PROPOSED EARLY LEARNING AND CHILDCARE CENTRE AT 218 BYRON ROAD LEPPINGTON

S	SITE & STATUTORY INFORMATION					
AREA	8024 sqm APPROX					
LOT	LOT26/-/ DP 1127208					
ZONING	B7 Business Park					
FSR	NA					
НОВ	24 metres					
HERITAGE	NA					
ACID S S	NA					

NUMBER	DRAWING	SIZE	SCAL
A101	COVERSHEET	A1	NTS
A102	SITE ANALYSIS PLAN	A1	1:25
A103	PLAN GROUND LEVEL	A1	1:250
A104	PLAN UPPER LEVEL	A1	1:25
A105	PLAN ROOF LEVEL	A1	1:250
A106	SHADOW PROJECTIONS	A1	1:120
A107	NOTIFICATION PLAN	A1	1:750@
A108	PLAN BASEMENT	A1	1:25
A113	PLAN GROUND - PLAY AREAS	A1	1:250
A114	PLAN UPPER - PLAY AREAS	A1	1:25
A501	PART PLANS - KITCHEN & INDOOR PLAY A	A1	1:50
A301	SECTIONS A - A & B - B	A1	1:25
A401	ELEVATIONS	A1	1:25

		SCHEDUL	E OF AREAS	
ROOM	AGES	AREA- INDOOR (SQ.M.)	AREA- OUTDOOR (SQ.M.)	POPULATION
1	0-1	40.4	86.4	12
2	0-1	40.4	86.4	12
3	1-2	53.0	113.5	16
4	1-2	53.0	124.1	16
5	2-3	97.6	216.7	30
6	2-3	97.6	213.1	30
7	2-3	97.6	223.1	30
8	3-4	66.1	141.1	20
9	3-4	66.1	141.1	20
10	4-5	66.1	140.3	20
11	4-5	128.5	259.6	30
12	4-5	130.5	285.3	40
13	3-4	74.4	260.5	20
			TOTAL	296
		OTH	ER DATA	
LEVEL		COMMERCIAL (SQ.M.)	PARKING	
BASE	MENT		50	CC VISITOR
BASEMENT			37	CC STAFF
BASEMENT			30	COMMERC'L
GRO	UND	659.0		
UPP	ER	472.0		

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R DATE DESCRIPTION

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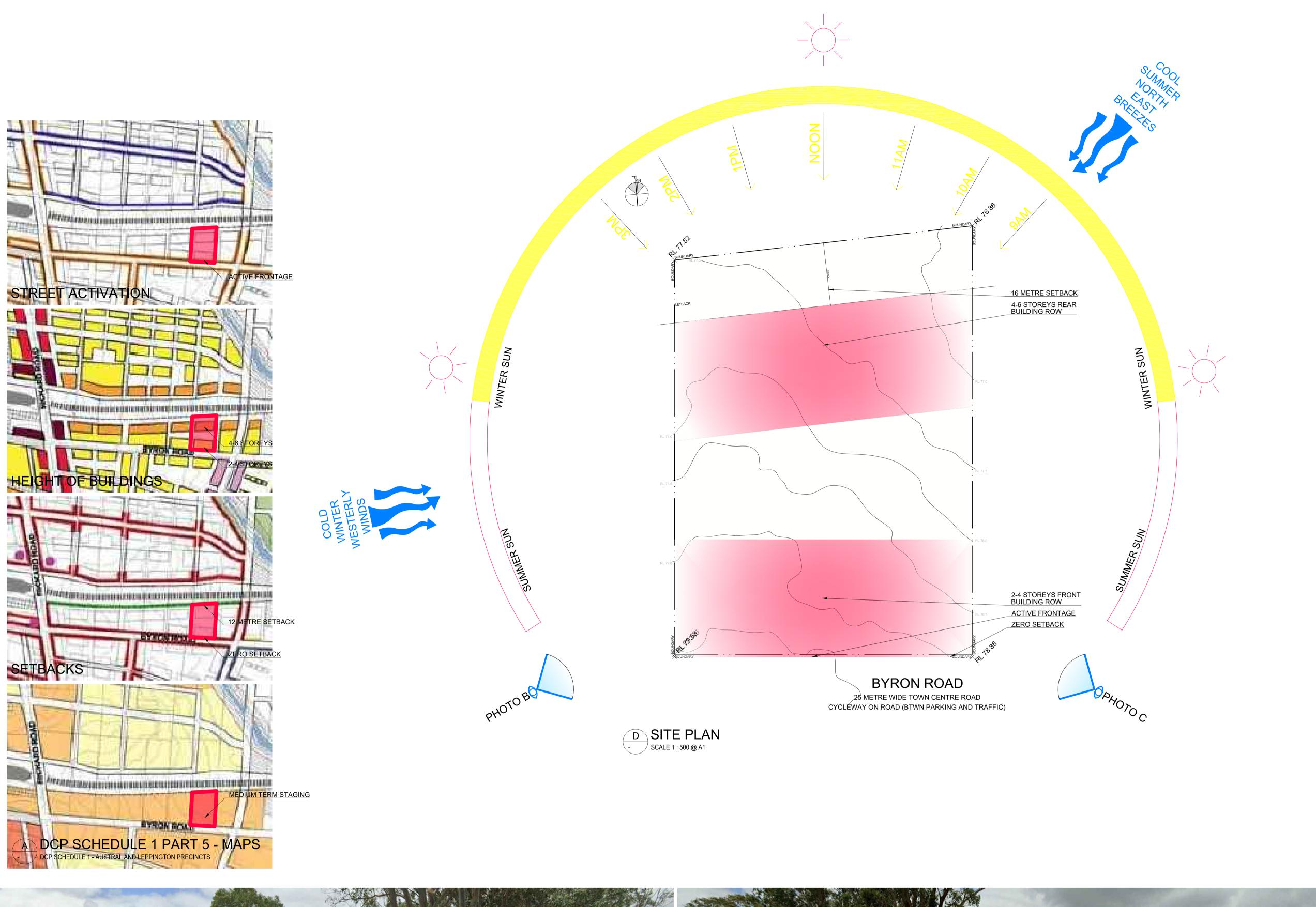
CHILDCARE CENTRE 218 BYRON RD LEPPINGTON

COVERSHEET

DRAWING NUMBER STAGE

NTS LEADER

SCALE



B 218 BYRON ROAD - LOOKING WEST

c 218 BYRON ROAD - LOOKING WEST

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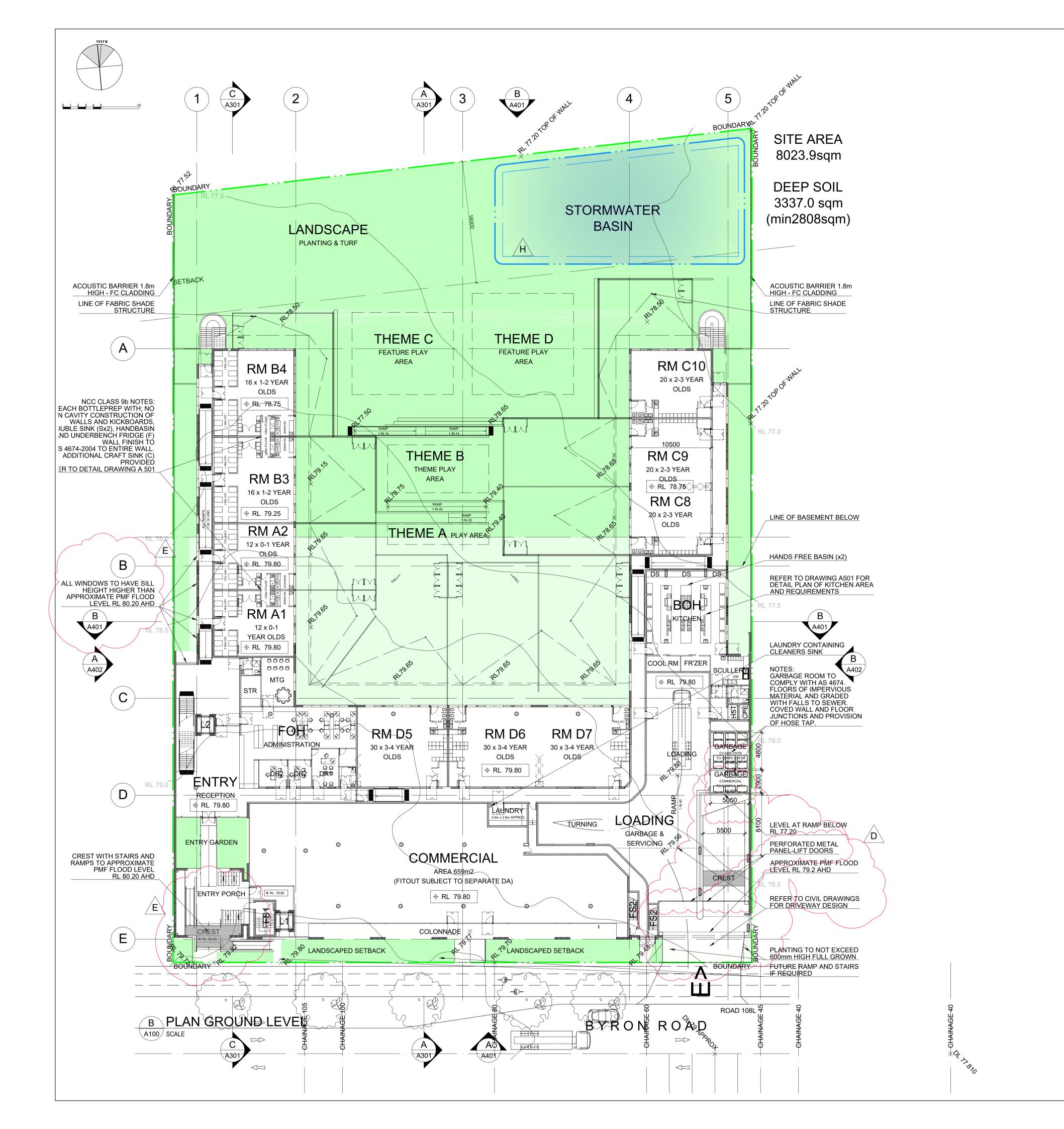
PROJECT
CHILDCARE CENTRE 218 BYRON RD LEPPINGTON

PLAN SITE ANALYSIS

PROJECT 2062 STAGE

DRAWING NUMBER

SCALE 1:250@A1 LEADER



REVISIONS

R DATE DESCRIPTION

A 04FEB23 DA LODGEMENT B 08MAY23 BIN RMS REVISED; SWEPT PATH

ADJUSTMENTS C 23MAY23 PANEL LIFT DOORS TO PARKING AND

LOADING DOCK

D 21AUG23 FOOTPATH ENTRY, ROAD, DRIVEWAY AND RAMP LEVELS

E 08SEP23 FOOTPATH ENTRY RAMP LEVELS

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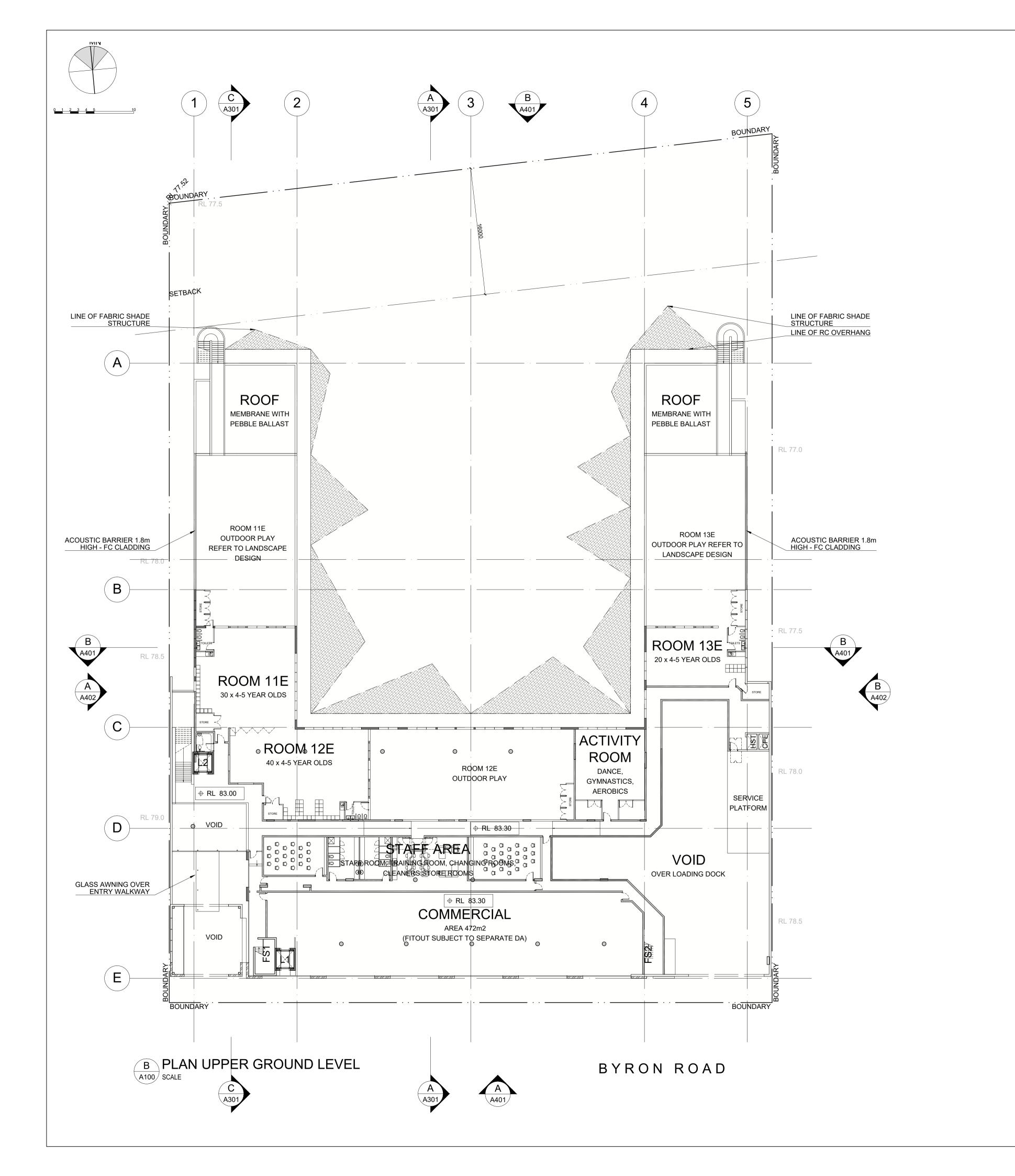
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CHILDCARE CENTRE 218 BYRON RD LEPPINGTON

PLAN GROUND LEVEL

PROJECT DRAWING NUMBER STAGE

SCALE 1:250@A1 LEADER



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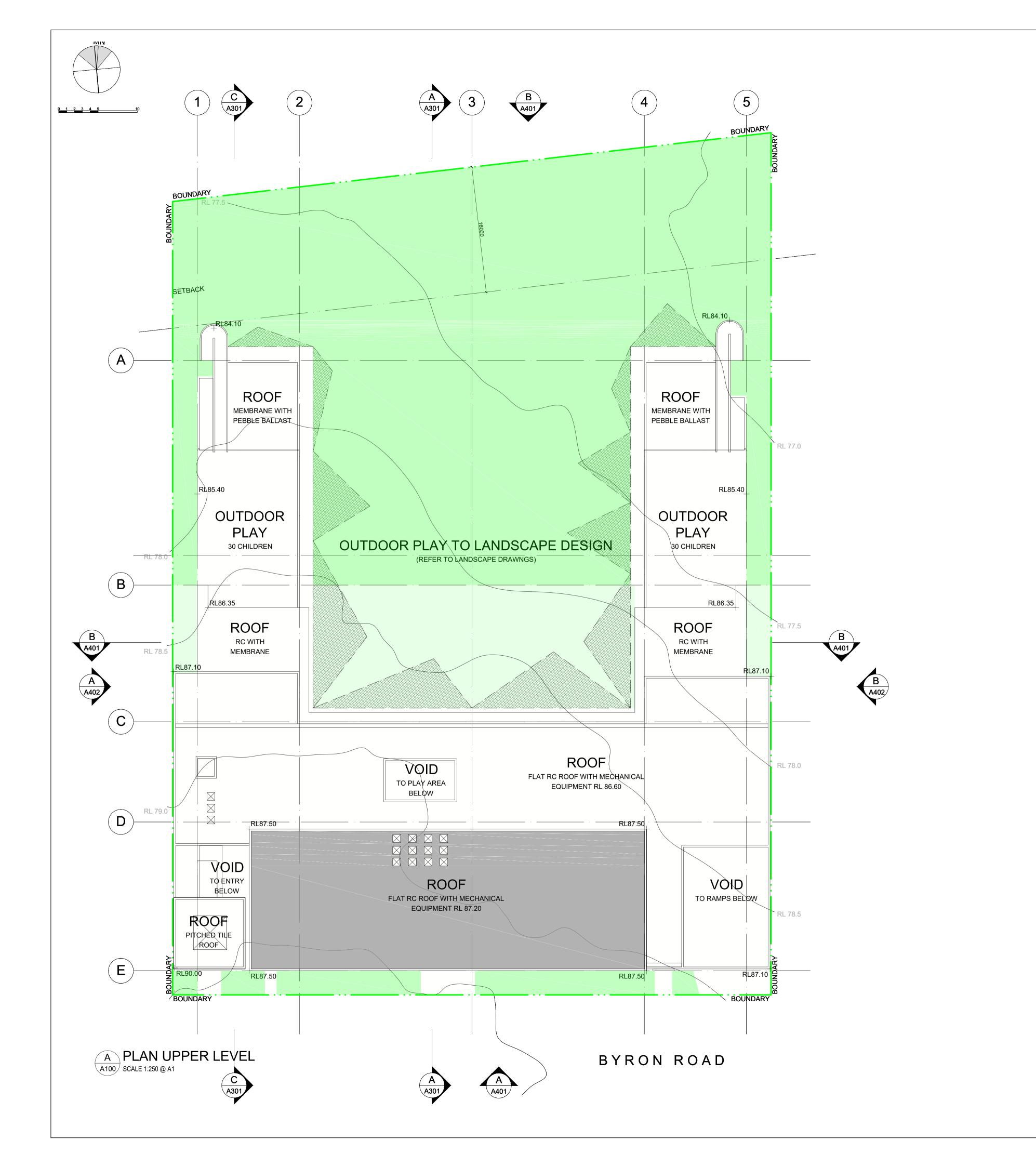
PROJECT
CHILDCARE CENTRE
218 BYRON RD LEPPINGTON

PLAN UPPER LEVEL

PROJECT DRAWING NUMBER A104-A

1:250@A1 LEADER

SCALE



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PROJECT
CHILDCARE CENTRE

218 BYRON RD LEPPINGTON

PLAN ROOF

PROJECT DRAWING NUMBER
2062
STAGE

A105-A

SCALE 1:250@A1 LEADER ML







21ST JUNE - 1300



21ST JUNE - 1500



21ST JUNE - 1200



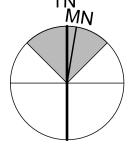
21ST JUNE - 1400



SITE BOUNDARY



SHADOW FROM EXISTING BUILDING



REVISIONS R DATE DESCRIPTION

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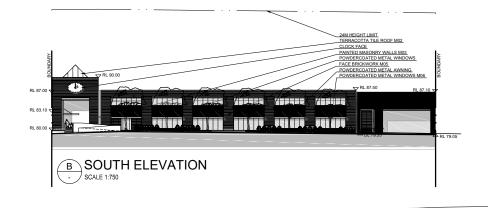
PROJECT
CHILDCARE CENTRE 218 BYRON RD LEPPINGTON

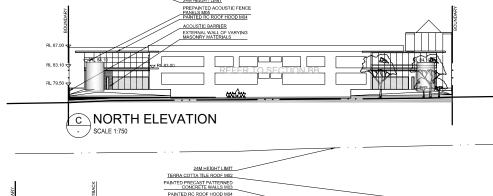
SHADOW ANALYSIS-1

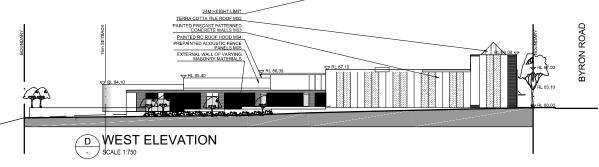
PROJECT DRAWING NUMBER A106-A STAGE

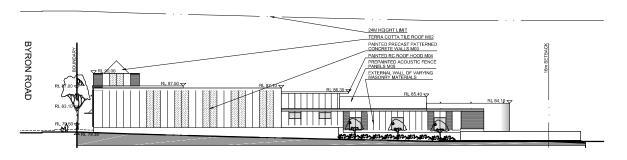
SCALE 1:800@A1 LEADER











A PLAN ROOF
SCALE 1:750



REVISIONS R DATE DESCRIPTION

A 04FEB23 DA LODGEMENT

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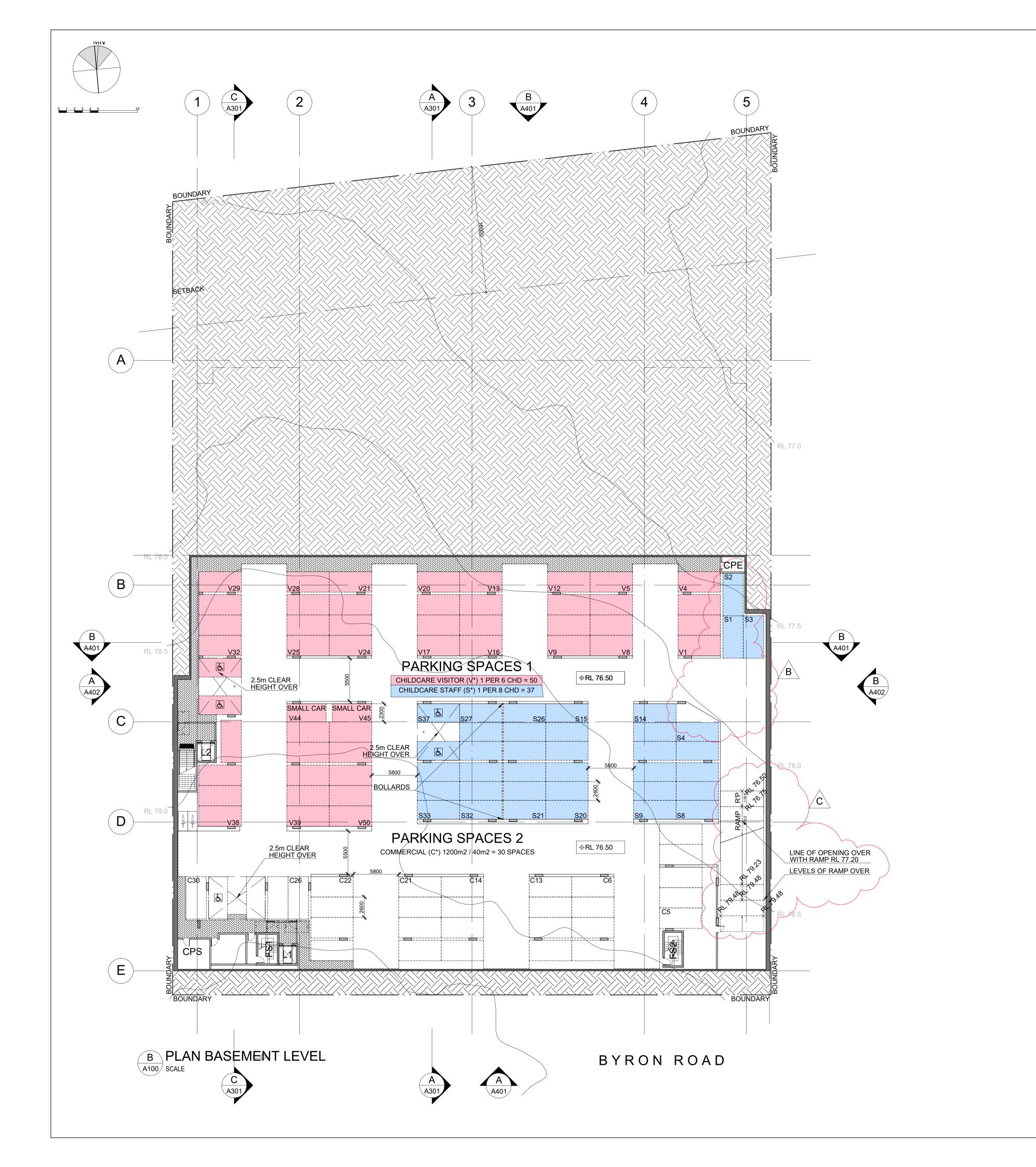
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CHILDCARE CENTRE 218 BYRON RD LEPPINGTON

ADVERTISING PLAN

A107-A STAGE



REVISIONS R DATE DESCRIPTION

A 04FEB23 DA LODGEMENT
B 14MAR23 SWEPT PATH ADJUSTMENTS
C 21AUG23 RAMP ADJUSTMENT

ARCHITECT

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PROJECT
CHILDCARE CENTRE

218 BYRON RD LEPPINGTON

PLAN BASEMENT LEVEL

PROJECT DRAWING NUMBER 2062 A 108-C

1:250@A1
LEADER

SCALE



REVISIONS R DATE DESCRIPTION

A 04FEB23 DA LODGEMENT B 23MAY23 SECTION DD ADDED

C 21AUG23 ROAD, FOOTPATH, DRIVEWAY LEVELS ADJUSTED

ARCHITECT

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CHILDCARE CENTRE 218 BYRON RD LEPPINGTON

SECTIONS - AA, BB, CC & DD

PROJECT DRAWING NUMBER 2062 STAGE

A301-C

SCALE 1:250@A1 LEADER

24M HEIGHT LIMIT PREPAINTED ACOUSTIC FENCE PANELS M05 PAINTED RC ROOF HOOD M04 ACOUSTIC BARRIER EXTERNAL WALL OF VARYING MASONRY MATERIALS RL 87.00 RL 83.10 RL 79.50 A NORTH ELEVATION 24M HEIGHT LIMIT TERRACOTTA TILE ROOF M02 CLOCK FACE TERRA COTTA COLOURED WALL PAINTED MASONRY WALLS MO3 POWDERCOATED METAL WINDOW FACE BRICKWORK M05 POWDERCOATED METAL AWNING → RL 90.00 POWDERCOATED METAL WINDOWS M06 PAINTED MASONRY WALLS M03 → RL 87.50 PERFORATED METAL PANEL-LIFT DOORS BEYOND - M08 FACE BRICK RL 83.10 HEADER REFER TO CIVIL DRAWINGS FOR DRIVEWAY LEVELS B SOUTH ELEVATION - BYRON ROAD 24M HEIGHT LIMIT TERRA COTTA TILE ROOF M02 PAINTED PRECAST PATTERNED CONCRETE WALLS M03 PAINTED RC ROOF HOOD M04 PREPAINTED ACOUSTIC FENCE PANELS M05 EXTERNAL WALL OF VARYING MASONRY MATERIALS → RL 85.40 □ RL 84.10 - Agrana The state of the s c WEST ELEVATION 24M HEIGHT LIMIT TERRA COTTA TILE ROOF M02 PAINTED PRECAST PATTERNED CONCRETE WALLS M03 PAINTED RC ROOF HOOD M04 PREPAINTED ACOUSTIC FENCE PANELS M05 EXTERNAL WALL OF VARYING MASONRY MATERIALS RL 87.50 < RL 87.10 ¬ RL 86.35 🗇 RL 85.40 \tag RL 84.10 \tag RL 83.10[™] and the second second second second second **D** EAST ELEVATION

MATERIALS & COLOUR SCHEDULE

M02

TERRA COTTA TILE ROOF TERRA COTTA COLOUR



M03

PAINTED MASONRY WALLS COLOUR



M04

RC BALUSTRADE AND PARAPETS WHITE COLOUR



M05

FACE BRICKWORK BLEACHED BEIGE COLOUR



M06

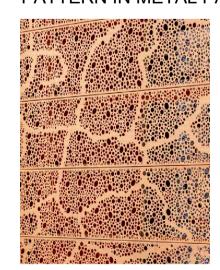
WINDOW FRAMES WHITE COLOUR

M07

OTHER METALWORK; AWNING, STEEL FRAMES, FLAGPOLE, CLOCK MID GREY COLOUR

80M

PANEL -LIFT DOORS TO LOADING DOCK AND BASEMENT PARKING - 'PICK-PERF' (OR SIMLAR) PATTERN IN METAL PANELS



REVISIONS R DATE DESCRIPTION

A 04FEB23 DA LODGEMENT B 15MAY23 NORTH ELEVATION, WALL COLOUR C 23MAY23 PANEL-LIFT DOORS TO LOADING

DOCK AND PARKING C 21AUG23 ROAD, FOOTPATH, DRIVEWAY LEVELS ADJUSTED

ARCHITECT



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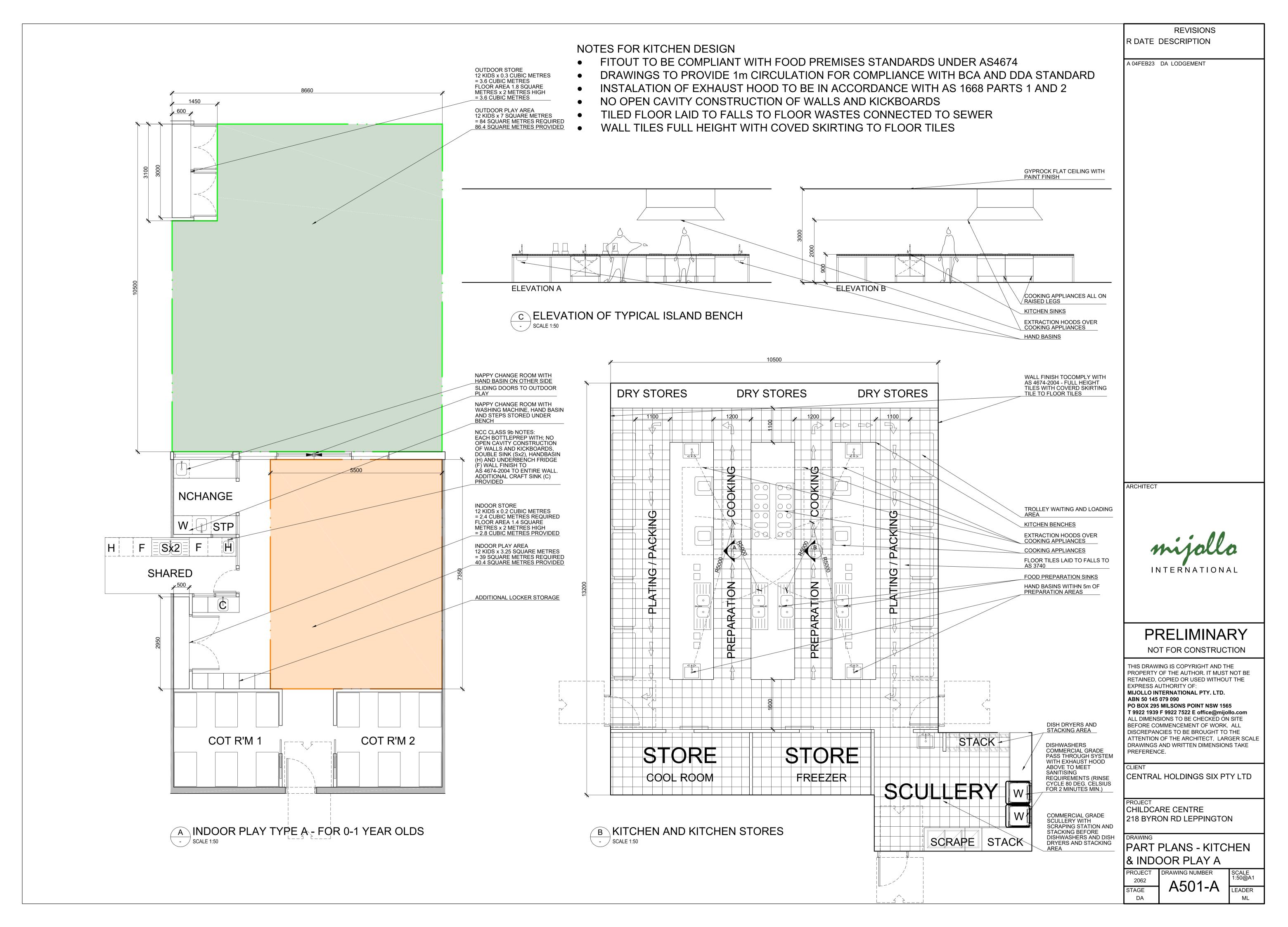
ELEVATIONS & MATERIALS SCHEDULE

PROJECT DRAWING NUMBER 2062 STAGE

A401-C

SCALE 1:250@A1

LEADER





MIJOLLO ARCHITECTS

218 BYRON ROAD LEPPINGTON NSW 2179

CIVIL ENGINEERING WORKS

DEVELOPMENT APPLICATION

DRAWING SCHEDULE

DESCRIPTION DRAWING NUMBER COVER SHEET AND DRAWING SCHEDULE 210027-DA-C01.41 GENERAL ARRANGEMENT PLAN 210027-DA-C02.01 **DEMOLITION PLAN** 210027-DA-C03.01 **EROSION AND SEDIMENTATION CONTROL PLAN** 210027-DA-C03.21 **EROSION AND SEDIMENTATION CONTROL DETAILS**

210027-DA-C05.01

210027-DA-C05.02 210027-DA-C05.03

210027-DA-C06.01 210027-DA-C07.01 210027-DA-C07.02 DRIVEWAY LONGITUDINAL SECTIONS - SHEET 02 210027-DA-C07.11 BYRON ROAD LONGITUDINAL SECTIONS 210027-DA-C08.01 BYRON ROAD CROSS SECTIONS - SHEET 01

210027-DA-C14.11 SITEWORKS DETAILS

210027-DA-C14.01

BIO-RETENTION BASIN PLAN AND DETAILS - SHEET 01 210027-DA-C18.51 210027-DA-C18.52 BIO-RETENTION BASIN PLAN AND DETAILS - SHEET 02

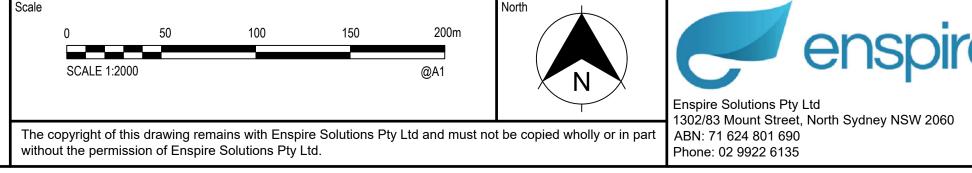
RETAINING WALL ELEVATION

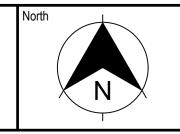
210027-DA-C20.01 STORMWATER CATCHMENT PLAN

210027-DA-C23.01 SAFETY IN DESIGN

2	23/08/2023	ISSUED FOR DEVELOPMENT APPLICATION	JL	JL	AD	AD
1	3/02/2023	ISSUED FOR DEVELOPMENT APPLICATION	JS	JL	AD	JL
REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD.





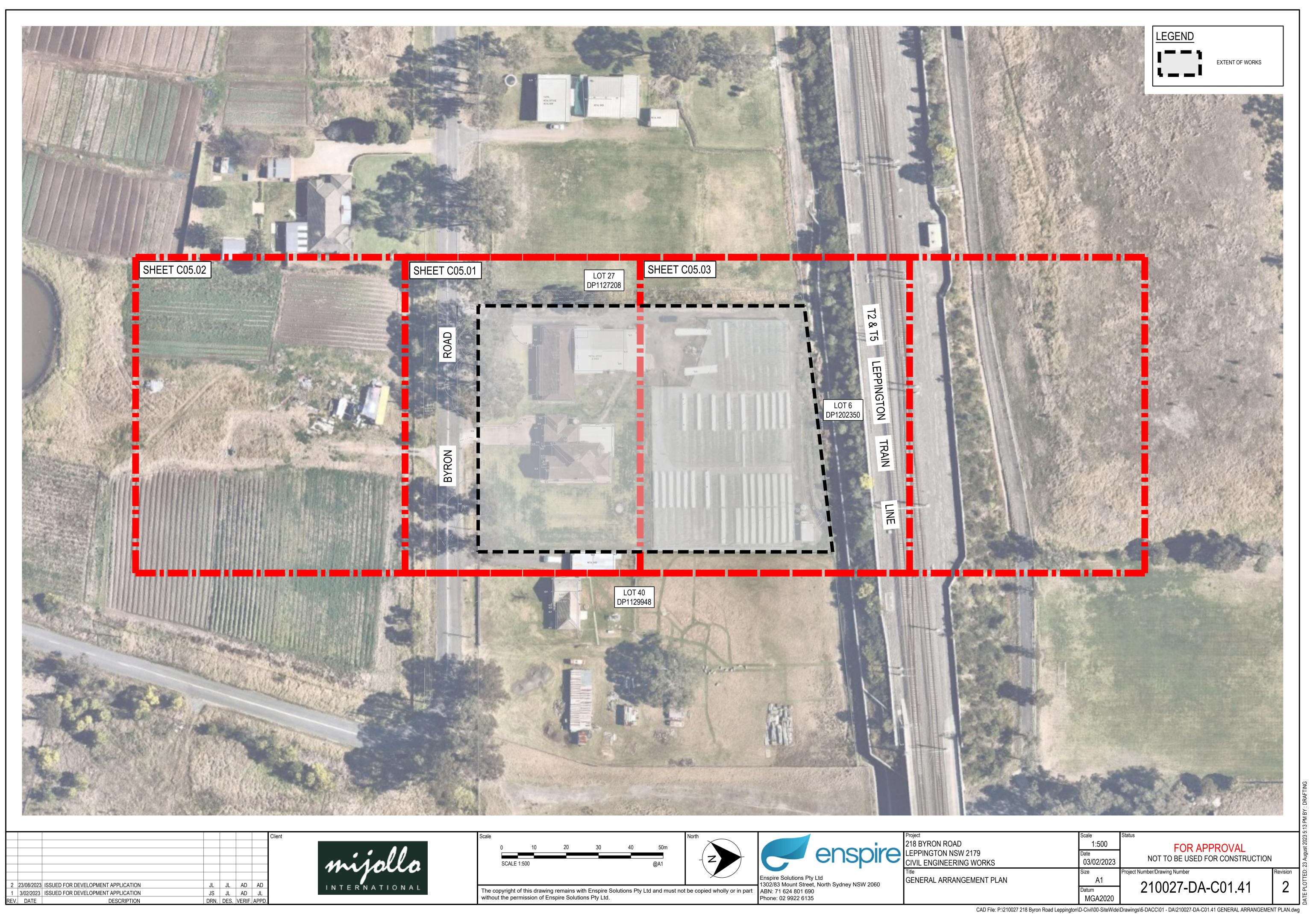


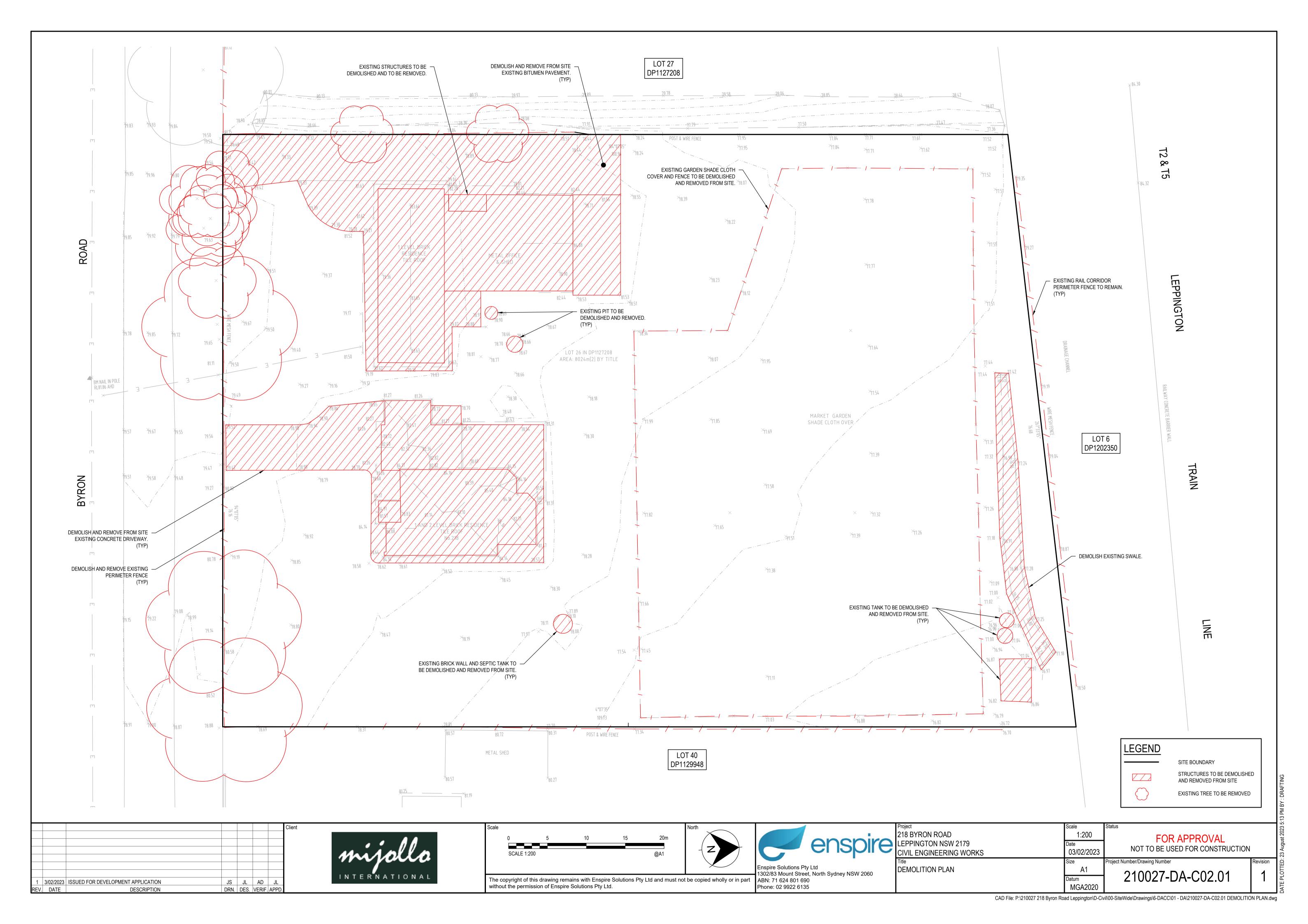


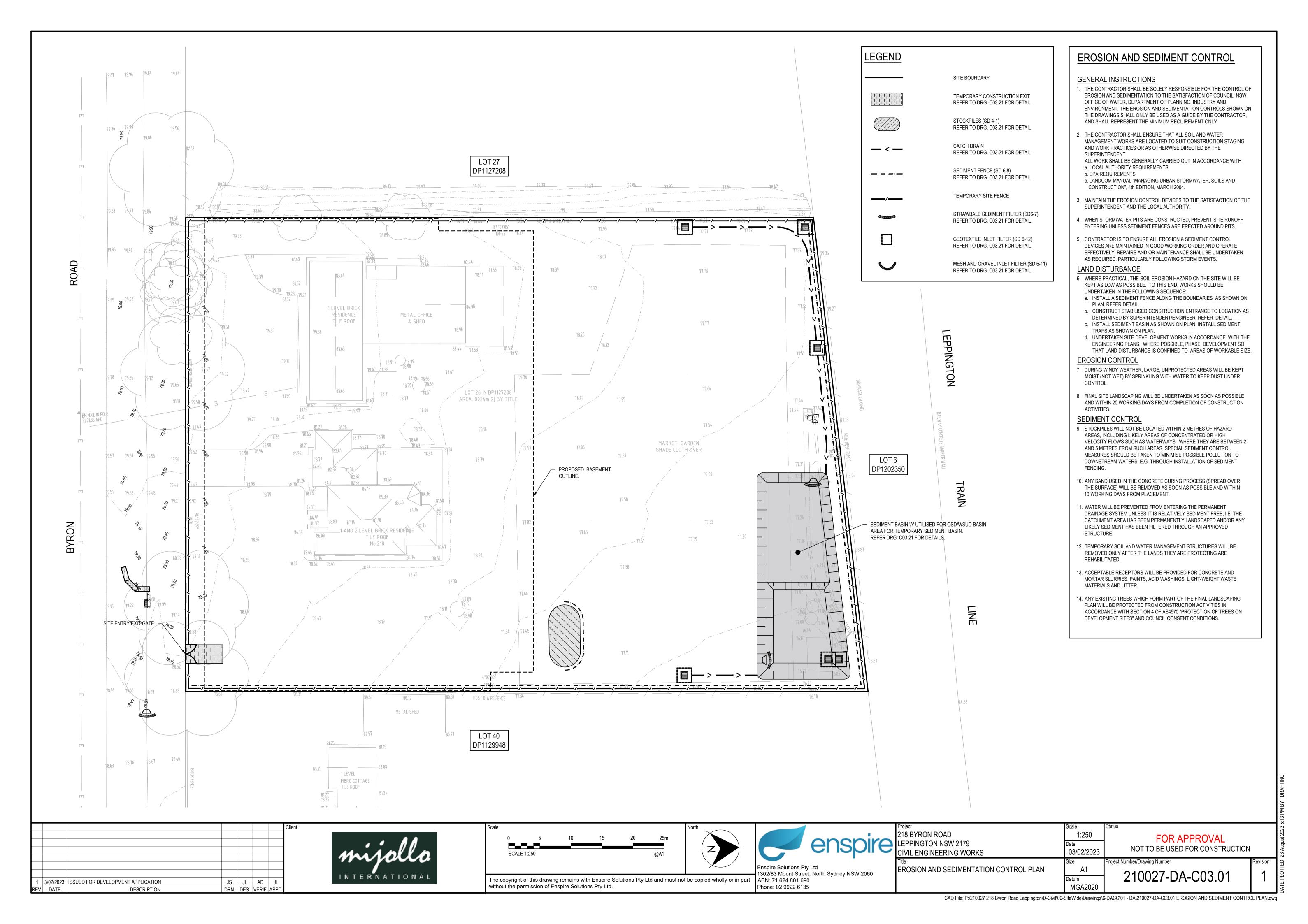
MGA2020

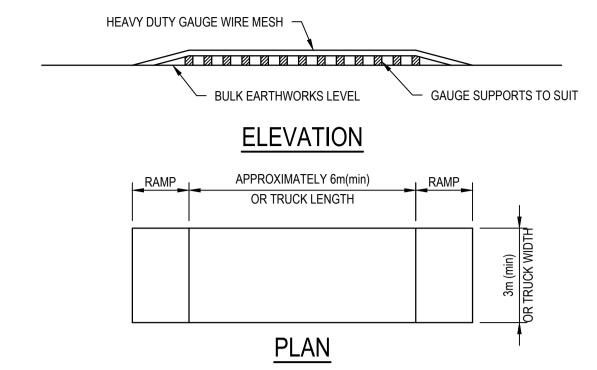
FOR APPROVAL NOT TO BE USED FOR CONSTRUCTION

210027-DA-C01.01



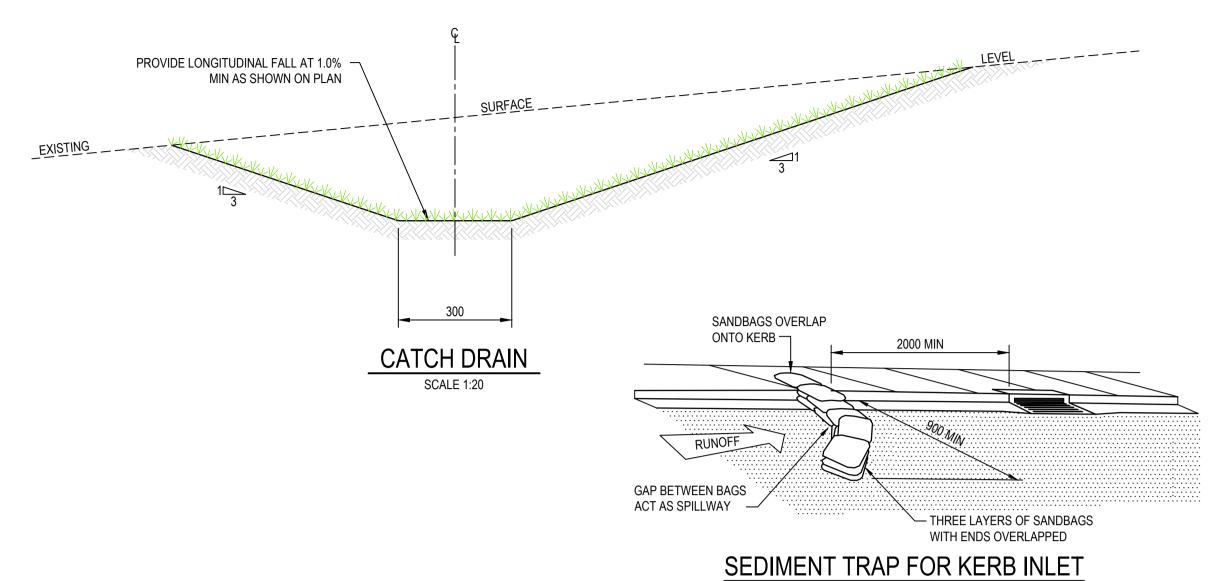


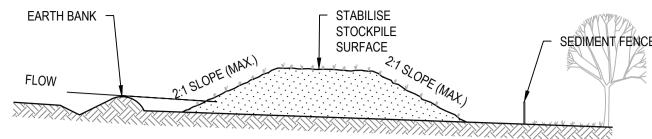




TEMPORARY CONSTRUCTION EXIT (SHAKER PAD DETAIL)

THE EXIT SHALL BE MAINTAINED IN A CONDITION WHICH PREVENTS TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS OF WAY. THIS MAY REQUIRE REPAIR AND OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS OF WAY MUST BE REMOVED IMMEDIATELY.

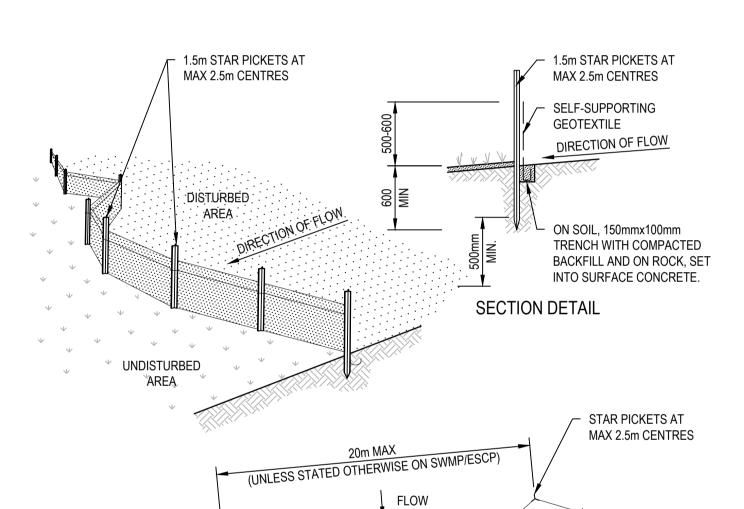




CONSTRUCTION NOTES

- PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
- 2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
- WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m IN HEIGHT.
- WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESCP OR SWMP TO REDUCE THE C-FACTOR TO LESS THAN 0.10.
- CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-5) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-8) 1 TO 2m DOWNSLOPE.

STOCKPILES (SD 4-1)



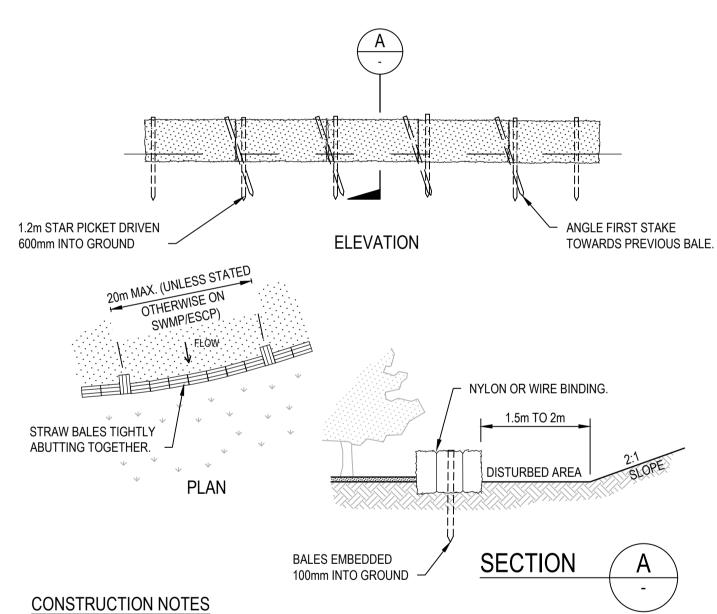
CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE. BUT WITH SMALL RETURNS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW IF CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.

PLAN

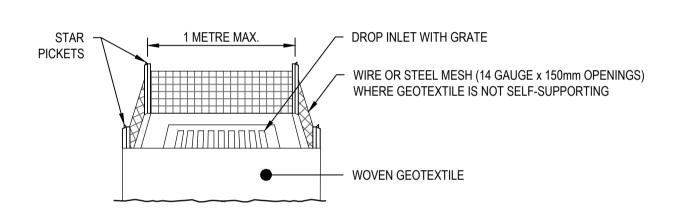
- 2. CUT A 150mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE ENTRENCHED.
- 3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
- 4. FIX SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHADE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
- 5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
- 6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

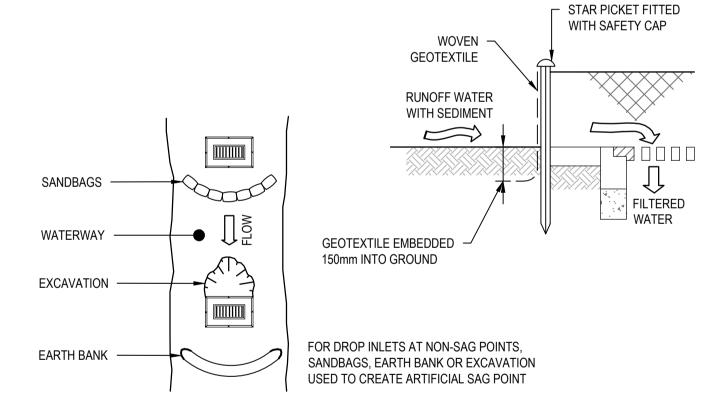
SEDIMENT FENCE (SD 6-8)



- CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE
- 2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN
- BALES. STRAWS ARE TO BE PLACED PARALLEL TO GROUND.
- 3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE. 4. EMBED EACH BALE IN THE GROUND 75mm TO 100mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY LAID BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS
- ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS. 5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
- 6. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER (SD 6-7)





CONSTRUCTION NOTES

(ON GRADE - SANDBAG) NOT TO SCALE

- FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
- 2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES OR GEOFABRIC. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
- 3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN
- 4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER (SD 6-12)

1. Erosion Hazard an	d Se	dime	ent B	asin	S		
Site Name:	218 By	218 Byron Road					
Site Location:	Leppington						
Precinct/Stage:							
Other Details:							
Site area	Sub-c	atchm	ent or	Name	of Stru	cture	Notes
Site area	D						Notes
Total catchment area (ha)	0.802						
Disturbed catchment area (ha)	0.802						

1 1								
Soil analysis (enter sediment type if known, or laboratory particle size data)								
Sediment Type (C, F or D) if known:	D	D	D	D	D		From Appendix C (if known)	
% sand (fraction 0.02 to 2.00 mm)							Enter the percentage of each soil	
% silt (fraction 0.002 to 0.02 mm)							fraction. E.g. enter 10 for 10%	
% clay (fraction finer than 0.002 mm)							ilidotoli. E.g. chici 10 loi 1070	

Rainfall data						
Dainfall data						
Soil Texture Group	D	D	D	D	D	Automatic calculation from above
% of whole soil dispersible						See Section 6.3.3(e). Auto-calculated
Dispersion percentage						E.g. enter 10 for dispersion of 10%
% clay (fraction finer than 0.002 mm)						
% silt (fraction 0.002 to 0.02 mm)						fraction. E.g. enter 10 for 10%
, , , , , , , , , , , , , , , , , , ,						Enter the percentage of each soil

Design rainfall depth (no of days) See Section 6.3.4 and, particularly, Design rainfall depth (percentile) Table 6.3 on pages 6-24 and 6-25. x-day, y-percentile rainfall event (mm) Rainfall R-factor (if known) Only need to enter one or the other here IFD: 2-y ear, 6-hour storm (if known) DUCLE Foo

RUSLE Factors							
Rainfall erosivity (R-factor)	2020						Auto-filled from abov e
Soil erodibility (K-factor)	0.034						
Slope length (m)	100						
Slope gradient (%)	6						RUSLE LS factor calculated for a high
Length/gradient (LS -factor)	1.68						rill/interrill ratio.
Erosion control practice (P -factor)	1.3	1.3	1.3	1.3	1.3	1.3	
Ground cov er (C-factor)	1	1	1	1	1	1	

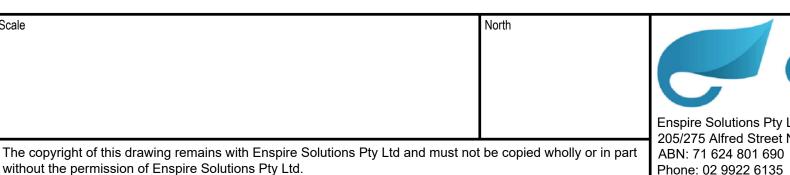
ediment Basin Design Criteria (for Type D/F basins only. Leave blank for Type C basins)							
torage (soil) zone design (no of months)	2						Minimum is generally 2 months
v (Volumetric runoff coefficient)	0.51						See Table F2, page F-4 in Appendix F

Calculations and Type D/F Sediment Basin Volumes Soil loss (t/ha/yr) Soil Loss Class See Table 4.2, page 4-13 Conversion to cubic metres Soil loss (m³/ha/y r) See Sections 6.3.4(i) for calculations Sediment basin storage (soil) v olume (m³) See Sections 6.3.4(i) for calculations Sediment basin settling (water) volume (m³ Sediment basin total v olume (m³)

NB for sizing of Type C (coarse) sediment basins, see Worksheet 3 (if required).

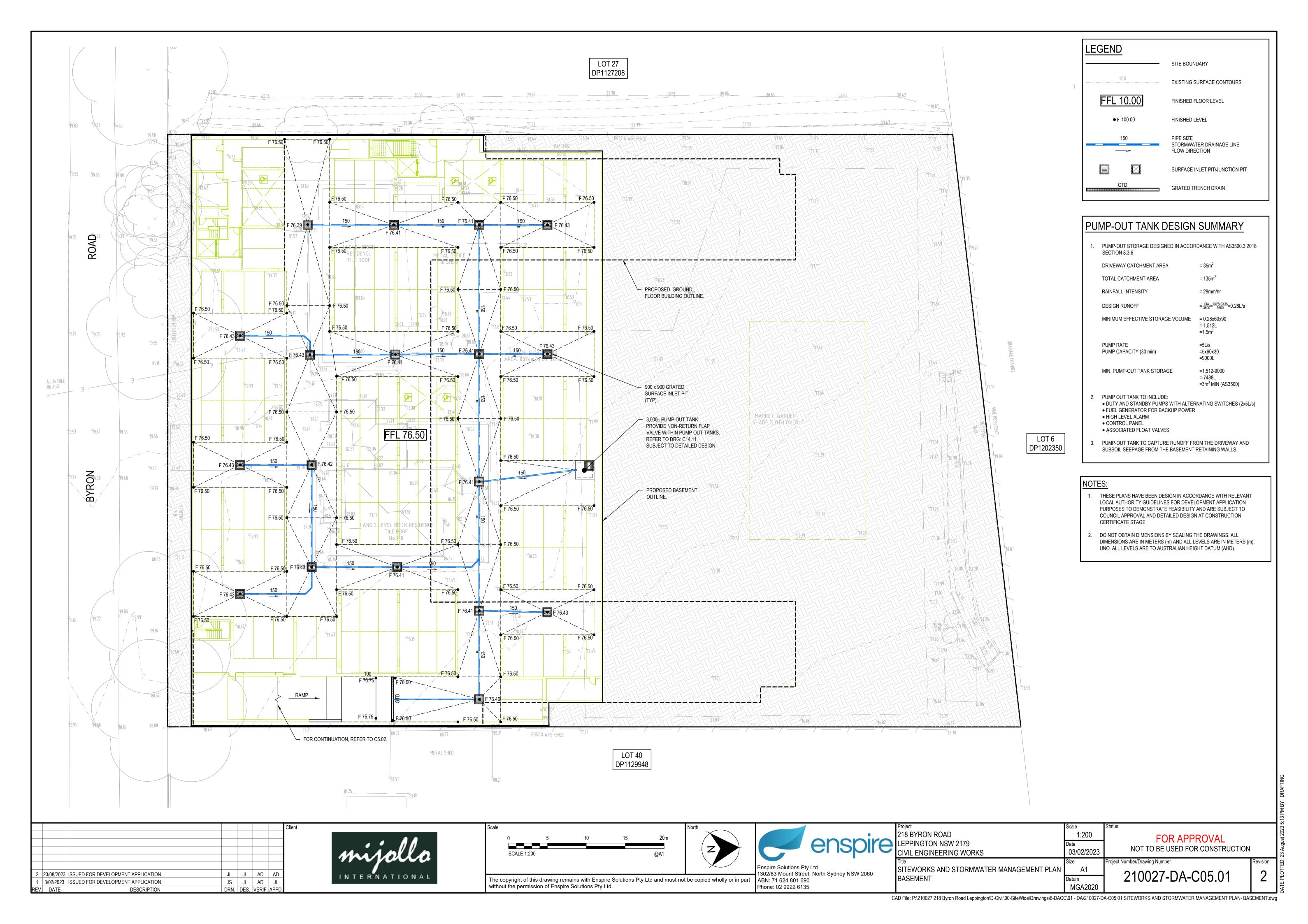
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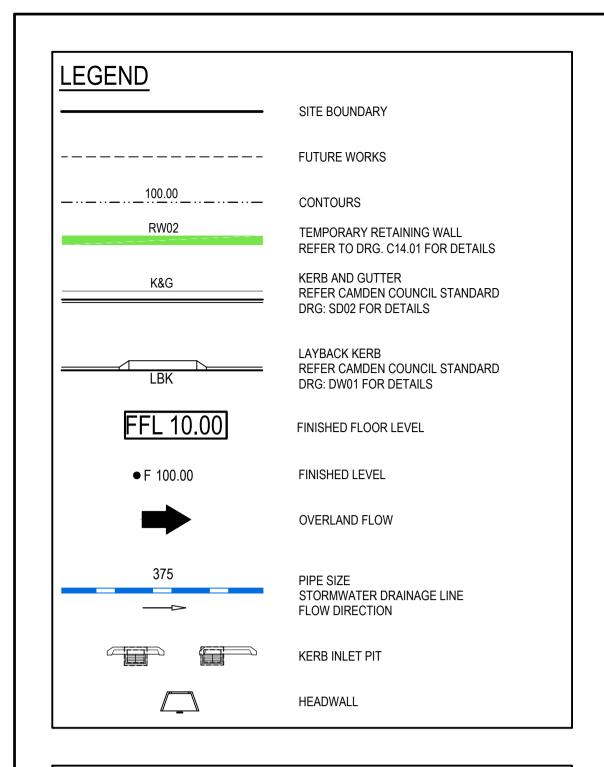






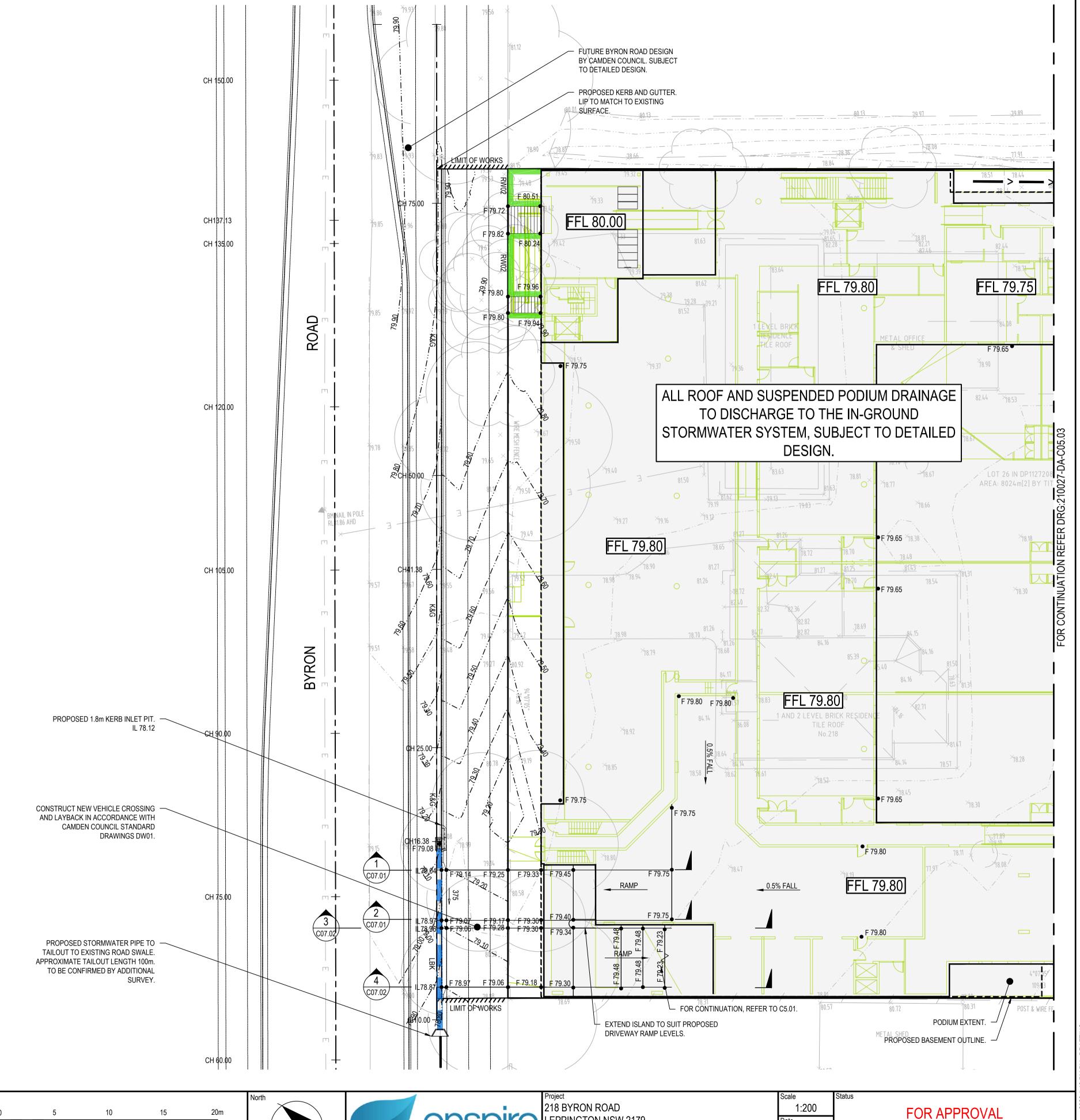
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EPPINGTON NSW 2179	Date		
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	Datum	210027-DA-C03.21	ı
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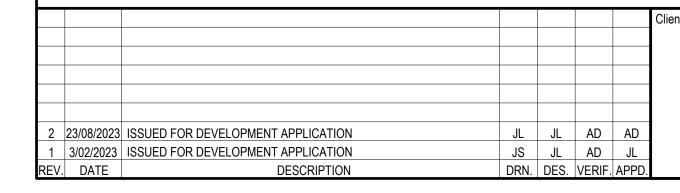




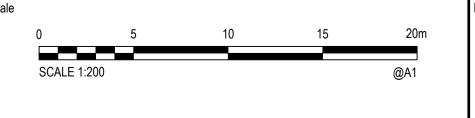
NOTES

- DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWING. ALL DIMENSIONS ARE IN METRES (m), UNO. ALL LEVELS ARE IN AUSTRALIAN HEIGHT DATUM (AHD)
- RUN ALL STORMWATER PIPEWORK @ 1% (MIN) UNO. CONNECT TO DOWNPIPE MIN.
- 600mm BELOW FFL. BOUNDARY LEVELS ARE TO BE DETERMINED BY COUNCIL.
- ALL ROOF AND SUSPENDED PODIUM DRAINAGE TO DISCHARGE TO THE IN-GROUND
- STORMWATER SYSTEM, SUBJECT TO DETAILED DESIGN.
- DOWNPIPE LOCATIONS IS SUBJECT TO DETAILED DESIGN.
- PUBLIC DOMAIN LEVELS ARE SUBJECT TO DETAILED DESIGN. CONTRACTOR TO CONFIRM THE LEVELS OF EXISTING SERVICES WITHIN THE SITE AND
- PUBLIC DOMAIN PRIOR TO CONSTRUCTION

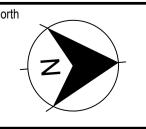


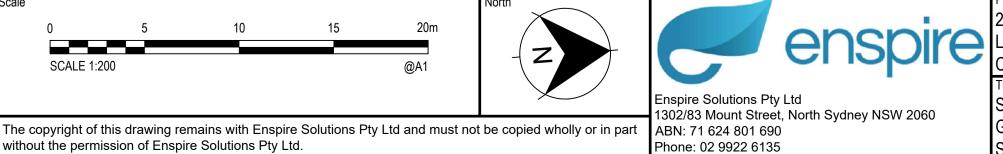






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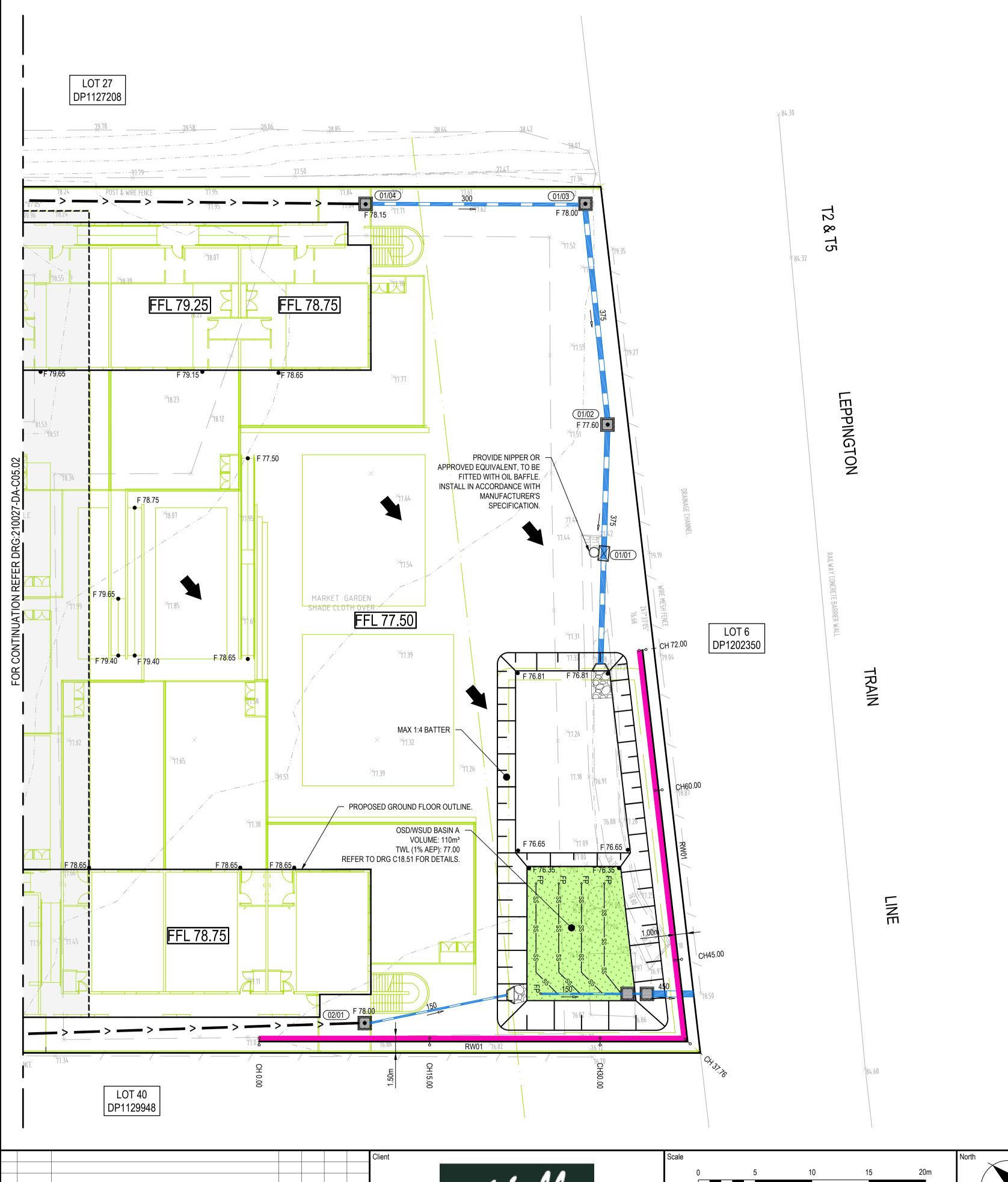


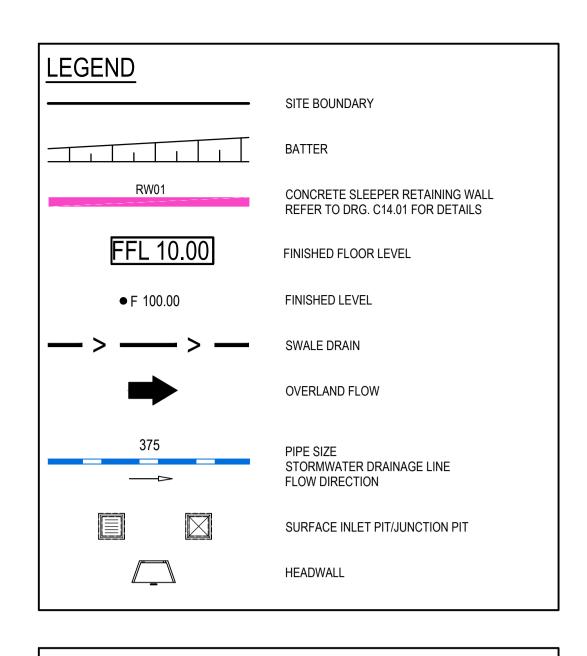
LEPPINGTON NSW 2179 CIVIL ENGINEERING WORKS 03/02/2023 SITEWORKS AND STORMWATER MANAGEMENT PLAN GROUND FLOOR MGA2020 SHEET 01

NOT TO BE USED FOR CONSTRUCTION

2

210027-DA-C05.02





NOTES

- 1. DO NOT OBTAIN DIMENSIONS BY SCALING THE DRAWING. ALL DIMENSIONS ARE IN METRES (m), UNO. ALL LEVELS ARE IN AUSTRALIAN HEIGHT DATUM (AHD)
- 2. RUN ALL STORMWATER PIPEWORK @ 1% (MIN) UNO. CONNECT TO DOWNPIPE MIN. 600mm BELOW FFL.
- 3. BOUNDARY LEVELS ARE TO BE DETERMINED BY COUNCIL.
- 4. ALL ROOF AND SUSPENDED PODIUM DRAINAGE TO DISCHARGE TO THE IN-GROUND
- STORMWATER SYSTEM, SUBJECT TO DETAILED DESIGN.
- DOWNPIPE LOCATIONS IS SUBJECT TO DETAILED DESIGN. 6. PUBLIC DOMAIN LEVELS ARE SUBJECT TO DETAILED DESIGN.
- CONTRACTOR TO CONFIRM THE LEVELS OF EXISTING SERVICES WITHIN THE SITE AND
- PUBLIC DOMAIN PRIOR TO CONSTRUCTION

DESIGN SUMMARY

- PRE-DEVELOPMENT IMPERVIOUS AREA = 0.0401 Ha, 5%
- POST-DEVELOPMENT IMPERVIOUS AREA = 0.5394 Ha, 67.2% INCREASE IN IMPERVIOUS AREA = 0.4993 Ha

WATER QUANTITY

OSD CALCULATED USING DRAINS WITH ARR 1987 PROCEDURE.

	ARI	PRE-DEVELOPMENT RUNOFF (L/s)	POST-DEVELOPMENT FLOW (L/s)	POST-DEVELOPMENT FLOW ATTENUATED (L/s)
l	2YR	116	239	114
l	20YR	271	326	206
l	100YR	335	388	330

OSD VOLUME REQUIRED

 $= 77.2 \text{ m}^3$

THE STORMWATER MANAGEMENT PLAN HAS BEEN DESIGNED IN ACCORDANCE WITH CAMDEN COUNCIL'S DEVELOPMENT CONTROL PLAN 2019 2.3 WATER MANAGEMENT.

WATER QUALITY

REFER TO ENSPIRE REPORT FOR FURTHER DETAILS.

TREATMENT NODES:

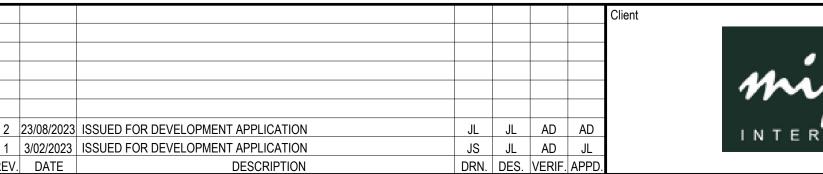
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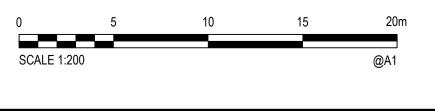
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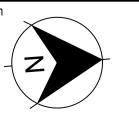
POLLUTANT REDUCTION STANDARDS % REDUCTION ACHIEVED % GP TSS 85 85.2 65 85.7

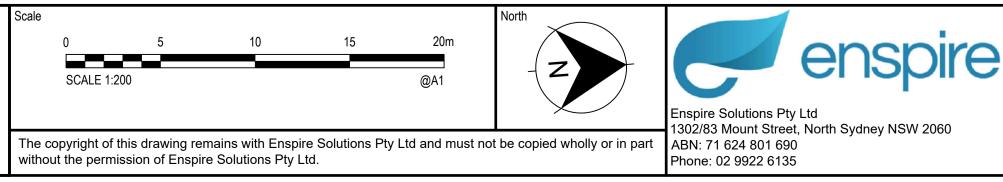
MUSIC MODEL PARAMETERS IN ACCORDANCE WITH CAMDEN COUNCIL'S ENGINEERING DESIGN SPECIFICATIONS 2017.

45



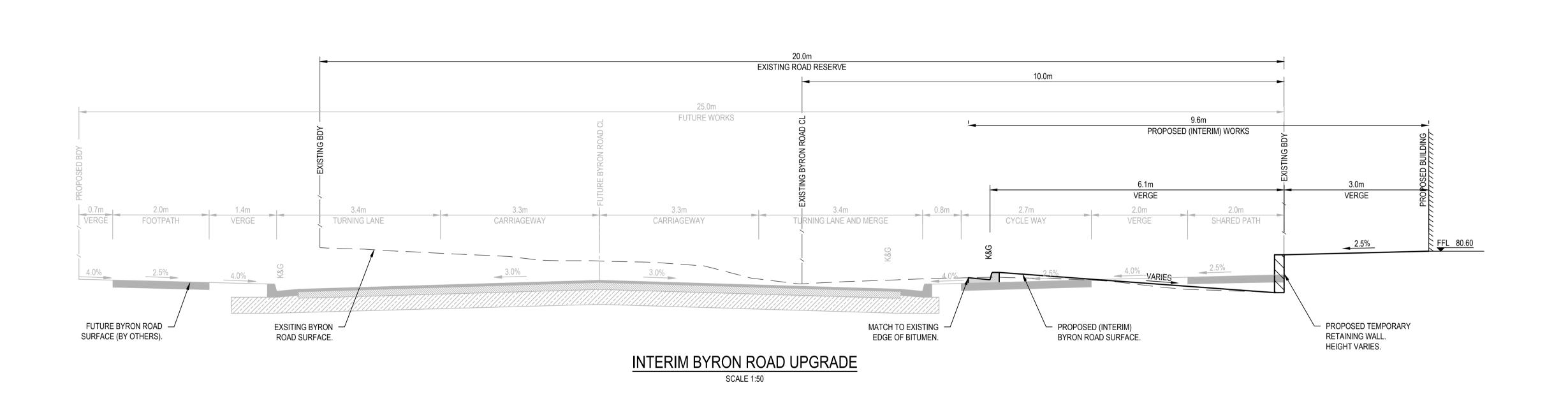


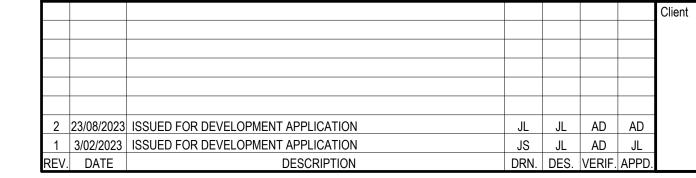




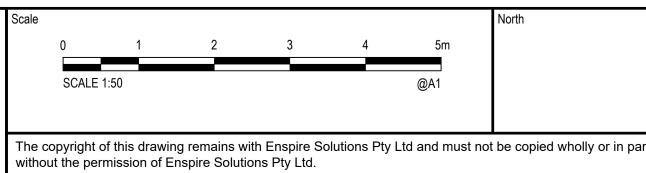
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218 BYRON ROAD
LEPPINGTON NSW 2179
CIVIL ENGINEERING WORKS
Title
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PPINGTON NSW 2179 VIL ENGINEERING WORKS Size Project Number/Drawing Number Revision Revision
VIL ENGINEERING WORKS U3/U2/2U23 Size Project Number/Drawing Number Revision TEWORKS AND STORMWATER MANAGEMENT PLAN A1
TEWORKS AND STORMWATER MANAGEMENT PLAN 41
TEWORKS AND STORMWATER MANAGEMENT PLAN A1 210027 DA COE 02 2
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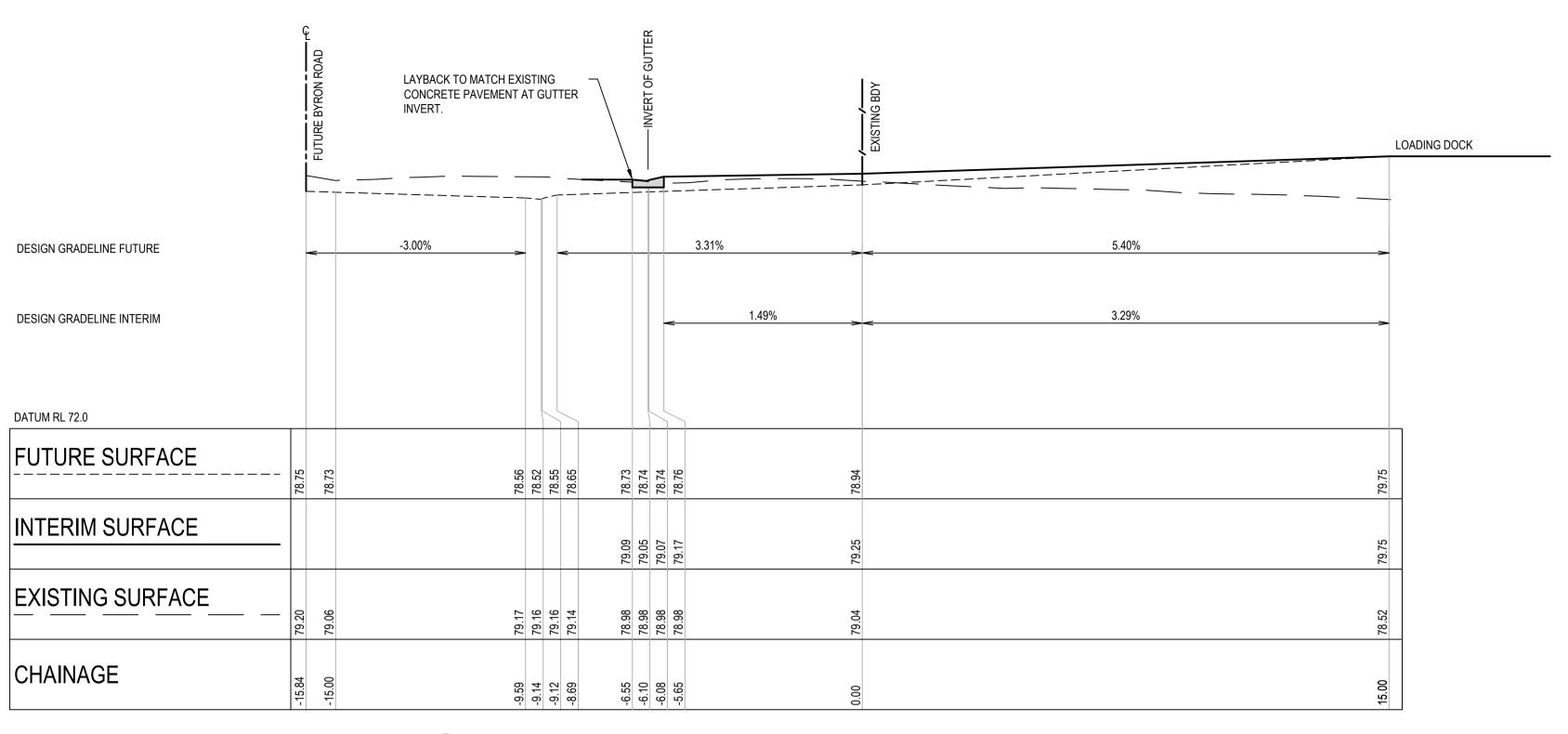






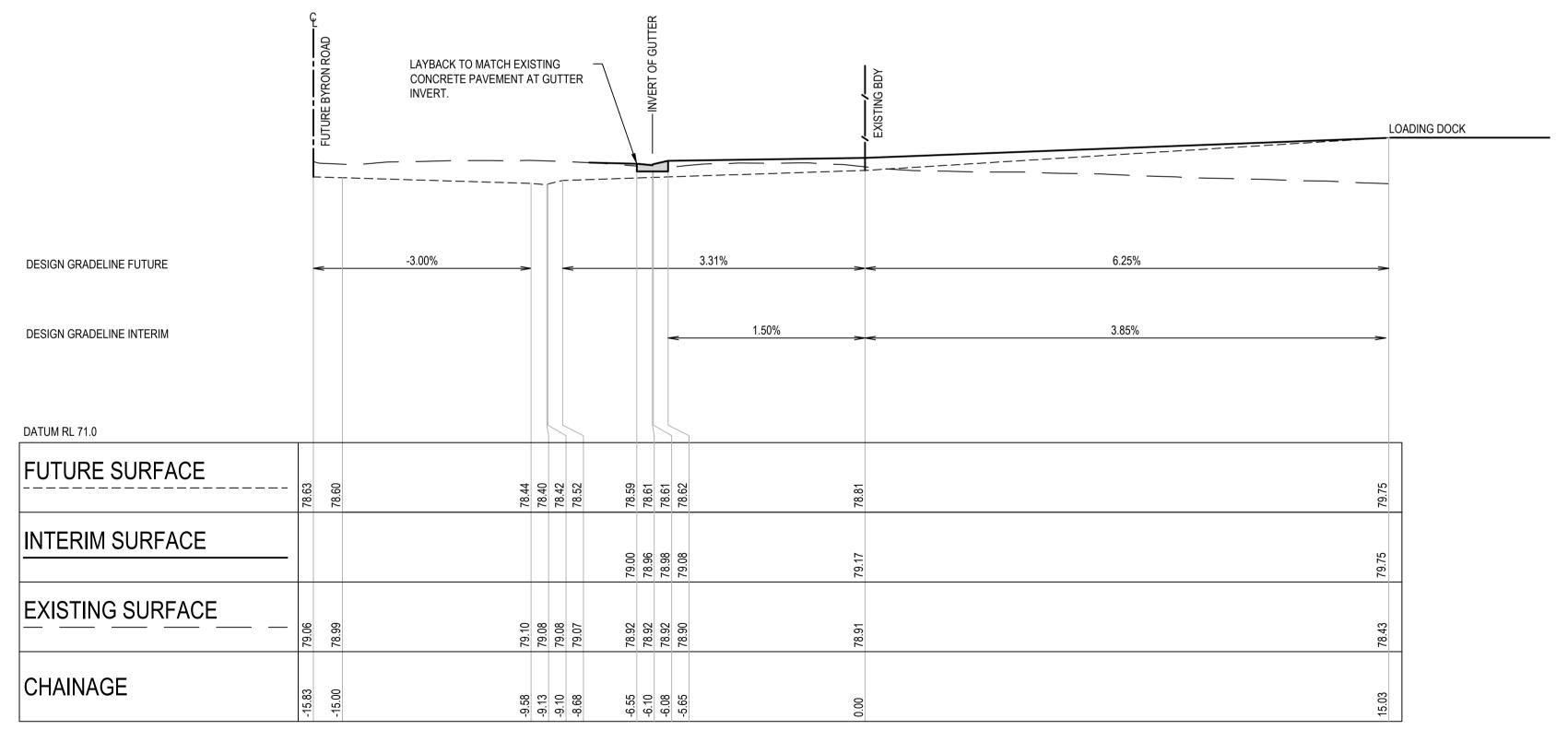
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	Enspire Solutions Pty Ltd 1302/83 Mount Street, North Sydney NSW 2060	В
oart	ABN: 71 624 801 690 Phone: 02 9922 6135	

Project	Scale	Status
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DRIVEWAY LONGITUDINAL SECTION SCALE 1:100

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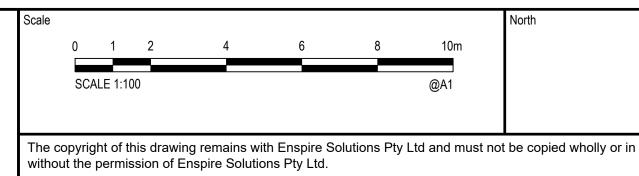


DRIVEWAY LONGITUDINAL SECTION SCALE 1:100

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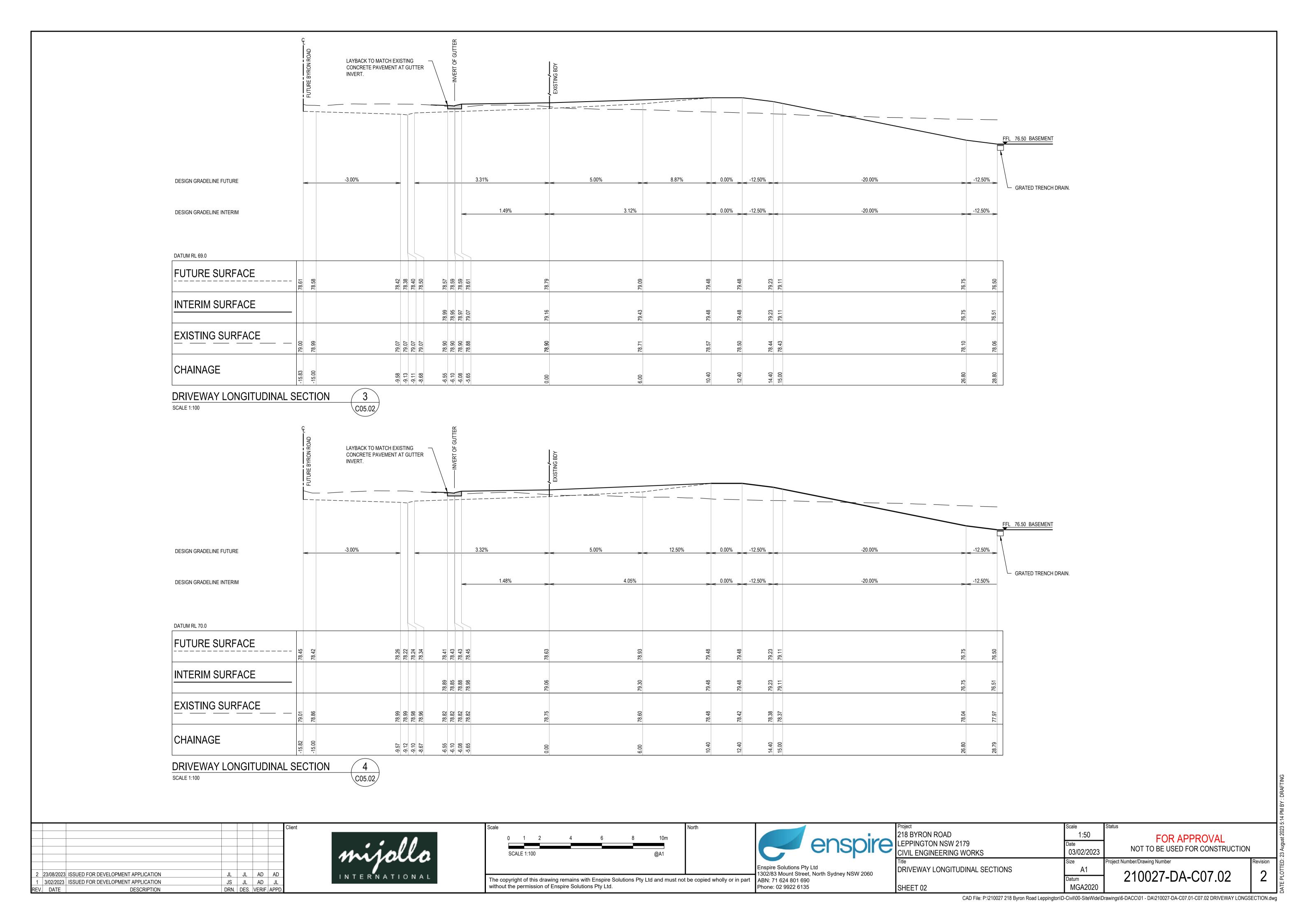
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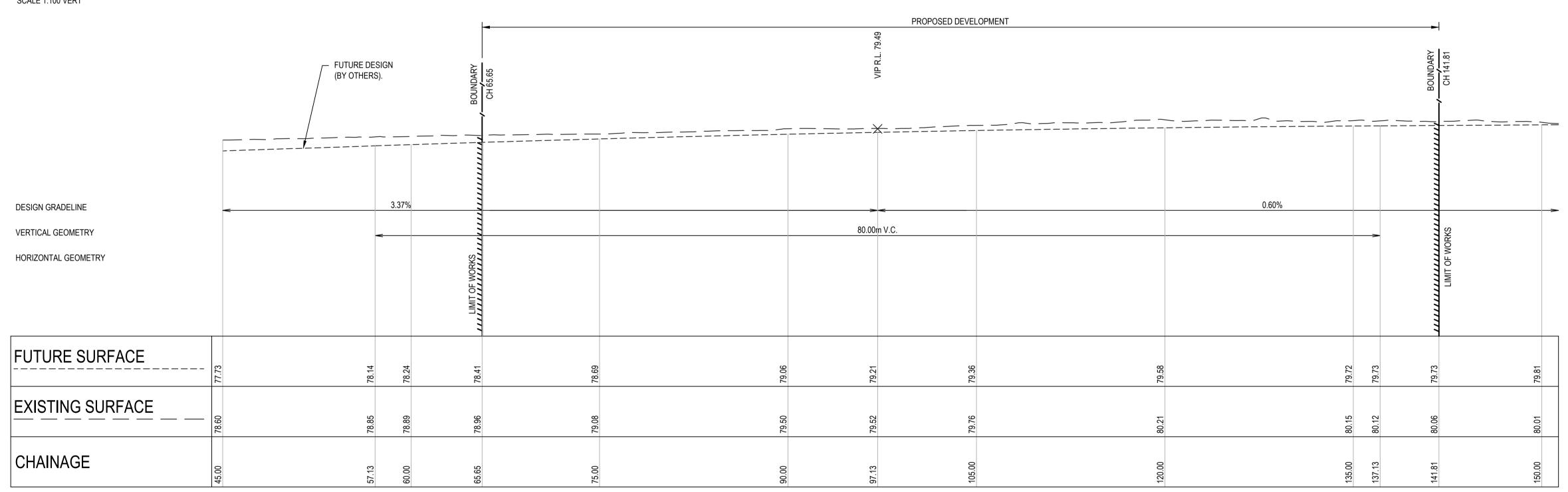
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PROPOSED DEVELOPMENT 1.70% -0.10% 2.00% **DESIGN GRADELINE** 50.00rn V.C. 20.00rn V.C. VERTICAL GEOMETRY HORIZONTAL GEOMETRY DATUM RL 71.0 FUTURE SURFACE 79.81 79.81 79.81 PROPOSED SURFACE 79.78 79.79 79.82 **EXISTING SURFACE** 79.71 79.75 79.76 CHAINAGE 74.11 75.00 76.49

KR01 LONGITUDINAL SECTION

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BYRON ROAD ULTIMATE LONGITUDINAL SECTION

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> NOTE 1 BYRON R

BYRON ROAD CENTERLINE HAS BEEN PROVIDED
 FOR INFORMATION ONLY. NO WORKS PROPOSED
 UNDER THIS DEVELOPMENT APPLICATION.

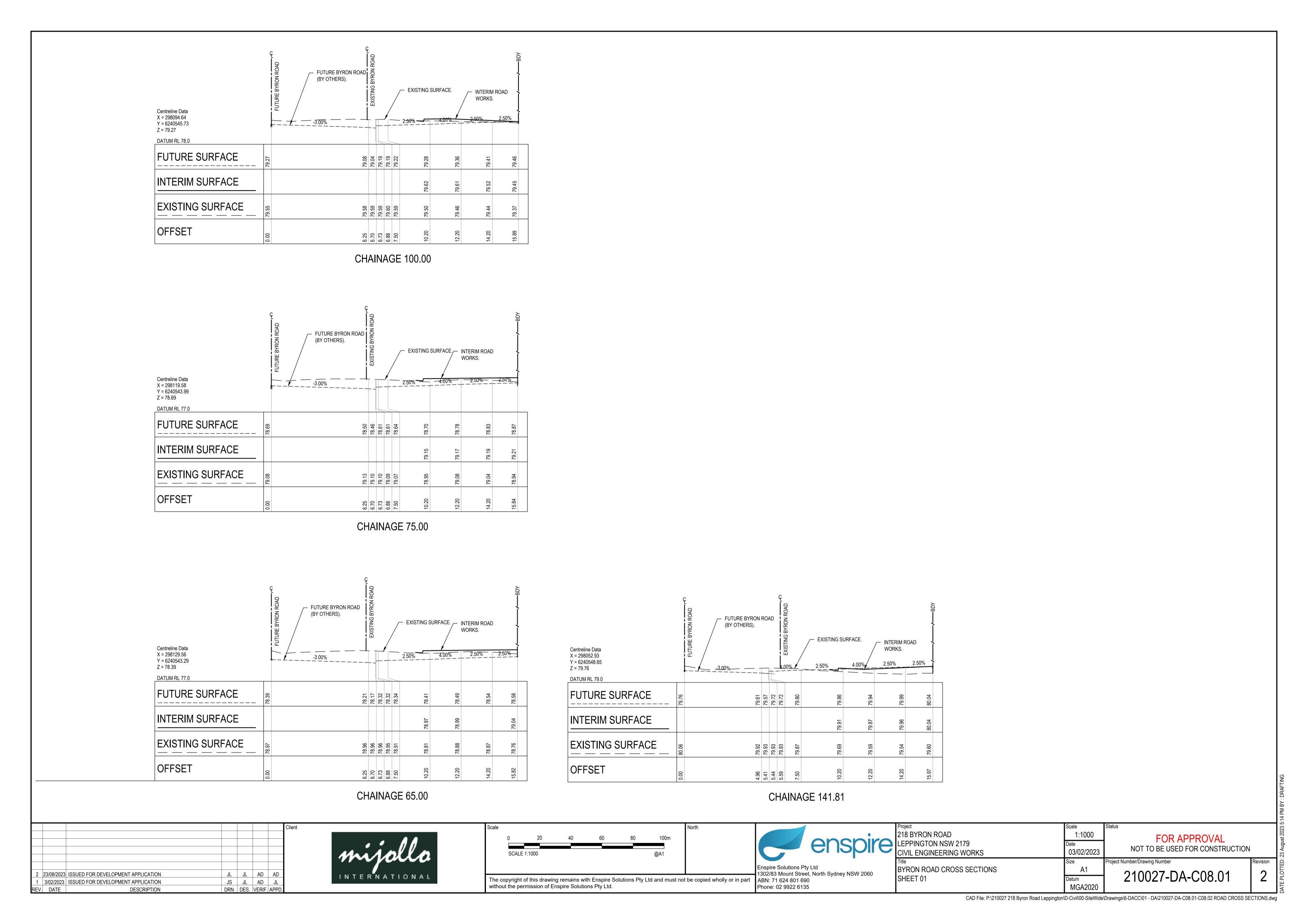
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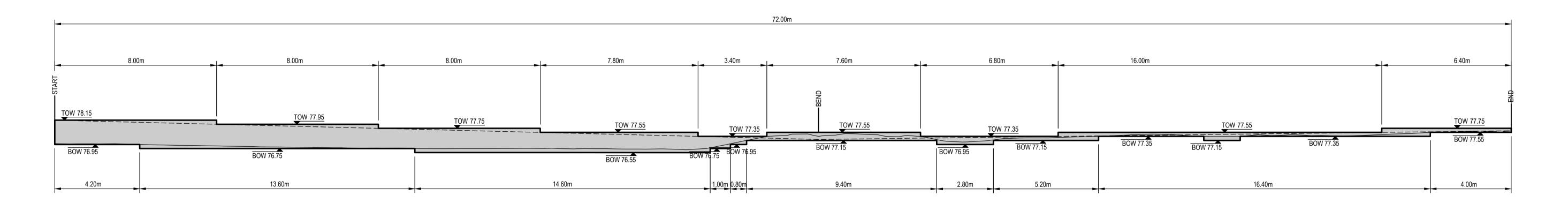
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	Enspire Solutions Pty Ltd 1302/83 Mount Street, North Sydney NSW 2060	В
art	ABN: 71 624 801 690 Phone: 02 9922 6135	

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ELEVATION OF RETAINING WALL 1 HORI SCALE 1:100 VERT SCALE 1:100

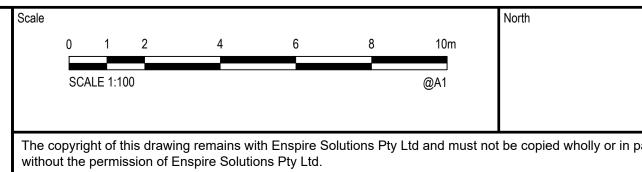
NOTES:

1. RW1 TOW TO MATCH EXISTING SURFACE LEVEL OF ADJACENT LOT TO MAINTAIN OVERLAND FLOWPATH.

2. SUBJECT TO FURTHER SURVEY AND DETAILED DESIGN.

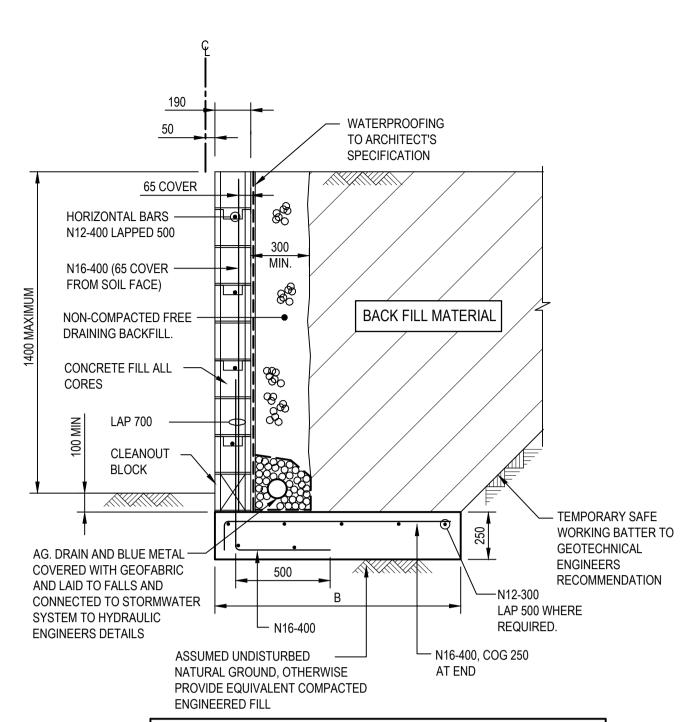
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	Enspire Solutions Pty Ltd 1302/83 Mount Street, North Sydney NSW 2060
n part	ABN: 71 624 801 690 Phone: 02 9922 6135

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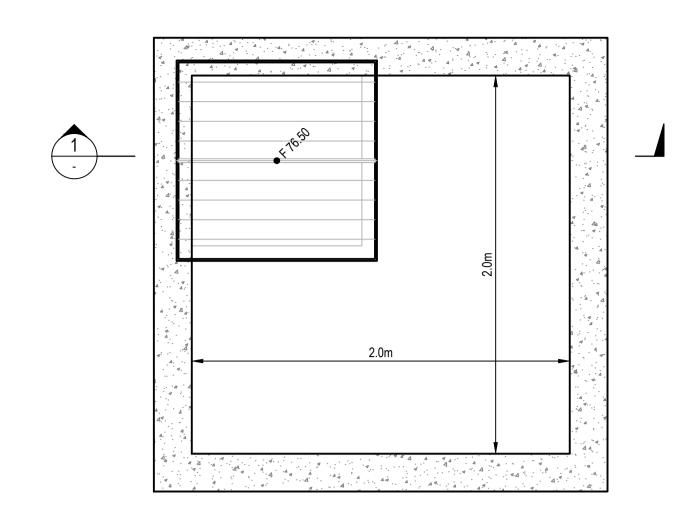


	RETAINING WALL SCHEDULE
	STRUCTURE CLASSIFICATION B
	ASSUMED BACKFILL MATERIAL Ø=25°
	FT & FIRM CLAY OF MEDIUM TO HIGH PLASTICITY, SILTY AYS, LOOSE VARIABLE CLAY FILL, LOOSE SANDY SILTS
Н	В
800	800
1000	900
1200	1000
1400	1100

1. - THIS WALL HAS BEEN DESIGNED FOR A LIVE LOAD SURFACE SURCHARGE OF 5kPa (STRUCTURE **CLASSIFICATION B)**

- 2. POSITION WALL STARTER BARS ACCURATELY BY TEMPLATES OR SIMILAR MEANS.
- 3. FOUNDATION. MIN. ALLOWABLE BEARING PRESSURE OF 100 kPa
- 4. PLACE NO BACKFILL AGAINST REINFORCED CONCRETE BLOCK RETAINING WALLS UNTIL 14 DAYS AFTER FILLING ALL CORES WITH CONCRETE BLOCK MIX
- 5. CONCRETE CORE FILL TO BE POURED AND PLACED WITH A PENCIL VIBRATOR TO ENSURE FULL AND DENSE FILLING OF ALL CORES.
- 6. CONSTRUCT RETAINING WALLS USING "DOUBLE U-BLOCKS"
- 7. IN EARTHQUAKE PRONE AREAS (eg. ADELAIDE, GEELONG, GOULBURN, LATROBE, NEWCASTLE) AND/OR SITES WITH A SOIL PROFILE CONSISTING OF >6m OF SOFT CLAYS, LOOSE SANDS, SILTS OR UNCONTROLLED FILLS, THE ABOVE TABLES DO NOT APPLY, CONSULT STRUCTURAL ENGINEER FOR F

MASONRY RETAINING WALL



PUMP-OUT TANK

900x900 CLEAR OPENING. PROVIDE 2x900x450 CLASS 'C' GALVANIZED MILD STEEL GRATES HINGED TO FRAME. INSTALL STEP IRONS IN ACCORDANCE WITH AS1657. REFER DETAIL. 900x900x400 SUMP BELOW ACCESS

SCALE 1:20

REFER STRUCTURAL ENGINEERS DETAILS FOR TANK STRUCTURE.
A CONFINED SPACES WARNING SIGN IS TO BE INSTALLED IN THE TANK AT THE ACCESS LOCATION.

SECTION

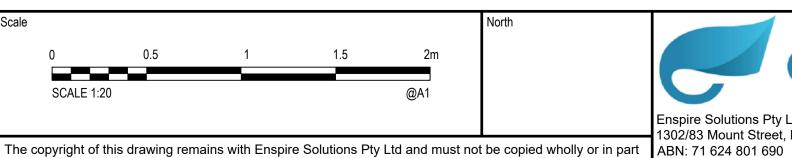
- 3. PUMP-OUT TANK TO INCLUDE:
- 3.1.1 SUBMERSIBLE DUTY AND STANDBY PUMPS WITH (SPECIFIED BY OTHERS) WITH ALTERNATING SWITCHES (MIN 2x5L/s)
- 3.1.2 FUEL GENERATOR FOR BACKUP POWER
- 3.1.3 HIGH LEVEL ALARM
- 3.1.4 CONTROL PANEL
- 3.1.5 ASSOCIATIVE FLOAT VALVES
 4. PROVIDE MOSQUITO AND VERMIN PROTECTION TO ALL INLETS AND OUTLETS. CIFICATIONS.

DC	T. THOUSE MOODON'S AND VERMINAT NOTEOTION TO A
DU FOR RETAINING WALL DETAIL	5. PROVIDE WATERPROOFING TO ARCHITECTS SPECIFI
FOR RETAINING WALL DETAIL.	

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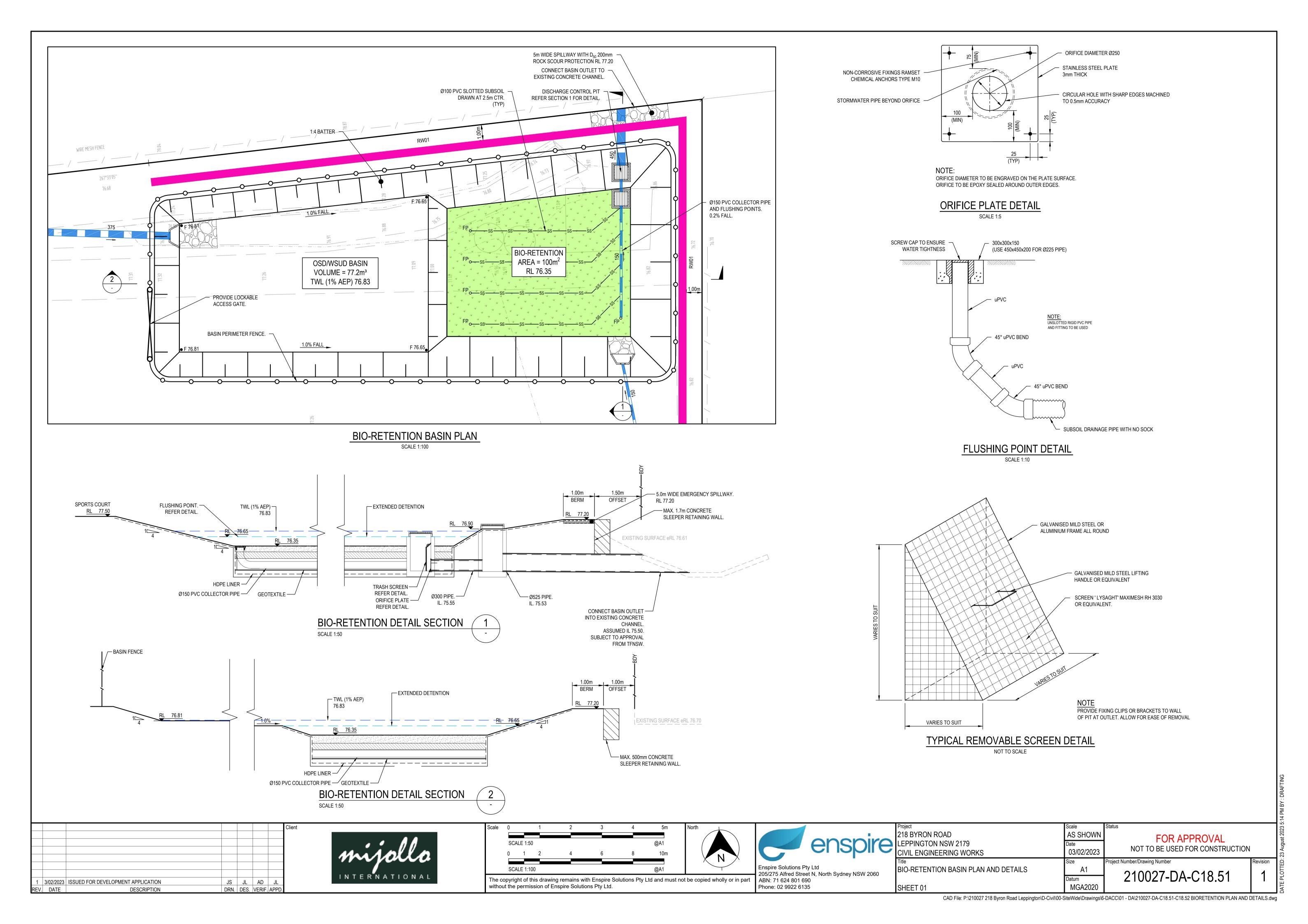
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1	3/02/2023	ISSUED FOR DEVELOPMENT APPLICATION	JS	JL	AD	JL	
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		Datum	210027-DA-C14.11	_	
		MGA2020			<u> </u>



RAINGARDEN NOTES:

- 1. ALL BIORETENTION SYSTEMS ARE TO BE LINED TO RETAIN WATER. LINING CAN INCLUDE CLAY LINING (MIN. 300mm COMPACTED THICKNESS), HDPE WATERTIGHT MEMBRANE 1.5mm THICK, GEOSYNTHETIC CLAY LINERS (i.e. BENTOFIX). THE LINER IS TO EXTEND TO THE SURFACE OF THE MEDIA LAYER WHERE NO BUILDINGS ARE LOCATED NEXT TO THE SYSTEM. IF BUILDINGS ARE LOCATED NEXT TO THE SYSTEM THE LINER IS TO BE ATTACHED 100mm ABOVE THE EXTENDED DETENTION DEPTH TO THE SIDE OF THE BUILDING. INSTALL A LAYER OF NON-WOVEN NEEDLE PUNCHED GEOFABRIC, SUCH AS BIDIM A34 OR APPROVED EQUIVALENT UNDER AND OVER HDPE LINERS TO MINIMISE THE RISK OF DAMAGE CAUSED BY ROCKS IN THE SUBSOIL. ALL HDPE LINERS SHALL HAVE WELDED WATER TIGHT JOINTS.
- 2. LINER SUBGRADE SHALL BE COMPACTED TO 95% STANDARD DRY DENSITY AND TO FORM CONTINUOUS BED FREE OF VOIDS AND FREE OF SHARP OBJECTS TO PREVENT TEARING. SUBGRADE SHALL BE GRADED AS SHOWN ON THE DRAWINGS TO FORM ROUNDED BASE. LINER TO HAVE ALL WELDED JOINTS SEALED IN ACCORDANCE WITH PRODUCT SPECIFICATIONS TO ENSURE THE SYSTEM IS WATERTIGHT. LINER NEEDS TO BE APPROPRIATELY KEYED INTO THE BATTERS AND EMBANKMENTS AND WRAPPED UP AGAINST DRAINAGE PITS TO TOP OF SOIL LAYER WITH CONSIDERATION TO PROTRUSIONS THROUGH THE LINERS SUCH AS OUTLET PIPES.
- 3. THE UNDERDRAIN FOR THE BIORETENTION SYSTEM SHALL BE 100mm SUBSOIL DRAINAGE PIPE TO THE REQUIREMENTS OF AS2439 PART 1 ACCORDING TO THE FOLLOWING:
- MAXIMUM OF SPACING 2.5m.
- THE MINIMUM CLEAR OPENING FOR SLOTS SHOULD BE 1500mm²/m WITH THE MAXIMUM SLOT WIDTH OF 1.5mm.
- ALL PIPE JUNCTIONS AND CONNECTIONS TO THE OUTLET PIT SHALL BE SEALED TO PREVENT SOIL ENTERING THE PIPE NETWORK.
- FILTER CLOTH WRAPPINGS OR SOCKS ARE <u>NOT</u> PERMITTED AROUND SLOTTED UNDERDRAINS.
- AN INSPECTION WELL SHALL BE PROVIDED BY EXTENDING THE UNDERDRAIN VERTICALLY BEYOND THE SURFACE OF THE BIORETENTION SYSTEM BY A MINIMUM OF 100mm. ALL VERTICAL SECTIONS OF THE UNDERDRAIN SHALL NOT BE PERFORATED AND SHALL BE CAPPED WITH SECURED SCREWS TO REDUCE THE RISK OF VANDALISM. USE 45 DEGREE ELBOWS RATHER THAN 90 DEGREE ELBOWS TO FACILITATE ENTRY OF MAINTENANCE EQUIPMENT.
- THE CAP IS TO BE POSITIONED ON THE BANK OF THE RAINGARDEN.
- 4. UNDERDRAINS SHALL BE LAID IN A MINIMUM OF 300mm DRAINAGE LAYER COMPRISED OF FINE GRAVEL (2-5mm), WITH <2% FINES AND HYDRAULIC CONDUCTIVITY OF 4000mm/hr. THE DRAINAGE LAYER DEPTH MUST ENSURE AT
- LEAST 50mm COVER OVER THE UNDERDRAIN. BRIDGING CRITERIA SHALL BE APPLIED TO AVOID MIGRATION OF THE TRANSITION LAYER INTO THE DRAINAGE LAYER. D15 (DRAINAGE LAYER) \leq 5 x D85 (TRANSITION LAYER). 5. WHERE INDICATED ON THE DESIGN DRAWINGS A TRANSITION LAYER SHALL BE
- INCLUDED. THE TRANSITION LAYER MATERIAL SHALL BE CLEAN, WELL GRADED SAND MATERIAL (TYPICALLY 1mm) CONTAINING < 2% FINES. THE PARTICLE SIZE DISTRIBUTION OF THE SAND SHALL BE ASSESSED TO MEET BRIDGING CRITERIA THAT THE SMALLEST 15% OF THE SAND PARTICLES BRIDGE WITH THE LARGEST 15% OF THE FILTER MEDIA. D15 (TRANSITION LAYER) ≤5 x D85 (FILTER MEDIA).
- 6. BIORETENTION FILTER MEDIA SHALL COMPLY WITH THE FOLLOWING: - HAVE A MINIMUM HYDRAULIC CONDUCTIVITY OF 200mm/hr. THIS SHOULD BE MEASURED ACCORDING TO ASTM F1815-06: STANDARD TEST METHODS FOR SATURATED HYDRAULIC CONDUCTIVITY, WATER RETENTION, POROSITY, AND BULK DENSITY OF PUTTING GREEN AND SPORTS TURF
- ROOT ZONES METHOD. - HAVE TOTAL CLAY AND SILT MIX LESS THAN 3% (w/w) TO REDUCE THE LIKELIHOOD OF STRUCTURAL COLLAPSE OF SUCH SOILS.
- THE FILTER MEDIA SHALL BE WELL GRADED LOAMY SAND WITHOUT GAP IN THE PARTICLE SIZE GRADING AND THE COMPOSITION SHALL NOT BE DOMINATED BY A SMALL PARTICLE SIZE RANGE. THE FOLLOWING IS A GUIDE FOR THE FILTER MEDIA PARTICLE SIZE DISTRIBUTION:

CLAY & SILT	<3%	(<0.05mm)
VERY FINE SAND	5-30%	(0.05-0.15mm)
FINE SAND	10-30%	(0.15-0.25mm)
MEDIUM TO COARSE SAND	40-60%	(0.25-1.0mm)
COARSE SAND	7-10%	(1.0-2.0mm)
FINE GRAVEL	<3%	(2.0-3.4mm)

- FILTER MEDIA SHALL BE TESTED (ACCORDING TO AS4419-2003 (SOILS FOR LANDSCAPING AND GARDEN USE)) TO COMPLY WITH THE FOLLOWING: a. TOTAL NITROGEN (TN) CONTENT <1000mg/kg
- ii. ORTHOPHOSPHATE (P0) CONTENT <20mg/kg
- iii. ORGANIC MATTER CONTENT TO BE LESS THAN 5% (w/w)
- iij. PH 5.5-7.5 (PH 1:5 IN WATER)
- v. ELECTRICAL CONDUCTIVITY (EC) <1.2dS/m vi. DISPERSIBILITY - TESTING TO BE UNDERTAKE IF SOIL IS
- SUSPECTED TO BE SUSCEPTIBLE TO STRUCTURAL COLLAPSE.

RAINGARDEN NOTES (CONTINUED)

7. AN ALTERNATIVE OPTION FOR BIORETENTION FILTER MEDIA IF THE ABOVE IS NOT AVAILABLE IS AN ENGINEERED FILTER MEDIA. THIS IS A WASHED, WELL-GRADED SAND WITH APPROPRIATE HYDRAULIC CONDUCTIVITY (SUCH AS MATERIALS USED FOR CONSTRUCTION OF GOLF GREENS). THE TOP 100mm OF THE FILTER MEDIA SHALL THEN BE AMELIORATED WITH APPROPRIATE ORGANIC MATTER, FERTILISER AND TRACE ELEMENTS AS SHOWN BELOW:

CONSTITUENT	QUANTITY (kg/100m² FILTER AREA)
GRANULATED POULTRY MANURE FINES	50
SUPERPHOSPHATE	2
MAGNESIUM SULPHATE	3
POTASSIUM SULPHATE	2
TRACE ELEMENT MIX	1
FERTILISER NPK (16.4.14)	4
LIME	20

- 8. POTENTIAL FILTER MEDIA SHALL BE ASSESSED BY A HORTICULTURIST TO ENSURE THAT THEY ARE CAPABLE OF SUPPORTING A HEALTHY VEGETATION COMMUNITY.
- 9. THE BIORETENTION FILTER MEDIA SHALL BE TESTED TO DEMONSTRATE COMPLIANCE WITH THE ABOVE MENTIONED REQUIREMENTS AT THE FOLLOWING FREQUENCIES:
 - FOR BIORETENTION SYSTEMS <500m³, ONE SAMPLE PER 500m³ OF FILTER
 - FOR BIORETENTION SYSTEMS >500M³, ONE SAMPLE PER 500m³ OF FILTER MEDIA FOR THE HYDRAULIC CONDUCTIVITY TEST PLUS ONE SAMPLE PER 2000m³ OF FILTER MEDIA FOR ALL OTHER REQUIRED TESTS.
- 10. TESTING SHALL BE UNDERTAKEN ON THE ACTUAL MATERIAL TO BE DELIVERED TO THE SITE. THE SUPPLIER AND CONTRACTOR WILL BE RESPONSIBLE FOR ENSURING THE FILTER MEDIA MEETS THE SPECIFICATIONS AND THE CORRECT MATERIAL IS DELIVERED TO THE SITE PRIOR TO INSTALLATION. THE SUPPLIER SHALL ARRANGE FOR THE FILTER MEDIA TO BE TESTED BY A CERTIFIED SOIL LABORATORY IN ACCORDANCE WITH THE ABOVE SPECIFICATIONS. ON THE BASIS OF THE TESTING, THE SOIL LABORATORY AND SUPPLIER SHALL CERTIFY THAT THE MATERIAL MEETS THESE SPECIFICATIONS. THE CONTRACTOR SHALL PROVIDE A COPY OF THE SUPPLIER'S CERTIFICATION, TEST RESULTS AND SUPPLY DOCKET TO THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) FOR REVIEW AND APPROVAL.
- 11. AN IN-SITU MEASUREMENT OF HYDRAULIC CONDUCTIVITY SHALL BE UNDERTAKEN FOLLOWING COMPLETING THE CONSTRUCTION OF THE BIORETENTION SYSTEM AND PRIOR TO HANDOVER OF THE SYSTEM. THIS TESTING SHALL BE ACCORDING TO FAWB (FACILITY FOR ADVANCING WATER BIOFILTRATION) PRACTICE NOTE 1: IN-SITU MEASUREMENT OF HYDRAULIC CONDUCTIVITY (HATT AND LE COUSTUMER, 2009), WHICH CAN BE FOUND IN HTTP://WWW.MONASH.EDU.AU/FAWB/PUBLICATIONS/INDEX.HTML
- 12. THE FILTER MEDIA SHALL BE LIGHTLY COMPACTED DURING INSTALLATION TO PREVENT MIGRATION OF FINE PARTICLES. A SINGLE PASS OF COMPACTING MACHINERY (VIBRATING PLATE FOR SMALL SYSTEMS AND DRUM LAWN ROLLER FOR LARGER SYSTEMS) SHALL BE USED. NO HEAVY COMPACTION OR MULTI-PASS SHALL BE MADE.
- 13.FILTER MEDIA SHALL BE INSTALLED IN TWO LIFTS FOR DEPTHS OF OVER 500mm.
- 14. THE BIORETENTION SYSTEMS SHALL BE CONSTRUCTED TO THE FOLLOWING TOLERANCES:

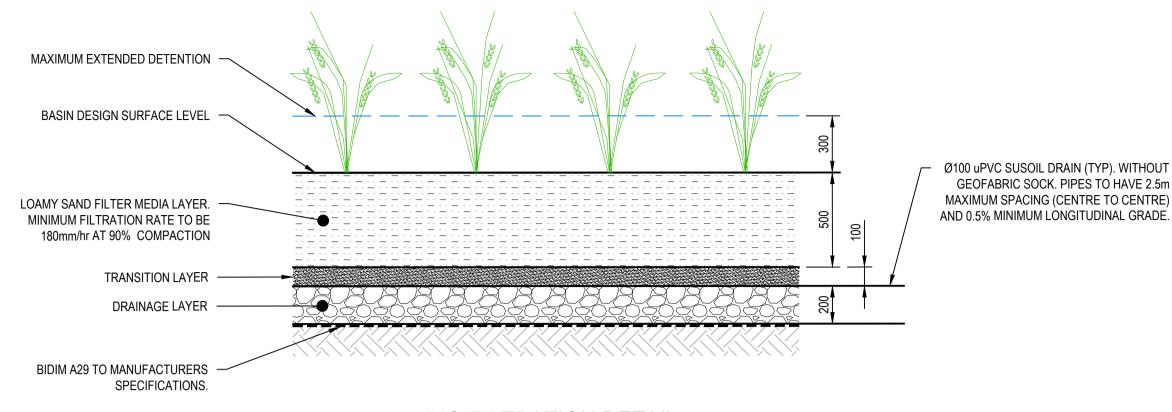
BIORETENTION ELEMENT	TOLERANCE
HYDRAULIC STRUCTURES (OVERFLOW PIT AND PIPE)	+/-5mm
WEIR	+/-50mm
UNDERDRAINS	+/-25mm
BASE OF BIORETENTION BED SLOPE	GRADE 0.5-1%, +/-50mm
DRAINAGE AND TRANSITION LAYERS	+/-25mm
SURFACE LEVEL (FILTER MEDIA SURFACE)	+/-25mm
TOP OF BATTER	+50/-0mm
INTERNAL TOE OF BATTER	+0/-50mm
	•

RAINGARDEN NOTES (CONTINUED)

15. TO ENSURE BIORETENTION SYSTEM IS NOT DAMAGED DURING THE DEVELOPMENT PHASE OF THE PROJECT. ALL UPSTREAM FLOWS ARE TO BYPASS THE RAINGARDEN, UNTIL THE SUBDIVISION CONSTRUCTION AND 80% OF THE BUILDING PHASE (CONSTRUCTION OF HOUSES AND BUILDINGS INCLUDING LANDSCAPING) ARE COMPLETED.

16. THE CONSTRUCTION OF THE BIORETENTION SYSTEMS SHALL COMPLY WITH THE FOLLOWING STEPS AND HOLD POINTS:

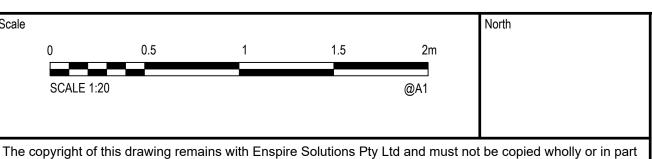
CONSTRUCTION STEP	HOLD POINT	SUBMISSION DETAILS	RELEASE OF HOLD POINT
BULK EARTHWORKS AND HYDRAULIC STRUCTURES. THIS INCLUDES: - INSTALLING OVERFLOW PIT AND OUTLET PIPE - BULK EARTHWORKS - TRIMMING AND PROFILING - OVERFLOW WEIR	-INSPECTION AND SIGN OFF TO CONFIRM COMPLIANCE WITH DESIGN AND TOLERANCES.	-AS-CONSTRUCTED SURVEY OF THE SYSTEM AT THIS STAGE INCLUDING HYDRAULIC STRUCTURES.	THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) SHALL INSPECT THE SYSTEM, REVIEW THE AS-CONSTRUCTED SURVEY. IF THE CONSTRUCTED SYSTEM CONFORMS TO THE DESIGN AND SPECIFICATIONS, A SIGN-OFF FORM SHALL BE COMPLETED WITH AS-CONSTRUCTED SURVEY.
LINER AND UNDER-DRAINAGE. THIS INCLUDES INSTALLING: - HDPE LINER - UNDERDRAINS - CLEANOUTS	-INSPECTION AND SIGN OFF TO CONFIRM COMPLIANCE WITH DESIGN AND TOLERANCES.	-SITE INSPECTION	THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) SHALL INSPECT THE SYSTEM. IF THE CONSTRUCTED SYSTEM CONFORMS TO THE DESIGN AND SPECIFICATIONS, A SIGN-OFF FORM SHALL BE COMPLETED.
SOURCE MATERIALS FOR BIORETENTION SYSTEM. THIS INCLUDES MATERIALS FOR: - DRAINAGE LAYER - TRANSITION LAYER - FILTER MEDIA	-CERTIFICATION AND SIGN OFF OF MATERIALS TO CONFIRM COMPLIANCE WITH TESTING REQUIREMENTS	-SUPPLIER CERTIFICATION (THROUGH CERTIFIED SOIL LABORATORY) THAT MATERIALS COMPLY WITH TESTING REQUIREMENTSTEST RESULTS AND SUPPLY DOCKET	THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) SHALL REVIEW THE SUBMITTED DOCUMENTATION AND IF THE MATERIALS CONFORM TO THE TESTING SPECIFICATIONS, A SIGN-OFF FORM SHALL BE COMPLETED WITH THE SUBMITTED DOCUMENTATION AS ATTACHMENTS.
CONSTRUCTION OF DRAINAGE LAYER, TRANSITION LAYER AND FILTER MEDIA	-INSPECTION TO ENSURE BIORETENTION SYSTEM LAYERS ARE CONSTRUCTED TO DESIGN SPECIFICATIONS	- AS-CONSTRUCTED SURVEY	THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) SHALL INSPECT THE SYSTEM AND TAKE PHOTOS. NO STOP TO CONSTRUCTION IS NEEDED
FINAL INSPECTION AND SIGN OFF	-INSPECTION AND SIGN OFF TO CONFIRM COMPLIANCE WITH DESIGN AND TOLERANCES	-AS-CONSTRUCTED SURVEY OF THE SYSTEM SURFACE AND SURROUNDING BUNDS. -CONFIRMATION OF PREVIOUSLY SUBMITTED AS CONSTRUCTED SURVEY FOR ENTIRE DESIGN APPROVAL.	THE DESIGNER (THROUGH THE SITE SUPERINTENDENT) SHALL INSPECT THE SYSTEM, REVIEW THE AS-CONSTRUCTED SURVEY. IF THE CONSTRUCTED SYSTEM CONFORMS TO THE DESIGN AND SPECIFICATIONS, A SIGN-OFF FORM SHALL BE COMPLETED WITH AS-CONSTRUCTED SURVEY.



BIO-FILTRATION DETAIL

3/02/2023 | ISSUED FOR DEVELOPMENT APPLICATION JS JL AD JL DRN. DES. VERIF. APPD EV. DATE DESCRIPTION

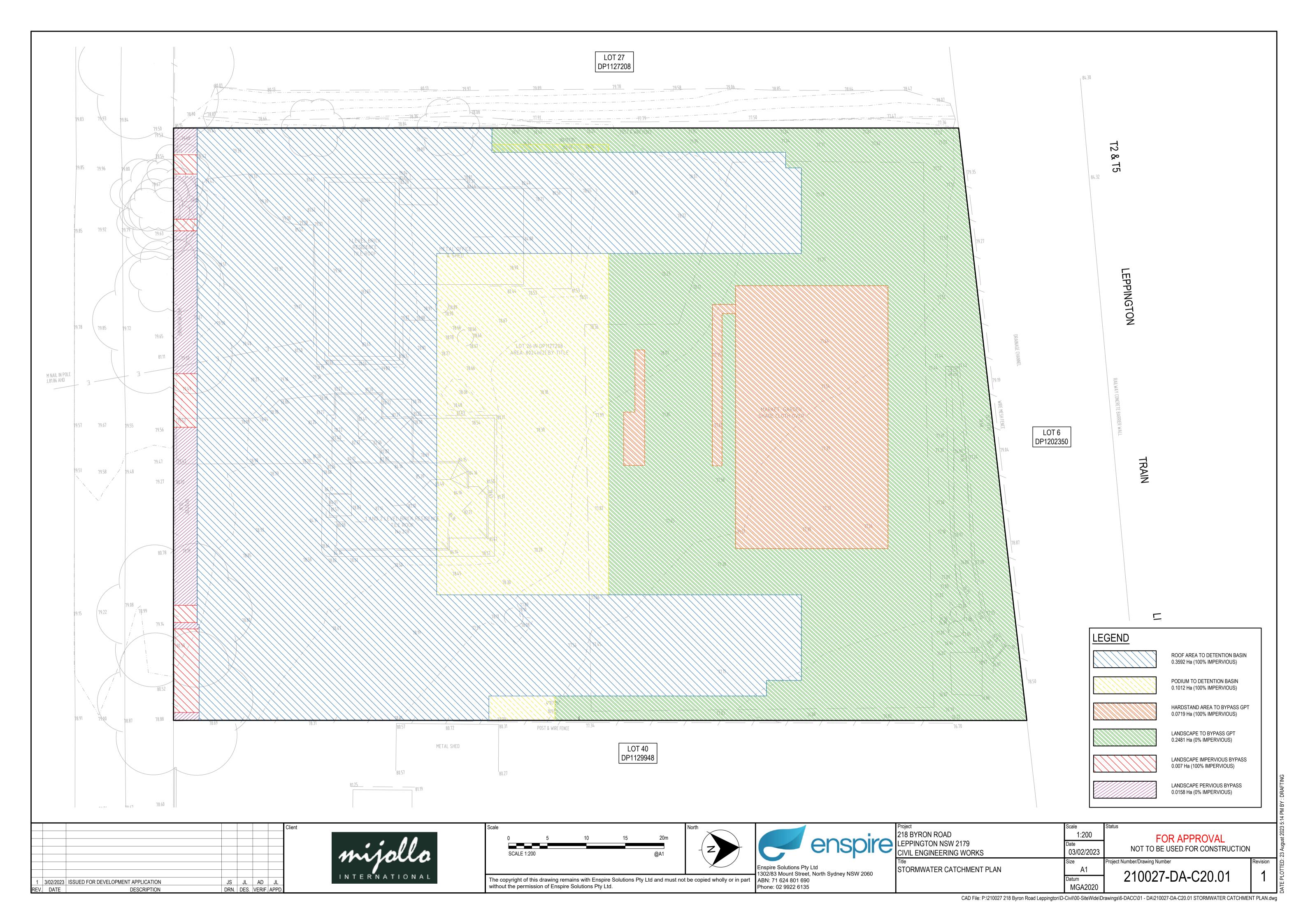




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Project	Scale	Status	
218 BYRON ROAD	1:20	FOR APPROVAL	
LEPPINGTON NSW 2179	Date	NOT TO BE USED FOR CONSTRUCTION	
CIVIL ENGINEERING WORKS	03/02/2023	NOT TO BE OBED FOR CONSTRUCTION	
Title	Size	Project Number/Drawing Number	Revision
BIO-RETENTION BASIN PLAN AND DETAILS	A1	240027 DA C40 52	1 4
	Datum	210027-DA-C18.52	
SHEET 02	MGA2020		



SAFETY IN DESIGN REPORT

INTRODUCTION

ENSPIRE HAS BEEN APPOINTED BY MIJOLLA INTERNATIONAL TO PREPARE DESIGN DOCUMENTATION FOR STORMWATER PIT AND PIPE INFRASTRUCTURE, AND STORMWATER BASIN FOR 210 BYRON ROAD, LEPPINGTON. THIS SAFETY IN DESIGN REPORT HAS BEEN DEVELOPED IN PARALLEL WITH THE DESIGN TO IDENTIFY POTENTIAL HAZARDS TO WORK HEALTH AND SAFETY AND DEVELOP RISK ASSESSMENT METHODS TO POTENTIALLY REDUCE THE LIKELIHOOD AND SEVERITY OF HAZARDS.

THIS SAFETY IN DESIGN REPORT HAS BEEN PREPARED IN ACCORDANCE WITH THE REQUIREMENTS OF THE WORK HEALTH AND SAFETY REGULATION 2017 AND THE WORK HEALTH AND SAFETY REGULATION PART 6.2 CLAUSE 295. UNDER THE WORK HEALTH AND SAFETY REGULATION DESIGNERS HAVE THE RESPONSIBILITY TO ENSURE THEIR DESIGN ELIMINATES OR MINIMISES RISKS TO HEALTH AND SAFETY AND GIVE ADEQUATE INFORMATION TO PEOPLE COMMISSIONING THE DESIGN AND UNDERTAKING CONSTRUCTION, OPERATION AND MAINTENANCE ACTIVITIES BASED ON THE DESIGN.

THIS REPORT SPECIFIES POTENTIAL HEALTH AND SAFETY RISKS AND HAZARDS ASSOCIATED WITH THE DESIGN ELEMENTS DOCUMENTED IN THIS DRAWING PACKAGE TO RELEVANT PERSONNEL DURING THE DESIGN, CONSTRUCTION, OPERATION AND MAINTENANCE, AND DEMOLITION AS WELL AS ULTIMATE DEMOLITION PROCESS AND ASSESSES THEIR LIKELIHOOD AND CONSEQUENCES. THIS REPORT PROPOSES ACTIONS AND STRATEGIES AGAINST RISKS IDENTIFIED TO ACHIEVE EFFECTIVE MITIGATION OF THE RISKS AND HAZARDS, AND ASSESSES RESIDUAL RISKS BASED ON CONTROL MEASURES BEING IMPLEMENTED. ANY SAFETY ISSUES UNRESOLVED THROUGH DESIGN ARE ALSO IDENTIFIED FOR THEIR APPROPRIATE MANAGEMENT.

THE INFORMATION CONTAINED IN THIS SAFETY IN DESIGN REPORT HAS BEEN PREPARED PRIOR TO THE COMMENCEMENT OF THE WORK ON SITE. IT DOES NOT TAKE ACCOUNT OF ANY MATTERS OR INFORMATION WHICH MAY COME TO LIGHT AFTER THAT TIME. WHEN A DESIGN IS ALTERED, AN ADDITIONAL REVIEW MUST BE CONDUCTED TO ENSURE NEW RISKS HAVE BEEN CAPTURED DUE TO MODIFICATION OF THE DESIGN. ADDITIONALLY, CLIENTS ARE REQUIRED TO INFORM ENSPIRE OF ANY EXISTING RISKS AND HAZARDS IN THE AREA WHERE CONSTRUCTION WILL TAKE PLACE.

THE RISKS IDENTIFIED IN THIS SAFETY IN DESIGN REPORT ARE PROJECT AND DESIGN SPECIFIC RISKS WHICH WOULD NOT BE EASILY RECOGNIZED BY A REASONABLY COMPETENT STAKEHOLDER. IT DOES NOT ADDRESS THE COMMON-PLACE HAZARDS OR HAZARDS WHERE KNOWN SOLUTIONS APPLY, AND WHICH ARE ASSOCIATED WITH CONSTRUCTION, OPERATION AND MAINTENANCE AND DEMOLITION GENERALLY. THESE COMMON-PLACE HAZARDS MUST BE CONTROLLED BY THE APPLICATION OF NORMAL GOOD MANAGEMENT PRACTICES.

THIS DESIGN REPORT ASSUMES THAT DURING CONSTRUCTION, OPERATION AND MAINTENANCE OF THE DEVELOPMENT, THE PRINCIPAL WILL ENGAGE EXPERIENCED AND COMPETENT PERSONNEL AS PART OF THE RESPECTIVE TENDER EVALUATION PROCESS. IT IS THE HEAD CONTRACTOR'S OBLIGATION TO PREPARE AND IMPLEMENT SITE SPECIFIC WORK HEALTH AND SAFETY MANAGEMENT PLANS TO MITIGATE COMMON RISKS ASSOCIATED WITH GENERAL CONSTRUCTION AND OPERATION ACTIVITIES IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY REGULATION 2017.

PROPOSED WORKS

- THE SCOPE OF THE MAIN ACTIVITIES INVOLVED IN THESE WORKS ARE:
- CONCEPT DESIGN OF STORMWATER INFRASTRUCTURE AND SERVICES
- FUTURE DEMOLITION

INFORMATION TRANSFER

SAFETY IN DESIGN RELIES ON EFFECTIVE DOCUMENTATION AND COMMUNICATION BETWEEN EVERYONE INVOLVED IN THE LIFE CYCLE OF THE DESIGN ELEMENTS. IN ACCORDANCE WITH THE WORK HEALTH AND SAFETY REGULATION 2017, THE DESIGNER MUST PROVIDE A COPY OF THIS SAFETY IN DESIGN REPORT TO THE PRINCIPAL CONTRACTOR IN PARALLEL WITH THE COMPLETED DESIGN DOCUMENTATION AND ENSURE THAT THE FOLLOWING ACTIONS ARE UNDERTAKEN:

- ONSITE SAFETY INDUCTIONS, INCLUDING HAZARDS IDENTIFIED IN THIS REPORT, SHOULD BE CONDUCTED FOR ALL STAFF;
- SAFETY MANAGEMENT PLANS SHOULD BE PREPARED FOR THE HAZARDS IDENTIFIED IN THIS REPORT;
- THERE SHOULD BE NO VARIATION ON DESIGN REQUIREMENTS WITHOUT CONSULTATION WITH THE ORIGINAL DESIGNERS; ONSITE MANAGEMENT OF CONTRACTORS TO ENSURE THAT HAZARDS THAT ARISE THROUGH STARTING/COMPLETION OF JOBS DOES NOT OCCUR; AND
- THIS DESIGN MAY INTERFACE WITH OTHER PLANS AND ACCOUNT SHOULD BE TAKEN OF ANY INTERFACE ISSUES.

IT IS RECOMMENDED THAT THIS SAFETY IN DESIGN REPORT BE PASSED ONTO ANY PARTICIPANT IN THE PROJECT WHO MAY EXTEND THE DESIGN OR FURTHER DEVELOP THE DESIGN.

SAFE DESIGN PROCESS

A SAFE DESIGN PROCESS SHOULD BE ENGAGED EARLY IN THE DEVELOPMENT OF THE DESIGN TO IDENTIFY ALL CONCEIVABLE RISKS AND HAZARDS THAT MAY AFFECT THE FUNDAMENTALS OF THE DESIGN AND AVOID UNNECESSARY REWORK. IT SHOULD BE IMPLEMENTED THROUGH A STRUCTURED APPROACH ACROSS EACH PHASE OF THE DESIGN PROCESS.

DELIVERY OF SAFE DESIGN FOR EACH DESIGN PHASE OF THE PROJECT HAS BEEN CARRIED OUT FOLLOWING THE STEPS

- STEP 1: PRELIMINARY RISK IDENTIFICATION

THE DESIGNER/DESIGN TEAM TO CONDUCT A PRELIMINARY ASSESSMENT AND IDENTIFY ANY POTENTIAL RISKS RELEVANT TO THE SCOPE OF DESIGN WORKS. WITH PROJECTS INVOLVING MULTIPLE DISCIPLINES, THE DESIGNER/DESIGN TEAM TO ATTEND SAFETY IN DESIGN WORKSHOP (IF APPROPRIATE) AND IDENTIFY RISKS IN CONSULTATION WITH OTHER KEY PROJECT STAKEHOLDERS.

STEP 2: RISK ASSESSMENT AND MITIGATION

THE DESIGNER/DESIGN TEAM TO ASSESS THE LIKELIHOOD AND SEVERITY OF EACH HAZARD AND DEVELOP CONTROLS AND MEASURES TO ELIMINATE OR MINIMISE THE CONSEQUENCES OF THE HAZARD.

STEP 3: VERIFICATION

ENSPIRE TO PERFORM INTERNAL VERIFICATION ON THE SAFE DESIGN RISK REGISTER PRIOR TO ISSUING TO THE CONTRACTOR AND CLIENT.

STEP 4: REVIEW DESIGN THE DESIGNER/DESIGN TEAM TO IDENTIFY ANY ALTERATIONS IN DESIGN AND REVIEW AND UPDATE RISK REGISTER ACCORDINGLY.

PROJECT REPRESENTATIVES				
ORGANISATION	PROJECT ROLE	MAIN CONTACT	CONTACT DETAILS	
MIJOLLO INTERNATIONAL	ARCHITECT	MILTON LLOYD	TEL: (02)9922 1939 EMAIL: MILTON@MIJOLLO.COM ADD: 1203/275 ALFRED ST NORTH, NORTH SYDNEY NSW 2060	
ENSPIRE SOLUTIONS	CIVIL DESIGN CONSULTANT	JONA LUCAS	TEL: 9922 6135 EMAIL: JONA.LUCAS@ENSPIRESOLUTIONS. COM.AU ADD: LEVEL 4, 153 WALKER STREET, NORTH SYDNEY NSW 2060	

	QUALITATIVE MEASURES OF LIKELIHOOD OR FREQUENCY				
LEVEL	MEASURE	CRITERIA			
1	RARE	WOULD ONLY OCCUR IN HIGHLY EXCEPTIONAL CIRCUMSTANCES THAT ARE UNLIKELY TO EXIST IN ANY PHASE OF THE DEVELOPMENT'S LIFECYCLE PERIOD. EXTREMELY REMOTE CHANCE OF OCCURRENCE IN DEVELOPMENT'S LIFECYCLE PERIOD. 'ONCE IN A LIFETIME' EVENT.			
2	UNLIKELY	NOT LIKELY TO OCCUR IN THE DEVELOPMENT'S LIFECYCLE PERIOD. A SMALL, BUT REMOTE CHANCE OF OCCURRENCE DUE TO CIRCUMSTANCES / SITUATIONS THAT COULD ARISE.			
3	POSSIBLE	LIKELY TO OCCUR AT LEAST ONCE BUT NOT EXPECTED TO OCCUR MUCH MORE THAT THIS IN THE DEVELOPMENT'S LIFECYCLE PERIOD.			
4	LIKELY	LIKELY TO OCCUR MORE THAN ONCE IN THE DEVELOPMENT'S LIFECYCLE PERIOD BUT NOT AN 'EVERYDAY' OCCURRENCE. PRECONDITIONS WILL ARISE AT TIMES THROUGHOUT THE PERIOD.			
5	ALMOST CERTAIN	WILL OCCUR. CIRCUMSTANCES OR SITUATIONS ARE LIKELY TO ARISE OFTEN THROUGHOUT THE DEVELOPMENT'S LIFECYCLE PERIOD WHICH PROVIDES THE OPPORTUNITY FOR CRYSTALLISATION OF RISK. EXPECT FREQUENT, REGULAR OCCURRENCES.			

C	QUALITATIVE MEASURES OF IMPACT - CONSEQUENCE SEVERITY							
LEVEL	MEASURE	CRITERIA						
1	INSIGNIFICANT	NO INJURIES; NO ENVIRONMENTAL IMPACT.						
2	MINOR	FIRST AID; ENVIRONMENTAL RELEASE IMMEDIATELY CONTAINED.						
3	MODERATE	MEDICAL TREATMENT; ENVIRONMENTAL RELEASE NOT IMMEDIATELY CONTAINED WITH NO DETRIMENTAL EFFECTS.						
4	MAJOR	LOST TIME AND/OR LONG-TERM INJURY/ILLNESS; ENVIRONMENTAL RELEASE NOT IMMEDIATELY CONTAINED WITH TOXIC EFFECTS.						
5	CATASTROPHIC	FATALITY; RELEASE TO THE ENVIRONMENT WITH LONG TERM OR PERMANENT TOXIC EFFECTS.						

	MATRIX FOR DETERMINATION OF RISK LEVEL										
	CATASTROPHIC	(5)	HIGH	VERY HIGH	VERY HIGH	VERY HIGH	VERY HIGH				
NCE	MAJOR	(4)	HIGH	HIGH	VERY HIGH	VERY HIGH	VERY HIGH				
CONSEQUENCE	MODERATE	(3)	MODERATE	MODERATE	HIGH	HIGH	VERY HIGH				
CONS	MINOR	(2)	LOW	LOW	MODERATE	HIGH	VERY HIGH				
	INSIGNIFICANT	(1)	LOW	LOW	LOW	MODERATE	HIGH				
			RARE (1)	UNLIKELY (2)	POSSIBLE (3)	LIKELY (4)	ALMOST CETFNSWIN (5)				
					LIKELIHOOD						

				INITIAL RISK				RESIDUAL RISK				
ITEM	ACTIVITY	HAZARD	STAGE	CONSEQUENCE RISK LEVEL RISK LEVEL		LIKELIHOOD	CONSEQUENCE	RISK LEVEL	PERSON RESPONSIBLE FOR CONTROLS	STATUS		
1		FALLING INTO BASIN WHICH HOLDS WATER	CONSTRUCTION	2	5	VERY HIGH	- PROVIDE BATTER SLOPES SUITABLE FOR SAFE EGRESS MAINTAIN WATER LEVELS IN BASIN MINIMISE PERMANENT WATER DEPTH.	2	3	MODERATE	CONTRACTOR	-
2	TREE REMOVAL	- FALL FROM HEIGHT - CRUSH INJURY FROM FALLING TREE	CONSTRUCTION	2	5	VERY HIGH	- LIMIT NUMBER OF TREES TO BE REMOVED. - CERTIFIED ARBORIST USING BEST PRACTICES RESPONSIBLE FOR TREE REMOVAL.	2	3	MODERATE	CONTRACTOR	-
3	PIPE TRENCHING	FALL INTO DEEP EXCAVATIONS	CONSTRUCTION	1	4	HIGH	- MINIMISE PIPE TRENCH DEPTH	1	2	LOW	CONTRACTOR	-
4	RETAINING WALL CONSTRUCTION	CRUSHING INJURY	CONSTRUCTION	2	5		- APPROPRIATE RETAINING WALL SYSTEM SPECIFIED TO MINIMISE HANDLING RETAINED HEIGHT ASSUMES NO LATERAL RESTRAINT AT LOW SIDE OF WALL PRIOR TO FORMATION OF FINISHED SURFACE LEVEL.	1	3	MODERATE	CONTRACTOR	-

1	3/02/2023	ISSUED FOR DEVELOPMENT APPLICATION	JS	JL	AD	JL
REV.	DATE	DESCRIPTION	DRN.	DES.	VERIF.	APPD



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Project	Scale	Status		752
218 BYRON ROAD	N.T.S	FOR APPROVAL		100
LEPPINGTON NSW 2179	Date			
CIVIL ENGINEERING WORKS	03/02/2023	NOT TO BE USED FOR CONSTRUCTION		72.4
Title	Size	Project Number/Drawing Number	Revision]
SAFETY IN DESIGN	A1	240027 DA C22 04	1	Į
	Datum	210027-DA-C23.01		٥
	MGA2020			

LANDSCAPE DA DRAWINGS CHILDCARE CENTRE

218 BYRON RD LEPPINGTON



DRAWING LIST

LIST	
Sheet Title	Date of Current
COVER PAGE	08/02/2023
GROUND FLOOR LANDSCAPE PLAN	08/02/2023
GROUND FLOOR DETAIL PLAN 1	08/02/2023
GROUND FLOOR DETAIL PLAN 2	08/02/2023
UPPER FLOOR LANDSCAPE PLAN	08/02/2023
UPPER FLOOR DETAIL PLAN 1	08/02/2023
UPPER FLOOR DETAIL PLAN 2	08/02/2023
PLANTING SCHEDULE & DETAILS	08/02/2023
	Sheet Title COVER PAGE GROUND FLOOR LANDSCAPE PLAN GROUND FLOOR DETAIL PLAN 1 GROUND FLOOR DETAIL PLAN 2 UPPER FLOOR LANDSCAPE PLAN UPPER FLOOR DETAIL PLAN 1 UPPER FLOOR DETAIL PLAN 2





08/02/23 FOR REVIEW ISSUE DATE COMMENT

AMENDMENTS

Authorities Regulations and all other relevant Authorities concerned.

steel beams & columns, wind bracing to AS 1170

and AS4055, anchor rods or bolts, tie downs, fixings etc., driveway slabs and drainage to Council's satisfaction. All timbers to be in accordance with SAA Timber Structure Code AS1720 and SAA Timber Framing Code AS 1684. All work to be carried out in a professional and workman-shiplike manner according to the plans Do not scale off the drawings unless otherwise stated and use figured dimensions in preference. All dimensions are to be checked and verified on site before the commencement of any work, all dimensions and levels are subject to final survey and set-out

All work to be carried out in accordance with the Building Code of Australia, all Local and State Government Ordinances, relevant Australian Standards, Local

All structural work and site drainage to be subject to Engineer's details or certification where required by Council. This shall include r.c. slabs and footings, r.c. and

No responsibility will be accepted by Sitedesign for any variations in design, builder's method of construction or materials used, deviation from specification without

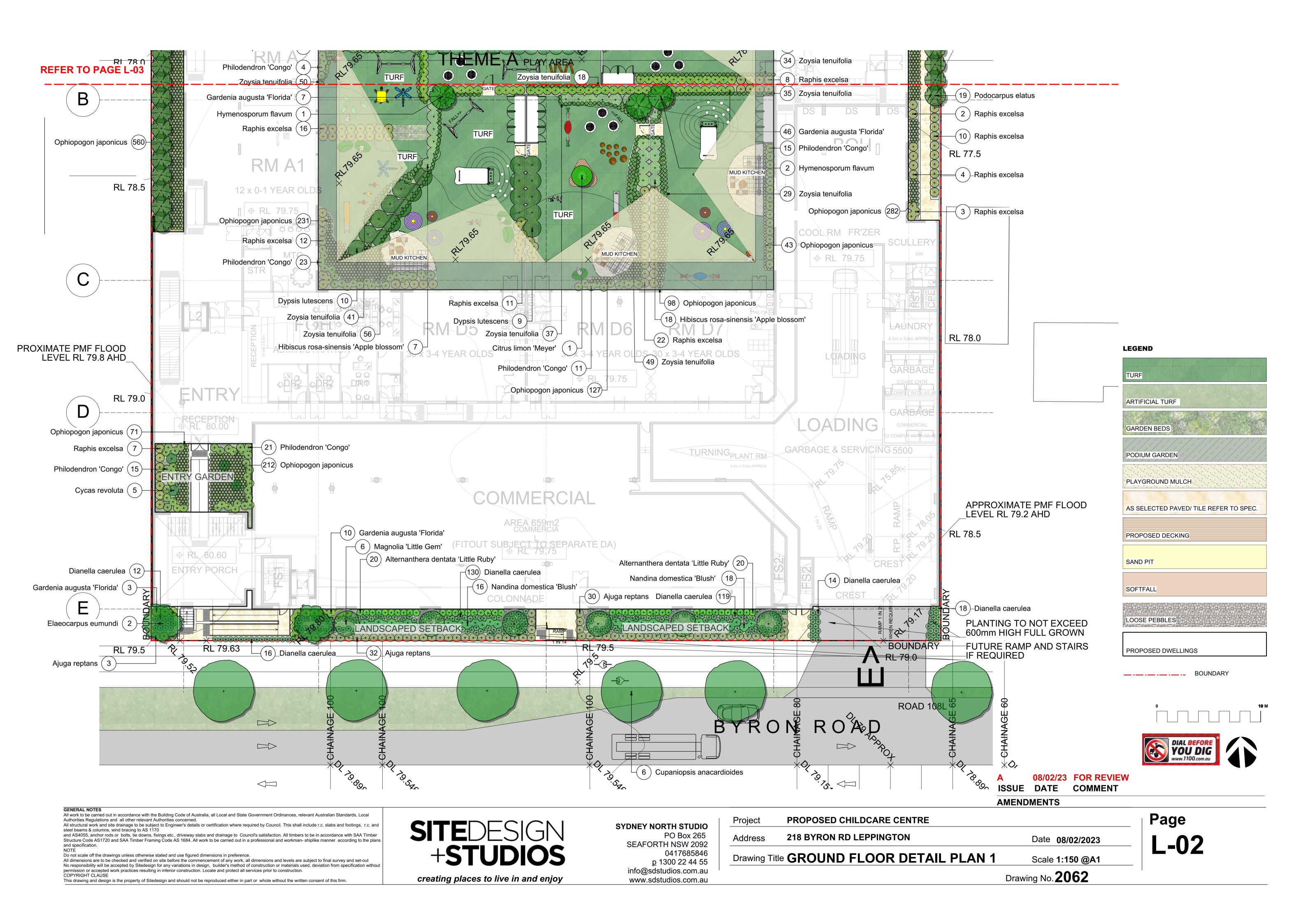
permission or accepted work practices resulting in inferior construction. Locate and protect all services prior to construction. This drawing and design is the property of Sitedesign and should not be reproduced either in part or whole without the written consent of this firm. SITEDESIGN +STUDIOS

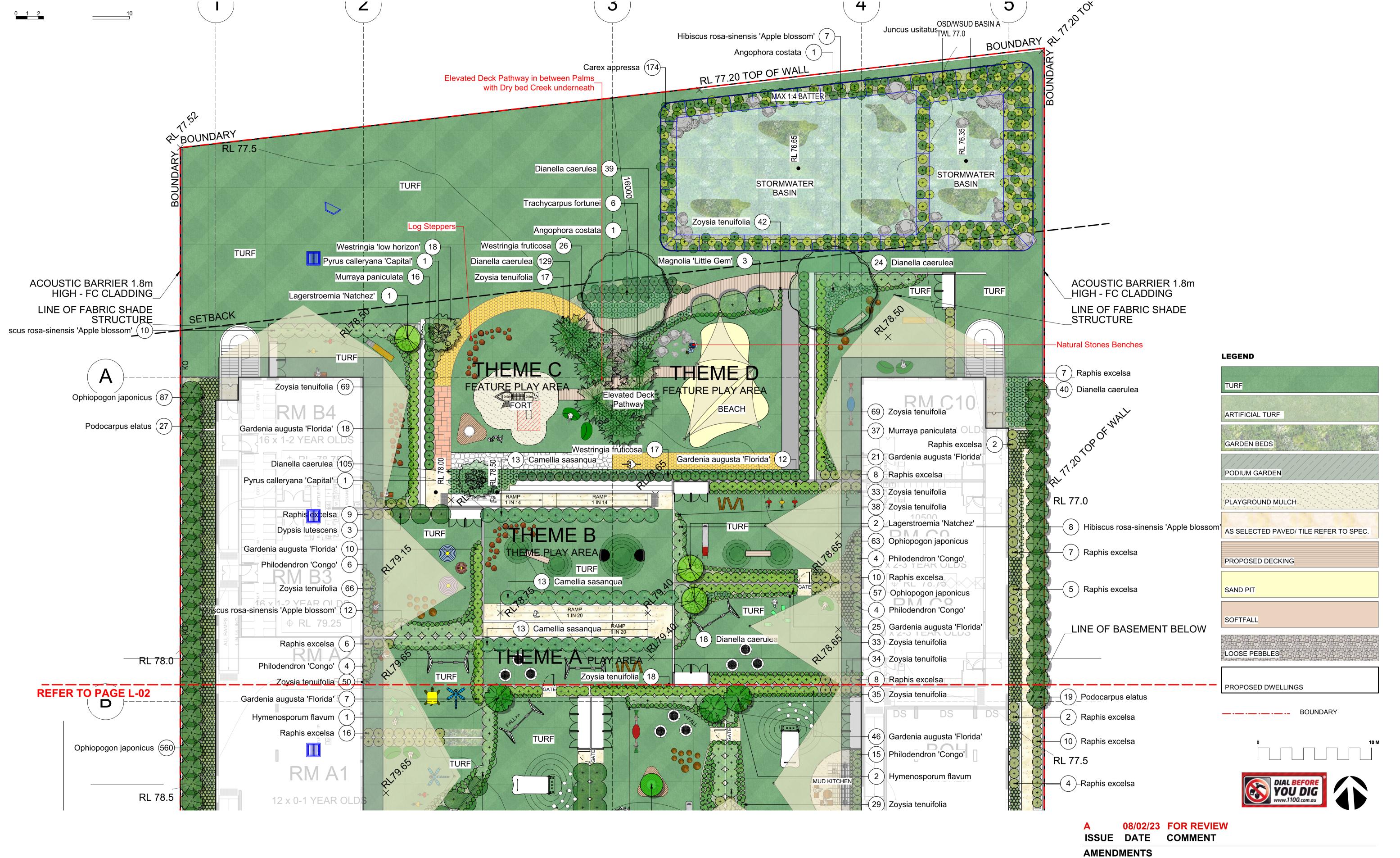
creating places to live in and enjoy

SYDNEY NORTH STUDIO PO Box 265 **SEAFORTH NSW 2092** 0417685846 <u>р</u> 1300 22 44 55 info@sdstudios.com.au www.sdstudios.com.au

Project	PROPOSED CHILDCARE CENTRE	
Address	218 BYRON RD LEPPINGTON	Date 08/02/2023
Drawing T	itle COVER PAGE	Scale N.T.S @A1
		Drawing No. 2062







GENERAL NOTES

All work to be carried out in accordance with the Building Code of Australia, all Local and State Government Ordinances, relevant Australian Standards, Local Authorities Regulations and all other relevant Authorities concerned.

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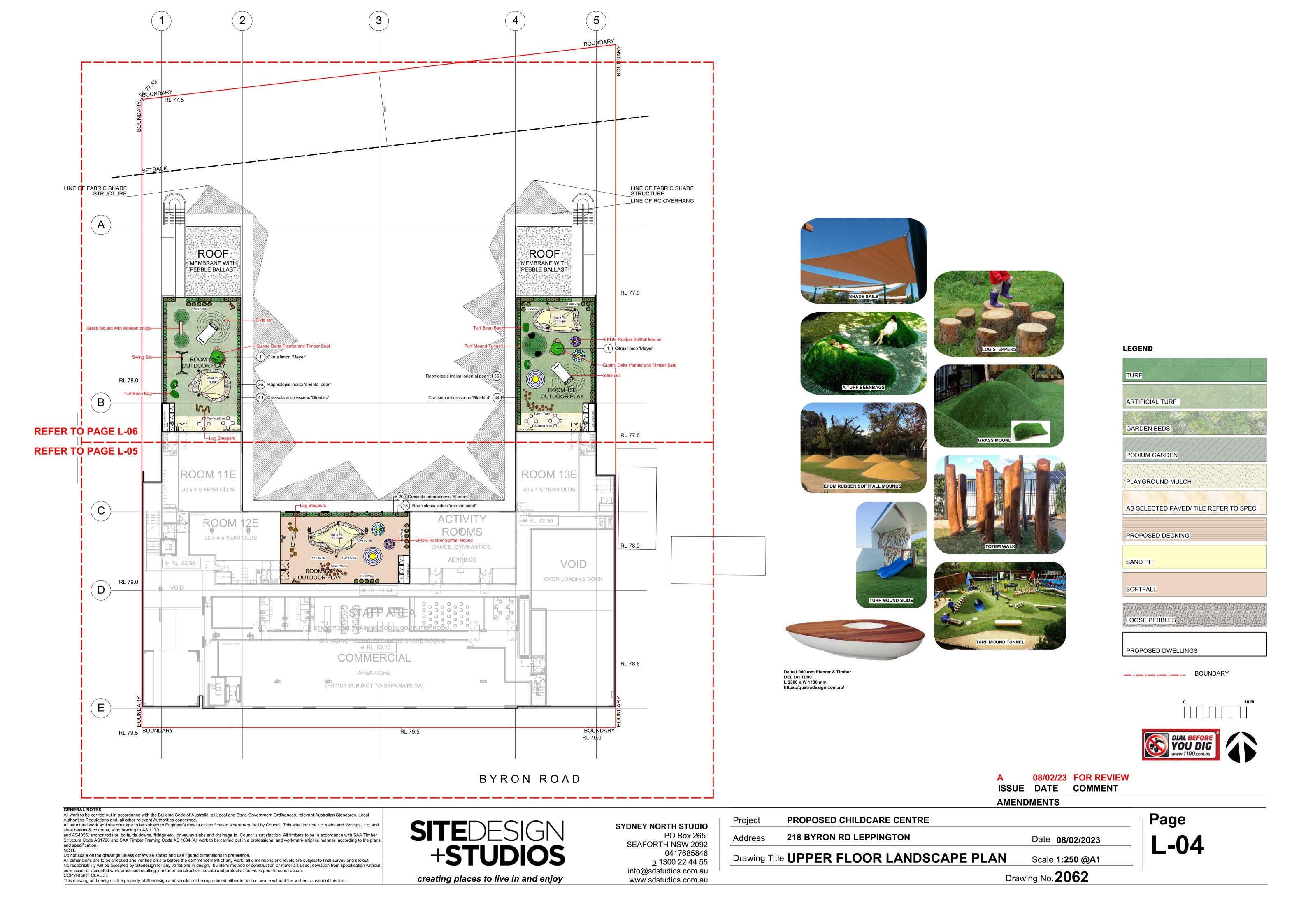
Project PROPOSED CHILDCARE CENTRE

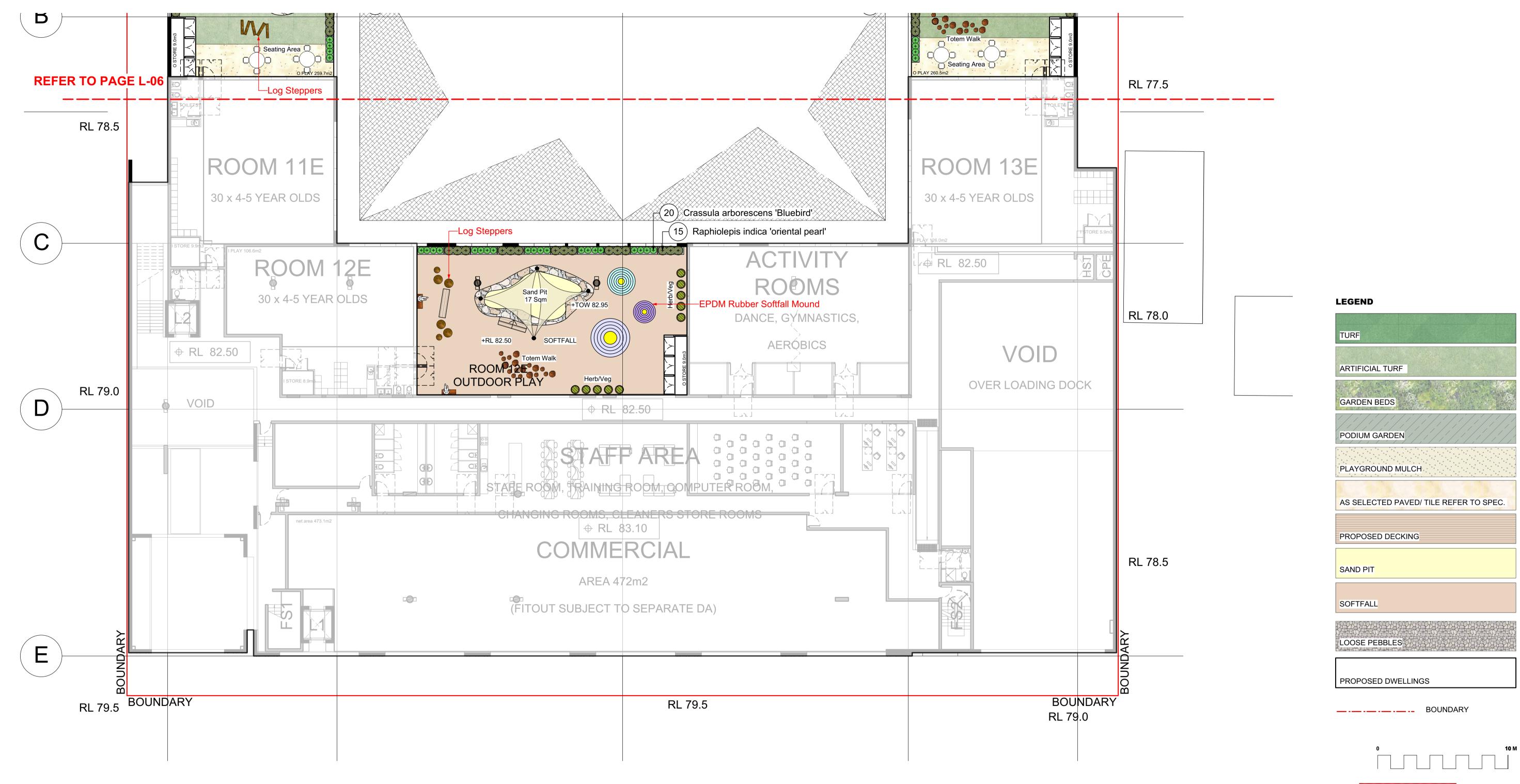
Address 218 BYRON RD LEPPINGTON Date 08/02/2023

Drawing Title GROUND FLOOR DETAIL PLAN 2 Scale 1:150 @A1

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BYRON ROAD



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AMENDMENTS

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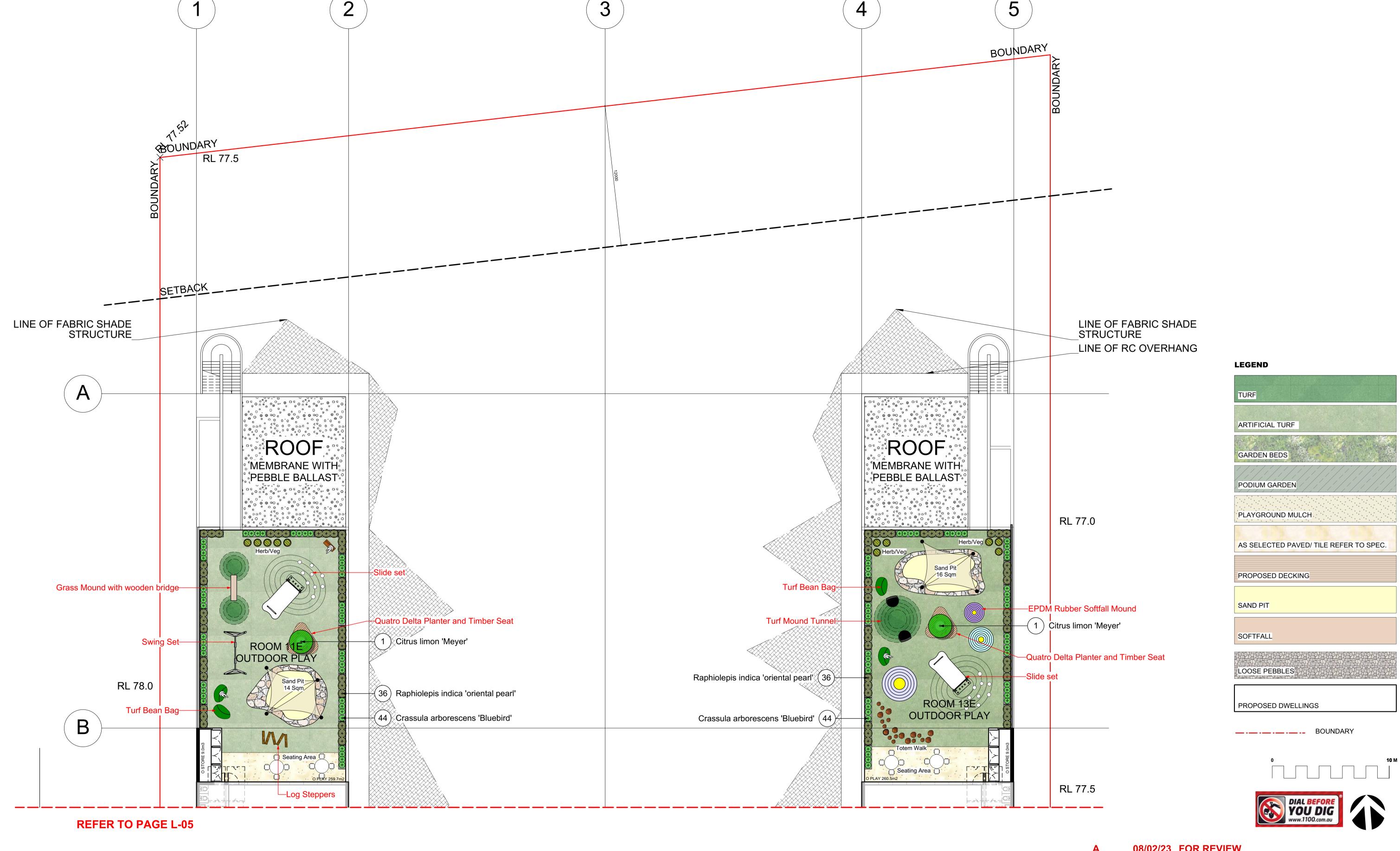
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Project PROPOSED CHILDCARE CENTRE 218 BYRON RD LEPPINGTON Address Date 08/02/2023 Drawing Title UPPER FLOOR DETAIL PLAN 1 Scale **1:150 @A1**

Drawing No. **2062**



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Page

Drawing Title UPPER FLOOR DETAIL PLAN 2 Scale 1:150 @A1

PROPOSED CHILDCARE CENTRE 218 BYRON RD LEPPINGTON Date 08/02/2023

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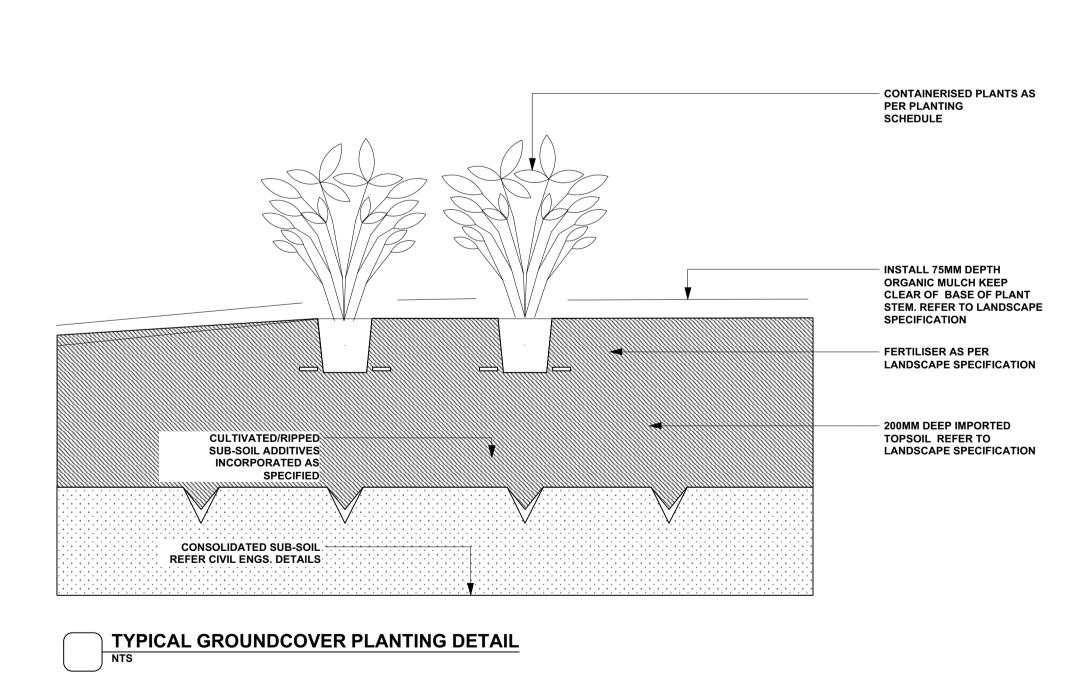
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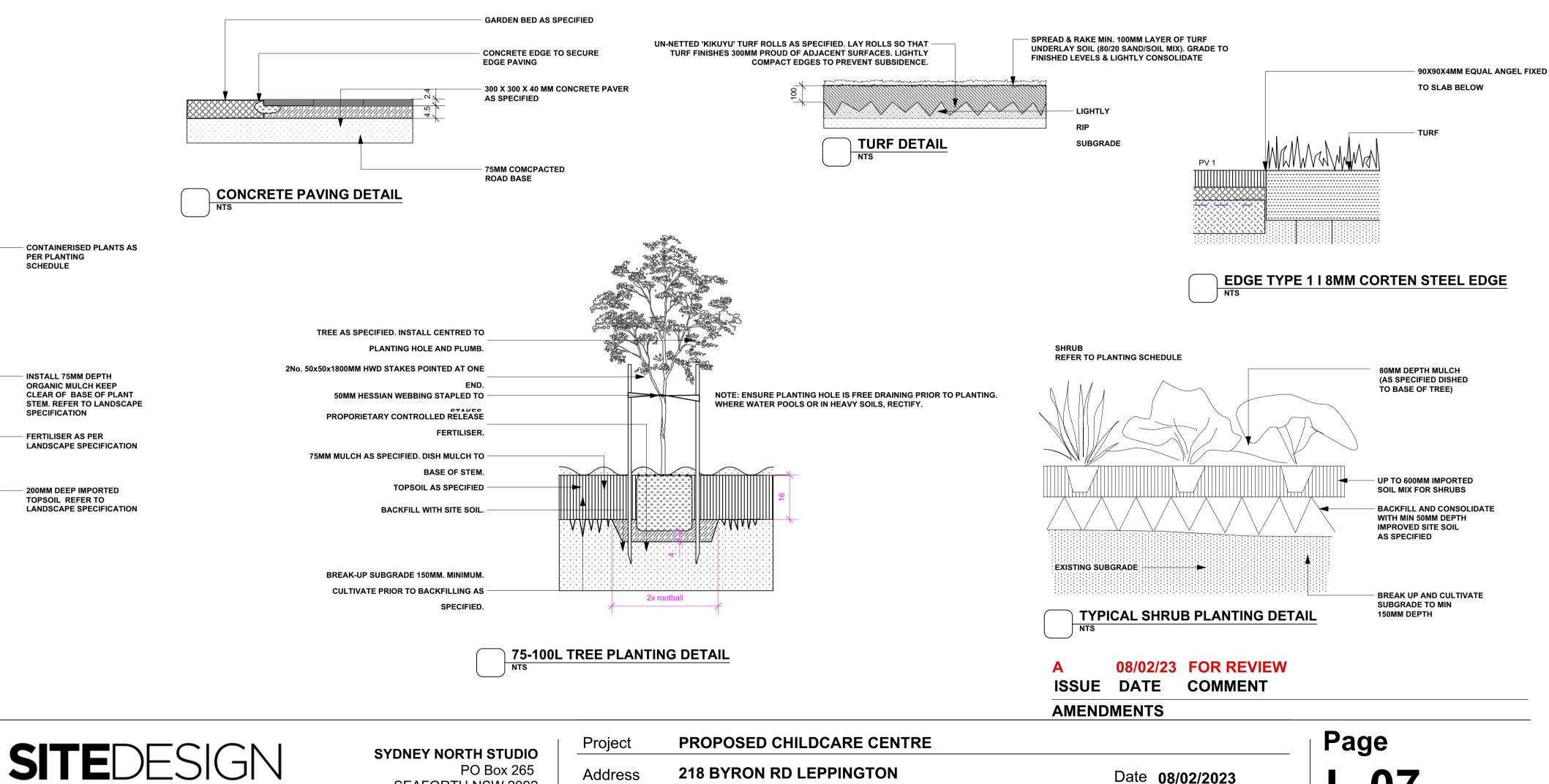
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Drawing No. **2062**

Plant Lis		10 11				
ID -	Botanical Name	Common Name	Scheduled Size	Mature Height	Mature Spread	Qty
Trees			451	45.00	2 42	
ACost	Angophora costata	Sydney Red Gum, Smooth-barked Apple	45L	15 - 20m	6 - 10m	2
Cit-li'me'	Citrus limon 'Meyer'	Meyer's Lemon	45L	3m	2m	3
CAna	Cupaniopsis anacardioides	Tuckeroo	45L	10m	6m	6
EE	Elaeocarpus eumundi	Smoothed leaved Quandong	45L	9m	3.5m	2
Hym-fl	Hymenosporum flavum	Native frangipani	45L	8m	4m	3
Lag-na	Lagerstroemia 'Natchez'	Natchez Crepe Myrtle	45L	4m	3m	3
M'LG"	Magnolia 'Little Gem'	Magnolia	45L	5m	2.0 - 3.5m	9
Pod-el	Podocarpus elatus	Plume Pine	45L	8m	4m	46
PCall-c	Pyrus calleryana 'Capital'	Capital Flowering Pear	45L	10m	3.5m	2
TF	Trachycarpus fortunei	Windmill Palm	45L	5 - 10m	3.5 - 6m	6
TLaur-lus	Tristaniopsis laurina 'luscious'	Kanooka, Water Gum	45L	5 - 10m	3.5 - 6m	1
Shrubs						
Cam-sas	Camellia sasanqua	Sasanqua Camellia	200mm	1.5-4m	1.5-4m	39
dyp-lut	Dypsis lutescens	Golden Cane Palm	300mm	2-4m	2-3m	22
Gar-aug-fl	Gardenia augusta 'Florida'	Gardenia	200mm	1m	1m	152
hib-rs'ap'	Hibiscus rosa-sinensis 'Apple blossom'	Hibiscus	200mm	2m	2m	62
Mur-pan	Murraya paniculata	Orange Jessamine	200mm	1.5 - 3m	3.5 - 6m	53
nan-do'bl'	Nandina domestica 'Blush'	Sacreed bamboo 'Blush'	200mm	0.8 -1m	1m	34
Phi-con	Philodendron 'Congo'		200mm	0.9 - 1.5m	0.9 - 1.2m	103
Rap-ind-op	Raphiolepis indica 'oriental pearl'	Indian Hawthorn	300mm	0.45 - 0.6m	1.2 - 2.0m	87
rap-exc	Raphis excelsa	Lady Palm	300mm	3 - 5m	1.0 - 3.5m	149
Wes-fru	Westringia fruticosa	Coastal Rosemary	200mm	0.6m	0.9m	43
Ground Co	_	,				
Aju-rep	Ajuga reptans	Bugle, Wild Mint	150mm	0.0 - 0.3m	0.6 - 0.9m	65
alt-de'lr'	Alternanthera dentata 'Little Ruby'	Little Ruby	150mm	0.6 - 1.2m	0.8m	40
Cra-arb	Crassula arborescens 'Bluebird'	'Blue Bird'	150mm	0.0 - 0.3m	0.3 - 0.6m	108
wes-lh'	Westringia 'low horizon'	coastal rosmary	200mm	0.4m	0.8m	18
Zoy-ten	Zoysia tenuifolia	Petting Grass	150mm	0.0 - 0.3m	0.3 - 0.6m	716
Grasses	•	0 2 2 2 2				
cag-ap	Carex appressa	Tall Sedge	150mm	0.8m	1m	174
Cyc-rev	Cycas revoluta	Cycad	150mm	2000	Spread	5
Dia-cae	Dianella caerulea	Blue Flax-lily	150mm	0.4m	0.6m	664
jun-us	Juncus usitatus	tussock grass	150mm	1m	0.8m	125
Oph-jap	Ophiopogon japonicus	Mondo Grass	150mm	0.0 - 0.3m	0.0 - 0.3m	1831







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