



MRC

CONSULTING ENGINEERS



Stormwater Quality Management Plan

Prepared for Fleetwood Australia

**South Rock Secondary School
Kindergarten**

185 Grampians Circuit, Yarrabilba

8th September 2026 (Rev B)



Project: South Rock Secondary School Kindergarten

Document Title: Stormwater Quality Management Plan

Project No: J26135

Document Verification					
<i>Issue</i>	<i>Date</i>	<i>Issuer Details</i>	<i>Author</i>	<i>Verifier</i>	<i>Approved</i>
A	30.06.2026	DA Issue	MR	MH	MH
B	08.09.2026	Updated DA Issue	MR	MH	MH

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Mark Harrison Date: 08/09/2026

BEng MIEAust NER CPESC RPEQ: 18458

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TABLE OF CONTENTS

EXECUTIVE SUMMARY	5
1. INTRODUCTION	6
2. BACKGROUND	6
3. SITE CHARACTERISTICS	6
3.1. SITE DESCRIPTION	6
3.2. STUDY TEAM	7
3.3. GEOTECHNICAL INVESTIGATION.....	7
3.4. TOPOGRAPHY	7
3.5. SITE SURVEY	7
3.6. LAND USE	7
3.7. WATER COURSES / SIGNIFICANT VEGETATION.....	7
3.8. PREVIOUS WATERWAY RELATED STUDIES.....	7
3.9. EXISTING STORMWATER INFRASTRUCTURE.....	8
4. OPPORTUNITIES AND CONSTRAINTS.....	8
4.1. PERVIOUS / IMPERVIOUS NATURE	8
4.2. INFILTRATION AND POTENTIAL FOR STORMWATER POLLUTION.....	8
5. STORMWATER QUALITY	8
5.1. OVERVIEW.....	8
5.2. WATER QUALITY DESIGN OBJECTIVES.....	9
5.2.1. Construction Phase	9
5.2.2. Erosion and Sediment Control Plan.....	9
5.2.3. Site Specific Activities	10
5.2.4. Performance Objectives and Indicators.....	10
5.2.5. Monitoring and Responsibility.....	11
5.2.6. Operational Phase.....	11
6. WATER QUALITY MONITORING PROGRAM.....	11
7. MAINTENANCE PLANS	11
7.1. CONSTRUCTION PHASE	11
7.2. OPERATIONAL PHASE	12
10.0 CONCLUSION	12
8. REFERENCES	13

APPENDICES

Appendix A – Proposed Architectural Site Plans

Appendix B – Contour and Detailed Survey Plan

Appendix C – Stormwater Drainage Plans

TABLES

Table 1: Typical Stormwater Pollutants, Possible Sources, & Potential Impacts

Table 2: Construction Phase Pollutants Ranges

LIST OF FIGURES

Figure 1 – Site Location (Source: Google)

EXECUTIVE SUMMARY

MRC Consulting Engineers Pty Ltd has been commissioned by Fleetwood Australia to prepare a Site Based Stormwater Quality Management Plan suitable for lodgement to Logan City Council as part of the Development Approval. The proposed development is a Kindergarten at South Rock State School. The site is located at 185 Grampians Circuit, Yarrabilba, and sits within Precinct 4 (previously Precinct 5) of the Yarrabilba PDA.

The proposed development will generally consist of the following;

- 1 x Kindergarten building;
- Extension of existing carpark, with a new vehicle crossover to Grampians Circuit; and
- Associated Open Space and Landscaping Area, including retaining walls

This report has been prepared as supporting information for the application being lodged with Logan City Council for the proposed development.

Stormwater Quality

As the proposed development footprint is less than 2500m², the development does not trigger the State Planning Policy requirement for a Site Based Stormwater Quality Management from this site in accordance with the Concept Design Guidelines for Water Sensitive Urban Design.

For the construction phase of the project, an appropriate Erosion and Sediment Control plan will be implemented in accordance with the International Erosion Control Association (IECA) "Best Practice Erosion and Sediment Control Guidelines".

Operational Phase measures for this project will be consistent with the Water Sensitive Urban Design intents set out in the Concept Design Guidelines for Water Sensitive Urban Design (Healthy Waterways 2009)

- Promote Evapo-transpiration, infiltration of rainfall, and conveyance of stormwater runoff within surface systems enabling natural filtering and cleaning processes to be better incorporated within the urban environment.
- Disconnect hard paved areas where possible from the roof water drainage system, by directing surface runoff to turfed areas or garden bed areas, with the potential of infiltration where possible.
- Install solid pollutant filters within grated inlet pits.
- Rainwater harvesting where possible.

The existing school was developed with a stormwater treatment strategy at a site wide level, which should cater to stormwater quality treatment needs. It is also noted that a precinct wide treatment strategy is in place

1. INTRODUCTION

MRC Consulting Engineers Pty Ltd has been commissioned by Fleetwood Australia to prepare a Site Based Stormwater Quality Management Plan suitable for submission to Logan City Council for their proposed development located at 185 Grampians Circuit, in Yarrabilba.

The proposed development will generally consist of the following;

- 1 x Kindergarten building;
- Extension of existing carpark, with a new vehicle crossover to Grampians Circuit; and
- Associated Open Space and Landscaping Area, including retaining walls

This Site Based Stormwater Quality Management Plan (SQMP) has been prepared with the purpose of illustrating how stormwater quality will be managed for the proposed development.

2. BACKGROUND

Fleetwood Australia is planning to develop the proposed site into a kindergarten, within the existing South Rock State School grounds. A previous Stormwater Management Plan has been submitted by Inertia for the South Rock State School, and a Precinct Stormwater Management Plan by DesignFlow.

3. SITE CHARACTERISTICS

3.1. Site Description

The proposed site is located within South Rock State School, Yarrabilba, which is within the Logan City LGA. The site area to be developed is approximately 0.237 ha in size. The real description of the land containing the site is as follows;

- Lot 5080 on SP327799

The undeveloped area is comprised primarily of grass, bound by:

- Existing school carparking and Grampians Court to the North / West
- Wentland Ave and the existing South Rock State School to the South
- South Rock State School and residential development to the East



Figure 1 – Site Location (Source: Google)

3.2. Study Team

The study team preparing this Site Based Stormwater Quality Management Plan is MRC Consulting Engineers Pty Ltd. The plan is being prepared on behalf of Fleetwood Australia submission to Logan City Council as part of the Development Approval.

3.3. Geotechnical Investigation

No geotechnical investigation / reporting has been undertaken to MRC Consulting Engineers' knowledge, nor supplied.

3.4. Topography

The existing site topography is as follows;

- Existing site levels from approximately 44.5 to 40.5 mAHD
- The site falls from the existing school towards the existing carpark at approximately 10% in the Northern direction.
- An existing swale flows through the proposed building location, West to East at a grade between 2.8% and 10%
- The natural ground where the proposed carpark is to be located, falls at approximately 7% West to East
- There is an existing sports oval to the South West that is relatively flat
- In general, the existing ground falls towards either the existing swale or the existing carpark
- Refer Appendix B for the detailed survey plan.

3.5. Site Survey

A site survey has been prepared by Pro Survey Services Pty Ltd. Refer to Appendix B for drawing. Minor and Major Contours have been shown at 0.5m and 1.0m respectively

3.6. Land Use

The site is within the existing South Rock State School grounds, with the school being located within Precinct 4 (previously Precinct 5) of the Yarrabilba Priority Development Area.

The existing site includes educational buildings and classrooms, sports fields and courts, carparking and other associated hardscape and landscape areas

3.7. Water Courses / Significant Vegetation

There are no existing water courses located within this site. The Northern Tributary, as identified in the Precinct 5 (now known as Precinct 4) Stormwater Management Plan, is located East/ North East of the site. This discharges to the Quinzeh Creek to the North

As the site is located within grassed school grounds, there is no existing significant vegetation in the immediate area.

3.8. Previous Waterway Related Studies

A Stormwater Management Plan was produced for the precinct by DesignFlow, and a Site Based Stormwater Management Plan for the original school development was produced by Inertia. Both reports provide a Stormwater Management Strategy at the precinct level and site level respectively.

3.9. Existing Stormwater Infrastructure

Based on detailed survey and design drawings, the following stormwater infrastructure is located either within the proposed development site or in the vicinity of the site.

- Existing grated pits adjacent to and within the existing carpark, discharging to underground pipes
- Existing formed overland flow paths to capture runoff from the sports fields and surrounding school grounds
- Existing stormwater treatment devices (GPT's and filter cartridges) as per the Stormwater Management Plan for the school development

The proposed lawful point of discharge for the proposed development will be via connection to the existing stormwater network within the school site. A conceptual Stormwater Drainage Layout Plan has been included in Appendix C for reference.

4. OPPORTUNITIES AND CONSTRAINTS

4.1. Pervious / Impervious Nature

As per the Inertia Stormwater Management Plan, the lawful point of discharge for the entire school grounds has been designed to cater for the 1% AEP, at a C10 value of 1.0. Therefore, the stormwater quantity aspect of the development has been addressed.

The stormwater quality management design for the school site has also allowed for treatment of the entire site. It is therefore understood that this development has appropriate treatment measures in place.

4.2. Infiltration and Potential for Stormwater Pollution

The potential for stormwater pollution from the site is minimal. This pollution is expected to be in the form of hydrocarbons and small litter consistent with runoff from both roof and roadway areas. The development area is small compared to the school site as a whole, and changes in the overall split catchment is considered to be negligible.

The Stormwater Management Plan for the precinct incorporates a precinct wide stormwater treatment strategy, to cater for the larger Yarrabilba development.

5. STORMWATER QUALITY

5.1. Overview

As the proposed development footprint is less than 2,500m², the development does not trigger the State Planning Policy (July 2017) requirement for a Site Based Stormwater Quality Management Plan under Water Quality, however stormwater quality management must still be undertaken utilising Best Management Practices to help protect the downstream receiving environment.

The State Planning Policy sets out requirements for both the Construction Phase and Operational (Post Construction) Phases of developments. The following section has been broken up to individually represent these two phases, and to outline the proposed stormwater management options to suit.

5.2. Water Quality Design Objectives

5.2.1. Construction Phase

Stormwater runoff collects a range of pollutants that have been deposited on the land surface including litter, sediment, hydrocarbons, toxic materials, heavy metals, pesticides, and pH altering substances. The key stormwater pollutants generated by various styles of projects, their potential sources, and their potential impacts are shown in Table 1

Table 1: Typical Stormwater Pollutants, Possible Sources, & Potential Impacts

Pollutants	Sources	Impacts
Suspended solids	- Erosion - Construction sites - Road/footpath wear	- Smother ecosystems - Block sunlight - Cause respiratory problems in fish
Metals	- Vehicle wear & emissions - Atmospheric deposition - Illegal/accidental discharges - Trade waste discharges	- Toxicity to aquatic organisms - Bioaccumulation through the food chain
Nutrients	- Detergents - Decaying organic matter - Fertilisers - Sewerage leaks & overflows	- Encourage riparian and aquatic weeds - Encourage algal growth - Increase potential for eutrophication
Pathogens	- Sewerage overflows - Illegal connections - Animal faeces	- Cause disease in humans and livestock - Reduce recreational amenity
Hydrocarbons	- Vehicle wear & emissions - Spills - Illegal discharges	- Toxicity to aquatic organisms - Loss of aesthetic amenity

5.2.2. Erosion and Sediment Control Plan

During the detailed design phase of the development, an Erosion and Sediment Control Program will be implemented to minimise any impact that water discharging from the site may have on the downstream receiving catchments.

Erosion and Sediment Control plans will be prepared in accordance with the International Erosion Control Association (IECA) "Best Practice Erosion and Sediment Control Guidelines", for the four primary phases of the development being clearing and grubbing phase, bulk earthworks phase, civil construction phase, and post construction phase of this project. The erosion and sediment control measures specified must remain in place until construction works in this zone are complete.

During the detailed design phase of the project, the Revised Universal Soil Loss Equation (RUSLE) (IECA2008) will be utilised as an indicator to predict average soil loss rates for the proposed project. From these calculations a risk analysis can be prepared, and an applicable Sediment Control Standard adopted for the project.

5.2.3. Site Specific Activities

Before construction commences, the following sediment and erosion control measures are required to be implemented.

- A vehicle shake down facility is to be provided at all site access/egress locations.
- Sediment fences are to be constructed downstream of construction activities and at the downstream site boundaries to protect the downstream properties.
- Diversion channels and catch drains are to be constructed in accordance with the design plans to ensure any sediment laden stormwater is contained and directed toward treatment areas.
- Rock check dams are to be employed (as required) to guide runoff, prevent flow concentration, and slow down runoff to reduce erosion and promote sediment deposition.
- A construction management plan is to be prepared and is required to designate sufficient areas for plant and construction material storage, and these areas are to be located within the specified erosion and sediment control measures for the site.
- Inlet sediment traps are to be positioned over any existing field inlet pits, and gully pits within roads adjacent to the site.

5.2.4. Performance Objectives and Indicators

BCC's Guideline on Identifying and Applying Water Quality Objectives in Brisbane City (2000) states that stormwater runoff during the construction phase must be in accordance with the following concentration ranges (or upper limits) shown in the table below.

Table 2: Construction Phase Pollutants Ranges

Pollutant	Sources
Total Suspended Solids (TSS)	<50mg/L
pH	6.5-8.5
Total Nitrogen	0.65
Turbidity (NTU)	Less than 10% above background, 75 NTU.
Total Phosphorus (mg/L)	0.070
Dissolved Oxygen	80 to 105 percent saturation
Oils and Grease	No visible films or odours
Litter	No anthropogenic material greater than 5m

Source: Brisbane City Council City Plan 2014 (Infrastructure Design Planning Scheme Policy)

5.2.5. *Monitoring and Responsibility*

The principal contractor shall be responsible for monitoring the performance of all Sediment and Erosion measures implemented on site for the duration of the works. These measures shall be regularly inspected and cleaned and maintained to ensure their effectiveness.

Adequate measures shall be taken to rectify any failure in the proposed control system if any measure is operating inadequately, or if site work changes necessitate the provision of additional measures. These measures will be detailed further during the detailed design phase of the project.

5.2.6. *Operational Phase*

Operational Phase measures for this project will be consistent with the Water Sensitive Urban Design intents set out in the Concept Design Guidelines for Water Sensitive Urban Design (Healthy Waterways 2009)

- Promote Evapo-transpiration, infiltration of rainfall, and conveyance of stormwater runoff within surface systems enabling natural filtering and cleaning processes to be better incorporated within the urban environment

The following Best Management Practice measures (BMP's) are being proposed for this development, and will be investigated further during the detailed design phase;

- It is proposed to disconnect hard paved areas where possible from the roofwater drainage system, by directing surface runoff to turfed areas or garden bed areas, with the potential of infiltration where possible;
- Solid Pollutant Filters – Install solid pollutant filters within grated inlet pits (Ocean Protect OceanGuards shown). Refer to Stormwater Quality Management Plan in Appendix C; and
- Rainwater harvesting where possible.

6. **WATER QUALITY MONITORING PROGRAM**

Monitoring the water quality, before, during, and after construction will help with the analysis of the effectiveness of the adopted ESC measures. Where safety allows, water quality sampling and analysis is to be undertaken at a minimum, at each point of concentrated discharge across the site.

Water quality monitoring requirements and discharge criteria will be detailed during the operational works phase of this project.

7. **MAINTENANCE PLANS**

7.1. *Construction Phase*

The Sediment & Erosion Control Plan will detail the requirements on site during the construction phase of the project. A mix of Type 1 and 2 sediment control measures will likely be required based on IECA (2008). Detailed Erosion and Sediment Control Plans will be designed and detailed during the operational works phase of this project.

7.2. Operational Phase

As the existing stormwater quality treatment strategy will service the development, the maintenance plan shall be as outlined in the Inertia Stormwater Management Plan. Maintenance of the proposed Gross Pollutant Traps shall be as per the manufacturer's requirements.

10.0 CONCLUSION

MRC Consulting Engineers Pty Ltd has been commissioned by Fleetwood Australia to prepare a Site Based Stormwater Quality Management Plan suitable for submission to Logan City Council for their proposed development located at 185 Grampians Circuit, in Yarrabilba.

The proposed stormwater infrastructure is a minor extension of the existing system within South Rock State School grounds, and will ultimately discharge via the existing lawful point of discharge for the school.

Stormwater Quality

The existing school grounds have a lot wide stormwater treatment strategy in place, which caters for this development within the school. This design was proposed and built as part of the South Rock State School development, and is covered in Intertia's Stormwater Quality Management Plan. Grated inlet pits shown are to be provided with Gross Pollutant Traps – Ocean Protect OceanGuards are shown.

A global treatment strategy is also in place for Precinct 4 of the Yarrabilba Primary Development Area. This is covered by the Precinct 5 (now known as Precinct 4) Stormwater Management Plan.

As the proposed site area is less than 2500m², stormwater quality management is to be undertaken utilising Best Management Practices for both construction and operational phases.

8. REFERENCES

DesignFlow (2017), Yarrabilba Precinct 5 Stormwater Management Plan – Version 2

Intertia (2022), Stormwater Management Plan, Yarrabilba State School #2

Water by Design (2009) Concept Design Guidelines for Water Sensitive Urban Design Version 1, South East Queensland Healthy Waterways Partnership, Brisbane. March 2009

Healthy Waterways (2007), Water Sensitive Urban Design: Developing Design Objectives for Water Sensitive Urban Design in South East Queensland, Healthy Waterways.

BCC (2000) Guidelines on Identifying and Applying Water Quality Objectives in Brisbane City, Appendix 6 – Best Practice Discharge Guidelines. Brisbane.

IPWEAQ (2017), Queensland Urban Drainage Manual – 4th Edition: Institute of Public Works Engineering Australasia, Queensland Division. 2016.

BCC (2003), *Guidelines for Pollutant Export Modelling in Brisbane, Version 7 [Rev 2]*, Waterways Program, Urban Management Division, Brisbane City Council, Brisbane, 11 December 2003.

Water by Design, (2009), *Construction and Establishment Guidelines: Swales, Bioretention Systems and Wetlands*, South East Queensland Healthy Waterways Partnership, Brisbane, Queensland.

FAWB (2009), *Stormwater Biofiltration Systems - Adoption Guidelines*, Facility for Advancing Water Biofiltration, Version 1, 2009

IECA (2008), *Best Practice Erosion & Sediment Control (BPESC) Document: 2008 International Erosion Control Association (Australasian Chapter)*.

Qld Department of State Development, Infrastructure and Planning (2017), *State Planning Policy - Appendix 2 Stormwater Management Design Objectives* Department of Infrastructure, Local Government and Planning, July 2017



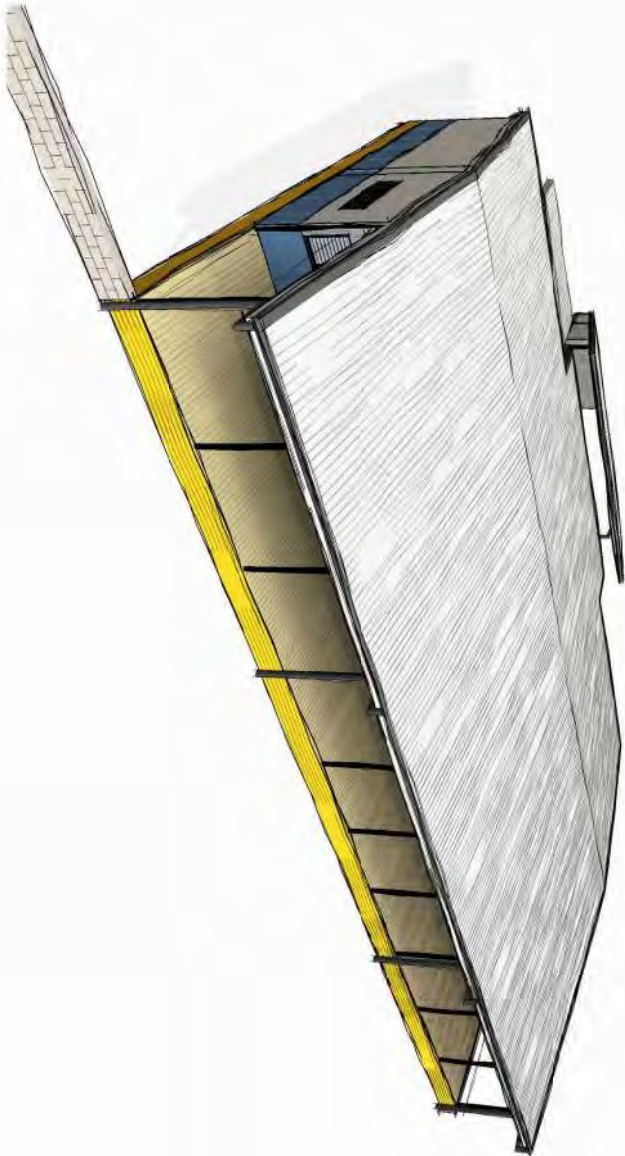
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APPENDIX

A

Proposed Architectural Site Plans

SHEET LIST - SCHEMATIC DESIGN	
SHEET NUMBER	SHEET NAME
SD000	COVER PAGE - SCHEMATIC
SD010	SITE - SCHEMATIC - EXISTING & DEMOLITION
SD011	SITE - SCHEMATIC- PROPOSED
SD020	GROUND FLOOR - SCHEMATIC- DEMOLITION
SD021	GROUND FLOOR - SCHEMATIC - REFURBISHMENT



ARTISTIC IMPRESSION ONLY

SOUTH ROCK SS_10 MOD_KINDY DOUBLE

PROJECT NO:
J004124

B. SCHEMATIC DESIGN - ISSUED FOR REVIEW		18.05.2026	RV	JP
A. PRELIMINARY DESIGN - ISSUED FOR REVIEW		15.05.2026	RV	JP
NO. DESCRIPTION		DATE	BY	CHK'D

COVER PAGE - SCHEMATIC

SHEET NUMBER		REVISION
SD000	B	





PROPOSED SITE
LOCATION
CLIMATE ZONE 2
WIND REGION B

1 STATE CONTEXT

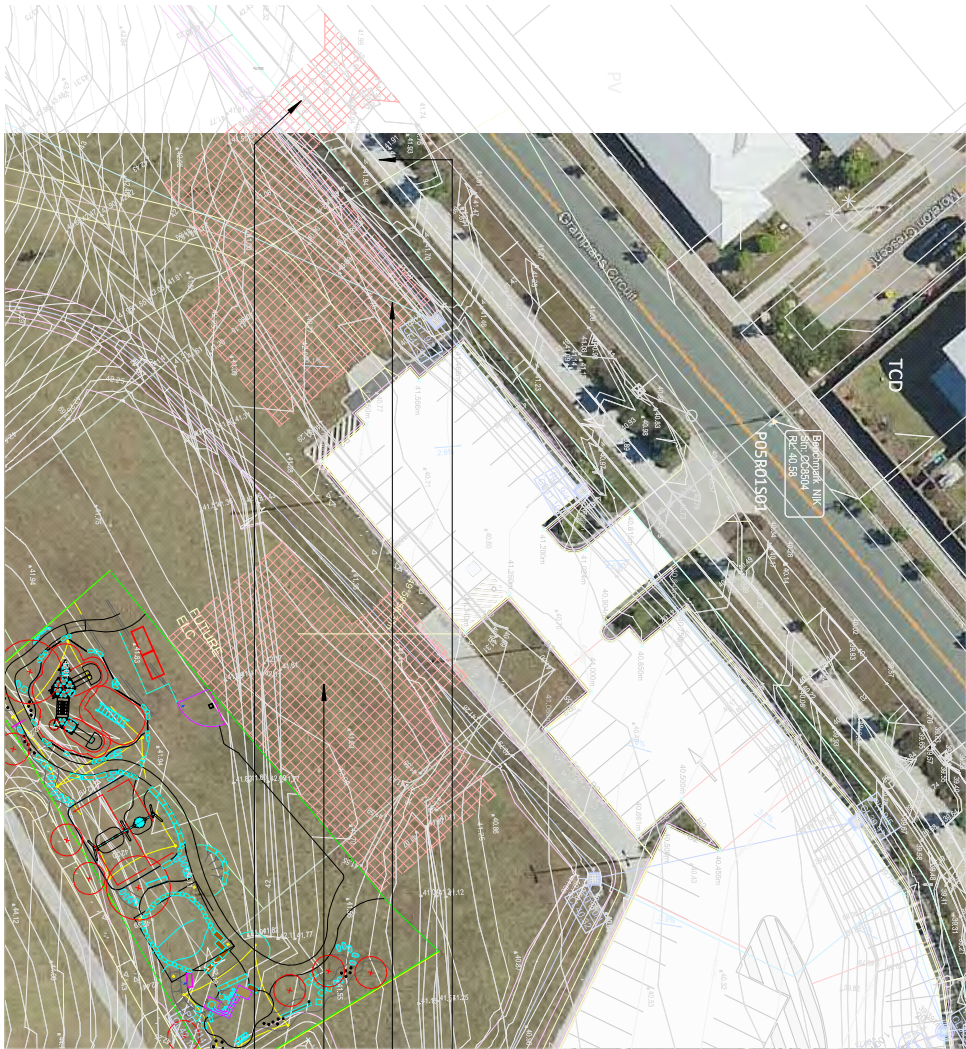


2 LOCAL CONTEXT PLAN

1 : 24000

NOTE: SATELLITE IMAGERY USED FOR EARLY STAGE SITE PLANNING ONLY.
ACCURATE SITE REPRESENTATIONS CANNOT BE MADE UNTIL SITE SURVEY COMPLETED.
AS SUCH FLEETWOOD RESERVES RIGHT TO MAKE CHANGES TO SITE PLANS AS NECESSARY
TO ACHIEVE ACTUAL SPATIAL REQUIREMENTS AND NCC COMPLIANCE

SOUTH ROCK SS_10 MOD_KINDY DOUBLE



REMOVE FOOTPATH FOR
NEW ACCESS DRIVEWAY.

STRIP VEGETATION TO NEW
CARPARK AREA. (AREA
EXTENT SHOWN IN RED)

STRIP VEGETATION TO NEW
BUILDING FOOTPRINT (AREA
EXTENT SHOWN IN RED)

REMOVE TYPE 1 FENCE FOR
NEW ENTRY GATE.

NOTE:
CUT IN NEW CROSSOVER TO GRUMPAN Cct.
REMOVE FOOTPATH FOR NEW ACCESS
DRAVEWAY.
REMOVE TYPE 1 FENCE FOR NEW ENTRY
GATE.
STRIP VEGETATION TO NEW CARPARK AREA.
STRIP VEGETATION TO BUILDING FOOTPRINT.
EQUIPMENT AREA.

SITE - SCHEMATIC - EXISTING & DEMOLITION

PROJECT NO.:	J004124	A	SCHEMATIC DESIGN - ISSUED FOR REVIEW	15/05/2026	RV	JP	SHEET NUMBER	SD010	REVISION	A
Author:	Doc/J004124_Doc_SouthRock_SS_10MOD_DoubleKindy	NO. DESCRIPTION	DATE	BY	CHKD					



1 SD SITE - PROPOSED PLAN
A300 1 : 500

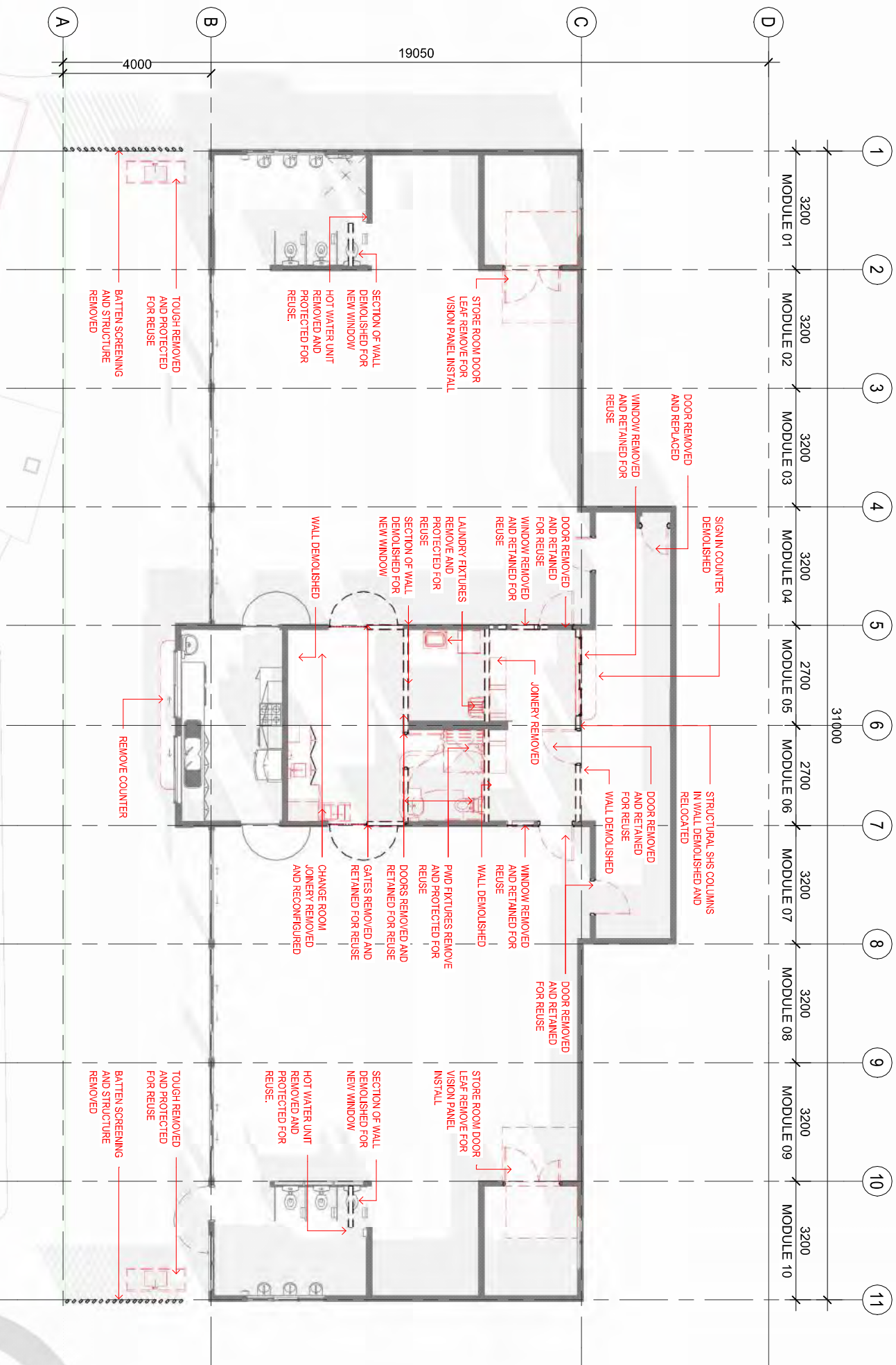
NOTE: SATELLITE IMAGERY USED FOR EARLY STAGE SITE PLANNING ONLY.
ACCURATE SITE REPRESENTATIONS CANNOT BE MADE UNTIL SITE SURVEY COMPLETED.
AS SUCH FLEETWOOD RESERVES RIGHT TO MAKE CHANGES TO SITE PLANS AS NECESSARY
TO ACHIEVE ACTUAL SPATIAL REQUIREMENTS AND NCC COMPLIANCE

SOUTH ROCK SS_10 MOD_KINDY DOUBLE

PROJECT NO.:
J004124

SITE - SCHEMATIC- PROPOSED

NO.	DESCRIPTION	DATE	BY	CHKD	SHEET NUMBER		REVISION
					SD011	B	
B	SCHEMATIC DESIGN - ISSUED FOR REVIEW	19/05/2026	RY	JP			
A	SCHEMATIC DESIGN - ISSUED FOR REVIEW	15/05/2026	RY	JP			



SOUTH ROCK SS_10 MOD_KINDY DOUBLE

GROUND FLOOR - SCHEMATIC DEMOLITION

PROJECT NO.:
J004124

A	SCHEMATIC DESIGN - ISSUED FOR REVIEW	15.05.2026	RY	JIP
NO.	DESCRIPTION	DATE	BY	CHK'D

SHEET NUMBER
SD020

REVISION
A



GROUND FLOOR - SCHEMATIC - REFURBISHMENT

SHEET NUMBER
SD021

REVISION
B



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APPENDIX

B

Contour and Detailed Survey Plan

SHEET LIST	
SHEET NUMBER	SHEET NAME
A100	COVER PAGE
A000	BOUNDARIES PLAN
A001	SITE PLAN
A002	UTILITIES PLAN
A003	TREE PLAN
A007	SECTIONS

GENERAL NOTES

[illegible]

PROPERTY BOUNDARIES

[illegible]

— quantity

- [illegible]

ANN - PAPERNO

[illegible][illegible]

REGION MAP



BOUNDARIES PLAN SMALL



UTILITIES PLAN

SURVEY INFORMATION			
SURVEYED BY	DATE BY	DESIGNED BY	
SB on 27/04/2026	TN on 30/04/2026	SB on 30/04/2026	
VERTICAL CONTROL	HORIZONTAL CONTROL		
AHD	MGA		
BENCH CONTROL	MARK CONTROL		
1m	0.5m		
DATE OF WORK			
COORD. GPS			



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APPENDIX

C

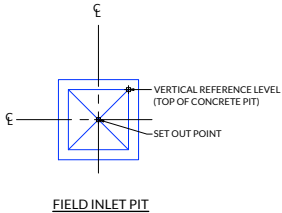
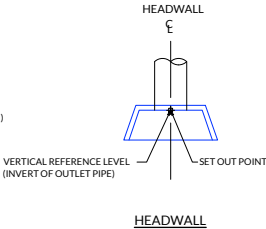
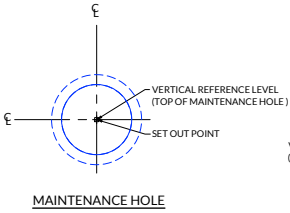
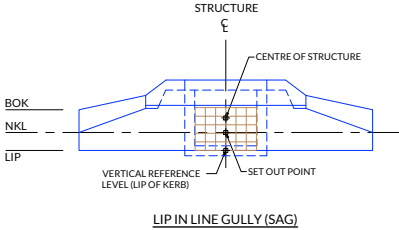
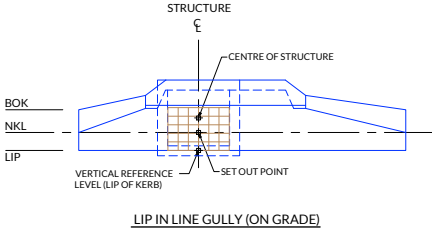
Stormwater Drainage Plans

STORMWATER DRAINAGE NOTES

1. ALL WORKS SHALL BE CONSTRUCTED IN ACCORDANCE WITH THE RELEVANT LOCAL AUTHORITY SPECIFICATIONS AND STANDARD DRAWINGS AS WELL AS MRC PROJECT SPECIFICATIONS AND DRAWINGS.
2. ALL STORMWATER DRAINAGE PIPES ARE TO BE A MINIMUM R.C.P. CLASS '2' OR F.R.C. CLASS '2' UNLESS SHOWN OTHERWISE ON PLAN. ALL UPVC PIPES SHALL BE CLASS SN8. ALL PIPES TO BE RUBBER RING JOINT UP TO AND INCLUDING 600 DIA. 675 DIA AND ABOVE TO BE FLUSH JOINTED WITH EXTERNAL BANDS.
3. THE CONTRACTOR IS TO VERIFY ALL FINISHED SURFACE LEVELS OF PROPOSED ROOFWATER PITS BEFORE CONSTRUCTING TO FINISHED LEVELS.
4. EXCAVATION AND BEDDING OF STORMWATER DRAINAGE PIPES IS TO BE CARRIED OUT IN ACCORDANCE WITH IPWEA STD DWG DS-030. PIPE CLASSES INDICATED HAVE BEEN DESIGNED FOR A MINIMUM CONSTRUCTION TRENCH TYPE H52. PIPE SUPPORT SHALL BE H53 WITHIN ROAD RESERVE AND H2 ELSEWHERE IN ACCORDANCE WITH IPWEA STD DWG DS-030 UNLESS NOTED OTHERWISE.
5. ALL MANHOLES DENOTED 'MH' ON PLAN SHALL BE 1050 DIA. WITH CIRCULAR COVER & FRAME (U.N.O.) ALL GULLIES ARE TO BE LIP IN LINE (U.N.O.) IN ACCORDANCE WITH LOCAL AUTHORITY STANDARDS.
6. TWIN KERB ADAPTORS ARE TO BE PROVIDED FOR ALL ALLOTMENTS DRAINING TOWARDS THE STREET. WHERE KERB ADAPTORS ARE LOCATED ON THE SAME SIDE OF THE ROAD AS CONCRETE FOOTPATHS, TWIN 1000x75 RHs (GALVANISED) ARE TO BE INSTALLED FROM THE KERB ADAPTORS TO THE PROPERTY BOUNDARY.
7. THE CONTRACTOR SHALL VERIFY LOCATIONS OF EXISTING SERVICES WITH ALL RELEVANT AUTHORITIES BEFORE COMMENCING CONSTRUCTION (PROVIDE A COPY OF THE INFORMATION TO THE SITE SUPERINTENDENT). IN PARTICULAR PROPOSED SERVICE CROSSINGS.
8. ALL STORMWATER OUTLET LOCATIONS TO EXISTING INFRASTRUCTURE SHALL BE CONFIRMED ON SITE BY THE CONTRACTOR PRIOR TO COMMENCING ANY CONSTRUCTION ON SITE. ANY DISCREPANCIES ARE TO BE REPORTED TO THE SUPERVISING ENGINEER.
9. ALL WORKS ARE TO JOINT NEATLY TO EXISTING CONSTRUCTION.
10. ALL CONSTRUCTION UNDERTAKEN BY THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE WORKPLACE HEALTH AND SAFETY ACT.
11. COMPACTION TESTING IS TO BE CARRIED OUT AT THE REQUIRED FREQUENCY BY A N.A.T.A. APPROVED TESTING FACILITY AT THE CONTRACTORS COST. THE CONTRACTOR IS TO PROVIDE COPIES OF ALL TEST RESULTS AT REGULAR INTERVALS DURING THE WORKS. ANY NON-COMPLIANCE ARE TO BE RECTIFIED BY THE CONTRACTOR AT THE CONTRACTORS EXPENSE.
12. SPOIL MATERIAL GENERATED FROM TRENCH EXCAVATIONS SHALL BE DISPOSED OF AS DIRECTED BY THE SUPERINTENDENT.
13. BACKFILLING OF STORMWATER PIPE IN OPEN SPACE AREAS IS TO CONSIST OF SELECT FILL FROM EXCAVATIONS AND SHALL BE PLACED IN LAYERS NOT EXCEEDING 250mm LOOSE IN DEPTH AND SHALL BE COMPACTED TO A MINIMUM OF 95% STANDARD COMPACTION.
14. ALL PIPE STUBS ARE TO BE SEALED OFF AT ENDS WITH HARDBOARD PLANKS PRIOR TO BACKFILLING.
15. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PIPES DURING CONSTRUCTION AND SHALL ADOPT CONSTRUCTION PRACTICES TO PREVENT CRACKING OF PIPES.
16. BACKFILL UNDER PAVEMENTS TO CONSIST OF APPROVED SUBGRADE REPLACEMENT MATERIAL WITH A MINIMUM CALIFORNIA BEARING RATIO OF 15. PLACED IN LAYERS NOT EXCEEDING 250mm LOOSE IN DEPTH AND SHALL BE COMPACTED TO A MINIMUM OF 95% MODIFIED MAXIMUM DRY DENSITY.
17. OVERLAND FLOW PATH ZONES ARE TO BE GRADED EVENLY BETWEEN THE SURFACE/INVERT LEVELS PROVIDED ON THE DESIGN DRAWINGS UNLESS DIRECTED OTHERWISE.
18. CLASS OF STORMWATER PIPES HAVE BEEN DESIGNED IN ACCORDANCE WITH CONCRETE PIPE ASSOCIATION OF AUSTRALASIA FOR IN SERVICE CONDITIONS ONLY. CONTRACTOR IS TO ENSURE CONSTRUCTION METHODS USED ON SITE DO NOT COMPROMISE THE INTEGRITY OF THE SPECIFIED PIPE.

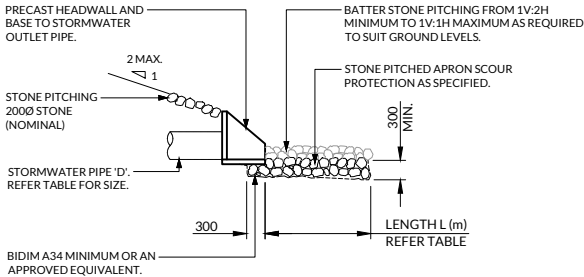
STONE PITCHING NOTES

1. STONE PITCHING TO BOTH INLETS & OUTLETS SHALL BE PLACED AS DIRECTED & SHALL BE SOUND ROCK WHICH WILL NOT DISINTEGRATE IN WATER. THE STONES SHALL BE NOT LESS THAN 0.01 CUBIC METRES GENERALLY, BUT WITH AVERAGE FILLING STONE DIAMETER BEING 200mm, UNLESS A DIFFERENT NOMINAL SIZE d₅₀ IS SPECIFIED. STONES SHALL BE SET & INTERLOCKED IN A MANNER THAT NO SINGLE STONE CAN BE DISLOGGED BY WATER FLOW & SO PRESENT A ROUGH SURFACE.
2. PROVIDE 300W x 600D STONE PITCHED CUT-OFF WALL TO UNDERSIDE OF PRECAST HEADWALL BASE AT JUNCTION WITH STONE PITCHED CHANNEL.
3. STONE PITCHING DEPTH SHALL BE 300mm MINIMUM. PROVIDE BIDIM A34 GEOFABRIC, OR APPROVED ALTERNATIVE, TO UNDERSIDE OF PITCHING AS PER DETAILS.
4. REFER STORMWATER OUTLET SCHEDULE FOR DIMENSIONS OF STONE PITCHING.



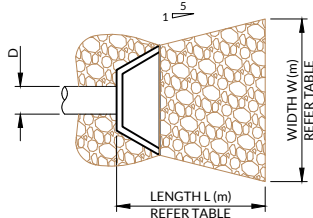
STANDARD SET-OUT DETAILS

SCALE N.T.S.



SCHEMATIC OUTLET DETAIL

SCALE N.T.S.



SCHEMATIC OUTLET PLAN

SCALE N.T.S.

ROCK GRADATION TABLE					
SMALLEST DIMENSIONS IN (mm)					% OF ROCK SMALLER THAN SIZE SHOWN
200d ₅₀	300d ₅₀	400d ₅₀	500d ₅₀	600d ₅₀	
380	525	630	750	850	100
300	450	550	650	750	50-70
200	300	400	500	600	35-50
75	100	130	150	175	2-10

NOTE : ROCK SHOULD NOT BE PLACED DIRECTLY ON DISPERSIVE SOILS. IF SUBSOILS ARE FOUND TO BE DISPERSIVE, THE SWALE SHOULD BE OVER EXCAVATED THEN TOPPED WITH A 200mm (MIN) THICK LAYER OF NON-DISPERSIVE SOIL, THEN COVERED WITH A LAYER OF GEOFABRIC PRIOR TO PLACEMENT OF ROCK.

STONE PITCHING NOTES

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3. STONE PITCHING DEPTH SHALL BE 300mm MINIMUM. PROVIDE BIDIM A34 GEOFABRIC, OR APPROVED ALTERNATIVE, TO UNDERSIDE OF PITCHING AS PER DETAILS.
4. REFER STORMWATER OUTLET SCHEDULE FOR DIMENSIONS OF STONE PITCHING.

STORMWATER OUTLET SCHEDULE					
NAME	PIPE SIZE (D)	LENGTH (L)	WIDTH (W)	NORMAL ROCK SIZE d ₅₀	THICKNESS OF PROTECTION
			TBC		

CONCEPTUAL DRAWING SUBJECT TO DETAILED DESIGN

No.	DATE	AMENDMENT	BY
A	09.04.26	PRELIMINARY ISSUE	C.R.P.
B	28.08.26	PRELIMINARY RE-ISSUE	C.R.P.

NOT FOR CONSTRUCTION

RP DESCRIPTION :
LOT : 5080 ON SP327799
LGA : LOGAN CITY COUNCIL

CLIENT :

FLEETWOOD



PROJECT :

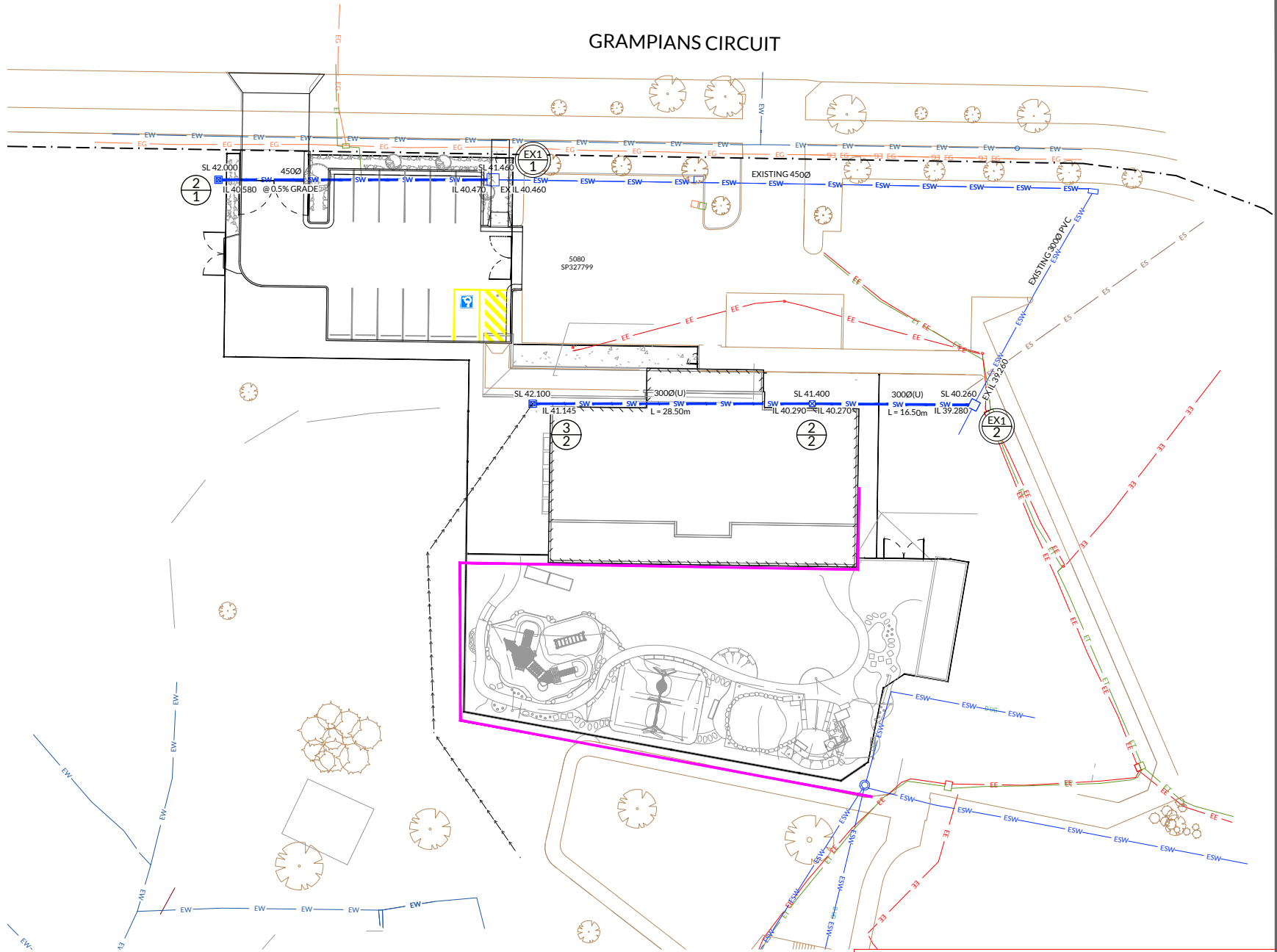
SOUTH ROCK SS KINDERGARTEN
185 GRAMPIANS CIRCUIT
YARRABILBA, QLD, 4207

Drawn : C.R.P.	Date : JUNE 2026
Designed : M.H.	Checked : R.A.
Approved : MARK HARRISON	MIEAust NER RPEQ 18458
Status : PRELIMINARY	

DRAWING TITLE :		
STORMWATER NOTES AND DETAILS SHEET		
Project No. J26135	Drawing No. C-7.01	Revision B

LEGEND

- PROPERTY BOUNDARY
- INTERNAL PROPERTY BOUNDARY
- EXTERNAL PROPERTY BOUNDARY
- EXISTING BUILDING
- EXISTING NEIGHBOURING BUILDING
- EXISTING MAJOR CONTOUR @ 1.00m
- EXISTING MINOR CONTOUR @ 0.25m
- EXISTING WATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING ELECTRICAL
- EXISTING OVERHEAD ELECTRICAL
- EXISTING GAS
- PROPOSED TEMPORARY SWALE
- PROPOSED STORMWATER LINE
- PROPOSED 900x900 STORMWATER FIELD INLET PIT (WITH MEDIUM DUTY GRATE)
- PROPOSED 600x600 STORMWATER FIELD INLET PIT (WITH LIGHT DUTY GRATE)
- PROPOSED RETAINING WALL



CONCEPTUAL DRAWING SUBJECT TO DETAILED DESIGN

No.	DATE	AMENDMENT	BY
A	17.06.26	PRELIMINARY ISSUE	C.R.P.
B	21.07.26	PRELIMINARY ISSUE	C.R.P.
C	22.07.26	PRELIMINARY ISSUE	C.R.P.
D	28.08.26	PRELIMINARY RE-ISSUE	C.R.P.

NOT FOR CONSTRUCTION

0	1	2	3	4	5		10		15
Scale 1:200 @ A1 Scale 1:400 @ A3									
RP DESCRIPTION :									

RP DESCRIPTION:
LOT: 5080 ON SP327799
LGA: LOGAN CITY COUNCIL

CLIENT:
FLEETWOOD



PROJECT:
**SOUTH ROCK SS
KINDERGARTEN**
185 GRAMPIANS CIRCUIT
YARRABILBA, QLD, 4207

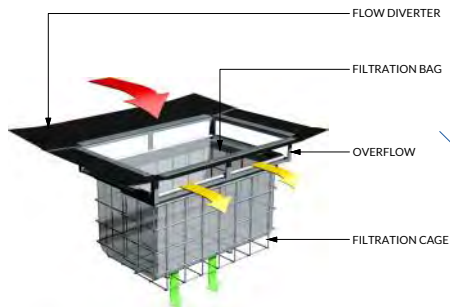
Drawn: C.R.P.	Date: JUNE 2026
Designed: M.H.	Checked: R.A.
Approved: MARK HARRISON	MIEAust NER RPEQ 18458
Status: PRELIMINARY	

DRAWING TITLE:	Project No.	Drawing No.	Revision
STORMWATER LAYOUT PLAN	J26135	C-7.11	D

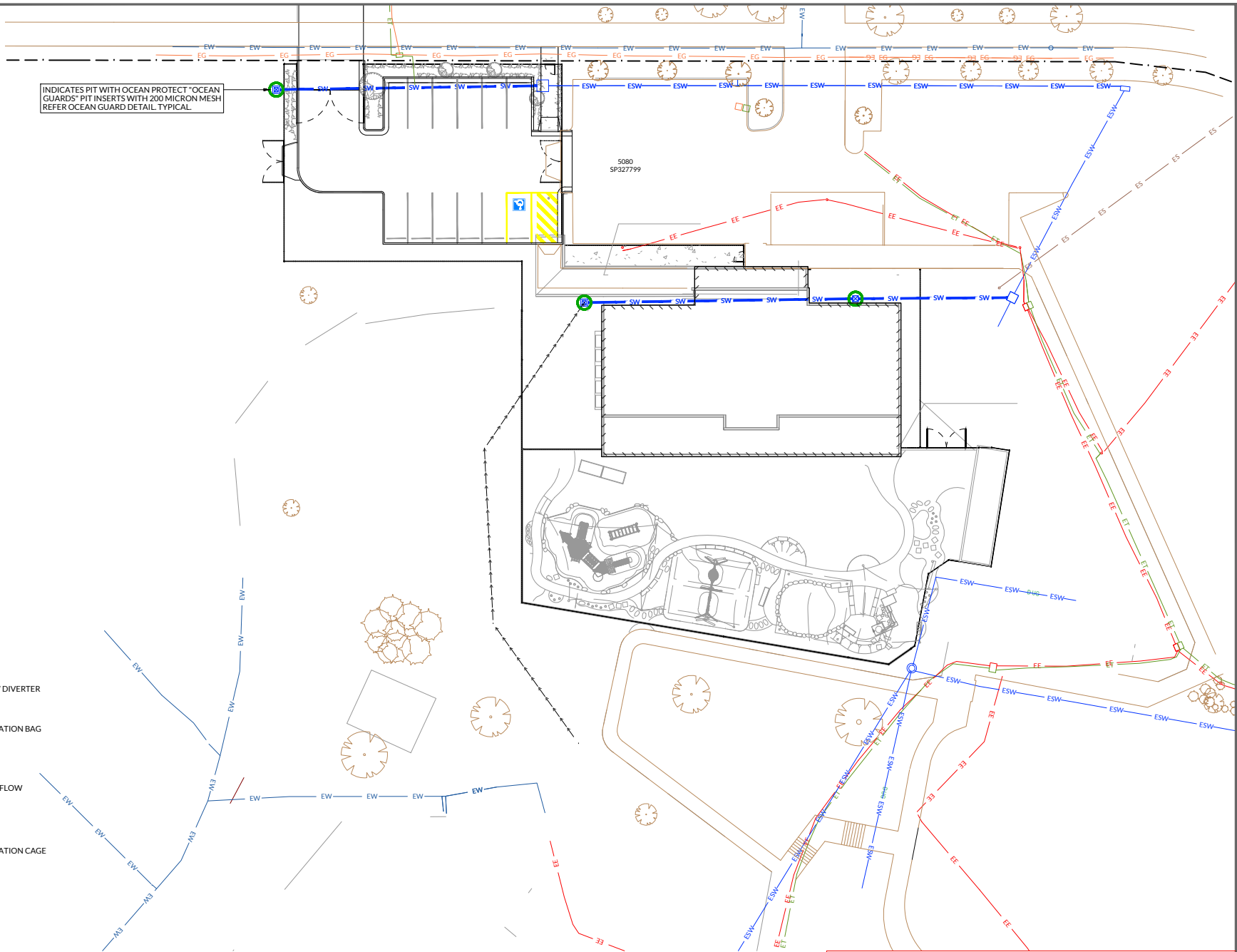
LEGEND

- PROPERTY BOUNDARY
- INTERNAL PROPERTY BOUNDARY
- EXTERNAL PROPERTY BOUNDARY
- EXISTING BUILDING
- EXISTING NEIGHBOURING BUILDING
- EXISTING MAJOR CONTOUR @ 1.00m
- EXISTING MINOR CONTOUR @ 0.25m
- EXISTING WATER
- EXISTING STORMWATER
- EXISTING SEWER
- EXISTING ELECTRICAL
- EXISTING OVERHEAD ELECTRICAL
- EXISTING GAS
- PROPOSED TEMPORARY SWALE
- PROPOSED STORMWATER LINE
- DENOTES OCEAN PROTECT "OCEAN GUARDS" PIT INSERTS WITH 200 MICRON MESH BAGS (SQIDEP APPROVED PRODUCT)

INDICATES PIT WITH OCEAN PROTECT "OCEAN GUARDS" PIT INSERTS WITH 200 MICRON MESH REFER OCEAN GUARD DETAIL TYPICAL



OCEANGUARD DETAIL
SCALE NTS



No.	DATE	AMENDMENT	BY
A	28.08.26	PRELIMINARY ISSUE	C.R.P.
NOT FOR CONSTRUCTION			

0	1	2	3	4	5	10	15
Scale 1:200 @ A1 Scale 1:400 @ A3							
RP DESCRIPTION: LOT: 5080 ON SP327799 LGA: LOGAN CITY COUNCIL							

CLIENT:	FLEETWOOD
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MRC CONSULTING ENGINEERS	MRC Consulting Engineers PO Box 778, Ashgrove West, Brisbane, QLD 4060 e: admin@mrceng.com.au www.mrceng.com.au
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PROJECT:	SOUTH ROCK SS KINDERGARTEN 185 GRAMPIANS CIRCUIT YARRABILBA, QLD, 4207
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Drawn:	C.R.P.	Date:	JUNE 2026
Designed:	M.H.	Checked:	R.A.
Approved:	MARK HARRISON	MIEAust NER RPEQ 18458	
Status:	PRELIMINARY		

DRAWING TITLE:	STORMWATER QUALITY MANAGEMENT PLAN		
Project No.	J26135	Drawing No.	C-7.25
Revision	A		

STRUCTURE NAME

STRUCTURE DESCRIPTION

PIPE SIZEmm (Class)	300(3)	300(3)
PIPE GRADE %	3.00%	6.00%
PIPE SLOPE 1in X	33.33	16.67
FULL PIPE FLOW VELOCITY (m/s)		
PART FULL FLOW VELOCITY (m/s)		

WATER LEVEL IN STRUCTURE

HYDRAULIC GRADE LEVEL

PIPE FLOW (Cumecs)

PIPE CAPACITY AT GRADE (Cumecs)

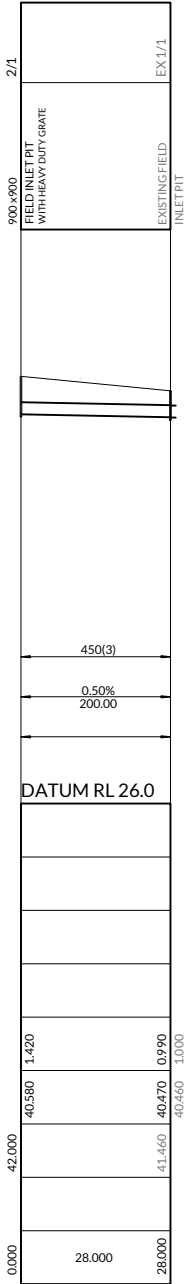
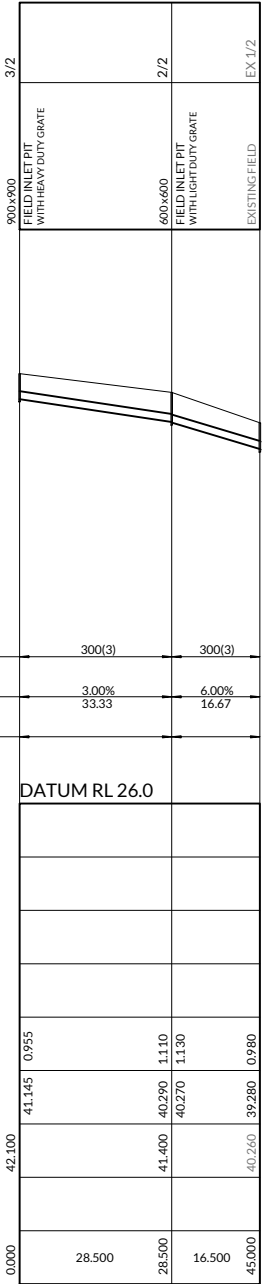
DEPTH TO INVERT

INVERT LEVEL OF DRAIN

DESIGN SURFACE LEVEL

ROAD CHAINAGE (Offset)

RUNNING CHAINAGE



LINE

CONCEPTUAL DRAWING SUBJECT TO DETAILED DESIGN

No.	DATE	AMENDMENT	BY
A	17.04.26	PRELIMINARY ISSUE	C.R.P.
B	28.08.26	PRELIMINARY RE-ISSUE	C.R.P.
NOT FOR CONSTRUCTION			

HORIZ. SCALE	10 5 0 5 20
1:500 @ A1	
1:1000 @ A3	
VERT. SCALE	1 0.5 0 2 4
1:100 @ A1	
1:200 @ A3	
RP DESCRIPTION:	
LOT : 5080 ON SP327799	
LGA : LOGAN CITY COUNCIL	

CLIENT:

FLEETWOOD



MRC
CONSULTING ENGINEERS

MRC Consulting Engineers
PO Box 778, Ashgrove West, Brisbane, QLD 4060
e : admin@mrceng.com.au www.mrceng.com.au

PROJECT :

SOUTH ROCK SS
KINDERGARTEN
185 GRAMPIANS CIRCUIT
YARRABILBA, QLD, 4207

Drawn : C.R.P.	Date : JUNE 2026
Designed : M.H.	Checked : R.A.
Approved : MARK HARRISON MIEAust NER RPEQ 18458	
Status : PRELIMINARY	

DRAWING TITLE:		
STORMWATER LONG SECTIONS		
Project No.	Drawing No.	Revision
J26135	C-7.31	B