

141 DARKES ROAD,
KEMBLA GRANGE



ISSUED FOR ADDITIONAL INFORMATION	IAC
EXTERNAL LOU/MTS AMENDED	
ISSUED FOR ADDITIONAL INFORMATION	IAC
ROAD 11 AMENDED	
ISSUED FOR ADDITIONAL INFORMATION	IAC
ISSUED FOR ADDITIONAL INFORMATION	OQ
ISSUED FOR ADDITIONAL INFORMATION	IAC
ISSUED FOR DA	IAC
DESCRIPTION	ISSUED

ARCHITECTURAL DRAWING SCHEDULE

NO.	DESCRIPTION	SCALE (B/A)
A00	TITLE SHEET	N75
A01	DEVELOPMENT SUMMARY	N75
A02	SITE ANALYSIS	N75
A03	SITE PLAN	1:500
A04	BASEMENT PLAN	1:100
A05	GROUND LEVEL PLAN	1:100
A06	OVERALL LEVEL 1 PLAN	1:500
A07	OVERALL LEVEL 2 PLAN	1:500
A08	OVERALL LEVEL 4 PLAN	1:500
A09	BLOCK A - ELEVATIONS NW & SW	1:200
A10	BLOCK A - ELEVATIONS NE & SE	1:200
A11	BLOCK B - ELEVATIONS NW & SE	1:200
A12	BLOCK B - ELEVATIONS NW & SE	1:200
A13	BLOCK C - ELEVATIONS NW & SW	1:200
A14	BLOCK C - ELEVATIONS NW & SE	1:200
A15	BLOCK D - ELEVATIONS NW & SW	1:200
A16	BLOCK D - ELEVATIONS NW & SE	1:200
A17	BLOCK E - ELEVATIONS NW & SW	1:200
A18	BLOCK E - ELEVATIONS NW & SE	1:200
A19	OVERALL LEVEL 3 PLAN	1:500
A20	SITE SECTIONS AA & BB	1:100
A21	COLOR & MATERIALS SCHEDULE	N75
A22	SHADOW ANALYSIS	N75
A23	DETAILED SOLAR ACCESS STUDY 1 OF 2	N75
A24	DETAILED SOLAR ACCESS STUDY 2 OF 2	N75
A25	PRE & POST ADAPTATION PLAN 1 OF 2	1:100
A26	PRE & POST ADAPTATION PLAN 2 OF 2	1:100
A27	ARTIST IMPRESSION 1 OF 2	N75
A28	ARTIST IMPRESSION 2 OF 2	N75
A29	DEMOLITION PLAN	N75

#	DATE	REVISION	BY
A	08-11-18	ISSUED FOR ADDITIONAL INFORMATION	RAC
B	10-05-18	EXTERNAL COLUMNS AMENDED ISSUED FOR ADDITIONAL INFORMATION ROAD 1 MODIFIED	RAC
C	10-06-18	ISSUED FOR ADDITIONAL INFORMATION	RAC
D	11-04-18	ISSUED FOR ADDITIONAL INFORMATION	DQ
E	23-01-19	ISSUED FOR ADDITIONAL INFORMATION	RAC
F	10-12-17	ISSUED FOR DA	RAC
DATE	DATE	REVISION	BY

Figured dimensions are not to be scaled. Figured dimensions shall be used in all cases.

[illegible]

adm

Kembla Grange
Holdings Pty Ltd

Project
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
at
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	NTS			
date	AUGUST 2018			
drawn	RAC	MC	DQ	chtd
drawing	DEVELOPMENT APPLICATION			
	TITLE SHEET			
Project No.	Drawing No.			Issue
2016-14	A00			F

Project : 141 Darkes Road, KEMBLA GRANGE

Project No: 2016-14
Date: September 2017

Site Area (m²) Total Overall site - 14570m² Proposed Usable site - 13745m²
Wollongong LEP 2009

Land use	Controls	Proposed
FSR	R3 Medium Density 0.75:1	Residential Flat Development 0.67:1
Height (m)	13m	Max at Parapet 12.98m Max at Lift Overrun 12.95m

Level	Residential GFA	1 bdrm	2 bdrm	Unit Totals
Basement	-	-	-	-
Level 1	2304	8	19	27
Level 2	2325	7	20	27
Level 3	2325	7	20	27
Level 4	2315	7	20	27
Total	9269	29	79	108
Unit Mix		27%	73%	100%
Total Units	108			
Total GFA	9269			
Permissible GFA	10,308.7			

Car Parking Requirements	Min. rate	Allowable	Provided
1 bdrm - (< 70m ²)	1.0/unit	29	29
2 bdrm - (70 - 110m ²)	1.5/unit	118.5	119
Visitor	0.2/unit	22	22
Total			170

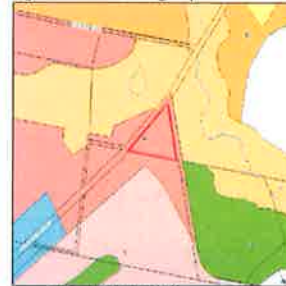
Motorbike Requirements	Min. rate	Allowable	Provided
1 space 15 unit		7	7
Total		7	7

Accessible Parking Requirements	No. of Accessible Units	Allowable	Provided
Accessible Units 10% Residential	11	11	11
Total		11	11

Bicycle Requirements	Allowable	Provided
Residential	1/3 units	36
Visitor Bicycles	1/12 units	9
Total	45	45

Waste Management	Garbage	Recycling	Green
Twice Weekly Council Collection			
Residential	Rate: 80L/unit/week	80L/unit/week	
	Weekly Total: 8938L	4470L	
Total Bins Required	660L	7 - Twice weekly	8
Total Bins Provided	660L	7 - Twice weekly	8
Total Bins Provided	660L	7	8

Figure A : Land Zoning Map



Zone R3 Medium Density Residential

Figure B : Floor Space Ratio Map



Floor Space Ratio 0.75:1

Figure C : Height Restriction Map



13m Height Restriction

NATHERS THERMAL PERFORMANCE SPECIFICATION

NATHERS Thermal Performance Specification			
External Walls			
Wall Type	Insulation	Colour	Comments
Brick Veneer	R1.5	Med - SA 0.475 - 0.7	All Level 1 Units except:
Brick Veneer	R2.5	Med - SA 0.475 - 0.7	Unit B101, C101, D105 and E109
Brick Veneer	R1.5	Light - SA < 0.475	All Level 2 and Level 3 Units except:
Brick Veneer	R2.5	Light - SA < 0.475	Unit E206
Hobrel Panel + Plaster Lining	R1.5	Dark - SA > 0.7	As per Level 4 elevations except
Hobrel Panel + Plaster Lining	R2.5	Dark - SA > 0.7	Unit E406, E407, E408 and E409
Reverse Brick Veneer	R1.5	Dark - SA > 0.7	As per Level 4 elevations except
Reverse Brick Veneer	R2.5	Dark - SA > 0.7	Unit E406, E407, E408 and E409
SA - Solar Absorbance			
Internal Walls			
Wall Type	Insulation	Comments	
Plaster board on Stud	None	Intensely in units	
Hobrel Panel + Plaster Lining	None	Party walls	
Hobrel Panel + Plaster Lining	None	Shared walls with lobby/stairs/hall of all units except	
Hobrel Panel + Plaster Lining	R2.5	Unit A101, A201, A301, A401, B101, B102, B105, B201, B202, B301, B302, B401, B402, C101, C102, C104, C201, C301, C401, C402, D101, D105, D205, D305, D401, D405, E106, E107, E108, E109, E206, E207, E208, E209, E307, E308, E309, E406, E407, E408 and E409	
Floors			
Floor Type	Insulation	Comments	
Concrete	R1.0	All units with suspended slab over basement	
Concrete	None	All units with adjoining unit below	
Ceilings			
Ceiling Type	Insulation	Comments	
Plasterboard	None	Throughout	
Insulation loss due to downlights has not been modelled in this assessment. A sealed exhaust fan has been included in every bathroom, laundry and ensuite. No ceiling penetration has been modelled as a recirculating hood is installed in every kitchen.			
Roof			
Roof Type	Insulation	Colour	Comments
Concrete	R4.0	Light - SA < 0.475	Throughout
SA - Solar Absorbance			
Glazing			
Glazing & Frame Type	U-Value	SHGC	Comments
Single Clear Aluminium	6.7	0.57	All window windows except cas.
Single Low E Clear Aluminium	5.4	0.49	Unit A401, C105, C401, D305, E109 and E406
Single Low E Tint Aluminium	5.6	0.35	Unit D102 and D104
Double Glazed Clear Aluminium	4.8	0.51	Unit D101, B401, C101, D105, D405, E105
Single Clear Aluminium	6.7	0.7	All sliding and fixed glazing except
Single Low E Clear Aluminium	5.4	0.58	Unit A401, C105, C401, D305, E109 and E406
Single Low E Tint Aluminium	5.6	0.41	Unit D102 and D104
Double Glazed Clear Aluminium	4.8	0.59	Unit D101, B401, C101, D105, D405, E105
U and SHGC values are based on the AFRC Default Windows Set. Glazing systems to be installed must have an equal or lower U value and a SHGC value $\pm$ 10% of the above specified values.			

REV	DATE	DESCRIPTION	BY	CHK
1	10/08/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
2	10/08/18	ISSUED FOR ADDITIONAL INFORMATION	DO	
3	10/08/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADP
4	10/08/18	ISSUED FOR EIA	RAC	

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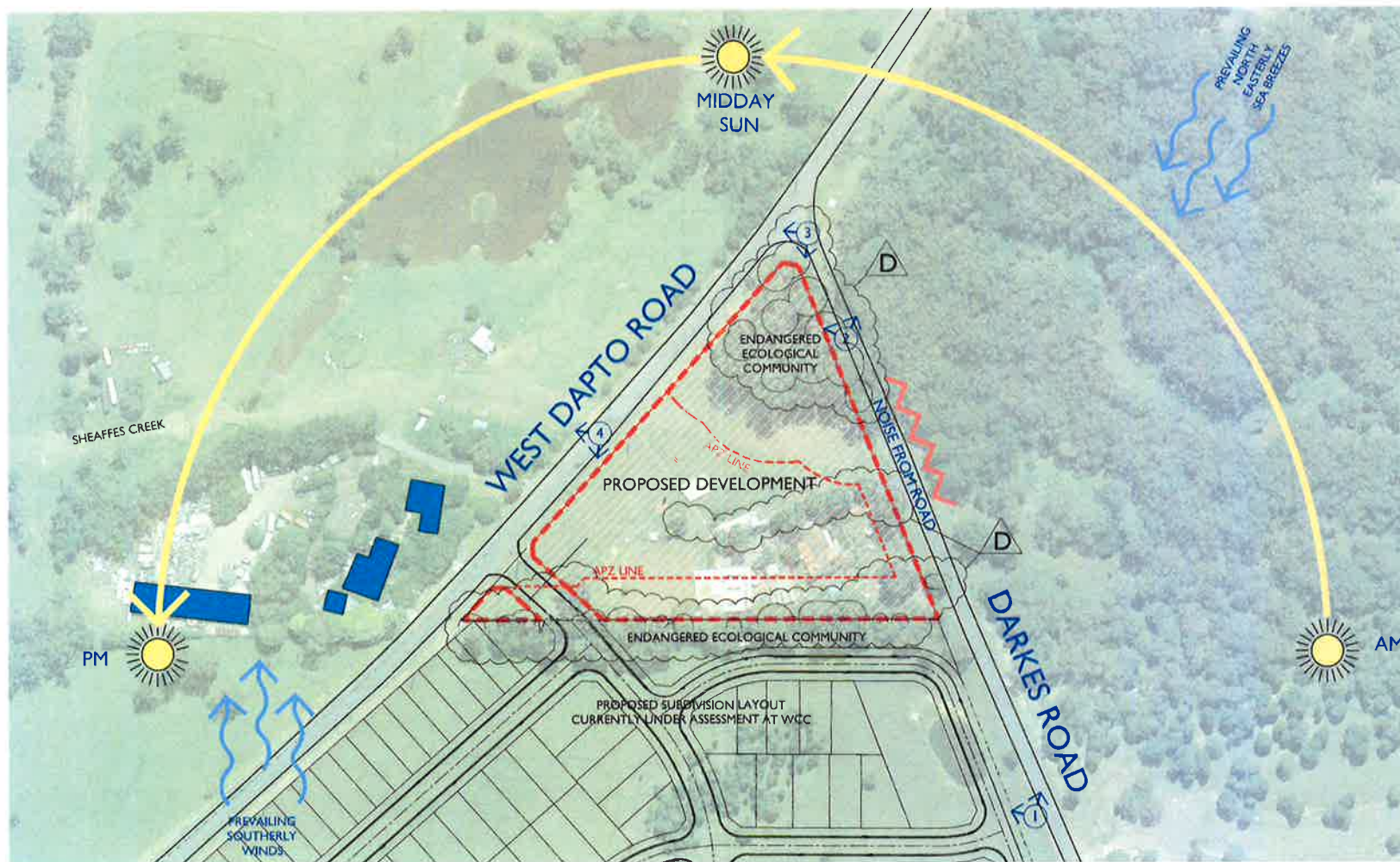
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Kembla Grange Holdings Pty Ltd

PROPOSED RESIDENTIAL FLAT DEVELOPMENT CONSISTING OF 108 APARTMENTS OVER BASEMENT PARKING
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale: NTS
date: AUGUST 2018
drawn: RAC HC DQ chid
checked: RAC
DEVELOPMENT APPLICATION
DEVELOPMENT SUMMARY
Project No: 2016-14
Drawing No: A01
sheet: D



LEGEND



SITE ANALYSIS

NOTE:
REFER TO ARBORIST REPORT AND A01 SITE PLAN FOR
DETAILS ON TREE NUMBERING.

D	11/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
C	11/06/18	ISSUED FOR ADDITIONAL INFORMATION	DQ	
B	11/05/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	AGE
A	11/11/17	ISSUED FOR DA		
DATE	DESCRIPTION	INITIALS	END	

Fig. 1

[illegible]

Kembla Grange
Holdings Pty Ltd

PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING

LOT 1: DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	NTS		
date	AUGUST 2018		
drawn	RAC	MC	DQ ctkid
drawing			
DEVELOPMENT APPLICATION SITE ANALYSIS			
Project No	Drawing No		Issued
2016-14	A02		D



SITE PLAN

NOTE
REFER TO CIVIL ENGINEERS DOCUMENTATION FOR
STORMWATER COLLECTION & ALL EXTERNAL SURFACE
LEVELS
REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION
FOR ALL PAVING & PLANTING DETAILS

LEGEND



REV	DATE	DESCRIPTION	BY	CHKD
1	11/09/18	ISSUED FOR ADDITIONAL INFORMATION - ROAD & WIDENED TO 25M	RAC	
2	11/09/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
3	11/09/18	ISSUED FOR ADDITIONAL INFORMATION	DO	
4	11/09/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
5	11/11/18	ISSUED FOR DA	RAC	

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Kembla Grange
Holdings Pty Ltd

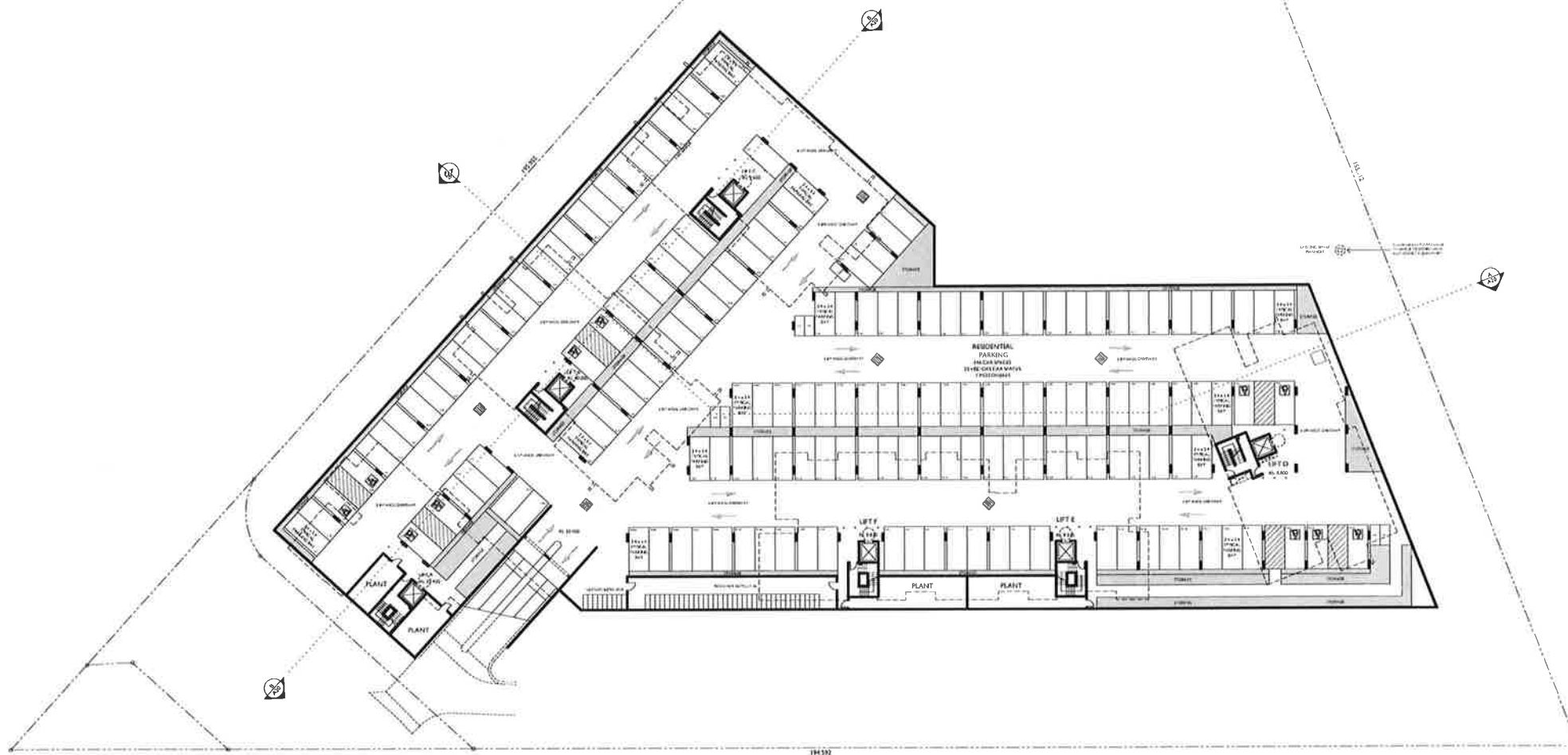
Project
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
at
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	1:600 @ A3, 1:300 @ A1
date	AUGUST 2018
drawn	RAC MC DQ chd
drawing	DEVELOPMENT APPLICATION SITE PLAN
Project No	2016-14
Drawing No	A03
Issue	E



NOTE:
REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR
STORMWATER COLLECTION & ALL EXTERNAL SURFACE
LEVELS.

REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION
FOR ALL PAVING & PLANTING DETAILS



SL	DATE	DESCRIPTION	STATUS	TYPE
1	09/09/08	ISSUED FOR ADDITIONAL INFORMATION ADAD I WIDENED TO 20 KM	RAC	
2	09/09/08	ISSUED FOR ADDITIONAL INFORMATION	RAC	
3	10/09/08	ISSUED FOR ADDITIONAL INFORMATION	DQ	
4	01/05/09	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADP
5	22/12/17	ISSUED FOR DA	RAC	

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Holdings Pty Ltd

**PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING**

**21
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE**

scale 1 : 500 

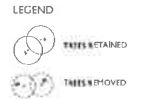
date AUGUST 2018

drawn RAC MC DQ chko

drawing

DEVELOPMENT APPLICATION
BASEMENT PLAN

Project No	Drawing No	Issue
2016-14	A04	E



LEGEND

- SUNLIGHT ACCESS
- CROSS VENTILATION



ADM
Agriculture. Nutrition. Industry.

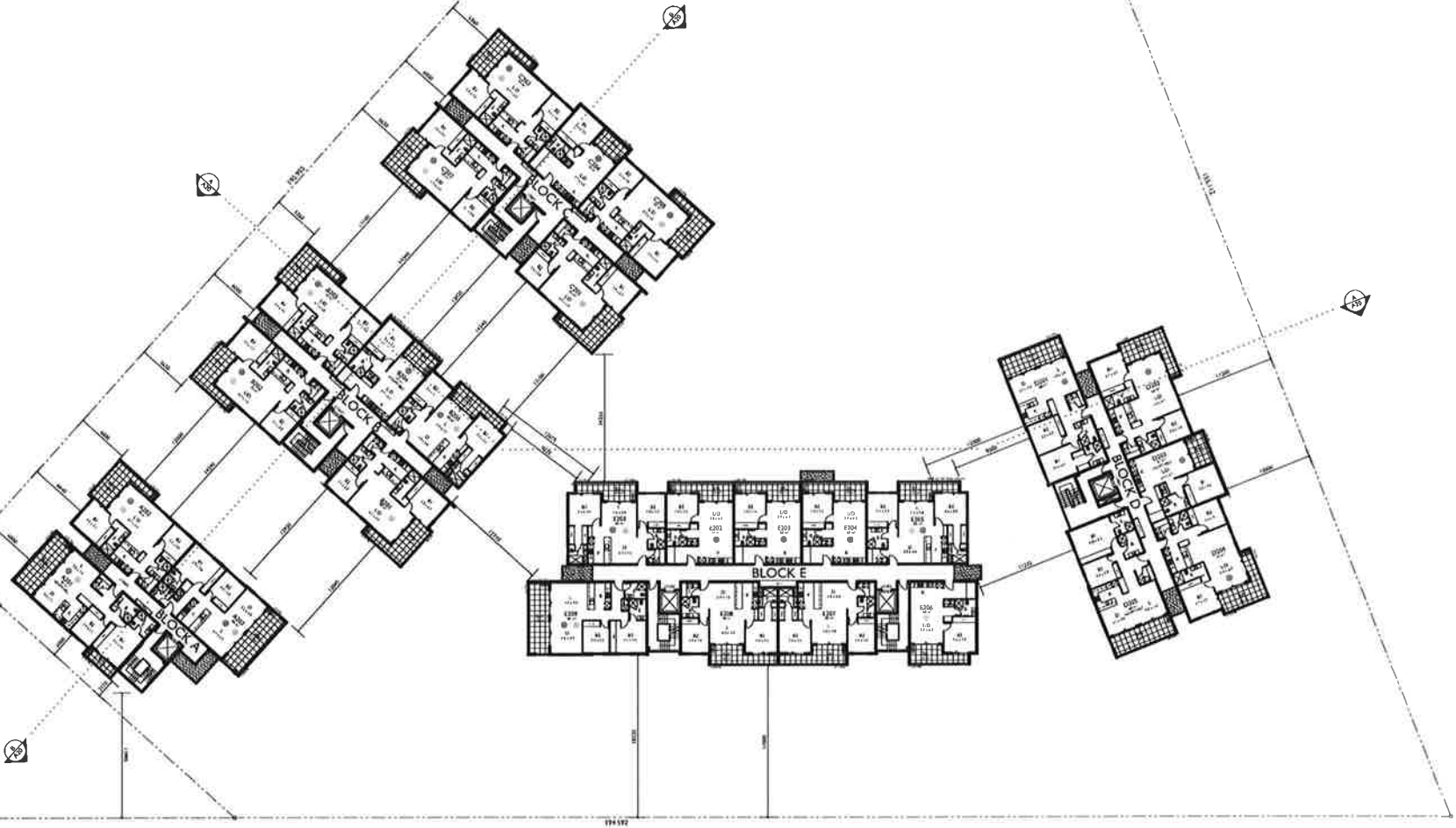
scale	1:250	AI	1:500	AI
date	AUGUST 2018			
drawn	RAC	MC	DQ	chld
drawing				
DEVELOPMENT APPLICATION				
LEVEL 1 PLAN				
Project No	Drawing No			Issue
2016-14	A05			E



LEVEL 2 PLAN

NOTE:
REFER TO CIVIL ENGINEER'S DOCUMENTATION FOR
STORMWATER COLLECTION & ALL EXTERNAL SURFACE
LEVELS

REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION
FOR ALL PAVING & PLANTING DETAILS



NO.	DATE	DESCRIPTION	ISSUED BY	CHECKED BY
1	08/11/18	ISSUED FOR ADDITIONAL INFORMATION EXTERNAL SURFACES PROVIDED	RAC	
2	15/08/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
3	15/08/18	ISSUED FOR ADDITIONAL INFORMATION	DQ	
4	22/08/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
5	12/12/17	ISSUED FOR QA	RAC	

LEGEND

- SUNLIGHT ACCESS
- CROSS VENTILATION

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ARCHITECTS

Kembla Grange
Holdings Pty Ltd

Project:
**PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING**

at
**LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE**

Scale: 1:250 @ A1 1:500 @ A3

Date: AUGUST 2018

Drawn: RAC MC DQ chd

Drawing:

DEVELOPMENT APPLICATION

LEVEL 2 PLAN

Project No:

2016-14

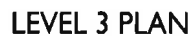
Drawing No:

A06

Issue:

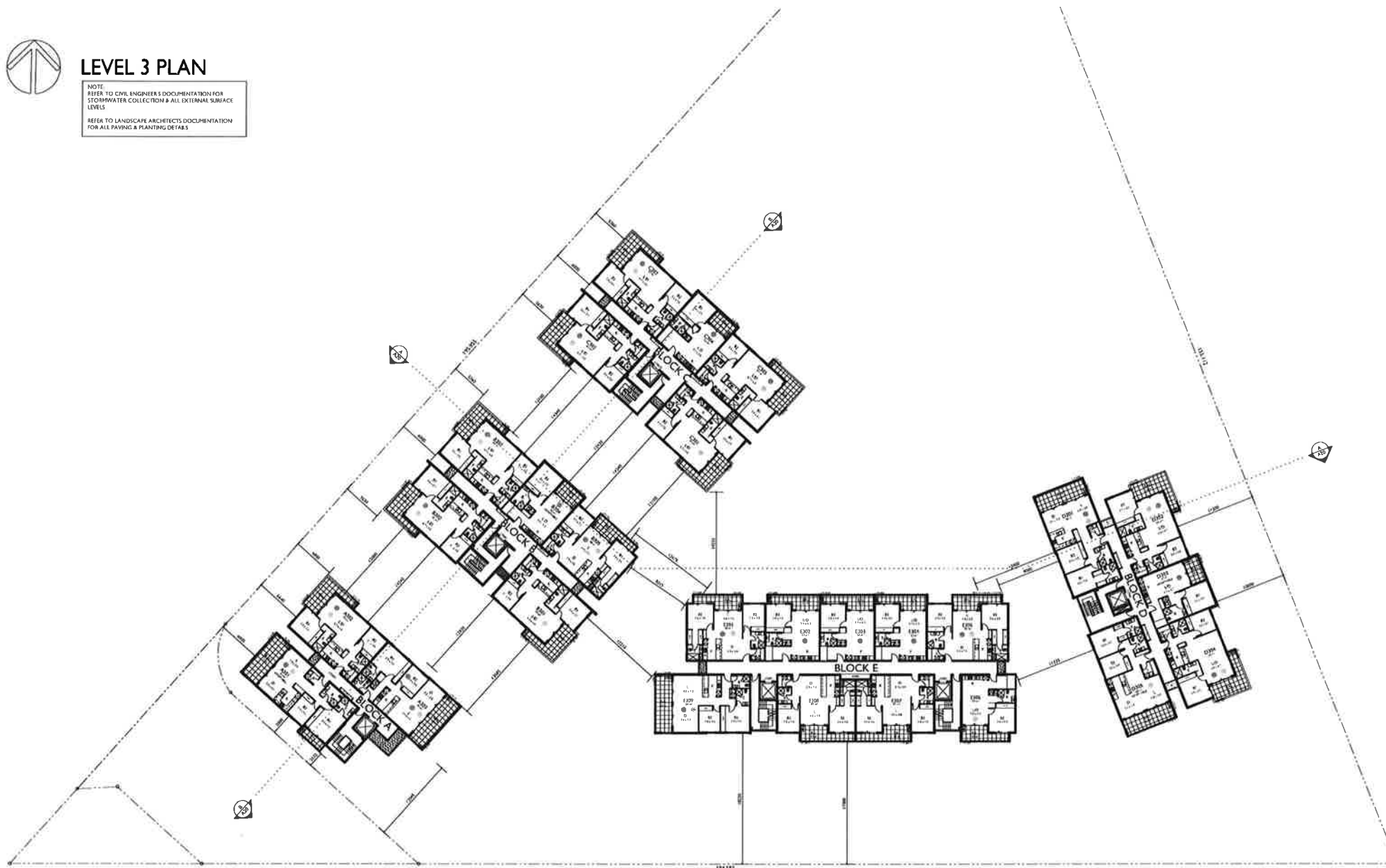
E

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STORMWATER COLLECTION & ALL EXTERNAL SURFACE
LEVELS

REFER TO LANDSCAPE ARCHITECT'S DOCUMENTATION
FOR ALL PAVING & PLANTING DETAILS



#	DATE	DESCRIPTION	STATUS	BY
1	08/11/08	ISSUED FOR ADDITIONAL INFORMATION - EXTERNAL SOURCES APPENDED	RAC	
2	10/08/08	ISSUED FOR ADDITIONAL INFORMATION	RAC	
3	11/08/08	ISSUED FOR ADDITIONAL INFORMATION	DO	
4	21/01/09	ISSUED FOR ADDITIONAL INFORMATION	RAC	
5	22/12/12	ISSUED FOR DA	RAC	

- SUNLIGHT ACCESS
- CROSS VENTILATION

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Project
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING

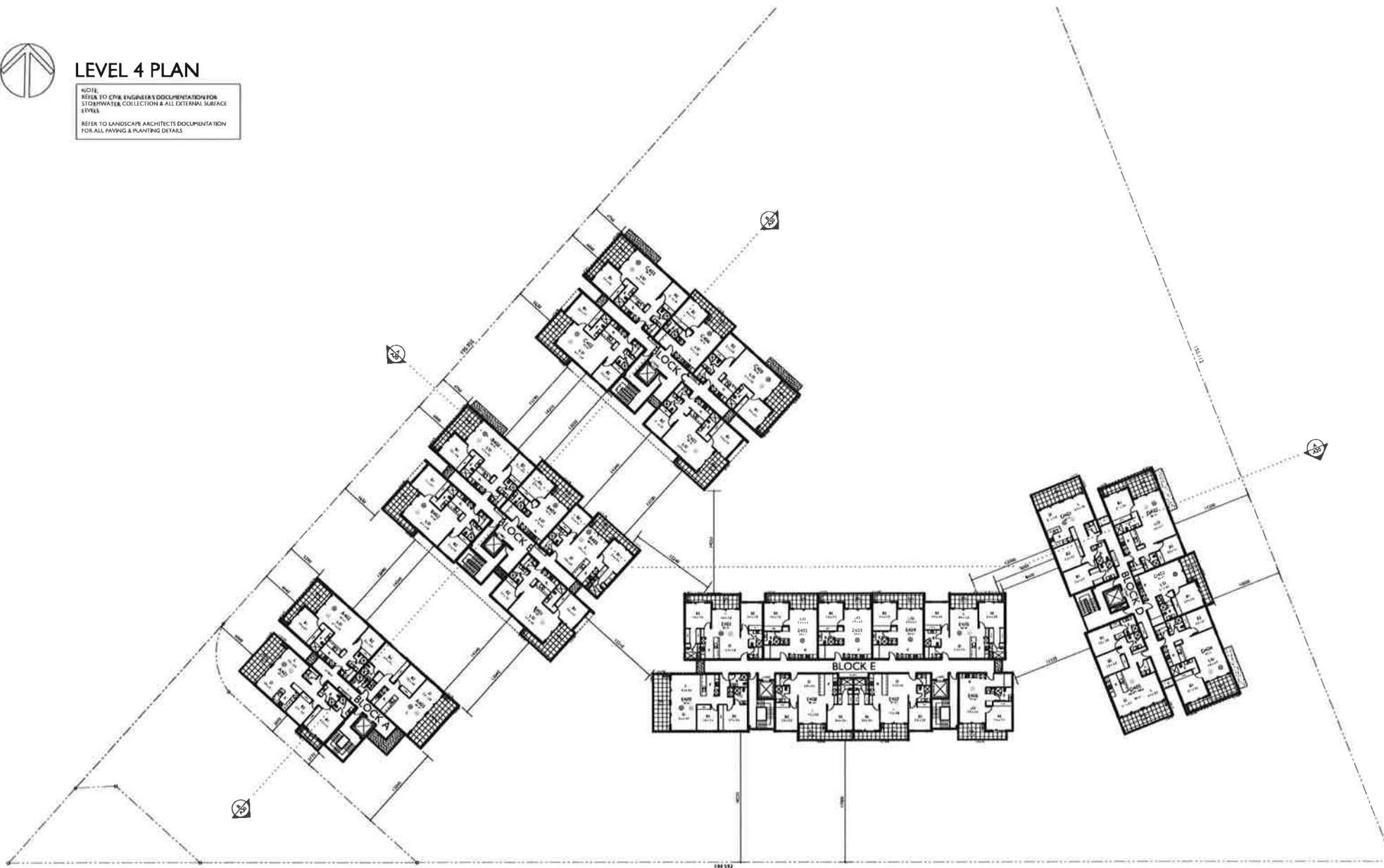
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	1 : 500 @ A3, 1 : 250 @ A1
date	AUGUST 2018
drawn	RAC MC DQ chld
drawing	DEVELOPMENT APPLICATION LEVEL 3 PLAN
Project No.	Drawing No
2016-14	A07



REFER TO CIVIL ENGINEERING DOCUMENTATION FOR
STORMWATER COLLECTION & ALL EXTERNAL SURFACE
LEVELS

REFER TO LANDSCAPE ARCHITECTS DOCUMENTATION
FOR ALL PAVING & PLANTING DETAILS



S	09/11/18	ISSUED FOR ADDITIONAL INFORMATION EXTERNAL LOOKUPS AMENDED	RAC
E	10/05/18	ISSUED FOR ADDITIONAL INFORMATION	RAC
C	15/06/18	ISSUED FOR ADDITIONAL INFORMATION	OQ
B	23/05/18	ISSUED FOR ADDITIONAL INFORMATION	RAC
A	22/12/17	ISSUED FOR DA	RAC
DATA	DESCRIPTION	STATUS	DATE

LEGEND

- SUNLIGHT ACCESS
- CROSS VENTILATION

[illegible]

Kembla Grange
Holdings Pty Ltd

Project
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
at
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale 1 : 250 @ A1, 1 : 500 @ A2

date AUGUST 2018

drawn RAC MC DQ chkd

drawing

DEVELOPMENT APPLICATION

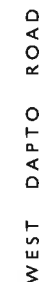
LEVEL 4 PLAN

Project No. Drawing No.

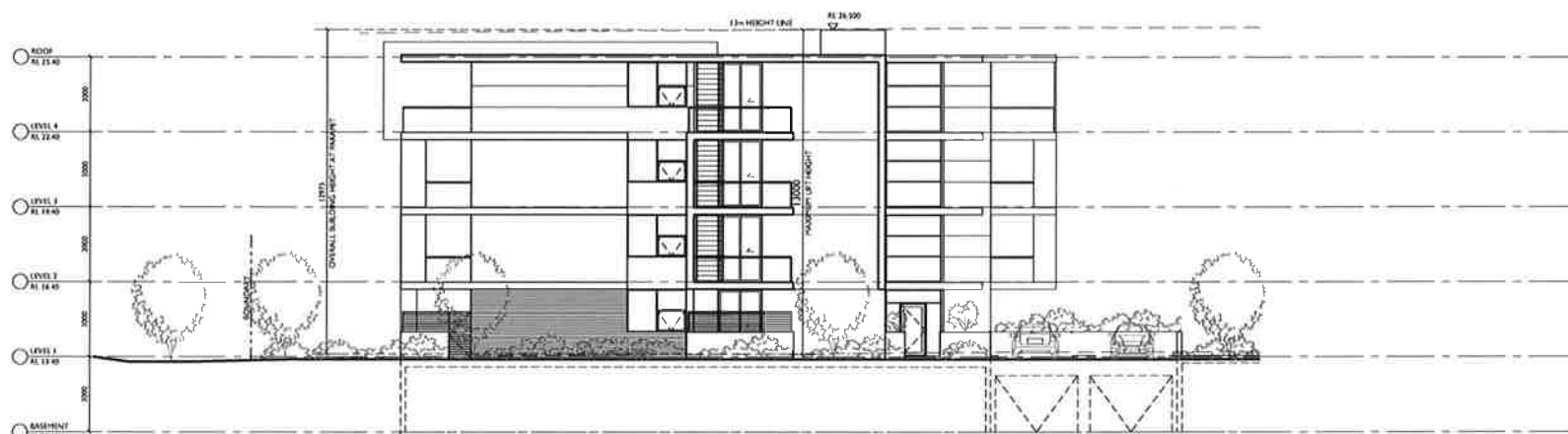
2016-14 A08

ism

E



WEST DAPTO ROAD



BLOCK A - SOUTHWEST ELEVATION

F	09/11/18	ISSUED FOR ADDITIONAL INFORMATION EXTERNAL LOCUMS AMEND	RAC	
G	10/08/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	
H	17/06/18	ISSUED FOR ADDITIONAL INFORMATION	DO	
I	17/05/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADR
J	17/03/18	ISSUED FOR DA	RAC	
	DATE	DESCRIPTION	INITIALS	CHK

If these drawings are sent to be sealed, **Signatures shall** be used in all cases.

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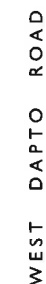
Kembla Grange
Holdings Pty Ltd

Project:
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
at
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale 1:100 A1 1:200 A3
date AUGUST 2018
drawn RAC MC DQ chkd
drawing
DEVELOPMENT APPLICATION
BLOCK A - ELEVATIONS NE & SW
Project No. Drawing No. Issue No.
2016-14 A09 E



scale	1:100 @ A1	1:200 @ A3
date	AUGUST 2018	
drawn	RAC	MC DQ chid
drawing		
DEVELOPMENT APPLICATION		
BLOCK A - ELEVATIONS NW & SE		
Project No.	Drawing No	Issue
2016-14	A10	E



WEST DAPTO ROAD



BLOCK B - SOUTHWEST ELEVATION

D	08/11/18	ISSUED FOR ADDITIONAL INFORMATION / EXTERNAL COUNCIL AMENDED	RAC
C	11/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC
B	11/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC
A	22/12/17	ISSUED FOR DA	RAC
FILE	DATE	DESCRIPTION	FINAL

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[illegible]

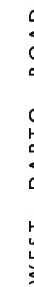
Kembla Grange
Holdings Pty Ltd

PROJECT
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
AT
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale 1:100 @ A1 1:200 @ A3
date AUGUST 2018
drawn RAC MC DQ chld
drawing
DEVELOPMENT APPLICATION
BLOCK B - ELEVATIONS NE & SW
Project No. Drawing No. Issue No.
2016-14 A11 D



scale 1:100  1:250 
date AUGUST 2018
drawn RAC MC DQ chkd
drawing
DEVELOPMENT APPLICATION
BLOCK B - ELEVATIONS NW & SE
Project No Drawing No
2016-14 A12 D



WEST DAPTO ROAD

BLOCK C - SOUTHWEST ELEVATION

[illegible]

Kembla Grange
Holdings Pty Ltd

Project
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
*
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale 1:100 @ A1 1:200 @ A2
date AUGUST 2018
drawn RAC HC DQ checked
drawing
DEVELOPMENT APPLICATION
BLOCK C - ELEVATIONS NE & SW
Project No Drawing No
2016-14 A13



These drawings are not to be scaled. Figure dimensions shall be used in all cases.

adm

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BASEMENT PARKING
24
LOT 1 DP 770451
DARKES ROAD
KEMBLA GRANGE

DEVELOPMENT APPLICATION
BLOCK C - ELEVATIONS NW & SW
Project No. 2016-14 Drawing No. A14



CONCEPT 1: These drawings represent the relative strength of RNA Polymerase II binding to the DNA template at different sites. Relative to the TATA box, the TSS is the closest sequence to the promoter in the 5' to 3' direction.

QUESTION 1 (BIOCHEM): These drawings represent the relative strength of RNA Polymerase II binding to the DNA template at different sites. Relative to the TATA box, the TSS is the closest sequence to the promoter in the 5' to 3' direction. The transcription of the eukaryotic gene occurs in both directions with RNA Polymerase II moving in opposite directions from the TSS. Which of the following best represents the relative strength of RNA Polymerase II binding to the DNA template at different sites? (A) The TSS is the closest sequence to the promoter in the 5' to 3' direction. (B) The TSS is the closest sequence to the promoter in the 5' to 3' direction. (C) The TSS is the closest sequence to the promoter in the 5' to 3' direction. (D) The TSS is the closest sequence to the promoter in the 5' to 3' direction.

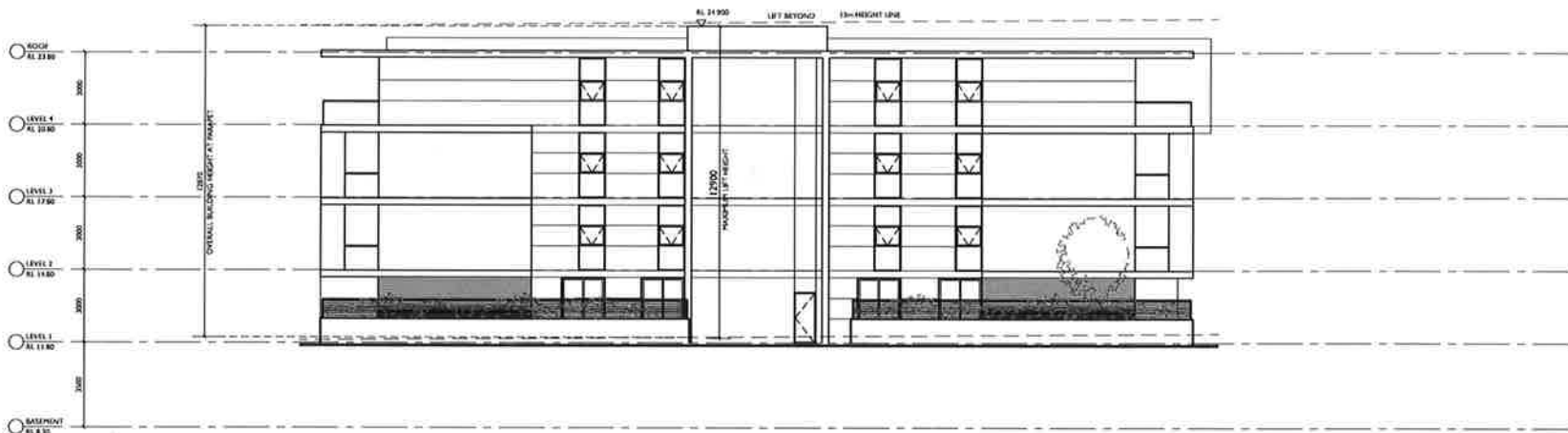
ANSWER 1 (BIOCHEM): The correct answer is choice (A). RNA Polymerase II binds to the DNA template at different sites. Relative to the TATA box, the TSS is the closest sequence to the promoter in the 5' to 3' direction. The transcription of the eukaryotic gene occurs in both directions with RNA Polymerase II moving in opposite directions from the TSS. Which of the following best represents the relative strength of RNA Polymerase II binding to the DNA template at different sites? (A) The TSS is the closest sequence to the promoter in the 5' to 3' direction. (B) The TSS is the closest sequence to the promoter in the 5' to 3' direction. (C) The TSS is the closest sequence to the promoter in the 5' to 3' direction. (D) The TSS is the closest sequence to the promoter in the 5' to 3' direction.

Project:
**PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING**
at
**LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE**

title	1:100	1:200
date	AUGUST 2018	
drawn	RAC MC DQ	chbd
drawing	DEVELOPMENT APPLICATION BLOCK D - ELEVATIONS N & S	
Project No	Drawing No	Issue
2016-14	A15	D



BLOCK D - EAST ELEVATION



BLOCK D - WEST ELEVATION

DATE	DESCRIPTION	BY	CHECKED
10/11/18	REVISED FOR ADDITIONAL INFORMATION	SAC	
11/08/18	REVISED FOR ADDITIONAL INFORMATION	SAC	
11/08/18	REVISED FOR ADDITIONAL INFORMATION	SAC	
21/12/17	REVISED FOR DA	SAC	

NOTES:
 1. THESE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION OF THE PROJECT WITHOUT THE WRITTEN APPROVAL OF ADM HOLDINGS PTY LTD.
 2. THESE DRAWINGS ARE NOT TO BE USED FOR CONSTRUCTION OF THE PROJECT WITHOUT THE WRITTEN APPROVAL OF ADM HOLDINGS PTY LTD.
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Kembla Grange
Holdings Pty Ltd

Project:
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
Lot 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

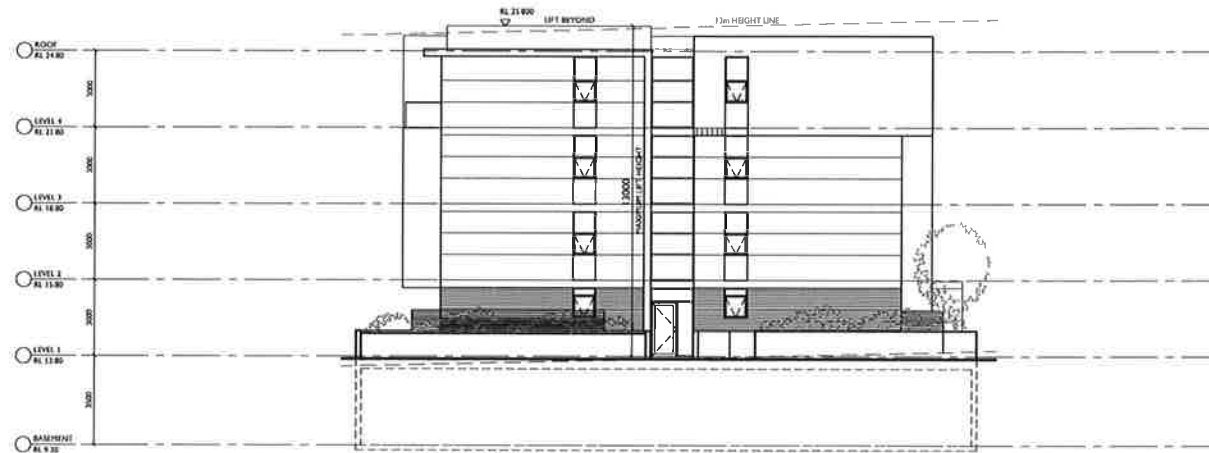
Scale	1:100 @ A1	1:200 @ A3
Date	AUGUST 2018	
Drawn	RAC MC DQ	CHB
Checked		
Project No	2016-14	
Drawing No	A16	
Issue	D	



signature _____ date _____

Kembla Grange
Holdings Pty Ltd

scale 1:100 @ A1 1:200 @ A3
date AUGUST 2018
drawn RAC MC DQ chld
drawing
DEVELOPMENT APPLICATION
BLOCK E - ELEVATIONS N & S
Project No. Drawing No. Issue
2016-14 A17 D



BLOCK E - EAST ELEVATION



BLOCK E - WEST ELEVATION

DATE	DESCRIPTION	STATUS
10/11/18	ISSUED FOR ADDITIONAL INFORMATION	RAC
15/06/19	ISSUED FOR ADDITIONAL INFORMATION	RAC
13/05/19	ISSUED FOR ADDITIONAL INFORMATION	RAC
12/12/17	ISSUED FOR DA	RAC

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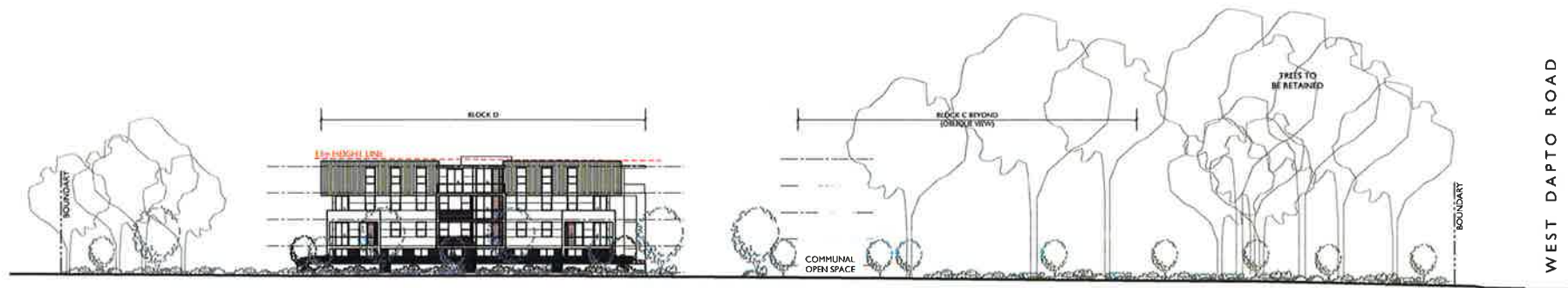
Kembla Grange Holdings Pty Ltd

Project: PROPOSED RESIDENTIAL FLAT DEVELOPMENT CONSISTING OF 108 APARTMENTS OVER BASEMENT PARKING
at LOT 1, DP 770451 DARKES ROAD KEMBLA GRANGE

scale: 1:100 @ A1 1:200 @ A3
date: AUGUST 2018
drawn: RAC MC DQ checked
drawing: DEVELOPMENT APPLICATION
BLOCK E - ELEVATIONS E & W
Project No: Drawing No: Issue:
2016-14 A18 D



WEST DAPTO ROAD STREETSCAPE



DARKES ROAD STREETSCAPE

REV	DATE	DESCRIPTION	BY	CHKD
C	15.01.18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
B	15.01.18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
A	15.01.18	ISSUED FOR QA	RAC	ADM
001	DATE	DESCRIPTION	BY	CHKD

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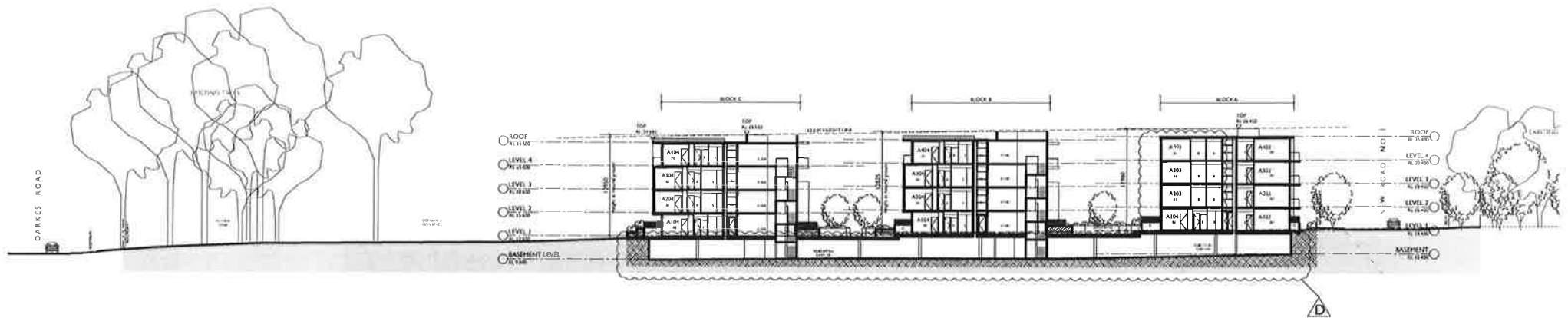
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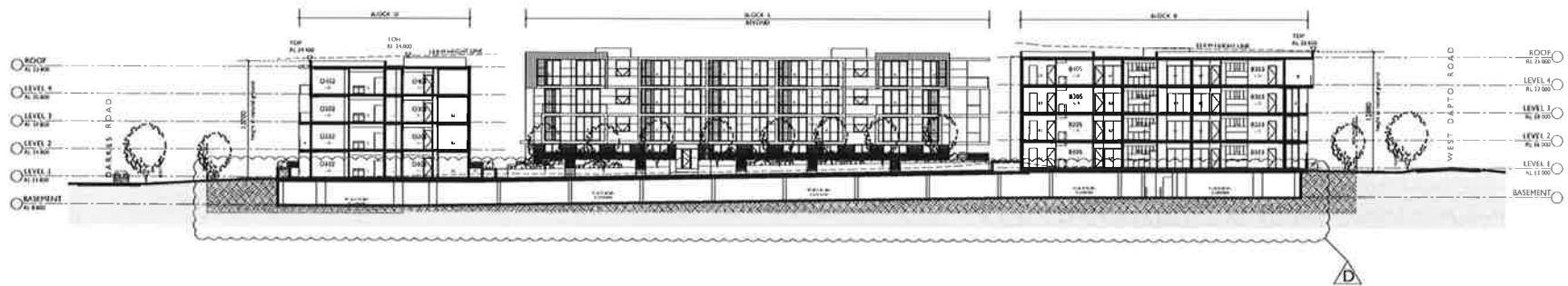
G.C. Property
Holdings Pty Ltd

Project:
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 112 APARTMENTS OVER
BASEMENT PARKING
at
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	1:250 @ A1	1:500 @ A3
date	MAY 2018	
drawn	RAC MC DQ	chkd ADM
drawing	DEVELOPMENT APPLICATION STREETSCAPE ELEVATIONS	
Project No.	2016-14	Issue
Drawing No.	A19	C



SITE SECTION BB



SITE SECTION AA

U	8/08/18	RAISED FOR ADDITIONAL INFORMATION	RAC	DQ
C	8/08/18	RAISED FOR ADDITIONAL INFORMATION	RAC	DQ
A	8/12/18	RAISED FOR DA	RAC	DQ
REV	DATE	DESCRIPTION	BY	CHK

These drawings are not to be scaled. Figure dimensions shall be used in all cases.

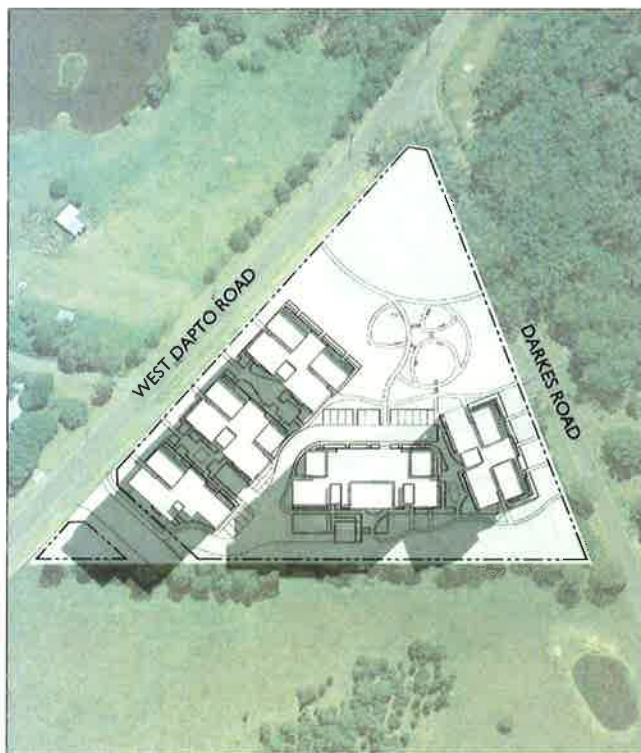
CDP 10/1/18: These drawings contain the minimum requirements of ADP 10/1/18. Any deviation from these requirements shall be noted on the drawings. The Designer shall be responsible for ensuring that the drawings comply with the requirements of ADP 10/1/18. The Designer shall be responsible for ensuring that the drawings comply with the requirements of ADP 10/1/18. The Designer shall be responsible for ensuring that the drawings comply with the requirements of ADP 10/1/18.

adm

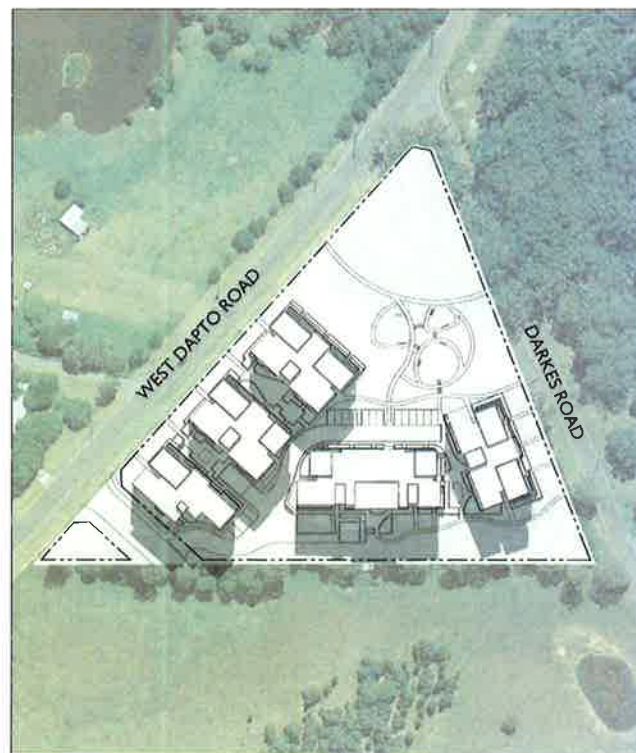
Kembla Grange
Holdings Pty Ltd

Project:
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING
Lot 1, DP 770451
DANKES ROAD
KEMBLA GRANGE

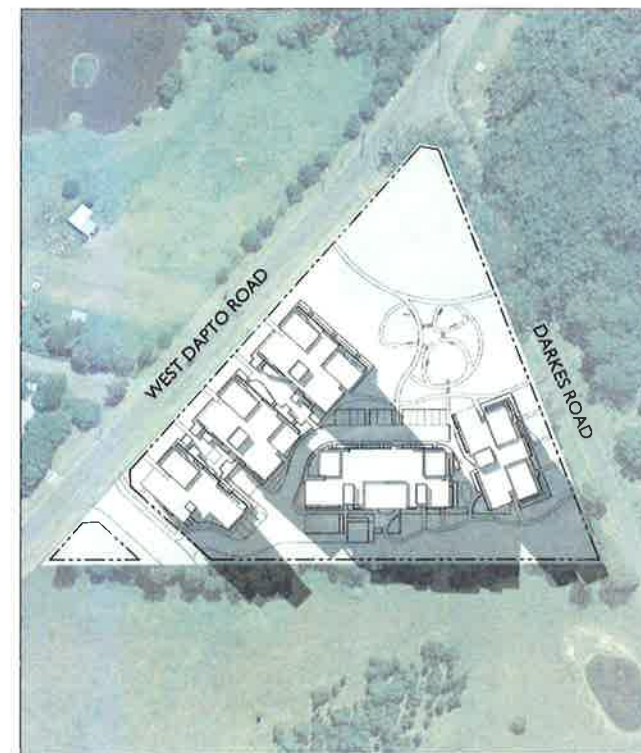
Scale: 1:250 @ A1 1:500 @ A3
Date: AUGUST 2018
Drawing: RAC MC DQ 1/18
Development Application
Site Section AA & BB
Project No: 2016-14
Drawing No: A20
Issue: D



9AM



12PM



3PM



SHADOW ANALYSIS

21ST OF JUNE

REV	DATE	DESCRIPTION	BY	CHKD
1	14/06/18	ISSUED FOR ADDITIONAL INFORMATION	DQ	ADM
2	15/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
3	17/06/18	ISSUED FOR DA	RAC	ADM

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ADM 0011 - These drawings are not to be used for construction. All dimensions shall be used in all cases.

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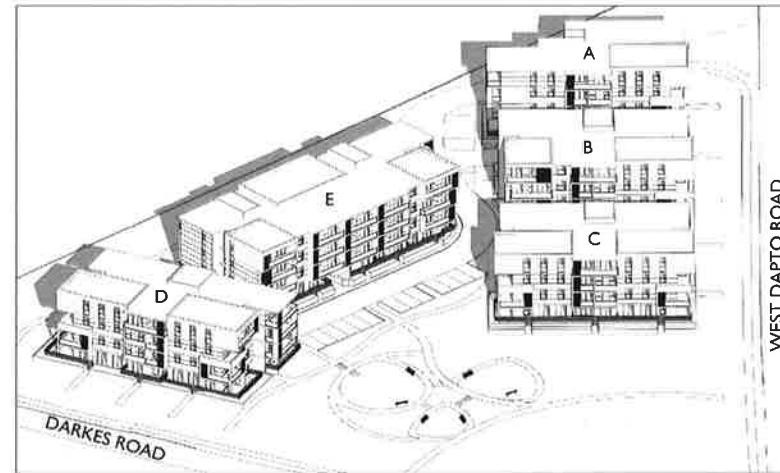
G.C Property
Holdings Pty Ltd

Project:
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 112 APARTMENTS OVER
BASEMENT PARKING
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

Scale: NTS
Date: MAY 2018
Drawn: RAC MC DQ chld ADM
Drawing: DEVELOPMENT APPLICATION
SHADOW ANALYSIS
Project No: 2016-14
Drawing No: A22
Issue: C



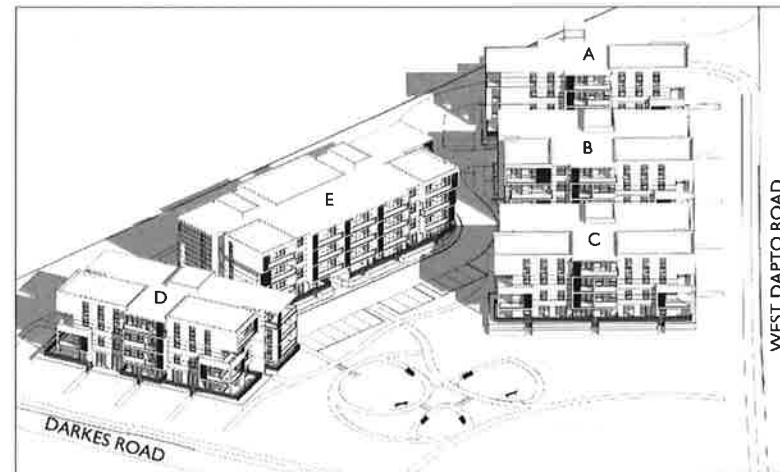
9AM



10AM



11AM



12PM

DETAILED SOLAR ACCESS STUDY

21ST OF JUNE

REV	DATE	DESCRIPTION	BY	CHK
1	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
2	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
3	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
4	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
5	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
6	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
7	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
8	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
9	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
10	21/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM

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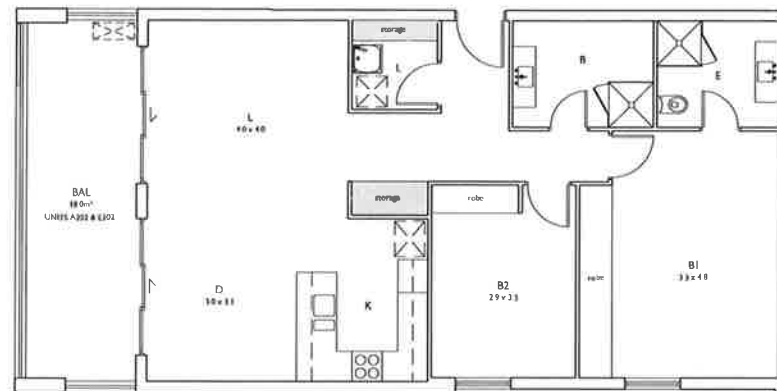


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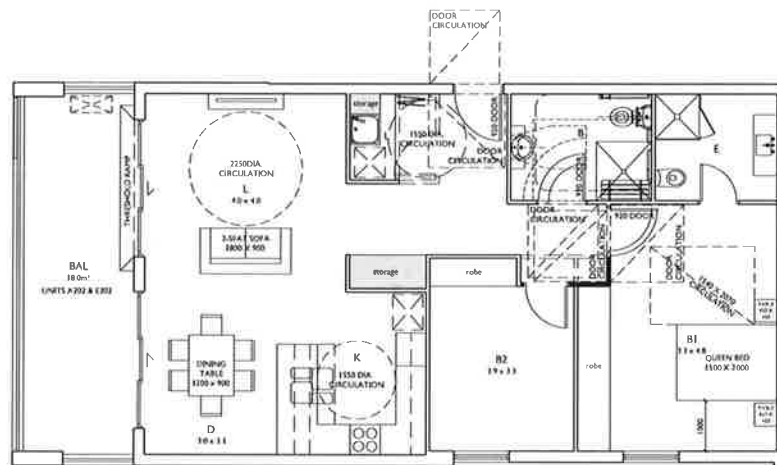
Project:
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 112 APARTMENTS OVER
BASEMENT PARKING
at
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	NTS
date	MAY 2018
drawn	RAC MC DQ chad ADM
drawing	DEVELOPMENT APPLICATION DETAILED SOLAR ACCESS STUDY 1 OF 2
Project No	2016-14
Drawing No	A23
Issue	C

UNITS A101, A201, A301, A401 SIMILAR
UNITS D101, D201, D301 AS SHOWN



UNITS A101, A201, A301, A401 SIMILAR
UNITS D101, D201, D301 AS SHOWN



REFER ACCESS CONSULTANTS REPORT

D	01/06/18	RESULTS FOR ADDITIONAL INFORMATION	RAC	
C	01/06/18	RESULTS FOR ADDITIONAL INFORMATION	DO	
S	01/06/18	RESULTS FOR ADDITIONAL INFORMATION	RAC	ACOM
A	01/11/17	RESULTS FOR DA	RAC	
FILE	DATA	DESCRIPTION		Peak

[illegible]

adm

Kembla Grange
Holdings Pty Ltd

**PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 108 APARTMENTS OVER
BASEMENT PARKING**
IN
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

state 1:50 @ 1:100 @ A3
date AUGUST 2018
drawn RAC MC DQ chkd
drawing
DEVELOPMENT APPLICATION
PRE & POST ADAPTATION PLAN 1 OF 2
Project No Drawing No
2016-14 A25
D



ARTIST IMPRESSION

FACING SOUTH WEST INTO COMMUNAL OPEN SPACE
IMAGE NOT TO BE REPRODUCED WITHOUT ADM ARCHITECTS APPROVAL

REV	DATE	DESCRIPTION	BY	CHKD
C	11/06/18	ISSUED FOR ADDITIONAL INFORMATION	DQ	ADM
B	11/06/18	ISSUED FOR ADDITIONAL INFORMATION	RAC	ADM
A	11/06/18	ISSUED FOR DA	RAC	ADM
001	06/06/18	ISSUED FOR DA	RAC	ADM

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G.C Property
Holdings Pty Ltd

Project
PROPOSED RESIDENTIAL FLAT
DEVELOPMENT CONSISTING
OF 112 APARTMENTS OVER
BASEMENT PARKING
At
LOT 1, DP 770451
DARKES ROAD
KEMBLA GRANGE

scale	NTS
date	MAY 2018
drawn	RAC MC DQ
checked	ADM
drawing	DEVELOPMENT APPLICATION ARTIST IMPRESSION 1 OF 2
Project No	2016-14
Drawing No	A27
Issue	C



scale	1:50 @ A1	1:100 @ A3
date	AUGUST 2018	
drawn	RAC	MC DQ chkd
drawing		
DEVELOPMENT APPLICATION		
PRE & POST ADAPTATION PLAN 2 OF 2		
Project No	Drawing No	Issue
2016-14	A26	D

[illegible]



INDEX OF SHEETS

C200	COVER SHEET
C201	DRAINAGE CONCEPT PLAN
C202	OSD SECTIONS
C203	OSD CALCULATIONS
C204	ROAD No#1 INDICATIVE LONGSECTION AND CROSS SECTIONS
C205	BASEMENT DRAINAGE PLAN
C206	CATCHMENT PLAN
C207	DRAINS RESULTS

NOT FOR CONSTRUCTION

EDITED BY : H. J. Cantow, Jr.
FLEXNAME: K:\P\175\N\CL\cvt\Drawings\USA\USF175.NB-C-DA_VZ.DWG

NOTES:

- 1 DETAILED DESIGN WILL INCLUDE SPEED HUMPS TO DIVERT 1% AEP RUNOFF FROM ENTERING BASEMENTS.
- 2 FLOOR WASTES OF BLOCK A, B TO C TO CONNECT TO DRAINAGE LINE 2.
- 3 FLOOR WASTES OF BLOCK D AND E TO CONNECT TO DRAINAGE LINE 1.
- 4 PROPOSED LOCATIONS FOR PITS AND PIPES OUTSIDE SITE BOUNDARY AND ADJACENT TO WEST DAPTO RD TO BE DETERMINED ONCE SERVICES HAVE BEEN LOCATED POST DEVELOPMENT APPROVAL.
- 5 FLOOR WASTE/PITS DESIGNED TO CATER FOR 20 YEAR ARI RUNOFF.
- 6 BUILDING STORMWATER INDICATIVE ONLY SUBJECT TO FINAL DESIGN FOR CC.

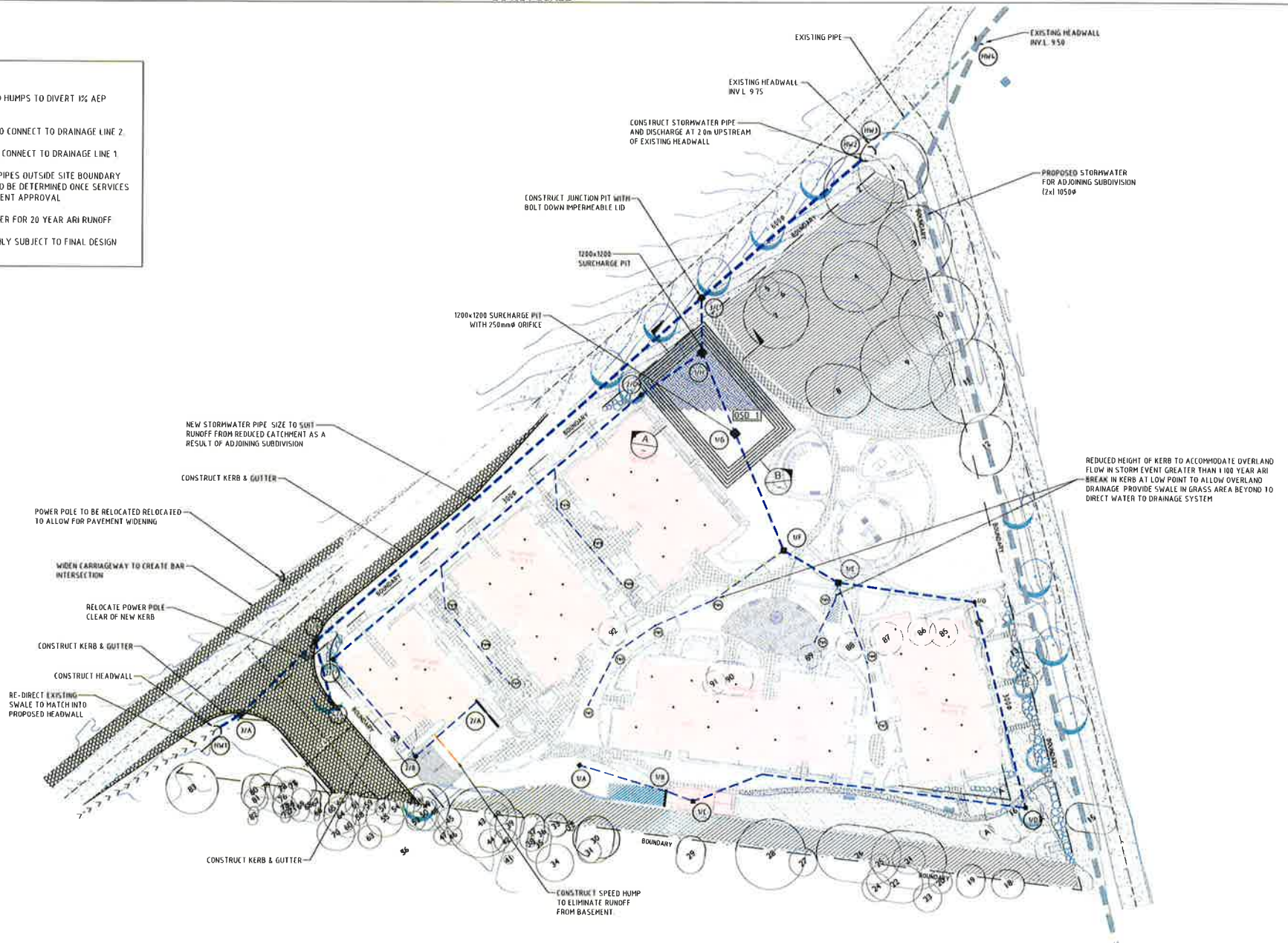
GRASSED OSD BASIN 1

AREA: 578 5m²
VOLUME: 224 3m³
MAX. DEPTH: 8 50m
MAX. WATER DEPTH: 0 37m
SHE SLOPE: 1V 8H



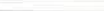
LEGEND

- | | |
|---|--------------------------------|
|  | DENOTES PROPOSED STORMWATER |
|  | DENOTES PITS |
|  | DENOTES OSD TANKS |
|  | DENOTES FLOOR WASTES |
|  | DENOTES SPEED HUMP |
|  | DENOTES PROPOSED GRASSED SWALE |
|  | DENOTES EXISTING GRASSED SWALE |
|  | DENOTES EXISTING TREES |
|  | DENOTES EXISTING ROAD |
|  | DENOTES PROPOSED ROAD |



DRAINAGE CONCEPT PLAN
SCALE 1/4"=1'-0"

NOT FOR CONSTRUCTION

				 DIAL BEFORE YOU DIG www.1100.com.au		 KFW INFRASTRUCTURE PROFESSIONALS		K.F. Williams & Associates Pty Ltd 28 Auburn Street Wollangbar NSW 2500 A.C.N 008 664 417 Project Management, Surveying, Civil, Structural, Water & Sewer		p (02) 4226 7044 f (02) 4226 2004 e mail@kfw.net.au www.kfw.net.au		<table><tr><td>Surveyor/ CEH (Duplo)</td><td>Date May 2018</td><td rowspan="4">PROPOSED DEVELOPMENT 141 DARKES ROAD KEMBLA GRANGE DRAINAGE CONCEPT PLAN</td><td>Project No KF112578</td></tr><tr><td>Date of Survey 8 DEC 2016</td><td>Drawn M. Jacomovic</td><td>Drawing No C201</td></tr><tr><td>Height (m) AHD</td><td>Designed M. Jacomovic</td><td></td></tr><tr><td>Origin PA53111 RL 12.544</td><td>Checked W. Mulvaney</td><td></td></tr><tr><td>Horizontal Datum MGA(DP) 1132818</td><td>Approved</td><td>Scale 1:400 @ A1 1:800 @ A2</td><td>Drawing Status ISSUED FOR DA APPROVAL</td></tr></table>		Surveyor/ CEH (Duplo)	Date May 2018	PROPOSED DEVELOPMENT 141 DARKES ROAD KEMBLA GRANGE DRAINAGE CONCEPT PLAN	Project No KF112578	Date of Survey 8 DEC 2016	Drawn M. Jacomovic	Drawing No C201	Height (m) AHD	Designed M. Jacomovic		Origin PA53111 RL 12.544	Checked W. Mulvaney		Horizontal Datum MGA(DP) 1132818	Approved	Scale 1:400 @ A1 1:800 @ A2	Drawing Status ISSUED FOR DA APPROVAL
Surveyor/ CEH (Duplo)	Date May 2018	PROPOSED DEVELOPMENT 141 DARKES ROAD KEMBLA GRANGE DRAINAGE CONCEPT PLAN	Project No KF112578																											
Date of Survey 8 DEC 2016	Drawn M. Jacomovic		Drawing No C201																											
Height (m) AHD	Designed M. Jacomovic																													
Origin PA53111 RL 12.544	Checked W. Mulvaney																													
Horizontal Datum MGA(DP) 1132818	Approved	Scale 1:400 @ A1 1:800 @ A2	Drawing Status ISSUED FOR DA APPROVAL																											
B AMENDED AS PER MICE'S COMMENTS DATED 15.08.2018 A AMENDED AS PER MICE'S COMMENTS DATED 11.07.2018 Revision Amendment or Reason for Issue Issue date Drawn by Authorised				17.09.2018 M.J. W.M. 09.08.2018 M.J. W.M.																										

3.0m 10.2m 3.0m

0.6% WATER DEPTH 0.37m

0.1% SLOPE AND

4.5m Ø PIPE

GRASSED / LANDSCAPED O&M BASIN REFER TO LANDSCAPE ARCHITECTS PLANS

Diagram illustrating the proposed OSD system layout, showing the flow path and key components:

- NEW JUNCTION PIT** (S.L. 1130m AHD)
- BOUNDARY**
- 12m x 12m SURCHARGE PIT TO ACT AS WEIR IN 100YR ARI** (S.L. 1160m AHD)
- GRASED /LANDSCAPED OSD BASIN** (REFER TO LANDSCAPE ARCHITECTS PLANS)
- 12m x 12m SURCHARGE PIT TO ACT AS AN OSD CONTROL PIT WITH 250mm Ø DRIFCE** (S.L. 1130m AHD)
- O₂ WATER DEPTH 0.5m**
- O₂ WATER DEPTH 0.24m**
- 450mm Ø PIPE**
- INV. 9.51m AHD**
- INV. 9.80m AHD**
- MAXI-FRESH**

550mm

550mm

250mm ORIFICE

500mm PIPE THROUGH WALL BEHIND ORIFICE PLATE

5mm STAINLESS STEEL ORIFICE PLATE TO WALL OF TANK WITH 10mm MASONRY BOLTS

$Q_5 = 60.9 \text{ l/s}$
 $VOL_5 = 65.0 \text{ m}^3$
 $Q_{100} = 77.3 \text{ l/s}$
 $VOL_{100} = 113.0 \text{ m}^3$

Diagram illustrating the screen holding bracket in a pit wall. The bracket is shown holding the screen against the wall. Dimensions are indicated: 150mm for the bracket width, 150mm for the bracket height, and 150mm for the bracket depth. The flow direction is indicated by an arrow labeled "DIRECTION OF FLOW".

NTS
TO BE FITTED ONTO ORIFICE PLATE 1

Serial	Maintenance task	Frequency	Responsibility	Procedure
1	Inspect and clear any blockage from orifice	Six monthly	owner	Remove access lid and visually inspect orifice plates, remove any debris
2	Inspect and clean grated inlet pits	Six monthly	owner	Remove access lid and visually inspect inside pits, remove any debris and remove any floatable debris from pit
3	Inspect maximesh screen and clean	Six monthly	owner	Visually inspect screen and remove any debris
4	Inspect building roof gutters and remove debris	Six monthly	owner	Visually inspect building roof gutters, clear any debris in downpipes
5	Inspect stormwater discharge point	Six monthly	owner	Visually inspect discharge point and remove any debris or silt build up. Check for pipe blockage by running water through upstream pit. Engage plumber to remove pipe blockage if required.

1. ALL OSD PIT GRATES WILL PROVIDE ACCESS AND WILL BE LOCKABLE.
2. NORTH-EAST EDGE OF OSD WILL ACT AS A WEIR 20m LONG. WEIR WILL OVERFLOW AT RL 11.70m AHD AND WILL OVERFLOW TO THE SWALE ADJACENT TO DARKES RD.

PROPOSED DEVELOPMENT
141 DARKES ROAD
KEMBLA GRANGE
OSD SECTIONS

Project No.	
KF112578	
Drawing No.	
C202	
Sheet	Revision
2 of 7	B

[illegible]

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f (02) 4226 2004
e mail@kfw.net.au
w www.kfw.net.au

Surveyor CEH (Depth)	Date May 2018
Date of Survey 8 DEC 2018	Drawn M Jacmorio
Height Datum AHD	Designed M Jacmorio
Origin PM53111 RL12.544	Checked V. Mulyani
Height Datum MGA/OP 1132618	Approved

Drawing Title	
Scale	1/50 1/100

PROPOSED DEVELOPMENT
141 DARKES ROAD
KEMBLA GRANGE
OSD SECTIONS

ISSUED FOR DA APPROVAL

Project No.	
KF112578	
Drawing No.	
C202	
Sheet	Revision
2 of 7	B

OSD Calculations - Wollongong City Council Method
Job No: KF112578
OSD #1: Darkes Rd, Kembla Grange
Date: 09/08/2018

Step 1**Calculations**

Site Area (m ²) =	12,000	1.20 ha
Tributary Area (m ²) =	12,187	1.22 ha
Existing Imperv (m ²) =	1990	0.20 ha
% imperv in Tributary =	16.3	
Dev imperv (m ²) =	6560	0.66 ha
% imperv in Tributary =	53.8	
I_1^{50} =	96.7	
Rounded	Calculated	
$F1_5$ =	1.05	1.0550
$F1_{100}$ =	1.04	1.0436
$F2$ =	0.98	0.9817
$F3$ =	0.13	0.1346
$F4$ =	1.05	1.0508
PSD ₅ (l/s) =	323.78	SSR ₅ (m ³) = 101.55
PSD ₁₀₀ (l/s) =	580.92	SSR ₁₀₀ (m ³) = 175.92

Step 2

If existing impervious surface in contributing area

Calculations

Site Area (m ²) =	12,000	1.20 ha
Tributary Area (m ²) =	12,187	1.22 ha
Existing Perv (m ²) =	1990	0.20 ha
% imperv in Tributary =	16.3	
I_1^{50} =	96.7	
Rounded	Calculated	
$F1_5$ =	1.00	1.0000
$F1_{100}$ =	1.00	1.0000
$F2$ =	0.98	0.9817
$F3$ =	0.05	0.0488
$F4$ =	1.05	1.0508
Final PSD ₅ (l/s) =	308.36	SSR ₅ (m ³) = 101.55
		Less 37.17
		Final SSR ₅ (m ³) = 64.38
Final PSD ₁₀₀ (l/s) =	539.34	SSR ₁₀₀ (m ³) = 175.92
		Less 65.01
		Final SSR ₁₀₀ (m ³) = 110.91

OSD Stage - Storage - Discharge Calculations
OSD #1: Darkes Rd, Kembla Grange

Nominal Tank Dimensions at Max Water Level
Nominal Surface Area m² = 503.948
max storage depth (m) = 0.370

W
17.670
L
28.52

Pipe Outlet No 1
Dead storage water depth = 0.00
Inv Level = 9.80
Outlet dia (m) = 0.26
Outlet area (m²) = 0.053092916
 $C_d = 0.61$

$C_w = 1.7$
Weir Length = 20
Weir Level = 11.7

Pipe Outlet No 2
Outlet dia (m) = 0
Outlet area (m²) = 0
 $C_d = 0.62$
disch height = 100

Minimum Dimensions
 $x = 18.8$
 $y = 24.3$
Aspect Ratio =

calculation increment (m) = 0.01
Grade = 0.167 %

Basin / Tank Discharge													
x	y	h0	INV	AD	Vol	Water Level	H1	Q1	H2	Q2	Hver	Qover	Qtotal
(m)	(m)					(m)	m	l/s	m	l/s	m	l/s	l/s
13.23	24.08	0.000	11.300	318.578	0.000	11.300	0.000	0.000	0.000	0.000	0.000	0.000	0.000
13.35	24.2	0.010	11.310	323.070	3.208	11.31	0.010	14.35	0.010	0.00	0.00	0.00	14.3
13.47	24.32	0.020	11.320	327.580	6.462	11.32	0.020	20.29	0.020	0.00	0.00	0.00	20.3
13.59	24.44	0.030	11.330	332.140	9.761	11.33	0.030	24.85	0.030	0.00	0.00	0.00	24.8
13.71	24.56	0.040	11.340	336.718	13.106	11.34	0.040	28.69	0.040	0.00	0.00	0.00	28.7
13.83	24.68	0.050	11.350	341.324	16.498	11.35	0.050	32.08	0.050	0.00	0.00	0.00	32.1
13.95	24.8	0.060	11.360	345.960	19.936	11.36	0.060	35.14	0.060	0.00	0.00	0.00	35.1
14.07	24.92	0.070	11.370	350.624	23.422	11.37	0.070	37.95	0.070	0.00	0.00	0.00	38.0
14.19	25.04	0.080	11.380	355.318	26.956	11.38	0.080	40.58	0.080	0.00	0.00	0.00	40.6
14.31	25.16	0.090	11.390	360.040	30.538	11.39	0.090	43.04	0.090	0.00	0.00	0.00	43.0
14.43	25.28	0.100	11.400	364.790	34.168	11.40	0.100	45.36	0.100	0.00	0.00	0.00	45.4
14.55	25.4	0.110	11.410	369.570	37.848	11.41	0.110	47.58	0.110	0.00	0.00	0.00	47.6
14.67	25.52	0.120	11.420	374.378	41.577	11.42	0.120	49.69	0.120	0.00	0.00	0.00	49.7
14.79	25.64	0.130	11.430	379.216	45.357	11.43	0.130	51.72	0.130	0.00	0.00	0.00	51.7
14.91	25.76	0.140	11.440	384.082	49.186	11.44	0.140	53.68	0.140	0.00	0.00	0.00	53.7
15.03	25.88	0.150	11.450	388.976	53.067	11.45	0.150	55.56	0.150	0.00	0.00	0.00	55.6
15.15	26	0.160	11.460	393.900	56.998	11.46	0.160	57.38	0.160	0.00	0.00	0.00	57.4
15.27	26.12	0.170	11.470	398.852	60.982	11.47	0.170	59.15	0.170	0.00	0.00	0.00	59.1
15.39	26.24	0.180	11.480	403.834	65.017	11.48	0.180	60.86	0.180	0.00	0.00	0.00	60.9
15.51	26.36	0.190	11.490	408.844	69.105	11.49	0.190	62.53	0.190	0.00	0.00	0.00	62.5
15.63	26.48	0.200	11.500	413.882	73.246	11.50	0.200	64.16	0.200	0.00	0.00	0.00	64.2
15.75	26.6	0.210	11.510	418.950	77.440	11.51	0.210	65.74	0.210	0.00	0.00	0.00	65.7
15.87	26.72	0.220	11.520	424.046	81.689	11.52	0.220	67.29	0.220	0.00	0.00	0.00	67.3
15.99	26.84	0.230	11.530	429.172	85.991	11.53	0.230	68.80	0.230	0.00	0.00	0.00	68.8
16.11	26.96	0.240	11.540	434.326	90.348	11.54	0.240	70.28	0.240	0.00	0.00	0.00	70.3
16.23	27.08	0.250	11.550	439.508	94.761	11.55	0.250	71.73	0.250	0.00	0.00	0.00	71.7
16.35	27.2	0.260	11.560	444.720	99.229	11.56	0.260	73.15	0.260	0.00	0.00	0.00	73.1
16.47	27.32	0.270	11.570	449.960	103.753	11.57	0.270	74.54	0.270	0.00	0.00	0.00	74.5
16.59	27.44	0.280	11.580	455.230	108.333	11.58	0.280	75.91	0.280	0.00	0.00	0.00	75.9
16.71	27.56	0.290	11.590	460.528	112.970	11.59	0.290	77.25	0.290	0.00	0.00	0.00	77.3
16.83	27.68	0.300	11.600	465.854	117.665	11.60	0.300	78.57	0.300	0.00	0.00	0.00	78.6
16.95	27.8	0.310	11.610	471.210	122.417	11.61	0.310	79.87	0.310	0.00	0.00	0.00	79.9
17.07	27.92	0.320	11.620	476.594	127.228	11.62	0.320	81.15	0.320	0.00	0.00	0.00	81.2
17.19	28.04	0.330	11.630	482.008	132.097	11.63	0.330	82.41	0.330	0.00	0.00	0.00	82.4
17.31	28.16	0.340	11.640	487.450	137.025	11.64	0.340	83.65	0.340	0.00	0.00	0.00	83.6
17.43	28.28	0.350	11.650	492.920	142.012	11.65	0.350	84.87	0.350	0.00	0.00	0.00	84.9
17.55	28.4	0.360	11.660	498.420	147.060	11.66	0.360	86.07	0.360	0.00	0.00	0.00	86.1
17.67	28.52	0.370	11.670	503.948	152.167	11.67	0.370	87.26	0.370	0.00	0.00	0.00	87.3
17.79	28.64	0.380	11.680	509.506	157.336	11.68	0.380	88.43	0.380	0.00	0.00	0.00	88.4
17.91	28.76	0.390	11.690	515.092	162.566	11.69	0.390	89.59	0.390	0.00	0.00	0.00	89.6
18.03	28.88	0.400	11.700	520.706	167.857	11.70	0.400	90.73	0.400	0.00	0.00	0.00	90.7
18.15	29	0.410	11.710	526.350	173.210	11.71	0.410	91.86	0.410	0.01	34.00	125.9	173.21
18.27	29.12	0.420	11.720	532.022	178.626	11.72	0.420	92.97	0.420	0.02	96.17	188.1	178.63
18.39	29.24	0.430	11.730	537.724	184.105	11.73	0.430	94.07	0.430	0.03	176.67	270.7	184.10
18.51	29.36	0.440	11.740	543.454	189.647	11.74	0.440	95.16	0.440	0.04	272.00	367.2	189.65
18.63	29.48	0.450	11.750	549.212	195.253	11.75	0.450	96.23	0.450	0.05	380.13	476.4	195.25
18.75	29.6	0.460	11.760	555.000	200.923	11.76	0.460	97.30	0.460	0.06	499.70	597.0	200.92
18.87	29.72	0.470	11.770	560.818	206.658	11.77	0.470	98.35	0.470	0.07	629.69	728.0	206.66
18.99	29.84	0.480	11.780	566.662	212.455	11.78	0.480	99.39	0.480	0.08	769.33	858.7	212.46
19.11	29.96	0.490	11.790	572.536	218.323	11.79	0.490	100.42	0.490	0.09	918.00	1018.4	218.32
19.23	30.08	0.500	11.800	578.438	224.254	11.80	0.500	101.44	0.500	0.10	1075.17	1178.6	224.25

PSD5= 308.36 (l/s)
SSR5= 64.38 (m³)

PSD100= 539.34 (l/s)
SSR100= 110.91 (m³)

NOT FOR CONSTRUCTION

Revised	Authorised	Drawn by	Authorised
17/09/2018	M.J.	W.M.	
09/08/2018	M.J.	W.M.	



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Surveyor	Date	May 2018
Date of Survey	Drawn	M. Jaumovic
Height Datum	Designed	M. Jaumovic
Origin	Checked	W. Mulvaney
Point Datum	Approved	
MGDA50 1132818		

PROPOSED DEVELOPMENT
141 DARKES ROAD
KEMBLA GRANGE
OSD CALCULATIONS

Project No:	KF112578
Drawing No:	C203
Sheet	3 of 7
Revision	B

ISSUED FOR DA APPROVAL



Drawing Title	PROPOSED DEVELOPMENT 141 DARKES ROAD KEMBLA GRANGE ROAD NO#1 INDICATIVE GRADE AND CROSS SECTIONS	
Scale as shown	A1	Drawing Status ISSUED FOR DA APPROVAL

[illegible]

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Surveyor CEH (Doris)	Date May 2016
Date of Survey 8 DEC 2016	Drawn M. Jacomy
Height Datum AHD	Designed M. Jacomy
Origin PMS3111 RL12.544	Checked W. Millar
Height Datum MGA50P 1132618)	Approved

Drawing Title	
ROAD NO:	
Scale as shown A1	
as shown A3	

PROPOSED DEVELOPMENT 141 DARKES ROAD KEMBLA GRANGE #1 INDICATIVE GRADE AND CROSS SECTIONS	
Drawing Status	ISSUED FOR DA APPROVAL

Project No. KF112578		FLOOR PLAN
Drawing No. C204		
Sheet 4 OF 7	Revision B	LOTTED BY: PLANNING

[illegible]

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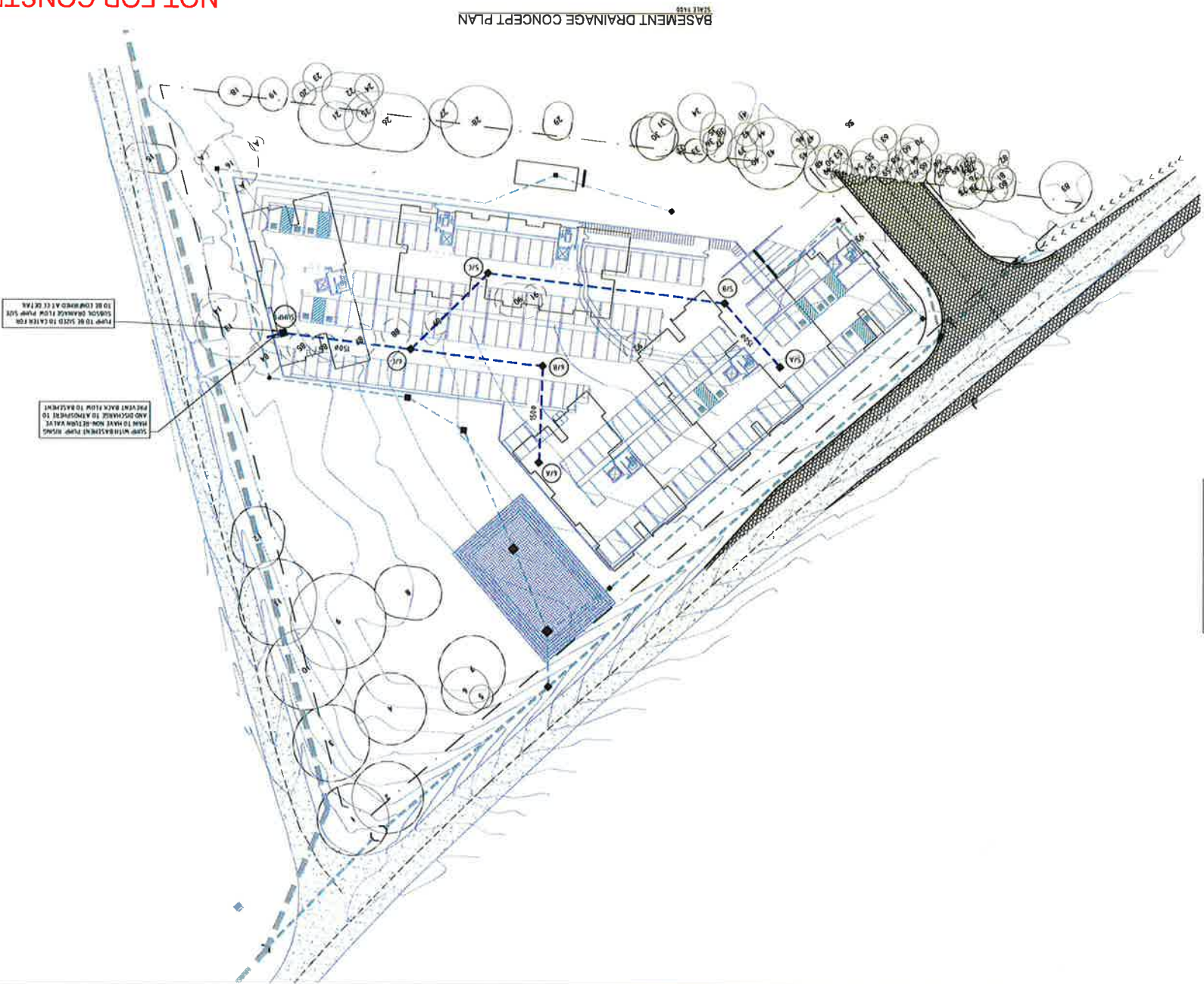
Date	May 2018
CEN (Daplo)	8 DEC 2016
Surveyor	M. Jacomova
Height (Datum AHD)	Checked by M. Jacomova
Origin	Checked by M. Jacomova
Kontak (Datum MGAIDP 1132818)	Approved

1 400 @ A1
1 600 @ A2

PROPOSED DEVELOPMENT
141 DARKESS ROAD
KEMBLA GRANGE
BASEMENT DRAINAGE PLAN

Project No.	KF112578
Drawing No.	C205
Sheet	5 OF 7
Revision	B

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LEGEND

DENOTES PROPOSED BASEMENT RECONSTRUCTION
 DENOTES PITS
 DENOTES 0.50 YARDS
 DENOTES EXISTING CASSEST SWALE
 DENOTES EXISTING TREES

DO NOT SCALE

CATCHMENT NO	AREA (m ²)	% IMPERVIOUS	COLLECTION PIT	NOTES
BLOCK A	373	100	OSD	VIA FLOOR WASTES & DOWNPIPES
BLOCK B	576	100	OSD	VIA FLOOR WASTES & DOWNPIPES
BLOCK C	584	100	OSD	VIA FLOOR WASTES & DOWNPIPES
BLOCK D	597	100	OSD	VIA FLOOR WASTES & DOWNPIPES
BLOCK E	797	100	OSD	VIA FLOOR WASTES & DOWNPIPES
COURTYARDS	1068	100	OSD	VIA FLOORWASTES & PIPES
DRIVEWAY	868	80	OSD	VIA FLOOR WASTES & PIPES
PAVEMENT / PLANTERS	2316	80	OSD	VIA PITS & PIPES
GRASS	6482	0	PITS / HW	VIA SHEET FLOW



LEGEND

- | | |
|---|------------------------------------|
|  | DENOTES PROPOSED STORMWATER |
|  | DENOTES PITS |
|  | DENOTES OSD TANKS |
|  | DENOTES FLOOR WASTES |
|  | DENOTES SPEED HUMP |
|  | DENOTES PROPOSED GRASSED SWALE |
|  | DENOTES EXISTING GRASSED SWALE |
|  | DENOTES BUILDING CATCHMENT |
|  | DENOTES PAVEMENT/PLANTER CATCHMENT |
|  | DENOTES PERVIOUS CATCHMENT |



CATCHMENT PLAN
SCALE 1:100

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[illegible]

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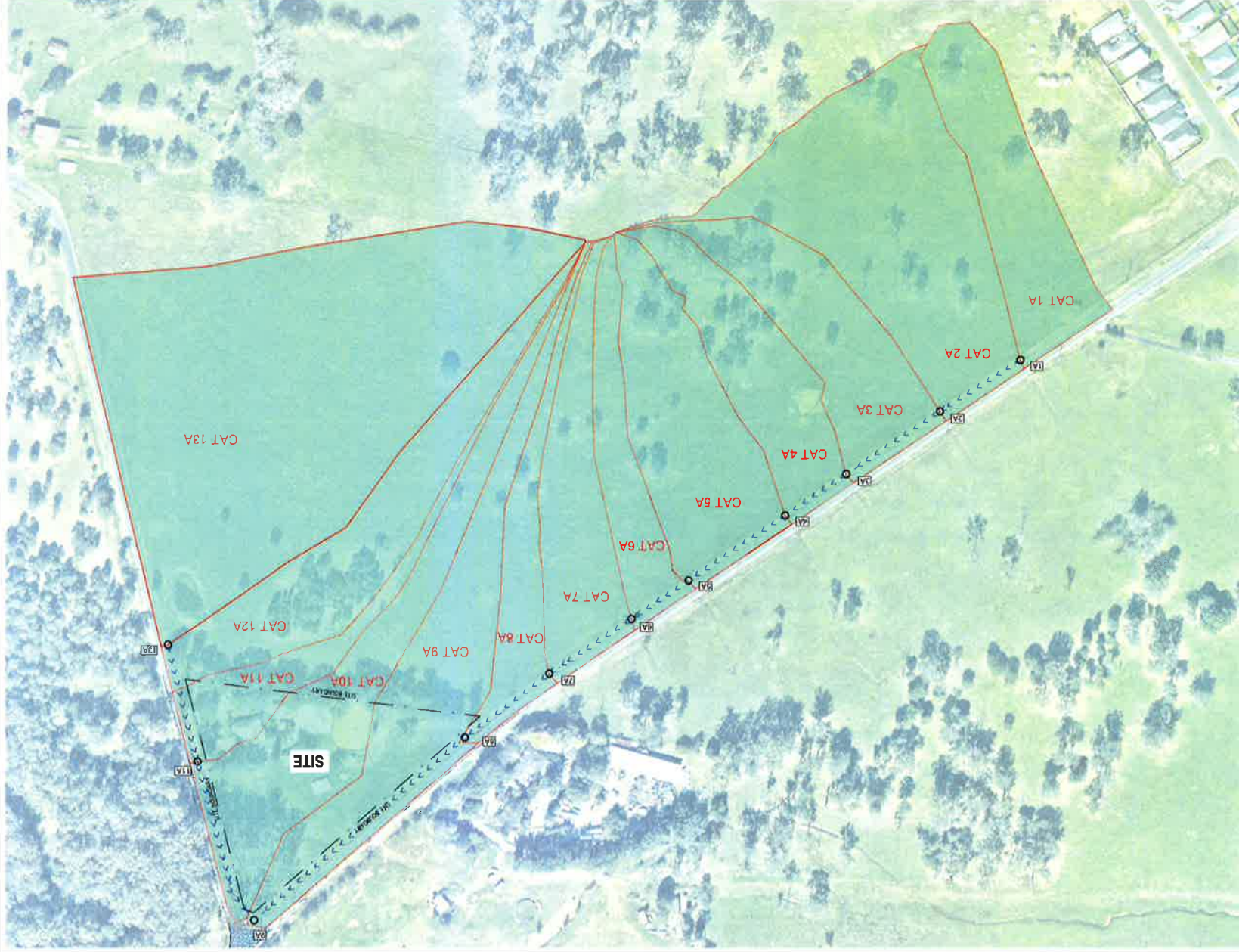
Surveyor CEH (Daplat)	Date May 2018	Drawing Title PROPOSED DEVELOPMENT		Project No. KF112578
Date of Survey 8 DEC 2016	Drawn M. Jaisman	141 DARKES ROAD		Drawing No. C206
Height Datum RHSD	Designed M. Jaisman	KEMBLA GRANGE		
Origin PAS3111 RL12.54	Checked M. Mulyani	CATCHMENT PLAN		
Issue, Datum MGSUR 11/12/18	Approval	Scale 1:400 @ A1	Drawing Status ISSUED FOR DA APPROVAL	Sheet 5 OF 7
				Revision B

CATCHMENT SUMMARY TABLE			
CATCHMENT NO	AREA (m ²)	% IMPERVIOUS	COLLECTION NO
CAT 1A	11000	0	2A
CAT 2A	20000	0	3A
CAT 3A	11000	0	4A
CAT 4A	9000	0	5A
CAT 5A	11000	0	6A
CAT 6A	6000	0	7A
CAT 7A	9000	0	8A
CAT 8A	5000	0	9A
CAT 9A	15000	0	10A
CAT 10A	5700	0	11A
CAT 11A	12000	0	12A
CAT 12A	14000	0	13A



LEGEND

- 20--- DEMONSTRATES NATURAL CONTOURS
- DEMONSTRATES CATCHMENT
- DEMONSTRATES CATCHMENT
- <<< DEMONSTRATES DISTINGUISHING SWALE



CATCHMENT PLAN - SWALES & VEHICULAR CROSSING - PRE

SCALE 1:1000 (A3)

FOR DA ONLY - NOT FOR CONSTRUCTION

Revision	Author	Check	Drawn	Date	Notes
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					

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Drawn	Check	Drawn	Check	Drawn	Check
July 2018	July 2018	July 2018	July 2018	July 2018	July 2018
Drawn	Check	Drawn	Check	Drawn	Check
Drawn	Check	Drawn	Check	Drawn	Check
Drawn	Check	Drawn	Check	Drawn	Check
Drawn	Check	Drawn	Check	Drawn	Check

PROPOSED DEVELOPMENT
141 DARKES ROAD
KEMBLA GRANGE
CATCHMENT PLAN - PRE DEVELOPMENT
ISSUED FOR DA APPROVAL

Sheet	Revision	Drawn	Check	Drawn	Check
SK01	SK01	SK01	SK01	SK01	SK01
SK01	SK01	SK01	SK01	SK01	SK01
SK01	SK01	SK01	SK01	SK01	SK01
SK01	SK01	SK01	SK01	SK01	SK01
SK01	SK01	SK01	SK01	SK01	SK01

DO NOT SCALE

DO NOT SCALE

CATCHMENT SUMMARY TABLE			
CATCHMENT NO.	AREA (m ²)	X IMPERVIOUS	COLLECTION PNT
CAT 1A	11000	0	2A
CAT 7A	93000	0	3A
CAT 3A	10000	0	4A
CAT 4A	9000	0	5A
CAT 5A	13000	0	6A
CAT 6A	9000	0	7A
CAT 7A	9000	0	8A
CAT 8A	5800	0	9A (POST)
CAT 12A	10500	0	10A+11A (POST)
CAT 13A	48500	0	12A
CAT 1A (POST)	19450	0	O/L
CAT 10A-11A (POST)	13650	0	9A (POST)
OSD 1	7833	00	OSD 1 BASIN
OSD 1 BASIN	578	0	9A (POST)



LEGEND

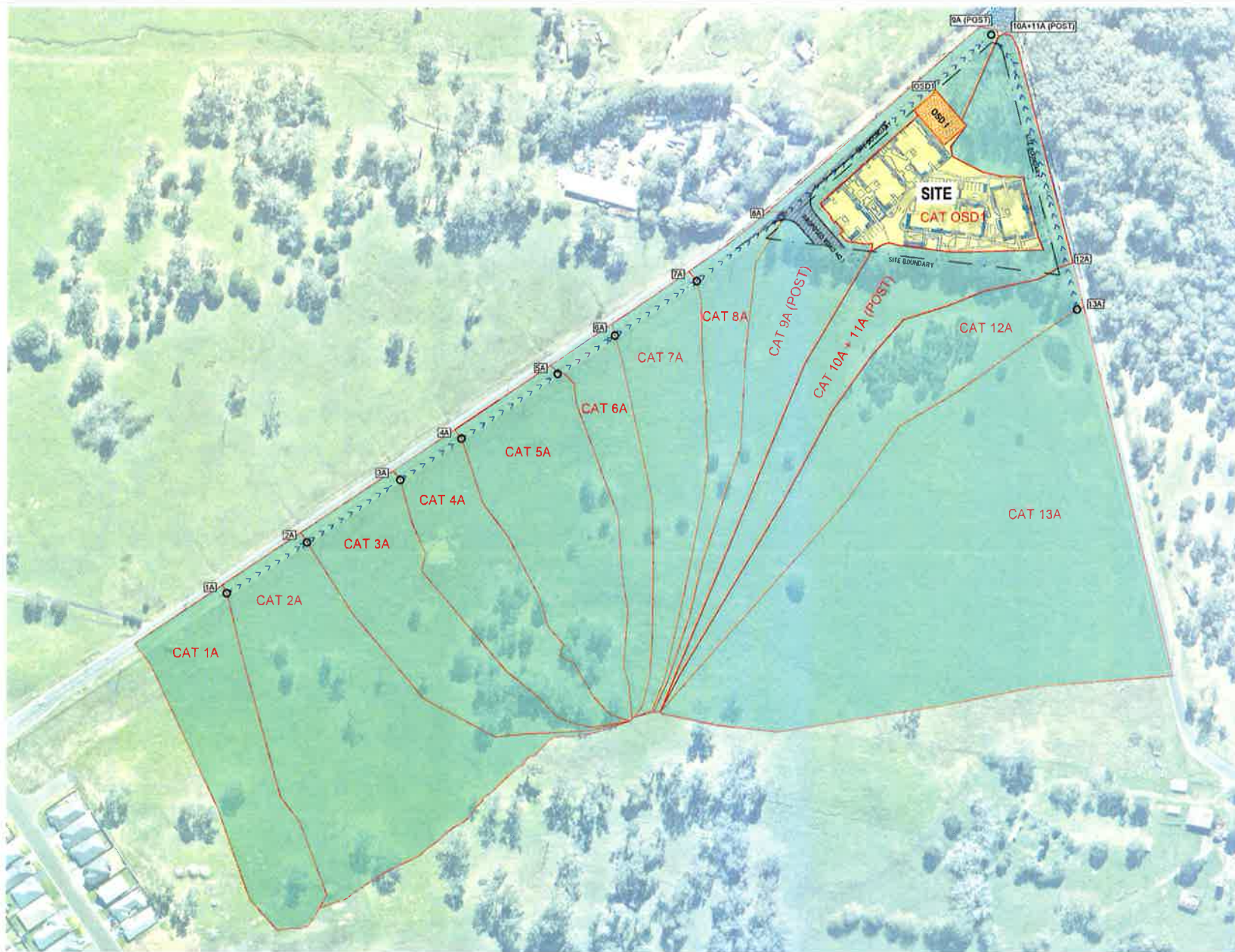
 DENOTES NATURAL CONTOURS

 DENOTES CATCHMENTS EXTERNAL OF SITE

 DENOTES SITE CATCHMENT COLLECTED BY OSD

 DENOTES EXISTING HEADWALL

 DENOTES EXISTING SWALE



CATCHMENT PLAN - SWALES & VEHICULAR CROSSING - POST

SCALE 1:250 @A1
1:2500 @A3

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A	APPROVED AS PER COUNCIL'S COMMENTS	10/09/2016	M.J.	JRM
Revision	Amendment or reason for issue	Issue Date	Drawn by	Authorized



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Surveyor	Date	Drawing Title	Project No.
	July 2018	PROPOSED DEVELOPMENT	KF11257
Date of Survey	Drawn by	141 DARKES ROAD	
	JA Jacomine	KEMBLA GRANGE	SK02
Height Datum	Designed by	CATCHMENT PLAN - POST DEVELOPMENT	
AHD	JA Jacomine		
Origin	Checked by		
	W. Mullany		
Height Datum	Agreement	Scale	Drawing Status
		1:100 @ A1	ISSUED FOR DA APPROVAL
			Sheet
			1 OF 1
			Revisions

8

