m²
RL 18.750
9614
11500
89054
ANACONDA
2,500m²
RL 18.850
5400
3600

APPENDIX 3 SWEPT PATH ANALYSIS (PREPARED BY OTHERS)

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



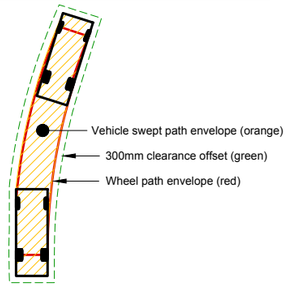
LRV - Large Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

CANOPY ABOVE

BOUNDRY

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LOADING

EASEMENT

WASTE AREA

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

EXCLUSIVE

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

REFER TO SLIP LANE PATH PLAN

MOORES CREEK RD

FILE NAME: C:\Users\robert.barger\OneDrive\02. Job Data\01. TTPlus\10000\10861-10700\10653 - Moores Creek Road, Rockhampton\Cad\10653-SWEPT PATHS.dwg

CREATED: 8 February 2024 JOB SUB #:

REV	DESCRIPTION	DATE	BY
F	Updated site layout plan and layout review	15-06-2023	JHV
G	Updated site layout plan and layout review	21-06-2023	JHV
H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Swept Paths - LRV

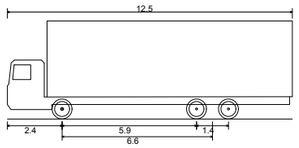
TRAFFIC TRANSPORT plus
Ph: +61 7 3871 0411
www.TTPLUS.com.au

SCALE: 1:600 When Printed On A3 — 0 12m
DRAWN: JHV
CHECKED: BT
COORDINATE SYSTEM: GDA94 / AHD / MGA56

DRAWING NUMBER: FIGURE 5
REVISION: H
JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



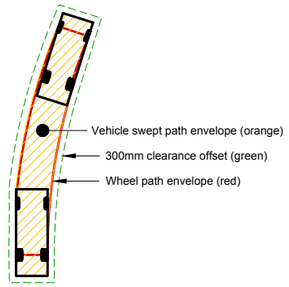
LRV - Large Rigid Vehicle

Overall Length	12.500m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

BOUNDRY

CANOPY ABOVE

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LOADING

EASEMENT

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

WASTE AREA

16 CAR SPACES

24

06

07

09

28

12

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

OVERAL PYLON S

MOORES CREEK RD

REFER TO SLIP LANE PATH PLAN

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CREATED: 8 February 2024 JOB SUB #:

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F	Updated site layout plan and layout review	15-06-2023	JHV
G	Updated site layout plan and layout review	21-06-2023	JHV
H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Swept Paths - LRV

TRAFFIC TRANSPORT plus
Ph: +61 7 3871 0411
www.TTPLUS.com.au

SCALE: 1:600 When Printed On A3 — 0 — 12m

DRAWN: JHV | COORDINATE SYSTEM: GDA94 / AHD / MGA56

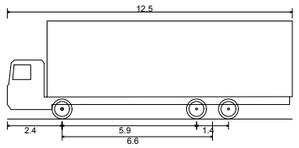
CHECKED: BT

DRAWING NUMBER: FIGURE 4 | REVISION: H

JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



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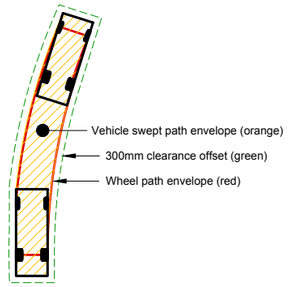
Overall Body Height	4.300m
Min Body Ground Clearance	0.417m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

CANOPY ABOVE

BOUNDRY

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

WASTE AREA

LOADING

6 x CYCLE PARKING

REFER TO SLIP LANE PATH PLAN

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

OVERAL PYLON S

MOORES CREEK RD

FILE NAME: C:\Users\robert.barger\OneDrive\02. Job Data\01. TTPlus\10000\10651-10700\10653 - Moores Creek Road, Rockhampton\Cad\10653-SWEPT PATHS.dwg

CREATED: 8 February 2024 JOB SUB #:

REV	DESCRIPTION	DATE	BY
H	ORIGINAL ISSUE	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Swept Paths - LRV

TRAFFIC TRANSPORT plus
Ph: +61 7 3871 0411
www.TTPLUS.com.au

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DRAWN: JHV | COORDINATE SYSTEM: GDA94 / AHD / MGA56

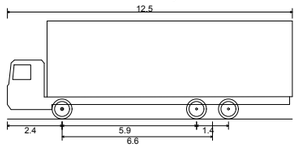
CHECKED: BT

DRAWING NUMBER: FIGURE 7 | REVISION: H

JOB CODE: 10653

VEHICLE TURNING SUMMARY

Vehicle Used for Analysis:



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Min Body Ground Clearance	0.417m
Track Width	2.500m
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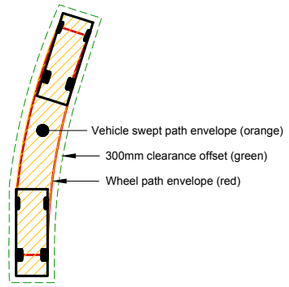
Curb to Curb Turning Radius	12.500m

NOTE:

- Software used for swept path analysis is Autodesk Vehicle Tracking 2022
- 300mm clearance adopted

TURNING PATH DIAGRAM



EXISTING MERCY HEALTH AGED CARE VILLAGE

CANOPY ABOVE

BOUNDRY

LFR 1
1750m2
RL 18.700

BOH

AMENITIES

LOADING

EASEMENT

LFR2
488m2
RL 18.750

LFR 3
590m2
RL 18.750

LFR 4
1110m2
RL 18.750

LFR 5
407m2
RL 18.750

WASTE AREA

6 x CYCLE PARKING

REFER TO SLIP LANE PATH PLAN

ENTRY

EXIT

SUBSTATION KIOSK

KIOSK MSB

FIRE BOOSTER

OVERALL CENTRE PYLON SIGN A

SERVICE STATION PYLON SIGN B

MOORES CREEK RD

FILE NAME: C:\Users\robert.bargiel\OneDrive\02. Job Data\01. TTPlus\10000\10661-10700\10653 - Moores Creek Road, Rockhampton\Cad\10653-SWEPT PATHS.dwg

CREATED: 6 February 2024 JOB SUB #:

REV	DESCRIPTION	DATE	BY
F	Updated site layout plan and layout review	15-06-2023	JHV
G	Updated site layout plan and layout review	21-06-2023	JHV
H	Updated site layout plan and layout review	5-02-2024	BD

Data Sources:
Photography:
Topography:
Cadastre:
Ecosystem:
LiDAR:

PROJECT: Proposed Development
Moores Creek Road, Rockhampton

CLIENT: SPG Developments Pty Ltd

TITLE: Swept Paths - LRV

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337-341 YAAMBA ROAD, PARK AVENUE

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

These plans are approved subject to the current conditions of approval associated with

Development Permit No.: D/155-2022

Dated: 27 May 2024

Material Change of Use
Noise Impact Assessment

Prepared for:

SPG Developments (Manager) Pty Ltd, C/O Blueprint
1A, 100 Market Street
South Melbourne VIC 3025

SLR Ref: 620.31183.00000-R01
Version No: -v4.0
February 2024

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BASIS OF REPORT

This report has been prepared by SLR Consulting Australia Pty Ltd (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with SPG Developments (Manager) Pty Ltd, C/O Blueprint (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

DOCUMENT CONTROL

Reference	Date	Prepared	Checked	Authorised
620.31183.00000-R01-v4.0	6 February 2024	Daniel Lee	Timothy Trewin	Timothy Trewin

CONTENTS

DOCUMENT REFERENCES

TABLES

FIGURES

APPENDICES

CONTENTS

1 Introduction

SLR Consulting Australia Pty Ltd (SLR) has been commissioned by SPG Developments Pty Ltd (SPG) to undertake a noise impact assessment to support a Development Application (DA) located at 337-341 Yaamba Road, Park Avenue (the Project). The purpose of the assessment is to demonstrate the viability of the Project from an environmental noise perspective by assessing predicted noise intrusion levels at the closest noise sensitive receptors external to the project against the applicable noise criterion contained within the Environmental Protection (Noise) Policy 2019.

A glossary of terms utilised throughout this report is presented in **Appendix A**.

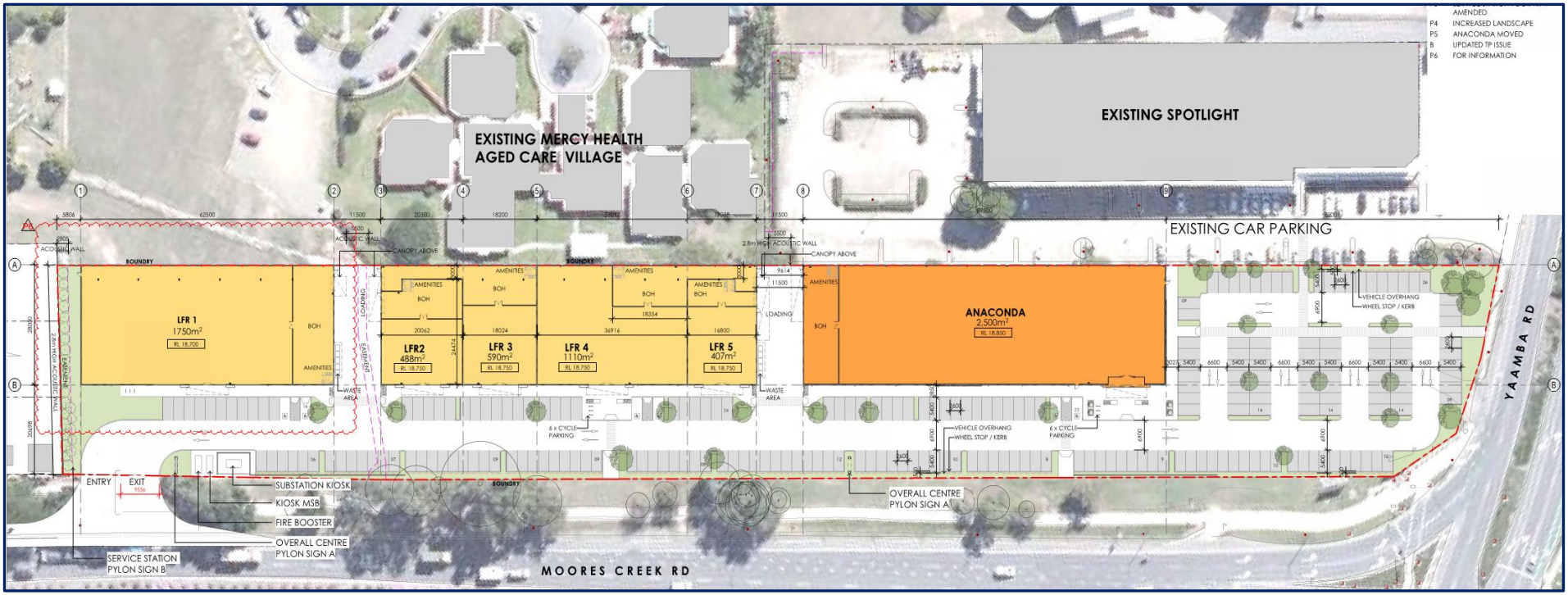
2 Project Description and Site Location

The proposed development will be situated within a specialised centre area on lot 24 on SP191047, 337-341 Yaamba Road, Park Avenue. The site is located on the corner of Moores Creek Road and Yaamba Road, with an existing retail business (Spotlight) and outdoor carpark bounded to the northeast project boundary. The development proposed to comprise of the following:

- Five (5) Large Format Retail (LFR) tenancies anchored by Anaconda (2,500 m^2), a retail company specialising in outdoor and camping supplies. Currently no specific businesses have been proposed for the remaining four (4) LFRs. It is anticipated that the market demand for business land uses will determine what will occupy the remain LFRs but is likely end-uses will be that of retail/showrooms. As such, SLR has conservatively assumed operational use of the LFR areas to be 7:00 am to 10:00 pm, seven (7) days a week.
- A new open space carpark, with a total of 258 car spaces. The carpark will be accessible through a new access point to the southwest off Moores Creek Road.

A layout of the proposed development has been shown in **Figure 1** below.

Figure 1 Proposed Site Plan



3 Noise Sensitive Receptors

The nearest Noise Sensitive Receptors (NSR) have been identified as the residential dwellings directly surrounding the development, located along Kerr Street and Pearce Street. Compliance achieved at these receptors is expected to result in compliance at surrounding NSRs located further away from the project.

The nearest NSRs adjacent the proposed development are listed below:

- NSR 1: 24 to 26 Kerr Street (SW)–*Low Density Residential*. Two storey residential dwellings neighbouring the proposed development to the southwest.
- NSR2: 22 Kerr Street (SW)– L*ow Density Residential.* Single storey residential dwelling neighbouring the proposed development to the southwest.
- NSR3: 3 Pearce Street (W)– *Low Density Residential*. Land parcel is currently unoccupied. SLR has considered noise impacts to the area as land is likely to be used for future aged care dwellings. Future dwellings are presumed to be of single storey construction, consistent with the other aged care dwellings of 3 Pearce Steet.
- NSR4: 3 Pearce Street (E)– L*ow Density Residential.* Single storey aged-care dwellings neighbouring the proposed development to the north.

The site location, noise monitoring location and nearest residential receptors are in **Figure 2.**

Figure 2 Site Location, Noise Monitoring and Nearest Sensitive Receptors (Source: Nearmaps 2022)

Aerial imagery sourced from Nearmap.

4 Existing Acoustic Environment

Unattended noise monitoring (i.e. noise logging) was undertaken between Thursday 13 October and Wednesday 19 October 2022. The objective of the noise monitoring was to quantify the existing noise levels in the area surrounding the subject site and to assist in determining appropriate noise criterion applicable for assessment. The location of monitoring is shown in **Figure 2** which is considered representative of the ambient environment at the worst affected receptors near the development.

Monitoring was undertaken using an SVAN 977 Noise Logger, configured to record a range of A-weighted Fast-response statistical noise parameters including the L_{Amax}, L_{A10}, L_{A90}, L_{Aeq} and L_{Amin} noise levels over consecutive 15 minute periods. A field calibration of the instrument was performed before and after the monitoring, using a GRAS 42AG Sound Level Calibrator. The instrument showed a drift less than ±1dB during the course of monitoring; therefore, measurements are considered valid according to AS1055:2018 - *Acoustics - Description and measurement of environmental noise*.

The noise monitor was located in the free-field with a microphone height of 1.5 m above the existing ground level. A summary of the ambient noise levels is presented in **Table 1**. Noise monitoring data was cross referenced with rainfall and windspeed records obtained from the nearest Bureau of Meteorology (BoM) weather station at Rockhampton Airport for each 15-minute interval. Intervals which recorded rainfall greater than 0.2 mm and wind speed readings greater than 5 m/s at 1.5 m above ground level were excluded from the noise monitoring dataset. Further, noise logging information and daily noise logging graphs including weather observations are contained in **Appendix B**.

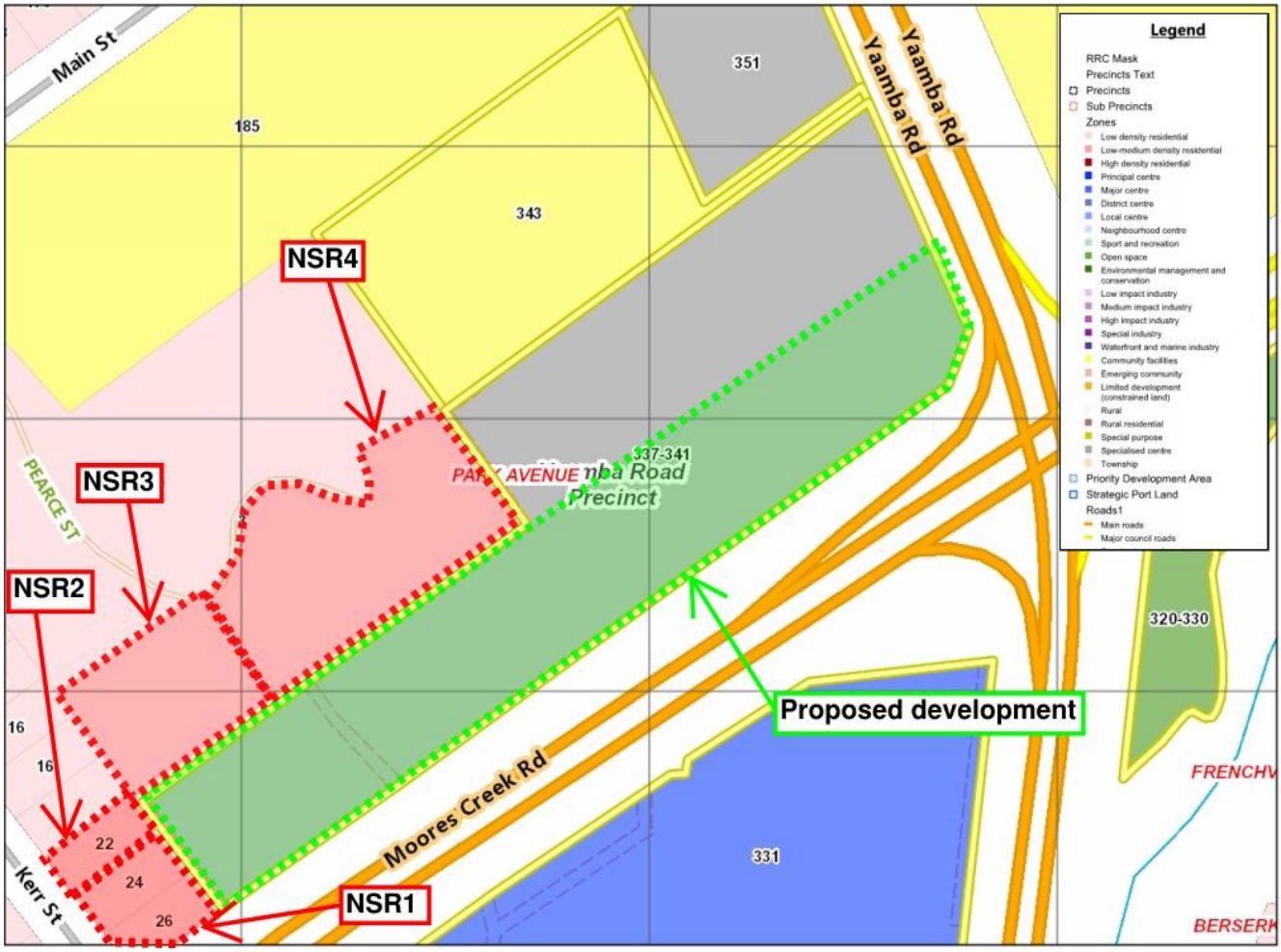
Table 1 Summary of Measured 15-minute Ambient Noise Levels, 13th October to 19th October 2022

Parameter	Period	Noise Level (dBA)
L_{A1}	Average Daytime (7 am-6 pm)	65
	Average Evening (6 pm-10 pm)	65
	Average Night (10 pm-7 am)	60
L_{Aeq}	Log Average Daytime (7 am-6 pm)	58
	Log Average Evening (6 pm-10 pm)	60
	Log Average Night (10 pm-7 am)	53
LAmax	Max Daytime (7 am-6 pm)	74
	Max Evening (6 pm-10 pm)	72
	Max Night (10 pm-7 am)	66
LA90	Average Daytime (7 am-6 pm)	50
	Average Evening (6 pm-10 pm)	51
	Average Night (10 pm-7 am)	42
LA10	Average Daytime (7 am-6 pm)	58
	Average Evening (6 pm-10 pm)	60
	Average Night (10 pm-7 am)	53

5 Noise Assessment Criteria

Under the current Rockhampton Regional Council (RRC) City Plan (Version 2.2, 2015/8), the sensitive receptors surrounding the development at 337 to 341 Yaamba Road are identified as located within a Low Density Residential zone, as shown in **Figure 3** (extracted from Rockhampton Planning Scheme Plan). The proposed development will also be located within a Specialised Centre Zone.

Figure 3 Extract from RRC City Plan



Criteria for assessment for commercial (retail activity) within specialised centre zone is defined in the RRC Tables of assessment - Centre zones category – Table 5.4.6.3 Specialised centre zone – Yaamba Road precinct. Relevant parts of this table for the Project has been reproduced in **Table 2**.

Table 2 RRC City Plan Assessment Benchmark for the Development

Use	Assessment benchmark for assessable development and requirements for accepted development
Food and drink outlet	Specialised centre zone code The planning scheme
Shop	
Shopping centre	

A noise criterion for the above uses is not specified within the Specialised centre zone code. Therefore, SLR has referred to the noise impact assessment requirements listed in *Schedule 6 Planning scheme policies, section SC6.3.2.2* which nominates the Acoustic Quality Objectives (AQO) of the Queensland Environmental Protection (Noise) Policy (EPP Noise). The AQO objectives have been summarised in **Table 3**.

Table 3 EPP Noise 2019- Acoustic Quality Objectives

Sensitive receptor	Time of day	Acoustic quality objectives (measured at the receptor) dB(A)			Environmental value
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$	
Dwelling (for outdoors)	daytime and evening	50	55	65	health and wellbeing
Dwelling (for indoors)	daytime and evening	35	40	45	health and wellbeing
	night-time	30	35	40	health and wellbeing, in relation to the ability to sleep

The external AQO has been adopted during the day and evening period, whilst the internal criteria have been adopted for the night-time period.

The internal noise targets have been adjusted by a correction to allow for the direct assessment of external free field noise predictions in the vicinity of dwellings, which accounts for the reduction of noise achieved by the building (with windows open). For this assessment, a 7 dBA façade noise reduction has been applied in line with the DES guideline titled '*Noise and Vibration EIS Information Guideline*', which states:

> *When assessing outdoor to indoor noise attenuation at sensitive receptors … use an outdoor to indoor attenuation value of 7dB, which is appropriate for typical Queensland buildings with open windows.*

Based on the above adopted targets and corrections, the residential criteria applicable to the Project is shown in **Table 4**.

Table 4 External Noise Criteria for the Project – Residential receptors

Receptors	Day and evening (7:00 am – 10:00 pm)	Night (10:00 pm – 7:00 am)
Dwellings (for outdoors)	50 dBA $L_{Aeq,adj,1hr}$	37 dBA $L_{Aeq,adj,1hr}$
	55 dBA $L_{A10,adj,1hr}$	42 dBA $L_{A10,adj,1hr}$
	65 dBA $L_{A1,adj,1hr}$	47 dBA $L_{A1,adj,1hr}$

It should be noted that the acoustic environment (as shown by L_{Aeq} and L_{A1} data) recorded during the noise monitoring period indicates that the ambient noise environment is already in excess of the EPP Noise AQO (refer **Section 5**). The AQO L_{Aeq} criterion was in excess by 8 dBA, 10 dBA and 16 dBA during the day, evening and night- time periods respectively. Similarly, the AQO L_{A1} criterion was exceeded by 13 dBA during the night-time period.

6 Noise Assessment Methodology

To assess the operational noise impacts from the proposed development, a SoundPLAN (v8.1) computer noise model was developed to predict airborne noise levels at the identified sensitive receptor.

SoundPLAN is a software package that enables the compilation of a sophisticated 3D computer model comprising a digitised ground map (containing ground contours), the location of critical noise sources and the definition of their noise emission (ie sound power level), ground cover, shielding by barriers and/or intervening buildings, atmospheric information and the location of sensitive receptors for assessment purposes.

The model considers the effects from the spectral composition of the sound source, distance attenuation, ground topography, ground absorption, air absorption, building/barrier screening and sound reflection effects and meteorological conditions. The noise propagation algorithm described in ISO 9613-2:1996 *Acoustics — Attenuation of sound during propagation outdoors — Part 2: General method of calculation* as implemented within SoundPLAN was selected for calculation.

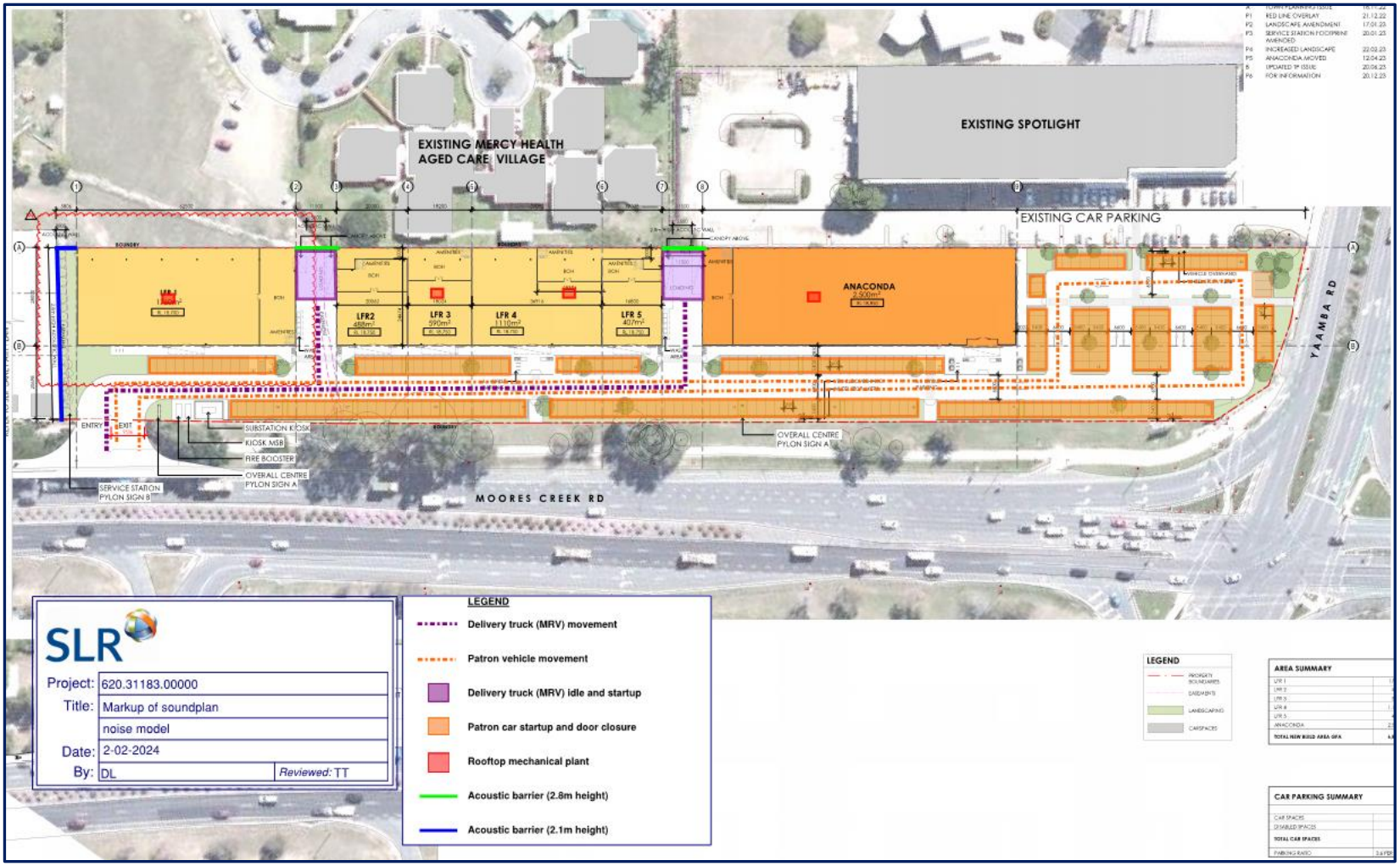
The noise modelling details are discussed in the follow sections.

6.1 Noise Source Emissions

Operational activities have been broken up into day and evening time (occurring between 7:00 am and 10:00 pm) and night-time activities (occurring between 10:00 pm and 7:00 am) for the purpose of this assessment. A noise model has been produced to predict the noise emissions during a 'worst-case' 1 hour event within these time periods.

Sound power levels (SWLs) were obtained from SLR's in-house measurement database. Noise source events and locations were based off Leffler Simes Architects *Preliminary Sketch Plan drawing no. SK008 Rev P2,* dated 27 September 2022. The noise sources and acoustic treatments as digitised in the computer model are shown in **Figure 4**.

Figure 4 Modelled Noise Sources and Acoustic Treatment



6.1.1 Time Varying Noise Emissions

Vehicle sound power levels from SLR's acoustic library were used to assess potential noise emissions from the on-site car parking facility. All vehicles are assumed to move at an average 10 km/h whilst in the development and follow movement paths described in **Figure 4.** Details of the noise sources digitised in the computer model are detailed in **Table 5** and expanded further in the sections below.

Table 5 Noise Source Emission Details

Noise Source	Source type	SWL, $L_{Aeq,Adj,T}$ dBA	SWL, L_{A1}, dBA	1/1 Oct band SWL, dB(Linear), rounded						
				63 Hz	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz
Patron vehicle movement	Moving point source at 10km/h 0.5m above the ground	77	82	83	75	74	74	70	69	68
Patron vehicle door closure	Point source 2 sec duration, 1m above the ground	83	88	60	72	79	73	82	74	70
Delivery truck (MRV)	Moving point source at 10km/h and 1.5m above the ground.	95	100	100	94	90	89	92	88	83
Delivery truck idle/start up (MRV))	Point source 10min duration, 1.5m above the ground.	97	102	97	95	93	92	93	90	86

Note 1: Conservatively, L_{Amax} values have been used for the L_{A01} sound powers. This is considered to yield a conservative result.

6.1.1.1 LFRs and SUs

The proposed development will include an on-site external car parking facility (258 spaces), with provision for 12.5 m length medium rigid vehicles (MRV) for delivery. In order to capture a worst-case scenario of noise emissions, the carpark has been assumed to reach 'peak capacity' during the day/evening periods (7am-10pm) of 200 vehicle movements over any one-hour period. At night (10pm-7am), the assumed peak hour usage of the car park will be up to 20 movements per hour. Vehicle movements were broken down in the acoustic model as follows:

- 200 patron vehicle movements per hour in the car parking area during peak hours in the day and evening, reducing to 20 movements per hour at night.
- 400 door closure events per hour during peak hours in the day and evening, reducing to 40 door closure events per peak hour at night (assuming 2 door closures per car movement).
- One (1) delivery truck (MRV) activity have been modelled at each of the designated loading bays to predict worst-case hours of operation during day and evening periods. Delivery truck (MRV) are predicted to stay idling at the loading bays for 10min during each event. Delivery truck (MRV) activity is not to occur during the night-time period.

6.1.2 Continuous Noise Sources - Mechanical Plant

Mechanical plant is anticipated to consist of commercial air conditioning external condenser units for buildings withing the development. At this stage, the noise emission of specific items of plant has not been defined; therefore, a preliminary calculation was conducted using the computer model to estimate the maximum Sound Power Level (Lw) for the abovementioned plant that is expected to meet the noise criterion at the closest sensitive receptors. For this purpose, one (1) point source to each building rooftop within the development was digitised in the computer model, as shown in **Figure 4** as an unscreened noise source.

Noise spectra of actual representative plant was used, which was adjusted iteratively until a noise criterion exceedance was found at the closest sensitive receptor, or a practical sound power level was reached. The resulting noise level was used to qualify the potential requirement for noise controls.

It has been further assumed that all the plant will run at capacity 24/7, which is a conservative assumption as plant capacity is reduced during the colder hours of the day.

7 Noise Assessment Results

7.1 Time Varying Noise Sources

Worst case scenario noise prediction results at the surrounding sensitive receptors were assessed against the criterion levels and the results are presented in **Table 6**. Modelling was conducted assuming the acoustic conditions detailed in **Section 6**.

Table 6 Modelled Noise Assessment Results

Predicted noise levels at Receptor	Day and Evening (7:00 am – 10:00 pm) 50 dBA $L_{Aeq,Adj,1hr}$ / 65 dBA $L_{A1,adj,1\ hr}$ Criterion		Night (10:00 pm – 7:00 am) 37 dBA $L_{Aeq,Adj,1hr}$ / 47 dBA $L_{A1,adj,1hr}$ Criterion	
	L_{Aeq} (dBA)	L_{A1} (dBA)	L_{Aeq} (dBA)	L_{A1} (dBA)
NSR 1: 24 to 26 Kerr Street	41	55	37	47
NSR 2: 22 Kerr Street	35	48	33	39
NSR 3: 3 Pearce Street (empty land parcel)	36	43	33	34
NSR 4: 3 Pearce Street	47	59	37	41

Note 1: For multi-storey NSRs, presented noise levels of the worst affected floor have been presented.

Based on the presented predictions, the noise emissions are expected to comply with the criteria as nominated in **Section 5**. Predictions assume incorporation of the noise control measures listed in **Section 8**.

7.2 Continuous Noise Sources - Mechanical Plant

In the absence of detailed mechanical plant information, one (1) point source to each building rooftop within the development was digitised in the computer model, as shown in **Figure 4** as an unscreened noise source.

Preliminary calculations have predicted a plant noise limiting value of 78 dBA per tenancy for the locations shown in **Figure 4** which assume plant is positioned away from the roofs edge. Where the noise emissions of the plant does not exceed the sound power level stated above no further mitigation measures are considered warranted. The noise emissions and locations of the actual plant proposed the development should be reviewed during the design stages to confirm compliance with the noise criterion presented in **Table 4**.

8 Noise Control Recommendations

Based on the findings of the noise assessment, the following measures are required in order to meet the noise criterion levels detailed in **Section 5**.

Time varying noise sources:

- A 10 km/h speed limit is set for vehicle movements.
- To minimise tyre squeal from on-site vehicle movements the trafficable surfaces are to be of a 'low-squeal' compound. Asphalt, plain concrete or textured surfaces are expected to satisfy this requirement. Polished concrete or high-gloss painted surfaces are not.
- Metal grates and man hole covers be well fixed to avoid rattling.
- Signage should be installed to assist with management of the following operational factors:
  - Delivery truck movement paths are to prevent excessive reversing activities (which typically involve beepers and air brakes). For noise sources that require regular reversing activities, signage is to indicate audible reversing sensors must be disabled whilst on site.
  - Excessive idling of vehicles be avoided. Signage to this effect should be installed.
- Operating hours of LFRs and Anaconda are limited to 7am-10pm. Additional acoustic assessment is required should these operating hours be extended in the future.
- Delivery truck (MRV) for LFRs and Anaconda are not to occur during the night period (10pm to 7am)
- A 2.8 m and 2.1 m acoustic barrier along the northern and southwest project boundary as specified in **Figure 5** forms the basis of this assessment; therefore, it **must** be constructed on the specified site boundaries for the development. Barrier height to be measured from the finished ground level of the development. It is required that the acoustic barrier be impervious from the ground to the recommended height and contain no gaps that would allow the passage of sound, with the exception of mandatory requirements to accommodate overland flow as discussed below. Minimum surface density for the core barrier is to be 12.5 kg/m^2. Suitable materials include, but are not limited to, 25 mm lapped and capped pine palings, 9 mm fibrous cement sheeting, or 75 mm thick Hebel.
- On this project it is understood a 6 to 8m wide portion of the noise barrier will need to be provided with a 150mm to 200mm high open slot at the base to accommodate overland flow in a flood event. This is able to be accommodated provided the following considerations are taken into account to ensure the barrier remains acoustically effective:
  - **Acoustic flap:** A flood flap (comprised of rubber material) could be installed to cover the flood gap. Flood flaps are to remain seated to the ground and that there are no gaps between the fence mounting point and adjacent rubber flaps. The flap should provide a continuous barrier in normal circumstances, i.e. it should only be open while water is flowing. An example of an acoustic barrier with flood flaps have been provided in **Figure 6.**
  - **Noise-reducing landscaping:** The concept behind noise-reducing landscaping is to create a physical barrier between the noise source and the receiver using natural elements. By strategically positioning vegetation, earth mounds, berms, or other landscaping features, it is possible to interrupt the path of sound waves and reduce their impact on the surrounding area.

Continuous noise sources:

- Rooftop mechanical plant is required to be located away from the roof edge as nominally shown in the locations marked in **Figure 4**.
- Rooftop mounted united are to be designed to achieve a sound power level of no greater than 78 dBA L_{Aeq} plant (combined) per building.
- Should the sound power of roof top mechanical plant units exceed 78 dBA**,** acoustic screens may be required to control noise emissions to offsite noise sensitive receptors. Any acoustic screen should extend no less than 600 mm above the highest plant to provide effective acoustic attenuation and be constructed of a solid material with a minimum surface density of 12.5 kg/m^2. Examples of such conforming material are metal cladding outside of 6mm fibrous cement sheeting, or 9mm compressed fibrous cement sheeting (both being supported by steel framing). To minimise acoustic reflections back from the screen, it is required that the inside face of the screen be fitted with an internal layer of 75mm thick glasswool/rockwool insulation protected by a perforated steel sheet.
- Any other individual non-rooftop HVAC (such as wall mounted A/C condenser) units within the development are not to exceed 66 dBA at 1 m.
- Where any of the above equipment is deemed to be tonal, a 5 dBA penalty would apply, and additional treatment may be required.
- Mechanical plant extraction systems are to be constructed such that the outlet is either shielded from the noise sensitive premises and/or is pointing in a direction at least 90 degrees away from the nearest residences.
- Acoustic design input will be required during the later detailed design phase such that mechanical plant noise is able to be controlled to acceptable levels at both on and off-site noise sensitive receptors. Upon commissioning of the building, it will be the mechanical contractor's responsibility to submit confirmation that noise emissions from the installed plant comply with the noise criteria listed in **Table 4** of this report.

Figure 5 Acoustic Fence Conditions

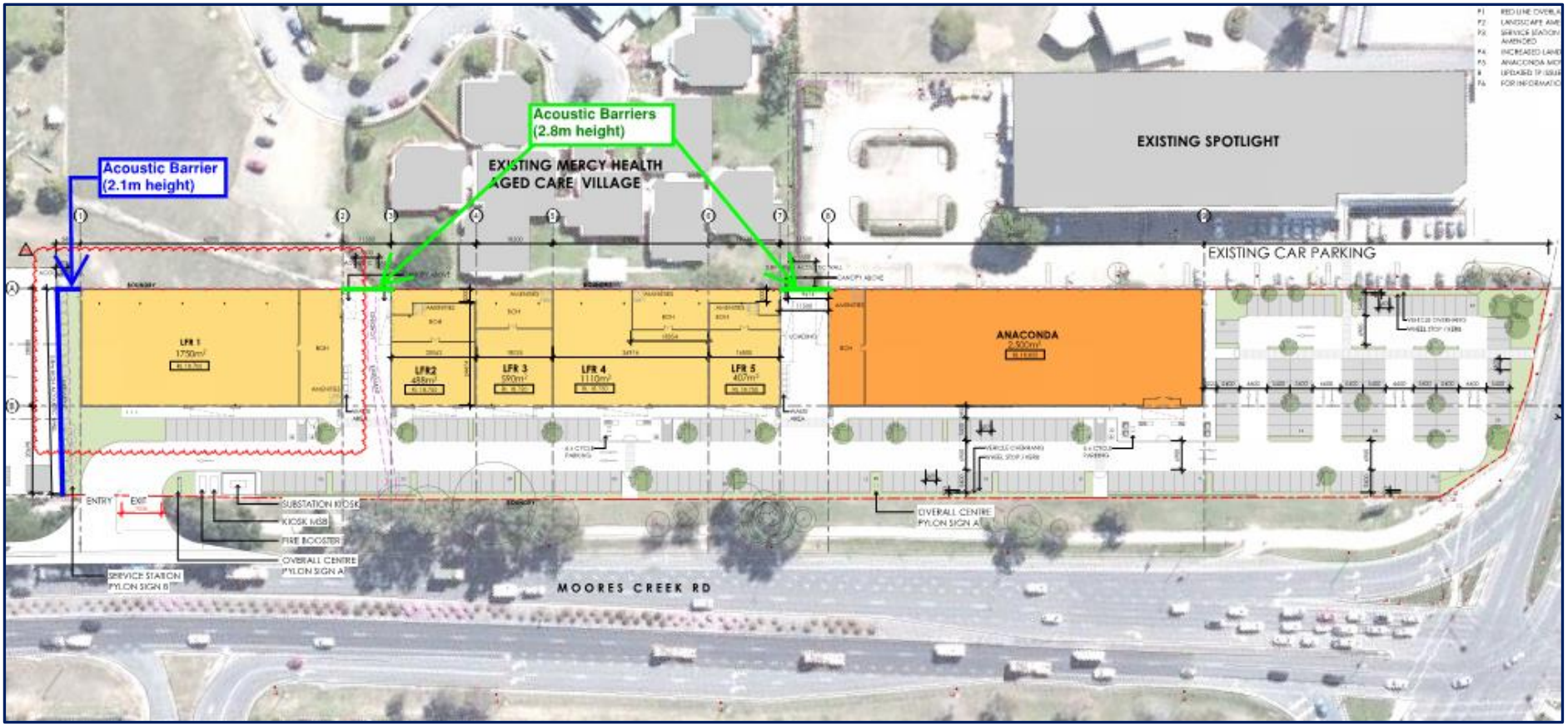
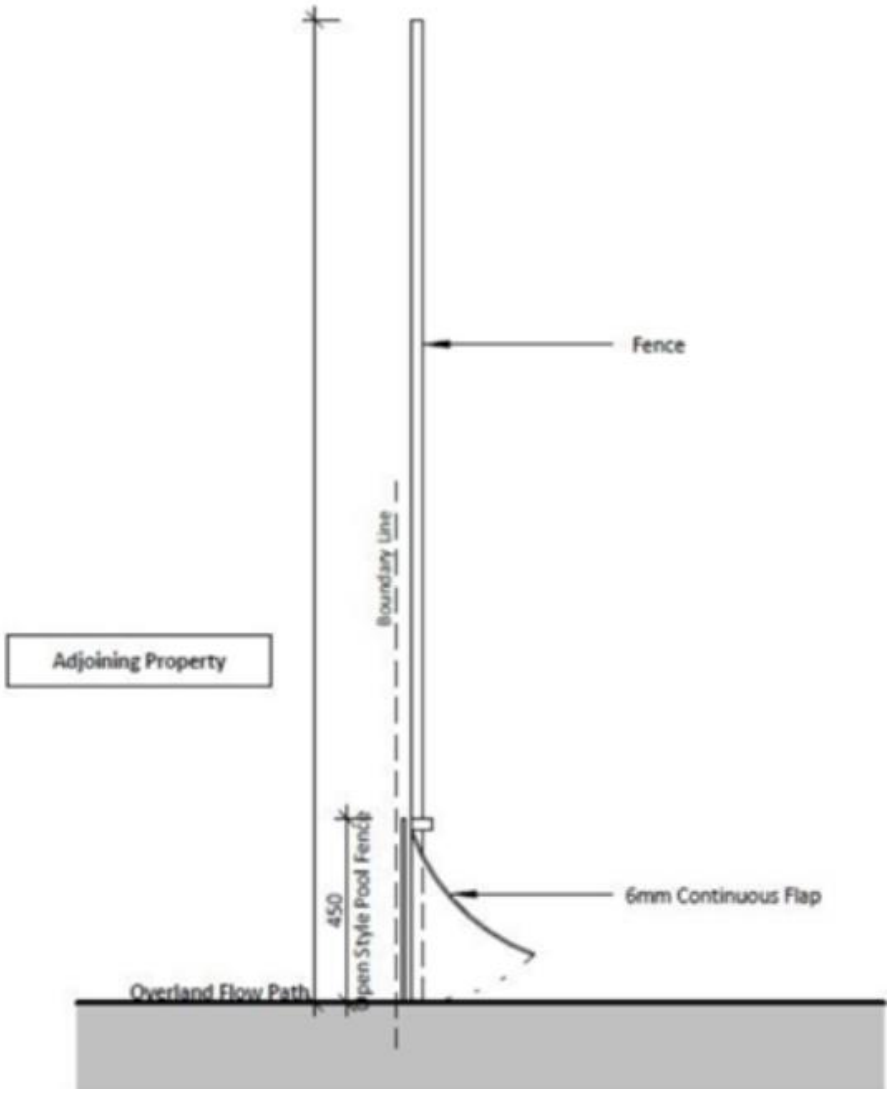


Figure 6 Example of Acoustic Barrier with Rubber Flap



9 Conclusion

An operational noise assessment has been conducted for the proposed retail tenancies development at 337-341 Yaamba Road, Park Avenue. Noise monitoring was conducted to determine the existing noise levels on site and a computer noise model was developed to predict airborne noise levels at the identified sensitive receptors.

The model inputs conservatively assumed worst case scenarios for day, evening and night-time noise emissions from the development and the predicted noise levels were assessed against relevant EPP Noise 2019 Acoustic Quality Objectives, as referred to by the Rockhampton City Plan.

Results of predictions showed levels of noise from operational activities at the closest external receptors are expected to be compliant with the criterion levels with implementation of the achievable operational noise control measures described in **Section 8**. Furthermore, an analysis of the results of the unattended noise monitoring showed that the external sensitive receptors to the project are exposed to significant levels of road traffic noise.

Similarly, noise predictions showed that the noise emission from external mechanical plant can be managed using reasonable and feasible mitigation measures, if required to meet the environmental noise criterion levels.

In summary, based on the outcomes of the noise assessment conducted, it is expected that the proposed development can be designed and operated in a manner that results in environmental noise emissions compliant with the Environmental Protection (Noise) Policy 2019, and therefore an acceptable acoustic outcome has been deemed to be achieved.

A glossary of terms utilised throughout this report is presented in **Appendix A**.

APPENDIX A

Glossary of Terms

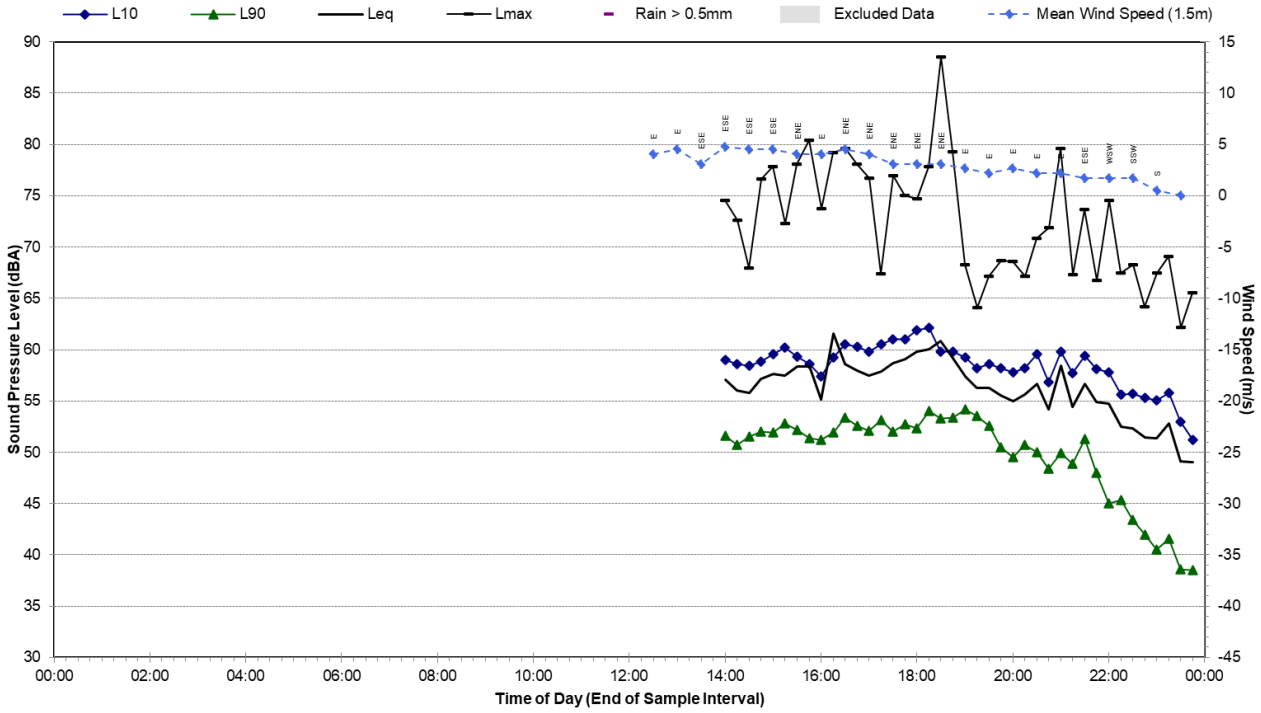
Term	Description
'A' weighted	A frequency adjustment which represents how humans hear sounds.
ABL	Assessment Background Level. The single-figure background level representing each assessment period (day, evening and night). Defined in the *Noise Policy for Industry*.
Ambient noise level	The all-encompassing sound associated with an environment or area.
Background creep	The incremental increase in background noise levels over time as new developments are built in an area.
Ctr	A frequency adaptation term applied in accordance with the procedures described in ISO 717, generally to account for increased significance of low-frequency noise transfer being assessed.
dB	Decibel
dBA	'A' weighted decibel
DW	The weighted level difference between two rooms, that is, the on-site sound insulation between two spaces.
Facade affected	A monitoring location which is influenced by facade reflections. Measurements at facades are typically taken at a distance of 1 m away and the measured noise level generally regarded as being +2.5 dB higher than 'free field'.
Free field	A monitoring location where the microphone is positioned sufficiently far from nearby surfaces for the measured data to not be influenced by reflected noise.
Hz	Hertz
Impulsive noise	Noise with a high peak of short duration, or sequence of peaks.
Intermittent noise	Noise which varies in level with the change in level being clearly audible
L_{90} , L_{10}, etc.	Statistical exceedance levels, where LN is the sound pressure level exceeded for N% of a given measurement period.
L_{AE} (or SEL)	Sound Exposure Level. This is the constant sound level that has the same amount of energy in one second as the original noise event.
LA_{eq}	The 'A' weighted equivalent noise level. It is defined as the steady sound level that contains the same amount of acoustical energy as the corresponding time-varying sound.
L_{Amax}	The A' weighted maximum sound pressure level of an event.
LnTw	The weighted, standardised impact sound pressure level of a floor/ceiling system. A lower LnTw value represents a better acoustic performance.
LnTw+Ci	The combined weighted, standard plus spectrum adaption term that describes the impact sound insulation performance of floor and ceiling systems. A lower LnTw value represents a better acoustic performance.
Term	Description
Low frequency	Noise containing energy in the low frequency range.
L_P or SPL	Sound Pressure Level
Lw or SWL	Sound Power Level
Noise logger	A self-contained, battery powered item of equipment that is used to measure noise levels over several days.
Noise reduction	The difference in sound pressure level between any two areas.
NR noise rating	Single number evaluation of the background noise level in a space. The NR level is typically around 5 to 6 dB below the 'A' weighted noise level.
Octave-band	A frequency band where the highest frequency is twice the lowest frequency.
Offensive noise	Noise that is considered harmful or which interferes unreasonably with affected receivers.
Over pressure	A term used to describe the air pressure pulse emitted during blasting or similar events.
PNTL	Project Noise Trigger Levels. Target noise levels for a particular noise generating development.
RBL	Rating Background Level. The overall single-figure background level representing each assessment period (day/evening/night) over the whole monitoring period. Defined in the *Noise Policy for Industry*.
Reverberation time (or RT or T-60)	The time taken (in seconds) for a sound to decay by 60 dB within a space.
Rw	Weighted Sound Reduction Index of a building element. That is, the laboratory tested (or theoretically calculated) sound insulation performance of a single element.
Sound Insulation	A reference to the degree of acoustical separation between any two areas.
Steady state noise	Noise which remains relatively constant in level over time, as opposed to time-varying noise which fluctuates over time.
Speech privacy	The privacy achieved between two spaces, being a combination of source strength (vocal effort), sound insulation (D_W) between the spaces and the background noise levels in the receiving location.
Time weighting	Sound level meters can be set to 'fast' or 'slow' response. 'Fast' corresponds to a 125 ms time constant and 'slow' corresponds to a 1 second time constant.
Tonality	Noise containing a prominent frequency.
Transmission loss (or sound transmission loss or sound reduction index)	A test which rates the sound transmission properties of a wall, floor or roof construction.

APPENDIX B

Noise Charts

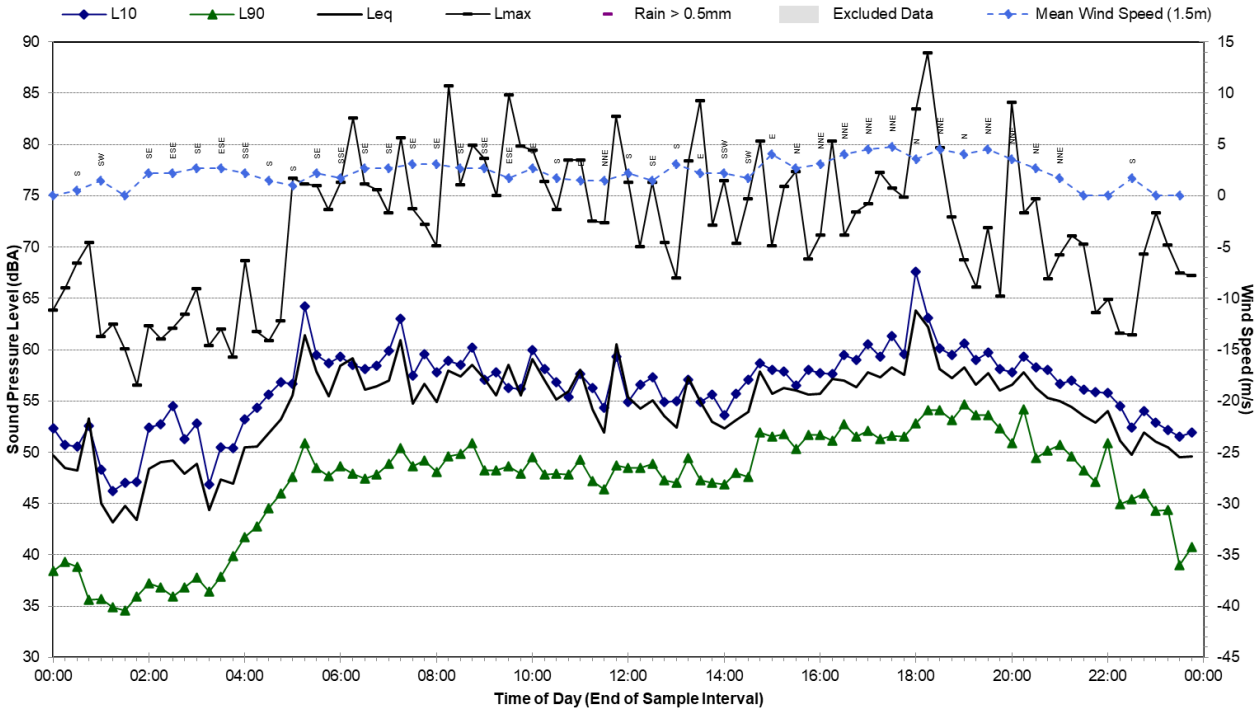
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Thursday, 13 October 2022



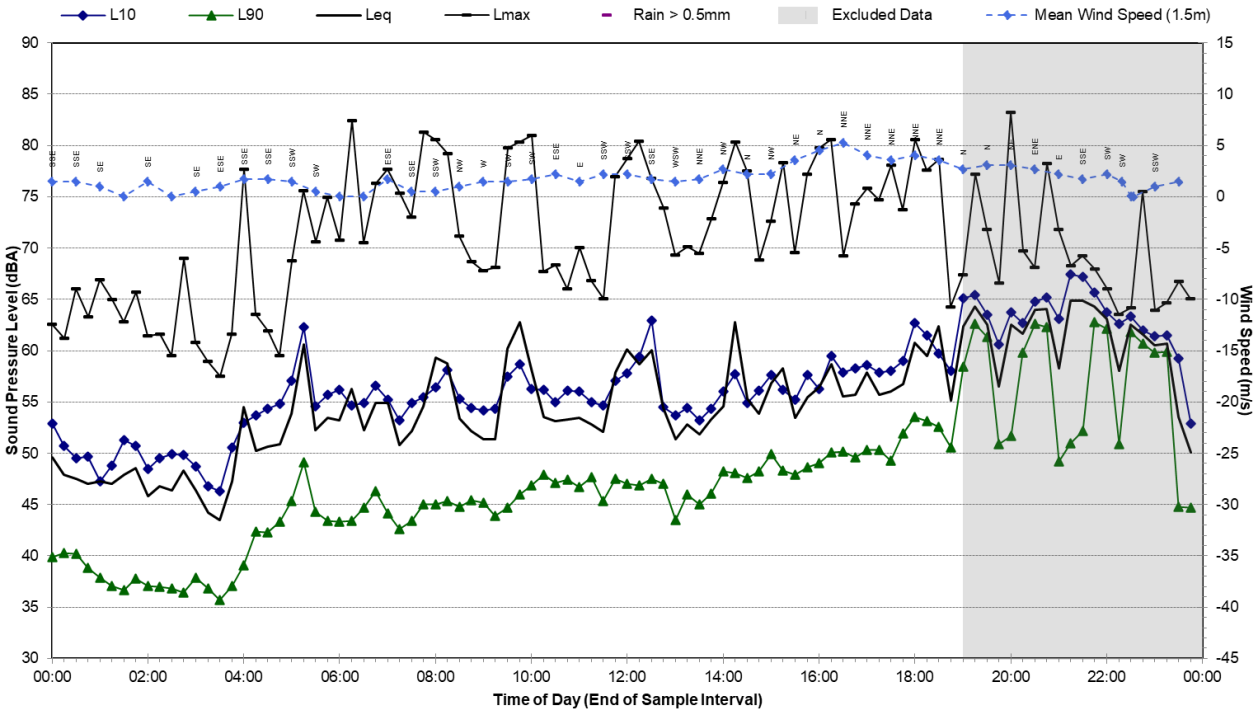
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Friday, 14 October 2022



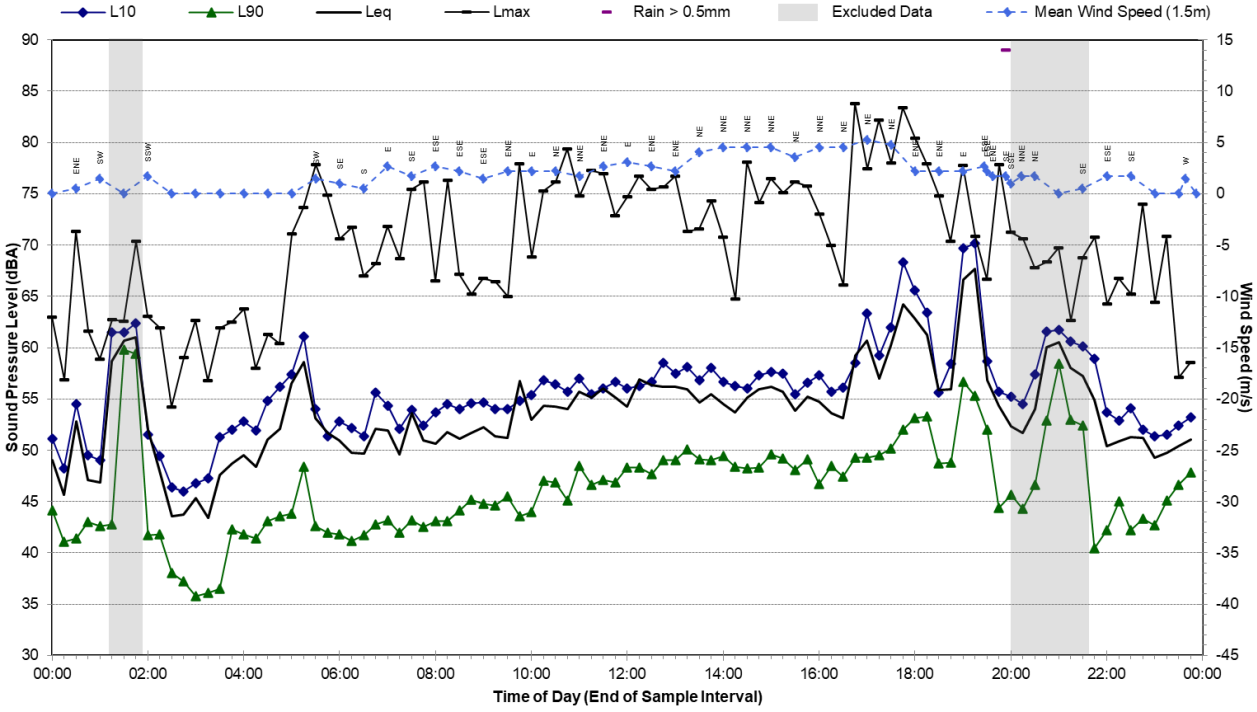
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Saturday, 15 October 2022



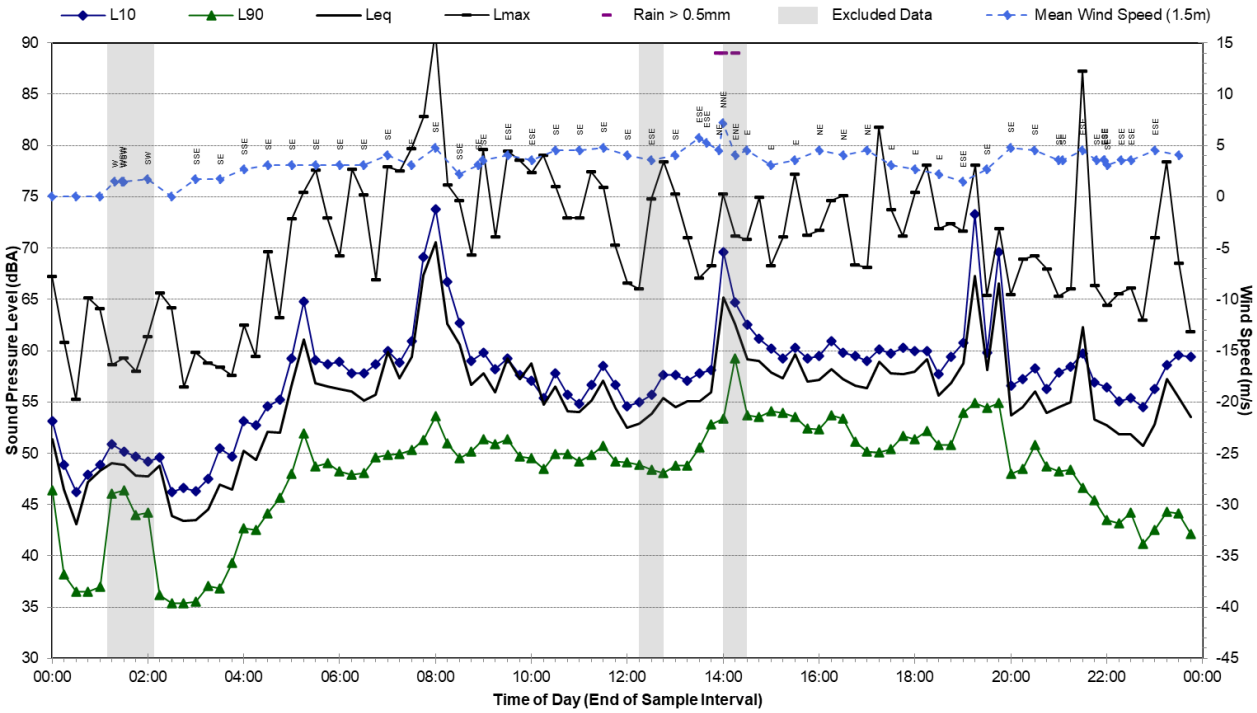
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Sunday, 16 October 2022



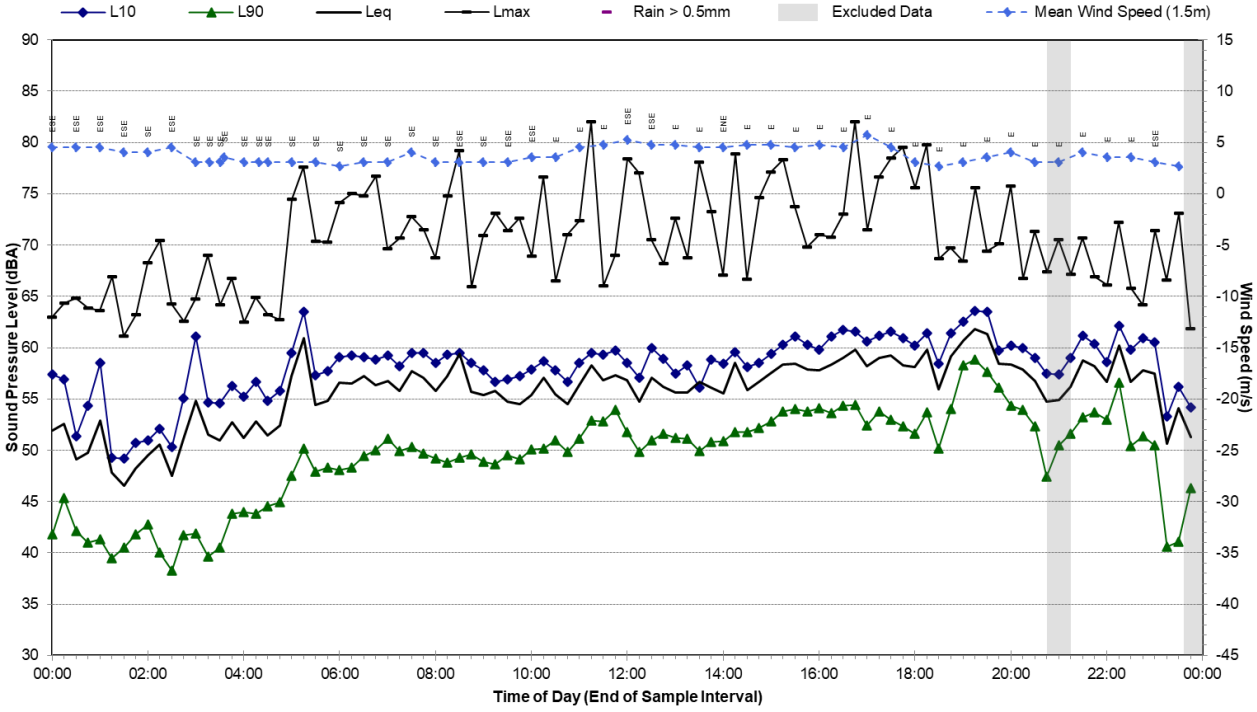
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Monday, 17 October 2022



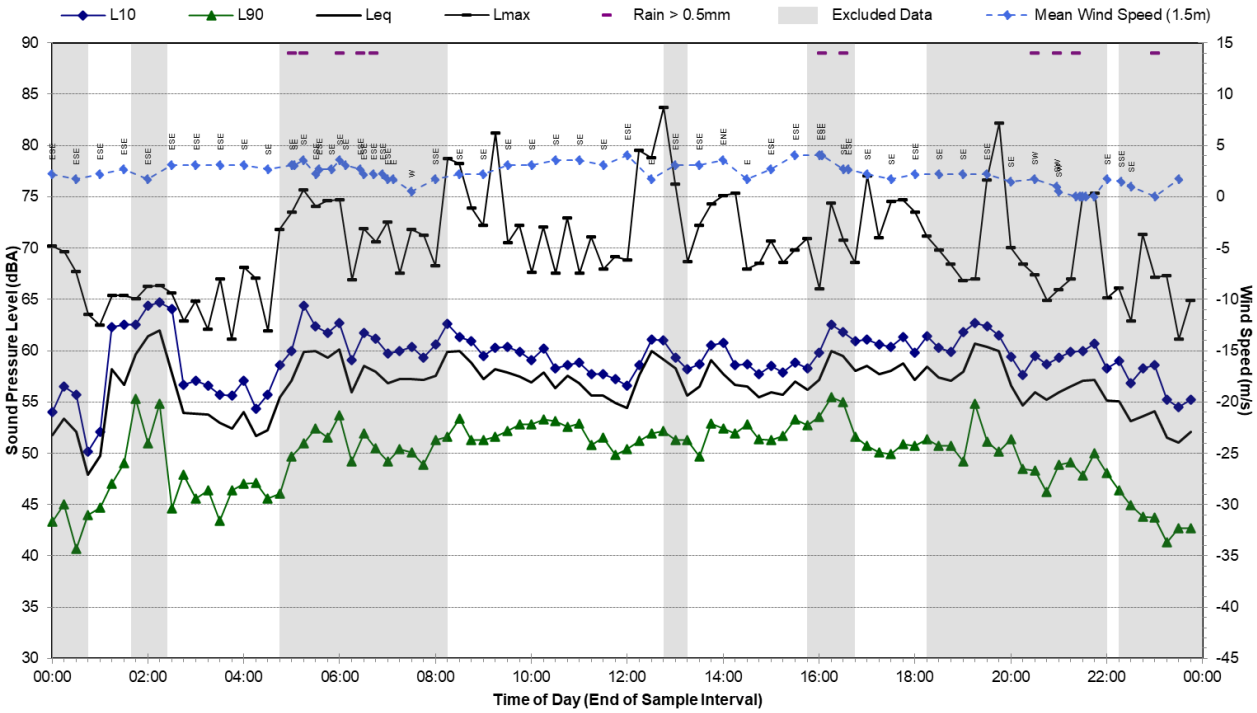
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Tuesday, 18 October 2022



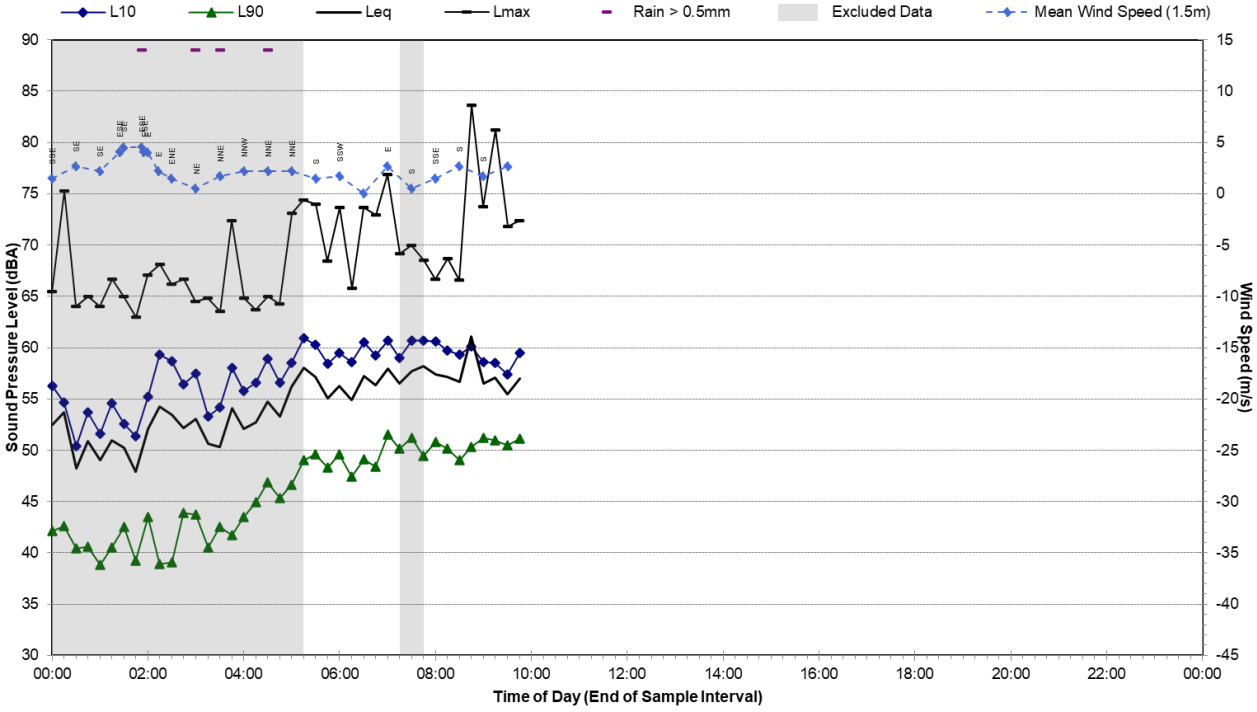
Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Wednesday, 19 October 2022



Statistical Ambient Noise Levels

Noise Monitor: 331 to 341 Yaamba Road - Thursday, 20 October 2022



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