PROJECT SUMMARY

LOT 505 ON R2642
PARISH OF GRACEMERE
COUNTY OF LIVINGSTONE
SITE AREA 4072m²

CHILD CARE GROSS FLOOR AREA	=	587m²
KINDERGARTEN GROSS FLOOR AREA	=	229m²
SHED	=	49m²
TOTAL GROSS FLOOR AREA	=	**865m²**

SITE COVER CHILD CARE	=	903m²	
SITE COVER KINDERGARTEN	=	300m²	
SITE COVER SHED	=	61m²	
TOTAL SITE COVER	=	**1264m²**	(31.0 %)

CHILDCARE CARPARKING REQUIRED (1 per 30m²)	=	21
CHILDCARE CARPARKING PROVIDED	=	21
KINDERGARTEN CARPARKING REQUIRED (1 per 30m²)	=	10
KINDERGARTEN CARPARKING PROVIDED	=	12

ALTERNATE KINDERGARTEN CARPARKING CALCULATION
AS PER CURRENT ROCKHAMPTON PLANNING SCHEME
1 SPACE PER 6 CHILDREN (33 / 6 = 5.5) = 6
1 SPACE PER STAFF (4 TOTAL) = 4
TOTAL PARKING REQUIRED = **10**

NOTE:

- ALL CARPARKING IN ACCORDANCE WITH AS2890.1
- MINIMUM TYPICAL DIMENSIONS:

ALL DRIVEWAYS:	6.2m WIDE MIN.
PATRON CAR:	5.4m x 2.6m
STAFF MEMBER CAR:	5.4m x 2.4m

WASTE/REFUSE x 240 LITRE BINS

GENERAL	=	4
RECYCLED	=	4

NOTE:

- COLLECTION KERBSIDE

ROCKHAMPTON REGIONAL COUNCIL
AMENDED PLANS APPROVED
4 July 2024
DATE
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/97-2015
Dated: 30 March 2016

01 PERSPECTIVE IVEW
NOT TO SCALE

02 LOCATION PLAN
NOT TO SCALE

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

COVER PAGE

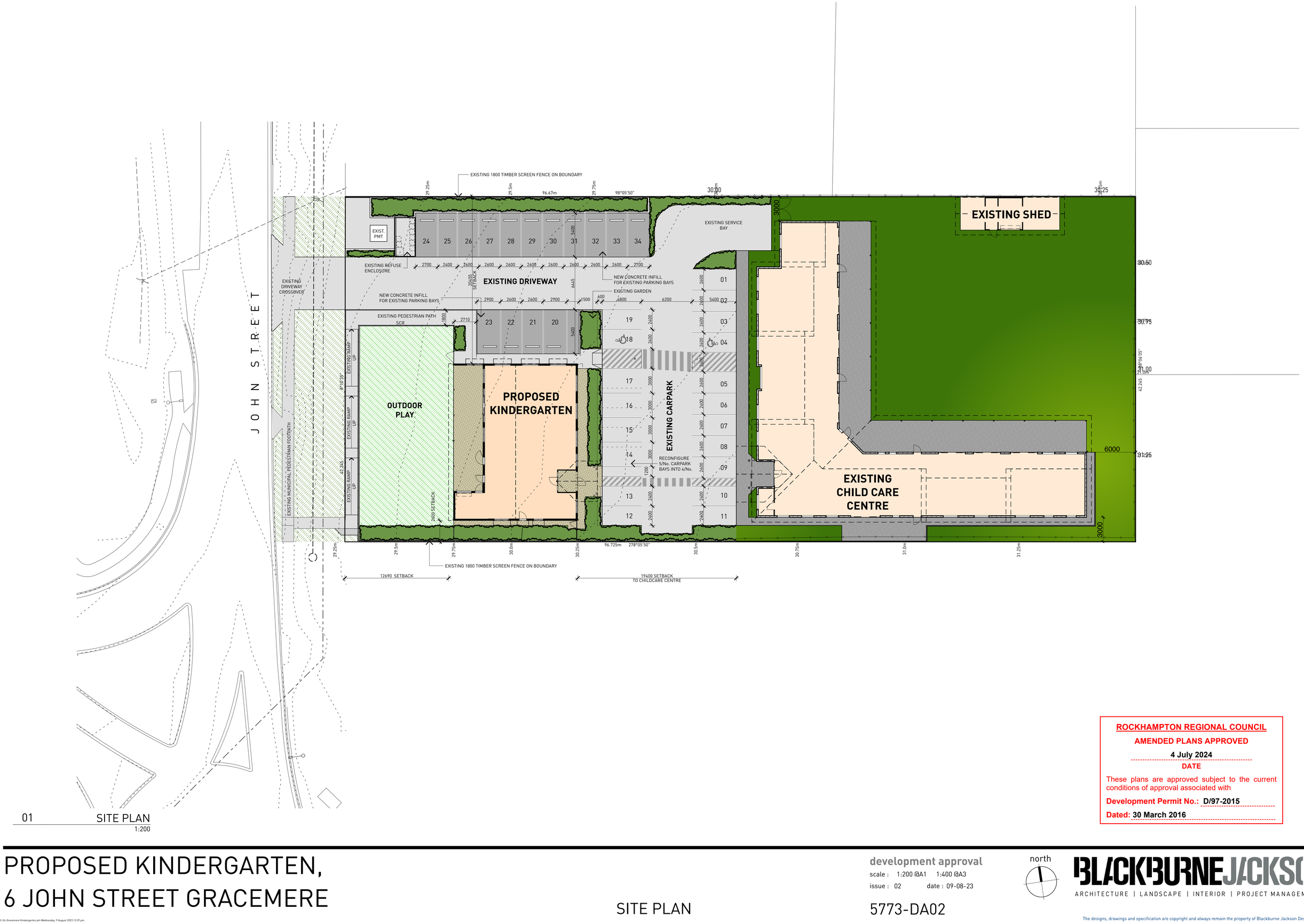
development approval
scale : N.T.S.
issue : 02 date : 09-08-23

5773-DA01

north

BLACKBURNEJACKSON
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

5773-26-Gracemere Kindergarten.pln Wednesday, 9 August 2023 12:29 pm



01 SITE PLAN
1:200

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

4 July 2024

DATE

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

Development Permit No.: D/97-2015

Dated: 30 March 2016

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

SITE PLAN

development approval

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

issue : 02 date : 09-08-23

5773-DA02

north

BLACKBURNEJACKSON

ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

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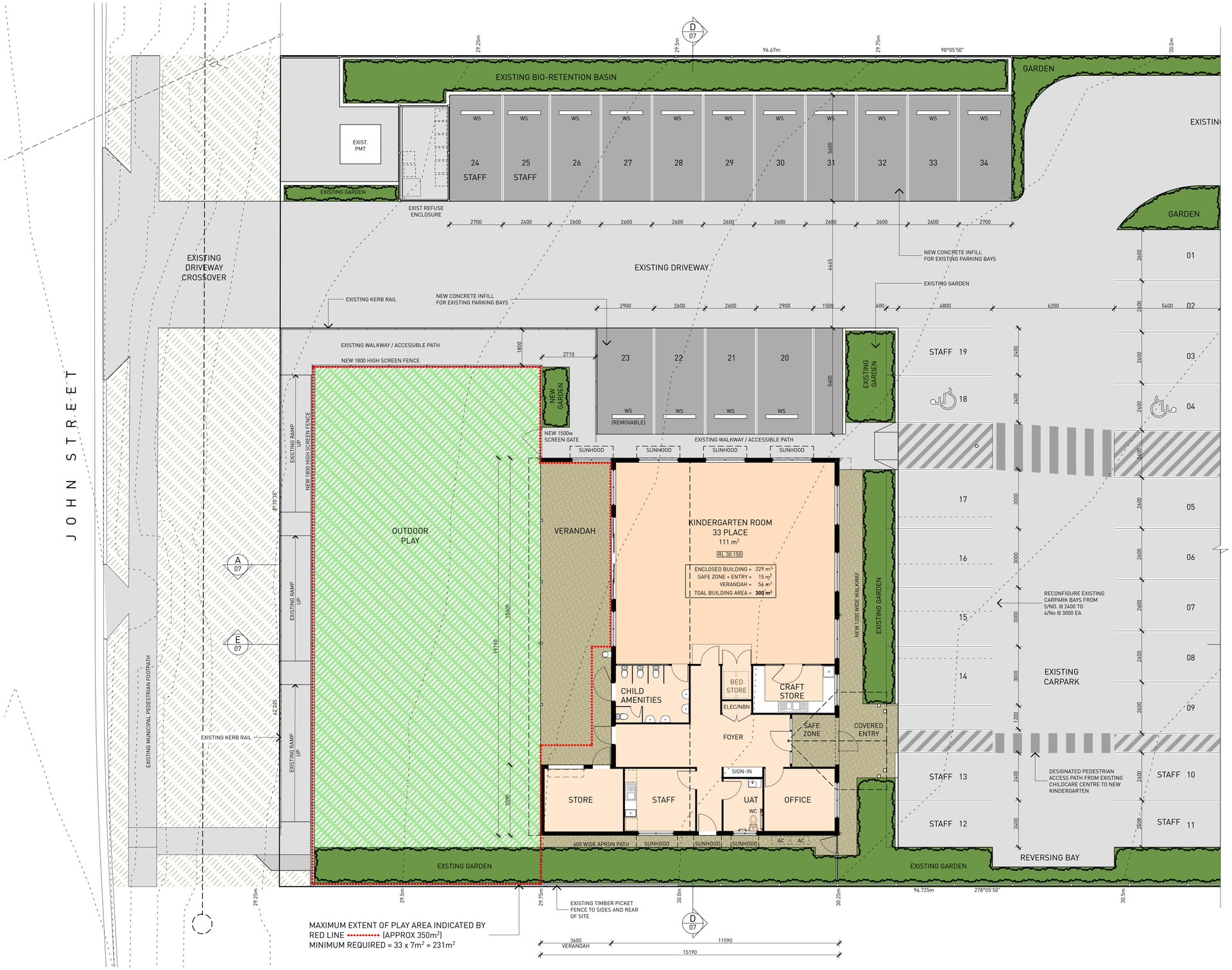

01 FLOOR PLAN LEVEL 1
1:100

ROCKHAMPTON REGIONAL COUNCIL
AMENDED PLANS APPROVED
4 July 2024
DATE
These plans are approved subject to the current conditions of approval associated with
Development Permit No.: D/97-2015
Dated: 30 March 2016

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

FLOOR PLAN - KINDERGARTEN

development approval
scale : 1:100 @A1 1:200 @A3
issue : 02 date : 09-08-23

5773-DA03

north

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01 FLOOR PLAN LEVEL 1
1:100

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

4 July 2024

DATE

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

Development Permit No.: D/97-2015

Dated: 30 March 2016

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

FLOOR PLAN - CHILDCARE CENTRE

development approval

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

issue : 02 date : 09-08-23

5773-DA04

north

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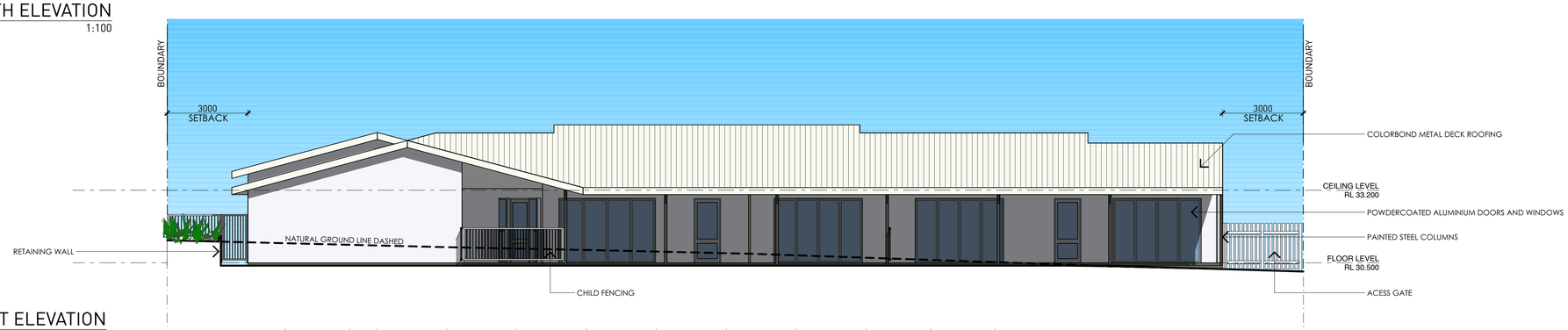
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

5773-26-Gracemere Kindergarten.pln Wednesday, 9 August 2023 12:29 pm

03 NORTH ELEVATION
1:100

04 SOUTH ELEVATION
1:100



02 EAST ELEVATION
1:100

01 WEST ELEVATION
1:100

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

4 July 2024

DATE

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

Development Permit No.: **D/97-2015**

Dated: **30 March 2016**

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

CHILD CARE ELEVATIONS

development approval

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

issue : 01 date : 09-07-15

5773-DA05

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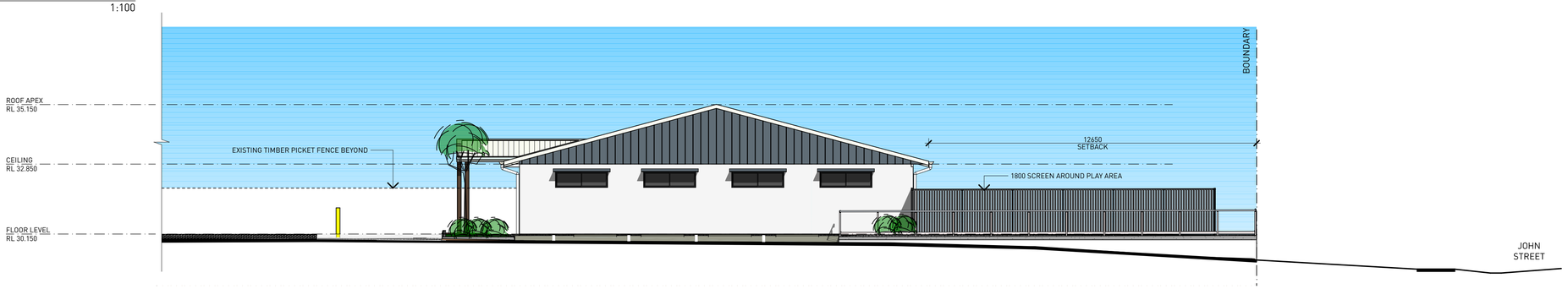
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

5773-26-Gracemere Kindergarten.pln Wednesday, 9 August 2023 12:29 pm

01 KINDERGARTEN - WEST ELEVATION

1:100

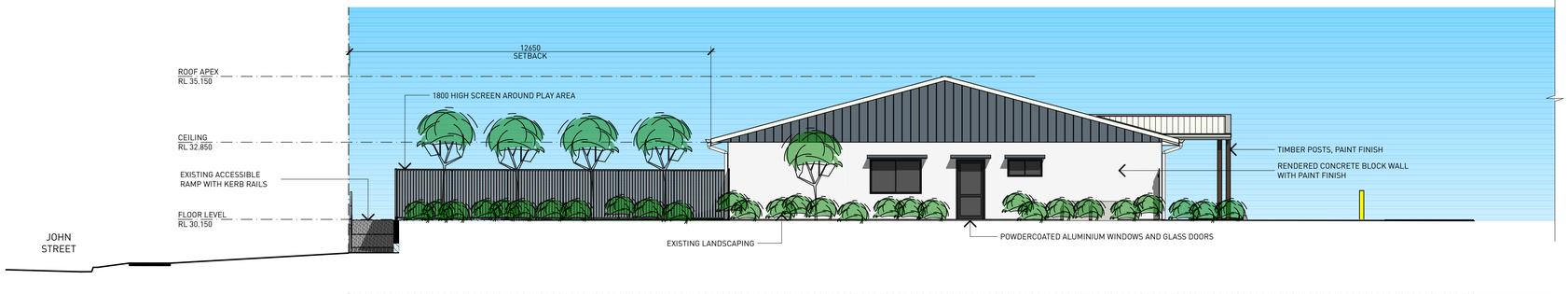


02 KINDERGARTEN - NORTH ELEVATION

1:100

03 KINDERGARTEN - EAST ELEVATION

BOUNDARY FENCE OMITTED FOR CLARITY 1:100



04 KINDERGARTEN - SOUTH ELEVATION

BOUNDARY FENCE OMITTED FOR CLARITY 1:100

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

4 July 2024

DATE

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

Development Permit No.: D/97-2015

Dated: 30 March 2016

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

KINDERGARTEN ELEVATIONS

development approval

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

issue : 02 date : 09-08-23

5773-DA06

BLACKBURNE JACKSON

ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

5773-26-Gracemere Kindergarten.pln Wednesday, 9 August 2023 12:29 pm

Site Based Stormwater Management Plan

for

Proposed Childcare Centre and Kindergarten

at

4-6 John Street, Gracemere

Prepared for

Daisy CJC Pty Ltd

Job Ref: CC-7334

December 2023

Revision B

EMPIRE ENGINEERING

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DOCUMENT CONTROL SHEET

PREPARED BY

Report Title: Site Based Stormwater Management Plan for Proposed Childcare Centre and Kindergarten at 4-6 John Street, Gracemere

Job Number: CC-7334

Author: Sid Olive

Qualifications: BEng (civil)

SITE INFORMATION

Street Address: 4-6 John Street, Gracemere

RP Description: Lot 505 R2642

PREPARED FOR

Client: Daisy CJC Pty Ltd

Client Contact: David Shields – Blackburne Jackson

REVISION HISTORY

Revision Number	Date	Reviewed By		Authorised By	
A	September 2016	Ross Wegner		Ross Wegner RPEQ 8042	
B	December 2023	Ross Wegner		Ross Wegner RPEQ 8042	

DOCUMENT DISTRIBUTION

Revision Number	Recipient	Number of Copies	Format
A	Adams Sparkes Town Planning and Development	1	PDF
B	David Shields – Blackburne Jackson	1	PDF

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1. INTRODUCTION

1.1. Background

Empire Engineering Pty Ltd (Empire Engineering) has been commissioned by Daisy CJC Pty Ltd (the client) to prepare a Site Based Stormwater Management Plan for a proposed Kindergarten to go alongside an existing Childcare Centre located at 4-6 John Street, Gracemere (Lot 505 R2642). A previous development approval for the site exists for a Medical Centre (Stage 2) to go alongside the approved Childcare Centre (Stage 1). Stage 2 has however been revised and is now proposed to be a Kindergarten rather than a Medical Centre. This report was originally prepared to assist with the previous development application which was approved in 2016. This revision has been prepared to reflect the modified Stage 2 proposal.

This report presents the results of a drainage investigation and proposes measures to be adopted in relation to stormwater quality management and stormwater quantity management for the site in question. Industry recognised computer software has been utilised in the preparation of this report. Model for Urban Stormwater Improvement Conceptualisation (MUSIC) has been used to suitably size stormwater quality improvement devices. XP Storm has been utilised to model stormwater discharge and flow rate mitigation measures for minor AEP 18%, 10%, 5% and major AEP 2% and 1% storm events to assist in the flood assessment of this site and adjoining properties. This report is consistent with the requirements outlined in the Rockhampton Regional Planning Scheme.

1.2. Aim

This document aims to provide a conceptual framework of drainage management strategies for the development proposal to be incorporated into the detailed design of the project works.

1.3. Site Description

The subject site is approximately 4072m^2 and is bounded by residential land to the north, east and south and the John Street road reserve to the west. Previous to the construction of the Stage 1 Childcare Centre, the site was vacant and covered in maintained grass, as can be seen in Figure 1.1. The approved Stage 1 has since been constructed on the site as depicted in Figure 1.2. The Stage 1 design incorporated stormwater infrastructure sufficient to also service Stage 2.

1.4. Proposed Development

The development plan prepared by Blackburne Jackson Design, attached to this report as Appendix A, depicts the revised Stage 2 Kindergarten development, including a new building, carparks, outdoor play area, pathways and landscaping.

Figure 1.1 – 2016 Aerial Photography of Subject Site and Surrounds (QLD Globe)

Figure 1.2 – Aerial Photography Reflecting Current Subject Site

2. WATER QUALITY MANAGEMENT

2.1. Background

This section of the report will outline the measures to be adopted to control the quality of stormwater which leaves the site. The scope typically encompasses the 'post construction' phase of the development however 'construction phase' water quality is briefly addressed.

2.2. Construction Phase

Table 2.1 details the typical stormwater pollutants which may be generated during the construction phase of the development.

Table 2.1 – Typical Construction Phase Pollutants

Pollutant	*Sources*
Litter	Paper, construction packaging, food packaging, cement bags and off-cuts
Sediment	Unprotected exposed soils and stockpiles during earthworks and building
Hydrocarbons	Fuel and oil spills, leaks from construction equipment
Toxic Materials	Cement slurry, solvents, cleaning agents, wash waters
pH Altering Substances	Cement slurry, wash waters

The following measures should typically be implemented prior to the commencement of construction:

- An Erosion and Sediment Control Plan prepared by a professional trained and experienced in Erosion and Sediment Control;
- Education of all site workers in sediment and erosion procedures; and
- Specific storage areas for construction materials and plant bunded to prevent any spillages from escaping.

During the construction phase of the development, silt fences should be erected downstream of all disturbed areas. In addition erosion and sediment control devices should be regularly inspected and maintained following storm events.

2.3. Operational Phase

During the operational stage of the development, the following impacts have been identified in relation to stormwater runoff and water quality of the receiving waterways:

- Gross pollutants which include human derived litter, course sediment and vegetation;
- Sediment and suspended solids; and
- Nutrients such as phosphorous and nitrogen.

To target these potential pollutants, stormwater quality improvement devices (SQIDs) have been incorporated into the design to reduce pollutants and to meet the desired water quality objectives.

2.3.1. Water Quality Objectives

The proposed development has triggered assessment against the requirements of the State Planning Policy for Water Quality. Table 2.2 indicates the minimum load reduction targets required to be met under the State Planning Policy for the "Central Coast (South)" region, as outlined in *Table B: Post construction phase—stormwater management design objectives* (Table B) of the State Planning Policy.

Table 2.2 - Water Quality Objectives (WQOs)

Pollutant	*% Load Reduction*
Total Suspended Solids (TSS)	85%
Total Phosphorus (TP)	60%
Total Nitrogen (TN)	45%
Gross Pollutants >5mm (GP)	90%

2.4. Water Quality Improvement Model

The Model for Urban Stormwater Improvement Conceptualisation (MUSIC) has been utilised to predict performance characteristics of the proposed treatment train. Modelling parameters were obtained from the recommendations specified in *MUSIC Modelling Guidelines: Version 3.0 – 2018* (Water By Design, 2018), (the Music Guidelines).

2.4.1. Rainfall Data

Rainfall data for the site was chosen to give the best representation of actual conditions. Data provided by the Bureau of Meteorology for Rockhampton was selected using a 6-minute time step.

2.4.2. Pollutant Source Nodes

A "Split Catchment" MUSIC model was created for the proposed development, whereby the model contained three pollutant source nodes for each development sub catchment area of Roof, Road (driveways and carparks), and Ground (open space, landscaping, pathways etc.). The MUSIC node layout in Figure 2.1 gives an overview of the areas of each source node generating predicted pollutant loads from the site. The Ground node was set to 70% impervious.

The pollutant source nodes were set up with "commercial" rainfall-runoff and pollutant export parameters as recommended in the Music Guidelines.

2.4.3. Treatment Nodes

The following device has been used in the treatment train to reduce predicted pollutant loads to achieve the Water Quality Objectives (WQOs) for the site. The resulting node layout for the MUSIC model showing the treatment node is displayed as Figure 2.1.

Bioretention A 54m^2 bioretention basin with 0.2m extended detention has been incorporated into the site along the northern boundary to treat runoff before being discharged to the John Street kerb. Bioretention properties were set in accordance with recommendations in the Music Guidelines. The bioretention basin has already been constructed as part of Stage 1 of the development. The bioretention area was originally sized in conjunction with the previous existing development approval. A photo of the existing bioretention basin is shown as Figure 2.2. It is recommended that the bioretention basin is renewed with effective nutrient removal plants to achieve optimum performance.

Gross Pollutant Trap Whilst not included in the modelling, gross pollutant traps (GPTs) have been integrated into the inlet pits in the subject site as part of Stage 1 of the development. GPTs act as a primary treatment device to aid in the removal of gross pollutants and attached nutrients from runoff. It is recommended practice to include GPTs into sites such as this which typically generate a high level of gross pollutants.

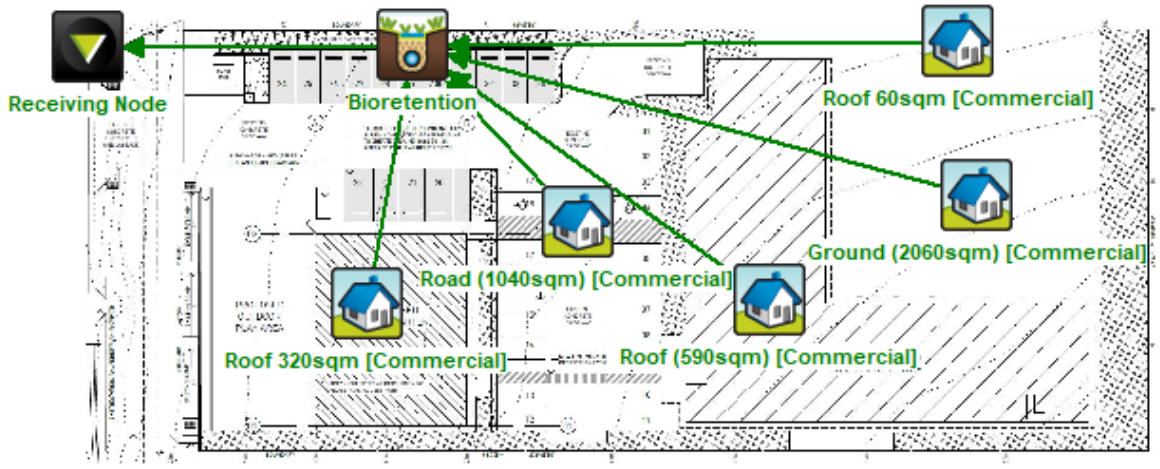


Figure 2.1 – MUSIC Model Node Layout

Figure 2.2 – Existing Bioretention Basin

2.4.4. Effectiveness in Pollution Reduction

Figure 2.3 below indicates the predicted pollutant reductions as calculated by the MUSIC water quality model.

	Sources	Residual Load	% Reduction
Flow (ML/yr)	2.38	2.26	4.9
Total Suspended Solids (kg/yr)	514	75.3	85.3
Total Phosphorus (kg/yr)	1.15	0.247	78.5
Total Nitrogen (kg/yr)	7.55	3.42	54.7
Gross Pollutants (kg/yr)	58.1	0	100

Figure 2.3 – Treatment Train Effectiveness

The MUSIC modelling results shown in Figure 2.2 indicate that the existing bioretention basin will adequately treat TSS, TP and TN in accordance with the targets required under the water quality objectives stated in Table 2.2.

2.4.5. Maintenance

An Operational Management and Maintenance Manual has been produced and is attached to this report as Appendix F. The manual outlines maintenance responsibilities and requirements for the future operators of the water quality treatment devices.

3. STORMWATER QUANTITY MANAGEMENT

3.1. Background

The purpose of this section of the report is to determine the general requirements for bulk stormwater management for the proposed development. This section of the report outlines stormwater modelling undertaken using the software package XP-STORM, based on the provided architectural drawings prepared by Blackburne Jackson Design. The modelling presented was originally conducted in 2016 in conjunction with the original development application for both Stage 1 and Stage 2 of the project.

The specific objectives of this section of the report are as follows:

- Determine pre and post-development flow;
- Identify how the non-worsening of stormwater flows will be achieved; and
- Identify a lawful point of discharge.

3.2. Existing Drainage System

The existing drainage system for the subject site was originally designed and sized to service both Stages 1 and 2 of the development. The drainage infrastructure on site includes a pit and pipe system within the existing driveway. All ground level and roof level runoff from the site are directed into a minimum 800mm depth bioretention basin with block wall sides (refer to Figure 2.2). This bioretention basin provides the detention storage volume required to mitigate peak flows from the subject site to no more than peak pre-development levels. Flows from the bioretention basin are discharged in a controlled manner to the John Street kerb and channel.

3.3. Proposed Drainage System

The revised stage 2 development proposal involves the construction of a new Kindergarten building and associated outdoor play area. The revised stage 2 proposal includes less impervious surface than the previous stage 2 plan due to a reduction in the size of the building. The existing drainage infrastructure on site has been designed to service the original stages 1 and 2, and therefore will be more than adequate to service the revised stage 2 plans.

3.4. Modelling Overview

Modelling in this section was conducted in 2016 in conjunction with the original development application for stages 1 and 2, which included more impervious area than the current stage 2 plan and is therefore conservative.

For this project it is necessary to construct three XP-Storm hydrology and hydraulic models, the three models being:

- Subject site – pre-development;
- Subject site – post-development; and
- Subject site – post-development, with mitigation.

The detailed reporting for each model is outlined in the subsequent sections of this report and full model output summaries from each model are attached to this report as Appendices C, D and E, respectively. The following parameters are also common to all models.

Roughness Coefficients

For the conduits and links used within the models, Mannings "n" roughness coefficient values are specified as 0.014 for pipes and sealed overland flow paths and 0.045 for vegetated overland flow paths. For overland sheet flow within the sub-catchment areas the impervious ground was assigned a Mannings "n" value of 0.014 and the pervious areas 0.025.

Infiltration

The Uniform Loss method was used in the models with infiltration properties with the initial and continuing losses set as 0 and 0 for the impervious areas and 0 and 2 for the pervious areas.

Routing Method

The Laurenson routing method was used in the models with default XP-Storm B and D values retained.

Tailwater Level

For the hydraulics component of the XP-Storm models, a free flowing outlet was set at the downstream model boundary.

Storm Events

Storm patterns were setup using Australian Rainfall and Runoff storm patterns for Area 3 with intensity frequency duration data taken for the local area. Storm durations of 30, 45, 60, 90, 120, 270, 360 and 540 minutes were investigated for the AEP 18%, 10%, 5%, 2% and 1% Year storm events. For all storm events the 25 minute storm was found to produce the highest peak flow rates.

3.5. Pre-Development Model

The pre-development model was modelled as 100% pervious to represent the pre-development site condition that included no impervious surfaces. The pre-development model node layout is attached to this report as Appendix C. The pre-development model peak flow rate results are displayed in Table 3.1.

Table 3.1 - Pre-Development Peak Flows From Subject Site

AEP (%)	Design Storm (min)	Peak Flow (m^3/s)
1	25	0.275
2	25	0.254
5	25	0.230
10	25	0.195
18	25	0.157

3.6. Post-Development Model

For the post-development model the subject site catchment area was increased to 65% impervious surfaces. The post-development model node layout is attached to this report as Appendix D. The post-development model peak flow rate results are displayed in Table 3.2.

Table 3.2 - Post-Development Peak Flows From Subject Site

AEP (%)	Design Storm (min)	Peak Flow (m^3/s)
1	25	0.311
2	25	0.287
5	25	0.267
10	25	0.230
18	25	0.188

As can be seen in Tables 3.1 and 3.2 the modelled increase in peak flow rates from pre to post development indicates an increase in peak flow rates, therefore mitigating options must be investigated.

3.7. Post-Development Model with Mitigation

Stormwater mitigation measures were added to the post-development model in the form of on-site detention storage. The detention storage was modelled as storage within the proposed bioretention basin. Multiple model iterations were run and it was found that to suitably mitigate the required AEP events 30m^3 of extended detention storage is required. The existing bioretention basin has approximately 43m^3 of extended detention storage. A photo of the existing bioretention basin is shown in Figure 2.2. Empire Engineering detail design plans CC-7334 CIV REV A are attached to this report as Appendix B.

The post-development with mitigation model node layout is attached to this report as Appendix E. The post-development with mitigation model peak flow rate results are displayed in Table 3.3

Table 3.3 - Post-Development with Mitigation Peak Flows From Subject Site

AEP (%)	Design Storm (min)	Peak Flow (m^3/s)
1	25	0.180
2	25	0.171
5	25	0.166
10	25	0.155
18	25	0.147

As can be seen in Table 3.3 the mitigated peak flow rates have been reduced from that of existing pre-development levels. On-site detention has been provided so that all flows from storm events up to and including the peak AEP 1% event can be stored on-site and discharged in a controlled manner to the site outlet.

3.8. Lawful Point of Discharge

It is contended that the John Street kerb and channel forms a lawful point of discharge for the development proposal as it is under the control of a statutory authority, being Rockhampton Regional Council. The proposed on-site detention storage measures will also result in a situation of non-worsening of peak flow rates generated by the subject site.

4. CONCLUSION

This report has outlined the detailed modelling and analysis that has been undertaken to determine a strategy for management of stormwater quality and quantity. On-site stormwater quality improvement devices in the form of a bio-retention area have been sized and located so as to meet the requirements of the State Planning Policy.

On-site stormwater detention storage areas have also been sized and located to ensure a situation of non-worsening of peak flow rates from the subject site to the John Street road reserve, as generated by the design minor and major AEP storm events. This requires an amount of on-site detention within the existing bioretention basin and will ultimately result in reductions in existing (pre development) peak flow rates.

The John Street kerb and channel has been nominated as the lawful discharge point for the proposed development.

5. REFERENCES

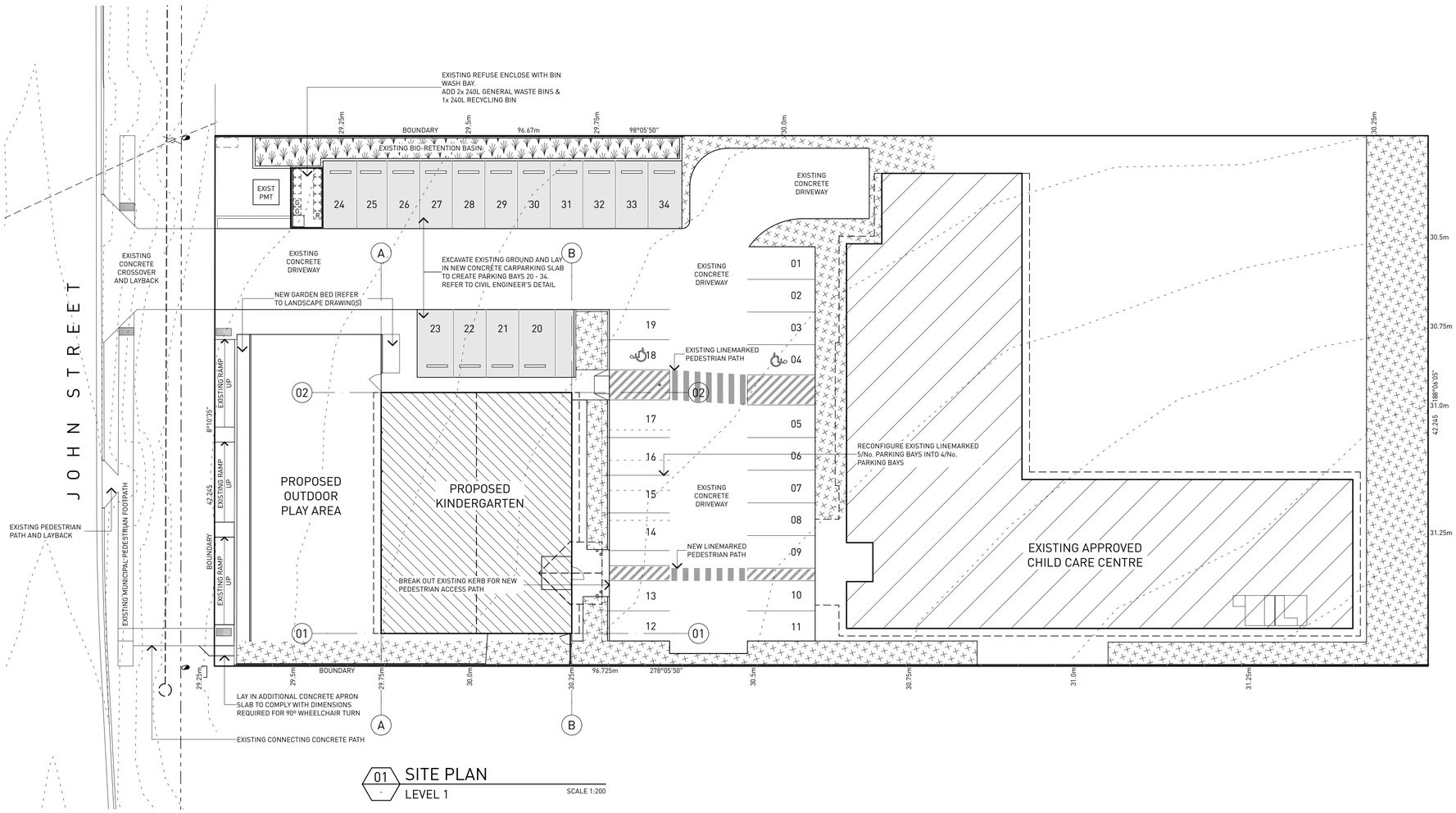
Rockhampton Regional Council, 2015, *Rockhampton Regional Council Planning Scheme 2015*, Rockhampton Regional Council, Rockhampton.

Department of State Development Infrastructure and Planning, 2014, *State Planning Policy*, July 2014, Queensland Government, Brisbane.

Department of Natural Resources and Water (DNRW), 2013, *Queensland Urban Drainage Manual*, Third Edition 2013, Queensland Government, Brisbane.

Water By Design, 2010, *MUSIC Modelling Guidelines: Version 1.0 – 2010*, SEQ Healthy Waterways Partnership, Brisbane.

APPENDIX A – DEVELOPMENT LAYOUT PLAN PREPARED BY BLACKBURNE JACKSON DESIGN



01 - SITE PLAN
LEVEL 1
SCALE 1:200

notes :

1 The designs, drawings and specification are copyright and always remain the property of Blackburne Jackson Design Pty Ltd.

2 Before commencing construction:
-Verify all dimensions and levels.
-Verify location and levels of all services on site.
-Verify that floor levels and finished levels will enable connection to services.

3 Do not scale this drawing. When in doubt refer to Architects.

issue	amendment log	by	date
01	PRELIMINARY ISSUE	BM	13-09-23

PRELIMINARY ISSUE
NOT FOR CONSTRUCTION

BLACKBURNE JACKSON
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

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phone 07 5443 3200
fax 07 5443 4030

project:
PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

client:
DAISY CJC PTY LTD

title:
SITE PLAN - LEVEL 1

north

date:	JUL 2023
drawn:	BM
checked:	DS
scale @ A1 :	1:200
scale @ A3 :	1:400
sheet:	A1

project/drawing no.
5773_A01-01_01

5773-26-Gracemere Kindergarten printed: Wednesday, 13 September 2023 11:24 am

APPENDIX B – EMPIRE ENGINEERING DETAIL DESIGN PLANS

PROPOSED KINDERGARTEN
No. 6 JOHN STREET, GRACEMERE
For DAISY CJC PTY LTD
CIVIL ENGINEERING PLANS

DRAWING INDEX

GENERAL NOTES

THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING ASSOCIATED CONSULTANTS DRAWINGS/DOCUMENTATION:

- BLACKBURNE JACKSON - ARCHITECTURAL PLANS (REFERENCE 5773_A01-01-01).
- ROCKHAMPTON REGIONAL COUNCIL - TBC.
- CQ SOIL TESTING - SOIL TESTING RESULTS (REFERENCE CQ13573)

NOTIFICATION AND INSPECTION PROTOCOLS

EMPIRE ENGINEERING IS RESPONSIBLE FOR LIAISING WITH THE COUNCIL DELEGATE AT THE CRITICAL CONSTRUCTION INSPECTIONS AND THE CONTRACTOR SHALL GIVE SUFFICIENT NOTICE, AS FOLLOWS:

1. PRE-START MEETING (MANDATORY) - MINIMUM 7 WORKING DAYS.
2. KEY CONSTRUCTION ACTIVITY INSPECTIONS (REFER BELOW) - MINIMUM 48 HOURS.
3. ON MAINTENANCE INSPECTION (WHERE SPEC'D BY COUNCIL AT THE PRE-START MEETING) - MINIMUM 5 WORKING DAYS.
4. OFF MAINTENANCE INSPECTION (WHERE SPEC'D BY COUNCIL AT THE PRE-START MEETING) - MINIMUM 5 WORKING DAYS.
5. EMPIRE ENGINEERING IS LIKELY TO CONDUCT RANDOM SITE VISITS AT THEIR DISCRETION AS NECESSARY. - NO NOTICE.

KEY CONSTRUCTION ACTIVITIES TO BE INSPECTED INCLUDE (BUT ARE NOT LIMITED TO) THE FOLLOWING:

1. BULK EARTHWORKS INSPECTION: STRIPPED TOPSOIL VISUAL AND PROOFROLL, SEDIMENT AND EROSION CONTROL MEASURES ARE USED AND MAINTAINED. CONTRACTOR TO SUBMIT CBR AND DENSITY TEST RESULTS COMPLIANT WITH AS3798.
2. SUB-GRADE BOX INSPECTION: VISUAL AND PROOFROLL. CONTRACTOR TO SUBMIT CBR AND DENSITY TEST RESULTS.
3. PRE-SEAL INSPECTION: MEASUREMENT, STRINGLINE, VISUAL AND PROOFROLL. CONTRACTOR TO SUBMIT CBR AND DENSITY TEST RESULTS.
4. CONCRETE PAVEMENT INSPECTIONS: STEEL INSPECTION, MEASUREMENT.
5. STORMWATER OUTLET: COMPLIANCE WITH THE DRAWINGS, PRIOR TO COMMENCING PIPE LAYING UPSTREAM.
6. UNDERGROUND CULVERT/CONDUIT AND PIPES: CHECK BEDDING AND ALIGNMENT PRIOR TO BACKFILL AND COMPACTION OF TRENCHES.

THE CONTRACTOR SHALL GIVE SUFFICIENT NOTICE TO EMPIRE ENGINEERING PRIOR TO COMMENCEMENT AND UPON COMPLETION OF EACH STAGE OF THE RELEVANT WORKS.

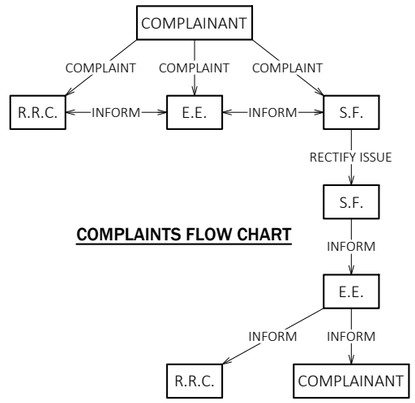
CONSTRUCTION NOTES

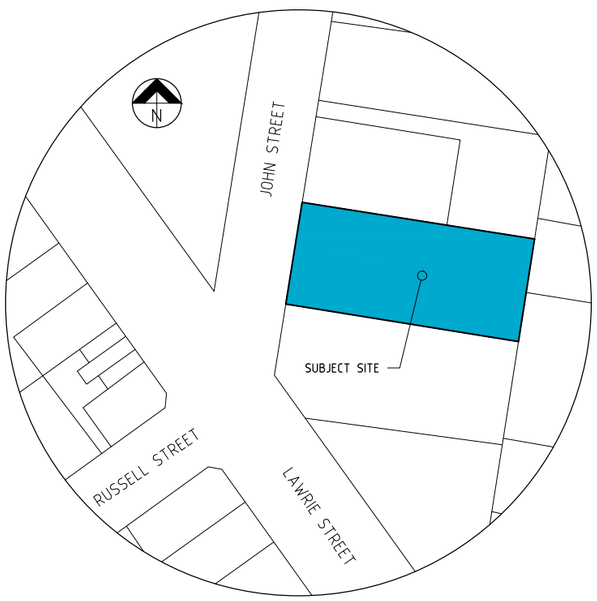
1. CONSTRUCTION START DATE - T.B.A.
2. CONSTRUCTION COMPLETION DATE - T.B.A.
3. HOURS OF OPERATION - 6:30am TO 6:30pm MONDAY TO SATURDAY.
4. DUST CONTROL MEASURES:-
   - 4.1. AREAS OF CLEARING/ EARTHWORKS TO BE LIMITED TO THAT SHOWN ON OPERATIONAL WORKS PLANS.
   - 4.2. PHYSICAL BARRIERS TO BE RETAINED. ie EXISTING VEGETATION/BUFFER ZONES.
   - 4.3. SITE TRAFFIC CONTROL. CONSTRUCTION VEHICLE SPEED LIMITS ON UNSEALED TRACKS TO BE REDUCED TO 10km/h OR FURTHER IF REQ.
   - 4.4. EARTH MOVING EQUIPMENT MANAGEMENT. CONSTRUCTION EQUIPMENT TO BE POSITIONED STRATEGICALLY THROUGHOUT THE SITE TO MINIMIZE DUST POLLUTION IMPACT ON NEIGHBOURING PROPERTIES. WIND DIRECTION AND VELOCITY TO BE MONITORED PERIODICALLY.
   - 4.5. WATER TRUCK TO CYCLE WITHIN DISTURBED AREAS OF THE SITE ON A REGULAR BASIS. WEATHER CONDITIONS TO BE MONITORED AND CYCLES TO BE INCREASED IF REQUIRED.
   - 4.6. VEGETATION TO BE STABILIZED AS SOON AS PRACTICABLE AT THE COMPLETION OF BULK EARTHWORKS. DISTURBED AREAS TO BE SEEDED, EROSION AND SEDIMENT CONTROL MEASURES TO BE CONSTRUCTED.
5. SITE FOREMAN DETAILS - T.B.A.

ADDRESSING COMPLAINTS

G.R.C. - ROCKHAMPTON REGIONAL COUNCIL
E.E. - EMPIRE ENGINEERING 41544894
S.F. - SITE FOREMAN T.B.A.

COMPLAINTS FLOW CHART





LOCALITY PLAN
NOT TO SCALE

PRINT FULL SET IN COLOUR

STATUS **FOR APPROVAL**

ISSUE	AMENDMENT	DATE	DFT
A	FOR APPROVAL	12.09.23	SMO

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CLIENT: DAISY CJC PTY LTD			
PROJECT: *PROPOSED KINDERGARTEN* NO.6 JOHN STREET GRACEMERE	DESIGNED: SMO	DRAWN: SMO	CHECKED: LJM
	APPROVED: SIDNEY OLIVE / RPEQ: 22964		

TITLE: TITLE SHEET, LOCALITY PLAN AND STANDARD NOTES

DATE: SEPTEMBER 2023	SCALE: AS SHOWN	
PROJECT NO:	DRAWING NO:	REV:
CC-7334	C01	A

	AIR QUALITY MANAGEMENT	NOISE MANAGEMENT	VIBRATION CONTROL	ON-SITE MACHINERY SERVICING AND MAINTENANCE	STORAGE AND HANDLING OF DANGEROUS GOODS ON-SITE	WASTE MANAGEMENT	VISUAL IMPACT MANAGEMENT	SITE SECURITY AND PROTECTION OF EMPLOYEES AND THE PUBLIC
ISSUE	- INCREASED WINDBORNE SEDIMENT LOADS DURING THE CONSTRUCTION PHASE.	- PUBLIC NOISE NUISANCE FROM CONSTRUCTION VEHICLES AND EQUIPMENT. - WORKER HEALTH AND SAFETY.	- VIBRATION DAMAGE TO NEIGHBOURING STRUCTURES. - NUISANCE.	- POTENTIAL FOR SPILLAGE OR LEAKAGE OF CHEMICAL AND PETROLEUM PRODUCTS AND REGULATED WASTES TO WATERS.	- POTENTIAL FOR SPILLAGE OR LEAKAGE OF CHEMICAL AND PETROLEUM PRODUCTS AND REGULATED WASTES TO WATERS.	- APPROPRIATE DISPOSAL OF ALL CONSTRUCTION SITE WASTE.	- LOSS OF VISUAL AMENITY DUE TO CONSTRUCTION, MACHINERY AND EQUIPMENT.	- UNAUTHORISED ACCESS TO THE SITE LEADING TO VANDALISM, THEFT OR PERSONAL INJURY.
OBJECTIVE	- TO REDUCE CONSTRUCTION IMPACTS ON AIR QUALITY AND TO HELP MINIMISE INCONVENIENCE TO NEIGHBOURING PROPERTIES.	- TO UNDERTAKE ALL REASONABLE AND PRACTICABLE MEASURES TO PREVENT OR MINIMISE NOISE NUISANCE TO NEIGHBOURING PROPERTIES.	- TO ENSURE GROUND VIBRATIONS DO NOT CAUSE DAMAGE TO ADJACENT BUILDINGS OR CAUSE ANNOYANCE TO NEARBY RESIDENTS.	- TO MINIMISE THE EFFECT OF ON-SITE MACHINERY MAINTENANCE. - TO UNDERTAKE ALL REASONABLE AND PRACTICAL MEASURES TO MINIMISE CONTAMINATION OF LAND AND WATERS.	- TO MINIMISE THE RISK OF HEALTH HAZARDS CAUSED BY THE STORAGE AND TRANSPORT OF DANGEROUS GOODS. - TO UNDERTAKE ALL REASONABLE AND PRACTICAL MEASURES TO MINIMISE CONTAMINATION OF LAND AND WATERS.	- TO TAKE ALL REASONABLE AND PRACTICABLE STEPS TO REDUCE AND RECYCLE WASTE DURING THE CONSTRUCTION PHASE AND TO DISPOSE OF IT IN AN APPROPRIATE MANNER.	- TO UNDERTAKE CONSTRUCTION USING ALL REASONABLE AND PRACTICABLE MEASURES TO MINIMISE IMPACT ON VISUAL AMENITY.	- TO LIMIT ACCESS TO THE CONSTRUCTION SITE FOR AUTHORISED PERSONAL DURING WORKS HOURS ONLY.
PERFORMANCE	- STANDARD CONSTRUCTION HOURS SHALL BE LIMITED TO 6.30AM TO 6.30PM MONDAYS TO SATURDAYS UNLESS OTHERWISE AUTHORISED BY COUNCIL. - NO WORKS TO BE CARRIED OUT ON A SUNDAY OR PUBLIC HOLIDAYS. - DUST PLUMES CREATED FROM THE CONSTRUCTION SITE AND/OR HAULAGE OF MATERIALS ARE TO BE ELIMINATED - NO COMPLAINTS FROM NEIGHBOURS	- STANDARD CONSTRUCTION HOURS SHALL BE LIMITED TO 6.30AM TO 6.30PM MONDAYS TO SATURDAYS. - NO UNREASONABLE NOISE RELEASES - IN ABSENCE OF QUANTITATIVE MONITORING DURING THE CONSTRUCTION PHASE, NOISE LEVELS ARE TO BE CONTROLLED TO ACCORD WITH ACCEPTED INDUSTRY AND REGULATORY REQUIREMENTS.	- STANDARD CONSTRUCTION HOURS SHALL BE LIMITED TO 6.30AM TO 6.30PM MONDAYS TO SATURDAYS. - VIBRATION IS TO COMPLY WITH BS 6472/ PR SECTION 5.7 OF MRS 11.51 OR EQUIVALENT. - NO EXCESSIVE COMPLAINTS FROM NEIGHBOURING RESIDENCES - NO UNREASONABLE VIBRATIONS	- NO RELEASE OF CONTAMINANTS TO LAND OR WATER. - AVOID ANY ADVERSE EFFECTS ON THE CONSTRUCTION SITE DUE TO THE MAINTENANCE AND SERVICING OF MACHINERY.	- ALL DANGEROUS GOODS TO BE STORED, HANDLED AND BUNDED, ACCORDING TO AUSTRALIAN STANDARDS, INCLUDING AS2508, AS1678, AS1940, AND AS2931. - NO RELEASE OF CONTAMINANTS TO LAND AND WATER	- ABSENCE OF WASTE AND LITTER ON THE CONSTRUCTION SITE, ACCESS ROAD AND BUFFERS. - NO COMPLAINTS.	- MINIMAL ADVERSE VISUAL IMPACT - NO EXCESSIVE COMPLAINTS.	- NO UNAUTHORISED ACCESS TO THE CONSTRUCTION SITE.
CONTROL MEASURES	- PRIOR TO COMMENCEMENT OF CONSTRUCTION, NEIGHBOURING RESIDENTS AND EMERGENCY SERVICES SHALL BE NOTIFIED IN WRITING (BY LETTER DROP) OF THE CONSTRUCTION PERIOD, DESIGNATED WORKING HOURS AND CONTACTS REGARDING COMPLAINTS OF EXCESSIVE AIR QUALITY DETERIORATION - VEGETATIVE GROUND COVERS ARE TO BE MAINTAINED WHERE POSSIBLE - ACTIVITIES ARE TO ONLY BE CONDUCTED DURING SUITABLE WEATHER CONDITIONS. - A WATER TRUCK OR SPRAY APPARATUS IS TO BE PROVIDED ON SITE WHEN REQUIRED - EXPOSED AREAS SUCH AS CLEARED AREAS AND STOCKPILES, ARE TO BE WATERED AND KEPT DAMP IN ORDER TO MINIMISE EROSION OR THE POTENTIAL FOR DUST CREATION - VEHICLE SPEED IS TO BE LIMITED ON SITE TO MINIMISE DUST GENERATION - TRUCKS ENTERING OR EXITING THE SITE SHALL HAVE THEIR LOADS COVERED - ALL CONSTRUCTION VEHICLES EXITING SITE SHALL PASS THROUGH A WHEEL WASH DOWN AND/OR DRIVE OVER A SHAKE DOWN GRID WHICH WILL BE LOCATED AT THE SITE ENTRY/EXIT - HAULAGE ROUTES SHALL AVOID RESIDENTIAL AREAS AND USE SEALED ROADS WHERE POSSIBLE - MACHINERY SHALL BE FITTED DUST FILTERS - ALL EQUIPMENT AND VEHICLES ARE TO MEET RELEVANT EMISSION STANDARDS. - MAINTENANCE OF WIND BREAKS AND BARRIERS WHERE POSSIBLE - STOCKPILES HEIGHTS ARE TO BE KEPT TO MANAGEABLE HEIGHTS FOR DUST AND EROSION CONTROL PURPOSES - PROTECTION OF LONG TERM SOIL STOCK PILES WITH REVEGETATION, WATERING/MOISTURE OR HYDRO MULCHING WHERE PRACTICABLE - REVEGETATE AS SOON AS POSSIBLE FOLLOWING CONSTRUCTION	- PRIOR TO COMMENCEMENT OF CONSTRUCTION, NEIGHBOURING RESIDENTS AND EMERGENCY SERVICES SHALL BE NOTIFIED IN WRITING (BY LETTER DROP) OF THE CONSTRUCTION PERIOD, DESIGNATED WORKING HOURS AND CONTACTS REGARDING COMPLAINTS OF EXCESSIVE NOISE. - ADJACENT RESIDENCES ARE TO BE ADVISED OF ANY WORKS TO BE CONDUCTED OUT OF THE STANDARD CONSTRUCTION HOURS - ALL CONSTRUCTION STAFF ARE TO HAVE ADEQUATE NOISE PROTECTION AS PER WORK PLACE HEALTH AND SAFETY. - ALL PLANT AND MACHINERY USED DURING CONSTRUCTION MUST BE FITTED WITH EXHAUST SILENCES OR NOISE SUPPRESSION EQUIPMENT, MUST BE IN GOOD OPERATING CONDITION AND MEET EMISSION STANDARDS. - HAULAGE ROUTES SHALL AVOID RESIDENTIAL AREAS AND USE DEDICATED ROUTES ROADS WHERE POSSIBLE	- PRIOR TO COMMENCEMENT OF CONSTRUCTION, NEIGHBOURING RESIDENTS AND EMERGENCY SERVICES SHALL BE NOTIFIED IN WRITING (BY LETTER DROP) OF THE CONSTRUCTION PERIOD, DESIGNED WORKING HOURS AND CONTACTS REGARDING COMPLAINTS OF EXCESSIVE VIBRATION. - USE CONSTRUCTION TECHNIQUES THAT MINIMISE THE NEED FOR BLASTING, ROCK BREAKING AND PILE DRIVING. - UNDERTAKE GEOTECHNICAL INVESTIGATION AS NECESSARY TO PREDICT VIBRATION EFFECTS OF CONSTRUCTION TECHNIQUES. - UNDERTAKE ACTIVITIES LIKELY TO CAUSE VIBRATION DURING NORMAL CONSTRUCTION HOURS.	- A BUNDED SERVICE AREA IS REQUIRED FOR MAINTENANCE AND SERVICING -SIGNIFICANT VEHICLE MAINTENANCE SHALL BE CONDUCTED OFF-SITE AT APPROPRIATE FACILITIES. - LIGHT MAINTENANCE MAY BE UNDERTAKEN ON SITE, IN THE BUNDED SERVICE AREA. - THE CONTRACTOR IS TO PROVIDE SUITABLE ACCESS SURFACING FOR ALL WEATHER PURPOSES. - SAFE HANDLING TECHNIQUES AND REQUIRED REFUELLING. - WASTE OILS ARE TO BE COLLECTED AND TRANSPORTED TO RECYCLERS OR DESIGNATED DISPOSAL SITES. - SERVICING OF PLANT AND EQUIPMENT SHOULD BE UNDERTAKEN OUTSIDE OF NORMAL CONSTRUCTION HOURS.	- DANGEROUS GOODS SHALL BE STORED SEPARATELY IN BUNDED AREAS NOT ASSESSABLE TO UNQUALIFIED PERSONS WITHOUT APPROPRIATE TRAINING IN ITS HANDLING AND FIRST AID PROCEDURES. - CHEMICAL DATA, HANDLING AND SAFETY SHEETS FOR ALL DANGEROUS GOODS WILL BE KEPT IN THE SITE OFFICE. - ONLY NECESSARY QUANTITIES OF CHEMICALS, FUELS AND OILS SHOULD BE KEPT ON THE CONSTRUCTION SITE AT ANY TIME. - EQUIPMENT IS TO BE AVAILABLE IN FUEL STORAGE AREAS AND IN VEHICLES TO CONTAIN AND CLEAN UP ANY SPILLS THAT MAY OCCUR. - RELEASE ANY CLEAN STORMWATER ACCUMULATED IN TEMPORARY BUNDED AREAS.	- DESIGNATE A WASTE COLLECTION AREA ON-SITE THAT DOES NOT RECEIVE A SUBSTANTIAL AMOUNT OF RUNOFF FROM UPLAND AREAS AND DOES NOT DRAIN DIRECTLY TO WATER BODY. - ENSURE REGULAR COLLECTION OF ON-SITE WASTE. - DISPOSAL OF WASTE COLLECTION BINS ARE TO BE CLEARLY MARKED "CONVENTIONAL WASTE", "RECYCLABLE" AND "REGULATED WASTE". ENSURE THAT ALL CONTAINERS ARE FITTED WITH LIDS' - REGULATED WASTES SHALL BE SEALED IN A APPROPRIATE LICENSED TO RECEIVE SUCH WASTE. - SCHEDULE WASTE COLLECTION IS REQUIRED TO PREVENT THE CONTAINERS FROM OVERFILLING.	- RUBBISH AND WASTE TO BE COLLECTED FROM SITE - SURPLUS CONSTRUCTION MATERIAL TO BE PROMPTLY REMOVED FROM CONSTRUCTION SITE. - VEGETATION DISTURBANCE TO BE MINIMISED	- ALL ACCESS TO THE SITE IS TO BE VIA THE NOMINATED POINT ON PLAN - BARRICADES AND SAFETY FENCING SHALL BE ERECTED AROUND THE SITE AND ADJACENT TO PUBLIC ACCESS WAYS. THE SITE ACCESS IS TO BE GATED. -GENERALLY, CONSTRUCTION ACTIVATES ARE TO BE FENCED/HOARDED FROM ADJACENT PROPERTIES. - THE CONSTRUCTION SITE COMPOUND (IF REQUIRED) IS TO BE LOCKED AT ALL TIMES OUTSIDE OF WORK HOURS. - THE SITE SHALL BE APPROPRIATELY MAINTAINED TO PROVIDE A SAFE WORK ENVIRONMENT FOR ALL PERSONAL, VISITORS AND THE GENERAL PUBLIC. - APPROPRIATE WARNING SIGNS SHALL BE ERECTED FOR THE WORK FORCE AND THE GENERAL PUBLIC TO HIGHLIGHT HAZARDOUS ACTIVITIES WITHIN AND AROUND THE SITE INCLUDING: EXCAVATION: DEMOLITION: THE USE OF EXPLOSIVES POWER TOOLS" EXPOSURE TO HIGH NOISE EMISSIONS. -STRICT HOUSEKEEPING SHALL APPLY TO ALL ENTRIES USED FOR SITE ACCESS OR EGRESS, INCLUDING ENTRY TO SITE SHEDS AND EMPLOYEES FACILITIES.
RESPONSIBILITY	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE - THE PRINCIPAL IS RESPONSIBLE FOR PUBLIC NOTIFICATION VIA A THE LETTER DROP	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE - THE PRINCIPAL IS RESPONSIBLE FOR PUBLIC NOTIFICATION VIA THE LETTER DROP	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE.	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE.	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE.	- THE CONTRACTOR HOLDS RESPONSIBILITY FOR THE SITE.	- THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGNATED SITE COMPOUND SECURITY FENCING, IF REQUIRED - THE PRINCIPAL IS RESPONSIBLE FOR FENCING/ HOARDING TO THE ADJACENT PROPERTIES, IF REQUIRED
MONITORING	- THE CONTRACTOR SHALL CONDUCT DAILY VISUAL INSPECTIONS OF THE SITE FOR DUST PLUMES. - A COMPLAINT REGISTER IS TO BE MAINTAINED	- A COMPLAINTS REGISTER TO BE MAINTAINED. - ALL GENUINE NOISE COMPLAINTS SHALL BE INVESTIGATED AND ASSESSED TO DETERMINE IF THE NOISE IS UNREASONABLE. SUCH INVESTIGATIONS MAY REQUIRE NOISE MONITORING TO DETERMINE IF A PROBLEM OF BREACH EXISTS.	- THE CONTRACTOR IS RESPONSIBLE FOR FREQUENT INSPECTIONS OF THE SITE DURING IMPACT WORKS	- THE CONTRACTOR IS RESPONSIBLE FOR DAILY VISUAL INSPECTIONS OF THE SITE.	- THE CONTRACTOR IS RESPONSIBLE FOR DAILY VISUAL INSPECTIONS OF THE SITE. - REGULAR INSPECTIONS WILL BE UNDERTAKEN OF ALL TEMPORARY CHEMICAL AND PETROLEUM PRODUCT STORAGE AREAS FOR LEAKAGES	- DAILY VISUAL INSPECTIONS OF THE SITE ARE TO BE CONDUCTED.	- REGULAR INSPECTIONS FOR UNREASONABLE VISUAL IMPACTS. - A COMPLAINT REGISTER IS TO BE MAINTAINED	- DAILY VISUAL INSPECTIONS OF THE SITE WILL BE UNDERTAKEN FOR ADEQUACY OF SITE SECURITY
CORRECTIVE ACTIONS	- CORRECTIVE ACTIONS WILL INCLUDE A REVIEW OF EXISTING CONTROL MEASURES FOR INADEQUACIES. - SHOULD COMPLAINTS ARISE, THE CONTRACTOR SHALL ENSURE MEASURES ARE TAKEN TO MODIFY THE OFFENDING EQUIPMENT OR MODIFY CONSTRUCTION PRACTICES TO REDUCE DUST LEVELS WITHIN RELEVANT GUIDELINES	- UNREASONABLE NOISE CAUSED BY MACHINERY IS TO BE REMEDIED BY APPROPRIATE REPAIRS AND A MAINTENANCE SCHEDULE REVIEW. - THE RELEVANT ACTIVITY MAY REQUIRE MODIFICATION OR RELOCATION. - SPECIFIC MACHINERY MAY REQUIRE AN ALTERATION TO ITS HOURS OF OPERATION. - CORRECTIVE ACTIONS WILL INCLUDE A REVIEW OF EXISTING CONTROL MEASURES FOR INADEQUACIES. - IN THE EVENT THAT A NON-CONFORMANCE HAS OCCURRED AS A RESULT OF POOR WORK PRACTICES, PERSONNEL ON SITE WILL BE MADE AWARE OF THE PROBLEM AND INFORMED OF ACCEPTABLE WORK PRACTICES.	- SHOULD COMPLAINTS ARISE, MEASURES SHALL BE TAKEN BY THE CONTRACTOR TO MODIFY THE OFFENDING EQUIPMENT OR MODIFY CONSTRUCTION PRACTICES TO ENSURE VIBRATIONS ARE WITHIN RELEVANT GUIDELINES.	- THE CONTRACTOR SHALL ENSURE ON-SITE MACHINERY IS STORED WITHIN THE SECURE DESIGNATED COMPOUND AFTER WORKING HOURS. - THE CONTRACTOR SHALL ENSURE ANY UNAUTHORISED MAINTENANCE IS CEASED IMMEDIATELY AND MOVED OFF- SITE. - THE CONTRACTOR SHALL ENSURE ANY AREA DAMAGED BY HYDROCARBONS OR HAZARDOUS CHEMICALS IS FENCED, EXCAVATED AND REMOVED FROM SITE TO A DESIGNATED DUMPING AREA AND THE AREA RE-ESTABLISHED	- IF DAMAGED GOODS ARE SPILT, THE CONTRACTOR SHALL ENSURE THAT THE AREA IS ISOLATED AND MINIMISED. - PETROLEUM OR CHEMICAL SPILLAGES ARE TO BE IMMEDIATELY, CLEANED UP WITH ADSORBENT MATERIAL. - ABSORBENT MATERIALS USED FOR CLEAN UP OR WASTE DANGEROUS GOODS ARE TO BE PLACED AND SEALED IN AN APPROPRIATE CONTAINER MARKED "REGULATED WASTE" AND CONSIGNED TO A WASTE CONTRACTOR LICENSED TO RECEIVE SUCH WASTE FOR DISPOSAL AT AN APPROVED FACILITY. - THE DAMAGED AREA IS TO BE RE-ESTABLISHED	- PROMPT DELEGATION OF CLEAN UP WORKS. - INCREASED VIGILANCE	- VISUALLY OFFENSIVE COMPONENTS OF CONSTRUCTION SHOULD BE IDENTIFIED AND IF POSSIBLE MODIFIED IN CONSULTATION WITH COMPLAINT.	- INSTALLATION OF INCREASED SECURITY MEASURES REQUIRED.
REPORTING	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN	- WEEKLY REPORTING BY THE PRINCIPLE CONTRACTOR TO THE CONSULTANT COVERING THE EFFECTIVENESS OF THE MANAGEMENT SYSTEM AND NOTING ANY CORRECTIVE ACTIONS TAKEN

STATUS

FOR APPROVAL

ISSUE	AMENDMENT	DATE	DFT
A	FOR APPROVAL	12.09.23	SMO

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CLIENT: DAISY CJC PTY LTD

PROJECT: *PROPOSED KINDERGARTEN* NO.6 JOHN STREET GRACEMERE

DESIGNED: SMO | DRAWN: SMO | CHECKED: LJM

APPROVED:

SIDNEY OLIVE / RPEQ: 22964

TITLE: CONSTRUCTION MANAGEMENT NOTES

DATE: SEPTEMBER 2023 | SCALE: AS SHOWN

PROJECT NO: CC-7334 | DRAWING NO: C02 | REV: A

EROSION AND SEDIMENT CONTROL PROGRAM

1. THIS PROGRAM AND ASSOCIATED PLANS SHALL BE READ IN CONJUNCTION WITH THE SITE MANAGEMENT SPECIFICATION INCORPORATED IN THE CONTRACT DOCUMENTS. THE PROVISIONS OF THE SPECIFICATION ARE TO BE STRICTLY ADHERED TO.

2. PRIOR TO THE COMMENCEMENT OF CONSTRUCTION, THE CONTRACTOR IS TO PROVIDE A DETAILED PROGRAM TO THE SUPERINTENDENT SHOWING THE TIMING FOR ALL WORKS ASSOCIATED WITH THE PROJECT, NOMINATING, IN PARTICULAR, THE PROGRAM FOR INSTALLATION OF SOIL AND EROSION CONTROL SYSTEMS.

3. EARTHWORKS SHALL BE CARRIED OUT IN SUCH A MANNER THAT THE SITE IS MAINTAINED IN A WELL DRAINED CONDITION, AREAS OF LOOSE SOIL ARE MINIMISED AND CONCENTRATIONS OF STORM WATER ARE MINIMISED.

4. THE BASIC OBJECTIVES OF THE EROSION AND SEDIMENT CONTROL ARE:
   - IDENTIFY CRITICAL AREAS AND PROVIDE SPECIAL ATTENTION TO THOSE AREAS.
   - PLAN SITE LAYOUT SO THAT ACCESS TO ALL REQUIRED DRAINAGE EROSION AND SEDIMENT CONTROL MEASURES IS MAINTAINED.
   - LIMIT EXPOSURE TIME BY PROGRAMMING TO MINIMISE THE AREA OF LAND EXPOSED TO POTENTIALLY ADVERSE WEATHER CONDITIONS AT ANY ONE TIME.
   - PROVIDE CONTROL MEASURES INCLUDING TEMPORARY AND PERMANENT DRAINAGE, EROSION AND SEDIMENT CONTROLS.

5. THE EROSION AND SEDIMENT CONTROL SHALL COMPLY WITH THE INTERNATIONAL EROSION CONTROL ASSOCIATION (AUSTRALASIA) 2008's "BEST PRACTICE EROSION AND SEDIMENT CONTROL FOR BUILDING AND CONSTRUCTION SITES" AND ALL OTHER LOCAL AUTHORITY EROSION AND SEDIMENT CONTROL GUIDELINES.

6. ALL ESC MEASURES SHALL BE INSPECTED:
   - AT LEAST DAILY (WHEN WORK IS OCCURRING ON SITE);
   - WITHIN 24 HOURS OF EXPECTED RAIN; AND
   - WITHIN 18 HOURS OF RAINFALL EVENT (ie. AN EVENT OF SUFFICIENT INTENSITY AND DURATION TO MOBILISE SEDIMENT ON SITE). MAINTENANCE OF ESC MEASURES SHALL OCCUR IN ACCORDANCE WITH THE FOLLOWING TABLE:

ESC MEASURES	MAINTENANCE TRIGGER	TIME FRAME FOR COMPLETION OF MAINTENANCE
SEDIMENT BASINS	WHEN SETTLED SEDIMENT EXCEEDS THE VOLUME OF THE SEDIMENT STORAGE ZONE (SEE COUNCIL'S SEDIMENT BASIN DESIGN GUIDELINES)	WITHIN 7 DAYS OF THE INSPECTION
OTHER ESC MEASURES	THE CAPACITY OF ESC MEASURES FALLS BELOW 75%	BY THE END OF THE DAY

7. WATER QUALITY SAMPLES MUST BE TAKEN AND ANALYSED PRIOR TO THE RELEASE OF ANY WATER FROM THE SITE. WATER QUALITY MUST SATISFY THE FOLLOWING CRITERIA: TSS<50 mg/L pH BETWEEN 6.5 AND 8.5. IF WATER QUALITY FAILS THE CRITERIA THEN USE OF A GYPSUM FLOCCULENT IS TO BE APPLIED AS DIRECTED BY THE SUPERINTENDENT.

8. ALL WATER QUALITY DATA INCLUDING DATES OF RAINFALL, TESTING AND WATER RELEASE MUST BE MAINTAINED IN AN ONSITE REGISTER. THIS REGISTER IS TO BE MAINTAINED FOR THE DURATION OF THE APPROVED WORKS AND BE AVAILABLE ON SITE FOR INSPECTIONS BY COUNCIL OFFICERS ON REQUEST.

9. CONSTRUCTION ACCESS SHALL BE AT ONLY ONE NOMINATED POINT AS DETAILED ON THE PLANS. A TRUCK WASH HARD STAND AS DETAILED ON THE PLAN COMPRISING FREE DRAINING GRAVEL SHALL BE LOCATED ADJACENT TO THE POINT OF ACCESS WHERE VEHICLES CAN BE WASHED DOWN PRIOR TO EXIT TO THE STREET SYSTEM IF REQUIRED. THE WASH DOWN AREA SHALL BE KEPT FREE OF MUD.

10. FOR DETAILS OF SHAKE DOWN AREA REFER TO IPWEA STANDARD DRAWING D-0040.

11. SUPPLEMENTARY EROSION AND SEDIMENT CONTROL DEVICES MAY BE REQUIRED AT THE DISCRETION OF THE SUPERINTENDENT AND/OR COUNCIL.

12. SEDIMENT CONTROL DEVICES SHALL BE PROVIDED WHERE SHOWN ON THE DRAWINGS. SEDIMENT TRAPS SHALL REMAIN IN PLACE UNTIL AT LEAST 70% SOIL COVERAGE UPSTREAM AND DOWNSTREAM OF THE DEVICE IS ACHIEVED AND/OR AS DIRECTED BY COUNCIL.

13. EXCAVATED MATERIAL WILL BE PLACED DIRECTLY INTO FILL AREAS IN ACCORDANCE WITH THE APPROVED SPECIFICATION.

14. ANY IMPORTED FILL MATERIAL SHALL COMPLY WITH THE REQUIREMENTS OF THE SPECIFICATION.

15. ALL TEMPORARY EROSION AND SEDIMENT CONTROL (ESC) MEASURES TO BE MAINTAINED AND FULLY OPERATIONAL DURING THE MAINTENANCE PERIOD AND ARE TO REMOVED AFTER THE SATISFACTORY COMPLETION OF AN OFF-MAINTENANCE INSPECTION BY COUNCIL AND PRIOR TO FORMAL ACCEPTANCE "OFF MAINTENANCE" BY COUNCIL.

ORDER OF CONSTRUCTION

1. PRIOR TO ANY CONSTRUCTION COMMENCING, CONSTRUCTION ENTRY/ EXIT TO BE INSTALLED.
2. SITE BARRIER/NO-GO FENCING TO BE ESTABLISHED.
3. SEDIMENT FENCES AND TRAPS (INLET PROTECTION) TO BE INSTALLED.
4. SITE TO BE SHAPED TO DESIGN LEVELS AND SURFACE STABILIZED ASAP BY MEANS OF TOP SOILING AND GRASS SEEDING WHERE APPLICABLE.

EROSION AND SEDIMENT CONTROL NOTES

TOPSOIL:

1. SEDIMENT FENCES TO BE PLACED AS SHOWN. FOR DETAILS OF SEDIMENT FENCE REFER IPWEA STANDARD DRAWING D-0040.
2. STRIP AND STOCKPILE AVAILABLE TOPSOIL (ASSUMED AVERAGE DEPTH 100mm) FROM ALL DISTURBED AREAS PRIOR TO BULK EARTHWORKS.
3. GRADE EVENLY BETWEEN ALLOTMENT FINISHED SURFACE LEVELS AND ENSURE LOTS ARE FREE DRAINING.
4. MINIMUM SLOPE ACROSS ALLOTMENTS TO BE 1%.
5. ALL FOOTPATHS, BATTERS AND EARTHWORKS AFFECTED ALLOTMENTS ARE TO BE TOPSOILED TO A MINIMUM DEPTH OF 100mm (LIGHTLY COMPACTED) AND TURFED WHERE SPECIFIED.

SEDIMENT FENCES:

1. SEDIMENT FENCES TO BE REPAIRED AS REQUIRED AND EXCESSIVE SEDIMENT DEPOSITS SHOULD BE REMOVED.
2. IN THE EVENT OF WET WEATHER, INSTALL KERB INLET FILTERS WITH GRAVEL RANGING FROM 50mm TO 75mm IN SIZE. REFER IPWEA STANDARD DRAWING D-0041. WHEREVER PRACTICABLE SEDIMENT RUNOFF SHOULD BE COLLECTED AND RETAINED WHOLLY WITHIN THE WORKSITE OR PRIOR TO ENTRY ON A ROAD SURFACE (WHETHER INSIDE OR OUTSIDE THE SITE). IF THE GRAVEL FILTER BECOMES CLOGGED WITH SEDIMENT DURING ITS USE, THE GRAVEL MUST BE PULLED AWAY FROM THE MESH AND CLEANED OR REPLACED.
3. DAILY CHECKS OF SILT FENCES IS TO BE MADE ALONG WITH A CHECK AFTER ANY SIGNIFICANT STORM EVENT TO ENSURE INTEGRITY AND PERFORMANCE.

TURFING:

1. PROVIDE TURFING TO ENTIRE WIDTH OF ALL SWALES, FOOTPATHS AND CUT AND FILL BATTERS.
2. FOOTPATH BATTERS ARE TO BE STABILISED WITH TOPSOIL (AND TURFED) AS SOON AS PRACTICAL AFTER BATTERS HAVE BEEN COMPLETED. REMAINING EXPOSED AREAS ON LOTS ARE TO BE SEEDED AND MULCHED (eg. HYDROMULCHED).
3. ALL AREAS OF CUT AND FILL INCLUDING ROAD VERGES TO BE SEEDED TO ACHIEVE 80% STRIKE WITHIN TWO WEEKS AND 80% COVERAGE WITH SIX MONTHS.

'A' DURING CONSTRUCTION:

1. TOPSOIL STOCKPILE TO HAVE A SEDIMENT FENCE DOWN SLOPE AND A DIVERSION DRAIN UP SLOPE.
2. SEDIMENT FENCES TO BE PLACED AS SHOWN.
3. INSPECT BANKS DAILY AND REPAIR ANY SLUMPS, WHEEL TRACK DAMAGE OR LOSS OF FREEBOARD.
4. REMOVE SEDIMENT TO AVOID PONDING FROM CATCH DRAINS.
5. REMOVE EXCESSIVE SEDIMENT FROM UPSTREAM OF CHECK DAM.
6. ROAD RESERVE TO BE USED AS HAUL ROAD.
7. A CATCH DRAIN/CATCH BANK IS TO BE PROVIDED ON THE TOP SIDE OF ALL CUTS AND DISCHARGE EITHER TO UNDISTURBED GRASS LANDS OR TO THE CROSS ROAD DRAINAGE.
8. SUPPLEMENTARY EROSION AND SEDIMENT CONTROL DEVICES MAY BE REQUIRED AT THE DISCRETION OF THE ENGINEER.
9. GRASS SEEDING IS TO ACHIEVE 70% COVER WITHIN 30 DAYS OF COMPLETION OF EARTHWORKS.

'B' FOLLOWING CONSTRUCTION:

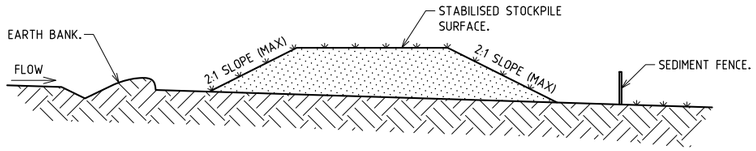
1. SEDIMENTATION AND EROSION CONTROLS TO BE MAINTAINED UNTIL SITE IS 80% STABILISED WITH ESTABLISHED GRASS/TURF THEN CONTROLS CAN BE REMOVED.

HOLD POINT

1. WORK TO ROADS, DRAINAGE, SEWER, WATER OR EARTHWORKS MUST NOT PROCEED UNTIL ADEQUATE SEDIMENT CONTROL IS IN PLACE TO THE SATISFACTION OF THE SUPERINTENDENT.

WARNING

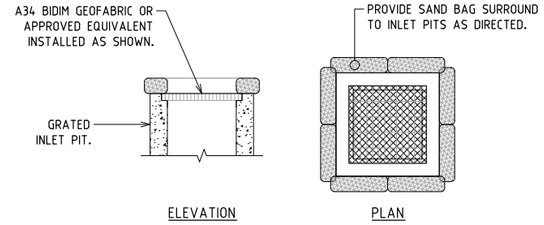
THE LOCATION OF ALL EXISTING SERVICES (E.G. TELSTRA, ELECTRICITY, SEWERAGE, WATER & GAS) ARE SHOWN SCHEMATICALLY ON THE DRAWINGS. PRIOR TO AND DURING CONSTRUCTION OBTAIN THE PRECISE LOCATION OF ALL SERVICES (UNDERGROUND & OVERHEAD) FROM THE RELEVANT AUTHORITY RESPONSIBLE FOR THE SERVICE SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING SERVICES WHETHER SHOWN ON THE DRAWINGS OR NOT.



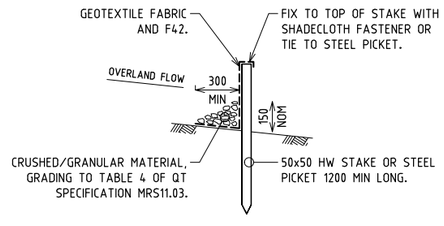
TYPICAL STOCK PILE DETAILS
NOT TO SCALE

STOCK PILE NOTES

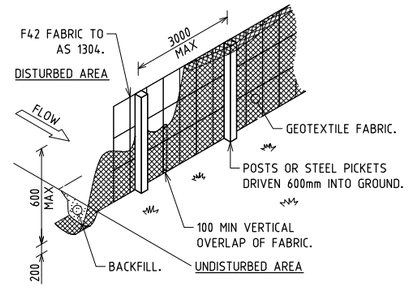
1. PLACE STOCKPILES MORE THAN 2 (PREFERABLY 5) METRES FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW, FLAT, ELONGATED MOUNDS.
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2 METRES IN HEIGHT.
4. WHERE THEY ARE TO 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.
5. 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 2 METRES DOWNSLOPE.



PIT INLET PROTECTION
TYPICAL TO BE INSTALLED AT ALL INLET PITS AROUND SITE
NOT TO SCALE



SEDIMENT FENCE DETAIL
NOT TO SCALE



SEDIMENT FENCE ELEVATION
NOT TO SCALE

STATUS

FOR APPROVAL

ISSUE	AMENDMENT	DATE	DFT
A	FOR APPROVAL	12.09.23	SMO

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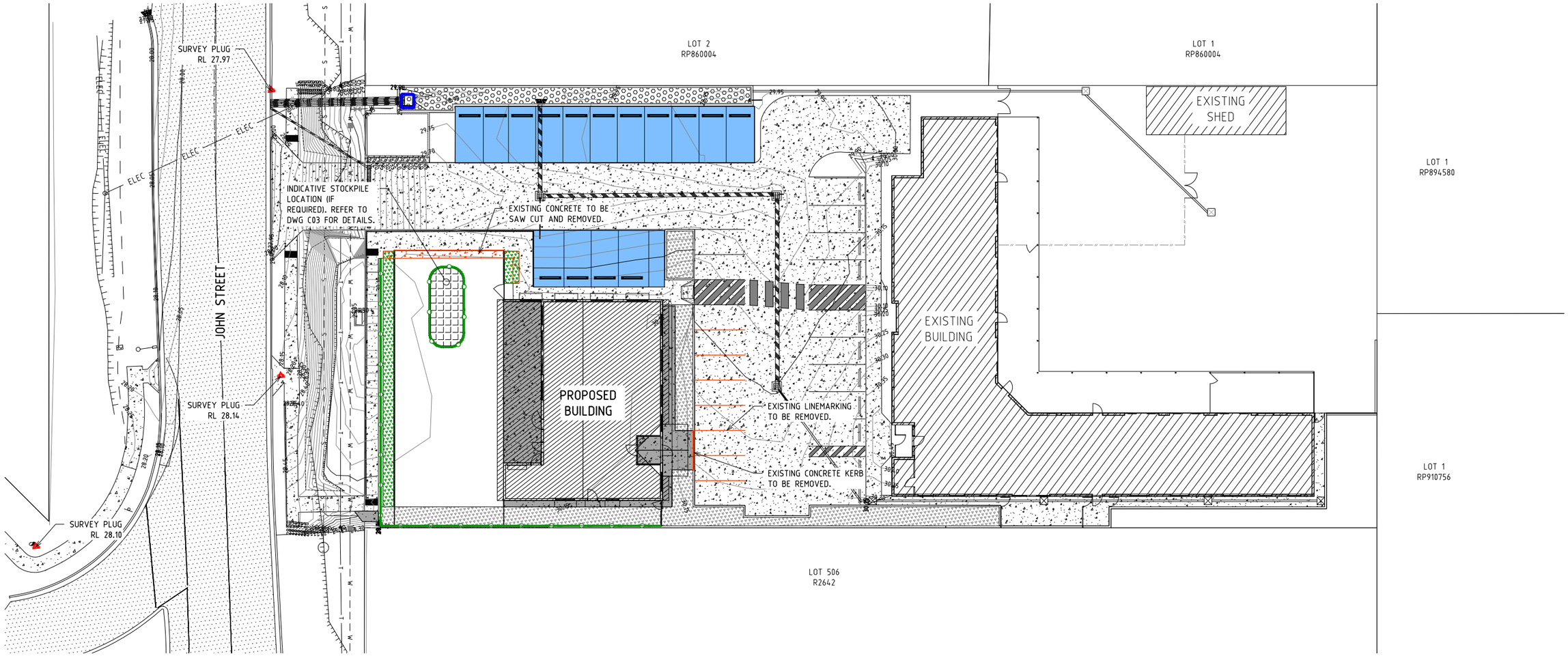
CLIENT: DAISY CJC PTY LTD
PROJECT: *PROPOSED KINDERGARTEN* NO.6 JOHN STREET GRACEMERE
DESIGNED: SMO | DRAWN: SMO | CHECKED: LJM
APPROVED:
SIDNEY OLIVE / RPEQ: 22964

TITLE: SEDIMENT AND EROSION CONTROL NOTES AND DETAILS

DATE: SEPTEMBER 2023	SCALE: AS SHOWN	
PROJECT NO:	DRAWING NO:	REV:
CC-7334	C03	A



SEDIMENT MANAGEMENT NOTES

1. CONTOURS SHOWN DEPICT THE EXISTING SURFACE AND ARE AT 0.05m INTERVALS.
2. PROVIDE SEDIMENT FENCES AT THE TOE OF ALL FILL BATTERS.
3. PROVIDE TEMPORARY SEDIMENT TRAPS AS DIRECTED.
4. SEDIMENT MANAGEMENT MEASURES ARE TO BE MAINTAINED UNTIL ACCEPTANCE 'OFF MAINTENANCE' & ARE DESIGNED IN ACCORDANCE WITH THE INTERNATIONAL EROSION CONTROL ASSOCIATION (AUSTRALASIA) 2008's "BEST PRACTICE EROSION AND SEDIMENT CONTROL FOR BUILDING AND CONSTRUCTION SITES" AND MAY VARY BY THE COUNCIL'S REPRESENTATIVE TO SUIT SITE CONDITIONS.
5. GRASS SEEDING OR MULCHING ARE TO BE CARRIED OUT AS SOON AS PRACTICABLE TO DISTURBED AREAS.

DUST CONTROL NOTES

1. CONTROL IS TO BE ESTABLISHED BY THE USE OF WATER TRUCKS ON SITE FOR THE DURATION OF THE CONTRACT PERIOD.
2. ALL DUST GENERATING AREAS TO BE TREATED BY SURFACE SPRAYING A MINIMUM OF THREE (3) TIMES PER DAY AT MAXIMUM THREE (3) HOUR INTERVALS, UNTIL SATISFACTORY GROUND COVER IS ACHIEVED, OR AS DIRECTED BY THE SUPERINTENDENT.

SEDIMENT & EROSION PLAN

OBJECTIVE/TARGET	COMPLY WITH ALL STATUTORY REGULATIONS AND MAINTAIN THEM DURING CONSTRUCTION AND THE MAINTENANCE PERIOD. COMPLY WITH THIS EROSION AND SEDIMENT CONTROL PLAN, TO CONTROL EROSION AND SEDIMENT FLOWS
MANAGEMENT STRATEGY	SITE FOREMAN TO IDENTIFY AND CHECK DIRECTION OF STORMWATER LAND FLOWS AS SHOWN ON THE PLAN. PROVIDE BARRIERS AND OTHER MEASURES SHOWN ON THE PLAN TO PREVENT STORMWATER FLOWS OVER EMBANKMENTS AND SEDIMENTS INTO CATCHPITS
TASKS/ACTIONS	ERECT SEDIMENT BARRIERS AT THE TOP OF EMBANKMENTS AS SHOWN ON THE DRAWING. STRATEGICALLY PLACE CHECK DAMS AROUND GULLY PITS
PERFORMANCE INDICATORS	SITE FOREMAN TO CHECK EROSION AND SEDIMENT FLOWS AT THE BASE OF EMBANKMENTS AFTER RAIN. CHECK THAT CHECK DAMS ARE WORKING DURING RAIN PERIODS
FREQUENCY/DEADLINE	SITE FOREMAN TO MONITOR PERFORMANCE AFTER EVERY HEAVY DOWNFALL
ORGANISATION	SITE FOREMAN TO BE RESPONSIBLE FOR INSPECTIONS
REPORTING/REVIEW	SITE WORKERS TO ADVISE FOREMAN IF THEY NOTICE ANY BARRIER NEEDING REPAIR
CORRECTIVE ACTIONS	SITE FOREMAN TO REPORT AND ORDER THROUGH SUPERVISOR, EXTRA BARRIER OR CHECK DAMS AS REQUIRED

LEGEND

- PROPOSED TEMPORARY PIT INLET PROTECTION. REFER TO DWG C03 FOR DETAILS
- PROPOSED SEDIMENT FENCE. REFER TO DWG C03 FOR DETAILS
- EXISTING SEALED ROAD
- PROPOSED CONCRETE CARPARK. REFER DWG C90 FOR DETAILS
- PROPOSED CONCRETE RIBBON FOOTPATH. REFER TO DWG C90 FOR DETAILS
- EXISTING BIORETENTION BASIN
- PROPOSED LANDSCAPING BY OTHERS
- EXISTING CONCRETE
- EXISTING LANDSCAPING
- EXISTING FIELD INLET PIT
- EXISTING STORMWATER PIPE
- EXISTING DRAIN INVERT
- ELEC — EXISTING ELECTRICAL SERVICE
- S — EXISTING SEWER MAIN
- W — EXISTING WATER MAIN

PROJECT NORTH

SCALES 1:200 at A1, 1:400 at A3 — 0 2 4 6 8 10m

STATUS **FOR APPROVAL**

ISSUE	AMENDMENT	DATE	DFT
A	FOR APPROVAL	12.09.23	SMO

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CLIENT: DAISY CJC PTY LTD

PROJECT: *PROPOSED KINDERGARTEN* NO.6 JOHN STREET GRACEMERE

DESIGNED: SMO | DRAWN: SMO | CHECKED: LJM

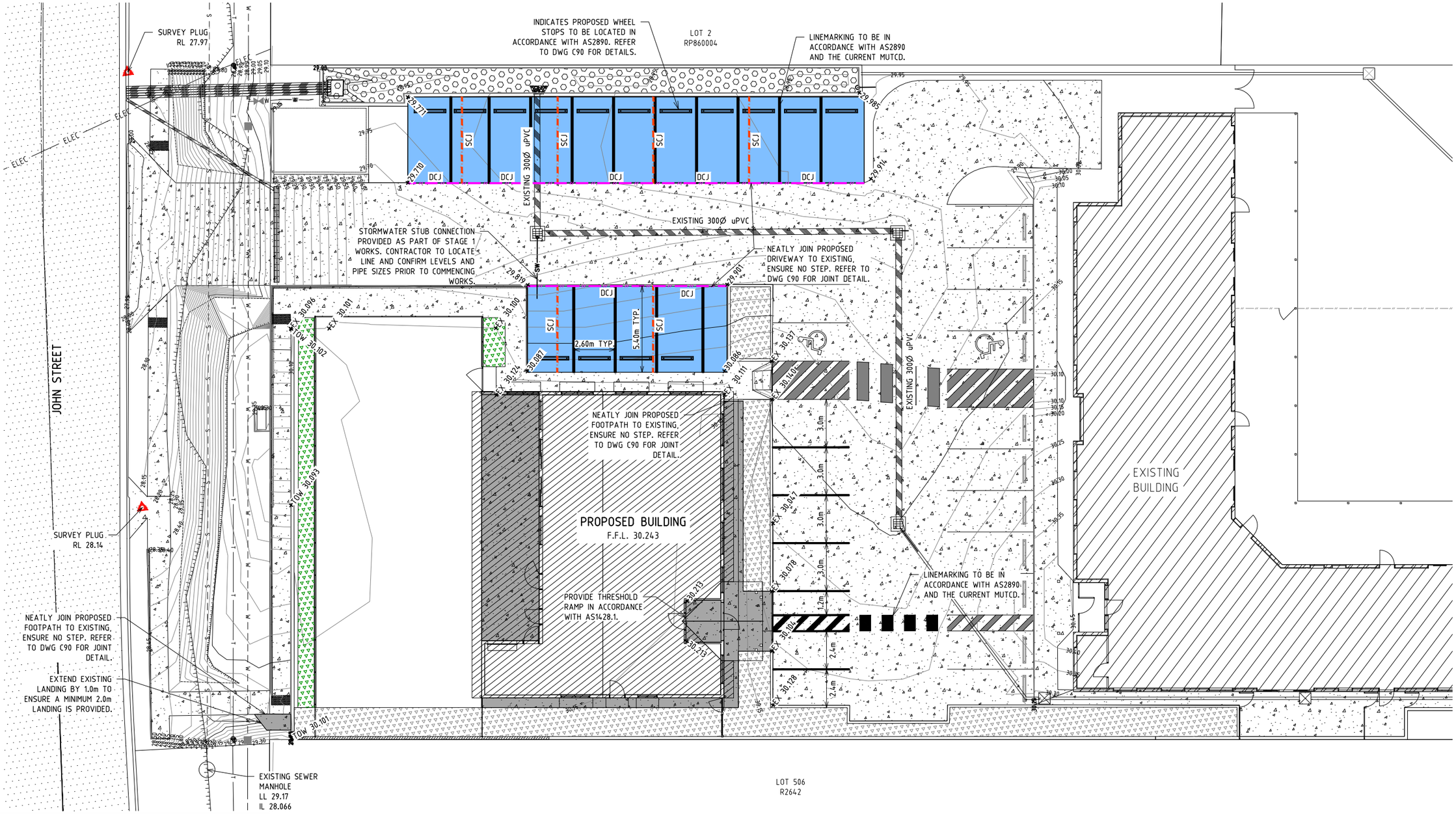
APPROVED:

SIDNEY OLIVE / RPEQ: 22964

TITLE: SEDIMENT AND EROSION CONTROL LAYOUT PLAN

DATE: SEPTEMBER 2023 | SCALE: AS SHOWN

PROJECT NO: CC-7334 | DRAWING NO: C04 | REV: A



GENERAL NOTES

1. ALL WORK SHALL COMPLY WITH THE REQUIREMENTS OF ROCKHAMPTON REGIONAL COUNCIL AND WITH THE REQUIREMENTS OF ALL RELEVANT AUSTRALIAN STANDARDS.
2. CONTOURS SHOWN DEPICT THE EXISTING SURFACE AND ARE AT 0.05m INTERVALS.
3. THE CONTRACTOR IS TO ASCERTAIN THE EXACT LOCATION OF ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION AND CONFIRM INVERT LEVELS AND LOCATIONS OF ALL AUTHORITY CONNECTIONS PRIOR TO THE INSTALLATION OF ANY ASSOCIATED SERVICES. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COST OF RECTIFICATION OF ANY DAMAGE WHICH MAY OCCUR. NO OPINION IS EXPRESSED AS TO THE ACCURACY OF THE EXISTING SERVICES SHOWN ON THIS DRAWING
4. THESE DRAWINGS ARE A DIAGRAMMATIC REPRESENTATION OF A PROPOSED PLUMBING AND DRAINAGE INSTALLATION. USE DIMENSIONED ARCHITECTURAL DRAWINGS FOR SET OUT OF PENETRATIONS RELATING TO PLUMBING FIXTURES. IT IS THE RESPONSIBILITY OF THE INSTALLER TO CO-ORDINATE THE ON-SITE INSTALLATION WITH OTHER SERVICES INSTALLATIONS, STRUCTURE AND THE LIKE. DO NOT SCALE THESE DRAWINGS.
5. AS A CONDITION OF TENDERING, THE CONTRACTOR SHALL VISIT THE SITE AND SHALL BE DEEMED TO BE FULLY AWARE OF SITE CONDITIONS. ANY CLAIM FOR VARIATION ON THE BASIS OF LACK OF KNOWLEDGE OF SITE CONDITIONS SHALL NOT BE ACCEPTED.

LEGEND

- EXISTING SEALED ROAD
- PROPOSED CONCRETE CARPARK. REFER DWG C90 FOR DETAILS
- PROPOSED CONCRETE RIBBON FOOTPATH. REFER TO DWG C90 FOR DETAILS
- PROPOSED LANDSCAPING BY OTHERS
- EXISTING BIORETENTION BASIN
- EXISTING CONCRETE
- EXISTING LANDSCAPING

- DCJ — PROPOSED DOWEL CONTROL JOINT AS DETAILED ON DWG C90
- SCJ — PROPOSED SAW CUT JOINT AS DETAILED ON DWG C90
- 30.150 × — INDICATES PROPOSED FINISH SURFACE LEVEL
- EX 30.150 × — INDICATES EXISTING FINISH SURFACE LEVEL
- TOW 30.150 × — INDICATES EXISTING TOP OF RETAINING WALL LEVEL
- EXISTING FIELD INLET PIT
- EXISTING STORMWATER PIPE
- EXISTING DRAIN INVERT
- ELEC — EXISTING ELECTRICAL SERVICE
- S — EXISTING SEWER MAIN
- W — EXISTING WATER MAIN

LINEMARKING NOTES

1. ALL NEW LINEMARKING TO BE IN ACCORDANCE WITH AS 1742.2:2022 AND CURRENT MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES MUTCD.
2. CONTACT EMPIRE ENGINEERING TO DISCUSS LINEMARKING SETOUT REQUIREMENTS.

WARNING

THE LOCATION OF ALL EXISTING SERVICES (E.G. TELSTRA, ELECTRICITY, SEWERAGE, WATER & GAS) ARE SHOWN SCHEMATICALLY ON THE DRAWINGS. PRIOR TO AND DURING CONSTRUCTION OBTAIN THE PRECISE LOCATION OF ALL SERVICES (UNDERGROUND & OVERHEAD) FROM THE RELEVANT AUTHORITY RESPONSIBLE FOR THE SERVICE SHOWN. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO EXISTING SERVICES WHETHER SHOWN ON THE DRAWINGS OR NOT.

PROJECT NORTH

SCALES
1:125 at A1
1:250 at A3
0 1.25 2.5 3.75 5 6.25m

STATUS
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ISSUE	AMENDMENT	DATE	DFT
A	FOR APPROVAL	12.09.23	SMO

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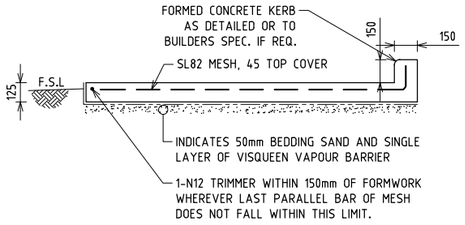
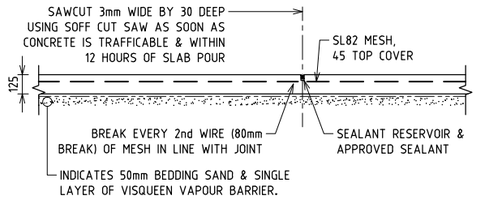
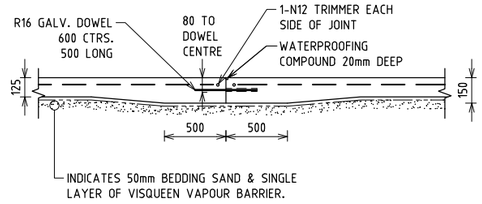
CLIENT:	DAISY CJC PTY LTD
PROJECT:	*PROPOSED KINDERGARTEN* NO.6 JOHN STREET GRACEMERE
DESIGNED: SMO	DRAWN: SMO	CHECKED: LJM
APPROVED:	SIDNEY OLIVE / RPEQ: 22964
TITLE:	DETAIL LAYOUT PLAN
DATE: SEPTEMBER 2023	SCALE: AS SHOWN
PROJECT NO:	DRAWING NO:	REV:
CC-7334	C40	A



CONCRETE DRIVEWAY & BARRIER KERB DETAILS



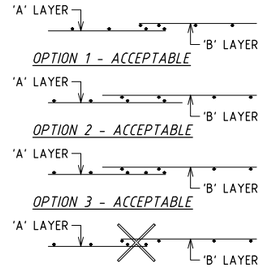
SAW CUT JOINT DETAIL (SCJ)



DOWEL CONTROL JOINT DETAIL (DCJ)

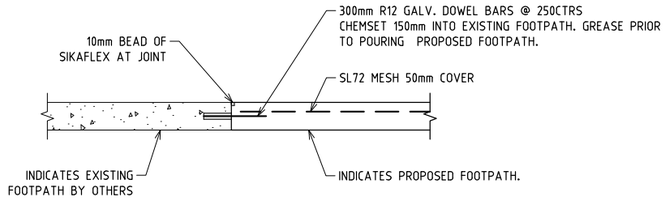
CONCRETE CARPARK / FOOTPATH DETAILS

1:20 at A1



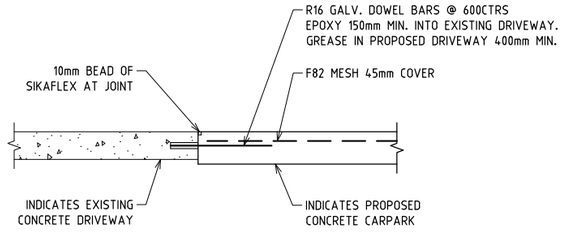
METHODS OF LAPPING MESH

NOT TO SCALE



EXISTING TO PROPOSED FOOTPATH JOINT DETAIL

NOT TO SCALE

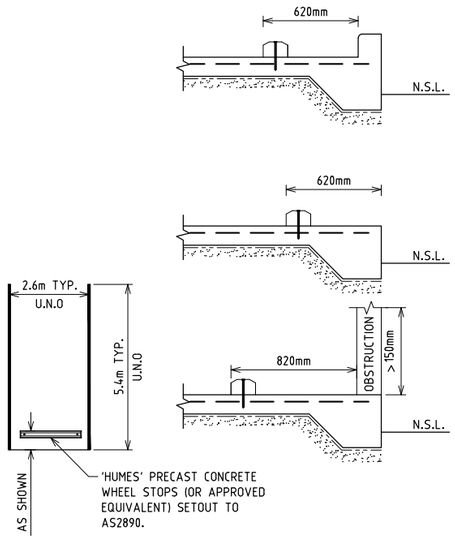


CONCRETE CARPARK CONNECTION DETAIL

NOT TO SCALE

CONCRETE NOTES

1. CONCRETE N32 FOR DRIVEWAYS. N25 FOR PATHWAYS. IN REFERENCE TO AS1379/AS3600
2. ALL CONCRETE TO BE BROOM FINISHED. FINISHES OTHER THAN BROOM CONCRETE ARE TO BE SPECIFICALLY APPROVED BY SUPERINTENDENT, WITH REGARDS FOR LONG TERM SKID RESISTANCE AND DURABILITY
3. PATTERN LINES TO BE SQUARE TO SIDES & FINISHED WITH APPROVED GROOVING TOOL
4. 3-N12 TRIMMER BARS 2.0m LONG TO BE PLACED AT ALL RE-ENTRANT CORNERS



TYPICAL WHEEL STOP POSITIONING DETAIL

NOT TO SCALE

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A	FOR APPROVAL	12.09.23	SMO

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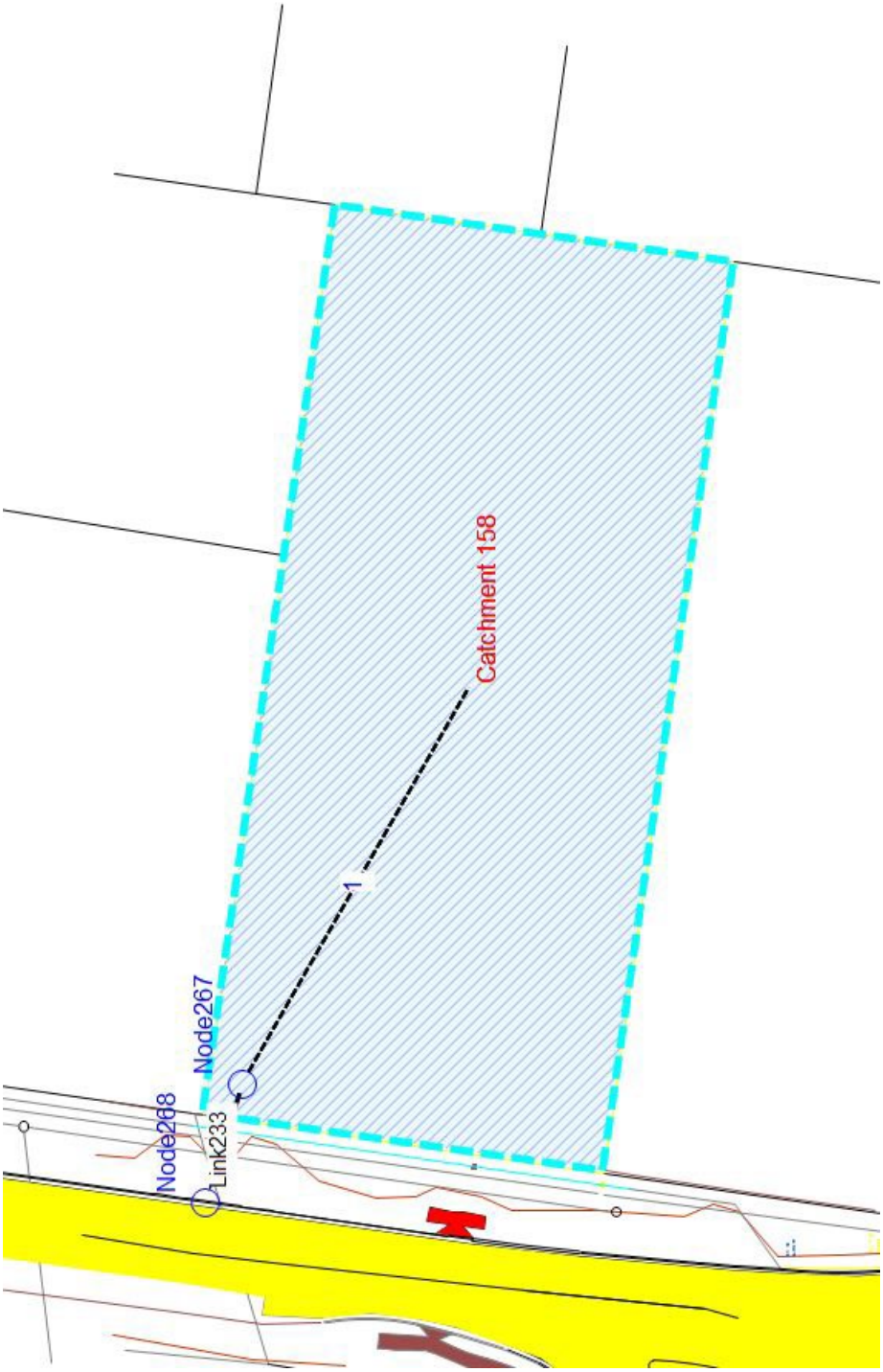
2. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALED.
3. VERIFY ALL DIMENSIONS ON SITE.

CLIENT:	DAISY CJC PTY LTD
PROJECT:	*PROPOSED KINDERGARTEN* NO.6 JOHN STREET GRACEMERE
DESIGNED: SMO	DRAWN: SMO	CHECKED: LJM
APPROVED:	SIDNEY OLIVE / RPEQ: 22964
TITLE:	STANDARD DETAILS PLAN
DATE: SEPTEMBER 2023	SCALE: AS SHOWN
PROJECT NO:	CC-7334
DRAWING NO:	C90
REV:	A

APPENDIX C – PRE-DEVELOPMENT XP-STORM MODEL LAYOUT AND RESULTS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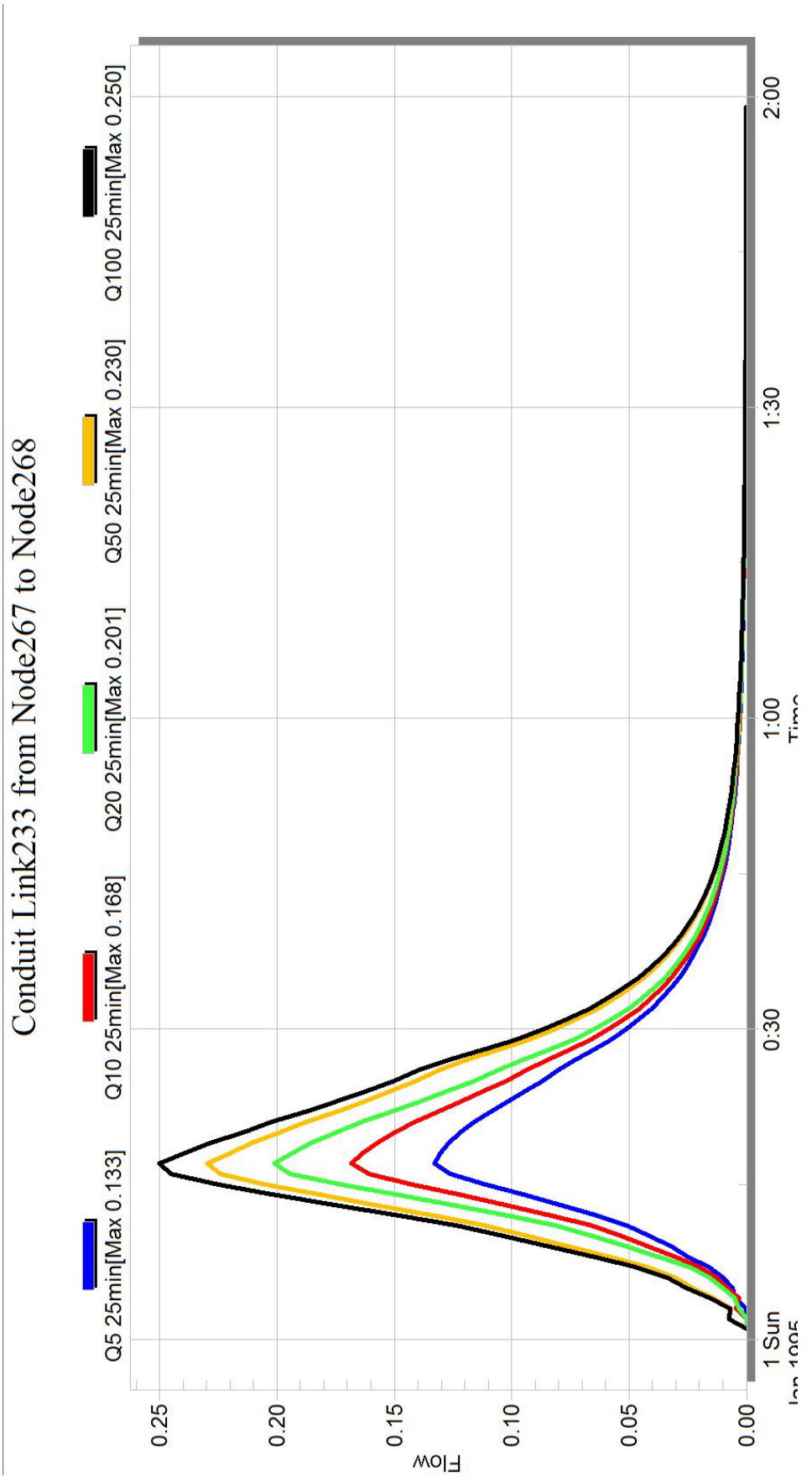
Node268
Link233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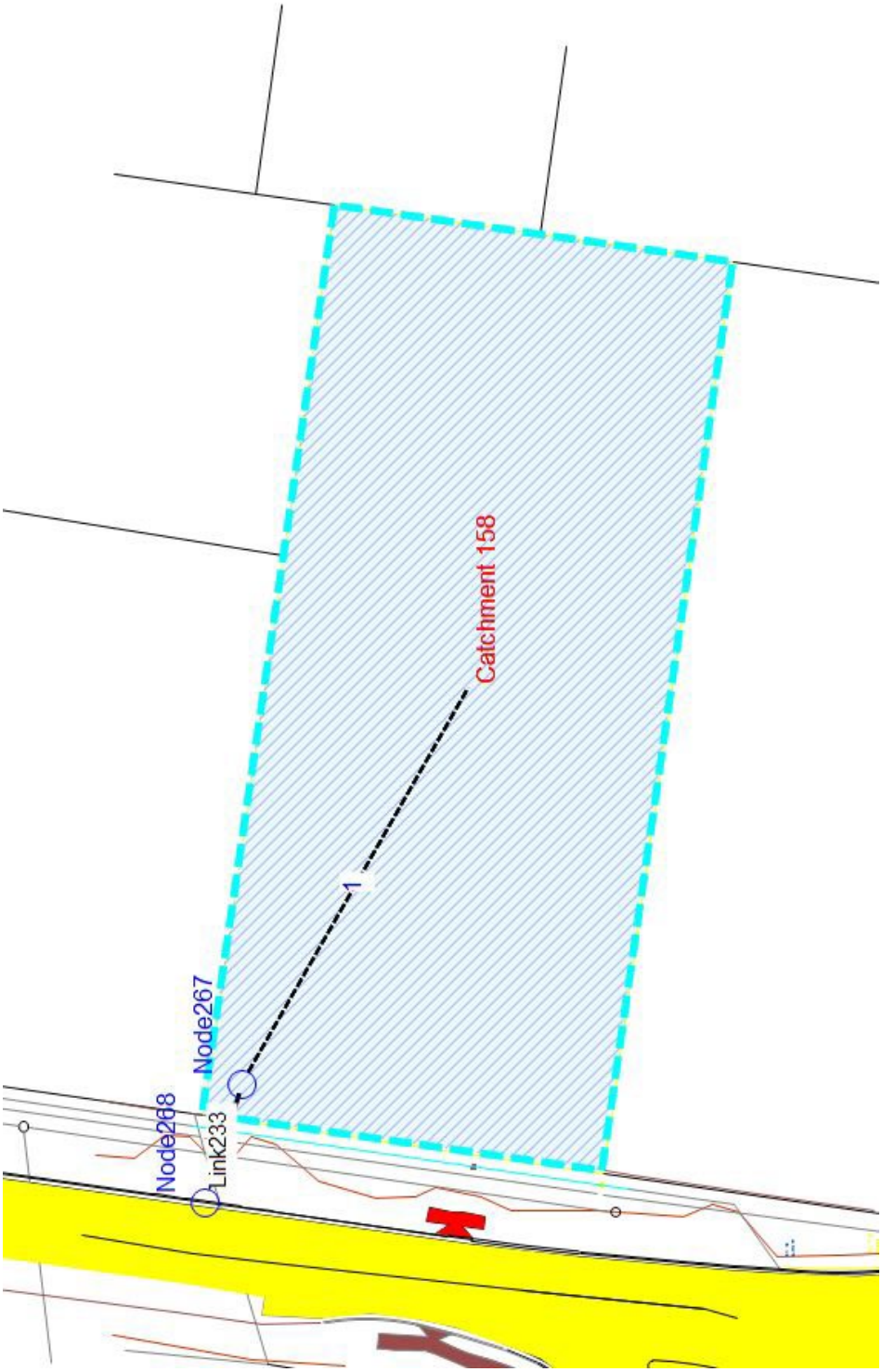
Q5 25min[Max 0.133]
Q10 25min[Max 0.168]
Q20 25min[Max 0.201]
Q50 25min[Max 0.230]
Q100 25min[Max 0.250]
Flow
0.25
0.20
0.15
0.10
0.05
0.00
0:30
1:00
1:30
2:00
1 Sun

APPENDIX D – POST DEVELOPMENT XP-STORM MODEL LAYOUT AND RESULTS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Node267
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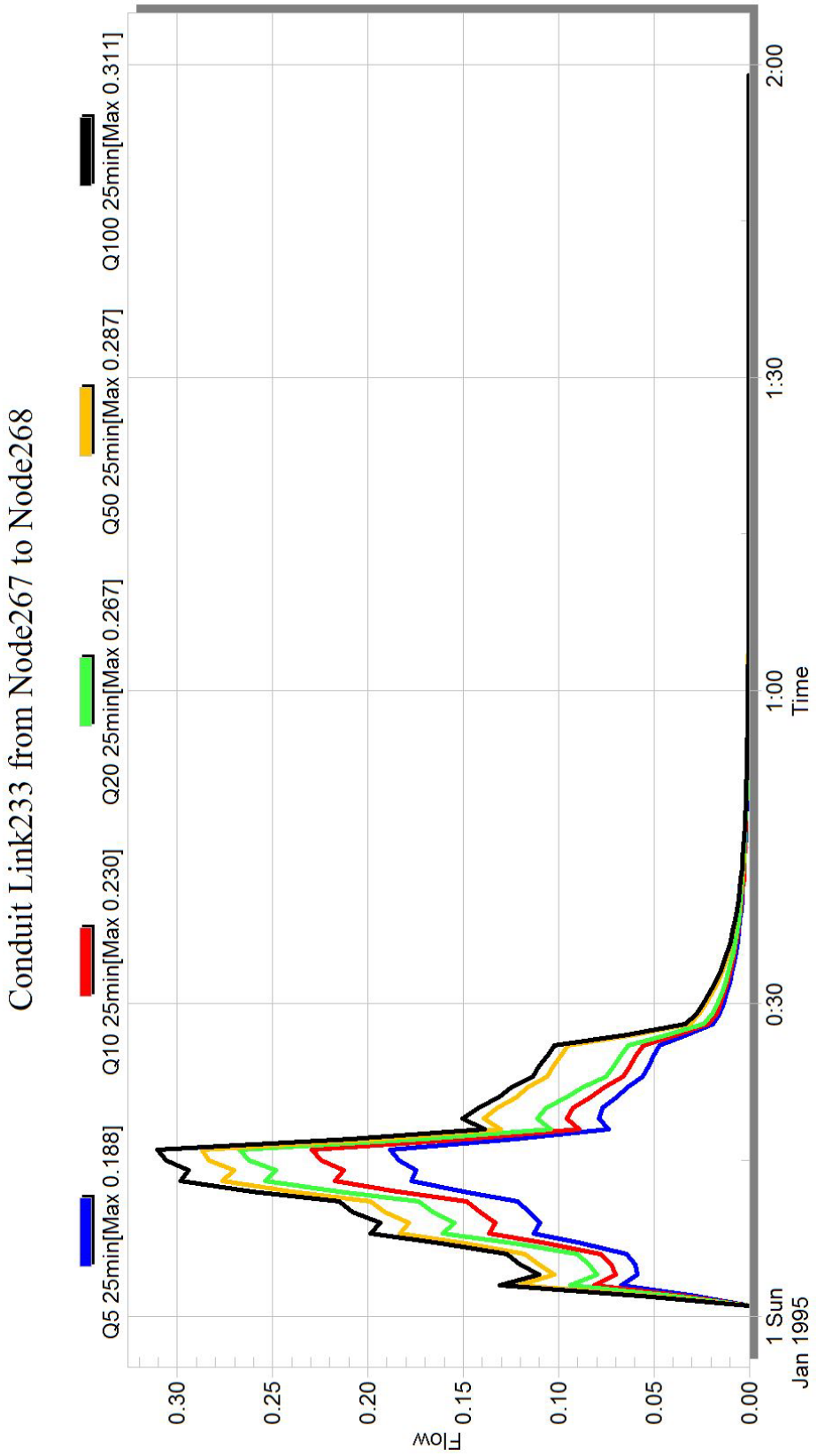
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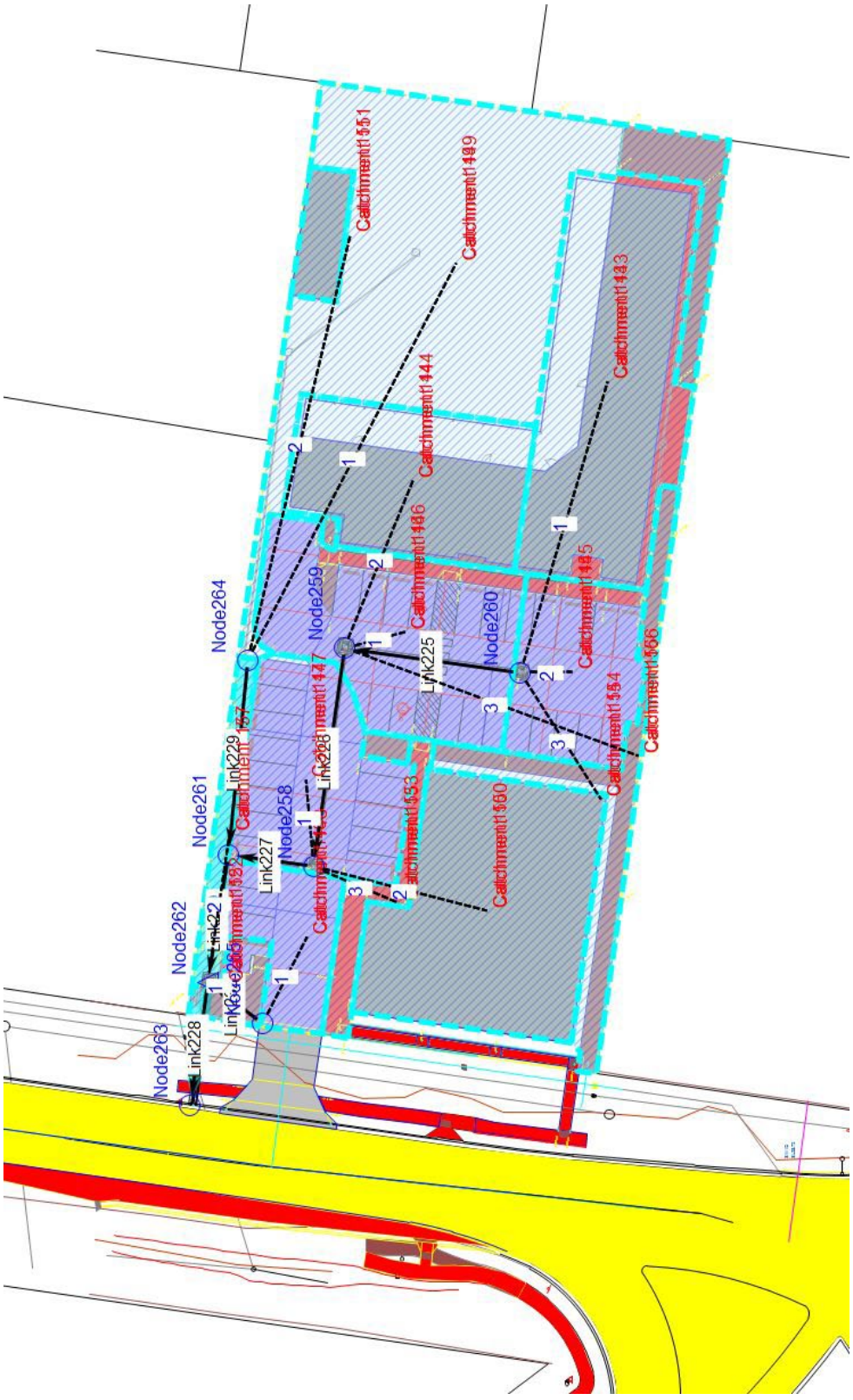
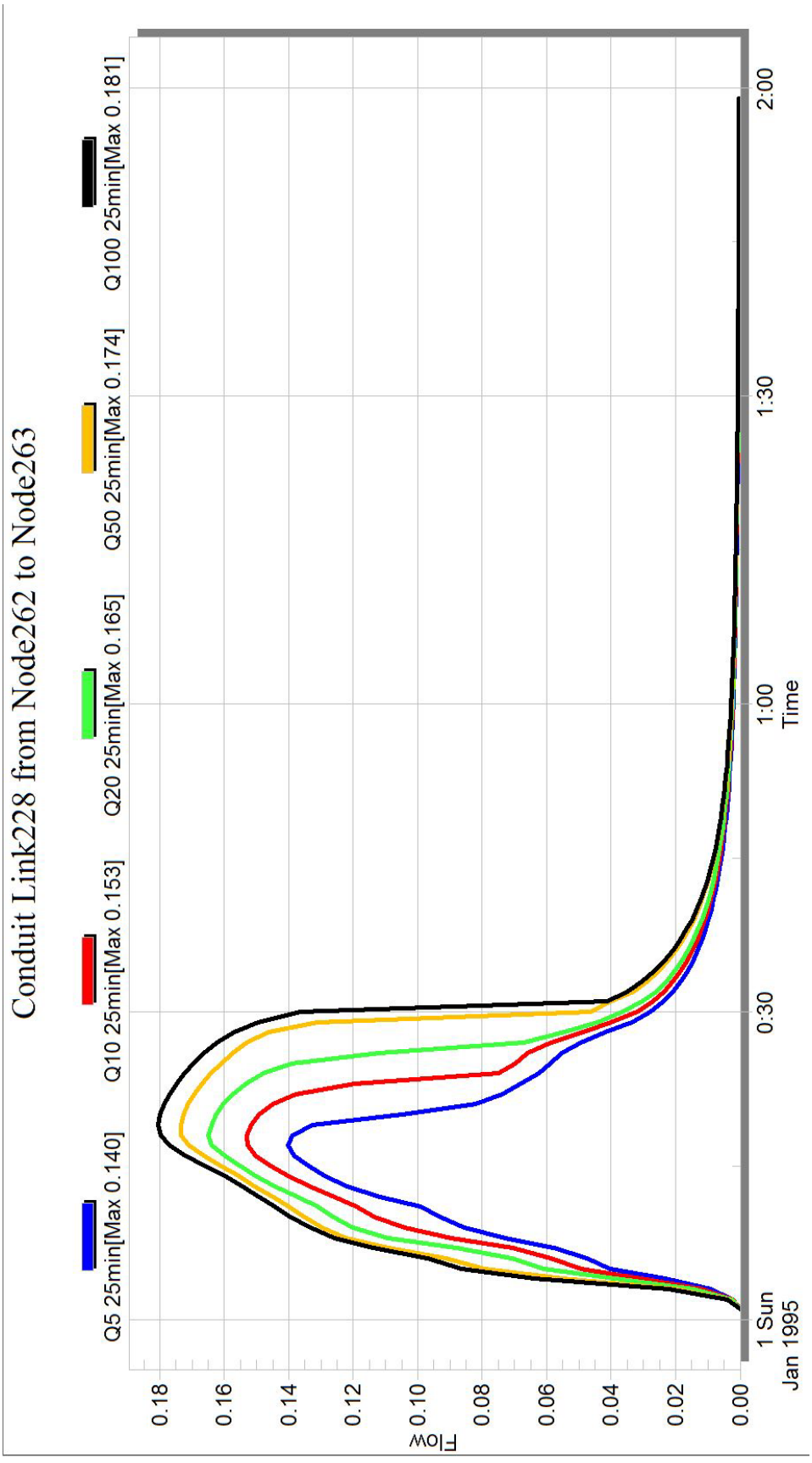
Q10 25min[Max 0.230]
Q20 25min[Max 0.267]
Q50 25min[Max 0.287]
Q100 25min[Max 0.311]
Flow
0.00
0.05
0.10
0.15
0.20
0.25
0.30
1 Sun
Jan 1995
0:30
1:00
1:30
2:00
Time

APPENDIX E – POST DEVELOPMENT WITH MITIGATION XP-STORM MODEL RESULTS


Node264
Node259
Node260
Node261
Node258
Node262
Node263
Link225
Link227
Link228
Catchment1151
Catchment1149
Catchment1144
Catchment1146
Catchment1145
Catchment1143
Catchment1154
Catchment1166
Catchment1160
Catchment1153
Catchment1147
Catchment1157


Conduit Link228 from Node262 to Node263
Q5 25min[Max 0.140]
Q10 25min[Max 0.153]
Q20 25min[Max 0.165]
Q50 25min[Max 0.174]
Q100 25min[Max 0.181]
Flow
0.18
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
1 Sun
Jan 1995
0:30
1:00
1:30
2:00
Time

APPENDIX F – OPERATIONAL MANAGEMENT AND MAINTENANCE MANUAL FOR STORMWATER QUALITY IMPROVEMENT DEVICES

Operational Management & Maintenance Manual

for

Proposed Childcare Centre & Kindergarten

at

4-6 John Street, Gracemere

Prepared for

Daisy CJC Pty Ltd

Job Ref: CC-7334

December 2023

Revision B

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LIST OF TABLES

1. INTRODUCTION

Water Sensitive Urban Design (WSUD) has been implemented within the design of the stormwater drainage system for this development. The purpose of this design is to improve the quality of the stormwater that is discharged from the site during its operational phase. This manual outlines the maintenance requirements needed to ensure the devices installed during the construction process are maintained in order to provide an efficient reduction in pollutant loads. Stormwater Quality Improvement Devices (SQIDs) implemented within this development include:

- Bioretention System.

2. BIORETENTION SYSTEM

2.1. Background

Bioretention systems treat stormwater by filtering runoff through densely planted vegetation and then percolating the runoff through a prescribed filter media. Bioretention systems serve as tertiary stormwater treatment devices in stormwater treatment trains. Bioretention systems contribute to stormwater quality management outcomes by removing fine sediments, metals, particulates and dissolved nutrients (Water by Design, 2009). The primary functions of a bioretention system, as outlined in *Maintaining Vegetated Stormwater Assets* (Water by Design, 2012a) are to:

- Capture and filter stormwater through dense vegetation;
- Percolate stormwater through prescribed filter media and infiltrate it into surrounding soils and/or discharge it to downstream drainage;
- Allow high flow to bypass or pass over the bioretention area in a controlled manner; and
- Provide visual amenity and promote ecology within urban zones.

The operational management and maintenance activities outlined below are consistent with the recommendations provided in *Concept Design Guidelines for Water Sensitive Urban Design* (Water By Design, 2009), *WSUD Technical Guidelines for South East Queensland* (Water By Design, 2006), *Maintaining Vegetated Stormwater Assets* (Water By Design, 2012a) and *Rectifying Vegetated Stormwater Assets* (Water By Design, 2012b).

2.2. Vegetation Establishment

The most intensive period of maintenance is during the first two years whilst the plants are established. During this time regular watering and weeding is required.

2.2.1. Watering

Regular watering of the bioretention system is essential for successful establishment. The frequency of watering is dependent on rainfall during the establishment phase however the following program should be used as a guideline:

- Week 1-2 3 waterings per week
- Week 3-6 2 waterings per week
- Week 7-12 1 watering per week
- After Week 12, water as required during extended dry periods

2.2.2. Weeding

Weed management will need to be undertaken manually on a fortnightly basis until such time that the plants are established with sufficient density to effectively prevent weed propagation. Surface mulching of the bioretention system with organic material such as bark chips **should not** be undertaken

as most organic mulch floats and runoff typically causes this material to be washed away with a risk of causing a drain blockage.

2.3. Inspection and Maintenance

The scope of inspection and maintenance tasks should include verifying the function and condition of the following aspects:

- Vegetation;
- Inlet;
- Batter slopes and base invert;
- Outlet; and
- Rainfall events.

Table 5.1 outlines the various inspection and maintenance tasks required for each aspect of the bioretention system.

2.4. Reporting and Log Booking

A historic record of inspections and maintenance undertaken is to be kept and made available for review at all times. An inspection and maintenance checklist for bioretention systems has been developed and is provided in Appendix B. The inspection and maintenance checklist provided in Appendix B is specific for this development and is based on the checklist provided in *Maintaining Vegetated Stormwater Assets* (Water By Design, 2012a).

2.5. Resetting of Bioretention System

With proper regular maintenance, the expected service life of a bioretention system is typically 20 -30 years. At such time, it may be necessary to replace some or all of the filter media to ensure effective pollutant removal. To ensure the maximum service life of a bioretention system it is critical that the filter media used is efficient in the capture and removal of target pollutants. It is also critical that dense and healthy vegetation is maintained in order to remove nutrients and maintain the hydraulic conductivity of the filter media. Regular and proper maintenance of the bioretention system will help to ensure the efficiency and lifespan of the bioretention system is optimised.

Table 5.1 – Inspection and Maintenance Plan for Bioretention Systems

Aspect	*Performance Indicator*	*Inspection Frequency*	*Inspection Activities*	*Maintenance Frequency*	*Preventative / Corrective Maintenance Activities*
Vegetation					
Plant height	Average plant height >500mm.	2 monthly during wet season / 4 monthly during dry season	Assess plant height to ensure an average of >500mm.	As inspection results dictate	Increase frequency of watering and application of fertiliser. If necessary, re-establish with species that are growing well in other parts of the bioretention system.
Plant density	Minimum 95% vegetation cover (minimal bare patches).		Assess plant densities to ensure a minimum of 95% vegetation cover.		Plant additional vegetation to increase the density. Increase the frequency of watering and application of fertiliser.
Pests and diseases	Plants healthy and free from pests and diseases.		Assess plants for disease, pest infection, stunted growth or senescent plants.		Prune, treat or replace as necessary to remove dead or diseased vegetation material and to stimulate new growth.
Weeds	No declared weeds (or declared weeds are controlled). Maximum 10% cover of weeds.	2 monthly during wet season / 4 monthly during dry season. Inspection frequency may need to be increased whilst implementing weed control measures.	Identify the occurrence and coverage of any weed species.		Implement the most appropriate control method (e.g. physical removal, containment, biological control, herbicide application, etc) for the weed species identified. Inspection frequency may need to be increased during active control of weeds.
Inlet					
Erosion	Inlet is structurally sound and there is no evidence of erosion or subsidence / settlement.	Immediately following first 3 storm events after construction complete. Then 2 monthly during wet season / 4 monthly during dry season	Identify any scouring of the inlet from storm flows.	As inspection results dictate	Repair damage to the inlet resulting from scour and if necessary install scour protection or energy dissipation.
Damaged or removed structures	No damage that poses a risk to public safety or structural integrity.		Check the inlet structure for any damage or loss of infrastructure.		Repair and/or replace damaged or lost infrastructure.
Sediment, litter or debris	No blockage.		Identify any blockage.		Remove sediment, litter or debris to remove blockage or potential blockage.

Aspect	*Performance Indicator*	*Inspection Frequency*	*Inspection Activities*	*Maintenance Frequency*	*Preventative / Corrective Maintenance Activities*
Batter Slopes and Base Invert					
Erosion	Minor erosion only that does not pose a risk to public safety or structural integrity and would not worsen if left unattended.	Immediately following first 3 storm events after construction complete. Then 2 monthly during wet season / 4 monthly during dry season	Identify any scouring of the base invert from storm flows, rill erosion of the batter slopes from lateral inflows or damage to the batter profile from vehicles.	As inspection results dictate	Repair damage to the bioretention system profile resulting from scour, rill erosion or vehicle damage and if necessary re-profile the batter slopes and invert and revegetate to original design specification.
Crust of Fine Sediment	No surface crusting.		Identify any areas of obvious surface crusting.		Remove sediment where it is impeding the surface conveyance or the hydraulic conductivity of the bioretention system and/ or smothering the vegetation.
Depressions or Mounds	No surface depressions or mounds >100mm.		Identify any areas of depressions or mounds >100mm.		Fill localised sag points with topsoil or remove excess sediment. If required, re-grade the batter slopes and re-establish plantings.
Hydraulic Conductivity or Permeability	Filter media is draining freely, whereby water is not ponded on the surface for more than 12 hours after rainfall and there is no obvious impermeable or clay-like surface on the filter media.		Identify any surface ponding of water or boggy conditions.		Remove any sediment from the surface of the filter media, the transition or drainage layers or the under-drains. If necessary, install sediment and erosion control measures.
Underdrains / Clean Out Points	Clean out points not damaged and end caps securely in place. Underdrain outlets are free draining.		Check for any damage to clean out points and ensure end caps are securely in place. Check that underdrain outlets are not blocked and are free draining.		Repair any damage to the clean out points and reinstall end caps. Use clean out points to flush sediment from underdrains as required.

Aspect	*Performance Indicator*	*Inspection Frequency*	*Inspection Activities*	*Maintenance Frequency*	*Preventative / Corrective Maintenance Activities*
Batter Slopes and Base Invert (cont.)					
Unusual Odours, Colours or Substances (e.g. oil and grease)	None detected.	Immediately following first 3 storm events after construction complete. Then 2 monthly during wet season / 4 monthly during dry season	Check for any unusual odours, colours or substances.	As inspection results dictate	Remove and replace vegetation and filter media affected by grease, oil, fuels or other substances, as required.
Litter and Debris	Maximum 1 piece per $4m^2$.		Check for debris and litter (including organic litter) within the bioretention system.		Remove both organic and anthropogenic litter and debris to ensure flow paths and infiltration are not hindered.
Algal or Moss Growth	Maximum 10% of surface covered in algae and no moss growth.		Identify any algal or moss growth.		Resolve why the filter media is constantly wet, allow the bioretention system to dry out and remove algae by hand.
Outlet					
Erosion	Outlet is structurally sound and there is no evidence of erosion or subsidence / settlement, including around edges of rock protection or tow of weir for large systems.	Immediately following first 3 storm events after construction complete. Then 2 monthly during wet season / 3 monthly during dry season	Identify any scouring of the outlet from high velocity flows.	As inspection results dictate	Repair damage to the outlet resulting from scour and if necessary install scour protection or energy dissipation.
Damaged or removed structures	No damage that poses a risk to public safety or structural integrity.		Check the outlet structure for any damage or loss of infrastructure.		Repair and/or replace damaged or lost infrastructure.
Sediment, litter or debris	No blockage.		Check for accumulated sediment, debris and litter (including organic litter) within the outlet structure.		Remove accumulated sediment, debris and organic and anthropogenic litter to ensure the functioning of the outlet structure is not impeded.
Downstream outfall	No downstream impediments to the release of water, no erosion or damage to the outfall structure, and no evidence of malfunction (e.g. excessive sediment accumulated).		Check for any impediments to the release of water from the bioretention system (e.g. erosion, damage to structure, sediment accumulation, etc).		Remove sediment where it is impeding the conveyance of the outfall. Repair damage to the outfall profile resulting from scour or rill erosion and if necessary re-profile.

Aspect	*Performance Indicator*	*Inspection Frequency*	*Inspection Activities*	*Maintenance Frequency*	*Preventative / Corrective Maintenance Activities*
Rainfall Events					
Inspection after rainfall	Bioretention system operates satisfactorily in wet conditions.	At least once per year during, or immediately after, a significant rainfall event (i.e. >50mm/day)	Check that the bioretention system is generally functioning as intended.	As inspection results dictate	Identify and rectify any system faults or functional impediments as required.

3. REFERENCES

Water By Design, 2006, *WSUD Technical Guidelines for South East Queensland: Version 1 – June 2006*, Brisbane City Council & Moreton Bay Waterways and Catchments Partnership, Brisbane.

Water By Design, 2009, *Concept Design Guidelines for Water Sensitive Urban Design: Version 1 – March 2009*, SEQ Healthy Waterways Partnership, Brisbane.

Water By Design, 2012a, *Maintaining Vegetated Stormwater Assets: Version 1 – February 2012*, Healthy Waterways Ltd, Brisbane

Water By Design, 2012b, *Rectifying Vegetated Stormwater Assets: Draft – February 2012*, Healthy Waterways Ltd, Brisbane.

APPENDIX A – BIORETENTION SYSTEM INSPECTION AND MAINTENANCE CHECKLIST

BIORETENTION SYSTEM INSPECTION AND MAINTENANCE CHECKLIST			Page 1 of 3
Location	**Childcare Centre and Kindergarten, Gracemere**	**Date**	
Purpose of Site Visit (circle)	**Inspection & Maintenance / Inspection Only / Maintenance Only**	**Weather**	
Officer's Name		**Date and Volume of Last Rainfall**	

Aspect	*Performance Indicator (PI)*	*Inspection Site Visit*				*Maintenance Site Visit*	
		Complies with PI?		*Maintenance Required?*		*Description of Maintenance Undertaken*	*Description of Additional Maintenance Required*
		Y	*N*	*Y*	*N*		
Vegetation							
Plant height	Average plant height >500mm.						
Plant density	Minimum 95% vegetation cover (minimal bare patches).						
Pests and diseases	Plants healthy and free from pests and diseases.						
Weeds	No declared weeds (or declared weeds are controlled). Maximum 10% cover of weeds.						
Inlet							
Erosion	Inlet is structurally sound and there is no evidence of erosion or subsidence / settlement.						
Damaged or removed structures	No damage that poses a risk to public safety or structural integrity.						
Sediment, litter or debris	No blockage.						
Batter Slopes and Base Invert							
Erosion	Minor erosion only that does not pose a risk to public safety or structural integrity and would not worsen if left unattended.						
Crust of Fine Sediment	No surface crusting.						
Depressions or Mounds	No surface depressions or mounds >100mm.						

BIORETENTION SYSTEM INSPECTION AND MAINTENANCE CHECKLIST								Page 2 of 3
Aspect	*Performance Indicator (PI)*	*Inspection Site Visit*				*Maintenance Site Visit*		
		Complies with PI?		*Maintenance Required?*		*Description of Maintenance Undertaken*	*Description of Additional Maintenance Required*	
		Y	*N*	*Y*	*N*			
Batter Slopes and Base Invert (cont.)								
Hydraulic Conductivity or Permeability	Filter media is draining freely, whereby water is not ponded on the surface for more than 12 hours after rainfall and there is no obvious impermeable or clay-like surface on the filter media.							
Underdrains / Clean Out Points	Clean out points not damaged and end caps securely in place. Underdrains are free draining at outlets.							
Unusual Odours, Colours or Substances (e.g. oil and grease)	None detected.							
Litter and Debris	Maximum 1 piece per $4m^2$.							
Algal or Moss Growth	Maximum 10% of surface covered in algae and no moss growth.							
Outlet								
Erosion	Outlet is structurally sound and there is no evidence of erosion or subsidence / settlement, including around edges of rock protection or tow of weir for large systems.							
Damaged or removed structures	No damage that poses a risk to public safety or structural integrity.							
Sediment, litter or debris	No blockage.							
Downstream outfall	No downstream impediments to the release of water, no erosion or damage to the outfall structure, and no evidence of malfunction (e.g. excessive sediment accumulated).							
Rainfall Events								
Inspection after rainfall	Bioretention system operates satisfactorily in wet conditions.							

BIORETENTION SYSTEM INSPECTION AND MAINTENANCE CHECKLIST	Page 3 of 3
Comments	
Photos of Site (explanatory notes)	
1. 2. 3. 4. 5. 6.	
Officer's Signature	

LANDSCAPING NOTES

CROSS REFERENCING:

ENSURE LANDSCAPE PLANS ARE READ IN CONJUNCTION WITH ALL CONTRACT DOCUMENTS INCLUDING BUT NOT LIMITED TO ALL CONSULTANTS DRAWINGS AND ALL WRITTEN SPECIFICATIONS.

CLARIFICATIONS:

SHOULD THE CONTRACTOR HAVE ANY QUERIES OR QUESTIONS OR DISCOVER ANY DISCREPANCIES IN DOCUMENTATION OR CONTRACT DOCUMENTS HE/SHE MUST CONTACT THE CONTRACT ADMINISTRATOR OR LANDSCAPE ARCHITECT PRIOR TO TENDERING AND CONSTRUCTION FOR CLARIFICATION.

EXISTING SERVICES:

BEFORE COMMENCING GROUNDWORKS, LOCATE AND MARK EXISTING UNDERGROUND SERVICES.THE CONTRACTOR MUST CARRY OUT A DIAL BEFORE YOU DIG SEARCH PRIOR TO ANY WORKS ON SITE. DO NOT EXCAVATE BY MACHINE WITHIN 1m OF EXISTING UNDERGROUND SERVICES.

THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ALL SERVICES, WHETHER NOTED ON THE DRAWINGS OR OTHERWISE, AND SHALL MAKE GOOD ANY DAMAGE CAUSED AT THE CONTRACTORS COST.

PREPARATION OF NEW GARDEN BEDS FOR PLANTING:

ENSURE THAT ALL RUBBISH, RUBBLE, WEEDS, GRASS AND DEBRIS IS REMOVED FROM GARDEN AREAS PRIOR TO PLANTING.

CULTIVATE EXISTING SUBGRADE TO A MINIMUM DEPTH OF 150mm. REMOVE ANY ROCKS, STICKS OR OTHER DEBRIS GREATER THAN 25mm DIAMETER THAT HAVE BEEN BROUGHT TO THE SURFACE THROUGH CULTIVATION. AMEND EXISTING SOIL BY MIXING WITH ECO PK PASTEURISED COMPOST OR EQUAL APPROVED.

USE ONLY SUN 'HARDENED' PLANTS. ENSURE HEALTHY ROOT SYSTEM TO ALL PLANTS TO BE USED. UNDER NO CIRCUMSTANCES ARE ROOT BOUND PLANTS TO BE USED.

CULTIVATE EXISTING SUBGRADE TO A MINIMUM DEPTH OF 150mm. REMOVE ANY ROCKS, STICKS OR OTHER DEBRIS GREATER THAN 25mm DIAMETER THAT HAVE BEEN BROUGHT TO THE SURFACE THROUGH CULTIVATION.
IMPORTED TOPSOIL
SOIL INSTALLATION & DEPTHS
1. PLANTING AREA TOPSOIL DEPTH – 300MM SQ.
2. TREE PLANTINGS IN GARDEN BED – 700MM SQ.

IMPORT CERTIFIED FIRE ANT FREE TOPSOIL COMPLYING WITH "AS 4419(1998)".

ALL MATERIALS IMPORTED TO THE SITE ARE TO BE CERTIFIED FREE OF FIRE ANTS.

SPREAD MULCH OVER ENTIRE PLANTING ZONE. FOR PLANTING IN MULCHED AREAS SPREAD MULCH AWAY FROM PLANTING ZONE TO ENSURE MULCH DOES NOT COME IN CONTACT WITH STEM OF PLANTS.

TREES, SHRUBS AND GROUNDCOVERS:

REFER PLANTING PLAN FOR LAYOUT AND SPECIES.

CONTRACTOR IS TO ARRANGE NURSERY VISIT WITH LANDSCAPE ARCHITECT OR CLIENT TO SELECT AND INSPECT PLANT SPECIES PRIOR TO SITE DELIVERY.

ALL TREES AND PLANTS ARE TO MEET 'NATSPEC' GUIDELINES OF HEALTH AND FORM. ALL TREES WILL NEED TO BE STAKED SECURELY TO PREVENT PLANT DAMAGE UNTIL ESTABLISHED. REFER TO DETAIL FOR STAKE SIZES AND METHOD.

ENSURE NURSERY STAKES, TIES AND LABELS ARE REMOVED AFTER PLANTING.

ENSURE THAT THE TOPSOIL LEVEL OF THE PLANT ROOT BALL IS 20mm BELOW THE FINISHED SURFACE OF THE SOIL SURROUNDING THE HOLE BY BACKFILLING AS REQUIRED.

PROVIDE AN ON-SITE NURSERY FOR HOLDING PLANT STOCK ON SITE FOR MORE THAN 48 HOURS, OF SUFFICIENT SIZE, WITH PROVISION FOR WATERING.
IF DIRECTED, POT PLANTS INTO LARGER SOIL-FILLED CONTAINERS TO PREVENT THEM BECOMING ROOT BOUND IF THERE IS AN UNFORESEEN DELAY. THE CONTRACTOR SHALL BEAR THE COST OF POTTING ON. DO NOT CARRY OUT POTTING ON UNLESS AUTHORISED.

MULCH:

MULCH GARDENS TO A MINIMUM DEPTH OF 75mm WITH MIN. 10mm SIZE MAX. 25mm SIZE FOREST LITTER MULCH FROM MATURE TREES, SHRUBS FREE FROM WOOD SLIVERS.

ESTABLISH A MINIMUM DEPTH OF 75mm WITH AGED AND COMPOSTED MULCH PRODUCED BY A CHIPPER BEING A COMBINATION OF LEAF, BARK AND TIMBER.

SOIL LADEN TUB GRINDINGS WITH HIGH FINES CONTENT WILL NOT BE ACCEPTABLE. DO NOT MOUND MULCH HARD UP AGAINST PLANT STEMS.

TURF:

ALL TURFING IS TO BE 'A' GRADE WINTERGREEN TURF WITH MINIMUM 25mm THICKNESS OF SOIL. TURF TO BE LAID ON 100mm TOPSOIL AS PER "AS4419" SUBGRADE TO BE CULTIVATED TO 100mm PRIOR TO TOPSOIL BEING SPREAD. TURF IS TO BE LAID USING STRETCHER BOND PATTERN WITH BUTT EDGES, PEGGED ON STEEP SLOPES.

AS SOON AS PRACTICABLE AFTER LAYING, ROLL THE TURF WITH A ROLLER WEIGHING NOT MORE THAN 90kg PER METRE OF WIDTH FOR SANDY OR LIGHT SOILS.
WATER AS NECESSARY TO KEEP THE SOIL MOIST TO A DEPTH OF 100mm.
TURF TO BE MOWN TO A HEIGHT OF 50mm.

TURF FINISH SHALL BE DIVET AND WEED FREE.
DELIVER THE TURF WITHIN 24 HOURS OF CUTTING, AND LAY WITHIN 36 HOURS.
AN UNEVEN SURFACE FINISH IS NOT ACCEPTABLE.

IRRIGATION:

THE CONTRACTOR SHALL SUPPLY AND INSTALL AN AUTOMATICALLY CONTROLLED WATERING SYSTEM TO THE EXTENT OF LANDSCAPE WORKS WITHIN THE SITE EXCLUDING ROAD RESERVE AS SHOWN ON THE DRAWINGS. ALL GARDEN AREAS AND TREES ARE TO BE DRIP SYSTEMS, TURFED AREAS ARE TO BE POP-UP SYSTEMS. THE SYSTEM SHALL BE DESIGNED TO PROVIDE THE CORRECT AMOUNT OF WATER TO THE SPECIFIED PLANTS IN ORDER TO KEEP THEM IN NORMAL SEASONAL GROWTH.

IF PLANTING AREAS ARE ON PODIUM OR IN PLANTER BOXES HEAD CONTRACTOR MUST COORDINATE WITH IRRIGATION DESIGNER AND SUBCONTRACTORS TO ENSURE CONDUITS AND WATER LINES ARE INCORPORATED WHERE NECESSARY DURING BUILDING CONSTRUCTION.

THE IRRIGATION SYSTEM MUST BE OPERABLE PRIOR TO OR IMMEDIATELY AFTER THE INSTALLATION OF PLANT MATERIAL INTO THEIR FINAL LOCATIONS. ADJOINING PATHS AND ROADWAYS ARE NOT TO BE AFFECTED BY LEVELS OF OVER SPRAY LIKELY TO IMPEDE OR ADVERSELY AFFECT PEDESTRIAN/VEHICULAR MOVEMENT/COMFORT/SAFETY. THE IRRIGATION CONTRACTOR WILL INSPECT THE SITE PRIOR TO LODGEMENT OF TENDER AND TAKE INTO CONSIDERATION IN THE DESIGN, SUCH THINGS AS SUB-SOIL TYPES, PROPOSED GARDEN/TOPSOIL TYPES, AREA SIZES AND RESTRICTIONS AND GROUNDWATER CONDITIONS.

A PROVEN SUB-MULCH TRICKLE (NETAFIM) OR EQUIVALENT IRRIGATION WILL BE PREFERRED. THE SYSTEM SHALL INCORPORATE A RAIN SENSOR AND INTERFACED CONTROL SYSTEM, WHICH REDUCES OR SHUTS OFF IRRIGATION DURING EFFECTIVE RAIN PERIODS.

PIPES SHALL PASS UNDER ALL DRIVEWAYS, SOLID CONCRETE AREAS AND PAVED AREAS REQUIRING IRRIGATION ACCESS.
TERMINATE PIPES 300mm CLEAR OF HARD PAVED AREAS AND STRUCTURES, SEAL ALL PIPES TO PREVENT INGRESS OF SOIL AND CONCRETE SLURRY.

AT NO TIME SHALL THIS SPECIFICATION TAKE PRECEDENCE OVER THE MANUFACTURER'S INSTRUCTIONS. ALL WORKS SHALL BE IN ACCORDANCE WITH RELEVANT AND CURRENT AUSTRALIAN STANDARDS AND LOCAL AUTHORITY REQUIREMENTS.

CONTRACTOR SHALL BE RESPONSIBLE FOR ANY DAMAGE TO ALL SERVICES, WHETHER NOTED ON THE DRAWINGS OR OTHERWISE, AND SHALL MAKE GOOD ANY DAMAGE CAUSED AT THE CONTRACTORS COST.

IRRIGATION IS TO BE CONNECTED TO TANKS ON SITE. IF TANKS ARE NOT USABLE CONTRACTOR IS TO COMPLY WITH STATE AND LOCAL GOVERNMENT WATER RESTRICTIONS AT TIME OF PLANTING AND MAINTENANCE.

THE CONTRACTOR SHALL REFER TO HYDRAULIC ENGINEERING DRAWINGS FOR MAINS TAKE OFF LOCATION AND RPZ LOCATION.

PLANT SCHEDULE - PLAYSCAPE ZONE

NO.	CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE SPREAD	POT SIZE HEIGHT	POT SIZE SPREAD	FLOWER COLOUR	SUGGESTED POT SIZE
	TREES								
1	BRA ace	BRACHYCHITON acerifolius	Flame Tree	10.0m	3.0m	1.8m	0.9m	red	45L
1	FLI aus	FLINDERSIA australis	Crows Ash	15.0m	5.0m	1.8m	0.9m	white	45L
1	TRI lau	TRISTANIOPSIS laurina 'Luscious'	Luscious	6.0m	4.0m	2.0m	1.8m	yellow	45L
1	WAT flo	WATERHOUSEA floribunda	Weeping Lilly Pilly	8.0m	4.0m	1.8m	1.2m	White	45L
	MEDIUM SHRUBS & FOLIAGE PLANTS								
3	ACM smi	ACMENA smithii 'Minor'	Dwarf Lilly Pilly	4.0m	1.5m	0.2m	0.2m	red	200mm
5	AUS dul	AUSTROMYRTUS dulcis	Midyim Berry	0.7m	2.0m	0.3m	0.2m	white	140mm
6	ERE mac	EREMOPHILA maculata 'Pink Passion'	Pink Passion	1.5m	1.5m	0.4m	0.15m	white	140mm
6	OSO dio	OSMANTHUS diosmifolius	Rice Flower	1.5m	1.0m	0.4m	0.3m	white	200mm
9	PIT sil	PITTOSPORUM tenufolium 'Silver Sheen'	Silver Sheen	3.0m	1.5m	0.3m	0.2m	white	200mm
5	RAP ind	RAPHIOLEPIS indica	Indian Hawthorn	1.5m	1.5m	0.4m	0.3m	white	200mm
3	ZAM fur	ZAMIA furfuracea	Cardboard Palm	2.0m	1.0m	0.2m	0.3m	N/A	200mm
	SPREADING & CLUMP FORMING GROUNDCOVERS								
20	BRA mul	BRACHYSCOME multifida	Cut Leaved Daisy	0.5m	0.5m	0.3m	0.2m	pink/white	140mm
8	CAR des	CARISSA macrocarpa 'Desert Star'	Desert Star	0.6m	0.5m	0.15m	0.15m	white	140mm
12	DIE tin	DIETES grandiflora 'Tiny Dancer'	Fairy Lily	0.5m	0.4m	0.2m	0.2m	white	140mm
10	LIR str	LIRIOPE muscari 'Stripey white'	Stripey white	0.4m	0.4m	0.1m	0.1m	Purple	140mm
57	LOM con	LOMANDRA confertifolia	Matting Lomandra	0.3m	0.5m	0.15m	0.15m	cream	140mm
32	POA lab	POA labillardieri	Tussock Grass	0.3m	0.3m	0.2m	0.1m		140mm
15	SCA pur	SCAEVOLA puprpurea	Purple Fan Flower	0.5m	2.0m	0.2m	0.2m	purple	140mm
34	ZOY ten	ZOYSIA tenuifolia	Korean Velvetgrass	0.1m	rhizomes	0.03m	0.15m	N/A	140mm

PLANT SCHEDULE - BALANCE OF SITE

NO.	CODE	BOTANICAL NAME	COMMON NAME	MATURE HEIGHT	MATURE SPREAD	POT SIZE HEIGHT	POT SIZE SPREAD	FLOWER COLOUR	SUGGESTED POT SIZE
	TREES & LARGE SHRUBS								
4	BUC cel	BUCKINGHAMIA celsissima	Ivory Curl Tree	8.0m	3.0m	1.8m	1.0m	cream	45L
	MEDIUM SHRUBS & FOLIAGE PLANTS								
3	CAL lit	CALLISTEMON spp 'Little John'	Little John	1.5m	2.0m	0.3m	0.3m	red	200mm
6	MEL cla	MELALEUCA spp 'Claret Tops'	Claret Tops	1.5m	1.0m	0.3m	0.2m	white	200mm
12	WES blu	WESTRINGIA 'Blue Gem'	Native Rosemary	1.5m	1.3m	0.4m	0.3m	purple	200mm
	SPREADING & CLUMP FORMING GROUNDCOVERS								
16	DIA lit	DIANELLA congesta 'Little Jess'	Little Jess	0.3m	0.3m	0.2m	0.2m	blue	140mm
22	PEN alo	PENNISETUM alopecuroides	Fountain Grass	1.5m	0.5m	0.4m	0.3m	cream	140mm

MATERIALS SCHEDULE

CODE	ITEM	PRODUCT SELECTION, MATERIAL & FINISH	RECOMMENDED SUPPLIER	SAMPLE
	FIXTURES			
	Shade Sail Stucture	Posts : RHS steel posts - diameter and height to manufacturer's specification Shade Fabric : Comshade Polyfab Parasol - Heavy commercial 325gsm Colour : Harvest Or equal approved to client's selection	Nolan Group Telephone: 07 3387 8518	
	FINISHES			
C1	Exposed Agggreagate Concrete	Product: Hanson Imagecrete - Oyster Grey mix - exposed aggregate with grey cement base. Finish: Light wash. Sealer: Refer below for 'Concrete & Paver Sealant'. Reinforcement and jointing to engineers details and specification.	Hanson: Ground Floor, 601 Doncaster Road, Doncaster, VIC 3108 Tel: 03 9274 3700	
F1	Softfall Mulch	Product: Usually a fine graded pine bark around 5-15mm, level out uneven surface areas to comply with AS4422 - Playground Surfacing for appropriate depth of Loose-Fill Surfaces (mulch). Maintain minimum depth of 300mm or more dependant on AS4422 standards for fall heights.	Local Supplier	
F2	Artificial Turf	Product: Urban Turf - Urban Windsor 35mm pile. Laid to manufacturer's specification.	Urban Turf Solutions www.urbanturfsolutions.com.au Tel: 1800 872 268	
F3	Decomposed Granite	Refer to construction details		
	SEALANTS			
	Concrete & paver Sealant	Product: "CCS Streetscape Sealer" Colour: N/A Finish: Apply as per manufacturer instructions	Colour Supplier: Concrete Colour Systems. T: 1800 077 744 www.concretecoloursystems.com.au	
	Concrete & Jointing Sealant	Product: "Sikaflex Pro" polyurethane joint sealant Colour: Dark Amber / Grey or other to match surrounding surface treatment Finish: Smooth	Colour Supplier: Concrete Colour Systems T: 1800 077 744 www.concretecoloursystems.com.au	

ROCKHAMPTON REGIONAL COUNCIL

AMENDED PLANS APPROVED

4 July 2024

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issue	amendment log	by	date
A	OPERATIONAL WORKS APPROVAL	BM	17-01-24

OPERATIONAL WORKS

NOT FOR CONSTRUCTION

CHECKED : .....

BLACKBURNEJACKSON
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

37 Aerodrome Rd Maroochydore Qld
P.O. Box 154 Cotton Tree QLD 4558 phone 07 5443 3200
email mail@blackburnejackson.com.au fax 07 5443 4030

project:

PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

client:

DAISY CJC PTY LTD

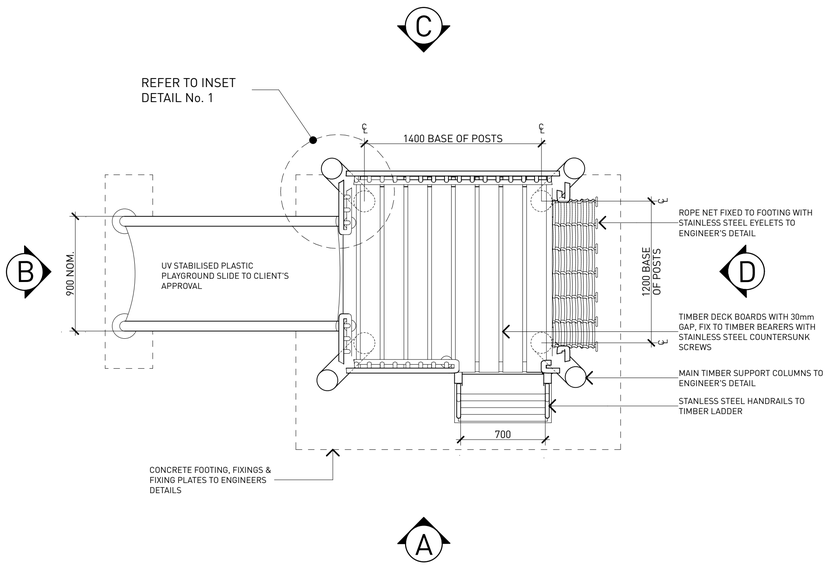
title:

LANDSCAPE NOTES & SCHEDULES

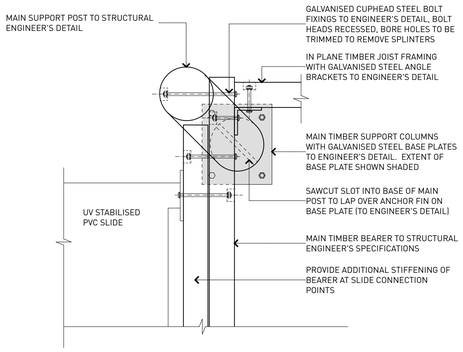
date:	JUL 2023
drawn:	DT
checked:	GC
scale @ A1 :	NTS
scale @ A3 :	NTS
sheet:	A1

project/drawing no.

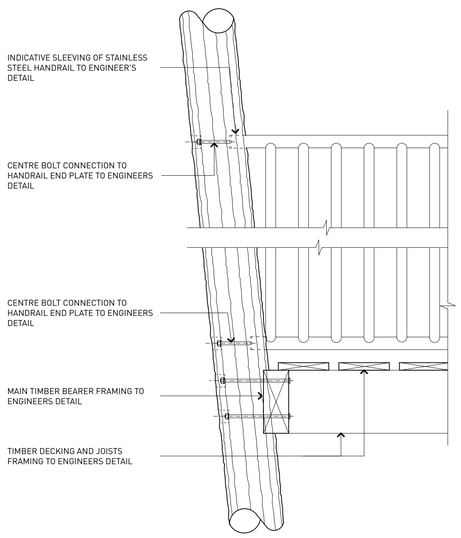
5773_L01-01_A



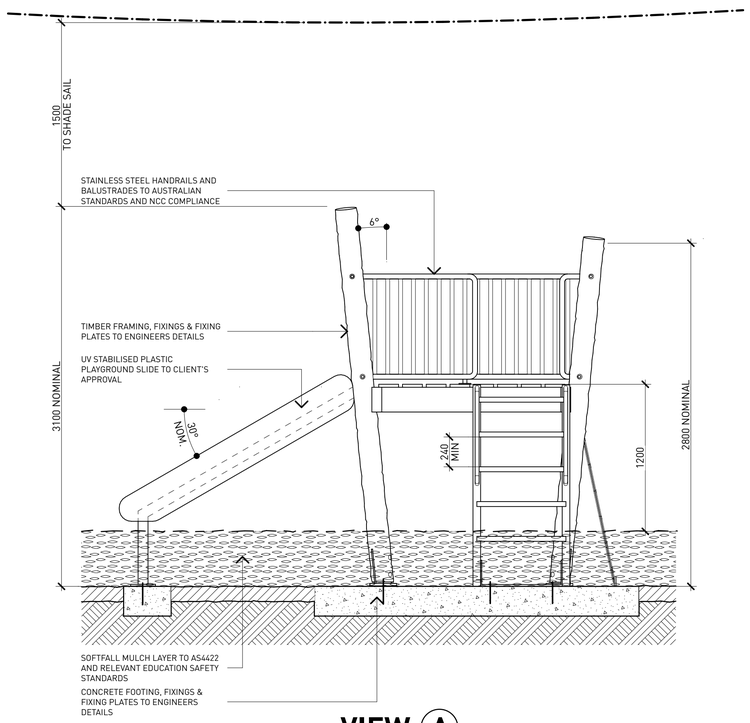
01 DETAIL PLAN
PLAY FORT
SCALE 1:25



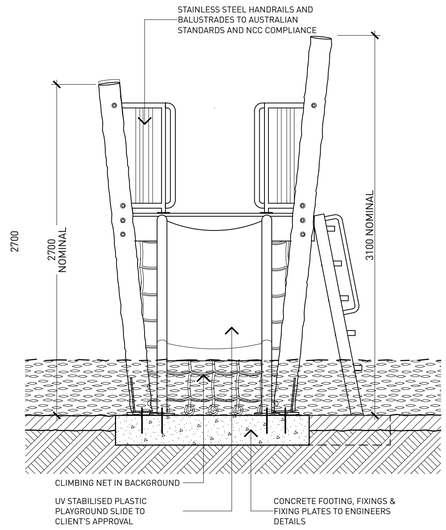
02 INSET DETAIL No. 1
TYPICAL BEARER AND FOOTPLATE CONNECTION
SCALE 1:10



03 INSET DETAIL No. 2
TYPICAL BEARER AND HANDRAIL CONNECTIONS
SCALE 1:10



VIEW A



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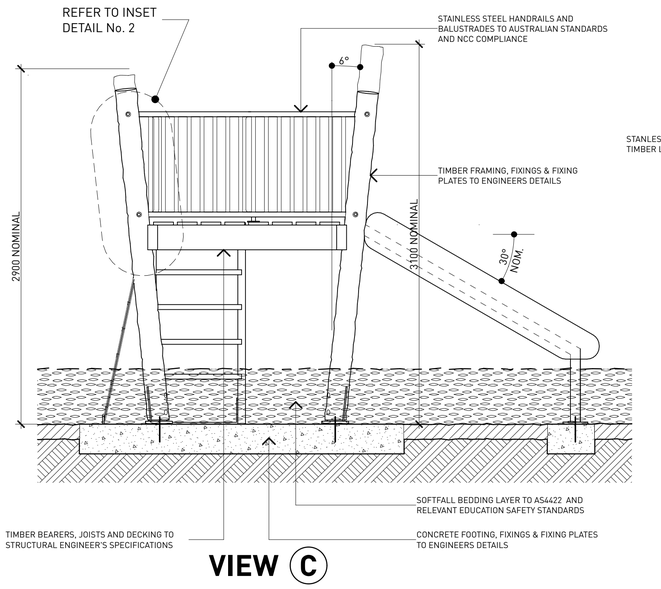

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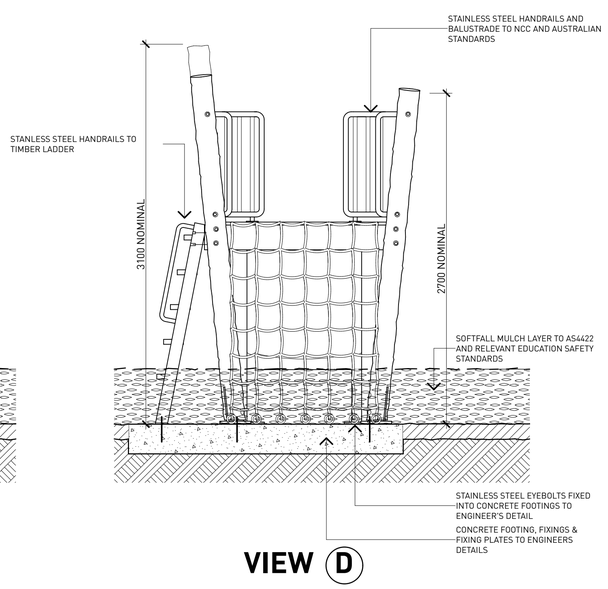

VIEW D

04 DETAIL ELEVATIONS
PLAY FORT
SCALE 1:25

NOTES :
- ALL BOLT FIXINGS TO BE OF CUPHEAD TYPE WITH COUNTERSUNK FIXINGS
- ALL TIMBER EDGES TO BE PENICL ROUNDED
- ALL SCREW FIXINGS TO BE OF COUNTERSUNK STAINLESS STEEL TYPE
- TIMBER FINISH TO APPROVED BY CLIENT

ROCKHAMPTON REGIONAL COUNCIL
AMENDED PLANS APPROVED
4 July 2024
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issue	amendment log	by	date
A	OPERATIONAL WORKS APPROVAL	BM	17-01-24

OPERATIONAL WORKS
NOT FOR CONSTRUCTION
CHECKED : .....

BLACKBURNE JACKSON
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT
37 Aerodrome Rd Maroochydore Qld
P.O. Box 154 Cotton Tree QLD 4558 phone 07 5443 3200
email mail@blackburnejackson.com.au fax 07 5443 4030

project:
PROPOSED KINDERGARTEN, 6 JOHN STREET GRACEMERE

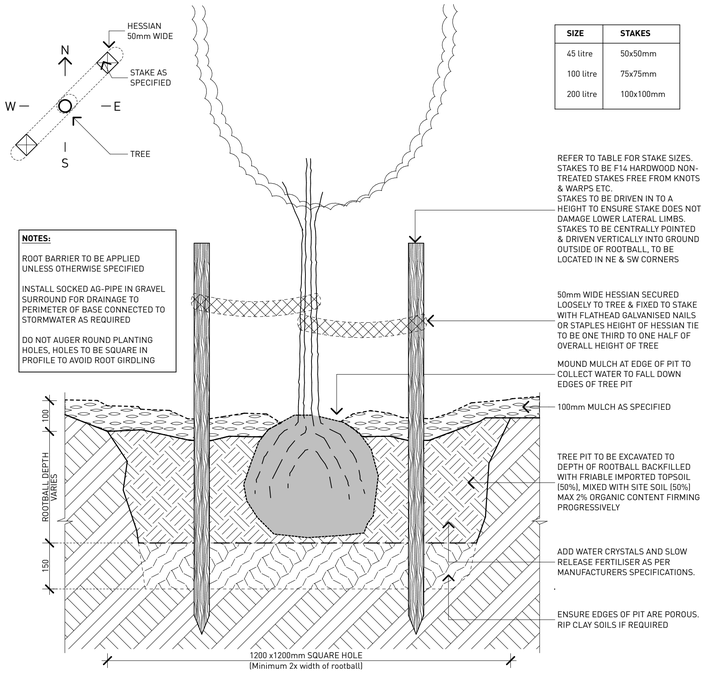
client:
DAISY CJC PTY LTD

title:
LANDSCAPE DETAILS

date:	JUL 2023
drawn:	BM
checked:	GC
scale @ A1 :	1:25, 1:10
scale @ A3 :	1:50, 1:20
sheet:	A1

project/drawing no.
5773_L07-01_A

5773-26-Gracemere Kindergarten printed: Wednesday, 17 January 2024 5:00 pm



SIZE	STAKES
45 litre	50x50mm
100 litre	75x75mm
200 litre	100x100mm

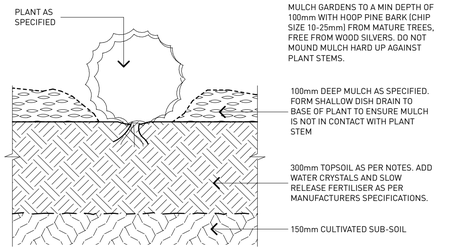
NOTES:

ROOT BARRIER TO BE APPLIED UNLESS OTHERWISE SPECIFIED

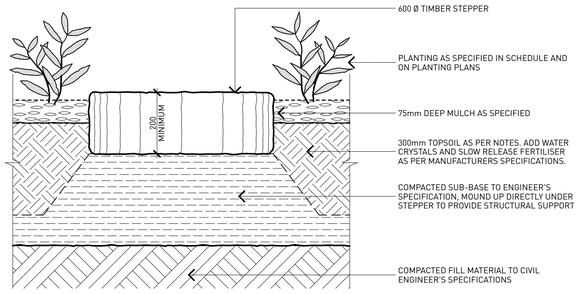
INSTALL SOCKED AG-PIPE IN GRAVEL SURROUND FOR DRAINAGE TO PERIMETER OF BASE CONNECTED TO STORMWATER AS REQUIRED

DO NOT AUGER ROUND PLANTING HOLES, HOLES TO BE SQUARE IN PROFILE TO AVOID ROOT GIRDLING

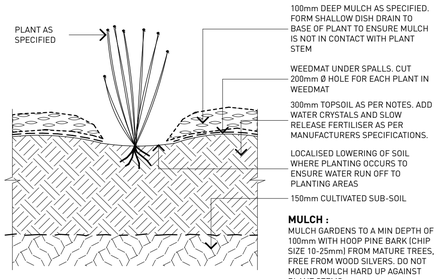
01 - PLANTING DETAIL
TREE PLANTING IN GROUND
SCALE 1:10



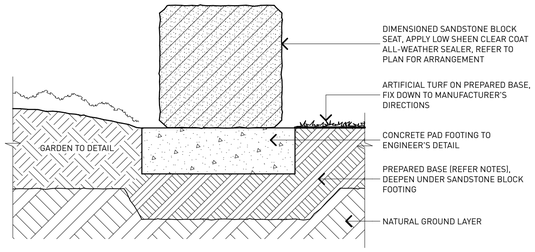
02 - PLANTING DETAIL
SHRUB & GROUNDCOVER PLANTING IN GROUND
SCALE 1:10



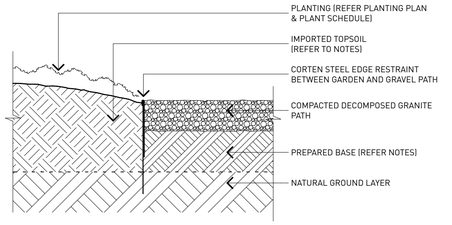
03 - DETAIL SECTION
TIMBER STEPPER
SCALE 1:10



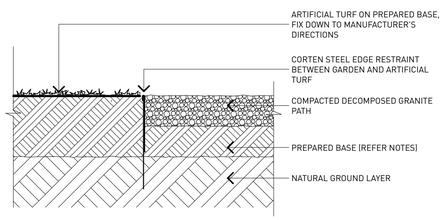
04 - PLANTING DETAIL
PLANTING WITH MULCH
SCALE 1:10



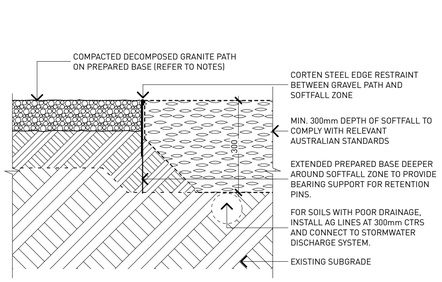
05 - DETAIL SECTION
SANDSTONE SEAT
SCALE 1:10



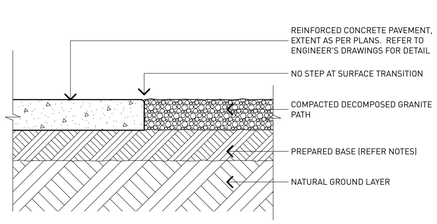
06 - DETAIL SECTION
GRAVEL PATH TO GARDEN
SCALE 1:10



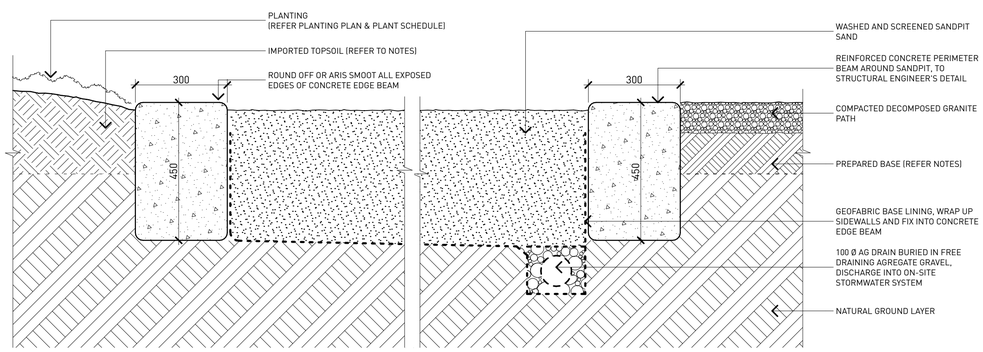
07 - DETAIL SECTION
GRAVEL PATH TO ARTIFICIAL TURF
SCALE 1:10



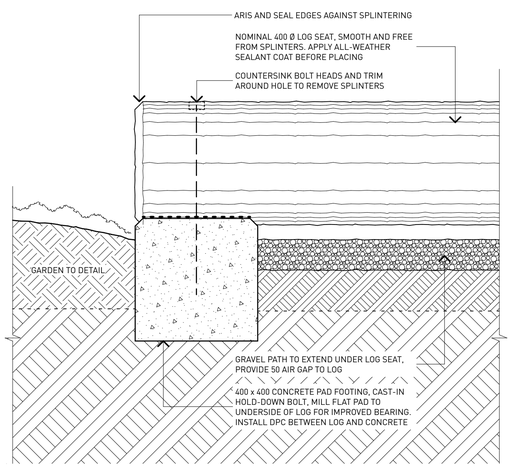
08 - DETAIL SECTION
GRAVEL PATH TO SOFTFALL
SCALE 1:10



09 - DETAIL SECTION
GRAVEL PATH TO CONCRETE SLAB
SCALE 1:10



10 - DETAIL SECTION
SANDPIT
SCALE 1:10



11 - DETAIL SECTION
LOG SEAT
SCALE 1:10

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issue	amendment log	by	date
A	OPERATIONAL WORKS APPROVAL	BM	17-01-24

ROCKHAMPTON REGIONAL COUNCIL

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4 July 2024

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CHECKED : .....

BLACKBURNEJACKSON
ARCHITECTURE | LANDSCAPE | INTERIOR | PROJECT MANAGEMENT

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fax 07 5443 4030

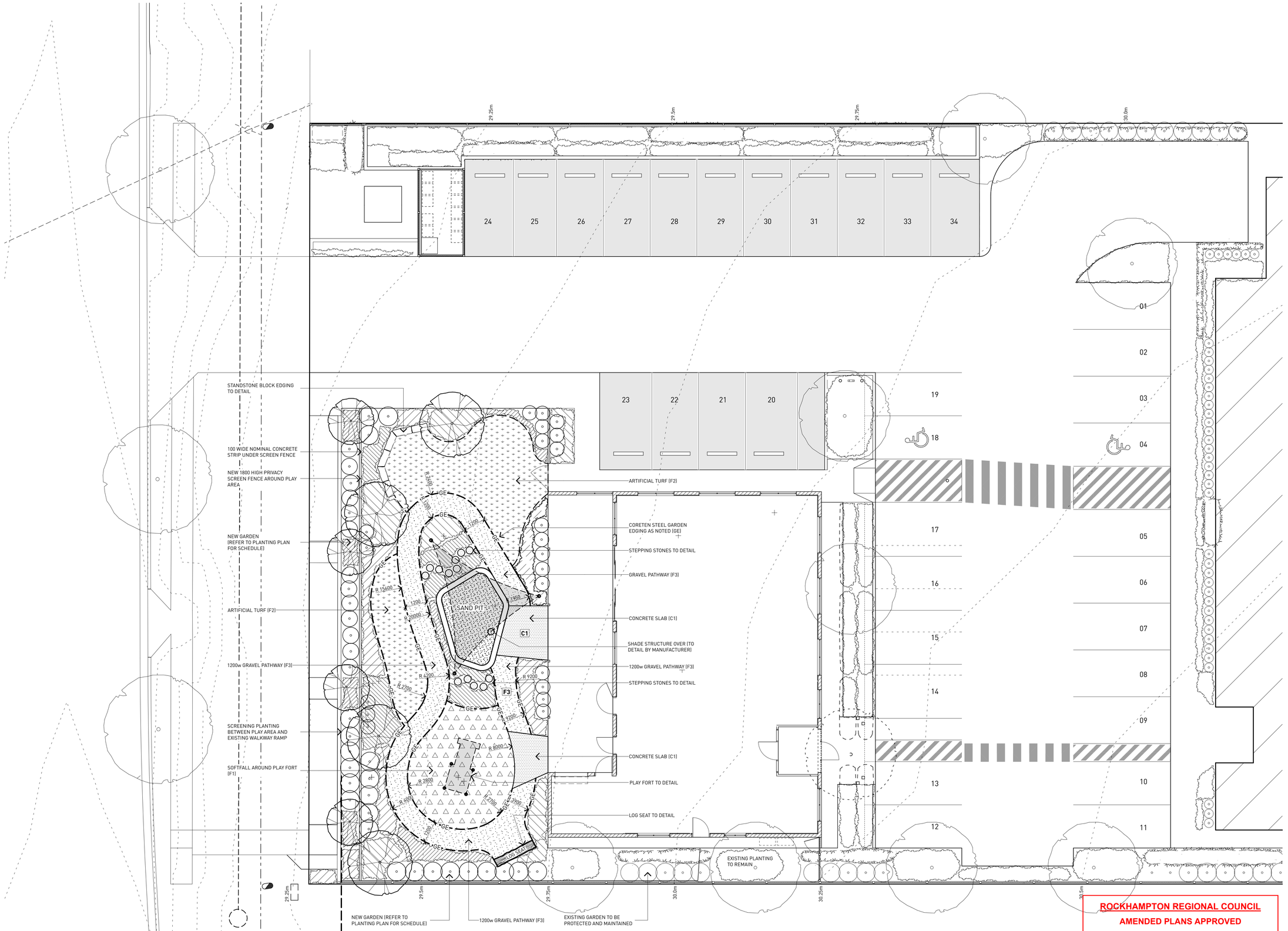
project:
PROPOSED KINDERGARTEN,
6 JOHN STREET GRACEMERE

client:
DAISY CJC PTY LTD

title:
LANDSCAPE DETAILS

date:	JUL 2023
drawn:	BM
checked:	GC
scale @ A1 :	1:10
scale @ A3 :	1:20
sheet:	A1

project/drawing no.
5773_L07-02_A



01 LANDSCAPE LAYOUT PLAN
LEVEL 1/LOWER
SCALE 1:100

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LANDSCAPE LAYOUT PLAN

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north

date:	JUL 2023
drawn:	BM
checked:	GC
scale @ A1 :	1:100
scale @ A3 :	1:200
sheet:	A1

project/drawing no.
5773_L02-01_A

3 SCA pur
3 ZAM fur
1 BUC cel
4 PEN alo
6 WES blu
16 LOM con
10 BRA mul
1 BRA ace
2 ERE mac
4 PEN alo
1 BUC cel
6 MEL cla
10 POA lab
12 SCA pur
4 PEN alo
1 BUC cel
3 ACM smi
6 WES blu
1 FLI aus
8 CAR des
5 RAP ind
12 DIE tin
1 BUC cel
6 PEN alo

6 OSO dio
1 WAT flo
10 POA lab
16 DIA lit
3 CAL lit
NEW GARDEN
4 ACM smi

EXISTING RAMP UP

ARTIFICIAL TURF F2
GE
GRAVEL F3
PROPOSED OUTDOOR PLAY-SCAPE
CONCRETE C1
SOFTFALL F1
PLAY FORT TO DETAIL
LOG SEAT (TO DETAIL)

18 LOM con
5 AUS dul
10 BRA mul
STEPPING STONES TO DETAIL
20 ZOY ten
SHADE STRUCTURE OVER (TO DETAIL BY MANUFACTURER)
SANDPIT TO DETAIL
4 ERE mac
STEPPING STONES TO DETAIL
14 ZOY ten
12 POA lab
10 LOM con
CORETEN STEEL GARDEN EDGING AS NOTED (GE)

PATH

PRUNE BACK EXISTING TREE WITH CARE AS REQUIRED TO FACILITATE NEW CONSTRUCTION. EXISTING TREE TO BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. SEEK ADVICE FROM ABORIST IF ROOT REMOVAL REQUIRED.

EXISTING PLANTING (TO BE PROTECTED AND MAINTAINED)

TRIM BACK PART OF EXISTING GARDEN AS REQUIRED TO FACILITATE NEW CONSTRUCTION. RE-USE HEALTHY PLANTS TO IMPROVE EXISTING UNDER-PEFORMING AREAS OF EXISTING GARDEN BEDS

PRUNE BACK EXISTING TREE WITH CARE AS REQUIRED TO FACILITATE NEW CONSTRUCTION. EXISTING TREE TO BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. SEEK ADVICE FROM ABORIST IF ROOT REMOVAL REQUIRED.

EXISTING GARDEN BEDS

TRIM BACK PART OF EXISTING GARDEN AS REQUIRED TO FACILITATE NEW CONSTRUCTION. RE-USE HEALTHY PLANTS TO IMPROVE EXISTING UNDER-PEFORMING AREAS OF EXISTING GARDEN BEDS

RELOCATE EXISTING TREE TO CLIENT'S DIRECTION OR REMOVE AND EXCAVATE STUMP AND ROOTS.
BACKFILL EXCAVATED AREA WITH COMPACTED MATERIAL TO ENGINEER'S SPECIFICATION.

REMOVE PORTION OF EXISTING GARDEN AS REQUIRED TO FACILITATE NEW CONSTRUCTION. RE-USE HEALTHY PLANTS TO IMPROVE EXISTING UNDER-PEFORMING AREAS OF EXISTING GARDEN BEDS

EXISTING PLANTING (TO BE PROTECTED AND MAINTAINED)

1 TRI lau
7 LOM con
10 LIR str
9 PIT sil

29.25m
29.5m
29.75m
30.0m
30.25m

ROCKHAMPTON REGIONAL COUNCIL
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PROPOSED KINDERGARTEN

01 - LANDSCAPE PLANTING PLAN
LEVEL 1/LOWER
SCALE 1:50

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client:
DAISY CJC PTY LTD

title:
LANDSCAPE PLANTING PLAN

north

date:	JUL 2023
drawn:	BM
checked:	GC
scale @ A1 :	1:50
scale @ A3 :	1:100
sheet:	A1

project/drawing no.
5773_L03-01_A