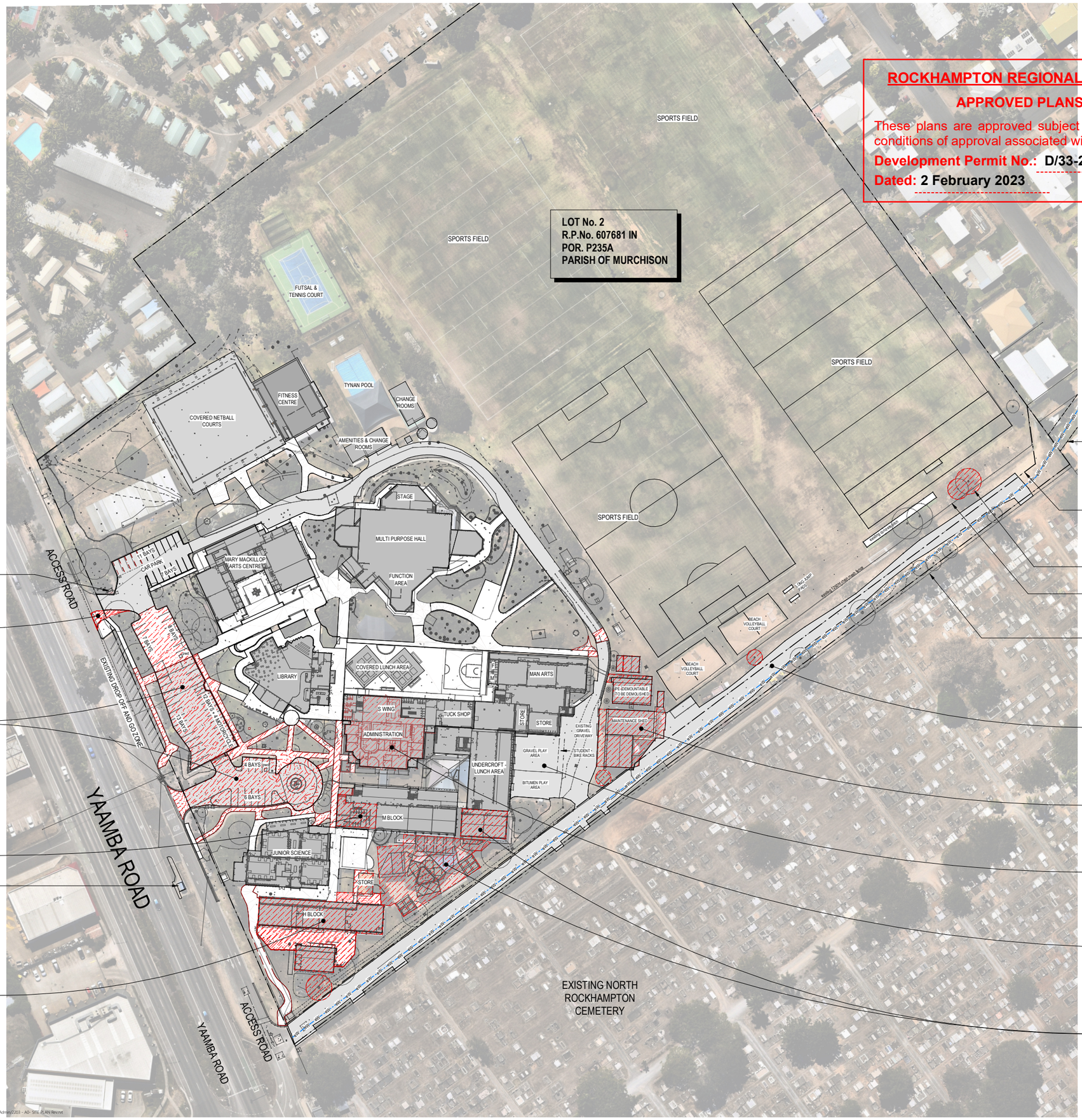

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Development Permit No.: D/33-2022

Dated: 2 February 2023

GENERAL NOTES

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SITE AREA

362 YAAMBA ROAD, LOT 1 ; RP607187	3 678m²
362 YAAMBA ROAD, LOT 2 ; RP607681	88 720m²
TOTAL	**92 398m²**

SITE COVERAGE

EXISTING	13.7% (12 746m²)

GROSS FLOOR AREA

EXISTING	-BUILDINGS -GROUND	9 472m²
EXISTING	-BUILDINGS -UPPER FLOOR	1 538m²
EXISTING	**-BUILDINGS TOTAL**	**11 010m²**
EXISTING	-VERANDAS & UNDERCROFTS	2 216m²

IMPERVIOUS AREA (EXCLUDING BUILDINGS)

EXISTING	-PATHS	8 050m²
	-ROADS	7 089m²
	-TOTAL	**15 139m²**

LANDSCAPING AREA

EXISTING	65 824m²

scale @A1 1 : 750 scale @A3

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P20	INTERNAL REVIEW		20/12/2021
P21	MCU APPLICATION		12/01/2022
P22	MCU UPDATES		21/01/2022

TONY MADDEN ARCHITECTS
(07) 4927 9700
www.tmarchitects.com.au

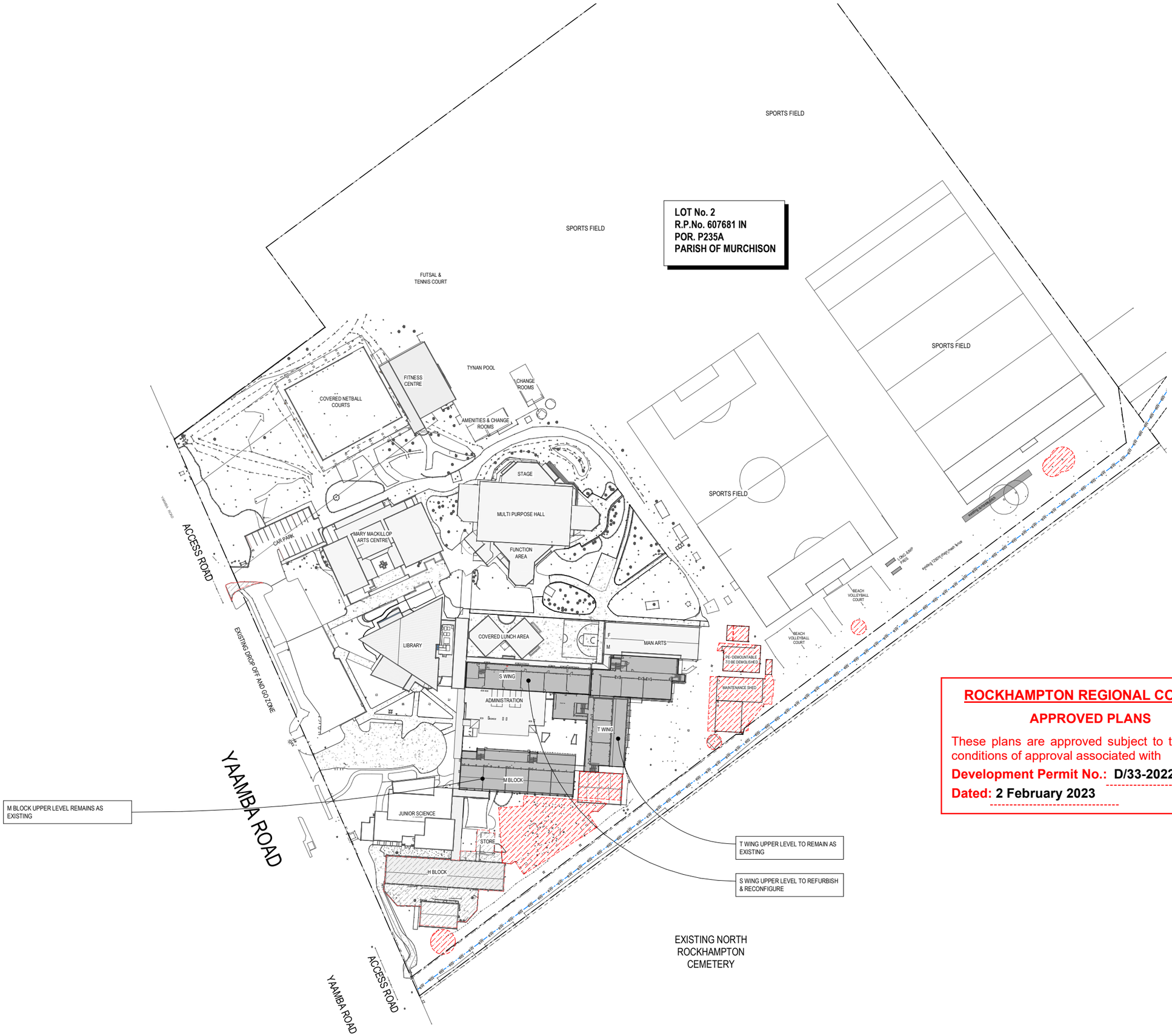
client:
ROMAN CATHOLIC TRUST CORP. DIOCESE OF ROCKHAMPTON FOR CATHOLIC EDUCATION - DIOCESE OF ROCKHAMPTON

location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
EXISTING OVERALL SITE PLAN - GROUND

job no:	drawing no:	rev:
2203	MCU-01	P22



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scale @A1 1 : 750 scale @A3

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REV.	DESCRIPTION	ISSUED BY	DATE
P22	MCU UPDATES		21/01/2022

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location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
EXISTING OVERALL SITE PLAN - UPPER

job no:	drawing no:	rev:
2203	MCU-02	P22

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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SITE AREA

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362 YAAMBA ROAD, LOT 2 ; RP607681	88 720m²
TOTAL	**92 398m²**

SITE COVERAGE

EXISTING	13.7% (12 746m²)
PROPOSED	15% (13 919m²)

GROSS FLOOR AREA

EXISTING	-BUILDINGS -GROUND	9 472m²
EXISTING	-BUILDINGS -UPPER FLOOR	1 538m²
EXISTING	**-BUILDINGS TOTAL**	**11 010m²**
PROPOSED	-BUILDINGS -GROUND	9 521m²
PROPOSED	-BUILDINGS -UPPER FLOOR	2 673m²
PROPOSED	**-BUILDINGS TOTAL**	**12 194m²**
BUILDINGS TOTAL INCREASE		**1 184m²**
EXISTING	-VERANDAS & UNDERCROFTS	2 216m²
PROPOSED	-VERANDAS & UNDERCROFTS	3 821m²
VERANDAHS TOTAL INCREASE		**1 605m²**

IMPERVIOUS AREA (EXCLUDING BUILDINGS)

EXISTING	-PATHS, GRAVEL AREAS	8 050m²
	-ROADS	7 089m²
	-TOTAL	**15 139m²**
PROPOSED	-PATHS, GRAVEL AREAS	8 273m²
	-ROADS	8 113m²
	-TOTAL	**16 386m²**

LANDSCAPING AREA (including sports fields)

EXISTING	65 824m²
PROPOSED	63 421m²

scale @A1 1 : 750

scale @A3

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P20	INTERNAL REVIEW		20/12/2021
P21	MCU APPLICATION		12/01/2022
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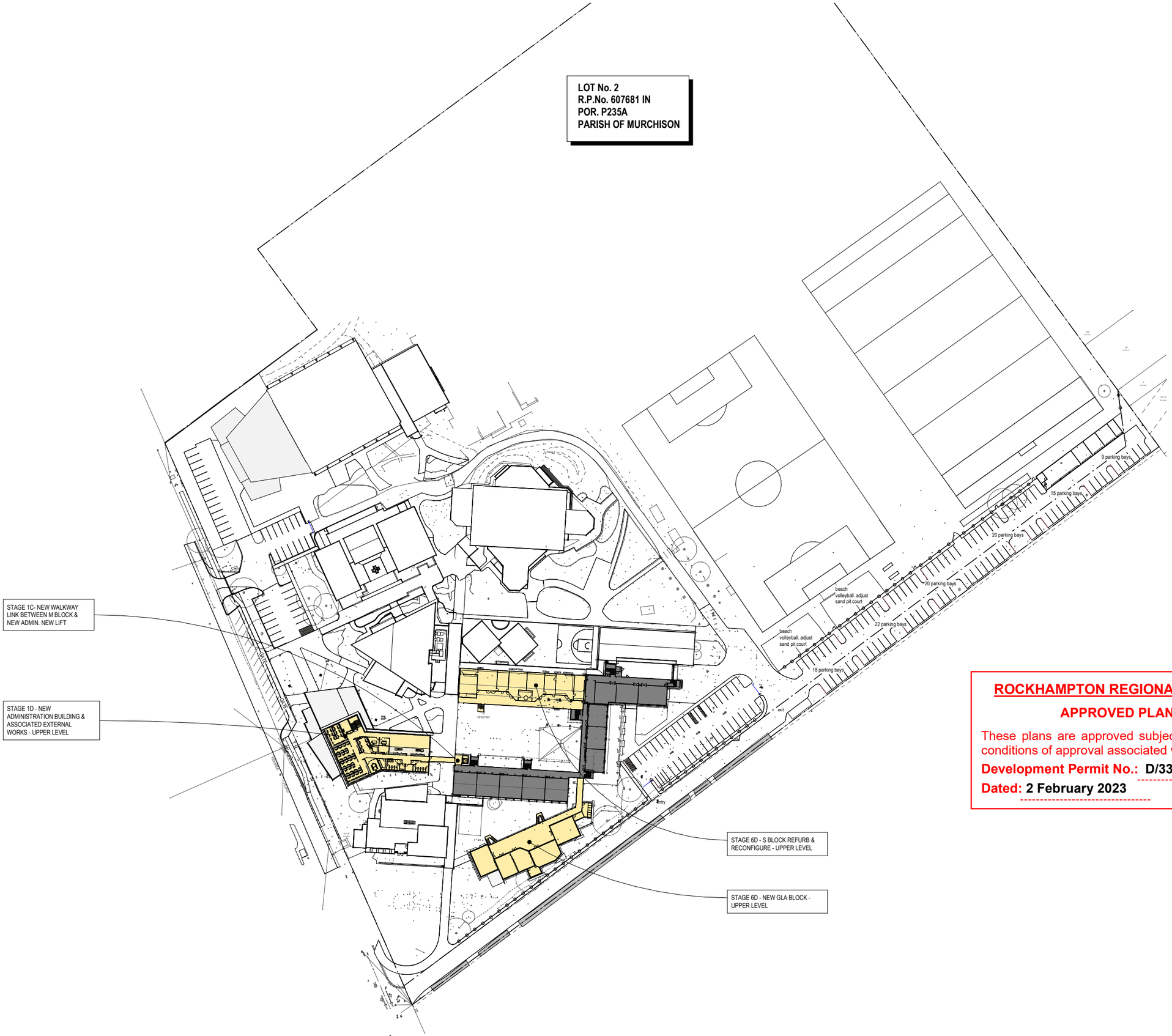
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
PROPOSED OVERALL SITE PLAN - GROUND

job no:	drawing no:	rev:
2203	MCU-03	P22



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ROCKHAMPTON REGIONAL COUNCIL

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Dated: 2 February 2023

scale @A1: 1 : 750

scale @A3:

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P22	MCU UPDATES		21/01/2022

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location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
PROPOSED OVERALL SITE PLAN - UPPER

job no:	drawing no:	rev:
2203	MCU-04	P22

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Development Permit No.: D/33-2022

Dated: 2 February 2023

ADMINISTRATION BUILDING - GROSS FLOOR AREA CALCULATION - PROPOSED

NEW ADMINISTRATION GROUND	614.40m2
NEW ADMINISTRATION UPPER	691.00m2
STUDENT SERVICES	211.00m2
STUDENT AMENITIES	32.30m2
COVERED ENTRIES	76.70m2
COVERED WALKWAYS & LIFT	155.70m2
NEW TOTAL GFA	**1781.10m2**

GENERAL NOTES

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FENCE TYPES

FENCE TYPE 1
1200ht POOL FENCE

scale @A1 1 : 200
scale @A3 1:400
0 10m 1:200

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		24/11/2021
P18	DA ISSUE	AD	25/11/2021
P19	MCU APPLICATION		12/01/2022

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location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW ADMINISTRATION

drawing title:
PROPOSED SITE PLAN - GROUND

job no:	drawing no:	rev:
2203	MCU-10	P19

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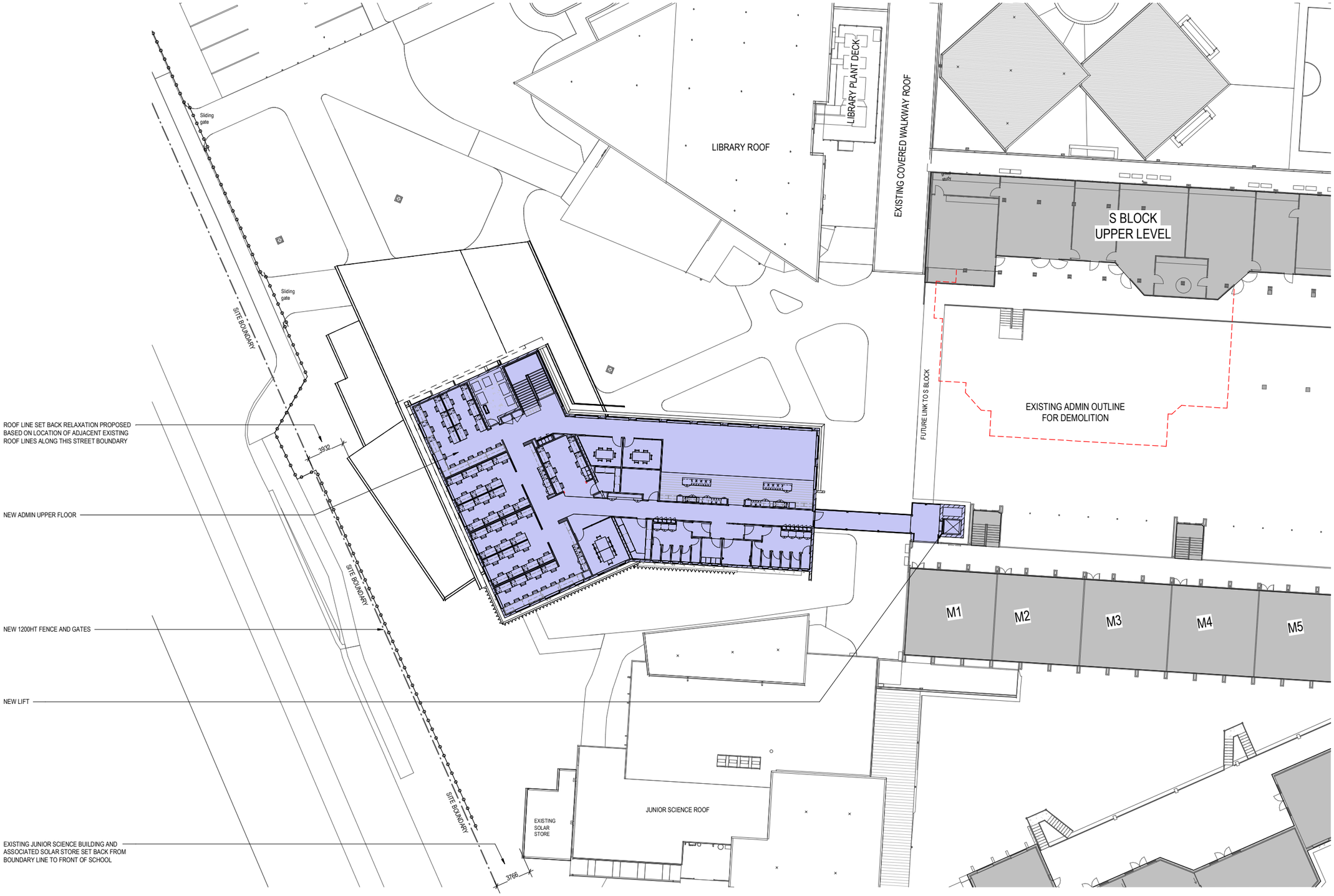
STUDENT SERVICES	211.00m2
STUDENT AMENITIES	32.30m2
COVERED ENTRIES	76.70m2
COVERED WALKWAYS & LIFT	155.70m2
NEW TOTAL GFA	**1781.10m2**



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scale @A1: 1 : 200 | scale @A3: 1:400

0 10m 1:200

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		24/11/2021
P18	DA ISSUE	AD	25/11/2021
P19	MCU APPLICATION		12/01/2022

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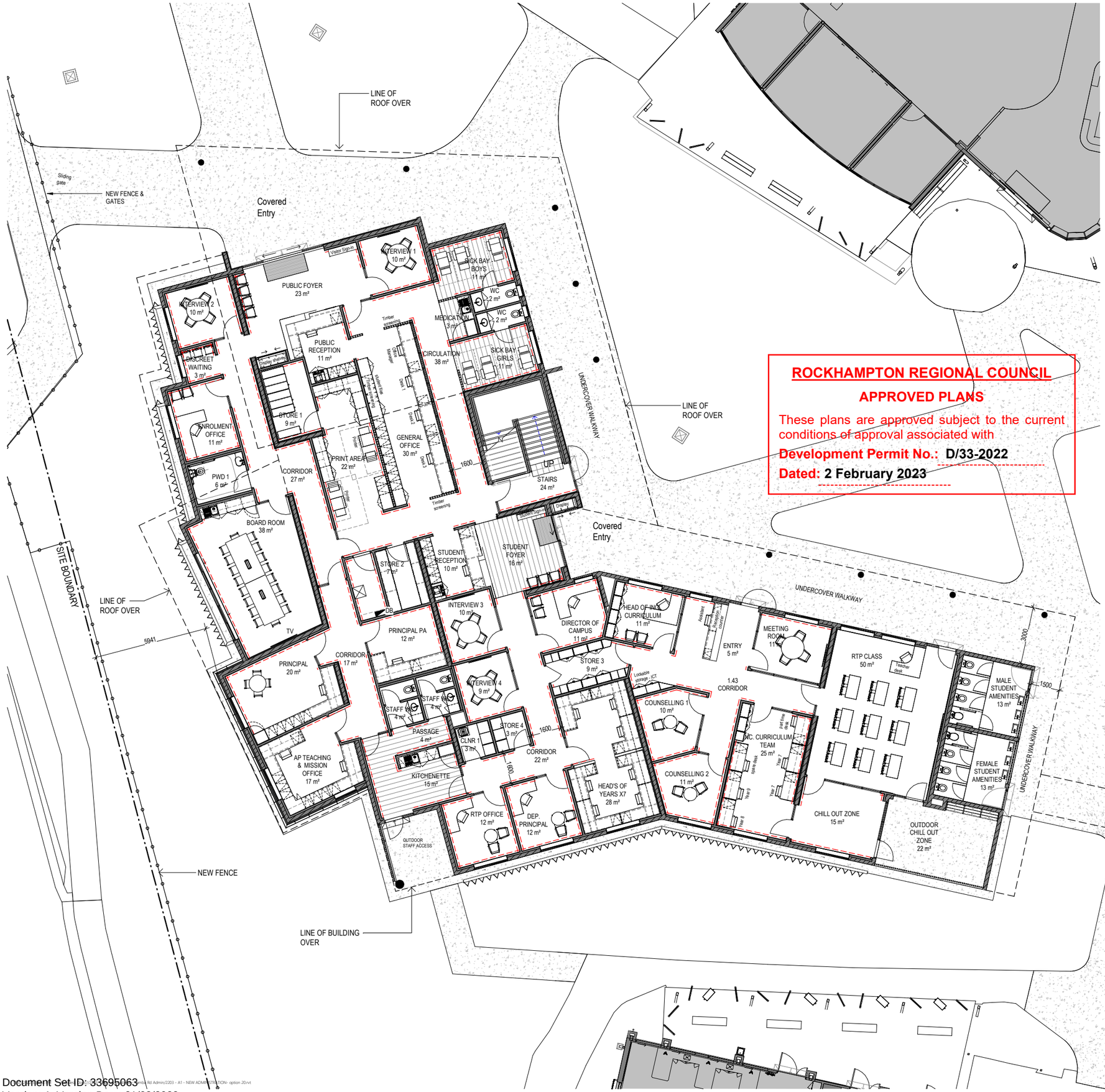
location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW ADMINISTRATION

drawing title:
PROPOSED SITE PLAN - UPPER

job no:	drawing no:	rev:
2203	MCU-11	P19



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INTERNAL AREA SCHEDULE - GROUND

FUNCTIONAL AREA	INTERNAL AREA
PUBLIC FOYER	23 m²
PUBLIC RECEPTION	11 m²
INTERVIEW 1	10 m²
INTERVIEW 2	10 m²
DISCREET WAITING	3 m²
ENROLMENT OFFICE	11 m²
PWD 1	6 m²
BOARD ROOM	38 m²
CORRIDOR	27 m²
STORE 1	9 m²
PRINT AREA	22 m²
GENERAL OFFICE	30 m²
CIRCULATION	38 m²
MEDICATION	3 m²
SICK BAY - BOYS	11 m²
WC	2 m²
WC	2 m²
SICK BAY - GIRLS	11 m²
STAIRS	24 m²
STUDENT FOYER	16 m²
STUDENT RECEPTION	10 m²
STORE 2	7 m²
COMMS	5 m²
PRINCIPAL PA	12 m²
CORRIDOR	17 m²
PRINCIPAL	20 m²
AP TEACHING & MISSION OFFICE	17 m²
PASSAGE	4 m²
STAFF WC	4 m²
STAFF WC	4 m²
KITCHENETTE	15 m²
CORRIDOR	22 m²
INTERVIEW 3	10 m²
INTERVIEW 4	9 m²
STORE 4	3 m²
CLNR 1	3 m²
RTP OFFICE	12 m²
DEP. PRINCIPAL	12 m²
HEAD'S OF YEARS X7	28 m²
STORE 3	9 m²
DIRECTOR OF CAMPUS	11 m²
ENTRY	5 m²
CORRIDOR	30 m²
HEAD OF INCL CURRICULUM	11 m²
COUNSELLING 1	10 m²
COUNSELLING 2	11 m²
INC. CURRICULUM TEAM	25 m²
MEETING ROOM	11 m²
RTP CLASS	50 m²
CHILL OUT ZONE	15 m²
OUTDOOR CHILL OUT ZONE	22 m²
FEMALE STUDENT AMENITIES	13 m²
MALE STUDENT AMENITIES	13 m²
LIFT	3 m²
	760 m²

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FENCE TYPES

FENCE TYPE 1
1200ht POOL FENCE

scale @A1 1 : 100
scale @A3 1:200
0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		24/11/2021
P18	DA ISSUE	AD	25/11/2021
P19	MCU APPLICATION		12/01/2022

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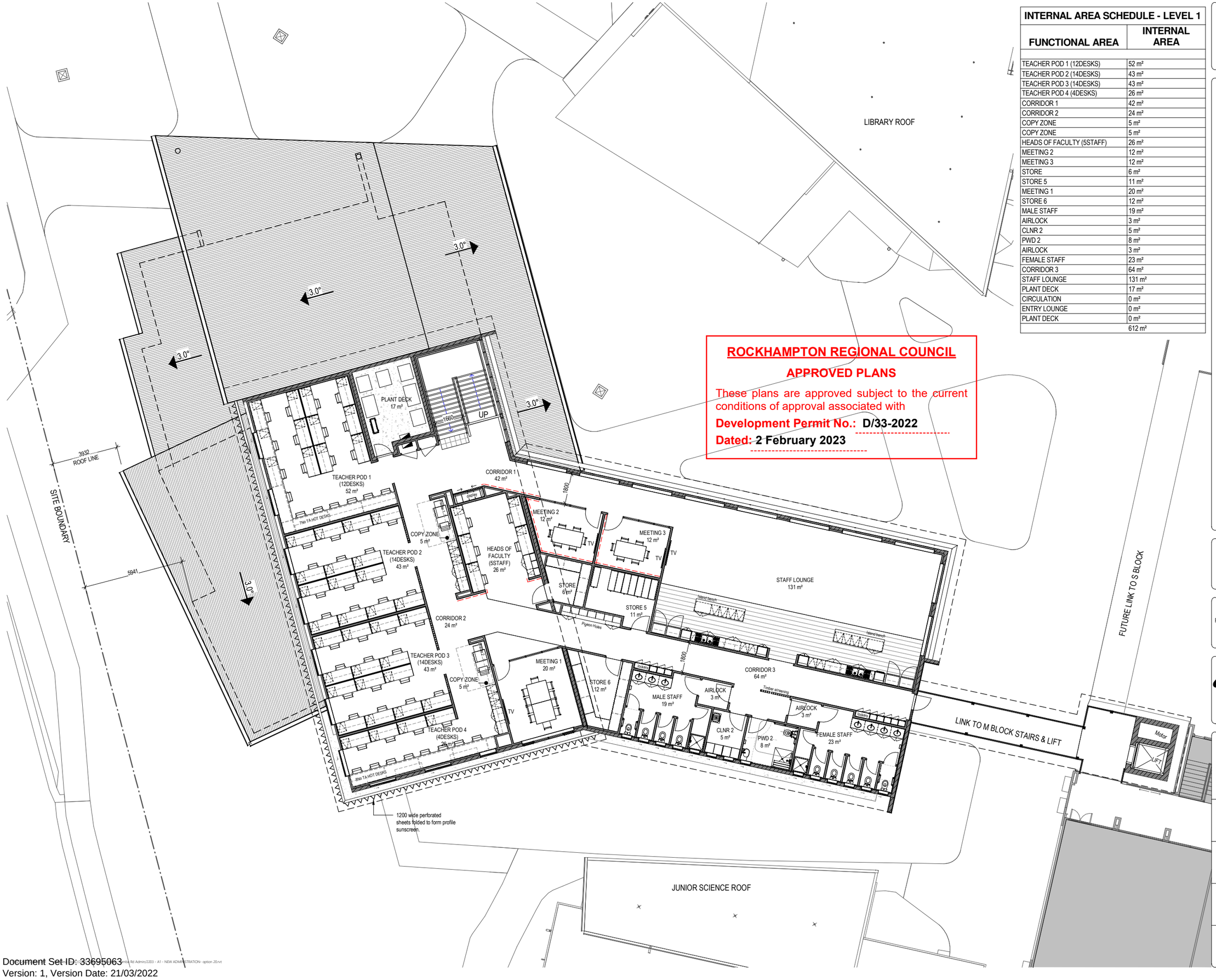
location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW ADMINISTRATION

drawing title:
PROPOSED GROUND FLOOR PLAN

job no:	drawing no:	rev:
2203	MCU-12	P19



INTERNAL AREA SCHEDULE - LEVEL 1

FUNCTIONAL AREA	INTERNAL AREA
TEACHER POD 1 (12DESKS)	52 m²
TEACHER POD 2 (14DESKS)	43 m²
TEACHER POD 3 (14DESKS)	43 m²
TEACHER POD 4 (4DESKS)	26 m²
CORRIDOR 1	42 m²
CORRIDOR 2	24 m²
COPY ZONE	5 m²
COPY ZONE	5 m²
HEADS OF FACULTY (5STAFF)	26 m²
MEETING 2	12 m²
MEETING 3	12 m²
STORE	6 m²
STORE 5	11 m²
MEETING 1	20 m²
STORE 6	12 m²
MALE STAFF	19 m²
AIRLOCK	3 m²
CLNR 2	5 m²
PWD 2	8 m²
AIRLOCK	3 m²
FEMALE STAFF	23 m²
CORRIDOR 3	64 m²
STAFF LOUNGE	131 m²
PLANT DECK	17 m²
CIRCULATION	0 m²
ENTRY LOUNGE	0 m²
PLANT DECK	0 m²
	612 m²

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scale @A1 1 : 100

scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		24/11/2021
P18	DA ISSUE	AD	25/11/2021
P19	MCU APPLICATION		12/01/2022

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YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW ADMINISTRATION

drawing title:
PROPOSED UPPER FLOOR PLAN

job no:	drawing no:	rev:
2203	MCU-13	P19

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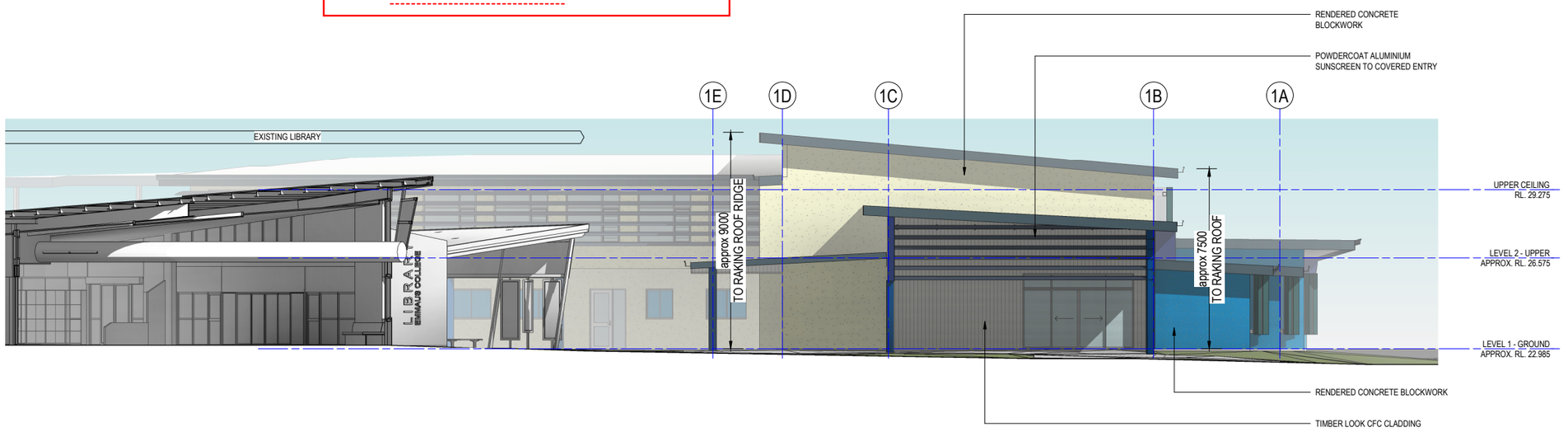
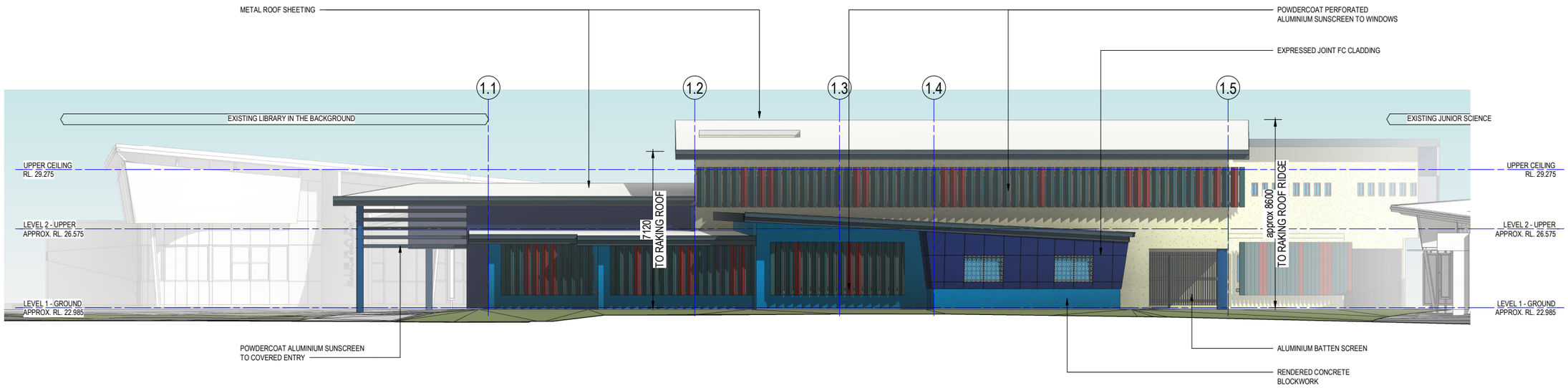


1 A1-304 NORTH ELEVATION - FROM VISITOR CARPARK

1 : 100 @ A1



2 A1-304 WEST ELEVATION - YAAMBA ROAD ELEVATION

1 : 100 @ A1

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0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P16	PRELIMINARY		8/11/2021
P17	PRELIMINARY		24/11/2021
P18	DA ISSUE	AD	25/11/2021

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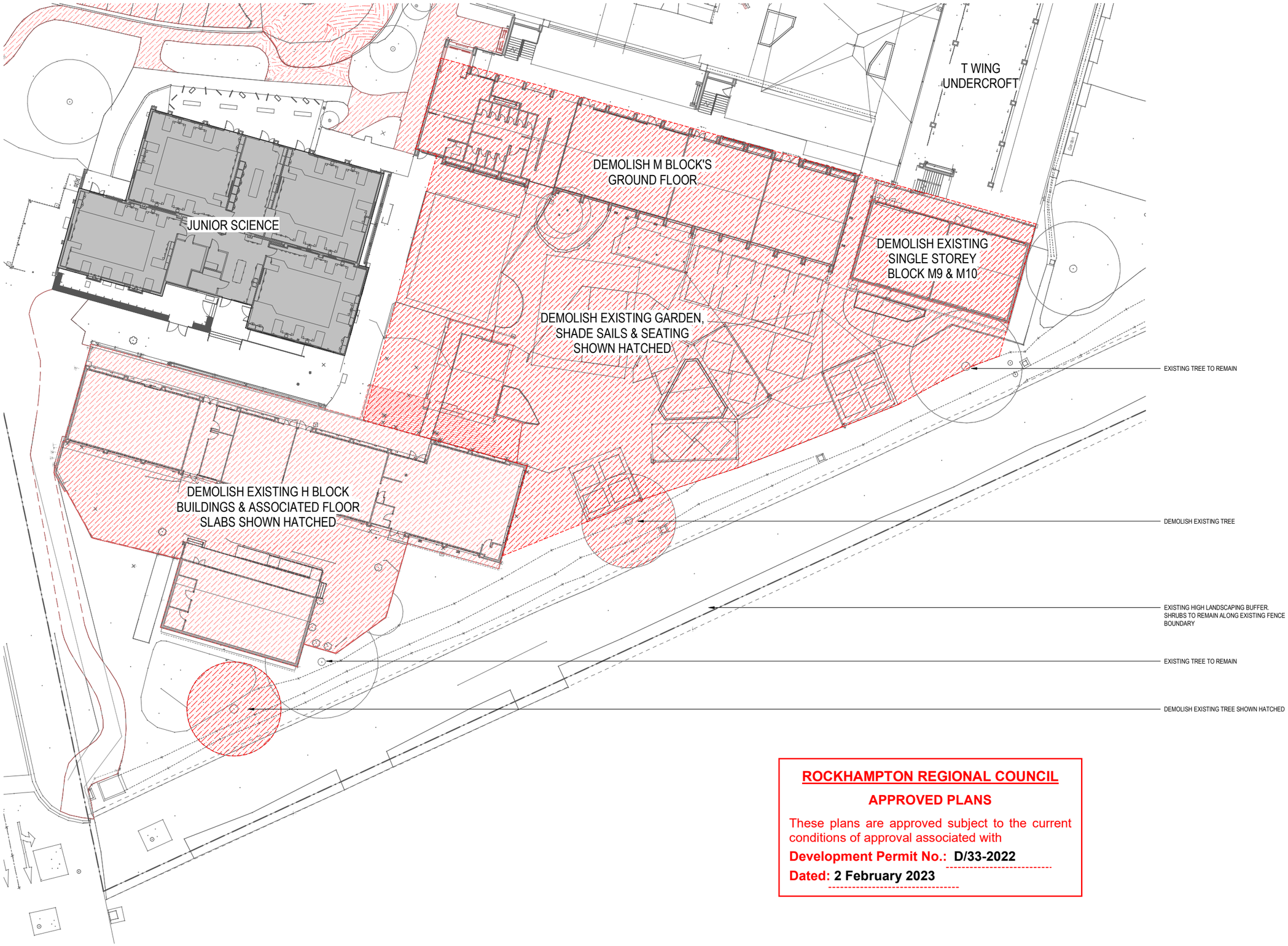
project:
NEW ADMINISTRATION

drawing title:
PROPOSED ELEVATIONS

job no:	drawing no:	rev:
2203	MCU-14	P18



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0 10m 1:200

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P18	DA ISSUE	AD	26/11/2021
P19	Draft Updates		20/12/2021
P20	MCU APPLICATION		12/01/2022

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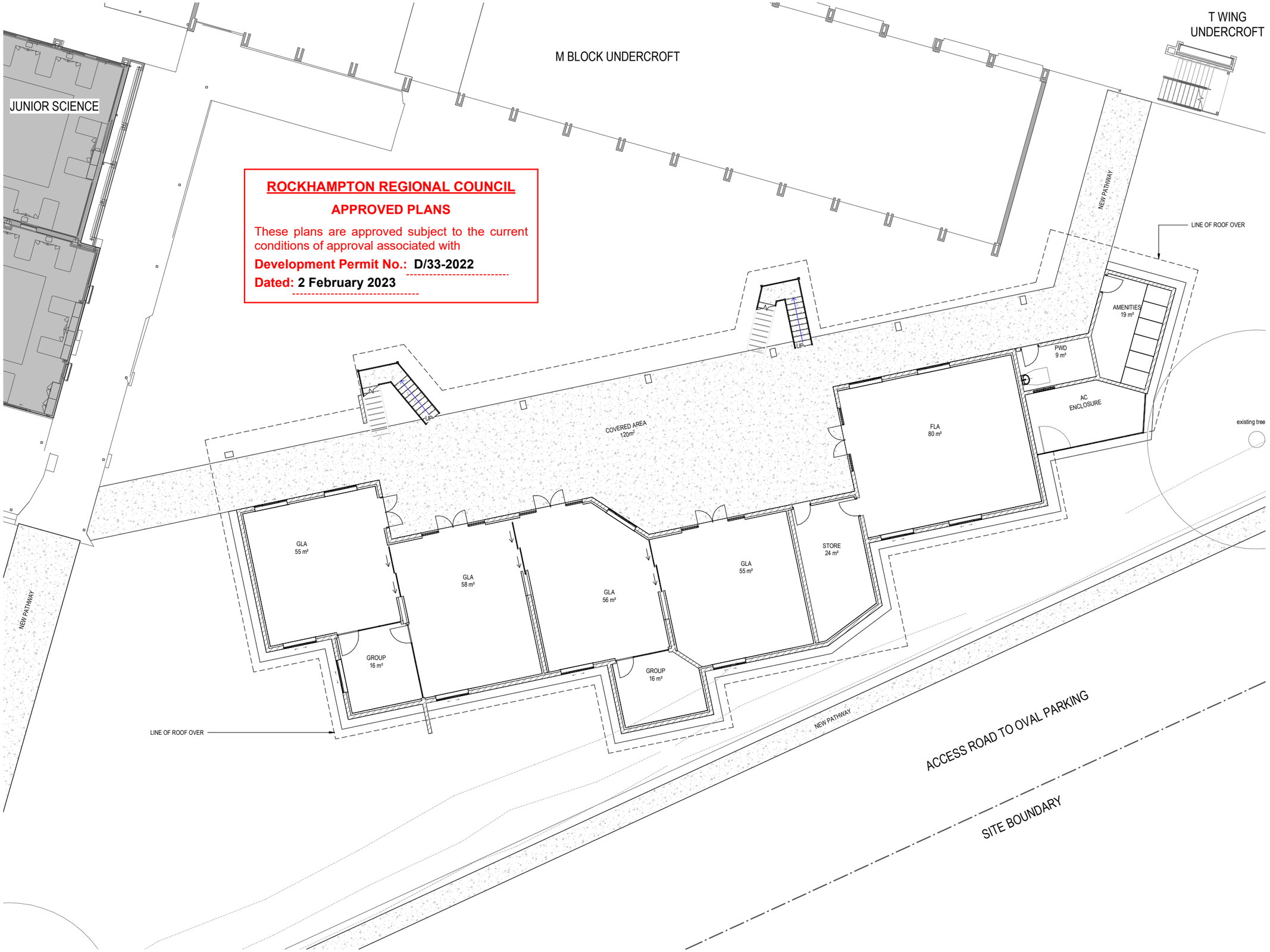
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW GLA BLOCK

drawing title:
EXISTING PLAN

job no:	drawing no:	rev:
2203	MCU-20	P20



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INTERNAL AREA SCHEDULE - GROUND

FUNCTIONAL AREA	INTERNAL AREA
GLA	55 m²
GLA	55 m²
GLA	58 m²
GLA	56 m²
STORE	24 m²
FLA	80 m²
GROUP	16 m²
GROUP	16 m²
PWD	9 m²
AMENITIES	19 m²
	387 m²

scale @A1 1 : 100 scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P18	DA ISSUE	AD	26/11/2021
P19	Draft Updates		20/12/2021
P20	MCU APPLICATION		12/01/2022

TONY MADDEN ARCHITECTS
(07) 4927 9700
www.tmarchitects.com.au

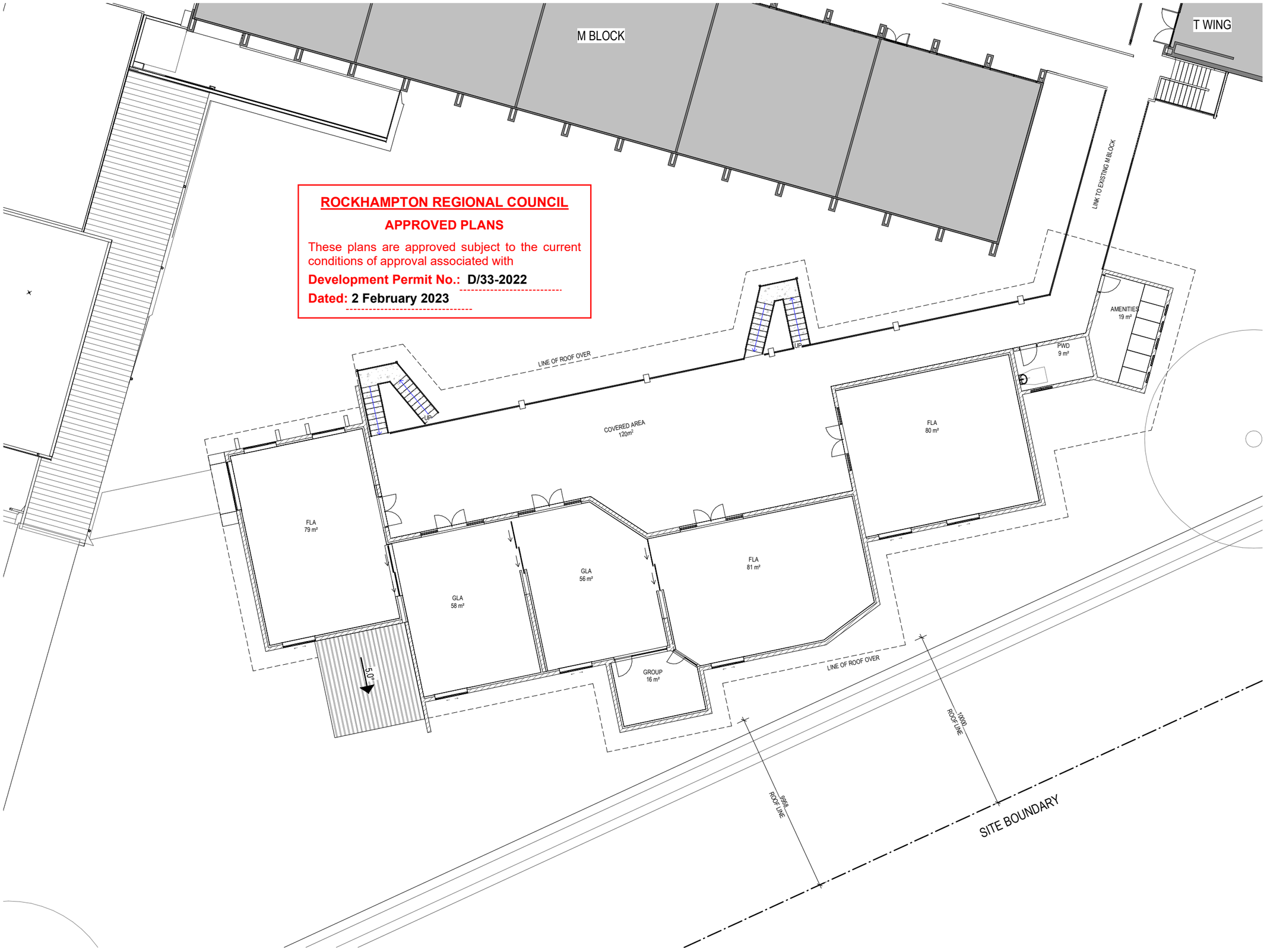
client:
ROMAN CATHOLIC TRUST CORP. DIOCESE OF ROCKHAMPTON FOR CATHOLIC EDUCATION - DIOCESE OF ROCKHAMPTON

location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW GLA BLOCK

drawing title:
PROPOSED GROUND FLOOR PLAN

job no:	drawing no:	rev:
2203	MCU-21	P20



ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Development Permit No.: D/33-2022

Dated: 2 February 2023

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INTERNAL AREA SCHEDULE - FIRST

FUNCTIONAL AREA	INTERNAL AREA
FLA	81 m²
FLA	79 m²
GLA	58 m²
GLA	56 m²
FLA	80 m²
GROUP	16 m²
PWD	9 m²
AMENITIES	19 m²
	396 m²

scale @A1 1 : 100 scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P18	DA ISSUE	AD	26/11/2021
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location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW GLA BLOCK

drawing title:
PROPOSED FIRST FLOOR PLAN

job no:	drawing no:	rev:
2203	MCU-22	P20

GENERAL NOTES

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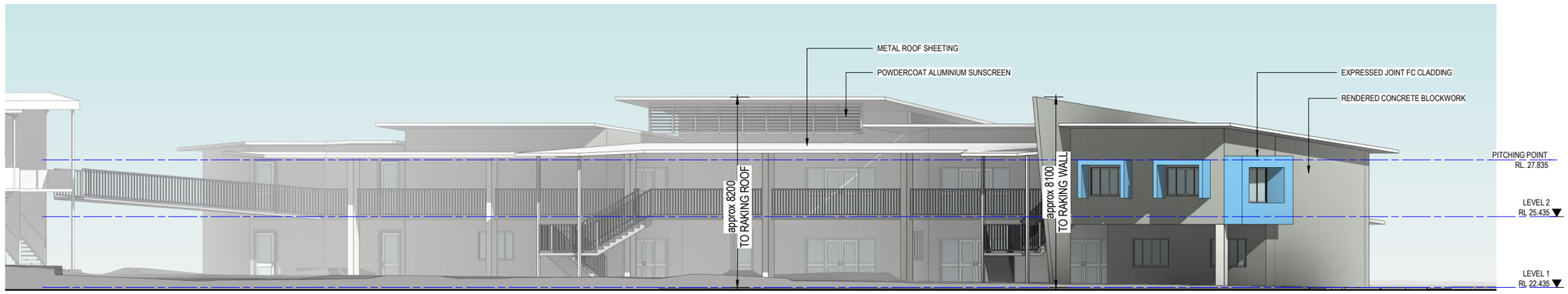
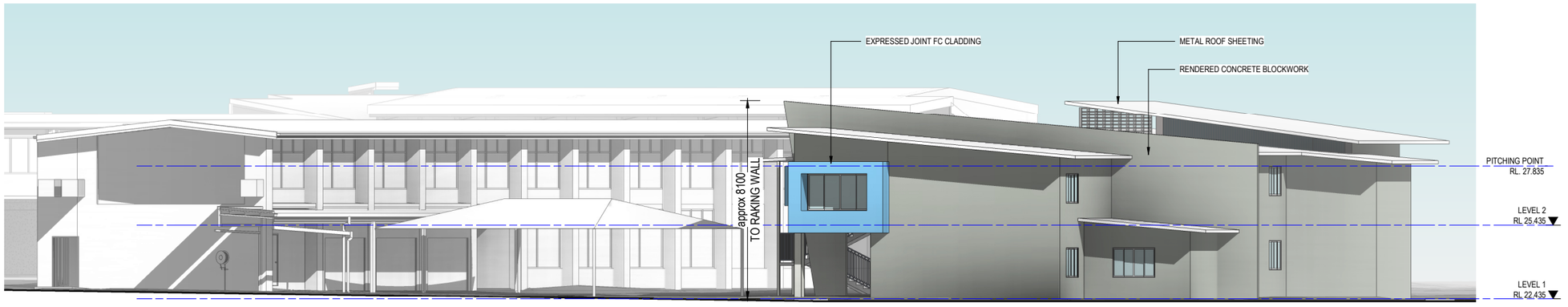


1 NORTH ELEVATION - FROM M BLOCK

1 : 100 @ A1



2 SOUTH WEST ELEVATION - FROM YAAMBA RD

1 : 100 @ A1

scale @A1	scale @A3
1 : 100	1:200

0 5m

1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P18	DA ISSUE	AD	26/11/2021
P19	Draft Updates		20/12/2021
P20	MCU APPLICATION		12/01/2022

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location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW GLA BLOCK

drawing title:
PROPOSED ELEVATIONS

job no:	drawing no:	rev:
2203	MCU-23	P20

PROPOSED NEW CONSTRUCTION

EXISTING COVERED COURTS

SITE BOUNDARY

EXISTING 150 DIA RRC CONCRETE SEWER LINE

EXISTING SEWER MANHOLE

EXISTING 150 DIA RRC CONCRETE SEWER LINE

min 1.5m from building

FLA 1
80 m²

RAMP

UP

PWD
9 m²

MALE
7 m²

FEMALE
7 m²

STORE
23 m²

STAIRS

STAGE & SEATING
574 m²

302 SEATING

STAIRS

MULTI STACKING DOORS

UP

FLA 2
80 m²

RAMP

ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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Development Permit No.: **D/33-2022**

Dated: **2 February 2023**

EXISTING COVERED NETBALL COURTS - ARC BUILDING

GENERAL NOTES

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INTERNAL AREA SCHEDULE

FUNCTIONAL AREA	INTERNAL AREA
FEMALE	6.55 m²
FLA 1	80.04 m²
FLA 2	80.04 m²
MALE	6.55 m²
PWD	8.64 m²
STAGE & SEATING	573.98 m²
STORE	23.40 m²
	779.19 m²

scale @A1 1 : 100

scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PERLIMINARY		24/11/2021
P18	DA ISSUE	AD	26/11/2021
P19	MCU APPLICATION		12/01/2022

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location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW MULTI-USE CENTRE

drawing title:
PROPOSED FLOOR PLAN

job no:	drawing no:	rev:
2203	MCU-30	P19

GENERAL NOTES

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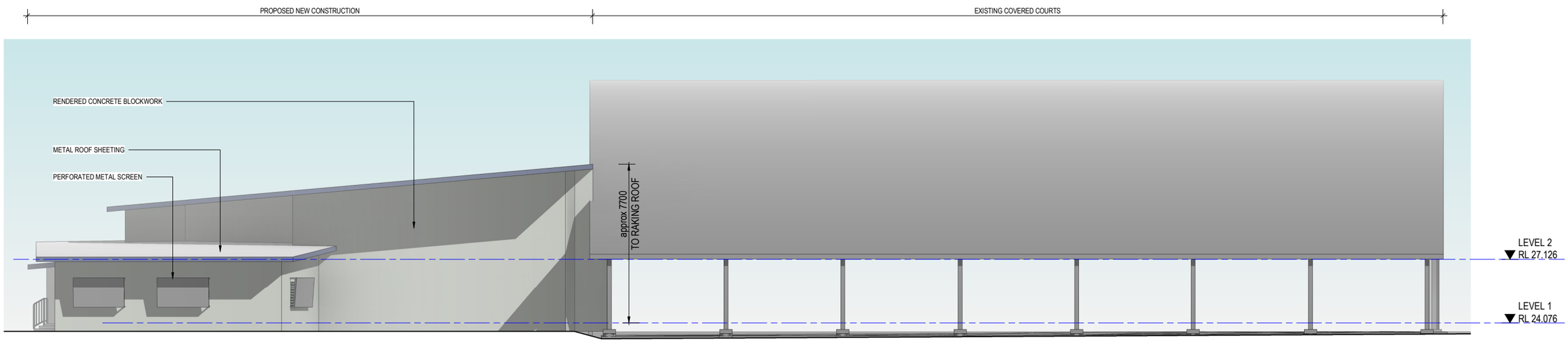
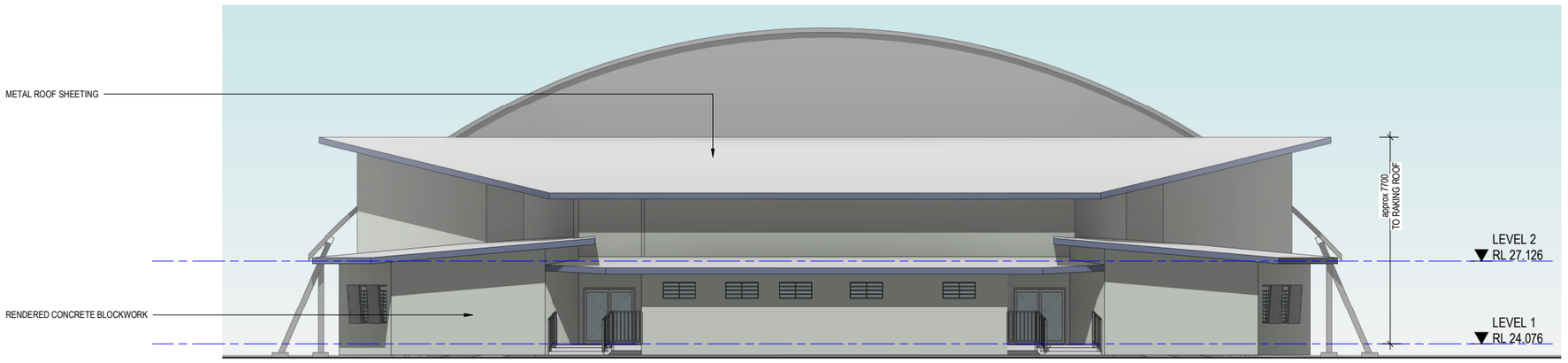


1 ELEVATION FROM INTERNAL PATH
1 : 100 @ A1



2 ELEVATION FROM YAAMBA RD
1 : 100 @ A1

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scale @A1	scale @A3
1 : 100	1:200

0 5m
1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PERLIMINARY		24/11/2021
P18	DA ISSUE	AD	26/11/2021
P19	MCU APPLICATION		12/01/2022

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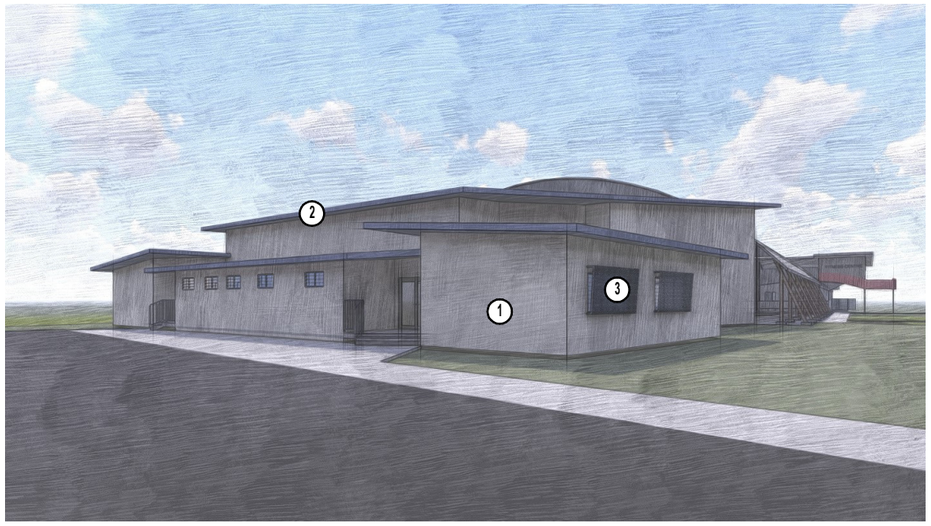
location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW MULTI-USE CENTRE

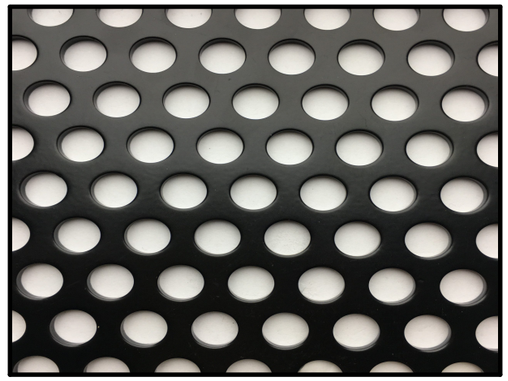
drawing title:
PROPOSED ELEVATIONS & 3D VIEWS

job no:	drawing no:	rev:
2203	MCU-31	P19



1 RENDER (COLOUR VARIES)

2 METAL ROOF SHEETING



3 PERFORATED METAL

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scale @A1 scale @A3

PRELIMINARY

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P18	DA ISSUE	AD	26/11/2021
P19	MCU APPLICATION		12/01/2022

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location:
YAAMBA RD CAMPUS, EMMAUS COLLEGE, ROCKHAMPTON

project:
NEW MULTI-USE CENTRE

drawing title:
3D VIEW

job no:	drawing no:	rev:
2203	MCU-32	P19

GENERAL NOTES

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GENERAL LEGEND

W.1.20.A WINDOW NUMBER, REFER TO SPEC.

D1.10.8 DOOR NUMBER, REFER TO SPEC.

EX / (E) DENOTES EXISTING.

DEM / (D) DENOTES DEMOLISH.

KEYNOTE LEGEND

AC	AIR CONDITIONING UNIT, REFER TO MECH DWGS
CD	CONDENSER UNIT, REFER TO MECH DWGS
COL	COLUMN- TO ENGINEERS DWG'S
DB	DISTRIBUTION BOARD, REFER ELEC DWGS
DF	DRINKING FOUNTAIN
FHR	FIRE HOSE REEL
HB	HAND BASIN
HB-2	HAND BASIN- TYPE 2
UR	URINAL
WC	TOILET SUITE

EXISTING TUCKSHOP
EXISTING COUNSELLORS OFFICE
EXISTING STORE
EXISTING COLDROOM
EXISTING ROLLER DOOR
EXISTING COVERED AREA
EXISTING SPORTS OFFICE
EXISTING SPORTS STORE
AMENITIES & CHANGE ROOMS
STAFF WORKSTATIONS
STAFF WORKSTATIONS
FHR
DEMOLISH EXISTING ADMIN
EXISTING STUDENT RECEPTION
STAFF ROOM
EXISTING PUBLIC RECEPTION
KITCHENETTE
EXISTING OFFICE
EXISTING OFFICE
EXISTING OFFICE
EXISTING COVERED WALKWAY

DEMOLISH EXISTING DOOR. INFILL WALL.

DEMOLISH EXISTING TEMPORARY OFFICE SPACE. DEMOLISH WALLS, DOORS & WINDOWS AS INDICATED.

DEMOLISH EXISTING AMENITIES. DEMOLISH WALLS, DOORS & FIXTURES AS INDICATED.

STAFF OFFICE, WORK STATIONS AND FIXTURES TO BE DEMOLISHED AS INDICATED

DEMOLISH EXISTING FLOORING AND SLAB TO UNDERCROFT

STAFF ROOM AND KITCHENETTE TO BE DEMOLISHED. WALLS, WINDOWS AND DOORS TO BE DEMOLISHED AS INDICATED

DEMOLISH EXISTING STAIRS. DEMOLISH WALLS, DOORS & STAIRS AS INDICATED.

STAFF AMENITIES (MALE) TO BE DEMOLISHED

EXISTING DB TO REMAIN

EXISTING S BLOCK TO REMAIN: DEMOLISH STAFF AMMENITIES, STAFF ROOM & JOINERY SHOWN HATCHED.

DEMOLISH EXISTING FENCE SHOWN HATCHED

E4 DEMOLISH EXISTING WINDOW AND DOOR. INFILL WALL.

REMOVE EXISTING PLATERBOARD WALL SHEETING FROM EXISTING S BLOCK WALLS.

FRAME SECTION OF EXISTING COLUMN WITH 70tk STUD AND 9tk FC SHEETING. RENDER AND PAINT FINISH.

FRAME EXISTING COLUMN WITH 70tk STUD AND 9tk FC SHEETING. RENDER AND PAINT FINISH.

DEMOLISH EXISTING ADMIN SHOWN HATCHED.

REMOVE EXISTING PLATERBOARD WALL SHEETING FROM EXISTING S BLOCK WALLS.

STAFF AMENITIES (FEMALE) TO BE DEMOLISHED.

E2 A2.1-401

1 MCU EXISTING FLOOR PLAN - GROUND
1 : 100 @ A1

EXISTING CANTEEN TO REMAIN.

9tk FC SHEETING TO EXISTING STUDWORK. RENDER AND PAINT FINISH.

NEW STAIRS

MALE
FEMALE
ACCESSIBLE TOILET
SPORTS OFFICE
SPORTS STORE

2 MCU PROPOSED FLOOR PLAN - GROUND
1 : 100 @ A1

ROCKHAMPTON REGIONAL COUNCIL

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Dated: 2 February 2023

scale @A1 1 : 100
scale @A3 1:200
0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		8/11/2021
P18	DA ISSUE	AD	26/11/2021
P19	MCU APPLICATION		12/01/2022

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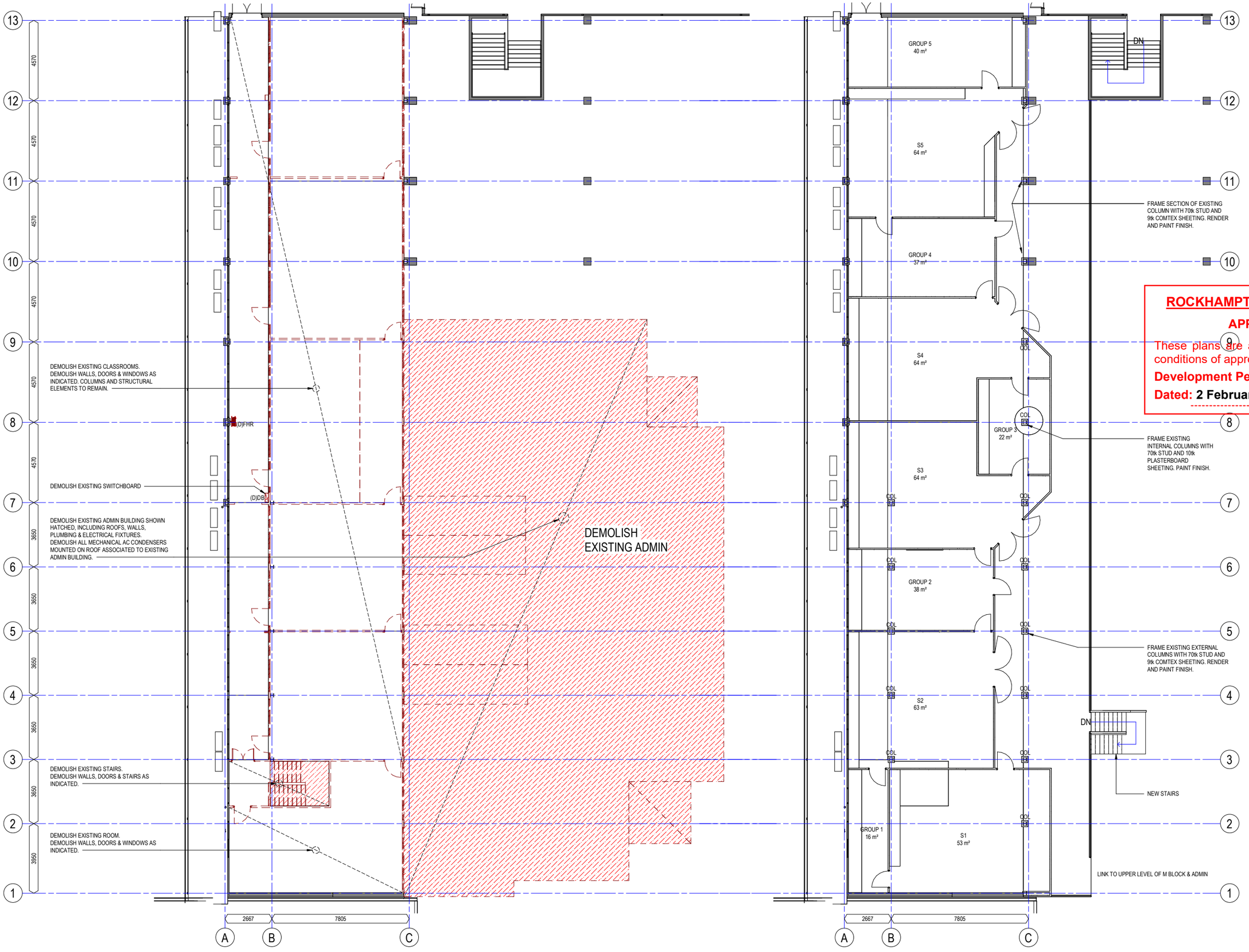
client:
ROMAN CATHOLIC TRUST CORP. DIOCESE OF ROCKHAMPTON FOR CATHOLIC EDUCATION - DIOCESE OF ROCKHAMPTON

location:
EMMAUS COLLEGE, YAAMBA RD, NORTH ROCKHAMPTON

project:
NEW ADMINISTRATION - S BLOCK ALTERATIONS

drawing title:
S WING FLOOR PLANS - GROUND

job no:	drawing no:	rev:
2203	MCU-41	P19



1 MCU EXISTING FLOOR PLAN - LEVEL 1
A2:1-401 1 : 100 @ A1

2 MCU PROPOSED FLOOR PLAN - LEVEL 1
1 : 100 @ A1

GENERAL NOTES

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GENERAL LEGEND

W.1.20.A WINDOW NUMBER, REFER TO SPEC.

D1.10.8 DOOR NUMBER, REFER TO SPEC.

EX / (E) DENOTES EXISTING.

DEM / (D) DENOTES DEMOLISH.

KEYNOTE LEGEND

COL	COLUMN- TO ENGINEERS DWG'S
DB	DISTRIBUTION BOARD, REFER ELEC DWGS
FHR	FIRE HOSE REEL

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scale @A1 1 : 100 scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		8/11/2021
P18	DA ISSUE	AD	26/11/2021
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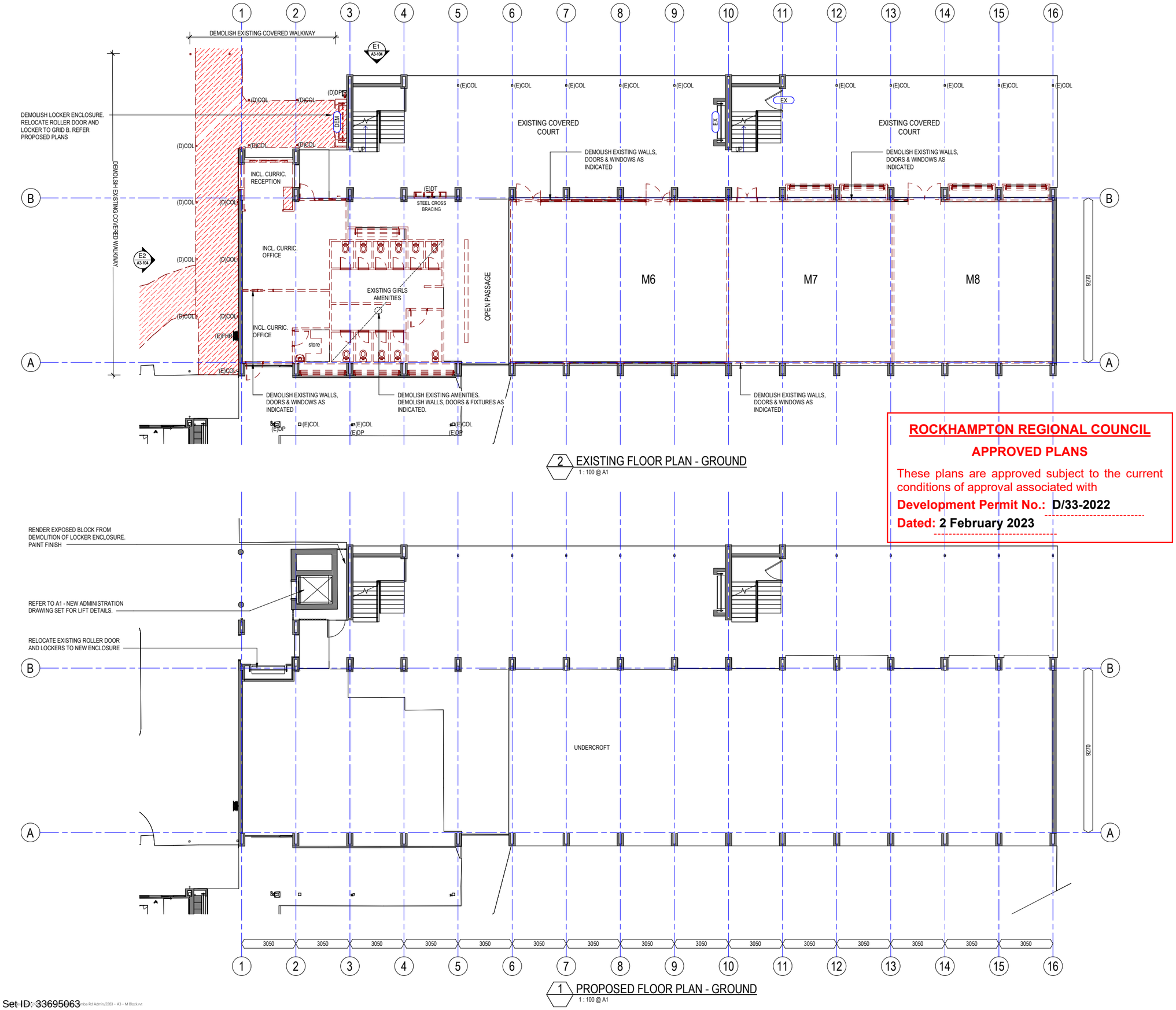
EMMAUS COLLEGE, YAAMBA RD, NORTH ROCKHAMPTON

project:
NEW ADMINISTRATION - S BLOCK ALTERATIONS

drawing title:
S WING FLOOR PLANS - LEVEL 1

job no:	drawing no:	rev:
2203	MCU-42	P19



2 EXISTING FLOOR PLAN - GROUND
1 : 100 @ A1

1 PROPOSED FLOOR PLAN - GROUND
1 : 100 @ A1

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GENERAL LEGEND

W.1.20.A	WINDOW NUMBER, REFER TO SPEC.
D1.10.8	DOOR NUMBER, REFER TO SPEC.
EX / (E)	DENOTES EXISTING.
DEM / (D)	DENOTES DEMOLISH.

KEYNOTE LEGEND

COL	COLUMN- TO ENGINEERS DWG'S
DP	DOWNPIPE, REFER HYDRA DRAWINGS.
DT	DRINKING TROUGH
FHR	FIRE HOSE REEL

scale @A1 1 : 100 scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		8/11/2021
P18	DA ISSUE	AD	26/11/2021
P19	MCU APPLICATION		12/01/2022

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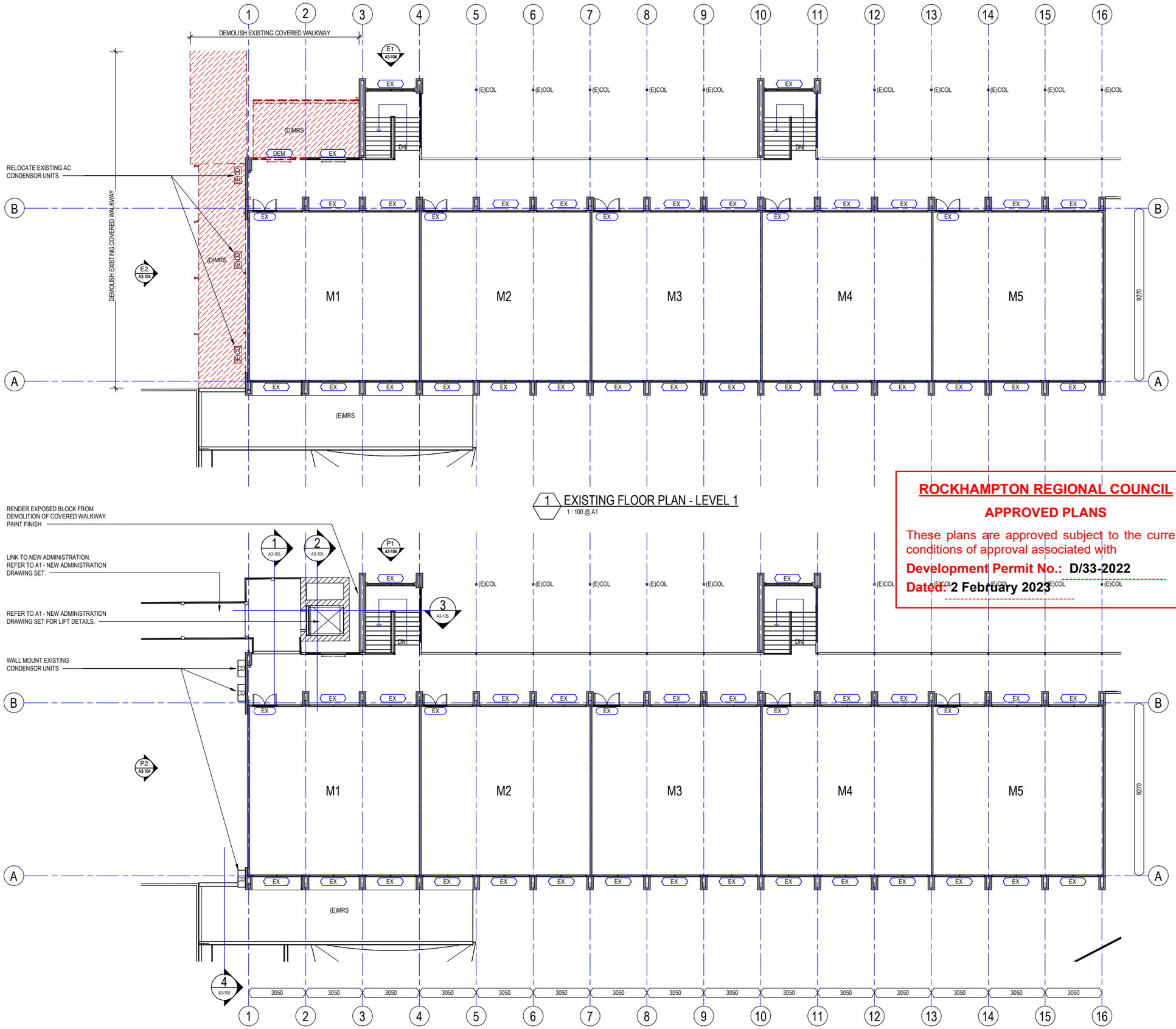
location:
EMMAUS COLLEGE, YAAMBA RD, NORTH ROCKHAMPTON

project:
M BLOCK ALTERATIONS

drawing title:
M BLOCK FLOOR PLANS - GROUND

job no:	drawing no:	rev:
2203	MCU-51	P19



1 EXISTING FLOOR PLAN - LEVEL 1
1 : 100 @ A1

2 PROPOSED FLOOR PLAN - LEVEL 1
1 : 100 @ A1

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GENERAL LEGEND

W.1.20.A WINDOW NUMBER, REFER TO SPEC.

D1.10.8 DOOR NUMBER, REFER TO SPEC.

EX / (E) DENOTES EXISTING.

DEM / (D) DENOTES DEMOLISH.

KEYNOTE LEGEND

CD	CONDENSER UNIT, REFER TO MECH DWGS
COL	COLUMN- TO ENGINEERS DWG'S
MRS	METAL ROOF SHEETING

scale @A1 1 : 100 scale @A3 1:200

0 5m 1:100

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P17	PRELIMINARY		8/11/2021
P18	DA ISSUE	AD	26/11/2021
P19	MCU APPLICATION		12/01/2022

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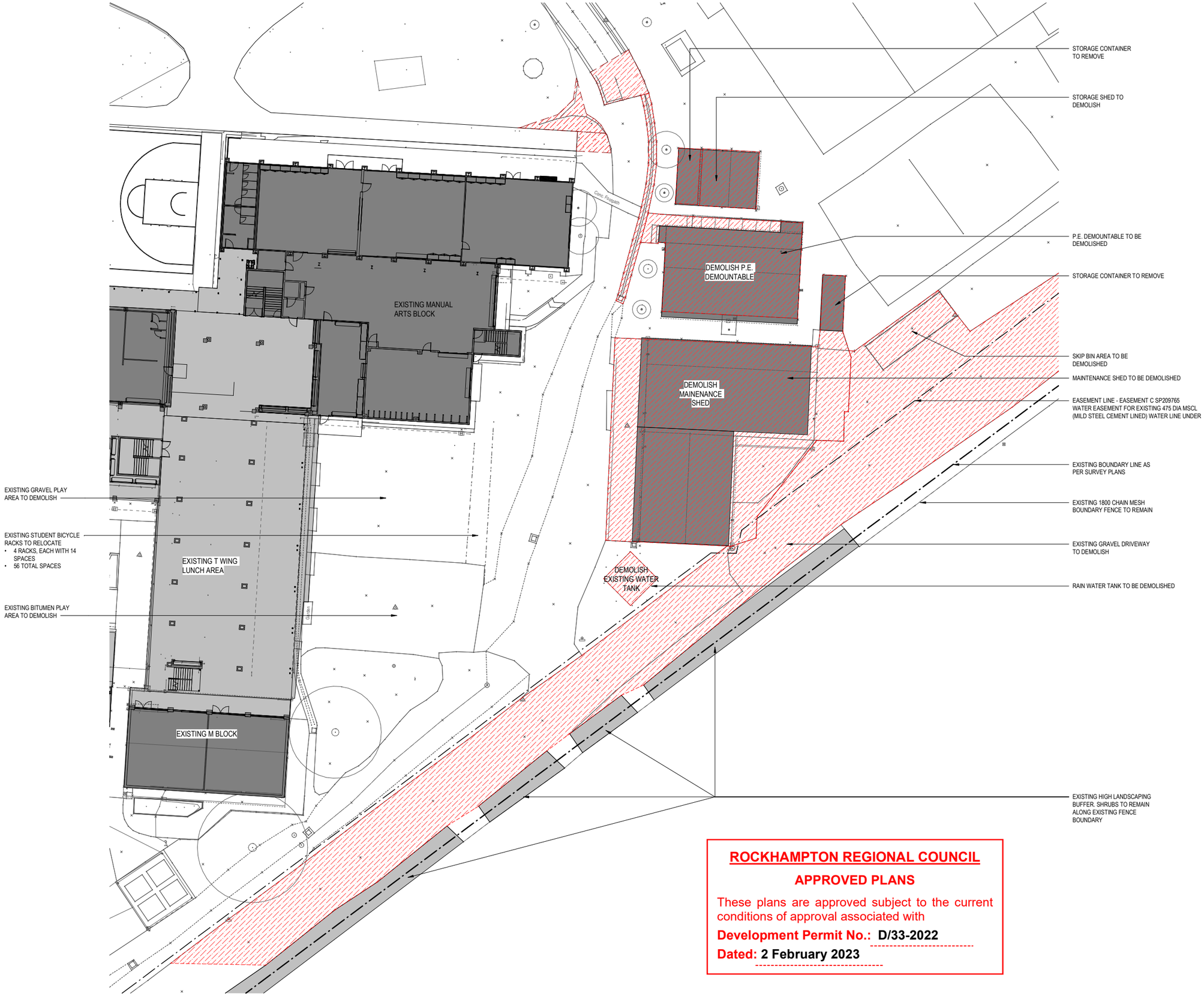
EMMAUS COLLEGE, YAAMBA RD, NORTH ROCKHAMPTON

project:
M BLOCK ALTERATIONS

drawing title:
M BLOCK FLOOR PLANS - LEVEL 1

job no:	drawing no:	rev:
2203	MCU-52	P19



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scale @A1 1 : 200 scale @A3 1:400

0 10m 1:200

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P19	STANTEC		09/12/2021
P20	INTERNAL REVIEW		20/12/2021
P21	MCU APPLICATION		12/01/2022

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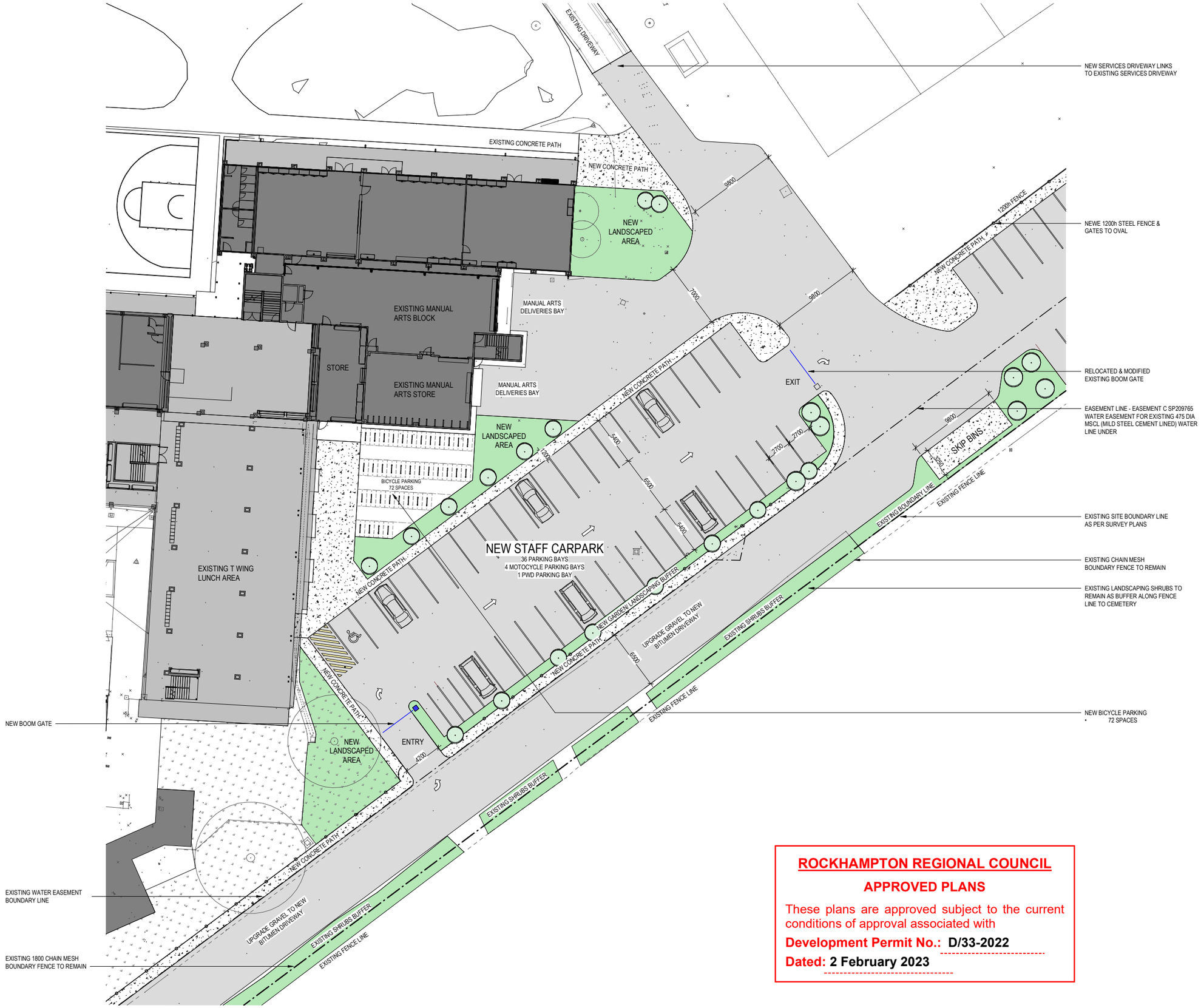
location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
EXISTING PART SITE - STAFF CARPARK

job no:	drawing no:	rev:
2203	MCU-60	P21



ROCKHAMPTON REGIONAL COUNCIL

APPROVED PLANS

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

Development Permit No.: **D/33-2022**

Dated: **2 February 2023**

GENERAL NOTES

- CONTRACTOR TO CONFIRM ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK.
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PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P19	STANTEC		09/12/2021
P20	INTERNAL REVIEW		20/12/2021
P21	MCU APPLICATION		12/01/2022

TONY MADDEN ARCHITECTS
(07) 4927 9700
www.tmarchitects.com.au

client:
ROMAN CATHOLIC TRUST CORP. DIOCESE OF ROCKHAMPTON FOR CATHOLIC EDUCATION - DIOCESE OF ROCKHAMPTON

location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
PROPOSED PART SITE - STAFF CARPARK

job no:	drawing no:	rev:
2203	MCU-61	P21

ROCKHAMPTON REGIONAL COUNCIL

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Development Permit No.: D/33-2022

Dated: 2 February 2023

EXISTING SPORTS FIELD

EXISTING SPORTS FIELD

LONG JUMP PADS

MODIFY EXISTING SAND PIT TO SUIT PROPOSED LAYOUT

MODIFY EXISTING SAND PIT TO SUIT PROPOSED LAYOUT

EXISTING CONCRETE PITCH

EXISTING 1200 FENCE TO REMOVE

EXISTING 1200 FENCE TO REMOVE

BOUNDARY LINE

FENCE LINE

EXISTING TREES TO REMAIN

DEMOLISH EXISTING TREES AS HATCHED

EXISTING TREE TO REMAIN

EXISTING WATER EASEMENT BOUNDARY LINE

EXISTING GRAVEL DRIVEWAY TO BE DEMOLISHED

EXISTING TREES TO REMAIN

EXISTING 1200 HT STEEL FENCE & GATES/TURNSTILES TO BE DEMOLISHED

EXISTING 1800 CHAIN MESH BOUNDARY FENCE TO REMAIN

EXISTING TREES TO REMAIN

DEMOLISH EXISTING TREES AS HATCHED

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PRELIMINARY

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location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
EXISTING PART SITE PLAN - OVAL CARPARK

job no:	drawing no:	rev:
2203	MCU-62	P21

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FENCE TYPES

FENCE - TYPE 1
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PRELIMINARY

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drawing title:
PROPOSED PART SITE PLAN - OVAL CARPARK

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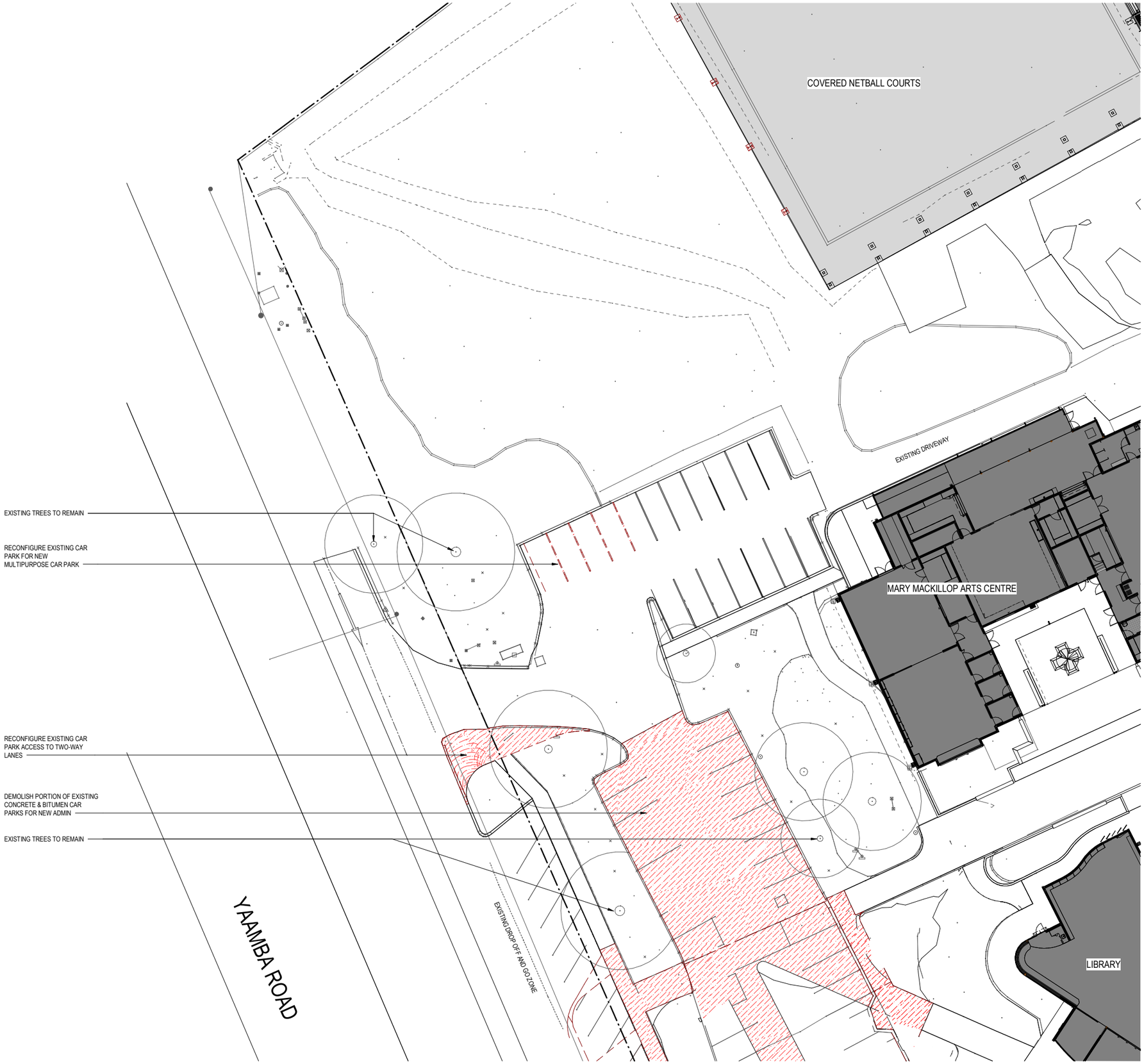

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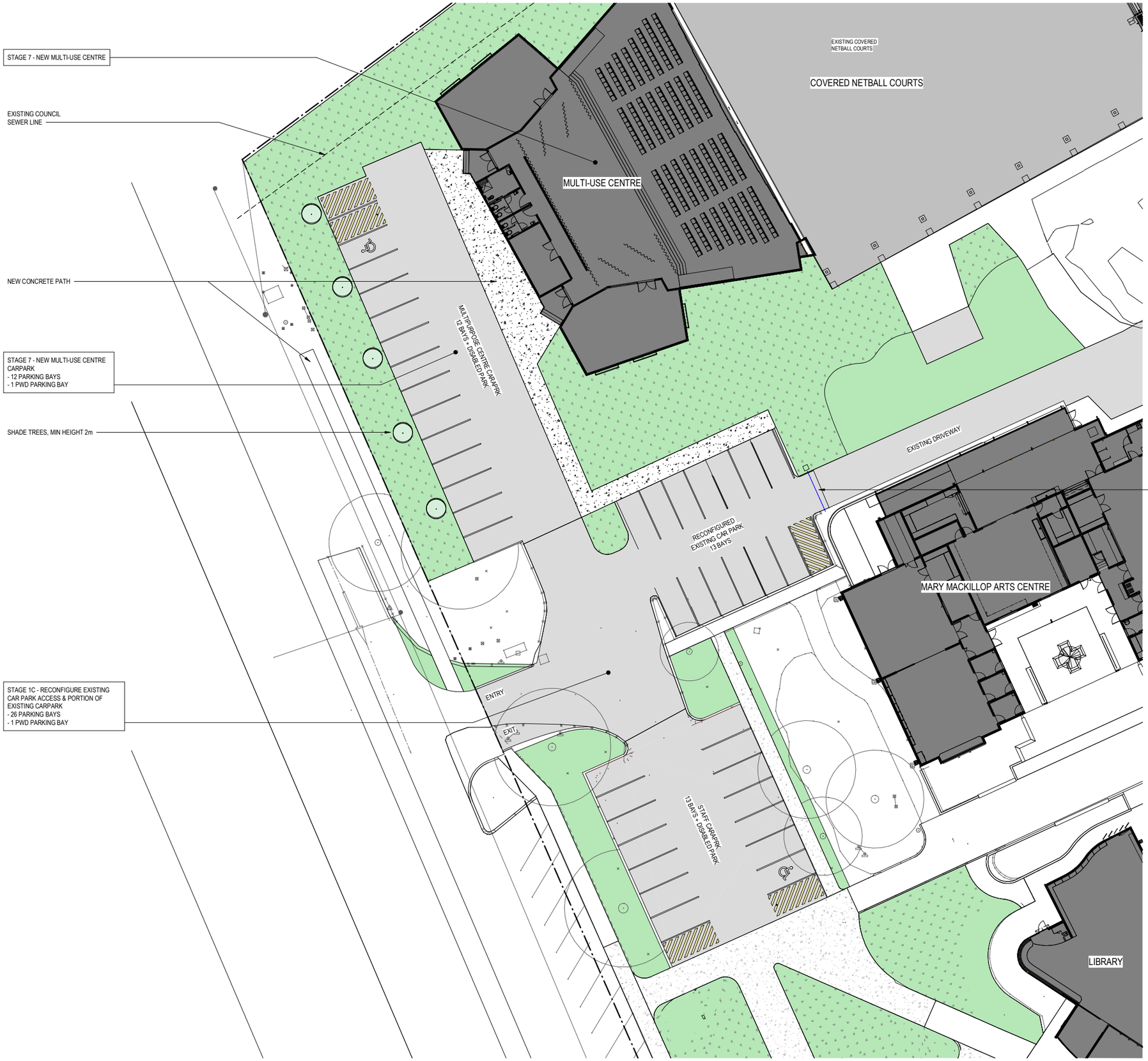
location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
EXISTING PART SITE PLAN - MULTI PURPOSE AND STAFF CARPARK

job no:	drawing no:	rev:
2203	MCU-64	P21



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job no:	drawing no:	rev:
2203	MCU-65	P21

Stormwater Management Report

Yaamba Road Campus Redevelopment, Emmaus College

The Roman Catholic Trust Corporation Diocese of Rockhampton for Catholic Education – Diocese of Rockhampton

Report 21195REP01

Janes and Stewart Structures Pty Ltd

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Project Number 21195
Date 04 March 2022

Janes and Stewart Structures

Report 21195REP01

Revision	Date	Revision Description	Author	Checked	Approval for issue for and on behalf of Janes and Stewart Structures Pty Ltd
1	04 March 2022	For Approval	MD	CJ	Matthew Dennis RPEQ 24862

Janes and Stewart Structures

Contents

Appendices

Janes and Stewart Structures

Introduction

Janes and Stewart Structures Pty Ltd has prepared this Stormwater Management Report in support of the Material Change of Use application for the redevelopment of the Yaamba Road campus of Emmaus College, located at 362 Yaamba Road, North Rockhampton. The Yaamba Road campus is situated on allotments with the real property descriptions Lot 1 on RP607187 & Lot 2 on RP607681. The redevelopment is intended to be completed over several stages and includes demolition of existing buildings to make way for new modernized facilities and improved infrastructure.

This report intends to address stormwater drainage relating to the redevelopment works including an assessment of stormwater quantity and quality measures.

An aerial photo extracted from Queensland Globe of the existing site is provided below:

Figure 1 Existing Site Aerial Photo (Extract: QLD Globe)

Stormwater Quantity

An analysis has been undertaken for the stormwater management of the development to ensure that no significant adverse impacts occur to adjacent and downstream properties and infrastructure from the proposed re-development of the Emmaus College Yaamba Road campus.

The Queensland Urban Drainage Manual 2017 (QUDM) has been utilised in order to determine the hydrology changes from the development through an analysis of the pre-development and post-development flow rates.

Existing System

The college site is part of a wider catchment discharging to Moores Creek. The catchment extends approximately 1.1kms north of the Emmaus College Yaamba Road campus to a crest in Yaamba Road adjacent the former Bunnings Warehouse site (Lot 25 on SP610513). Both a mixture of commercial and urban residential allotments are encompassed within this wider catchment including the college.

The runoff from the contributing catchment discharges to Moores Creek via a culvert crossing under Moores Creek Road. For the purposes of analyzing the stormwater strategy as part of this re-development, a point of analysis has been selected to be 60m south of the southern-most boundary of the college. This is prior to discharge to the Moores Creek Road culvert crossing and considered to be an appropriate location for analysis.

The catchment discharging to the point immediately downstream of site can be split into two distinct streams, with characteristics listed as follows:

- The main stream conveyed by half of the Yaamba Road corridor including service road adjacent to the college site.
- Existing stormwater pit and pipe infrastructure is located in several locations along Yaamba Road which divert a portion of the total main stream runoff away from the analyzed catchment.
- An existing stormwater pit and pipe system services the existing residential area to the north-east of the college and diverts runoff away from the college and discharges to Moores Creek.
- The Emmaus College Yaamba Road campus has been assigned as its own distinct catchment as a side stream contributing to the runoff discharging to Yaamba Road.

The college site currently has several pit and pipe stormwater drainage systems which connect to external infrastructure in the service lane of Yaamba Road including 2 x 1200mm diameter reinforced concrete pipes within the Yaamba Road service lane. It is intended that these connections will be maintained with northern, central and southern stormwater discharge locations currently in place along the college Yaamba Road boundary.

The following image highlights the key characteristics of the analysed catchment:

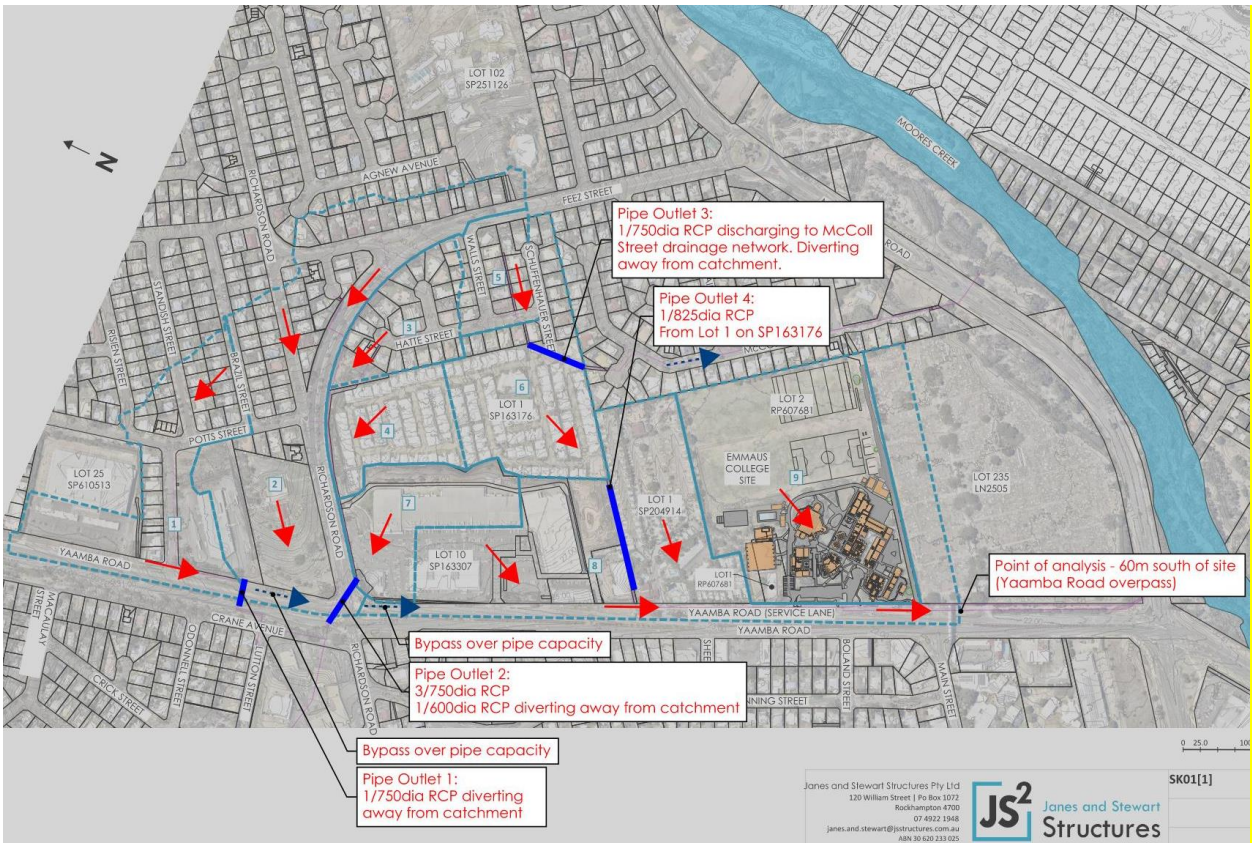

Figure 2 Existing Catchment Overview

Catchment Details

The existing catchment characteristics have been derived based on existing topography and the aerial imagery to define total and impervious areas. The existing Catchment plan included in Appendix A details the sub-catchment configuration which are combined to determine the total catchment contributing to the runoff at the point of analysis (60m south of the Emmaus College Yaamba Road campus).

The following table shows key characteristics of each catchment considered in the analysis:

Table 1 Existing Catchment Details

Catchment ID	Area (ha)	% Impervious	Discharge Location
1	5.710	70%	Yaamba Road (Pipe Outlet 1)
2	10.702	70%	Yaamba Road (Pipe Outlet 2)
3	2.477	70%	Richardson Road (Pipe Outlet 2)
4	2.606	70%	Richardson Road (Pipe Outlet 2)
5	1.744	70%	Pipe Outlet 3
6	4.789	70%	Pipe Outlet 4 (Yaamba Road)
7	3.161	70%	Yaamba Road (Pipe Outlet 2)
8	12.418	70%	Yaamba Road
9	9.250	28%	Yaamba Road
Total	**52.857**	**62.6%**	Yaamba Road (60m south of Emmaus College site)

As part of the study, the various pipe outlets which divert runoff away from the system have been considered. The bypassing flow exceeding the pipe outlet capacity has been added to the total runoff at the point of analysis. Therefore, the following flows will contribute to the point of analysis:

Table 2 Contributing Stream Catchments

Description	Stream
Pipe Outlet 1 Bypass	Main Stream
Pipe Outlet 2 Bypass	
Pipe Outlet 3 Bypass	
Catchment 6	
Catchment 8	
Catchment 9	Side Stream

Critical Time of Concentration

The critical time of concentration has been determined for each discharge location. This has been calculated by defining the longest flow path for a particular catchment and assigning this critical time to each of the contributing catchments at the point of analysis location. For the main stream, it was determined that Catchment 1 will have the longest travel time to the point of analysis.

Time of concentration has been calculated using a combination of the following methods where applicable in the accordance with the Queensland Urban Drainage Manual (QUDM) 2017:

- Friend's Equation for Overland Flow (QUDM 2017, Section 4.6.6)
- Kerb and Channel Travel Flow (QUDM 2017, Section 4.6.8)

The following table shows the critical time of concentration for each discharge location:

Table 3 Existing Critical Time of Concentration

Discharge Location	Flow Times - mins		Critical Time of Concentration (t_c) – mins
	Overland Sheet Flow	Kerb and Channel Flow	
Catchment 1 (Main Stream)	5.0	46	**51**
Emmaus College Site – Catchment 9 (Side Stream)	21.0	9.0	**30**

Therefore, these critical time of concentration values above will be assigned to the main stream catchments and side stream catchments respectively discharging to the point of analysis.

Design Rainfall Data

The adopted design rainfall intensities were sourced from the Bureau of Meteorology Design Rainfall Data System (2016) for the site location in North Rockhampton, Queensland. From this data, the 1 hour duration, 10 year design storm for North Rockhampton was determined. The rainfall intensities for a 63% Average Exceedance Probability (AEP) up to and including the 1% AEP were obtained for the critical time of concentrations previously determined.

The coefficient of discharge (C_{10}) for a 10% AEP design storm was assigned for each catchment using values from Table 4.5.3 of QUDM 2017 with use of the fraction impervious values and aforementioned rainfall intensity.

Using the C_{10} coefficient of discharge determined, the coefficient of discharge for the other various AEP's were calculated using the frequency factors (F_y) for each AEP from Table 4.5.2 of QUDM 2017.

The following tables shows the adopted rainfall intensities:

Table 4 Adopted Rainfall Intensities

Time of Concentration (t_c) – mins	Rainfall Intensity (I) – mm/hr						
	63%	39%	18%	10%	5%	2%	1%
30	57.8	64.4	85.6	101	116	137	154
51	41.6	46.3	61.9	73	84.1	99.5	112
60				65.7			

Peak Flow Calculations

The peak flow for each catchment based on the respective critical time of concentration has been calculated using the Rational Method as per QUDM 2017 section 4.3.

To determine the peak flow at the point of analysis 60m south of the Emmaus College Yaamba Road campus, the coincidental peak flows from the main stream and the side stream have been analysed as per the Carroll method (1990) provided under section 8.3.4 of QUDM 2017. The peak flows have been considered under two cases:

i. Flow conditions at the peak side stream (Catchment 9 – Emmaus College).
ii. Flow conditions at the time of peak flow passing down the main stream (Yaamba Road).

The peak flow for the main stream (Q_m) and side stream (Q_s) have been calculated as well as the combined flow ($Q_{combined}$) for each of the above cases.

Bypass exiting the system has also been considered based on the overland flow capacity checks performed.

As stated in Table D05.04.1 of the Capricorn Municipal Development Guidelines (CMDG) for Stormwater Drainage Design, the design AEP for low density urban residential use is a 39% AEP for the minor system and a 1% AEP for the major system.

Based on the above considerations the following table shows the peak flows at the point of analysis for each case of the existing system. Detailed stormwater calculations are included in Appendix D of this report.

Table 5 Existing Peak Flows at Point of Analysis (60m south of Emmaus College)

Average Exceedance Probability (AEP)	Peak Flows (m^3/s)					
	Case i			Case ii		
	Q_m	Q_s	$Q_{combined}$	Q_m	Q_s	$Q_{combined}$
63%	1.076	0.864	1.940	1.320	0.622	1.942
39% (Minor)	1.274	1.023	2.296	1.561	0.735	2.296
18%	1.892	1.519	3.412	2.333	1.098	3.431
10%	2.350	1.887	4.237	2.912	1.364	4.275
5%	2.835	2.275	5.110	4.187	1.650	5.837
2%	4.530	2.943	7.473	6.621	2.137	8.758
1% (Major)	6.040	3.452	9.492	8.549	2.511	11.060

As can be seen in the above table, case ii presents the greater peak flows for all design storms AEP's at the point of analysis. Therefore, at the time of the peak flows passing down Yaamba Road (main stream).

Proposed System

The drainage strategy for the proposed development will not alter significantly from the existing scenario with site discharge locations maintained. Additional drainage measures to control and convey runoff are intended to be incorporated into the design to improve conveyance of on-site drainage on the college campus.

The re-development includes the demolition of existing buildings and hardstands to make way for new buildings and infrastructure including car parking facilities and internal access roads. The details of the proposed works are illustrated in detail on the architectural documents prepared by Tony Madden Architects included as part of the Material Change of Use planning application.

Catchment Details

Adjustments to the finished surface levels and new impervious paved areas are proposed with the re-development. A comparison of the existing and proposed impervious areas has determined that the total impervious area does not change significantly as a result of the re-development. The discharge locations are intended to remain the same as part of the re-development and the college catchment will also remain the same. The following table includes the catchment characteristics analysed in the proposed system scenario with fraction impervious values assigned based on the re-development layout. A proposed catchment plan is provided in Appendix B:

Table 6 Proposed Catchment Details

Catchment ID	Area (ha)	% Impervious	Discharge Location
1	5.710	70%	Yaamba Road (Pipe Outlet 1)
2	10.702	70%	Yaamba Road (Pipe Outlet 2)
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8	12.418	70%	Yaamba Road
9	9.250	30%	Yaamba Road
Total	**52.857**	**62.9%**	Yaamba Road (60m south of Emmaus College site)

Critical Time of Concentration

The critical time of concentration for each discharge location was adopted to be the same as the existing case for the proposed system scenario, as the nature of the upper portion of the contributing catchment to the point of analysis has not changed. Therefore, the critical time of concentration values remain as stated in Table 3 of this report.

Design Rainfall Data

The design rainfall data for the proposed system scenario will remain the same as the existing system in order to adequately compare existing (pre-development) against the proposed (post-development) situation. Refer to the Design Rainfall Data section of the Existing System section for more details.

Peak Flow Calculations

The following table shows the peak flows at the point of analysis for each case of the proposed system, adopting the same principles calculated for the existing system.

Detailed stormwater calculations are included in Appendix D of this report.

Table 7 Proposed Peak Flows at Point of Analysis (60m south of Emmaus College)

Average Exceedance Probability (AEP)	Peak Flows (m^3/s)					
	Case i			Case ii		
	Q_m	Q_s	$Q_{combined}$	Q_m	Q_s	$Q_{combined}$
63%	1.076	0.870	1.946	1.320	0.626	1.946
39% (Minor)	1.274	1.030	2.303	1.561	0.740	2.301
18%	1.892	1.529	3.422	2.333	1.106	3.439
10%	2.350	1.900	4.250	2.912	1.373	4.285
5%	2.835	2.291	5.125	4.187	1.661	5.848
2%	4.530	2.963	7.494	6.621	2.152	8.773
1% (Major)	6.040	3.476	9.516	8.549	2.528	11.077

As can be seen in the above table, similar the existing system case ii presents the greater peak flows for all design storms AEP's at the point of analysis. Therefore, at the time of the peak flows passing down Yaamba Road (main stream).

Summary of Existing and Proposed Peak Flow Rates

The peak flow rates determined for the existing system and proposed system at the point of analysis have been summarized in the following table to form a comparison.

Table 8 Existing and Proposed Peak Flows Rates at Point of Analysis (60m south of Emmaus College)

Average Exceedance Probability (AEP)	Peak Flows (m^3/s)		Difference (%)
	Existing	Proposed	
63%	1.942	1.946	0.22
39% (Minor)	2.296	2.301	0.22
18%	3.431	3.439	0.22
10%	4.275	4.285	0.22
5%	5.837	5.848	0.19
2%	8.758	8.773	0.17
1% (Major)	11.060	11.077	0.16

As can be seen in the above table, peak flows at the point of analysis being 60m south of the Emmaus College Yaamba Road site have not altered significantly as a result of the re-development of the college campus included in this development application. The impervious area on the site has increased by 2% from the existing impervious area resulting in an insignificant change in peak flow rates for the analysed design storms. In a 1% AEP, the peak flow changes by 0.16% or 0.017m^3/s which can be catered for by the existing infrastructure in Yaamba Road including the 2 x 1200mm diameter reinforced concrete stormwater pipes and overland surface flow capacity.

Therefore based on this analysis, no stormwater quantity mitigation measures will be required to accommodate the development works as the peak flows from the site do not coincide with the peak flows from the total contributing catchment at the outlet to Yaamba Road, analysed 60m south of the Emmaus College site.

Stormwater Management Plan

As discussed in the Proposed System section, the overall drainage strategy for the Emmaus College redevelopment will be similar to the existing scenario with site discharge locations maintained. The proposed works will include upgrading selected on-site stormwater management systems to suit the re-developed layout and generally improve drainage.

As part of the proposal, new internal stormwater pit and pipe networks will be incorporated into the design. This includes a new pit and pipe network at the southern end of the college which is intended to convey the majority of the runoff from the college grassed fields and new car park and access road works along the southern boundary, to connect to existing pipe infrastructure in the Yaamba Road service lane. The inclusion of this new stormwater will further increase the underground drainage capacity for the college.

A site based stormwater management plan showing a preliminary pit and pipe drainage layout is included in Appendix D. This layout is subject to further detailed analysis and could be subject to change as the project advances in design.

Stormwater Quality

The stormwater quality assessment for the development has been based on the requirements listed in the State Planning Policy – July 2017 under the Water Quality section.

Further to the review provided in the town planning report, the proposed re-development of the Yaamba Road Emmaus College campus does not significantly alter the impervious area from the existing site arrangement as outlined in the Stormwater Quantity section of this report. It is anticipated that the change in the quality of stormwater discharging from the site will be insignificant with the increase in impervious area from the re-development being approximately 2%. Therefore, it is proposed that no specific stormwater quality treatment devices are required with the re-development based on the minimal change to the impervious area on the site and considering the triggers of the State Planning Policy.

Conclusion

There appears to be no insurmountable difficulties in relation to the stormwater management proposal for the re-development of the Emmaus College Yaamba Road campus located at 362 Yaamba Road, North Rockhampton.

Stormwater Quantity and Quality for the development has been assessed with the following conclusions determined:

- A comparison between the existing and proposed peak flow rates was undertaken immediately downstream of the Emmaus College Yaamba Road college site. The peak flows do not change significantly at this location in all modelled design storms as a result of the development and therefore no drainage mitigation measures are required.
- The stormwater for the site will be managed through the use of upgraded internal pit and pipe drainage systems and overland flow capacity via car parks and access road hardstands. These upgrades will further improve the underground drainage capacity for the college.
- Stormwater quality has been reviewed and given the minimal change in impervious area on the site based on the re-development, no specific treatment measures are required with the development.

If you should have any questions regarding this report, please do not hesitate to contact the office of Janes and Stewart Structures Pty Ltd (07) 4922 1948.

Janes and Stewart Structures

Appendix A

Existing Catchment Plan

Yaamba Road Campus Redevelopment, Emmaus College
The RCTC Diocese of Rockhampton for Catholic Education – Diocese of Rockhampton

Report 21195REP01

Janes and Stewart Structures Pty Ltd

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120 William Street
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07 4922 1948
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LEGEND	
	BUILDING ROOF AREA (SITE ONLY)
	SEALED PAVEMENT AREA (SITE ONLY)
	EXISTING STORMWATER DRAINAGE (DIA. AS NOTED)
	EXISTING LOT BOUNDARY
	EXISTING STORMWATER DRAINAGE CATCHMENT
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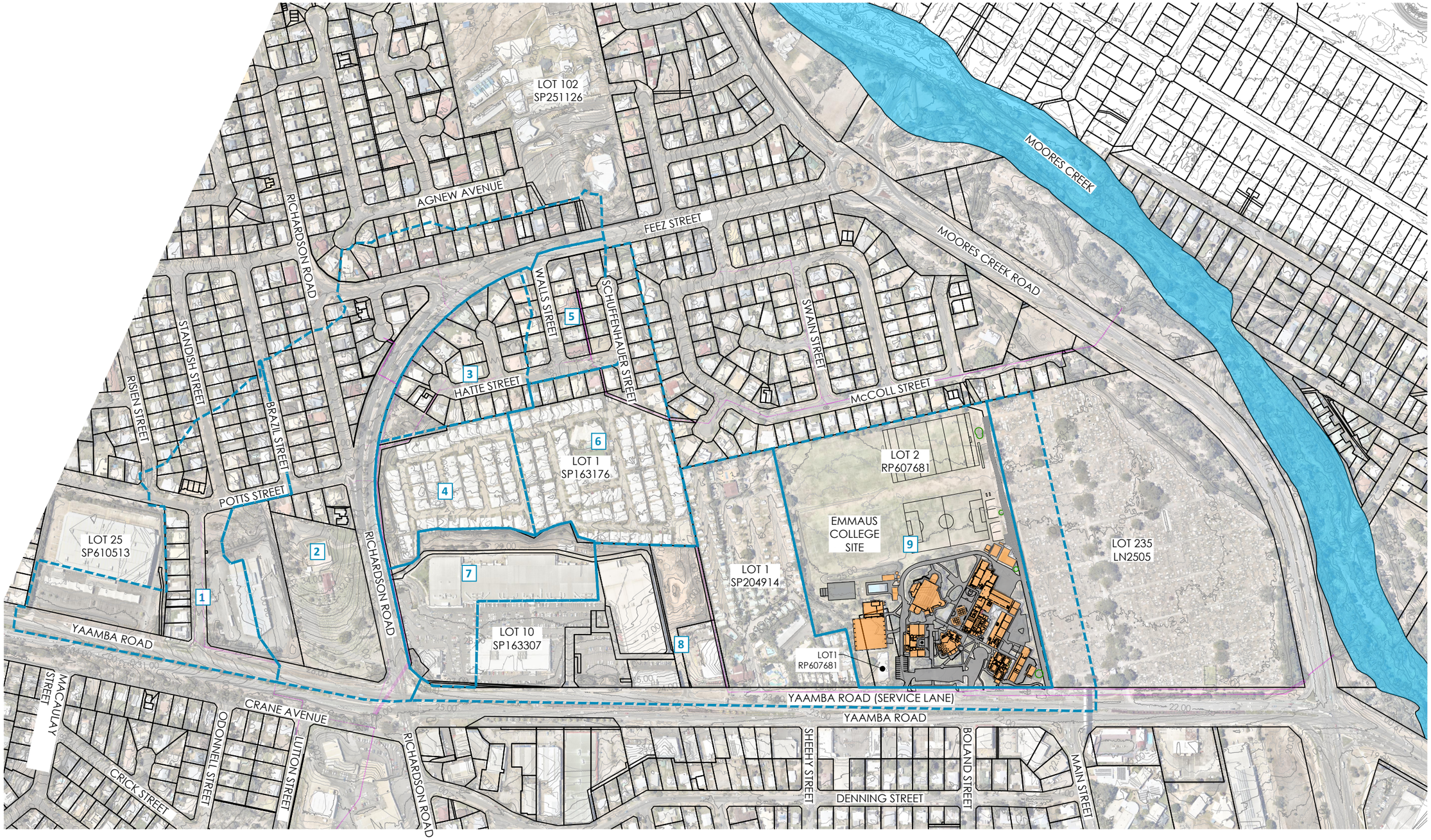

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120 William Street | Po Box 1072
Rockhampton 4700
07 4922 1948
janes.and.stewart@jsstructures.com.au
ABN 30 620 233 025

Janes and Stewart Structures

Project Number	SK01[1]
	21195
Date	04/03/2022

EXISTING CATCHMENT PLAN

Janes and Stewart Structures

Appendix B

Proposed Catchment Plan

Yaamba Road Campus Redevelopment, Emmaus College
The RCTC Diocese of Rockhampton for Catholic Education – Diocese of Rockhampton

Report 21195REP01

Janes and Stewart Structures Pty Ltd

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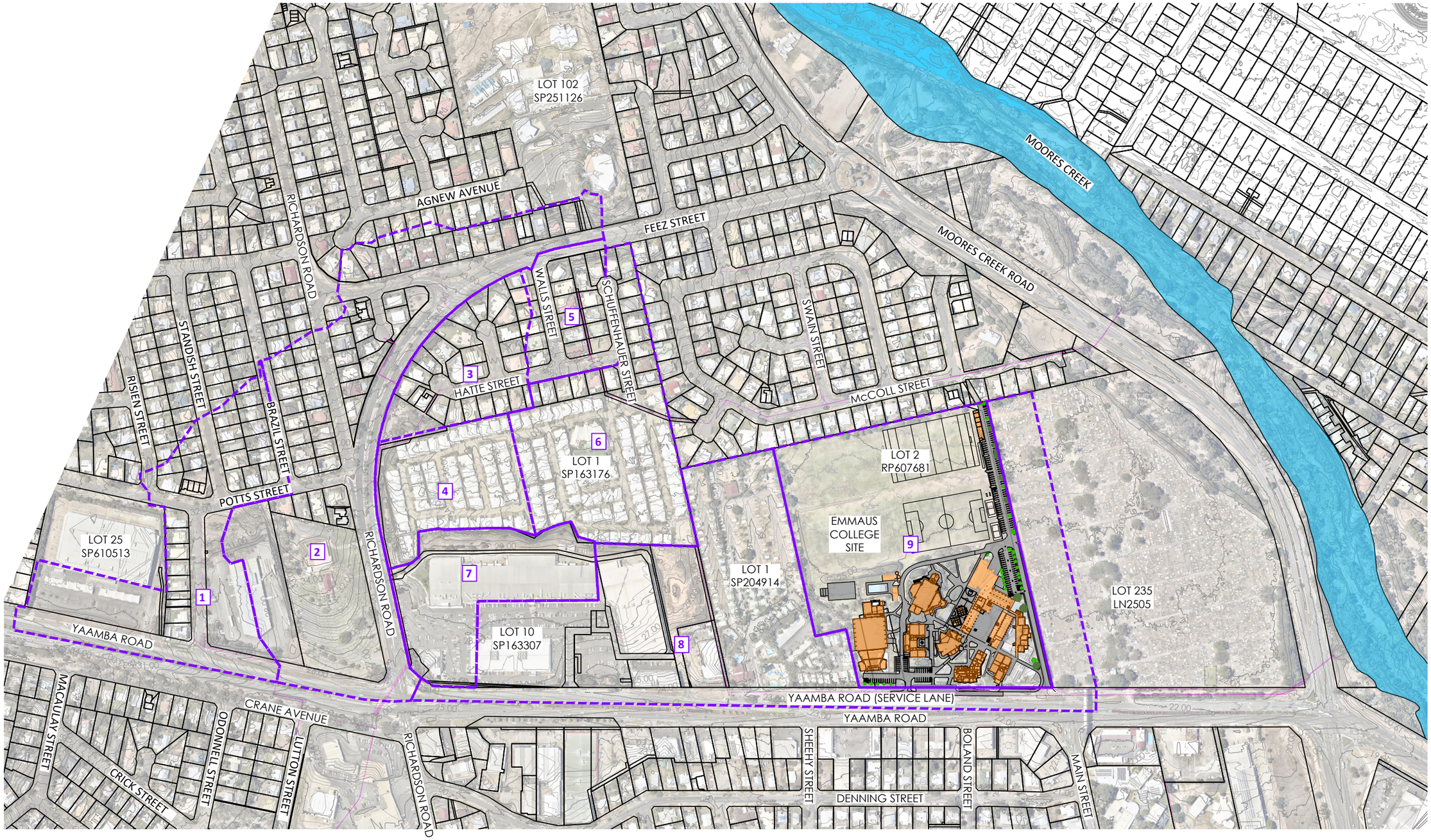
LEGEND	
	BUILDING ROOF AREA (SITE ONLY)
	SEALED PAVEMENT AREA (SITE ONLY)
	EXISTING STORMWATER DRAINAGE (DIA. AS NOTED)
	EXISTING LOT BOUNDARY
	PROPOSED STORMWATER DRAINAGE CATCHMENT
10.00	EXISTING CONTOUR



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Janes and Stewart Structures

Project Number
SK02[1]
21195
Date
04/03/2022

PROPOSED CATCHMENT PLAN

Janes and Stewart Structures

Appendix C

Existing and Proposed Site Plans

Yaamba Road Campus Redevelopment, Emmaus College
The RCTC Diocese of Rockhampton for Catholic Education – Diocese of Rockhampton

Report 21195REP01

Janes and Stewart Structures Pty Ltd

ABN: 30 620 233 025
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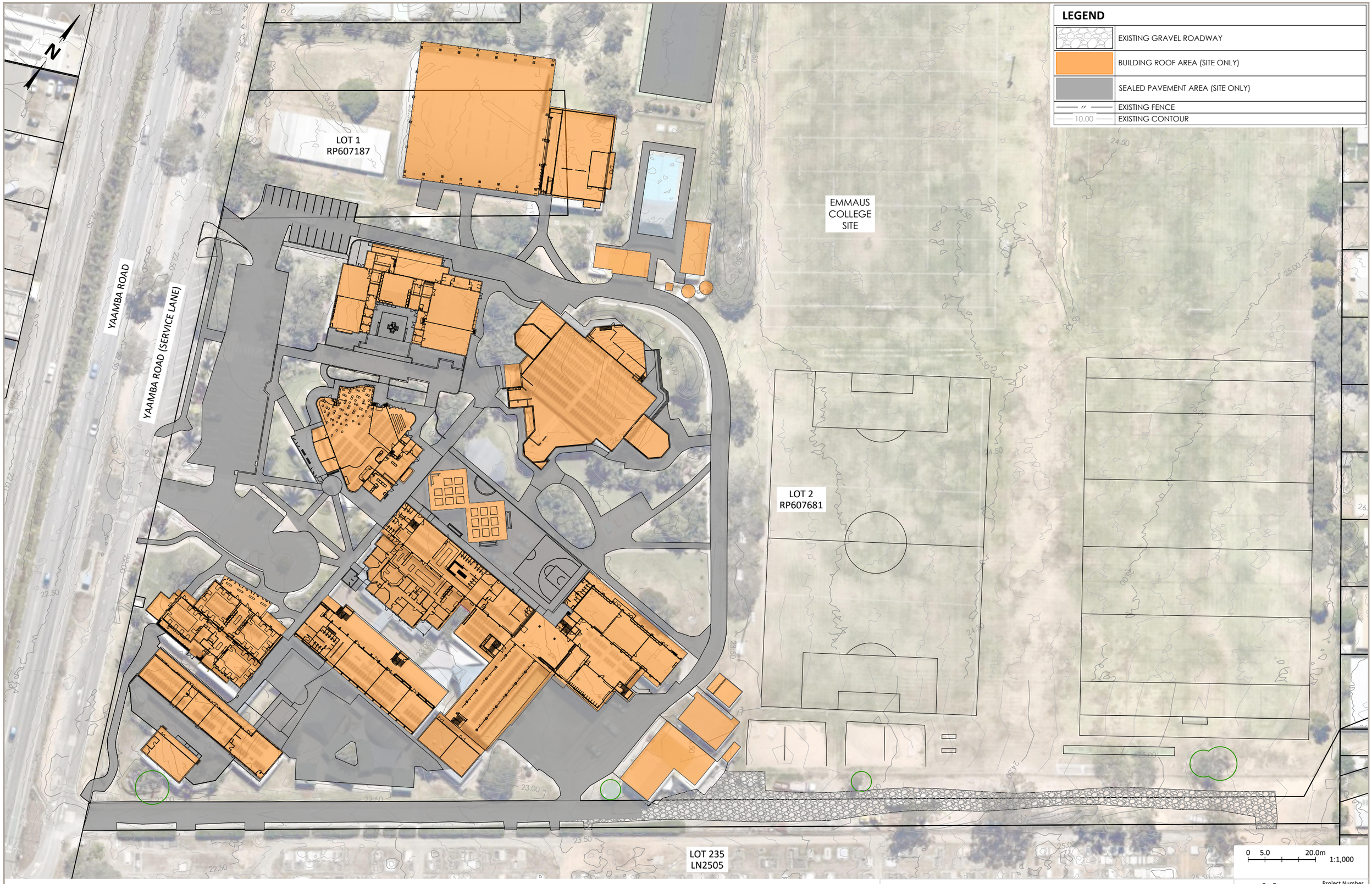

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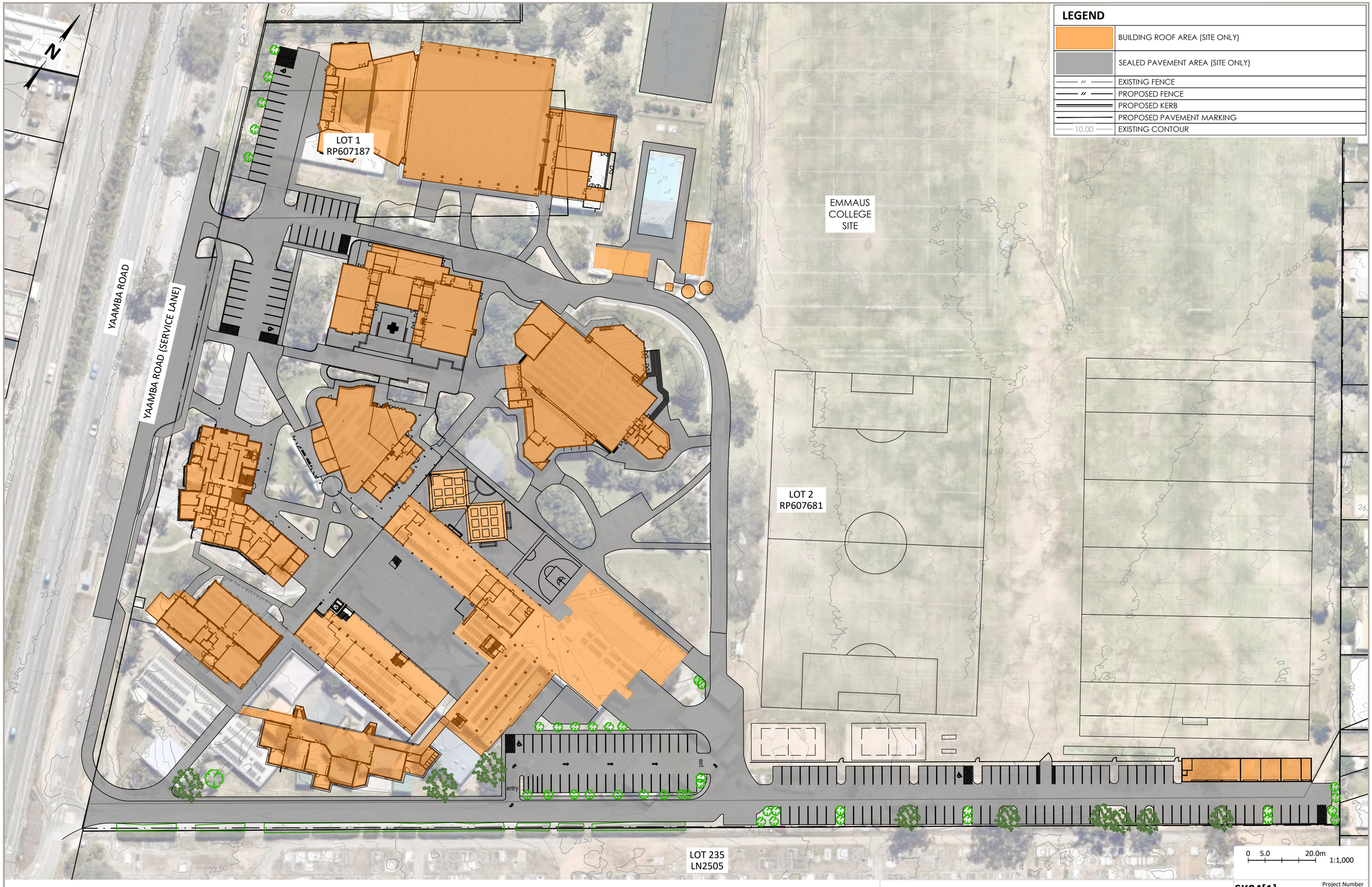
Janes and Stewart Structures

Project Number
SK03[1]

21195

Date
04/03/2022

EXISTING SITE PLAN



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Janes and Stewart Structures

Project Number
SK04[1]
21195
Date
04/03/2022

PROPOSED SITE PLAN

Janes and Stewart Structures

Appendix D

Stormwater Management Plan

Yaamba Road Campus Redevelopment, Emmaus College The RCTC Diocese of Rockhampton for Catholic Education – Diocese of Rockhampton

Report 21195REP01

Janes and Stewart Structures Pty Ltd

ABN: 30 620 233 025
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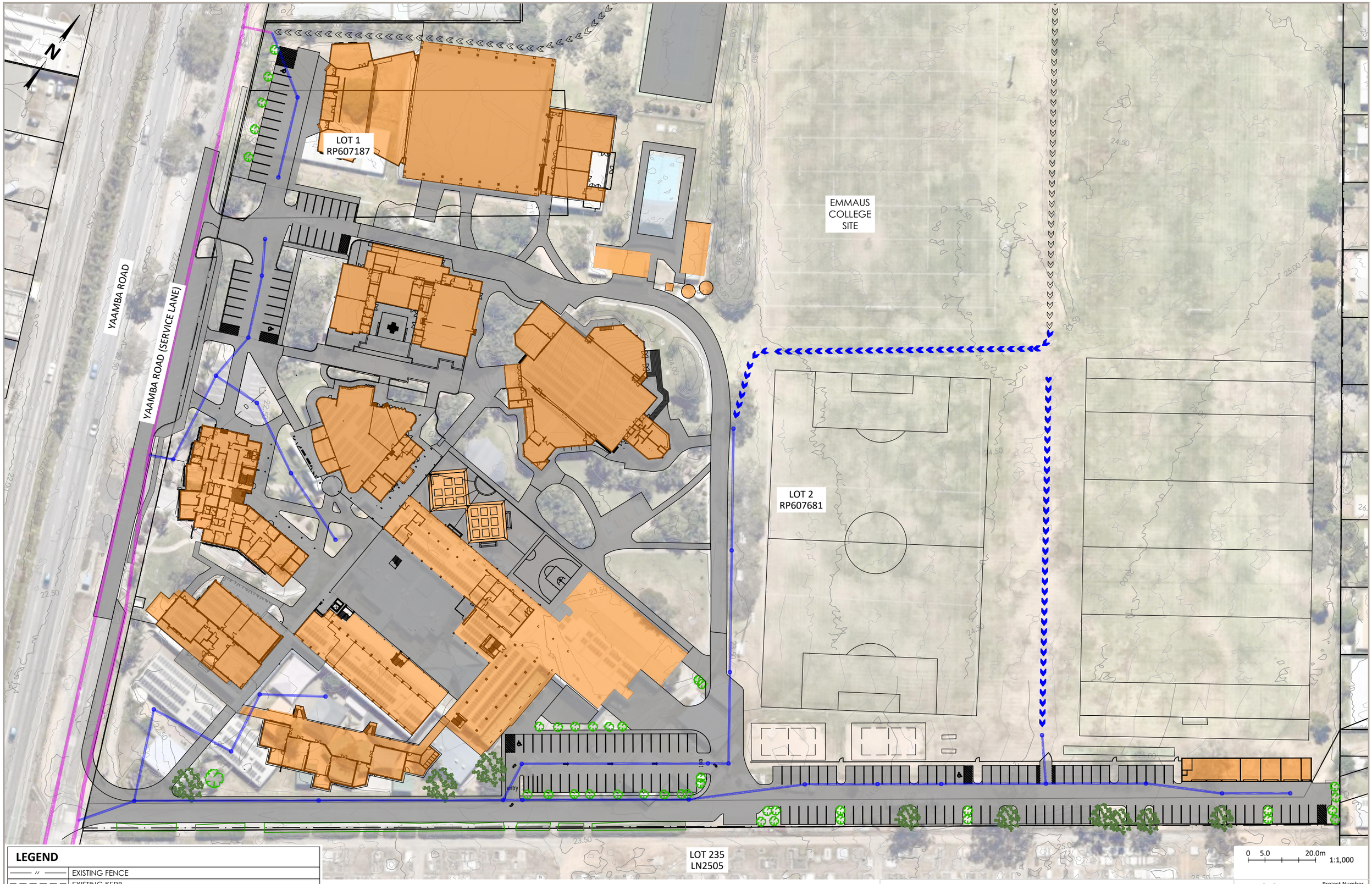

LEGEND

——〃——	EXISTING FENCE
═══	EXISTING KERB
———	EXISTING STORMWATER DRAINAGE (DIA. AS NOTED)
» » » » » »	EXISTING DRAINAGE CHANNEL
———	PROPOSED STORMWATER DRAINAGE (DIA. AS NOTED)
▶▶▶▶▶▶	PROPOSED DRAINAGE CHANNEL
——〃——	PROPOSED FENCE
———	PROPOSED PAVEMENT MARKING

0 5.0 20.0m 1:1,000

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Janes and Stewart Structures

Project Number
SK05[1]
21195
Date
04/03/2022

SITE BASED STORMWATER MANAGEMENT PLAN

Janes and Stewart Structures

Appendix E

Stormwater Calculations

Yaamba Road Campus Redevelopment, Emmaus College
The RCTC Diocese of Rockhampton for Catholic Education – Diocese of Rockhampton

Report 21195REP01

Janes and Stewart Structures Pty Ltd

ABN: 30 620 233 025
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Existing Runoff

Time of Concentration (to Point of Analysis)

Catchment 1

Bunnings Carpark pipe flow runoff	5.0	mins	
Kerb and Channel Flow (QUDM)			
Length of Gutter Flow (L)	531.0		
Slope of Gutter (S)	1.5		$t = 0.025\ L / S^{0.5}$ (minutes)
Time of Gutter Flow (t)	10.8	mins	
Kerb and Channel Flow (QUDM)			
Length of Gutter Flow (L)	838.0		
Slope of Gutter (S)	0.4		$t = 0.025\ L / S^{0.5}$ (minutes)
Time of Gutter Flow (t)	35.4	mins	
Time of Concentration (t) to Point of Analysis	51.3	mins	

Catchment 9

Friend's Equation (QUDM)

Description	**Value**	**Unit**	
Overland Sheet Flow Path Length (L)	271	m	
Horton's Surface Roughness Factor (n)	0.03		$t = (107n\ L^{0.333})/S^{0.2}$
Upstream RL	26.100	m	
Downstream RL	23.700	m	
Slope of Surface (S)	0.9	%	
Overland Flow Time (t)	21.2	mins	
Kerb and Channel Flow (QUDM)			
Length of Gutter Flow (L)	271.0		
Slope of Gutter (S)	0.6		$t = 0.025\ L / S^{0.5}$ (minutes)
Time of Gutter Flow (t)	8.8	mins	
Time of Concentration (t) at Point of Analysis	30.1	mins	

Existing Runoff
Rational Method

Runoff Calculation downstream of Emmaus College, Yaamba Road: Case i
Using Coincident Flooding Method: Carroll (1990)
QUDM BN8.3.4

Case i - Rainfall Intensity Corresponding to Time of Concentration for Side Drain

Main Drain Time of Concentration (t_{cm})	51.3	mins
Side Drain Time of Concentration (t_{cs})	30.1	mins

EX Catchment 9 (Qs)

TOC **30** mins

Area = 9.25 Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 92500 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.582	57.80	9.25	**0.864**	0.80
Q_2 - Minor	0.00278	0.618	64.40	9.25	**1.023**	0.85
Q_5	0.00278	0.691	85.60	9.25	**1.519**	0.95
Q_{10}	0.00278	0.727	101.00	9.25	**1.887**	1.00
Q_{20}	0.00278	0.763	116.00	9.25	**2.275**	1.05
Q_{50}	0.00278	0.836	137.00	9.25	**2.943**	1.15
Q_{100} - Major	0.00278	0.872	154.00	9.25	**3.452**	1.20

C10 value 0.727

fi value 27.00 % = 0.27 fi

EX Catchment 1 (Qm)

TOC	30	mins	Area =	5.71	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 57100 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	5.71	**0.357**	0.80
Q_2 - Minor	0.00278	0.706	64.40	5.71	**0.423**	0.85
Q_5	0.00278	0.789	85.60	5.71	**0.628**	0.95
Q_{10}	0.00278	0.830	101.00	5.71	**0.780**	1.00
Q_{20}	0.00278	0.872	116.00	5.71	**0.941**	1.05
Q_{50}	0.00278	0.955	137.00	5.71	**1.217**	1.15
Q_{100} - Major	0.00278	0.996	154.00	5.71	**1.427**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 2 (Qm)

TOC	30	mins	Area =	10.702	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 107020 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	10.702	**0.669**	0.80
Q_2 - Minor	0.00278	0.706	64.40	10.702	**0.792**	0.85
Q_5	0.00278	0.789	85.60	10.702	**1.177**	0.95
Q_{10}	0.00278	0.830	101.00	10.702	**1.462**	1.00
Q_{20}	0.00278	0.872	116.00	10.702	**1.763**	1.05
Q_{50}	0.00278	0.955	137.00	10.702	**2.280**	1.15
Q_{100} - Major	0.00278	0.996	154.00	10.702	**2.675**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 3 (Qm)

TOC	30	mins	Area =	2.477	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 24770 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	2.477	**0.155**	0.80
Q_2 - Minor	0.00278	0.706	64.40	2.477	**0.183**	0.85
Q_5	0.00278	0.789	85.60	2.477	**0.272**	0.95
Q_{10}	0.00278	0.830	101.00	2.477	**0.338**	1.00
Q_{20}	0.00278	0.872	116.00	2.477	**0.408**	1.05
Q_{50}	0.00278	0.955	137.00	2.477	**0.528**	1.15
Q_{100} - Major	0.00278	0.996	154.00	2.477	**0.619**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 4 (Qm)

TOC	30	mins	Area =	2.606	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 26060 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	2.606	**0.163**	0.80
Q_2 - Minor	0.00278	0.706	64.40	2.606	**0.193**	0.85
Q_5	0.00278	0.789	85.60	2.606	**0.287**	0.95
Q_{10}	0.00278	0.830	101.00	2.606	**0.356**	1.00
Q_{20}	0.00278	0.872	116.00	2.606	**0.429**	1.05
Q_{50}	0.00278	0.955	137.00	2.606	**0.555**	1.15
Q_{100} - Major	0.00278	0.996	154.00	2.606	**0.651**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 5 (Qm)

TOC	30	mins	Area =	1.744	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 17440 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	1.744	**0.109**	0.80
Q_2 - Minor	0.00278	0.706	64.40	1.744	**0.129**	0.85
Q_5	0.00278	0.789	85.60	1.744	**0.192**	0.95
Q_{10}	0.00278	0.830	101.00	1.744	**0.238**	1.00
Q_{20}	0.00278	0.872	116.00	1.744	**0.287**	1.05
Q_{50}	0.00278	0.955	137.00	1.744	**0.372**	1.15
Q_{100} - Major	0.00278	0.996	154.00	1.744	**0.436**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 6 (Qm)

TOC	30	mins	Area =	4.789	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 47890 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	4.789	**0.299**	0.80
Q_2 - Minor	0.00278	0.706	64.40	4.789	**0.355**	0.85
Q_5	0.00278	0.789	85.60	4.789	**0.527**	0.95
Q_{10}	0.00278	0.830	101.00	4.789	**0.654**	1.00
Q_{20}	0.00278	0.872	116.00	4.789	**0.789**	1.05
Q_{50}	0.00278	0.955	137.00	4.789	**1.020**	1.15
Q_{100} - Major	0.00278	0.996	154.00	4.789	**1.197**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 7 (Qm)

TOC	30	mins	Area =	3.161	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 31610 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	3.161	**0.198**	0.80
Q_2 - Minor	0.00278	0.706	64.40	3.161	**0.234**	0.85
Q_5	0.00278	0.789	85.60	3.161	**0.348**	0.95
Q_{10}	0.00278	0.830	101.00	3.161	**0.432**	1.00
Q_{20}	0.00278	0.872	116.00	3.161	**0.521**	1.05
Q_{50}	0.00278	0.955	137.00	3.161	**0.674**	1.15
Q_{100} - Major	0.00278	0.996	154.00	3.161	**0.790**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 8 (Qm)

TOC	30	mins	Area =	12.418	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 124180 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	12.418	**0.777**	0.80
Q_2 - Minor	0.00278	0.706	64.40	12.418	**0.919**	0.85
Q_5	0.00278	0.789	85.60	12.418	**1.366**	0.95
Q_{10}	0.00278	0.830	101.00	12.418	**1.696**	1.00
Q_{20}	0.00278	0.872	116.00	12.418	**2.046**	1.05
Q_{50}	0.00278	0.955	137.00	12.418	**2.646**	1.15
Q_{100} - Major	0.00278	0.996	154.00	12.418	**3.104**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

Pipe Outlet 1 Bypass (Qm)

Contributing Catchment **1**

Pipe Capacity @ 1% 1.25 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.000**	
Q_{100} - Major					**0.177**	

Pipe Outlet 2 Bypass (Qm)

Contributing Catchment **2,3,4,7, Pipe Oulet 1 Bypass**

Pipe Capacity @ 0.5% 3.173 m³/s

1 x 600 3 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.864**	
Q_{100} - Major					**1.739**	

Pipe Outlet 3 Bypass (Qm)

Contributing Catchment **5**

Pipe Capacity @ 2.6% 2 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.000**	
Q_{100} - Major					**0.000**	

Existing Runoff
Rational Method

Runoff Calculation downstream of Emmaus College, Yaamba Road: Case ii
Using Coincident Flooding Method: Carroll (1990)
QUDM BN8.3.4

Case ii - Rainfall Intensity Corresponding to Time of Concentration for Main Drain

Main Drain Time of Concentration (t_{cm})	51.3	mins
Side Drain Time of Concentration (t_{cs})	30.1	mins

EX Catchment 9 (Qs)

TOC **51** mins

Area = 9.25 Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 92500 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.582	41.60	9.25	**0.622**	0.80
Q_2 - Minor	0.00278	0.618	46.30	9.25	**0.735**	0.85
Q_5	0.00278	0.691	61.90	9.25	**1.098**	0.95
Q_{10}	0.00278	0.727	73.00	9.25	**1.364**	1.00
Q_{20}	0.00278	0.763	84.10	9.25	**1.650**	1.05
Q_{50}	0.00278	0.836	99.50	9.25	**2.137**	1.15
Q_{100} - Major	0.00278	0.872	112.00	9.25	**2.511**	1.20

C10 value 0.727

fi value 27.00 % = 0.27 fi

EX Catchment 1 (Qm)

TOC	51	mins	Area =	5.71	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 57100 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	5.71	**0.438**	0.80
Q_2 - Minor	0.00278	0.706	46.30	5.71	**0.518**	0.85
Q_5	0.00278	0.789	61.90	5.71	**0.774**	0.95
Q_{10}	0.00278	0.830	73.00	5.71	**0.961**	1.00
Q_{20}	0.00278	0.872	84.10	5.71	**1.163**	1.05
Q_{50}	0.00278	0.955	99.50	5.71	**1.506**	1.15
Q_{100} - Major	0.00278	0.996	112.00	5.71	**1.769**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 2 (Qm)

TOC	51	mins	Area =	10.702	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 107020 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	10.702	**0.821**	0.80
Q_2 - Minor	0.00278	0.706	46.30	10.702	**0.971**	0.85
Q_5	0.00278	0.789	61.90	10.702	**1.451**	0.95
Q_{10}	0.00278	0.830	73.00	10.702	**1.801**	1.00
Q_{20}	0.00278	0.872	84.10	10.702	**2.179**	1.05
Q_{50}	0.00278	0.955	99.50	10.702	**2.823**	1.15
Q_{100} - Major	0.00278	0.996	112.00	10.702	**3.316**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 3 (Qm)

TOC	51	mins	Area =	2.477	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 24770 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	2.477	**0.190**	0.80
Q_2 - Minor	0.00278	0.706	46.30	2.477	**0.225**	0.85
Q_5	0.00278	0.789	61.90	2.477	**0.336**	0.95
Q_{10}	0.00278	0.830	73.00	2.477	**0.417**	1.00
Q_{20}	0.00278	0.872	84.10	2.477	**0.504**	1.05
Q_{50}	0.00278	0.955	99.50	2.477	**0.653**	1.15
Q_{100} - Major	0.00278	0.996	112.00	2.477	**0.768**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 4 (Qm)

TOC	51	mins	Area =	2.606	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 26060 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	2.606	**0.200**	0.80
Q_2 - Minor	0.00278	0.706	46.30	2.606	**0.236**	0.85
Q_5	0.00278	0.789	61.90	2.606	**0.353**	0.95
Q_{10}	0.00278	0.830	73.00	2.606	**0.439**	1.00
Q_{20}	0.00278	0.872	84.10	2.606	**0.531**	1.05
Q_{50}	0.00278	0.955	99.50	2.606	**0.687**	1.15
Q_{100} - Major	0.00278	0.996	112.00	2.606	**0.808**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 5 (Qm)

TOC	51	mins	Area =	1.744	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 17440 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	1.744	**0.134**	0.80
Q_2 - Minor	0.00278	0.706	46.30	1.744	**0.158**	0.85
Q_5	0.00278	0.789	61.90	1.744	**0.236**	0.95
Q_{10}	0.00278	0.830	73.00	1.744	**0.294**	1.00
Q_{20}	0.00278	0.872	84.10	1.744	**0.355**	1.05
Q_{50}	0.00278	0.955	99.50	1.744	**0.460**	1.15
Q_{100} - Major	0.00278	0.996	112.00	1.744	**0.540**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 6 (Qm)

TOC	51	mins	Area =	4.789	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 47890 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	4.789	**0.367**	0.80
Q_2 - Minor	0.00278	0.706	46.30	4.789	**0.435**	0.85
Q_5	0.00278	0.789	61.90	4.789	**0.649**	0.95
Q_{10}	0.00278	0.830	73.00	4.789	**0.806**	1.00
Q_{20}	0.00278	0.872	84.10	4.789	**0.975**	1.05
Q_{50}	0.00278	0.955	99.50	4.789	**1.263**	1.15
Q_{100} - Major	0.00278	0.996	112.00	4.789	**1.484**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 7 (Qm)

TOC	51	mins	Area =	3.161	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 31610 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	3.161	**0.243**	0.80
Q_2 - Minor	0.00278	0.706	46.30	3.161	**0.287**	0.85
Q_5	0.00278	0.789	61.90	3.161	**0.429**	0.95
Q_{10}	0.00278	0.830	73.00	3.161	**0.532**	1.00
Q_{20}	0.00278	0.872	84.10	3.161	**0.644**	1.05
Q_{50}	0.00278	0.955	99.50	3.161	**0.834**	1.15
Q_{100} - Major	0.00278	0.996	112.00	3.161	**0.979**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 8 (Qm)

TOC	51	mins	Area =	12.418	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 124180 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	12.418	**0.953**	0.80
Q_2 - Minor	0.00278	0.706	46.30	12.418	**1.127**	0.85
Q_5	0.00278	0.789	61.90	12.418	**1.684**	0.95
Q_{10}	0.00278	0.830	73.00	12.418	**2.090**	1.00
Q_{20}	0.00278	0.872	84.10	12.418	**2.528**	1.05
Q_{50}	0.00278	0.955	99.50	12.418	**3.276**	1.15
Q_{100} - Major	0.00278	0.996	112.00	12.418	**3.848**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

Pipe Outlet 1 Bypass (Qm)

Contributing Catchment **1**

Pipe Capacity @ 1% 1.25 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.256**	
Q_{100} - Major					**0.519**	

Pipe Outlet 2 Bypass (Qm)

Contributing Catchment **2,3,4,7, Pipe Oulet 1 Bypass**

Pipe Capacity @ 0.5% 3.173 m³/s

1 x 600 3 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.016**	
Q_{20}					**0.684**	
Q_{50}					**2.082**	
Q_{100} - Major					**3.217**	

Pipe Outlet 3 Bypass (Qm)

Contributing Catchment **5**

Pipe Capacity @ 2.6% 2 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.000**	
Q_{100} - Major					**0.000**	

Proposed Runoff

Rational Method

Runoff Calculation downstream of Emmaus College, Yaamba Road: Case i

Using Coincident Flooding Method: Carroll (1990)

QUDM BN8.3.4

Case i - Rainfall Intensity Corresponding to Time of Concentration for Side Drain

Main Drain Time of Concentration (t_{cm})	51.3	mins
Side Drain Time of Concentration (t_{cs})	30.1	mins

EX Catchment 9 (Qs)

TOC **30** mins

Area = 9.25 Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 92500 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.586	57.80	9.25	**0.870**	0.80
Q_2 - Minor	0.00278	0.622	64.40	9.25	**1.030**	0.85
Q_5	0.00278	0.695	85.60	9.25	**1.529**	0.95
Q_{10}	0.00278	0.732	101.00	9.25	**1.900**	1.00
Q_{20}	0.00278	0.769	116.00	9.25	**2.291**	1.05
Q_{50}	0.00278	0.842	137.00	9.25	**2.963**	1.15
Q_{100} - Major	0.00278	0.878	154.00	9.25	**3.476**	1.20

C10 value 0.732

fi value 29.00 % = 0.29 fi

EX Catchment 1 (Qm)

TOC	30	mins	Area =	5.71	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 57100 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	5.71	**0.357**	0.80
Q_2 - Minor	0.00278	0.706	64.40	5.71	**0.423**	0.85
Q_5	0.00278	0.789	85.60	5.71	**0.628**	0.95
Q_{10}	0.00278	0.830	101.00	5.71	**0.780**	1.00
Q_{20}	0.00278	0.872	116.00	5.71	**0.941**	1.05
Q_{50}	0.00278	0.955	137.00	5.71	**1.217**	1.15
Q_{100} - Major	0.00278	0.996	154.00	5.71	**1.427**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 2 (Qm)

TOC	30	mins	Area =	10.702	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 107020 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	10.702	**0.669**	0.80
Q_2 - Minor	0.00278	0.706	64.40	10.702	**0.792**	0.85
Q_5	0.00278	0.789	85.60	10.702	**1.177**	0.95
Q_{10}	0.00278	0.830	101.00	10.702	**1.462**	1.00
Q_{20}	0.00278	0.872	116.00	10.702	**1.763**	1.05
Q_{50}	0.00278	0.955	137.00	10.702	**2.280**	1.15
Q_{100} - Major	0.00278	0.996	154.00	10.702	**2.675**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 3 (Qm)

TOC	30	mins	Area =	2.477	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 24770 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	2.477	**0.155**	0.80
Q_2 - Minor	0.00278	0.706	64.40	2.477	**0.183**	0.85
Q_5	0.00278	0.789	85.60	2.477	**0.272**	0.95
Q_{10}	0.00278	0.830	101.00	2.477	**0.338**	1.00
Q_{20}	0.00278	0.872	116.00	2.477	**0.408**	1.05
Q_{50}	0.00278	0.955	137.00	2.477	**0.528**	1.15
Q_{100} - Major	0.00278	0.996	154.00	2.477	**0.619**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 4 (Qm)

TOC	30	mins	Area =	2.606	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 26060 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	2.606	**0.163**	0.80
Q_2 - Minor	0.00278	0.706	64.40	2.606	**0.193**	0.85
Q_5	0.00278	0.789	85.60	2.606	**0.287**	0.95
Q_{10}	0.00278	0.830	101.00	2.606	**0.356**	1.00
Q_{20}	0.00278	0.872	116.00	2.606	**0.429**	1.05
Q_{50}	0.00278	0.955	137.00	2.606	**0.555**	1.15
Q_{100} - Major	0.00278	0.996	154.00	2.606	**0.651**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 5 (Qm)

TOC	30	mins	Area =	1.744	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 17440 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	1.744	**0.109**	0.80
Q_2 - Minor	0.00278	0.706	64.40	1.744	**0.129**	0.85
Q_5	0.00278	0.789	85.60	1.744	**0.192**	0.95
Q_{10}	0.00278	0.830	101.00	1.744	**0.238**	1.00
Q_{20}	0.00278	0.872	116.00	1.744	**0.287**	1.05
Q_{50}	0.00278	0.955	137.00	1.744	**0.372**	1.15
Q_{100} - Major	0.00278	0.996	154.00	1.744	**0.436**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 6 (Qm)

TOC	30	mins	Area =	4.789	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 47890 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	4.789	**0.299**	0.80
Q_2 - Minor	0.00278	0.706	64.40	4.789	**0.355**	0.85
Q_5	0.00278	0.789	85.60	4.789	**0.527**	0.95
Q_{10}	0.00278	0.830	101.00	4.789	**0.654**	1.00
Q_{20}	0.00278	0.872	116.00	4.789	**0.789**	1.05
Q_{50}	0.00278	0.955	137.00	4.789	**1.020**	1.15
Q_{100} - Major	0.00278	0.996	154.00	4.789	**1.197**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 7 (Qm)

TOC	30	mins	Area =	3.161	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 31610 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	3.161	**0.198**	0.80
Q_2 - Minor	0.00278	0.706	64.40	3.161	**0.234**	0.85
Q_5	0.00278	0.789	85.60	3.161	**0.348**	0.95
Q_{10}	0.00278	0.830	101.00	3.161	**0.432**	1.00
Q_{20}	0.00278	0.872	116.00	3.161	**0.521**	1.05
Q_{50}	0.00278	0.955	137.00	3.161	**0.674**	1.15
Q_{100} - Major	0.00278	0.996	154.00	3.161	**0.790**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

EX Catchment 8 (Qm)

TOC	30	mins	Area =	12.418	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
30	57.8	64.4	85.6	101	116	137	154

Total Catchment Area 124180 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	57.80	12.418	**0.777**	0.80
Q_2 - Minor	0.00278	0.706	64.40	12.418	**0.919**	0.85
Q_5	0.00278	0.789	85.60	12.418	**1.366**	0.95
Q_{10}	0.00278	0.830	101.00	12.418	**1.696**	1.00
Q_{20}	0.00278	0.872	116.00	12.418	**2.046**	1.05
Q_{50}	0.00278	0.955	137.00	12.418	**2.646**	1.15
Q_{100} - Major	0.00278	0.996	154.00	12.418	**3.104**	1.20

C10 value 0.83

fi value 70.00 % = 0.7 fi

Pipe Outlet 1 Bypass (Qm)

Contributing Catchment **1**

Pipe Capacity @ 1% 1.25 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.000**	
Q_{100} - Major					**0.177**	

Pipe Outlet 2 Bypass (Qm)

Contributing Catchment **2,3,4,7, Pipe Oulet 1 Bypass**

Pipe Capacity @ 0.5% 3.173 m³/s

1 x 600 3 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.864**	
Q_{100} - Major					**1.739**	

Pipe Outlet 3 Bypass (Qm)

Contributing Catchment **5**

Pipe Capacity @ 2.6% 2 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.000**	
Q_{100} - Major					**0.000**	

Proposed Runoff

Rational Method

Runoff Calculation downstream of Emmaus College, Yaamba Road: Case ii

Using Coincident Flooding Method: Carroll (1990)

QUDM BN8.3.4

Case ii - Rainfall Intensity Corresponding to Time of Concentration for Main Drain

Main Drain Time of Concentration (t_{cm})	51.3	mins
Side Drain Time of Concentration (t_{cs})	30.1	mins

EX Catchment 9 (Qs)

TOC **51** mins

Area = 9.25 Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 92500 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.586	41.60	9.25	**0.626**	0.80
Q_2 - Minor	0.00278	0.622	46.30	9.25	**0.740**	0.85
Q_5	0.00278	0.695	61.90	9.25	**1.106**	0.95
Q_{10}	0.00278	0.732	73.00	9.25	**1.373**	1.00
Q_{20}	0.00278	0.769	84.10	9.25	**1.661**	1.05
Q_{50}	0.00278	0.842	99.50	9.25	**2.152**	1.15
Q_{100} - Major	0.00278	0.878	112.00	9.25	**2.528**	1.20

C10 value 0.732

fi value 29.00 % = 0.29 fi

EX Catchment 1 (Qm)

TOC	51	mins	Area =	5.71	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 57100 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	5.71	**0.438**	0.80
Q_2 - Minor	0.00278	0.706	46.30	5.71	**0.518**	0.85
Q_5	0.00278	0.789	61.90	5.71	**0.774**	0.95
Q_{10}	0.00278	0.830	73.00	5.71	**0.961**	1.00
Q_{20}	0.00278	0.872	84.10	5.71	**1.163**	1.05
Q_{50}	0.00278	0.955	99.50	5.71	**1.506**	1.15
Q_{100} - Major	0.00278	0.996	112.00	5.71	**1.769**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 2 (Qm)

TOC	51	mins	Area =	10.702	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 107020 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	10.702	**0.821**	0.80
Q_2 - Minor	0.00278	0.706	46.30	10.702	**0.971**	0.85
Q_5	0.00278	0.789	61.90	10.702	**1.451**	0.95
Q_{10}	0.00278	0.830	73.00	10.702	**1.801**	1.00
Q_{20}	0.00278	0.872	84.10	10.702	**2.179**	1.05
Q_{50}	0.00278	0.955	99.50	10.702	**2.823**	1.15
Q_{100} - Major	0.00278	0.996	112.00	10.702	**3.316**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 3 (Qm)

TOC	51	mins	Area =	2.477	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 24770 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	2.477	**0.190**	0.80
Q_2 - Minor	0.00278	0.706	46.30	2.477	**0.225**	0.85
Q_5	0.00278	0.789	61.90	2.477	**0.336**	0.95
Q_{10}	0.00278	0.830	73.00	2.477	**0.417**	1.00
Q_{20}	0.00278	0.872	84.10	2.477	**0.504**	1.05
Q_{50}	0.00278	0.955	99.50	2.477	**0.653**	1.15
Q_{100} - Major	0.00278	0.996	112.00	2.477	**0.768**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 4 (Qm)

TOC	51	mins	Area =	2.606	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 26060 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	2.606	**0.200**	0.80
Q_2 - Minor	0.00278	0.706	46.30	2.606	**0.236**	0.85
Q_5	0.00278	0.789	61.90	2.606	**0.353**	0.95
Q_{10}	0.00278	0.830	73.00	2.606	**0.439**	1.00
Q_{20}	0.00278	0.872	84.10	2.606	**0.531**	1.05
Q_{50}	0.00278	0.955	99.50	2.606	**0.687**	1.15
Q_{100} - Major	0.00278	0.996	112.00	2.606	**0.808**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 5 (Qm)

TOC	51	mins	Area =	1.744	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 17440 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	1.744	**0.134**	0.80
Q_2 - Minor	0.00278	0.706	46.30	1.744	**0.158**	0.85
Q_5	0.00278	0.789	61.90	1.744	**0.236**	0.95
Q_{10}	0.00278	0.830	73.00	1.744	**0.294**	1.00
Q_{20}	0.00278	0.872	84.10	1.744	**0.355**	1.05
Q_{50}	0.00278	0.955	99.50	1.744	**0.460**	1.15
Q_{100} - Major	0.00278	0.996	112.00	1.744	**0.540**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 6 (Qm)

TOC	51	mins	Area =	4.789	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 47890 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	4.789	**0.367**	0.80
Q_2 - Minor	0.00278	0.706	46.30	4.789	**0.435**	0.85
Q_5	0.00278	0.789	61.90	4.789	**0.649**	0.95
Q_{10}	0.00278	0.830	73.00	4.789	**0.806**	1.00
Q_{20}	0.00278	0.872	84.10	4.789	**0.975**	1.05
Q_{50}	0.00278	0.955	99.50	4.789	**1.263**	1.15
Q_{100} - Major	0.00278	0.996	112.00	4.789	**1.484**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 7 (Qm)

TOC	51	mins	Area =	3.161	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 31610 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	3.161	**0.243**	0.80
Q_2 - Minor	0.00278	0.706	46.30	3.161	**0.287**	0.85
Q_5	0.00278	0.789	61.90	3.161	**0.429**	0.95
Q_{10}	0.00278	0.830	73.00	3.161	**0.532**	1.00
Q_{20}	0.00278	0.872	84.10	3.161	**0.644**	1.05
Q_{50}	0.00278	0.955	99.50	3.161	**0.834**	1.15
Q_{100} - Major	0.00278	0.996	112.00	3.161	**0.979**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

EX Catchment 8 (Qm)

TOC	51	mins	Area =	12.418	Ha

Rainfall Intensity Table

Return period	1	2	5	10	20	50	100
51	41.6	46.3	61.9	73	84.1	99.5	112

Total Catchment Area 124180 m²

Q= F*C*I*A

	F	C	I	A	Q	Fy
	factor	co eff	mm/hr	ha	m³/sec	factor
Q_1	0.00278	0.664	41.60	12.418	**0.953**	0.80
Q_2 - Minor	0.00278	0.706	46.30	12.418	**1.127**	0.85
Q_5	0.00278	0.789	61.90	12.418	**1.684**	0.95
Q_{10}	0.00278	0.830	73.00	12.418	**2.090**	1.00
Q_{20}	0.00278	0.872	84.10	12.418	**2.528**	1.05
Q_{50}	0.00278	0.955	99.50	12.418	**3.276**	1.15
Q_{100} - Major	0.00278	0.996	112.00	12.418	**3.848**	1.20
C10 value			0.83			
fi value	70.00	%	=	0.7 fi		

Pipe Outlet 1 Bypass (Qm)

Contributing Catchment **1**

Pipe Capacity @ 1% 1.25 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.256**	
Q_{100} - Major					**0.519**	

Pipe Outlet 2 Bypass (Qm)

Contributing Catchment **2,3,4,7, Pipe Oulet 1 Bypass**

Pipe Capacity @ 0.5% 3.173 m³/s

1 x 600 3 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.016**	
Q_{20}					**0.684**	
Q_{50}					**2.082**	
Q_{100} - Major					**3.217**	

Pipe Outlet 3 Bypass (Qm)

Contributing Catchment **5**

Pipe Capacity @ 2.6% 2 m³/s

1 x 750 dia RCP

					Q	
					m³/sec	
Q_1					**0.000**	
Q_2 - Minor					**0.000**	
Q_5					**0.000**	
Q_{10}					**0.000**	
Q_{20}					**0.000**	
Q_{50}					**0.000**	
Q_{100} - Major					**0.000**	

Emmaus College – Yaamba Road Campus

362 Yaamba Road - Norman Gardens
Transport Impact Assessment

Prepared by: Stantec Australia Pty Ltd for Catholic Education – Diocese of Rockhampton

on 18/01/2022

Reference: 301401314

Issue #: A

GTAconsultants now Stantec

Emmaus College – Yaamba Road Campus

362 Yaamba Road - Norman Gardens
Transport Impact Assessment

Client: Catholic Education – Diocese of Rockhampton

on 18 January 2022

Reference: 301401314

Issue #: A

Quality Record

Issue	Date	Description	Prepared By	Checked By	Approved By	Signed
A	18/01/2022	Final (for client)	S.Bate J.Hulbert	J.Hulbert	J.Hulbert (RPEQ 08902)	

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Appendices

Figures

Tables

1. INTRODUCTION

01

1.1. Background

Stantec Australia Pty Ltd has been commissioned by Catholic Education – Diocese of Rockhampton to undertake a Transport Impact Assessment (TIA), as presented in this report for the new master plan of redevelopment of the Yaamba Road Campus of Emmaus College located at 362 Yaamba Road, Norman Gardens. The site is described as Lots 1 on RP607187, Lot 2 on RP607681, and Lot 2 on RP613982.

The proposed redevelopment of the campus, which services school years 7 – 9, introduces new facilities such as a multi-use centre, student services and amenities block, as well as a new multi-use car park. This redevelopment is expected to cater for an increase of the student population from 750 to 773 students. This TIA outlines the conceptual level transport servicing strategy to support the development application for the proposed redevelopment being lodged with Rockhampton Regional Council.

1.2. Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed redevelopment, including consideration of the following:

1. existing traffic and parking conditions surrounding the site
2. suitability of the proposed parking in terms of supply (quantum) and layout
3. service vehicle requirements
4. pedestrian and bicycle requirements
5. suitability of the proposed access arrangements for the site
6. the transport impact of the development proposal on the surrounding road network.

1.3. References

In preparing this report, reference has been made to the following:

- Rockhampton Regional Council 'Rockhampton Region Planning Scheme' (dated July 2017)
- Department of Transport and Main Roads (TMR) 'Guidelines for Assessment of Road Impacts of Development' (GARID) (dated March 2006)
- Australian/New Zealand Standard, Parking Facilities, Part 1: Off-Street Car Parking 2890.1:2004 (AS/NZS 2890.1:2004)
- Australian Standard, Parking Facilities, Part 2: Off-Street Commercial Vehicle Facilities 2890.2-2002 (AS 2890.2-2002)
- Australian Standard, Parking Facilities, Part 3: Bicycle Parking Facilities 2890.3-1993 (AS 2890.3-1993)
- Australian/New Zealand Standard, Parking Facilities, Part 6: Off-Street Parking for People with Disabilities 2890.6:2009 (AS/NZS 2890.6:2009)
- plans for the proposed development prepared by Tony Madden Architects provided at Appendix A:
    - Proposed Overall Site Plan – MCU-02, Issue P21, dated 12/01/2022
- other documents and data as referenced in this report.

2. EXISTING CONDITIONS

02

2.1. Redeveloped Yaamba Road Campus

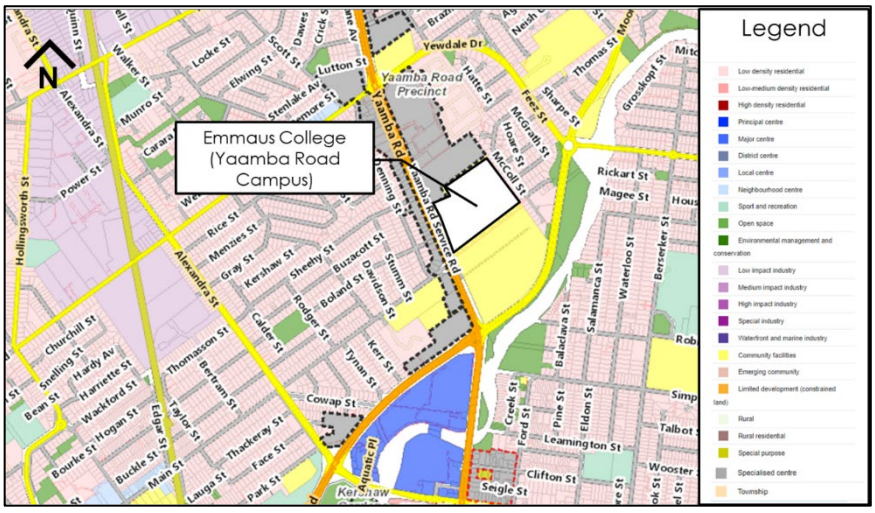
The existing Yaamba Road Campus is located at 362 Yaamba Road, Norman Gardens and is described as Lots 1 on RP607187, Lot 2 on RP607681, and Lot 2 on RP613982.The site of approximately 92,500sq.m has frontages of approximately 240m to the Yaamba Road Service Road. The location of the Yaamba Road Campus and its surrounding environs is shown in Figure 2.1.

Figure 2.1: Campus Location and Its Environs

The surrounding properties predominantly include community use (North Rockhampton Cemetery) to the south, the Yaamba Road Specialised Centre (highway focussed retail function) to the west, low-density residential property to the east, and the Discovery Park Rockhampton (caravan park) to the north.

The Yaamba Road Campus is classified as 'community use' in Council's Rockhampton Region Planning Scheme as shown in Figure 2.2.

Figure 2.2: Rockhampton Regional Council Zoning



The campus is also bordered to the south by a water easement for an underground trunk water main, formally known as Easement 'C' on SP209765, as shown in Figure 2.3.

Figure 2.3: Easement 'C' Location

The existing easement arrangement is currently used as a driveway for the school as shown in Figure 2.4. This allows access to the south-eastern side of the campus, including the store areas and school grounds whilst also being readily available for Council if they are required to inspect or conduct repairs along the easement.

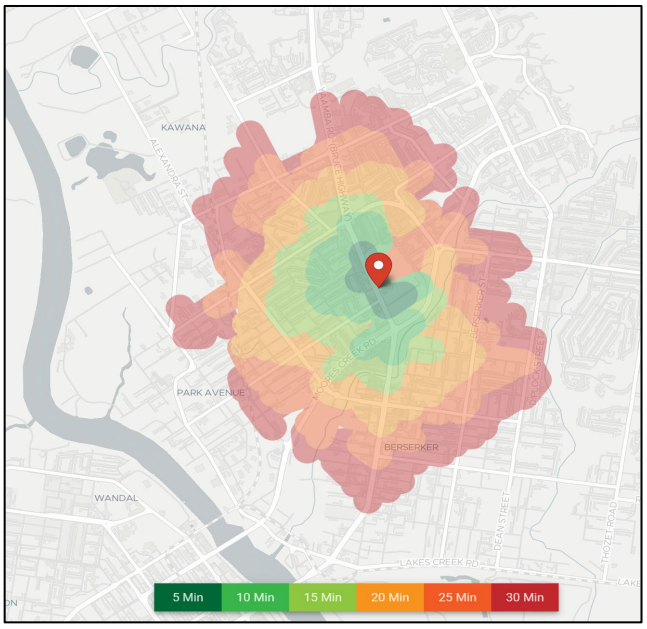
Figure 2.4: Easement 'C' Cross Section

2.2. Active Transport Network

2.2.1. Pedestrian Infrastructure

The provision of pedestrian infrastructure on the Yaamba Road service road is currently provided in the form of a shared zone along the western frontage of the campus, with Easement 'C' on SP209765 also providing an east-west pedestrian connection for staff and students. A skybridge due south of the campus also allows students to cross Yaamba Road without conflicting with vehicle movements on street, providing safe and efficient movement. The current walkability measure of the school is indicated in Figure 2.5, with the walking times from 5 minutes to 30 minutes outlined.

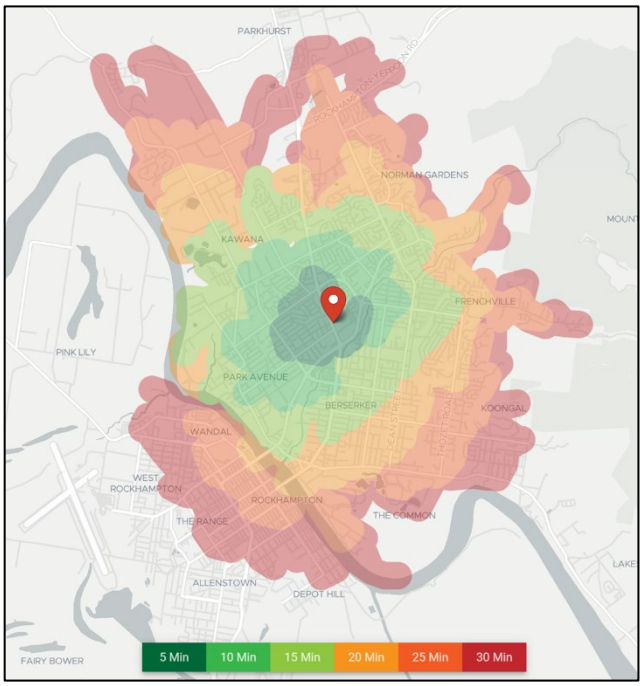
Figure 2.5: Yaamba Road Campus - Walkability Mapping



2.2.2. Bicycle Infrastructure

Dedicated on-road bicycle infrastructure is currently provided proximate to the campus, with bicycle lanes on currently provided on the Yaamba Road corridor, as well as on the intersection legs of Main Street (Main Street / Yaamba Road intersection), Moores Creek Road (Moores Creek Road / Yaamba Road intersection) and Richardson Road (Richardson Road / Yaamba Road intersection). The current bicycle connectivity of the school is indicated in Figure 2.5, with the cycling times from 5 minutes to 30 minutes outlined.

Figure 2.6: Yaamba Road Campus – Bicycle Mapping



2.3. Public Transport Network

Public transport accessibility is defined in TransLink's Public Transport Infrastructure Manual (PTIM) and measured by the reasonable walk-up catchment by stop type. The reasonable walk-up catchment for a standard bus stop is defined as 400m. This increases to 800m where access to high-frequency services, such as to rail or busway services are available.

The proposed new campus site currently has access to several Translink operated services, and more importantly, several dedicated school bus services all within 400m walking distance to the school, as shown in Figure 2.7. Details of the services are outlined in Table 2.1.

Based on the intent of Translink's guideline, the Yaamba Road Campus is well serviced by existing public transport infrastructure and services.

Figure 2.7: Public Transport Accessibility

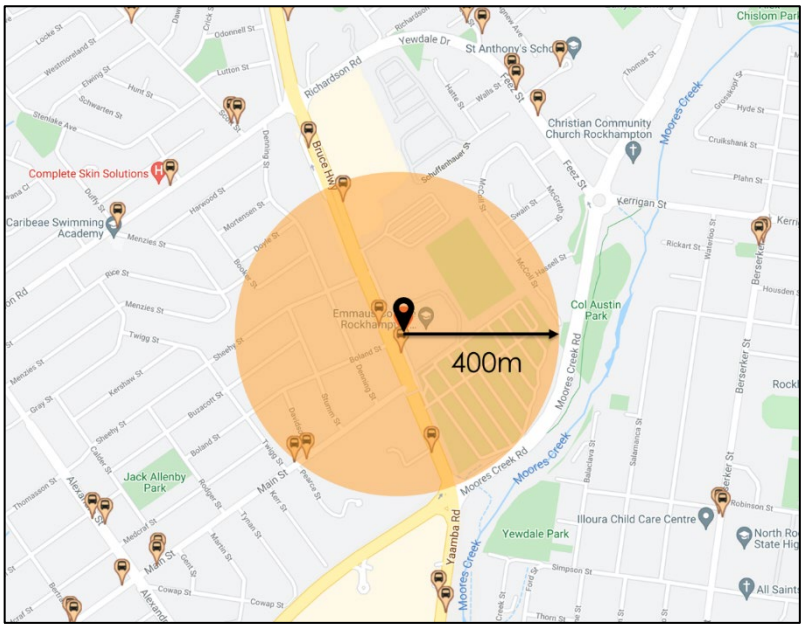


Table 2.1: Public Transport Provision

Service	Route #	Route Description	Location of Stop	Frequency On/Off Peak
Bus	Yep Express	Capricorn Coast – Rockhampton	Emmaus College	1 AM & PM Service
Bus	19	Rockhampton State High School – Emmaus College	Emmaus College	2 AM & PM Services
Bus	20	Capricorn Coast – Rockhampton	Emmaus College	2 AM services
Bus	410	City – Parkhurst Via Stockland	Main Street at Emmaus College (Norman Park)	Hourly

Service	Route #	Route Description	Location of Stop	Frequency On/Off Peak
Bus	401	Glenmore Schools – Stockland – City – Allenstown – The Range South	Main Street at Emmaus College (Park Avenue)	30 mins peak / Hourly off peak
Bus	403	CQU – Stockland – City – Rockhampton HS Clockwise	Main Street at Emmaus College (Park Avenue)	90 – 120 minutes
Bus	407	CQU – Stockland – City – Base Hospital South	Main Street at Emmaus College (Park Avenue)	35 minutes peak / Hourly off peak

2.4. Existing Road Network

Characteristics of existing roads in the vicinity of the subject site are outlined in Table 2.2, with typical cross-sections of those roads proximate to the Yaamba Road Campus shown in Figure 2.8 to Figure 2.11.

Table 2.2: Existing Road Network

Road Name	Yaamba Road (Bruce Highway)	Yaamba Road Service Road	Main Street
Jurisdiction	State Controlled	State Controlled	Council Controlled
Class Type	Highway	Highway (Service Road)	Major Urban Collector
Posted Speed	70km/h	20km/h (shared zone)	60km/h
Lane Formation	four-lane / divided / two-way	One-lane/ undivided / one-way	two-lane / undivided / two-way
Carriageway Width	11m NBD / 10m SBD	6m	11m
Reserve Width	32m	18m	20m
Kerbside Parking	No Stopping	16 drop and go bays	Unrestricted

Figure 2.8: Yaamba Road (Bruce Highway) at Emmaus College (Facing south)

Figure 2.9: Yaamba Road Service Road (Facing south)

Figure 2.10:Main Street at Yaamba Road (Facing east)

Figure 2.11: Easement C on SP209765 (facing east)

2.5. Future Road Network Planning

A review of the Queensland Department of Transport and Main Roads' *Queensland Transport and Roads Investment Program (QTRIP)* and Council's *My Neighbourhood* Works and Projects interactive mapping has indicated that there are no proposed road upgrades or other related works within the vicinity of the Campus.

2.6. On-Street Car Parking Supply

A review of publicly available car parking in the vicinity of the site indicates that on-street parking is currently only permitted in the 16 car parking spaces servicing the drop and go facility at the Yaamba Road Campus.

3. FUTURE CONDITIONS

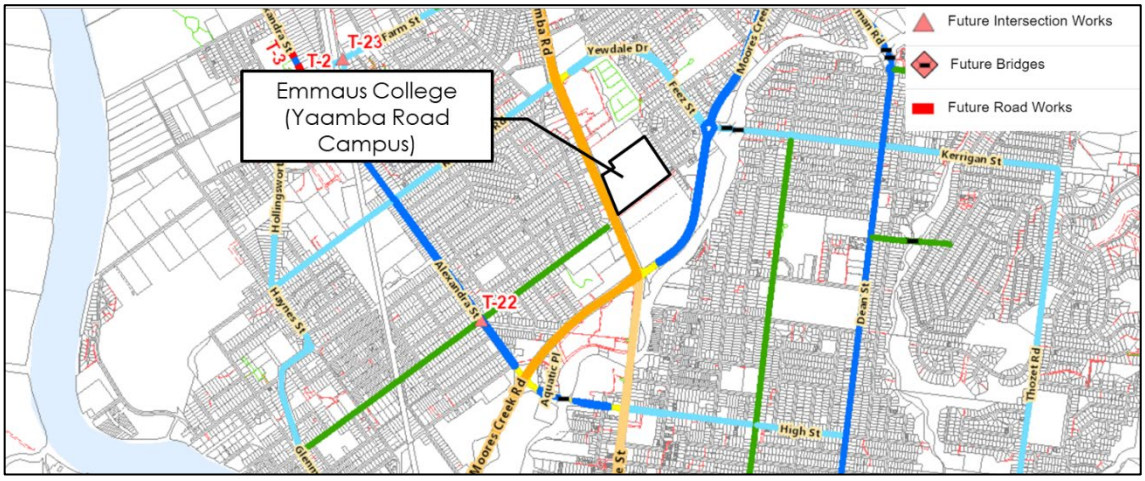
03

3.1. Future Transport Network Planning

3.1.1. Local Government Infrastructure Plan

A review of Rockhampton Regional Council's *Local Government Infrastructure Plan* has revealed that no future road projects are planned within the vicinity of the Yaamba Road campus, as shown in Figure 3.1.

Figure 3.1: Local Government Infrastructure Plan – Trunk Road Network



3.1.2. Department of Transport and Main Roads

A review of publicly available information on the projects in the Fitzroy Region (i.e. Rockhampton) of Department of Transport and Main Roads has revealed that no major projects are planned within the vicinity of the Yaamba Road campus. It should be noted however that continual projects on the provision of improved bicycle infrastructure and safety improvements along the Bruce Highway have been recently completed, promoting the active travel accessibility and safety along this road corridor.

3.2. Background Traffic Growth

Traffic growth rates for the background road network have been derived from data supplied within 'Table SC3.1.5.6 – Existing and projected demand for the transport network', contained within Council's LGIP. For the catchment of North Rockhampton, the daily trip projections were used to estimate a forecast annual average traffic growth. With an existing vehicle trip demand of 348,601 in 2016, and a projected demand of 395,076 in 2036, a growth rate of 0.70% is understood to be the linear annual growth for the area surrounding the campus.

4. PROPOSED YAAMBA ROAD CAMPUS

04

4.1. Site Plan

An overview of the proposed redevelopment of the Yaamba Road Campus for Emmaus College and its intended access arrangements, car parking and pedestrian / vehicle circulation network is generally provided in the site plan shown in Figure 4.1, with master plan drawings provided in Appendix A.

Figure 4.1: Site Plan

4.2. Proposed Service Offering

The proposed redeveloped Yaamba Road campus involves the construction of several new buildings and facilities, including:

- a new multi-use centre to the north-west of the campus
- reconfiguration of the existing car park access and carpark layout to the north-west of the campus

- a new landscaped student gathering area in the centre of the campus
- a new administration building to the south-west of the campus
- student services building and male/female student amenities
- a bus set down zone accommodating up to 3 buses to the south of the campus
- a GLA block to the south of the campus

The school has approval for a student population of 1422 students (for both the Yaamba Road and Main Street campuses), with approximately 735 students in Years 7 to 9 forming the student population for the Yaamba Road campus for 2022. The future 2025 student population for the Yaamba Road campus is expected to increase by 25 students, resulting in an expected future student population of 760. This student population increase is not viewed as major, nor is it expected to have any material impact to the operation of the campus.

This redevelopment is expected to commence in early to mid-2022 with the construction of the administration building. The remaining elements of the redevelopment of the campus are expected to be constructed thereafter in stages over a period of 3 to 4 years with a goal completion date of the early 2025 (i.e. before the start of the 2025 school year).

4.3. Pedestrian Access

4.3.1. External Pedestrian Access

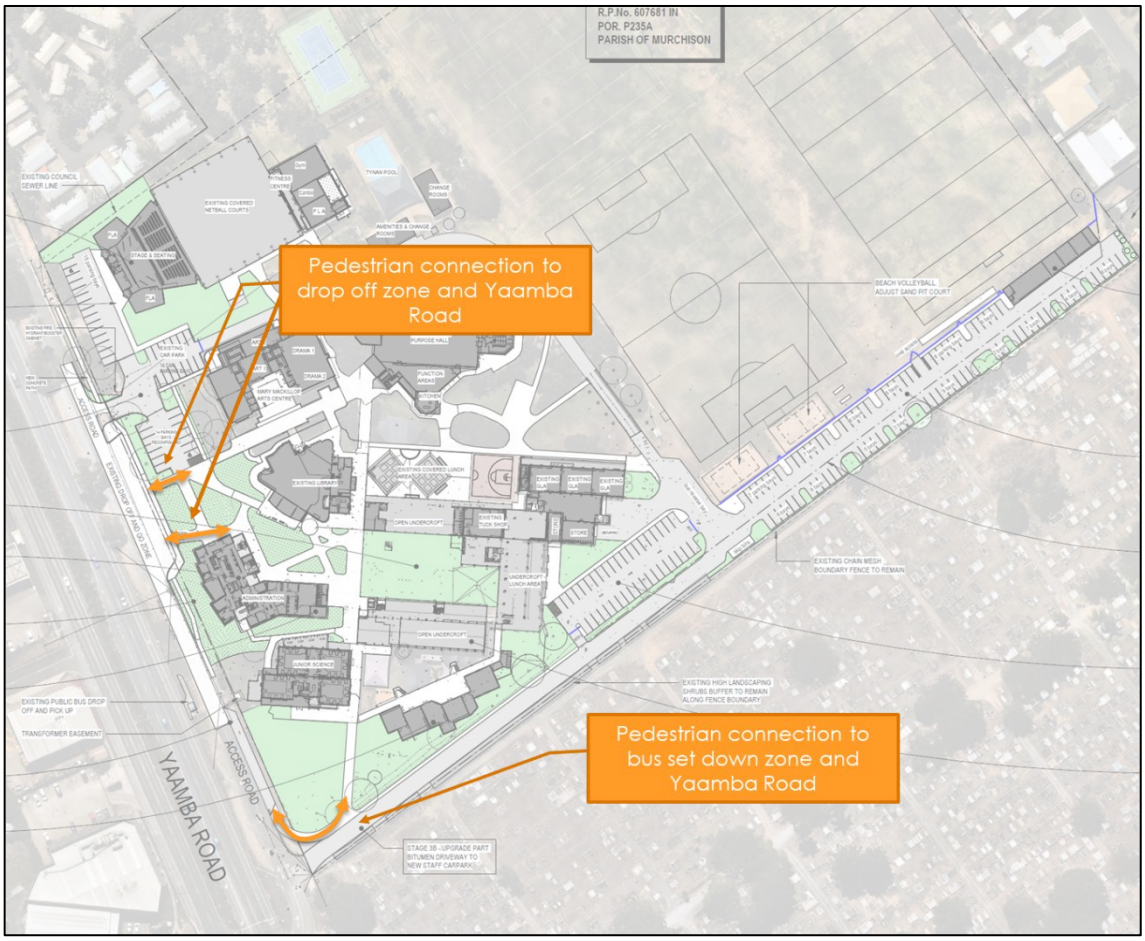
A formal pedestrian footpath network is currently provided around the proposed new campus in the form of dedicated pedestrian and shared zone roads. The existing footpath network provides necessary pedestrian connections to and from the campus to key public transport stops and stations.

Safe pedestrian crossings are also provided at the skybridge across Yaamba Road, south of the campus and the signalised intersections of Yaamba Road / Richardson Road to the north and Yaamba Road / Moores Creek Road to the south.

4.3.2. Internal Pedestrian Access

The preliminary pedestrian network internal to the campus connects the main buildings of the school to key pedestrian nodes, such as the school drop off zone, bus set down zone and Yaamba Road itself. The pedestrian connection to the west has also been noted in Easement C on SP209765. These connections are shown on Figure 4.2.

Figure 4.2: Internal Pedestrian Connections



4.4. Bicycle Facilities

The Yaamba Road Campus currently has on-site capacity for the secure storage of 56 student bicycles. This capacity currently caters for existing student bicycle mode-share demands and is also expected to adequately cater for additional demands that may arise from increased mode-share attributed to the total student population forecast (i.e. 735 to 760).

4.5. Public Transport Access

With consideration to the type of use for the educational establishment (i.e., Year 7 to 9 school) and provision of public transport services, it is expected that public transport usage by the students will continue to be high. With this in mind, the connections to the existing public transport will be maintained to ensure equity of access to the Campus. With connections to the Campus's buildings to the external pedestrian network intended to be provided, the safe and efficient movement of people from the school to the external pathway network is expected, resulting in high public transport accessibility.

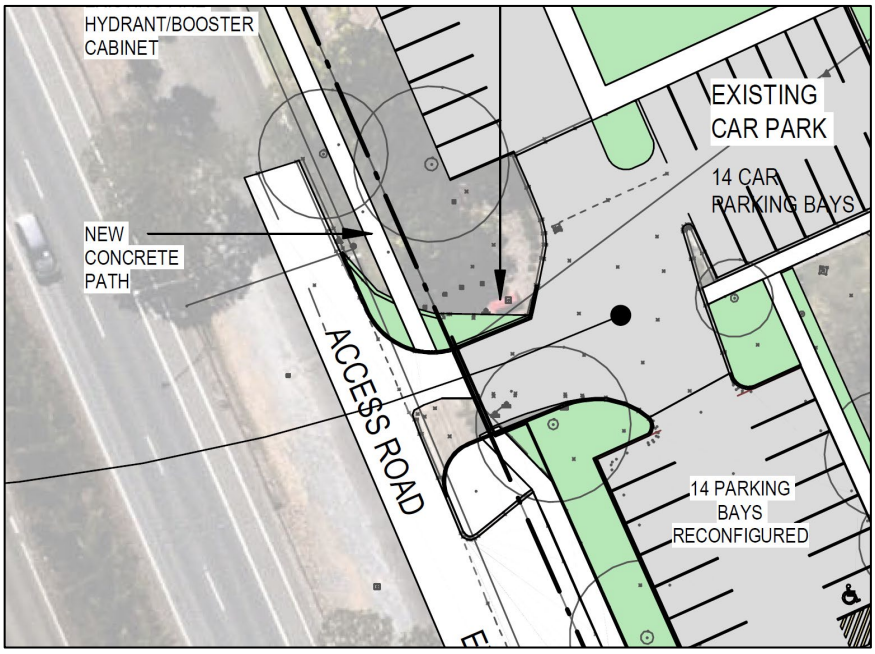
4.6. Vehicle Access Arrangements

As part of the redevelopment of the Yaamba Road Campus, the existing north and south vehicle accesses are proposed to remain to cater for the various needs of the users of the school, with the central vehicle access to be removed. This overall reduction in vehicle access numbers is expected to reduce the friction along the Yaamba Road corridor as well as promote the safety and operation of the pedestrian network (i.e. less conflict points along the campus's verge).

4.6.1. Northern Vehicle Access

The northern vehicle access is proposed to be maintained as part of one of the two vehicle accesses proposed to the redeveloped campus, as shown in Figure 4.3. This vehicle access will provide entry to the northern car park modules containing 42 parking spaces.

Figure 4.3: Proposed Northern Vehicle Access



Whilst the proposed access's location and intended uses remains the same, a review of the vehicle access against Council's Planning Scheme has found that any vehicle access is to be located such at it is:

- at least 6m away from the tangent point of a nearby intersection
- at least 1m away from any pit lintel
- at least 1m away from any local area traffic management device
- achieves a desirable minimum sight distance of 55m or absolute minimum of 35m, based on a 40km/h frontage road speed (lowest speed under Australian Standards).

The proposed vehicle access location is as per the arrangements of the existing site. Having regard for this and the above design requirements, the proposed northern vehicle access locations is considered satisfactory.

The vehicle access design for the northern carpark has also considered the intended design vehicles (i.e. up to a service vehicle vehicle) which are expected to be maintained as per the existing arrangements. Per the

requirements of Council's Planning Scheme, for a service vehicle on a minor road, the driveway is proposed to be designed in accordance with the following:

- a Type B2 crossover, based on Council's standard drawing CMDG – R – 042A
- a crossover width of 7.0m
- kerb tapers as set out in standard drawing CMDG – R – 042A.

The proposed northern vehicle access to be utilised by the school accords with these design requirements and is therefore considered acceptable. A swept path assessment was also undertaken, and is provided in Appendix C, which confirms that the proposed vehicle access form can accommodate the nominated design vehicles.

4.6.2. Southern Vehicle Access

The southern vehicle access is proposed to be maintained as part of one of the two vehicle accesses proposed to the redeveloped campus, as shown in Figure 4.3. This vehicle access will provide entry to the southern staff car park containing 39 parking spaces, the 80 bay multi-use car park to the east of the site as well as the campus's refuse servicing area and managed bus turnaround area.

Figure 4.4: Proposed Southern Vehicle Access

Whilst the proposed access's location and intended uses remains the same, a review of the vehicle access against Council's Planning Scheme has found that any vehicle access is to be located such at it is:

- at least 6m away from the tangent point of a nearby intersection
- at least 1m away from any pit lintel
- at least 1m away from any local area traffic management device
- achieves a desirable minimum sight distance of 55m or absolute minimum of 35m, based on a 40km/h frontage road speed (lowest speed under Australian Standards).

The proposed vehicle access location is as per the arrangements of the existing site. Having regard for this and the above design requirements, the proposed southern vehicle access locations is considered satisfactory.

The vehicle access design for the southern carparks has also considered the intended design vehicles (i.e. up to a bus) which are expected to be maintained as per the existing arrangements. Per the requirements of Council's Planning Scheme, for a design vehicle of a bus on a minor road, the driveway is proposed to be designed in accordance with the following:

- a Type B2 crossover, based on Council's standard drawing CMDG – R – 042A
- a crossover width of 9.0m
- kerb tapers as set out in standard drawing CMDG – R – 042A.

The proposed southern vehicle access to be utilised by the school has been designed generally in accordance with the above requirements, noting that the form of the driveway has largely been driven by the spatial requirements of a bus entering and exiting the driveway (as per the Australian Standard requirements), as such, the design of the southern crossover is viewed as acceptable.

A swept path assessment was also undertaken, and is provided in Appendix C, which confirms that the proposed vehicle access form can accommodate a bus entering and exiting the vehicle access.

4.7. Car Parking Provision

It is understood that the redeveloped campus will include the following:

- 59 car parking spaces for short-term parking
- 100 car parking spaces for staff
- drop and go facility with a capacity of 16 cars (can be used as visitor parking during non-peak periods)
- 3 bus parking bays.

As the Yaamba Road campus caters for the years 7 to 9 student population, there is an expectation that no students attending this campus will be of driving age. As such, parking for students has not been provided. The resulting car parking provision internal to the site is 161 car parking spaces.

The existing car park provision currently provided on the campus is 141 car parking spaces (unallocated) comprising of:

- 71 formal car parking spaces for staff and visitors
- 70 informal car parking spaces (provided adjacent to the school's sports grounds)
- drop and go facility with a capacity of 16 cars.

4.7.1. Short-Term Parking

TMR's planning guidelines, 'Planning for Safe Transport Infrastructure at Schools' highlights that short-term parking should be provided at the rate equivalent to 1 space per 15 students. The application of this rate to the upper-bound student population (i.e., 760 students) equates to a short-term parking provision of 51 car spaces.

As presented on the drawings, the short-term parking is located at both the north-west and east of the campus and will provide a total capacity of 59 car parking spaces. As such, the short-term car parking to be provided to support the redeveloped campus is aligned with the required intent of TMR's planning guidelines.

4.7.2. Staff Parking

TMR Requirements

TMR's planning guidelines, 'Planning for Safe Transport Infrastructure at Schools' highlights that parking for school staff should be provided at the rate equivalent to 0.7 spaces per staff member. The application of this rate to the expected staff population in 2025 (i.e., 100 FTE staff) equates to a staff parking provision of 70 car spaces.

As presented on the drawings, the parking for staff vehicles is located under to the east of the undercroft lunch area and will provide a total capacity of 37 regular car parking spaces and 4 motorcycle bays (accessed via the southern access road) in the dedicated staff car parking area. The remaining staff bays are provided to the west mixed with the short-term car parking areas.

The staff car parking to be provided to support the redeveloped campus is aligned with the requirement of TMR's planning guidelines.

Council Requirements

It is also noted that the only car parking requirement set out in Council's Planning Scheme for an educational establishment is for staff car parking at a rate of 2 spaces for every 3 full-time employees. With an FTE staff population of 100 in 2025, this equates to a required staff parking provision of 67 spaces.

The provision of 100 staff car parking spaces exceeds with Council's requirement and is considered acceptable.

4.7.3. Drop and Go Facility

The maintenance of the existing drop and go facility is proposed as part of the redevelopment of the campus. With no major change in student numbers expected for the campus, the provision of a 16 bay drop and go facility is expected to adequately maintain the demand for a set down facility for the campus.

4.7.4. Accessible Car Parking Provision

Car parking for people with disabilities (PWD) have been provided at the rates specified in the Disability (Access to Premises – Buildings) Standards 2010. For a school type use, the required provision rate is 1 space per 100 car parking spaces or part thereof.

Based on the car parking provisions for short-term and staff parking (i.e 166 spaces), 2 PWD spaces and their associated shared space are required to provided near the main pedestrian access points at the campus.

The provision of 4 PWD spaces exceeds the statutory requirements and is considered an acceptable provision.

4.8. Car Parking Design

4.8.1. Car Park Design Review

The proposed car park layout has been reviewed against the requirements of Council's Planning Scheme, and relevant Australian Standards (ASS2890.1, AS2890.2 and AS2890.6). The assessment included a review of the following:

- car parking bay and aisle widths
- adjacent structures
- turnaround facilities
- circulation roads and ramps
- ramp grades
- height clearances
- internal queueing
- parking for persons with disabilities
- motorcycle / motor scooter parking.

The review of the car park layout is summarised in Table 4.1.

Table 4.1: Car Park Layout Review

Design Aspect	Design Element	Statutory Requirement (Council)	Statutory Requirement (Australian Standard)	Proposed Design	Compliance
Parking Bays & Aisles	*Car Park Bays (for User Class 1)*				
	Bay width	As per AS 2890.1	2.4m	2.7m	AS 2890.1
	Bay length	As per AS 2890.1	5.4m	5.4m	AS 2890.1
	Aisle width	As per AS 2890.1	6.2m	6.5m	AS 2890.1
Parking Bays & Aisles	*Car Park Bays (for User Class 3)*				
	Bay width	As per AS 2890.1	2.6m	2.7m	Bay width
	Bay length	As per AS 2890.1	5.4m	5.4m	Bay length
	Aisle width	As per AS 2890.1	6.2m	6.5m	Aisle width
Adjacent Structures	Walls	0.3m clearance	0.3m clearance	0.3m clearance	AS 2890.1
	Columns	Outside of parking envelope	Outside of parking envelope	Outside of parking envelope	AS 2890.1
Turnaround Facilities	Terminating aisles	As per AS 2890.1	1m aisle extension	1m aisle extension (sliding gate)	AS 2890.1
Circulation Roads and Ramps	Circulation aisle width	As per AS 2890.1	One-way: 3.0m – straight Two-way: 5.5m – straight	6.5m	AS 2890.1

Design Aspect	Design Element	Statutory Requirement (Council)	Statutory Requirement (Australian Standard)	Proposed Design	Compliance
Ramp Gradients	First 6m	As per AS 2890.1	1:20 for first 6m	To be designed at a max of 1:20 for the first 6m	To be designed at a max of 1:20 for the first 6m
	Service Area Gradient	As per AS 2890.1	1:8	To be designed at a max of 1:8 for the service areas	To be designed at a max of 1:8 for the service areas
	Queueing Areas	As per AS 2890.1	1:6.5	To be designed at a max of 1:6.5 for the queueing areas	To be designed at a max of 1:6.5 for the queueing areas
	Parking Areas (parallel with parking spaces)	As per AS 2890.1	1:20	To be designed at a max of 1:20 for the parking areas	To be designed at a max of 1:20 for the parking areas
	Summit Transition Requirement	As per A AS 2890.1	1:16 in 10m of travel	N/A	-
	Circulation ramp	As per AS 2890.1	1:6.5	N/A	-
	Sag Transition Requirement	As per AS 2890.1	1:16 in 10m of travel	N/A	-
	Parking module ramp	As per AS 2890.1	1:16	N/A	-
Height Clearances	Circulation aisles	As per AS 2890.1	2.2m (regular bay) OR 2.3m (PWD)	N/A Open Air Car Park	-
	Parking bays	As per AS 2890.1	2.2m (regular bay) OR 2.5m (PWD)	N/A Open Air Car Park	-
Internal Queuing	Internal vehicle queuing provision	As per AS 2890.1	2 vehicles for car park	12m (2 vehicles)	AS 2890.1
Parking for Persons with Disabilities	Provision	2 spaces	2 spaces	2 spaces	Disability (Access to Premises - Buildings) Standards 2010
	PWD bay / adjacent shared bay width	As per AS 2890.1	2.4m	2.7m	AS 2890.1
	PWD bay / adjacent shared bay length	As per AS 2890.1	5.4m	5.4m	AS 2890.1

The review indicates that the proposed car parking layout complies with the requirements set out in Council's Planning Scheme and Australian Standards and is therefore considered acceptable.

4.8.2. Car Parking Interim Management

Stantec has been advised that the car parking areas are intended to be completed in one stage. Due to this, no major no interim management or operational requirements are expected to be required, noting some management due to construction traffic is expected throughout the redevelopment of the campus.

4.9. Servicing and Refuse Collection

Whilst Council's Planning Scheme does not explicitly specify a service vehicle for an educational establishment, servicing and refuse collection is expected to occur to the south of the campus. In terms of operations, this is consistent to the location of existing operations.

The refuse storage area is proposed to be located at the southern boundary of the school as shown in Figure 4.5. Collection of the refuse is expected to occur during off peak periods and managed internally, to minimise potential conflict with other vehicles.

Dedicated loading bays for service vehicles are also located at the stores to the south of the campus for any expected deliveries, as shown in Figure 4.6.

Figure 4.5: Proposed Refuse Storage & Collection Area

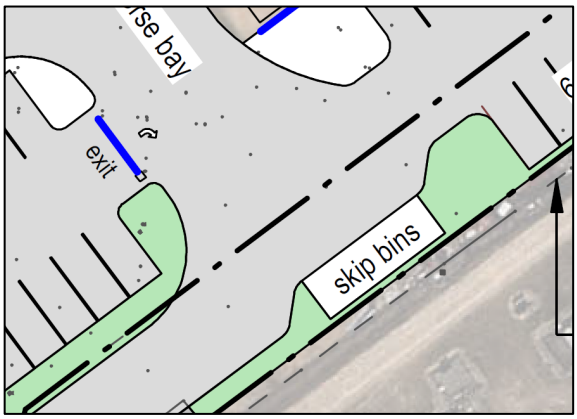
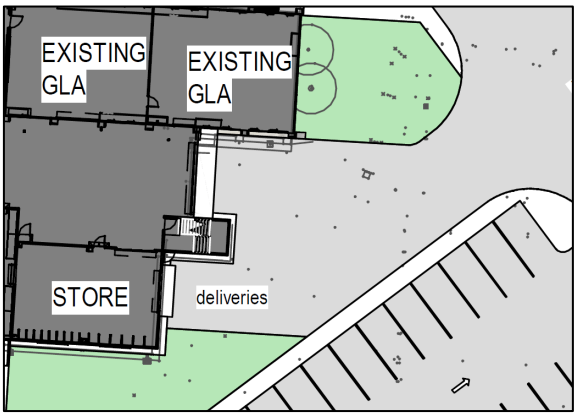


Figure 4.6: Proposed Loading Dock



The accessibility to the refuse collection and servicing area is viewed as satisfactory to the needs of the school.

5. TRAFFIC IMPACT ASSESSMENT

05

5.1. Analysis Overview

This section of the report examines the expected operational impacts of the proposed redevelopment of the Yaamba Road campus on the external road network.

5.2. Traffic Impact Summary

With an expected increase of 18 car parking spaces provided on-site and an increase of the student population of 25 students, under Schedule 20 of Planning Regulation 2017, the threshold of assessing any impacts to state transport networks is the increase of the educational establishment to likely accommodate an extra 100 students. As the increase falls well short of the 100-student threshold, no assessment against state-controlled road infrastructure is required.

It is noted that an increase of car parking supply is proposed in total (i.e., 159 proposed vs 141 existing), as well as the change in the location of the car park supply throughout the campus (decrease in car parking supply to the north of the campus, with an increase in car parking supply to the south accessed off the easement proposed). This is expected to result in a moderate redistribution of traffic accessing the campus from the service road, with more vehicles expected to access the southern driveway with the formalisation of a staff car park, and the sports ground car park.

This redistribution internal to the campus, however, is not expected to impact the distribution of traffic accessing the service road (and thus the campus) from Yaamba Road, with all vehicles travelling to the site still required to access the campus from the Sheehy Street / Yaamba Road priority-controlled intersection and exit the campus from the Yaamba Road / Main Street signalised intersection.

As the overall traffic distribution to and from the road network to the campus is understood to occur at two localised intersections, it is easy to understand that an increase of 18 vehicle trips (based on a conservative assumption because of an increase in 18 car park spaces for the campus), is going to result in no material impact to the operation and safety of the two aforementioned intersections or the Yaamba Road service road itself.

6. RESPONSE TO COUNCIL CODES AND SDAP STATE CODE 1

06

7BRESPONSE TO COUNCIL CODES AND SDAP STATE CODE 1

A response table to Rockhampton Region Planning Scheme and SDAP's State Code 1 is provided at Appendix C to this report.

7. CONCLUSION

07

8BCONCLUSION

Based on the analysis and discussions presented within this report, the following conclusions are made:

- The existing pedestrian and footpath network provides pedestrian connections to / from the proposed campus to key destinations and public transport services.
- The existing provision for bicycle facilities in the form of 56 student bicycle parking spaces is expected to maintain capacity to cater for existing student bicycle mode-share demands and is also expected to adequately cater for additional demands that may arise from the increased student count.
- The proposed secondary school generates a statutory car parking requirement of:
    - 52 short term car parking spaces.
    - 70 staff car parking spaces.
    - 24 set-down bays.
- The provision of 59 short term car parking spaces, 100 staff car park spaces exceeds or matches TMR's requirements and is viewed as an acceptable provision.
- The maintained provision of 16 drop and go bays is viewed as an acceptable provision, noting that ample parking provision is also provided internal to the campus for use.
- The proposed parking layout is to be consistent with the dimensional requirements as set out in the Council's Planning Scheme and the relevant Australian Standards (AS 2890.1 and AS 2890.6).
- On-site servicing and refuse collection by service vehicles is expected to be satisfactory, with confirmation of the servicing arrangements to be finalized at a later stage.
- The increase in student population of 25 students for the campus does not trigger an assessment of impacts to state controlled infrastructure.
- This increase in student population is viewed as minor in nature, with no material impact to the operation and safety of the campus and external road network as a result.

A.DEVELOPMENT PLANS

A

GENERAL NOTES

- CONTRACTOR TO CONFIRM ALL DIMENSIONS ON SITE BEFORE COMMENCING WORK.
- ALL WORKS TO BE CARRIED OUT TO LOCAL AUTHORITY REQUIREMENTS.
- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH SPECIFICATION AND ASSOCIATED NOTES.
- DO NOT SCALE THIS DRAWING. IF IN DOUBT, ASK.

SITE AREA

362 YAAMBA ROAD, LOT 1	3678m²
362 YAAMBA ROAD, LOT 2	88720m²
TOTAL	92398m²

SITE COVERAGE

TOTAL	12.9% (11 936m²)

IMPERVIOUS AREA

BUILDINGS	7 870m²
PATHS & COVERED AREAS	14 150m²
CARPARKS, ROADS & DRIVEWAYS	8 295m²
TOTAL	32.8% (30 315m²)

LANDSCAPING AREA

TOTAL	66.7% (61 600m²)

scale @A1 1 : 750 scale @A3

PRELIMINARY

REV.	DESCRIPTION	ISSUED BY	DATE
P19	STANTEC		09/12/2021
P20	INTERNAL REVIEW		20/12/2021
P21	MCU APPLICATION		12/01/2022

TONY MADDEN ARCHITECTS
(07) 4927 9700
www.tmarchitects.com.au

client:
ROMAN CATHOLIC TRUST CORP. DIOCESE OF ROCKHAMPTON FOR CATHOLIC EDUCATION - DIOCESE OF ROCKHAMPTON

location:
EMMAUS COLLEGE, YAAMBA RD NORTH ROCKHAMPTON

project:
PROPOSED NEW ADMINISTRATION

drawing title:
PROPOSED OVERALL SITE PLAN

job no:	drawing no:	rev:
2203	MCU-02	P21

B.SWEPT PATH ASSESSMENT

B

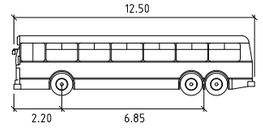
N

SWEPT PATH KEY

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 500mm CLEARANCE FROM VEHICLE BODY

ASSUMED SPEED 5-10km/h

DESIGN VEHICLE



BUS

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 36.6

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GTAconsultants NOW Stantec

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

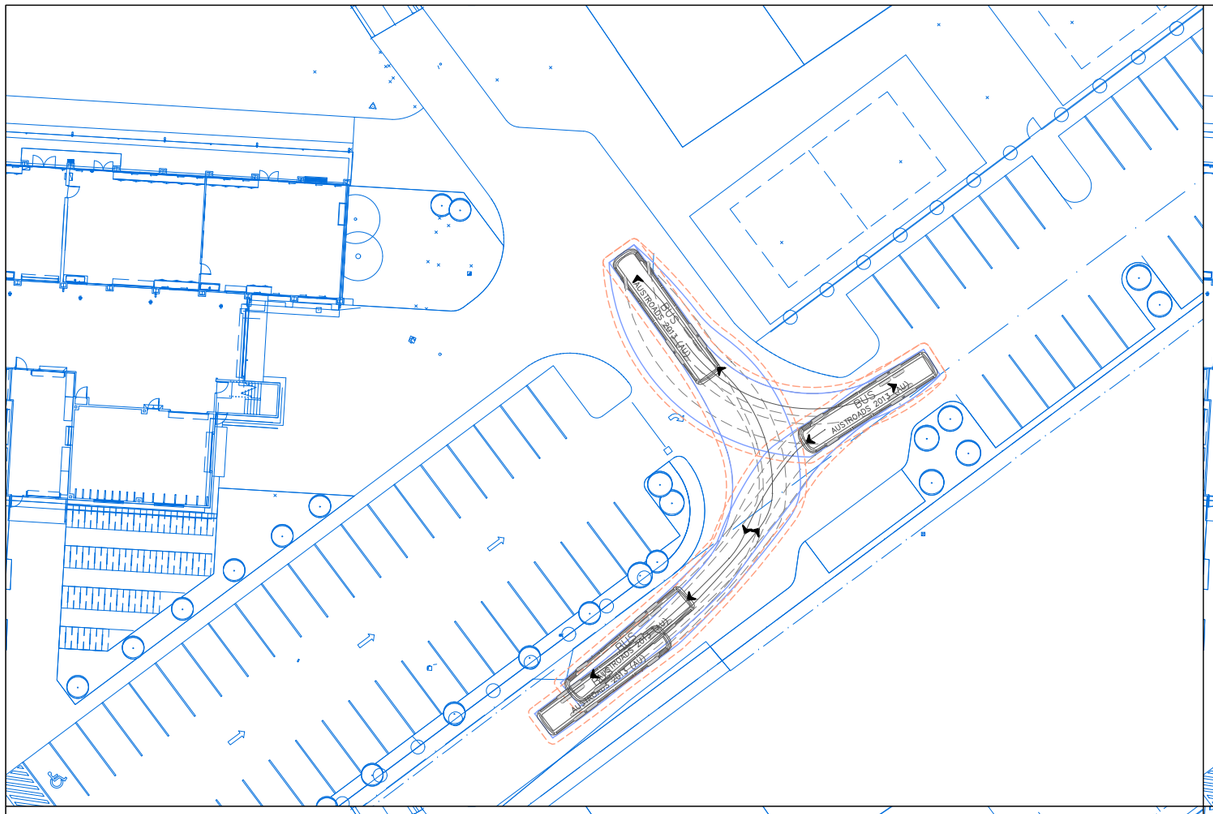
DESIGNED H.TRUONG	DESIGN CHECK S.BATE
APPROVED BY M.HULBERT	DATE ISSUED 16 DECEMBER 2021

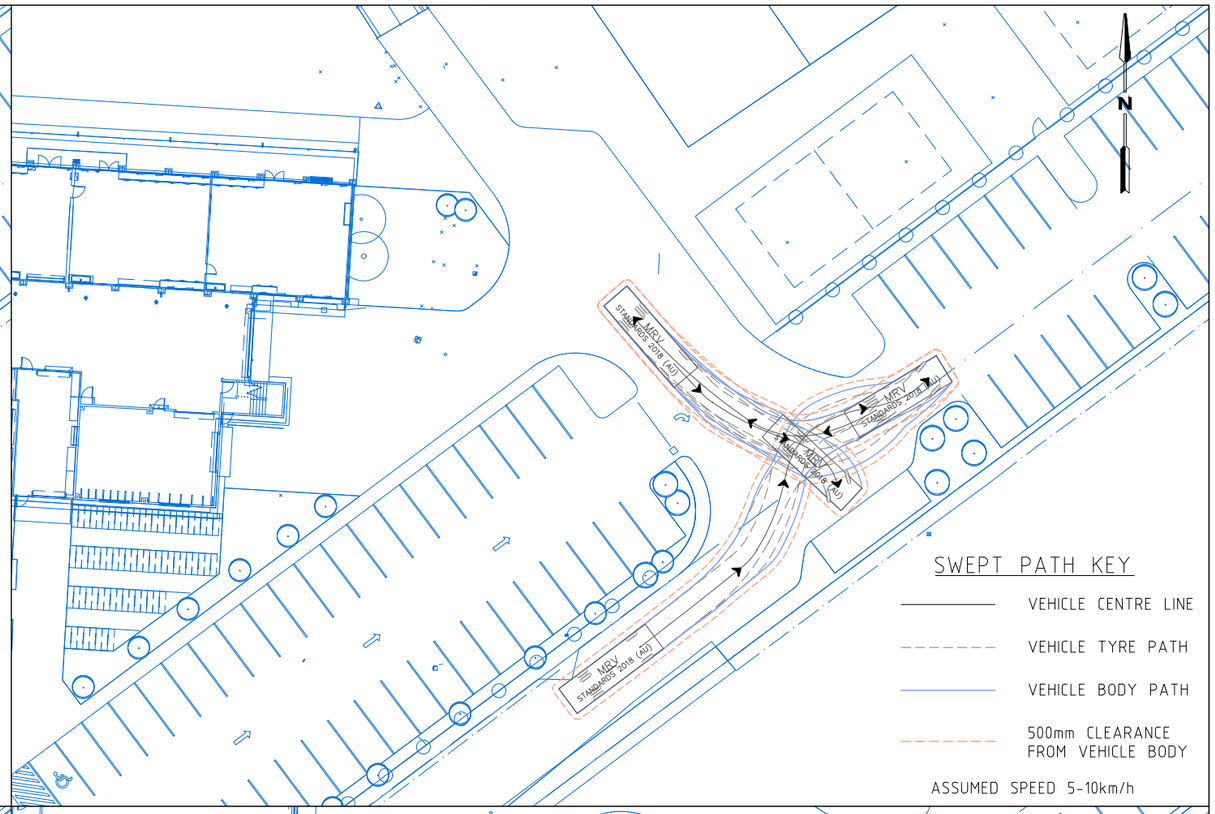
SCALE A3 0 2.5 5 10 1:500

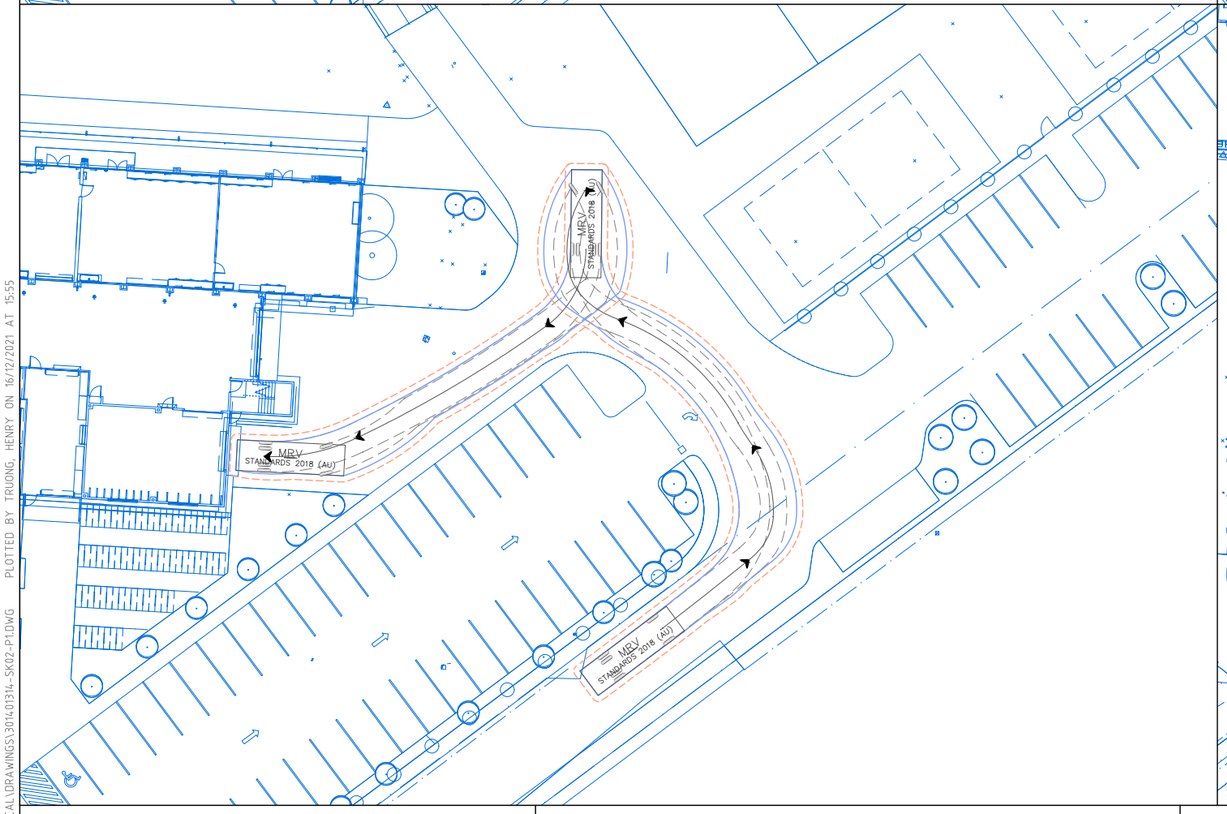
CAD FILE NO. 301401314-SK02-P1.DWG

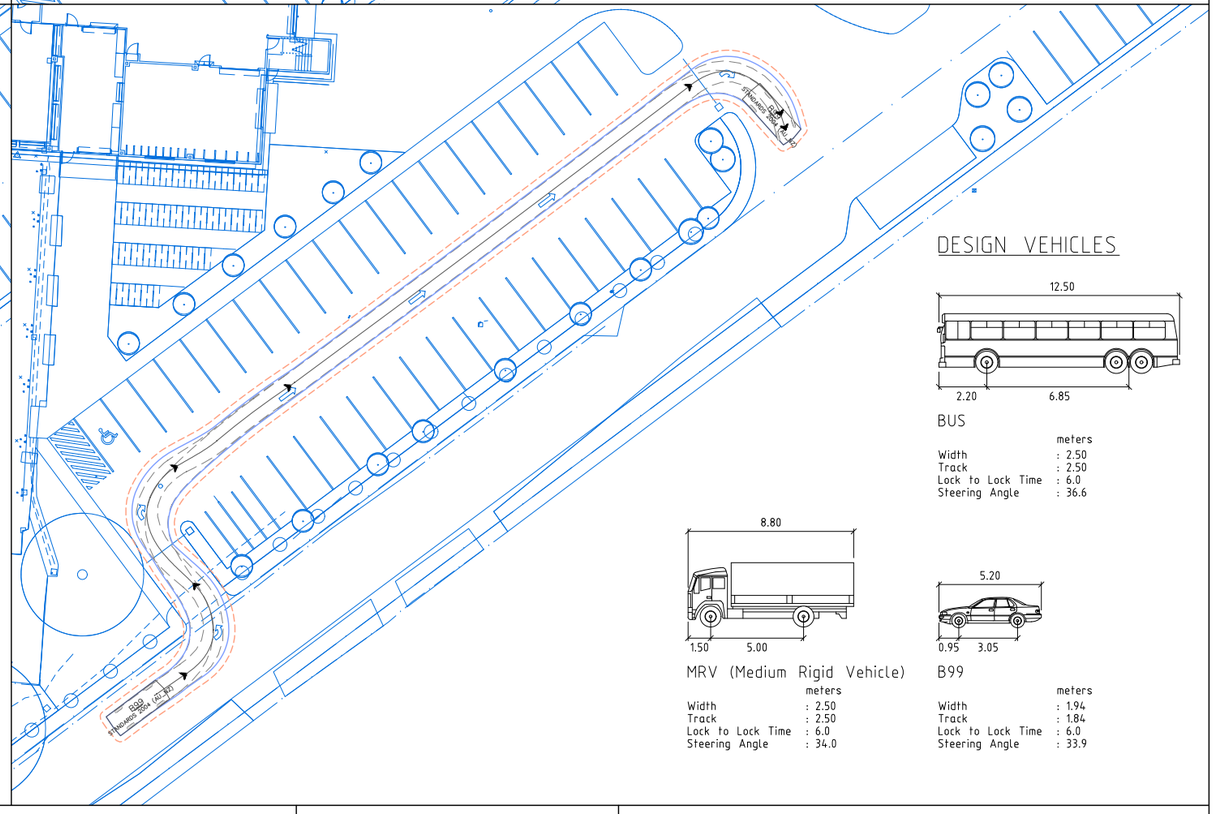
EMMAUS COLLEGE, NORTH ROCKHAMPTON
YAAMBA ROAD
SWEPT PATH ASSESSMENT

DRAWING NO. 301401314-SK03-01 SHEET 1 OF 2 ISSUE P1









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DESIGNED H.TRUONG	DESIGN CHECK S.BATE
APPROVED BY M.HULBERT	DATE ISSUED 16 DECEMBER 2021

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CAD FILE NO. 301401314-SK02-P1.DWG

EMMAUS COLLEGE, NORTH ROCKHAMPTON
YAAMBA ROAD
SWEPT PATH ASSESSMENT

DRAWING NO. 301401314-SK03-02 SHEET 2 OF 2 ISSUE P1

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C. RESPONSE TO COUNCIL CODES AND SDAP STATE CODE 1

C

Proposed Development (362 Yaamba Road - Norman Gardens)
Access, parking and transport code Assessment (Rockhampton Region Planning Scheme 2015)

PERFORMANCE OUTCOMES		ACCEPTABLE OUTCOMES		RESPONSE
PO1	Access driveways are located to avoid conflicts and designed to operate efficiently and safely, taking into account: ○ the size of the parking area; ○ the volume, frequency and type of vehicle traffic; ○ the need for some land uses (for example hospitals) to accommodate emergency vehicle access; ○ the type of use and the implications on parking and circulation, for example long-term or short-term car parking; ○ frontage road function and conditions; and ○ the capacity and function of the adjoining street system.	**AO1.1**	Access driveways are not located within: 1. twenty–five (25) metres of a signalised road intersection; 2. twenty (20) metres of an un-signalised road intersection in an industrial or centres zone or ten (10) metres otherwise; and 3. one (1) metre of any street signage, power poles, street lights, manholes, stormwater gully pits or other Council asset.	***Complies with Performance Outcome*** The proposed access driveways are to remain in their existing location. It is expected that these will maintain their functional operational use, and no conflicts will arise to the efficiency or safety of the vehicle access and adjacent road network as a result of utilising the existing vehicle access driveways.
PO2	Access driveways do not disrupt existing road or footpath infrastructure.	**AO2.1**	Access driveways: 1. do not require the modification, relocation or removal of any infrastructure including street trees, fire hydrants, water meters and street signs; 2. do not front a traffic island, speed control device, car parking bay, bus stop or other infrastructure within the road carriageway; 3. must be sealed and to a formed road; 4. are not constructed over an access point to equipment under the control of a regulatory authority, including storm water pits, water meters, hydrants and telephone pits; and 5. are raised or lowered to match the surface level of the driveway, where an access chamber is to be incorporated within the driveway.	***Complies with Acceptable Outcome*** The proposed access driveways are to be based on the existing locations and form of the vehicle access driveways at the Yaamba Road campus. This results in little to no modification, relocation or removal of any infrastructure, or a proposed fronting to traffic control infrastructure. The access driveways will be sealed and to a formed road and are not constructed over any regulatory authorities' infrastructure. The existing driveways will also be expected to match the level surface of the driveway.
PO3	Access driveways are designed and constructed so as to: 1. enable safe and functional vehicular access from the street to the property; and 2. not cause a change in the level of a footpath.	**AO3.1**	Access driveways are constructed in compliance with the Capricorn Municipal Development Guidelines.	***Complies with Performance Outcome*** The access driveways are designed and constructed such that the enable the safe and functional access to the site from the road as well as not cause a change in the level of the adjacent footpath.

PERFORMANCE OUTCOMES		ACCEPTABLE OUTCOMES		RESPONSE
PO4	A driveway does not allow water to pond adjacent to any buildings or cause water to enter a building.	**AO4.1**	A driveway has a minimum cross fall of one (1) metre (vertical) to 100 metres (horizontal) away from all adjoining buildings.	***Complies with Performance Outcome*** The access driveways are not expected to cause any undue water ponding to adjacent buildings, nor cause any water to enter nearby buildings.
PO5	Provision is made for on-site vehicle parking: 1. to meet the demand likely to be generated by the development; and 2. to avoid on-street parking where that would adversely impact on the safety or capacity of the road network or unduly impact on local amenity. Editor's note—SC6.6 — Car parking contributions planning scheme policy prescribes circumstances under which an applicant can satisfy PO5.	**AO5.1**	On-site car parking is provided at the rates set out in Table 9.3.1.3.2 of the access, parking and transport code. OR	***Complies with Acceptable Outcome*** The on-site parking for the campus complies with the rates set out in Table 9.3.1.3.2 of the access, parking and transport code.
		AO5.2	Where a change of use of existing premises is proposed and there is no increase in the gross floor area, the existing number of on-site car parks is retained or increased. AND	
		AO5.3	All parking, loading and manoeuvring facilities for visitors and employees to be located on-site. AND	***Complies with Acceptable Outcome*** All parking, loading and manoeuvring facilities for visitors and employees are located within the campus property boundary.
		AO5.4	Manoeuvring facilities to be of adequate dimensions to prevent any queuing in a roadway.	***Complies with Acceptable Outcome*** The design of the carpark and carpark aisles have been designed in accordance with the queuing requirements of the Australian Standards. More than 2 vehicles are able to store at each vehicle access respectively, resulting in the prevention of queuing on to the public road network.
PO6	Parking and servicing facilities are designed to meet user requirements.	**AO6.1**	Parking spaces, access and manoeuvring facilities, loading facilities and connections to the transport network are sealed and designed in accordance with Australian Standard AS 2890.	***Complies with Acceptable Outcome*** All parking spaces, access and manoeuvring facilities, loading facilities and connections to the transport network have been designed in accordance with the Australian Standards, with the expectation that all areas are to be sealed.
PO7	Sites with more than one (1) road frontage (excluding laneways) gain access only from the lower order road, except if it will introduce traffic generated by a non–residential use into a street that is in a residential zone.		No acceptable outcome is nominated	***N/A*** The site only has one (1) road frontage.
PO8	Parking areas are illuminated in a manner that maximises user safety but minimises the impacts on adjoining residents.	**AO8.1**	Parking areas for uses that operate at night are illuminated in accordance with the requirements of Australian Standard AS 1158.	***Complies with Performance Outcome*** All parking areas are expected to be illuminated to maximise user safety.

PERFORMANCE OUTCOMES		ACCEPTABLE OUTCOMES		RESPONSE
		AO8.2	Lighting used in parking areas does not cause an environmental nuisance and complies with Australian Standard AS 4282.	
PO9	Car parking areas, pathways and other elements of the transport network are designed to enhance public safety by discouraging crime and antisocial behaviour, having regard to: a. provision of opportunities for casual surveillance; b. the use of fencing to define public and private spaces, whilst allowing for appropriate sightlines; c. minimising potential concealment points and assault locations; d. minimising opportunities for graffiti and other vandalism; and e. restricting unlawful access to buildings and between buildings.		No acceptable outcome is prescribed.	***N/A*** Not relevant to the assessment of traffic & transport elements.
PO10	Parking and servicing areas are kept accessible and available for their intended use at all times during the normal business hours of the activity.		No acceptable outcome is prescribed.	***Complies with Performance Outcome*** *The parking and servicing areas of the school are intended to be accessible to relevant user groups during normal school hours.*
PO11	Development contributes to the creation of a transport network which is designed to: 1. achieve a high level of permeability and connectivity for all modes of transport, including pedestrians and cyclists, within the development and to the surrounding area; and 2. encourage people to walk, cycle or use public transport to and from the site instead of using a car.		No acceptable outcome is prescribed.	***Complies with Performance Outcome*** *The campus has a high level of permeability and connectivity to a wide range of transport modes, including pedestrians and cyclists for both students and staff. The redevelopment of the campus has taken into account the surrounding infrastructure of active travel users to ensure satisfactory integration as well as the ability to encourage students and staff to utilise alternative modes of transport rather than private vehicles.*
PO12	Development is located on roads that are appropriate for the nature of traffic (including vehicles, pedestrians and cyclists) generated, having regard to the safety and efficiency of the transport network.	**AO12.1**	Traffic generated by the development is safely accommodated within the design capacity of roads as provided in SC6.15 — Road infrastructure and hierarchy planning scheme policy.	***Complies with Performance Outcome*** *The redevelopment of the campus is not expected to result in a material difference in traffic generation compared to its existing generation output*

PERFORMANCE OUTCOMES		ACCEPTABLE OUTCOMES		RESPONSE
		AO12.2	A road or street does not connect with another road or street that is more than two (2) levels higher or lower in the road hierarchy.	*due to a minimal increase in student and staff numbers. The redeveloped campus is expected to be appropriate to the surrounding road network, and not result in any material worsening to the safety or efficiency of the transport network.*
		AO12.3	The existing infrastructure fronting the proposed development is upgraded in accordance with SC6.15 — Road infrastructure and hierarchy planning scheme policy and Capricorn Municipal Development Guidelines.	
PO13	Where the nature of the development creates a demand, provision is made for set down and pick-up facilities by bus, taxis or private vehicle, which: 1. are safe for pedestrians and vehicles; 2. are conveniently connected to the main component of the development by pedestrian pathway; and 3. provide for pedestrian priority and clear sightlines.		No acceptable outcome is prescribed.	***Complies with Performance Outcome*** *Set down facilities for both private vehicles and buses are proposed as part of the redevelopment which are safe for pedestrians and vehicles, conveniently located to the main pedestrian access points and have clear sightlines.*
PO14	Development does not impact on the safety, operation or function of the road network or system.	**AO14.1**	Vehicle manoeuvring into and from the site for all vehicles is designed in accordance with the Australian Standard AS 2890, as updated from time to time.	***Complies with Acceptable Outcome*** *Vehicle manoeuvring into and from the site have been confirmed with swept path assessments in accordance with the Australian Standards.*
		AO14.2	No direct property access is gained to a highway, main road, urban arterial or sub arterial road as defined in SC6.15 — Road infrastructure and hierarchy planning scheme policy other than via a service road or a joint access arrangement with other sites.	***Complies with Acceptable Outcome*** *Direct property access is achieved through the Yaamba Road service road.*
		AO14.3	Development that generates greater than 100 vehicle movements per day does not gain access to or from an urban access place or urban access streets as defined in SC6.15 — Road infrastructure and hierarchy planning scheme policy.	***Complies with Acceptable Outcome*** *The school campus gains access from a highway service road.*
PO15	Development facilitates the orderly provision and upgrading of the transport network or contributes to the construction of transport network improvements.		No acceptable outcome is prescribed.	***N/A*** *No upgrades are proposed nearby the site nor as part of the redevelopment of the campus.*
PO16	On-site transport network infrastructure integrates safely and effectively with surrounding networks.	**AO16.1**	Intersections, connections and access arrangements are designed in accordance with the Capricorn Municipal Development Guidelines and Australian Standard AS 2890.	***Complies with Acceptable Outcome*** *The access arrangements of the site have been designed in accordance with the relevant guidelines and Australian Standards.*
PO17	Development provides safe and convenient pedestrian and cycle movement to the site and within the site having regard to desire lines, users' needs, safety and legibility.	**AO17.1**	Pedestrian and cyclist movement are designed in compliance with the Capricorn Municipal Development Guidelines and Australian Standard AS 2890 — Parking facilities.	***Complies with Acceptable Outcome*** *The access arrangements of the site have been designed in accordance with the relevant guidelines and Australian Standards.*

PERFORMANCE OUTCOMES		ACCEPTABLE OUTCOMES		RESPONSE
PO18	Provision is made for adequate bicycle parking and end of trip facilities, to meet the likely needs of users and encourage cycle travel.		No acceptable outcome is nominated. Editor's note—Provisions are made for parking and end of trip facilities in accordance with the SC6.4 — Bicycle network planning scheme policy.	***Complies with Performance Outcome*** *Provision of bicycle parking and end of trip facilities is proposed as part of the redevelopment of the campus to further encourage bicycle travel.*
PO19	Refuse collection vehicles are able to safely access on-site refuse collection facilities.	**AO19.1**	Refuse collection areas are provided and designed in accordance with the waste management code and Australian Standard AS 2890.	***Complies with Acceptable Outcome*** *The refuse collection areas are provided and designed in accordance the waste management code and the relevant Australian Standards*

State code 1: Development in a state-controlled road environment

Table 1.2.1: Development in a state-controlled road environment

Performance outcomes	Acceptable outcomes	Response
Buildings and structures		
PO1 The location of buildings, structures, infrastructure, services and utilities does not create a safety hazard in a state-controlled road, or cause damage to, or obstruct road transport infrastructure.	**AO1.1** Buildings, structures, infrastructure, services and utilities are not located in a state-controlled road. AND	N/A
	AO1.2 Buildings, structures, infrastructure, services and utilities can be maintained without requiring access to a state-controlled road.	N/A
PO2 The design and construction of buildings and structures does not create a safety hazard by distracting users of a state-controlled road.	**AO2.1** Facades of buildings and structures facing a state-controlled road are made of non-reflective materials. OR	N/A
	AO2.2 Facades of buildings and structures do not reflect point light sources into the face of oncoming traffic on a state-controlled road. AND	N/A
	AO2.3 External lighting of buildings and structures is not directed into the face of oncoming traffic on a state-controlled road and does not involve flashing or laser lights. AND	N/A
	AO2.4 Advertising devices visible from a state-controlled road are located and designed in accordance with the Roadside Advertising Guide, 2nd Edition, Department of Transport and Main Roads, 2017.	N/A

Performance outcomes	Acceptable outcomes	Response
PO3 Road, pedestrian and bikeway bridges over a state-controlled road are designed and constructed to prevent projectiles from being thrown onto a state-controlled road.	**AO3.1** Road, pedestrian and bikeway bridges over a state-controlled road include throw protection screens in accordance with section 4.9.3 of the Design Criteria for Bridges and Other Structures Manual, Department of Transport and Main Roads, 2018.	N/A
Filling, excavation and retaining structures		
PO4 Filling and excavation does not interfere with, or result in damage to, infrastructure or services in a state-controlled road. Note: Information on the location of services and public utility plants in a **state-controlled road** can be obtained from the Dial Before You Dig service. Where development will impact on an existing or future service or public utility plant in a **state-controlled road** such that the service or public utility plant will need to be relocated, the alternative alignment must comply with the standards and design specifications of the relevant service or public utility provider, and any costs of relocation are to be borne by the developer. Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	No acceptable outcome is prescribed.	N/A
PO5 Filling, excavation, building foundations and retaining structures do not undermine, or cause subsidence of, a state-controlled road. Note: To demonstrate compliance with this performance outcome, it is recommended an RPEQ certified geotechnical assessment, prepared in accordance with the Road Planning and Design Manual 2nd Edition: Volume 3, Department of Transport and Main Roads, 2016, is provided. Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome and prepare a geotechnical assessment.	No acceptable outcome is prescribed.	N/A
PO6 Filling, excavation, building foundations and retaining structures do not cause ground water disturbance in a state-controlled road.	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
Note: To demonstrate compliance with this performance outcome, it is recommended an RPEQ certified geotechnical assessment, prepared in accordance with the Road Planning and Design manual 2nd Edition: Volume 3, Department of Transport and Main Roads, 2016, is provided. Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome and prepare a geotechnical assessment.		
PO7 Excavation, boring, piling, blasting or fill compaction during construction of a development does not result in ground movement or vibration impacts that would cause damage or nuisance to a state-controlled road, road transport infrastructure or road works. Note: To demonstrate compliance with this performance outcome, it is recommended an RPEQ certified geotechnical assessment, prepared in accordance with Road Planning and Design Manual 2nd Edition: Volume 3, Department of Transport and Main Roads, 2016, is provided. Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome and prepare a geotechnical assessment.	No acceptable outcome is prescribed.	N/A
PO8 Development involving the haulage of fill, extracted material or excavated spoil material exceeding 10,000 tonnes per year does not damage the pavement of a state-controlled road. Note: It is recommended a pavement impact assessment is provided. Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, and the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome and prepare a pavement impact assessment.	**AO8.1** Fill, extracted material and spoil material is not transported to or from the development site on a state-controlled road.	N/A

Performance outcomes	Acceptable outcomes	Response
PO9 Filling and excavation associated with the construction of vehicular access to a development does not compromise the operation or capacity of existing drainage infrastructure for a state-controlled road. Note: Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	No acceptable outcome is prescribed.	N/A
PO10 Fill material used on a development site does not result in contamination of a state-controlled road. Note: Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO10.1** Fill material is free of contaminants including acid sulfate content. Note: Soils and rocks should be tested in accordance with AS 1289.0 – Methods of testing soils for engineering purposes and AS 4133.0-2005 – Methods of testing rocks for engineering purposes. AND	N/A
	AO10.2 Compaction of fill is carried out in accordance with the requirements of AS 1289.0 2000 – Methods of testing soils for engineering purposes.	N/A
PO11 Filling and excavation does not cause wind-blown dust nuisance in a state-controlled road. Note: Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO11.1** Compaction of fill is carried out in accordance with the requirements of AS 1289.0 2000 – Methods of testing soils for engineering purposes. AND	N/A
	AO11.2 Dust suppression measures are used during filling and excavation activities such as wind breaks or barriers and dampening of ground surfaces.	N/A
Stormwater and drainage		
PO12 Development does not result in an actionable nuisance, or worsening of, stormwater, flooding or drainage impacts in a state-controlled road. Note: Refer to the SDAP Supporting Information: Stormwater and drainage in a state-controlled road environment, Department of	No acceptable outcome is prescribed.	N/A

Performance outcomes	Acceptable outcomes	Response
Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.		
PO13 Run-off from the development site is not unlawfully discharged to a state-controlled road. Note: Refer to the SDAP Supporting Information: Stormwater and drainage in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO13.1** Development does not create any new points of discharge to a state-controlled road. AND	N/A
	AO13.2 Stormwater run-off is discharged to a lawful point of discharge. Note: Section 3.9 of the Queensland Urban Drainage Manual, Institute of Public Works Engineering Australasia (Queensland Division) Fourth Edition, 2016, provides further information on lawful points of discharge. AND	N/A
	AO13.3 Development does not worsen the condition of an existing lawful point of discharge to the state-controlled road.	N/A
PO14 Run-off from the development site during construction does not cause siltation of stormwater infrastructure affecting a state-controlled road. Note: Refer to the SDAP Supporting Information: Stormwater and drainage in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO14.1** Run-off from the development site during construction is not discharged to stormwater infrastructure for a state-controlled road.	N/A
Vehicular access to a state-controlled road		
PO15 Vehicular access to a state-controlled road that is a limited access road is consistent with government policy for the management of limited access roads. Note: Refer to the SDAP Supporting Information: Vehicular access to a state-controlled road, Department of Transport and	**AO15.1** Development does not require new or changed access to a limited access road. Note: Limited access roads are declared by the transport chief executive under section 54 of the *Transport Infrastructure Act 1994* and are identified in the DA mapping system. OR	**Complies with AO15.1** The proposed development does not require any new or materially changed accesses to any limited access road.

Performance outcomes	Acceptable outcomes	Response
Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO15.2** A new or changed access to a limited access road is consistent with the limited access policy for the state-controlled road. Note: Limited access policies for limited access roads declared under the *Transport Infrastructure Act 1994* can be obtained by contacting the relevant Department of Transport and Main Roads regional office. AND	**Complies with AO15.2** The proposed development does not require any new or materially changed accesses to any limited access road.
	AO15.3 Where a new or changed access is for a service centre, access is consistent with the Service centre policy, Department of Transport and Main Roads, 2013 and the Access policy for roadside service centre facilities on limited access roads, Department of Transport and Main Roads, 2013, and the Service centre strategy for the state-controlled road. Note: The Service centre policy, Department of Transport and Main Roads, 2013, Access policy for roadside service centre facilities, Department of Transport and Main Roads, 2013 and the relevant Service centre strategy for a state-controlled road can be accessed by contacting the relevant Department of Transport and Main Roads regional office.	**Complies with AO15.3** The proposed development does not require any new or materially changed accesses to any limited access road.
PO16 The location and design of vehicular access to a state-controlled road (including access to a limited access road) does not create a safety hazard for users of a state-controlled road or result in a worsening of operating conditions on a state-controlled road. Note: Where a new or changed access between the premises and a state-controlled road is proposed, the Department of Transport and Main Roads will need to assess the proposal to determine if the vehicular access for the development is safe. An	**AO16.1** Vehicular access is provided from a local road.	
	OR all of the following acceptable outcomes apply: **AO16.2** Vehicular access for the development is consistent with the function and design of the state-controlled road. AND	**Complies with AO16.2** The proposed development utilises existing vehicular accesses on the service road of Yaamba Road. This consistency is expected to result in no material change to the function or design of the state-controlled road of Yaamba Road or the Yaamba Road service road.

Performance outcomes	Acceptable outcomes	Response
assessment can be made by Department of Transport and Main Roads as part of the development assessment process and a decision under section 62 of *Transport Infrastructure Act 1994* issued. Refer to the SDAP Supporting Information: Vehicular access to a state-controlled road, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO16.3** Development does not require new or changed access between the premises and the state-controlled road. Note: A decision under section 62 of the *Transport Infrastructure Act 1994* outlines the approved conditions for use of an existing vehicular access to a **state-controlled road**. Current section 62 decisions can be obtained from the relevant Department of Transport and Main Roads regional office. AND	**Complies with AO16.3** The proposed development is not proposing any new or changed vehicle accesses to the Yaamba Road service road.
	AO16.4 Use of any existing vehicular access to the development is consistent with a decision under section 62 of the *Transport Infrastructure Act 1994*. Note: The development which is the subject of the application must be of an equivalent use and intensity for which the section 62 approval was issued and the section 62 approval must have been granted no more than 5 years prior to the lodgement of the application. AND	**Complies with AO16.4** The proposed development's use of existing vehicular accesses to the site is expected to be consistent with a decision under section 62 of the Transport Infrastructure Act 1994.
	AO16.5 On-site vehicle circulation is designed to give priority to entering vehicles at all times so vehicles do not queue in a road intersection or on the state-controlled road.	**Complies with AO16.5** On-site vehicle circulation and entry is designed in accordance with the Australian Standards. This is expected to result in no queuing on state controlled roads and intersections whilst giving natural priority to vehicles entering the site.
Vehicular access to local roads within 100 metres of an intersection with a state-controlled road		
PO17 The location and design of vehicular access to a local road within 100 metres of an intersection with a state-controlled road does not create a safety hazard for users of a state-controlled road. Note: Refer to the SDAP Supporting Information: Vehicular access to a state-controlled road, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO17.1** Vehicular access is located as far as possible from the state-controlled road intersection. AND	**Complies with PO17** The location and design of the vehicular accesses is to remain consistent with the existing vehicle accesses. The maintained use of these existing driveways is not expected to result in any material safety or operational impact to any state-controlled road or intersection.
	AO17.2 Vehicular access is in accordance with parts, 3, 4 and 4A of the Road Planning and Design Manual, 2nd Edition: Volume 3, Department of Transport and Main Roads, 2016. AND	

Performance outcomes	Acceptable outcomes	Response
	AO17.3 On-site vehicle circulation is designed to give priority to entering vehicles at all times so vehicles do not queue in the intersection or on the state-controlled road.	
Public passenger transport infrastructure on state-controlled roads		
PO18 Development does not damage or interfere with public passenger transport infrastructure, public passenger services or pedestrian or cycle access to public passenger transport infrastructure and public passenger services. Note: Refer to the SDAP Supporting Information: Vehicular access to a state-controlled road, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO18.1** Vehicular access and associated road access works are not located within 5 metres of existing public passenger transport infrastructure. AND	**Complies with PO18** The proposed development does not damage or interfere with the existing public passenger transport infrastructure, services or active travel access.
	AO18.2 Development does not necessitate the relocation of existing public passenger transport infrastructure. AND	
	AO18.3 On-site vehicle circulation is designed to give priority to entering vehicles at all times so vehicles using a vehicular access do not obstruct public passenger transport infrastructure and public passenger services or obstruct pedestrian or cycle access to public passenger transport infrastructure and public passenger services. AND	
	AO18.4 The normal operation of public passenger transport infrastructure or public passenger services is not interrupted during construction of the development.	
Planned upgrades		

Performance outcomes	Acceptable outcomes	Response
PO19 Development does not impede delivery of planned upgrades of state-controlled roads.	**AO19.1** Development is not located on land identified by the Department of Transport and Main Roads as land required for the planned upgrade of a state-controlled road. Note: Land required for the planned upgrade of a state-controlled road is identified in the DA mapping system. OR	**Complies with AO19.1** The development is not located on land identified by TMR as required for the planned upgrade of a state controlled road.
	AO19.2 Development is sited and designed so that permanent buildings, structures, infrastructure, services or utilities are not located on land identified by the Department of Transport and Main Roads as land required for the planned upgrade of a state-controlled road.	
	OR all of the following acceptable outcomes apply: **AO19.3** Structures and infrastructure located on land identified by the Department of Transport and Main Roads as land required for the planned upgrade of a state-controlled road are able to be readily relocated or removed without materially affecting the viability or functionality of the development. AND	
	AO19.4 Vehicular access for the development is consistent with the function and design of the planned upgrade of the state-controlled road. AND	
	AO19.5 Development does not involve filling and excavation of, or material changes to, land required for a planned upgrade to a state-controlled road. AND	
	AO19.6 Land is able to be reinstated to the pre-development condition at the completion of the use.	

Performance outcomes	Acceptable outcomes	Response
Network impacts		
PO20 Development does not result in a worsening of operating conditions on the state-controlled road network. Note: To demonstrate compliance with this performance outcome, it is recommended that an RPEQ certified traffic impact assessment is provided. Please refer to the Guide to Traffic Impact Assessment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	No acceptable outcome is prescribed.	**Complies with PO20** The development is not expected to create a material worsening on the operating conditions of the state-controlled road network due to the minimal increase in student and staff numbers. It is noted that the intensifying of the school does not trigger the Code 6 response requirement (i.e. less than 100 students increase).
PO21 Development does not impose traffic loadings on a state-controlled road which could be accommodated on the local road network.	**AO21.1** The layout and design of the development directs traffic generated by the development to the **local road** network.	**Complies with PO21** The development is not expected to result in a material increase in vehicle trips. As a result, with increase in traffic loadings on to state-controlled roads is not expected to be materially increased as well.
PO22 Upgrade works on, or associated with, a state-controlled road are built in accordance with Queensland road design standards.	**AO22.1** Upgrade works required as a result of the development are designed and constructed in accordance with the *Road Planning and Design Manual*, 2nd edition, Department of Transport and Main Roads, 2016. Note: Road works in a state-controlled road require approval under section 33 of the *Transport Infrastructure Act 1994* before the works commence.	**N/A** No upgrade works are proposed as part of the redevelopment of the school campus.

Table 1.2.2: Environmental emissions

Statutory note: Where a **state-controlled road** is co-located in the same transport corridor as a railway, the development should instead comply with table 2.2.2: Environmental emissions in State code 2: Development in a railway environment.

Refer to the SDAP Supporting Information: Environmental emissions in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with the performance outcomes in Table 1.2.2.

Performance outcomes	Acceptable outcomes
Noise	
Accommodation activities	

Performance outcomes	Acceptable outcomes	
PO23 Development involving an accommodation activity or land for a future accommodation activity minimises noise intrusion from a state-controlled road or type 1 multi-modal corridor in habitable rooms.	**AO23.1** A noise barrier or earth mound is provided which is designed, sited and constructed: 1. to meet the following external noise criteria at all facades of the building envelope: a. ≤60 dB(A) L_{10} (18 hour) façade corrected (measured L_{90} (8 hour) free field between 10pm and 6am ≤40 dB(A)) b. ≤63 dB(A) L_{10} (18 hour) façade corrected (measured L_{90} (8 hour) free field between 10pm and 6am >40 dB(A)) 2. in accordance with chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013. Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting Information: Environmental emissions in a state-controlled road environment, Department of Transport and Main Roads, 2017. If the building envelope is unknown, the deemed-to-comply setback distances for buildings stipulated by the local planning instrument or relevant building regulations should be used. In some instances, the design of noise barriers and mounds to achieve the noise criteria above the ground floor may not be reasonable or practicable. In these instances, any relaxation of the criteria is at the discretion of the Department of Transport and Main Roads.	N/A
	OR all of the following acceptable outcomes apply: **AO23.2** Buildings which include a habitable room are setback the maximum distance possible from a state-controlled road or type 1 multi-modal corridor. AND	N/A

Performance outcomes	Acceptable outcomes	
	AO23.3 Buildings are designed and oriented so that habitable rooms are located furthest from a state-controlled road or type 1 multi-modal corridor. AND	N/A
	AO23.4 Buildings (other than a relevant residential building or relocated building) are designed and constructed using materials which ensure that habitable rooms meet the following internal noise criteria: 1. ≤35 dB(A) L_{eq} (1 hour) (maximum hour over 24 hours). Note: Noise levels from a state-controlled road or type 1 multi-modal corridor are to be measured in accordance with AS1055.1–1997 Acoustics – Description and measurement of environmental noise. To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting Information: Environmental emissions in a state controlled road environment, Department of Transport and Main Roads 2017. **Habitable rooms** of **relevant residential buildings** located within a **transport noise corridor** must comply with the Queensland Development Code MP4.4 Buildings in a transport noise corridor, Queensland Government, 2015. **Transport noise corridors** are mapped on the State Planning Policy interactive mapping system.	N/A
PO24 Development involving an accommodation activity or land for a future accommodation activity minimises noise intrusion from a state-controlled road or type 1 multi-modal corridor in outdoor spaces for passive recreation.	**AO24.1** A noise barrier or earth mound is provided which is designed, sited and constructed: 1. to meet the following external noise criteria in **outdoor spaces for passive recreation**: a. ≤57 dB(A) L_{10} (18 hour) free field (measured L_{90} (18 hour) free field between 6am and 12 midnight ≤45 dB(A)) b. ≤60 dB(A) L_{10} (18 hour) free field (measured L_{90} (18 hour) free field between 6am and 12 midnight >45 dB(A)) 2. in accordance with chapter 7 integrated noise barrier design of the Transport Noise	N/A

Performance outcomes	Acceptable outcomes	
	Management Code of Practice – Volume 1 Road Traffic Noise, Department of Transport and Main Roads, 2013. Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting Information: Environmental emissions in a state controlled road environment, Department of Transport and Main Roads 2017 OR	
	AO24.2 Each dwelling has access to an outdoor space for passive recreation which is shielded from a state-controlled road or type 1 multi-modal corridor by a building, solid gap-free fence, or other solid gap-free structure. AND	N/A
	AO24.3 Each dwelling with a balcony directly exposed to noise from a state-controlled road or type 1 multi-modal corridor has a continuous solid gap-free balustrade (other than gaps required for drainage purposes to comply with the Building Code of Australia).	N/A
Childcare centres and educational establishments		
PO25 Development involving a: 1. childcare centre; or 2. educational establishment minimises noise intrusion from a state-controlled road or type 1 multi-modal corridor in indoor education areas and indoor play areas.	**AO25.1** A noise barrier or earth mound is provided which is designed, sited and constructed: 1. to meet the following external noise criteria at all facades of the building envelope: a. ≤58 dB(A) L_{10} (1 hour) façade corrected (maximum hour during normal opening hours) 2. in accordance with chapter 7 – Integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013.	N/A

Performance outcomes	Acceptable outcomes	
	Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting Information: Environmental emissions in a state controlled road environment, Department of Transport and Main Roads 2017. If the building envelope is unknown, the deemed-to-comply setback distances for buildings stipulated by the local planning instrument or relevant building regulations should be used.	
	OR all of the following acceptable outcomes apply: **AO25.2** Buildings which include indoor education areas and indoor play areas are setback the maximum distance possible from a state-controlled road or type 1 multi-modal corridor. AND	N/A
	AO25.3 Buildings are designed and oriented so that indoor education areas and indoor play areas are located furthest from the state-controlled road or type 1 multi-modal corridor. AND	N/A
	AO25.4 Buildings are designed and constructed using materials which ensure indoor education areas and indoor play areas meet the following internal noise criteria: 1. ≤35 dB(A) L_{eq} (1 hour) (maximum hour during opening hours). Note: Noise levels from a state-controlled road or type 1 multi-modal corridor are to be measured in accordance with AS1055.1–1997 Acoustics – Description and measurement of environmental noise. To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting Information: Environmental emissions in a state controlled road environment, Department of Transport and Main Roads 2017.	N/A

Performance outcomes	Acceptable outcomes	
PO26 Development involving a: 1. childcare centre; or 2. educational establishment minimises noise intrusion from a state-controlled road or type 1 multi-modal corridor in outdoor education areas and outdoor play areas.	**AO26.1** A noise barrier or earth mound is provided which is designed, sited and constructed: 1. to meet the following external noise criteria in each outdoor education area or outdoor play area: a. ≤63 dB(A) L_{10} (12 hour) free field (between 6am and 6pm) 2. in accordance with chapter 7 – Integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013. Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting Information: Environmental emissions in a state controlled road environment, Department of Transport and Main Roads 2017. OR	N/A
	AO26.2 Each outdoor education area and outdoor play area is shielded from noise generated from a state-controlled road or type 1 multi-modal corridor by a building, solid gap-free fence, or other solid gap-free structure.	N/A
Hospitals		
PO27 Development involving a hospital minimises noise intrusion from a state-controlled road or type 1 multi-modal corridor in patient care areas.	**AO27.1** Hospitals are designed and constructed using materials which ensure patient care areas meet the following internal noise criteria: 1. ≤35 dB(A) L_{eq} (1 hour) (maximum hour during opening hours). Note: Noise levels from a state-controlled road or type 1 multi-modal corridor are to be measured in accordance with AS1055.1–1997 Acoustics – Description and measurement of environmental noise. To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified noise assessment report is provided, prepared in accordance with the SDAP Supporting	N/A

Performance outcomes	Acceptable outcomes	
	Information: Environmental emissions in a state controlled road environment, Department of Transport and Main Roads 2017.	
Vibration		
Hospitals		
PO28 Development involving a hospital minimises vibration impacts from vehicles using a state-controlled road or type 1 multi-modal corridor in patient care areas.	**AO28.1** Hospitals are designed and constructed to ensure vibration in the treatment area of a patient care area does not exceed a vibration dose value of $0.1m/s^{1.75}$. AND	N/A
	AO28.2 Hospitals are designed and constructed to ensure vibration in the ward area of a patient care area does not exceed a vibration dose value of $0.4m/s^{1.75}$. Note: To demonstrate compliance with the acceptable outcome, it is recommended that a RPEQ certified vibration assessment report is provided.	N/A
Air and light		
PO29 Development involving an accommodation activity minimises air quality impacts from a state-controlled road or type 1 multi-modal corridor in outdoor spaces for passive recreation.	**AO29.1** Each dwelling has access to an outdoor space for passive recreation which is shielded from a state-controlled road or type 1 multi-modal corridor by a building, solid gap-free fence, or other solid gap-free structure.	N/A
PO30 Development involving a: 1. childcare centre; or 2. educational establishment minimises air quality impacts from a state-controlled road or type 1 multi-modal corridor in outdoor education areas and outdoor play areas.	**AO30.1** Each outdoor education area and outdoor play area is shielded from a state-controlled road or type 1 multi-modal corridor by a building, solid gap-free fence, or other solid gap-free structure.	N/A
PO31 Development involving an accommodation activity or hospital minimises lighting impacts from a state-controlled road or type 1 multi-modal corridor.	**AO31.1** Buildings for an accommodation activity or hospital are designed to minimise the number of windows or transparent/translucent panels facing a state-controlled road or type 1 multi-modal corridor. OR	N/A

Performance outcomes	Acceptable outcomes	
	AO31.2 Windows facing a state-controlled road or type 1 multi-modal corridor include treatments to block light from a state-controlled road or type 1 multi-modal corridor.	

Table 1.2.3: Development in a future state-controlled road environment

Performance outcomes	Acceptable outcomes	
PO32 Development does not impede delivery of a future state-controlled road.	**AO32.1** Development is not located in a future state-controlled road. OR	**Complies with AO32.1** The development is not located in a future state-controlled road.
	AO32.2 Development is sited and designed so that permanent buildings, structures, infrastructure, services or utilities are not located in a future state-controlled road.	
	OR all of the following acceptable outcomes apply: **AO32.3** Structures and infrastructure located in a future state-controlled road are able to be readily relocated or removed without materially affecting the viability or functionality of the development. AND	
	AO32.4 Development does not involve filling and excavation of, or material changes to, a future state-controlled road. AND	
	AO32.5 Land is able to be reinstated to the pre-development condition at the completion of the use.	
PO33 Vehicular access to a future state-controlled road is located and designed to not create a safety hazard for users of a future state-controlled road or result in a worsening of operating conditions on a future state-controlled road.	**AO33.1** Development does not require new or changed access between the premises and a future state-controlled road. AND	N/A – Refer to AO32.1

Performance outcomes	Acceptable outcomes	
Note: Where a new or changed access between the premises and a future state-controlled road is proposed, the Department of Transport and Main Roads will need to assess the proposal to determine if the vehicular access for the development is safe. An assessment can be made by Department of Transport and Main Roads as part of the development assessment process and a decision under section 62 of *Transport Infrastructure Act 1994* issued.	**AO33.2** Vehicular access for the development is consistent with the function and design of the future state-controlled road.	N/A – Refer to AO32.1
PO34 Filling, excavation, building foundations and retaining structures do not undermine, or cause subsidence of, a future state-controlled road. Note: To demonstrate compliance with this performance outcome, it is recommended that an RPEQ certified geotechnical assessment is provided, prepared in accordance with the Road Planning and Design Manual, 2nd edition: Volume 3, Department of Transport and Main Roads, 2016. Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome and prepare a geotechnical assessment.	No acceptable outcome is prescribed.	N/A – Refer to AO32.1
PO35 Fill material from a development site does not result in contamination of land for a future state-controlled road. Note: Refer to the SDAP Supporting Information: Filling, excavation and retaining structures in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO35.1** Fill material is free of contaminants including acid sulfate content. Note: Soil and rocks should be tested in accordance with AS1289 – Methods of testing soils for engineering purposes and AS4133 2005 – Methods of testing rocks for engineering purposes. AND	N/A – Refer to AO32.1
	AO35.2 Compaction of fill is carried out in accordance with the requirements of AS1289.0 2000 – Methods of testing soils for engineering purposes.	N/A – Refer to AO32.1
PO36 Development does not result in an actionable nuisance, or worsening of, stormwater, flooding or drainage impacts in a future state-controlled road. Note: Refer to the SDAP Supporting Information: Stormwater and drainage in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	No acceptable outcome is prescribed.	N/A – Refer to AO32.1

Performance outcomes	Acceptable outcomes	
PO37 Run-off from the development site is not unlawfully discharged to a future state-controlled road. Note: Refer to the SDAP Supporting Information: Stormwater and drainage in a state-controlled road environment, Department of Transport and Main Roads, 2017, for further guidance on how to comply with this performance outcome.	**AO37.1** Development does not create any new points of discharge to a future state-controlled road. AND	N/A – Refer to AO32.1
	AO37.2 Stormwater run-off is discharged to a lawful point of discharge. Note: Section 3.9 of the Queensland Urban Drainage Manual, Institute of Public Works Engineering Australasia (Queensland Division), Fourth Edition, 2016, provides further information on lawful points of discharge. AND	N/A – Refer to AO32.1
	AO37.3 Development does not worsen the condition of an existing lawful point of discharge to the future state-controlled road.	N/A – Refer to AO32.1

GTA Consultants now Stantec

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EMMAUS COLLEGE, ROCKHAMPTON

INFORMATION REQUEST

ROCKHAMPTON REGIONAL COUNCIL

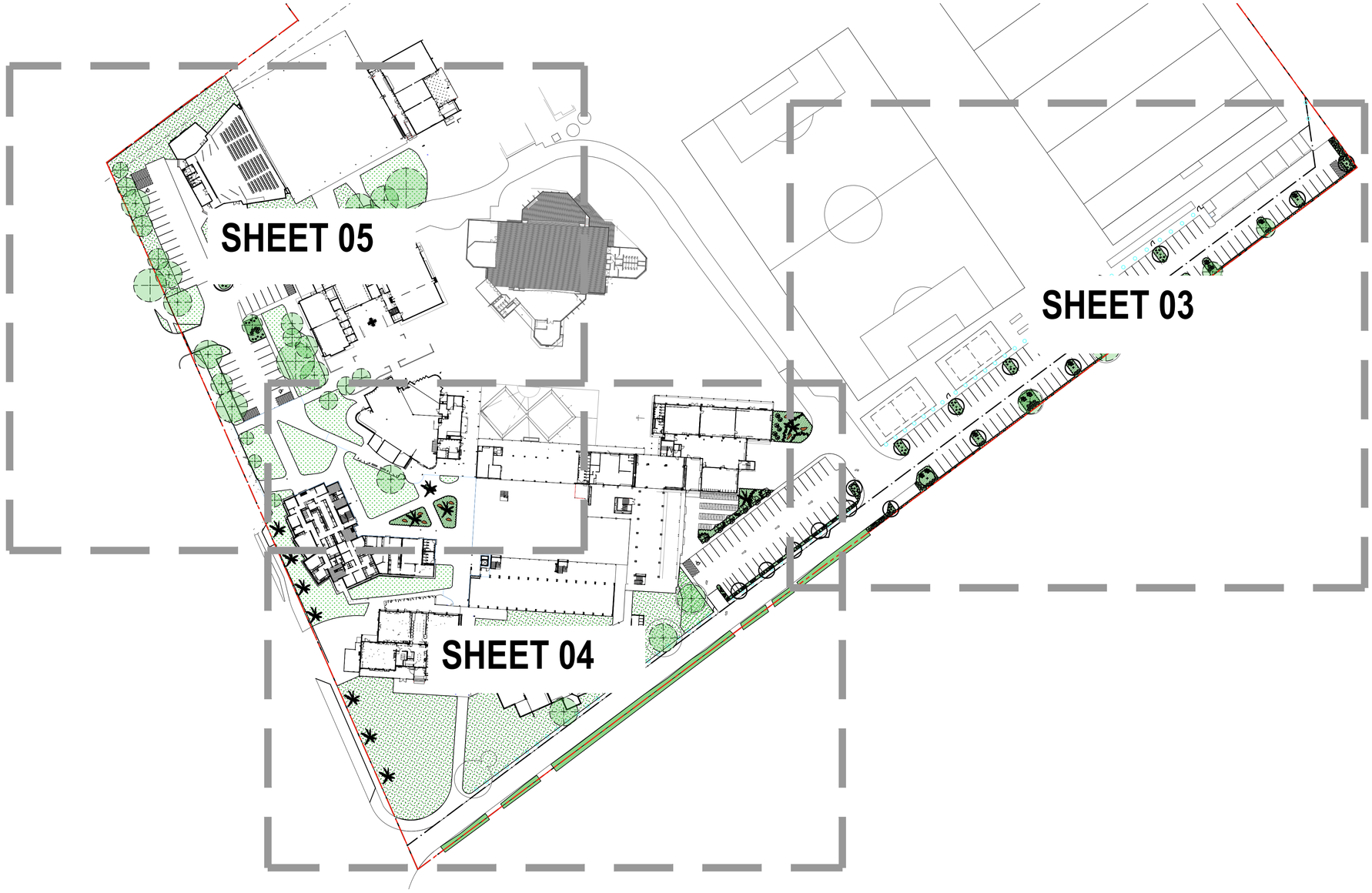
APPROVED PLANS

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

Development Permit No.: D/33-2022

Dated: 2 February 2023

DRAWING SCHEDULE



Property ID

EMMAUS COLLEGE ROCKHAMPTON

DISCLAIMER: OPERATIONAL WORKS

Rev.	Date.	Description.	Dwn.	Chk.
01	05.09.22	FOR APPROVAL	AH	AH

Stamp

FOR APPROVAL

Approval Details

APPROVAL NO: D33-2022 - Information Request

Drawing

TITLE PAGE

Scale Bar

SCALE 1:750

N

Project No.

J0652

Drawing No. 01

Rev No. 01

SPECIFICATIONS

GENERAL NOTES:

ALL WORKS TO BE CARRIED OUT IN ACCORDANCE WITH COUNCIL STANDARDS AND RELEVANT AUSTRALIAN STANDARDS.

A COPY OF THE COUNCIL DECISION NOTICE FOR THE APPROVED PLANS IS TO BE KEPT AT ALL TIMES WITH THE APPROVED LANDSCAPE PLANS.

VERIFY LOCATION OF ALL SERVICES PRIOR TO COMMENCEMENT OF WORKS.

1.0 SITE PREPARATION

1.1 EARTHWORKS

EARTHWORKS SHALL COMPRISE

- TOPSOIL CULTIVATION
- TOPSOIL MIXING AND INSTALLATION

1.2 SOIL CULTIVATION
CULTIVATE BY RIPPING TO THE DEPTHS SPECIFIED THIS SHEET TO LOOSEN AND AERATE GROUND. DO NOT DISTURB EXISTING SERVICES. REMOVE UNWANTED MATTER INCLUDING STONES, RUBBISH AND RUBBLE EXCEEDING 20MM IN DIAMETER AND STICKS AND WEEDS BROUGHT TO THE SURFACE DURING CULTIVATION. FINELY CULTIVATE THE SURFACE AND RAKE FREE OF CLODS.

TREE PLANTING AREAS: CULTIVATE TO THE DEPTH OF ROOT BALL PLUS A FURTHER DEPTH OF 300MM.

1.3 TOPSOIL - TREE PLANTING AREAS
IMPORTED TOPSOIL/SUPPLIMENTED SITE SOIL SHALL BE TO THE AUSTRALIAN STANDARD 4419 AND CERTIFIED FIRE ANT FREE IF REQUIRED.

1.4 COMPOST
COMPOST SHALL BE SPENT MUSHROOM COMPOST OR MILLED COW MANURE. IT SHALL HAVE A NEUTRAL pH VALUE AND BE FREE OF WEEDS, SEEDS AND DISEASE.

1.5 TOPSOIL MIXTURE
TOPSOIL MIXTURE SHALL BE A 3:1 MIX OF TOPSOIL/COMPOST.

1.6 TOPSOIL MIXTURE INSTALLATION
AS PER PLANTING DETAIL, INSTALL TOPSOIL BACKFILL TO TREE PLANTING AREAS BOTH BENEATH TO 300MM AND AROUND ROOT BALL.

2.00 PLANTING

2. 1 THE WORKS

PLANTING WORK COMPRISES:

- SUPPLY AND INSTALLATION OF ALL PLANTS AND TREES
- MULCHING OF ALL TREE PLANTING AREAS
- STAKING OF ALL TREES
-

2. 2 PLANTS

PLANTS SHALL BE VIGOROUS, WELL ESTABLISHED, OF GOOD FORM, NOT SOFT OR FORCED, HARDENED OFF, FREE FROM DISEASE AND PESTS WITH LARGE HEALTHY ROOT SYSTEMS AND NOT POT BOUND. THE ROOT SYSTEM SHALL BE WELL BALANCED IN RELATION TO THE SIZE OF THE PLANT.

TREES SHALL HAVE A SINGLE LEADING SHOOT.

PLANT CONTAINERS SHALL BE OF AN APPROPRIATE SIZE AND FREE FROM WEEDS. PLANTS SHALL NOT EXHIBIT SIGNS OF BEING STRESSED AT ANY STAGE DURING THEIR DEVELOPMENT DUE TO INADEQUATE WATERING, EXCESSIVE SUNLIGHT, PHYSICAL DAMAGE OR HAVE RESTRICTED GROWTH DUE TO NURSERY ROWS. NO SUBSTITUTIONS SHALL BE MADE UNLESS APPROVED BY THE LANDSCAPE ARCHITECT.

KEEP PLANTS IN GOOD CONDITION DURING STORAGE. PREVENT DRYING OUT OR DAMAGE FROM ANY CAUSE INCLUDING FROST, WIND, SUN, THEFT, VERMIN ETC.

2. 3 PLANTING

IF PLANTING IS TO BE EXECUTED DURING ***COUNCIL WATER RESTRICTION PERIODS*** ENSURE PLANTS CAN BE WATERED IN AT TIME OF PLANTING. DO NOT ALLOW PLANTS TO BE INSTALLED ON A DAY THEY CAN'T BE WATERED.

PLANTING TO BE EXECUTED IN ACCORDANCE WITH THE PLANTING DETAIL. DO NOT PLANT INTO DRY OR MUDDY SOIL OR IN EXTREME WEATHER CONDITIONS. ENSURE PLANT ROOT SYSTEMS ARE MOIST WHEN REMOVED FROM CONTAINER AND NOT ALLOWED TO DRY OUT AND PLANTING AREA HAS BEEN THOROUGHLY WATERED. PLANT OUT WITH MINIMUM DISTURBANCE TO ROOT BALL ENSURING FINISHED COMPACTED SOIL LEVELS COINCIDE WITH THE NATURAL SOIL LEVEL OF THE PLANT. PLANT, STAKE, TIE AND MULCH ACCORDING TO DETAIL DRAWINGS AND THEN DEEP SOAK THE WHOLE OF THE PLANTING AREA.

2. 4 DEPTH OF PLANTING

2.41 CULTIVATION

CULTIVATE SUBGRADE TO MIN 200MM DEPTH SUPPLY AND PLACE MIN 300MM DEPTH IMPORTED SOIL MIX TO BEDS IN GENERAL.

2.5 WATER SAVING GRANULES
SUPPLY AND IMPLEMENT FYOTGREEN HYDROCELL OR APPROVED EQUIVALENT.

BACKFILLING SOIL MIX TO TREE PLANTING AND BED PLANTING WILL BE AS FOLLOWS:

30% IMPORTED TOPSOIL
60% COARSE SAND
10% ORGANIC MATTER

PLUS AMENDMENTS AS DETERMINED BY SOIL CHEMICAL ANALYSIS TO ACHIEVE PH AND FERTILITY SUITABLE TO PROMOTE VIGOROUS GROWTH AND ESTABLISHMENT

ONCE THE BACK FILLING SOIL MIX HAD BEEN CREATED, MIX IN HYDROCELL OR APPROVED EQUIVALENT AT THE RATE OF HALF THE VOLUME OF THE ROOT BALL (IE 22.5L FOR A 45L ROOT BALL) AND PROCEED TO BACKFILL AROUND THE ROOT BALL.

WHEN THE PLANT IS IN ITS FINAL POSITION IN ITS HOLE THE TOP SOIL LEVEL OF THE PLANT ROOT BALL SHALL BE LEVEL WITH THE FINISHED SURFACE OF THE SOIL SURROUNDING THE HOLE. TEST THE DEPTH BY MEASURING THE SIDES OF CONTAINERS. IF BACKFILLING IS REQUIRED TO CORRECT THE DEPTH USE TOPSOIL MIX.

2. 6 PLANTING FERTILIZER

'OSMOCOTE' SUSTAINED RELEASE FERTILISER IN GRANULE FORM OR APPROVED EQUIVALENT SHALL BE ADDED TO THE TOPSOIL AS PER MANUFACTURERS DIRECTION.

'BIOPTIVATE GRANULE' SOIL ADDITIVE FOR REHABILITATION PLANTING AREA SHALL BE ADDED AT THE RATE OF:
1 TEASPOON PER PLANTING HOLE FOR TUBESTOCK.
10 TABLESPOONS PER PLANTING HOLE FOR 100 LTR TREE

2. 7 MULCHING
MULCH TO BE 'FOREST MULCH' AS DETAILED, FREE OF WEEDS, TERMITES AND OTHER FOREIGN MATTER. SPREAD MULCHES EVENLY TO A DEPTH OF 100MM TO ALL PLANTING AREAS REDUCING AROUND PLANT BASE. TAPER MULCH AT EDGES TO MAINTAIN FINISHED LEVEL WITH ADJACENT SURFACES.

3.0 DRAINAGE
ALL PLANTING AREAS AT GRADE TO DRAIN THROUGH NATURAL GROUND. PERFORATED AGRICULTURAL DRAIN TO BE INSTALLED WHERE ROCK IS AFFECTING DRAINAGE OF BED AREAS / SPECIMEN PLANTING AND GRADED TO PROVIDE ADEQUATE (MIN 1 IN 100 FALLS) DRAINAGE IN NATURAL GROUND.

4.0 TURFING

4.1 THE WORKS
TURFING WORK COMPRISES
- SUPPLY OF TURF AND FERTILIZER
- INSTALLATION OF PROPOSED TURF AREAS

4.2 TURF SPECIES
TURF SHALL BE A GRADE COUCH WITH AN EVEN THICKNESS TO NOT LESS THAN 30MM.

TURF SHALL BE OBTAINED FROM AN APPROVED GROWER OF CULTIVATED TURF. TURF TO BE DELIVERED ON SITE WITHIN 24 HOURS OF BEING CUT AND LAID WITHIN 36 HOURS OF BEING CUT. PREVENT TURF FROM DRYING OUT BETWEEN CUTTING AND LAYING.

4.3 TURF UNDERLAY
UNDERLAY SHALL BE CLEAN WASHED COURSE RIVER SAND AND LOAM MIX FREE OF CLAY LUMPS, CLODS, WEEDS, TREE ROOTS, STICKS, ORGANIC MATTER, RUBBISH AND MATERIAL TOXIC TO PLAN GROWTH.

4.4 LAYING
PREPARE THE AREA TO BE TURFED AS SPECIFIED. INSTALL 75M SANDY LOAM AND CULTIVATE INTO THE PREPARED SUB-GRADE. FERTILIZE USING 'TURF STARTER' OR APPROVED EQUIVALENT PER MANUFACTURERS DIRECTIONS.

LAY TURF IN STRETCHED BOND PATTERN WITH THE JOINTS STAGGERED AND CLOSE BUTTED. TURF TO BE PARALLEL WITH THE LONG SIDE OF LEVEL AREAS AND WITH THE CONTOURS OF SLOPES. TURF TO FINISH FLUSH AND LEVEL WITH ADJACENT FINISHED SURFACES WHEN ROLLED. ELIMINATE AIR POCKETS AND WATER IMMEDIATELY TO MOISTEN THE SOIL TO IT'S FULL DEPTH. CONTINUE WATERING TO MAINTAIN MOISTURE TO THIS DEPTH.

5.0 MAINTENANCE:
THE DURATION OF THE ESTABLISHMENT PERIOD IS 12 WEEKS AND COMMENCES AT THE DATE OF PRACTICAL COMPLETION. THE FOLLOWING TASKS SHOULD BE CARRIED OUT DURING THE ESTABLISHMENT PERIOD:

- WATERING, FERTILISING, WEEDING AND TREATMENT OF PLANTS AND TURF FOR PEST AND DISEASE TO MAINTAIN HEALTH AND GROWTH.
- MAINTAIN MINIMUM SOIL AND MULCH DEPTHS
- TOPDRESSING TURF TO MAINTAIN AN EVEN SURFACE FREE FROM DEPRESSIONS
- ADJUSTMENTS AND REPLACEMENTS OF STAKES AND TIES
- PRUNING TO PROMOTE THE DESIRED FORM
- MOWING OF ALL LAWN AREAS TO MAINTAIN A UNIFORM GRASS COVER WITH A MAXIMUM HEIGHT OF 50MM.

WATER: REGULARLY WATER THE PLANTS TO ENSURE CONTINUOUS HEALTHY GROWTH. WATER WITHIN COUNCIL WATER RESTRICTION PERIODS OR AS ADVISED WITHIN GUIDELINES FOR THE AREAS LOCAL RESTRICTIONS. CONTRACTOR IS TO ALLOW FOR WATER TRUCKING TO SITE DURING MIN ONE MONTH OF ESTABLISHMENT AND TO THE APPROVAL OF COUNCIL INSPECTORS.

REPLACEMENTS: REPLACE ALL PLANTS THAT ARE UNHEALTHY OR DEAD. REPLACEMENTS SHALL BE IDENTICAL IN SIZE AND SPECIES.

SOIL SUBSIDENCE: MAKE GOOD IF DUE TO WORKMANSHIP OF LANDSCAPE CONTRACTOR.

STAKES AND TIES: ADJUST AS REQUIRED, REMOVE FROM SITE AT COMPLETION OF MAINTENANCE PERIOD.

PROTECTION: PROTECT PLANTED AREAS FROM DAMAGE, EITHER MALICIOUS, IRRESPONSIBLE OR ACCIDENTAL.
MULCHED SURFACE: MAINTAIN IN A TIDY CONDITION, REINSTATE IF NECESSARY.

SPRAYING AND PEST ERADICATION: CHECK FOR INFESTATION REGULARLY AND IN PARTICULAR KNOWN PERIODS OF ACTIVITY. SPRAY AND REMOVE BY HAND.

Planting Schedule

Code	Botanical Name	Common Name	Container Size	Density/m2	Number
Trees					
ARC ale	*Archontophoenix alexandrae*	Alexandria Palm	100Ltr	As shown	12
BUC cel	*Buckinghamia celsissima*	Ivory Curl	100Ltr	As shown	18
HAR pen	*Harpullia pendula*	Tulipwood	100 Ltr	As shown	6
Shrubs & Feature Plants					
CAL vim	*Callistemon viminalis 'Little John'*	Little John	140mm	As shown	219
COR fru	*Cordyline fruticosa 'Pink diamond'*	Pink Diamond	200mm	As shown	6
MEL lin	*Melaleuca linariifolia 'Claret Tops'*	Honey Myrtle	200mm	As Shown	61
Groundcovers					
DIA cae	*Dianella caerulea*	Blue Flax Lilly	75mm tube	As shown	103
LOM hys	*Lomandra hystrix*	Mat Rush	75mm tube	As shown	180
MYO par	*Myoporum parvifolium*	Creeping Boobialla	75mm tube	As shown	400
Notes:					
Planting in accordance with Rockhampton Regional Council Plannning Scheme					
Plant selection subject to commercial availability, substitutes to be confirmed with Landscape Architect.					

ROCKHAMPTON REGIONAL COUNCIL
APPROVED PLANS
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/33-2022
Dated: 2 February 2023

Property ID
EMMAUS COLLEGE ROCKHAMPTON

DISCLAIMER: OPERATIONAL WORKS

Rev.	Date.	Description.	Dwn.	Chk.
01	05.09.22	FOR APPROVAL	AH	AH

Stamp
FOR APPROVAL

Approval Details
APPROVAL NO: D33-2022 - Information Request

Drawing
SPECIFICATION & PLANT SCHEDULE

Scale Bar

Project No.
J0652

Drawing No. 02 **Rev No.** 01

ROCKHAMPTON REGIONAL COUNCIL

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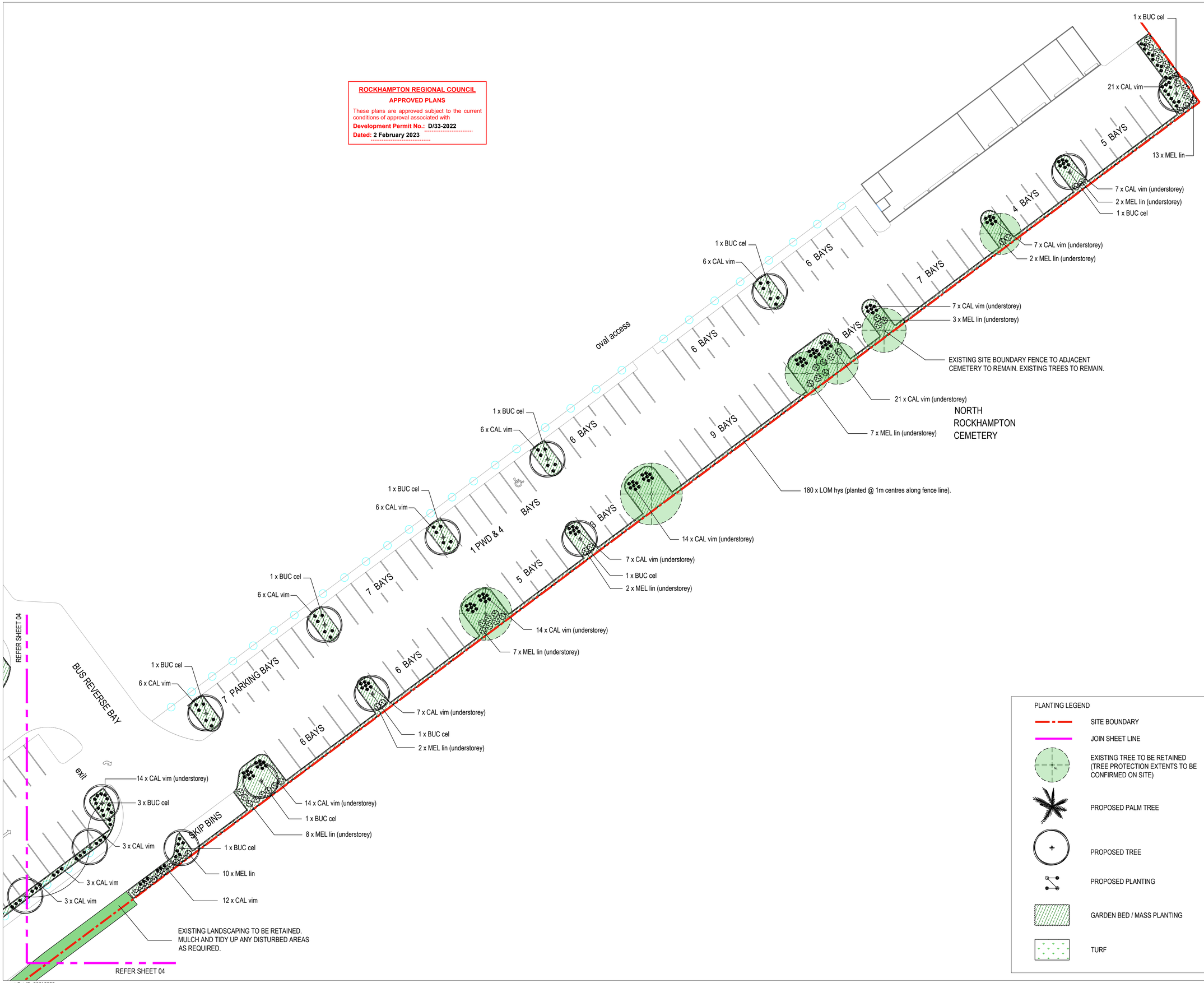
Dated: 2 February 2023



PLANTING LEGEND

- SITE BOUNDARY
- JOIN SHEET LINE
- EXISTING TREE TO BE RETAINED (TREE PROTECTION EXTENTS TO BE CONFIRMED ON SITE)
- PROPOSED PALM TREE
- PROPOSED TREE
- PROPOSED PLANTING
- GARDEN BED / MASS PLANTING
- TURF

Property ID

EMMAUS COLLEGE ROCKHAMPTON

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Approval Details

APPROVAL NO: D33-2022 - Information Request

Drawing

LANDSCAPE PLAN

Scale Bar

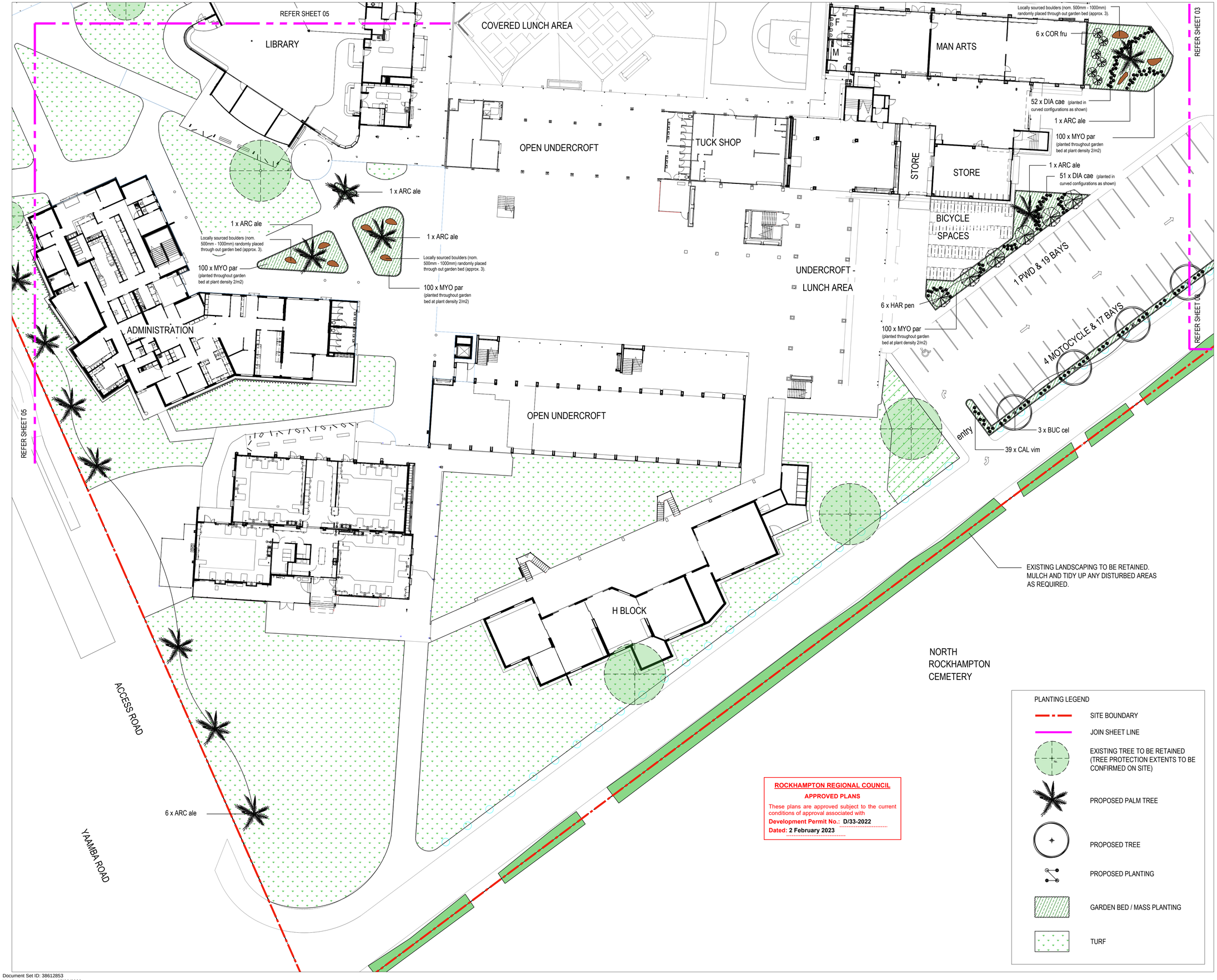
2 0 2 4 6 8 10 12 metres

SCALE 1:250 @ A1 1:500 @ A3 N

Project No.

J0652

Drawing No. 03 **Rev No.** 01



ROCKHAMPTON REGIONAL COUNCIL

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PLANTING LEGEND

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Property ID

EMMAUS COLLEGE ROCKHAMPTON

DISCLAIMER: OPERATIONAL WORKS

Rev.	Date.	Description.	Dwn.	Chk.
01	04.07.22	FOR APPROVAL	AH	AH

Stamp

FOR APPROVAL

Approval Details

APPROVAL NO: D33-2022 - Information Request

Drawing

LANDSCAPE PLAN

Scale Bar

2 0 2 4 6 8 10 12 metres

SCALE 1:250 @ A1 1:500 @ A3 N

Project No.

J0652

Drawing No. 04 **Rev No.** 01

COVERED NETBALL COURTS

ROOMS

AMENITIES & CHANGE ROOMS

MULTI PURPOSE CENTRE

STAGE & SEATING

EXISTING GARDEN AREAS TO BE RETAINED. MAKE GOOD ANY DISTURBED AREAS.

1 PWD & 12 BAYS

7 BAYS

6 BAYS

1 x BUC cel
6 x CAL cim

MARY MACKILLOP ARTS CENTRE

EXISTING GARDEN AREAS TO BE RETAINED. MAKE GOOD ANY DISTURBED AREAS.

STAGE

MULTI PURPOSE HALL

FUNCTION AREA

ACCESS ROAD

5 x CAL cim

5 x MEL lin

5 x CAL cim

1 PWD & 6 BAYS

7 BAYS

EXISTING GARDEN AREAS TO BE RETAINED. MAKE GOOD ANY DISTURBED AREAS.

EXISTING DROP OFF AND GO ZONE

GATE

GATE

LIBRARY

REFER SHEET 04

COVERED LUNCH AREA

OPEN UNDERCROFT

TUCK SH

1 x ARC ale

REFER SHEET 04

PLANTING LEGEND

- SITE BOUNDARY
- JOIN SHEET LINE
- EXISTING TREE TO BE RETAINED (TREE PROTECTION EXTENTS TO BE CONFIRMED ON SITE)
- PROPOSED PALM TREE
- PROPOSED TREE
- PROPOSED PLANTING
- GARDEN BED / MASS PLANTING
- TURF

ROCKHAMPTON REGIONAL COUNCIL

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Approval Details

APPROVAL NO: D33-2022 - Information Request

Drawing

LANDSCAPE PLAN

Scale Bar

2 0 2 4 6 8 10 12 metres

SCALE 1:250 @ A1 1:500 @ A3

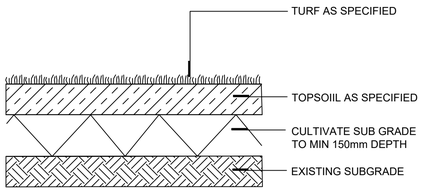
N

Project No.

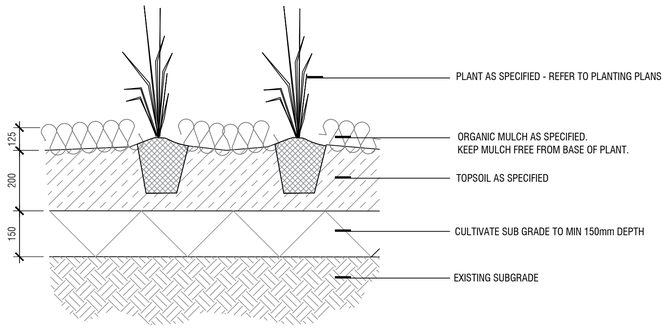
J0652

Drawing No. 05

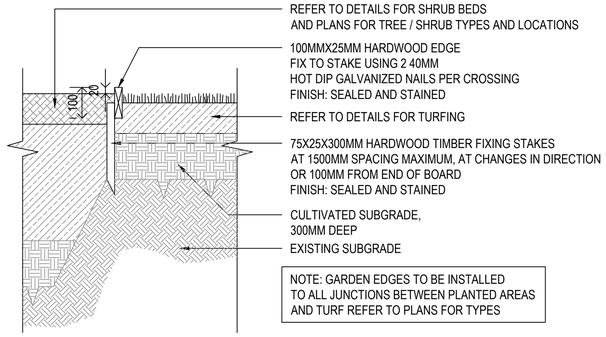
Rev No. 01



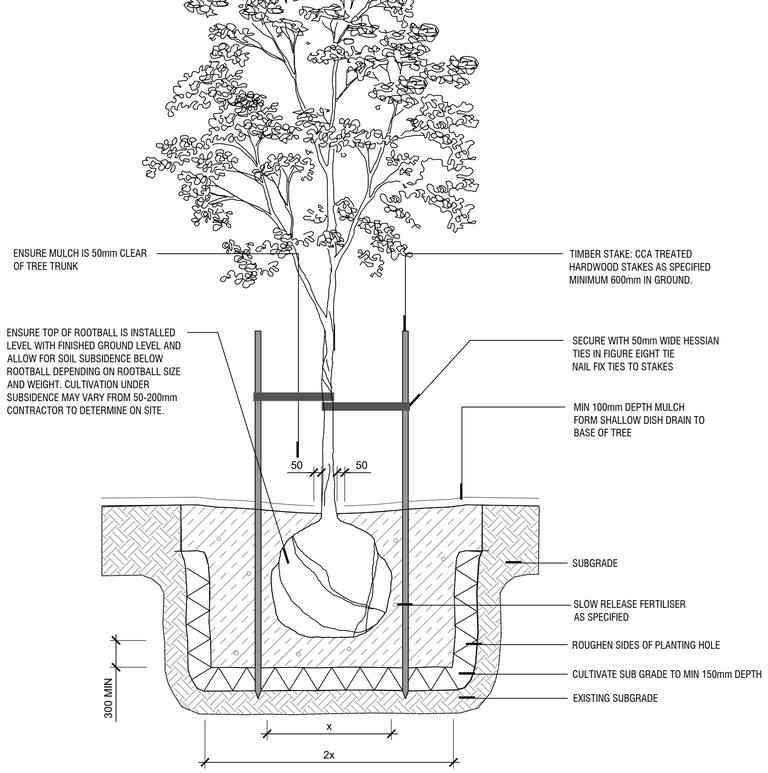
01 TURF - TYPICAL DETAIL
1:10 @ A1



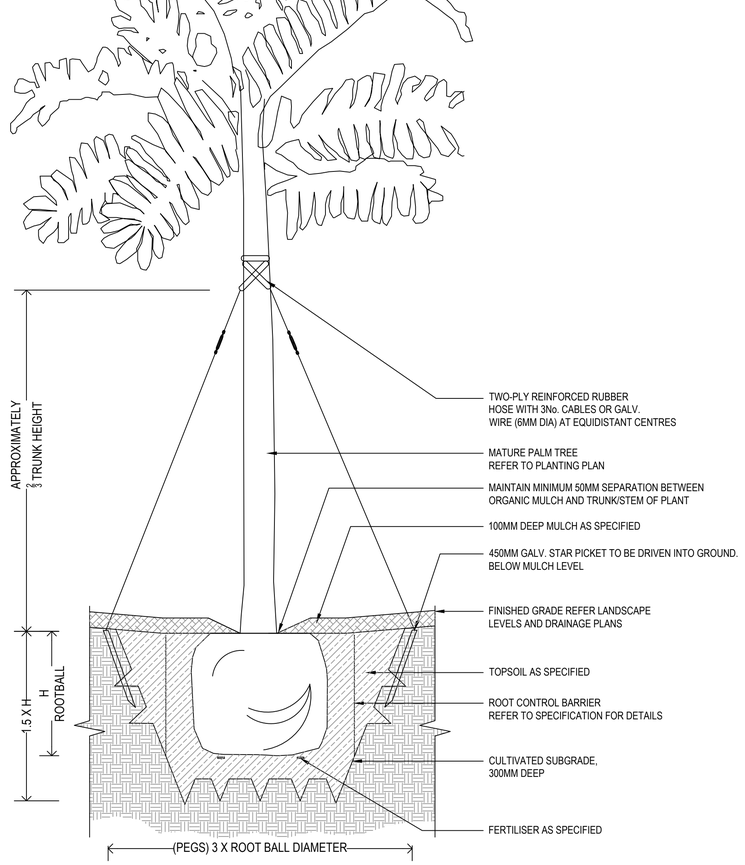
02 PLANTING - TYPICAL DETAIL
1:20 @ A1



03 TIMBER EDGE - TYPICAL DETAIL
1:10 @ A1



04 ADVANCED TREE - TYPICAL DETAIL
1:20 @ A1



05 ADVANCED PALM - TYPICAL DETAIL
1:20 @ A1

Property ID
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01	05.09.22	FOR APPROVAL	AH	AH

Stamp
FOR APPROVAL

Approval Details
APPROVAL NO: D33-2022 - Information Request

Drawing
LANDSCAPE DETAILS

Scale Bar
SCALE AS SHOWN @ A1

Project No.
J0652

Drawing No. 06 **Rev No.** 01