DA
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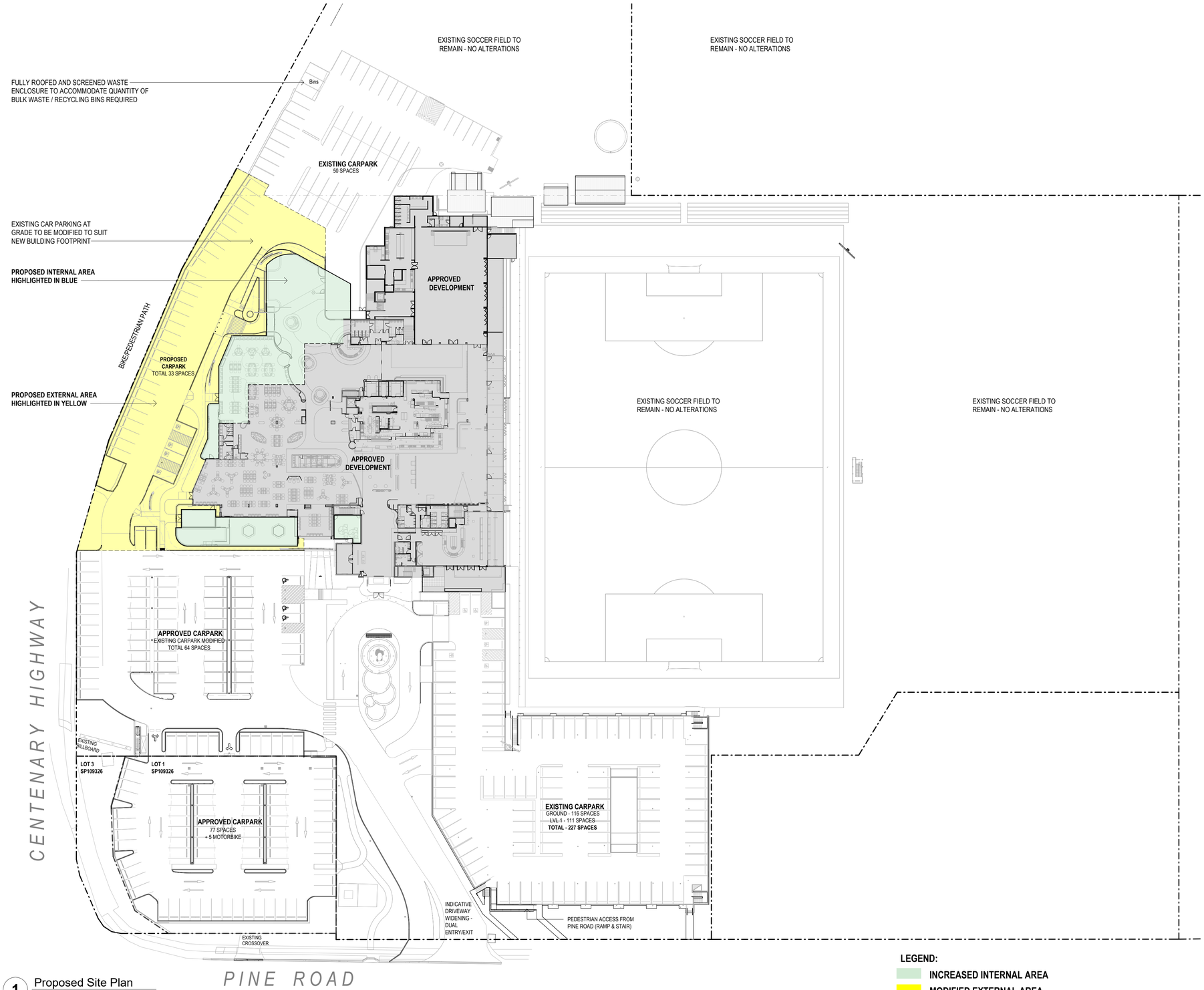

1 Proposed Site Plan
1 : 500

LEGEND:

INCREASED INTERNAL AREA

MODIFIED EXTERNAL AREA

CARPARK & MOTORBIKE SPACES CALCULATION:

	APPROVED	PROPOSED	+ / -
CARPARK	422	451	+ 29
MOTORBIKE	5	5	N/A

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A006902274

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE
Queensland Government
SARA ref: 2512-49704 SRA
Date: 7 May 2026

EXISTING PARKING = 400 SPACES + 1 MOTORBIKE
REMOVED PARKING = 41 SPACES + 1 MOTORBIKE
PROPOSED PARKING = 92 SPACES + 5 MOTORBIKE

TOTAL PARKING = 451 SPACES + 5 MOTORBIKE

issue	revision	initials	date
K	DA Amendment Issue	SB	09.10.25
J	WIP DA	SB	21.08.25
H	WIP DA	SB	12.08.25
G	DA Amendment	SB	12.05.25
F	Additional Shade Sails	SB	21.02.25
E	Council IR Response	LC	05.12.24
D	Revised Parking Totals	SB	09.09.24
C	DA Amendment	LC	27.08.24
B	DA Amendment Draft	LC	22.08.24
A	Council Pre-Lodgement	SB	03.06.24

Cayas +Ward
Suite 2, 19-25 Musk Avenue, Kelvin Grove. PO Box 360, Wilston Q 4051
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NSW Nominated Architect: Kimberley James Garton 8891

client: QCM Group
project: The Lion Richlands
133 Pine Road Richlands
drawing title: Proposed Final Site Plan
drawn: JW
date: OCT 2025
scale: As indicated@A1
project no.: 2425
drawing number: DA00.20
issue: K

LAMBERT & REHBEIN
ENGINEERS • MANAGERS • SCIENTISTS

DATE 3 FEBRUARY 2016

CONTACT ANDREW PEZZUTTI

REFERENCE B15295CR002

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE

Queensland Government

SARA ref: 2512-49704 SRA

Date: 7 May 2026

Amended in red by SARA on

7 May 2026

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APPLICATION REF

A006902274

Stormwater Management Plan

Proposed Refurbishment of Lions Richlands Club at 133 Pine Road, Richlands

For Lions Richlands

TABLE OF CONTENTS

APPENDIX A

PRELIMINARY ARCHITECTURAL PLANS PREPARED BY CAYAS ARCHITECTS
DETAIL SURVEY PREPARED BY LANDMARK CONSULTING SURVEYORS

APPENDIX B

CONCEPT CIVIL SERVICING LAYOUT PLAN B15295-CSK01
DETENTION TANK GENERAL ARRANGEMENT DETAILS B15295-CSK02
PRE DEVELOPMENT STORMWATER CATCHMENT PLAN B15295-CSK03
POST DEVELOPMENT STORMWATER CATCHMENT PLAN B15295-CSK04

APPENDIX C

XPRAFTS OUTPUT – PRE-DEVELOPMENT HYDROGRAPHS

APPENDIX D

XPRAFTS OUTPUT – POST-DEVELOPMENT HYDROGRAPHS

APPENDIX E

RATIONAL METHOD CALCULATIONS

Document Control Page

Revision	Date	Description	Author	Signature	Verifier	Signature	Approver	Signature
A	27/01/2016	DRAFT	BN		DL		AP	
B	03/02/2016	FINAL	BN	BN	DL		AP	

Table 7 Post-development Peak Flow Rates - Catchments A, B1 & B2

ARI (Years)	Value (m^3/s)	% Increase
Q1	0.530	+ 3%
Q2	0.686	+ 3%
Q5	0.895	+ 3%
Q10	1.011	+ 3%
Q20	1.178	+ 2%
Q50	1.325	+ 1%
Q100	1.520	+ 1%

3.5 DETENTION REQUIREMENTS

From the hydrological modelling it is evident that the development would cause an increase in the peak stormwater flows. Therefore stormwater detention will be required to avoid adverse impacts on downstream properties.

The stormwater detention system will attenuate all peak flows up to, and including, a Q_{100} storm. Refer XPRafts outputs included in Appendix C & D for further details.

3.5.1 UNDERGROUND DETENTION TANK

The on-site detention will be provided via an underground detention tank located to the east of the carpark fronting Pine Road as detailed on the Concept Civil Servicing Layout Plan B15295-CSK01 enclosed in Appendix B. Catchment B2's stormwater runoff will be directed through the tank and detained. It is proposed to over-detain Catchment B2's stormwater runoff to meet attenuation requirements as Catchments A's & B1's runoff will bypass the tank.

It is proposed to maintain the existing lawful point of discharge for stormwater to the existing open swale drain located to the east of the site in 107 Pine Road, Richlands (Lot 6 on RP49601).

The details for the proposed detention tank are shown in Table 8 overleaf and on the Detention Tank General Arrangement Details B15295-CSK02 enclosed in Appendix B.

Table 8 Detention Basin Details

Q_{100} Max Depth (m)	1.525
Q_{100} Storage Volume (m^3)	30.5
Low Level Outlet Orifice diameter (mm)	Ø275
Weir height above Tank Base (m)	1.30
Weir length (m)	0.4

The tank provides a detention storage volume of 31 m^3 for a Q100 storm event and depth of approximately 1.55m. With the addition of the above detention parameters to the developed site, the attenuated peak outflows for the fully developed site for each storm are shown below in Table 9.

Table 9 Post-development Attenuated Peak Flow Rates - Catchments A, B1 & B2

ARI (Years)	Value (m^3/s)	% Increase
Q1	0.513	0%
Q2	0.659	- 1%
Q5	0.857	- 1%
Q10	0.969	- 1%
Q20	1.135	-2%
Q50	1.308	0%
Q100	1.495	0%

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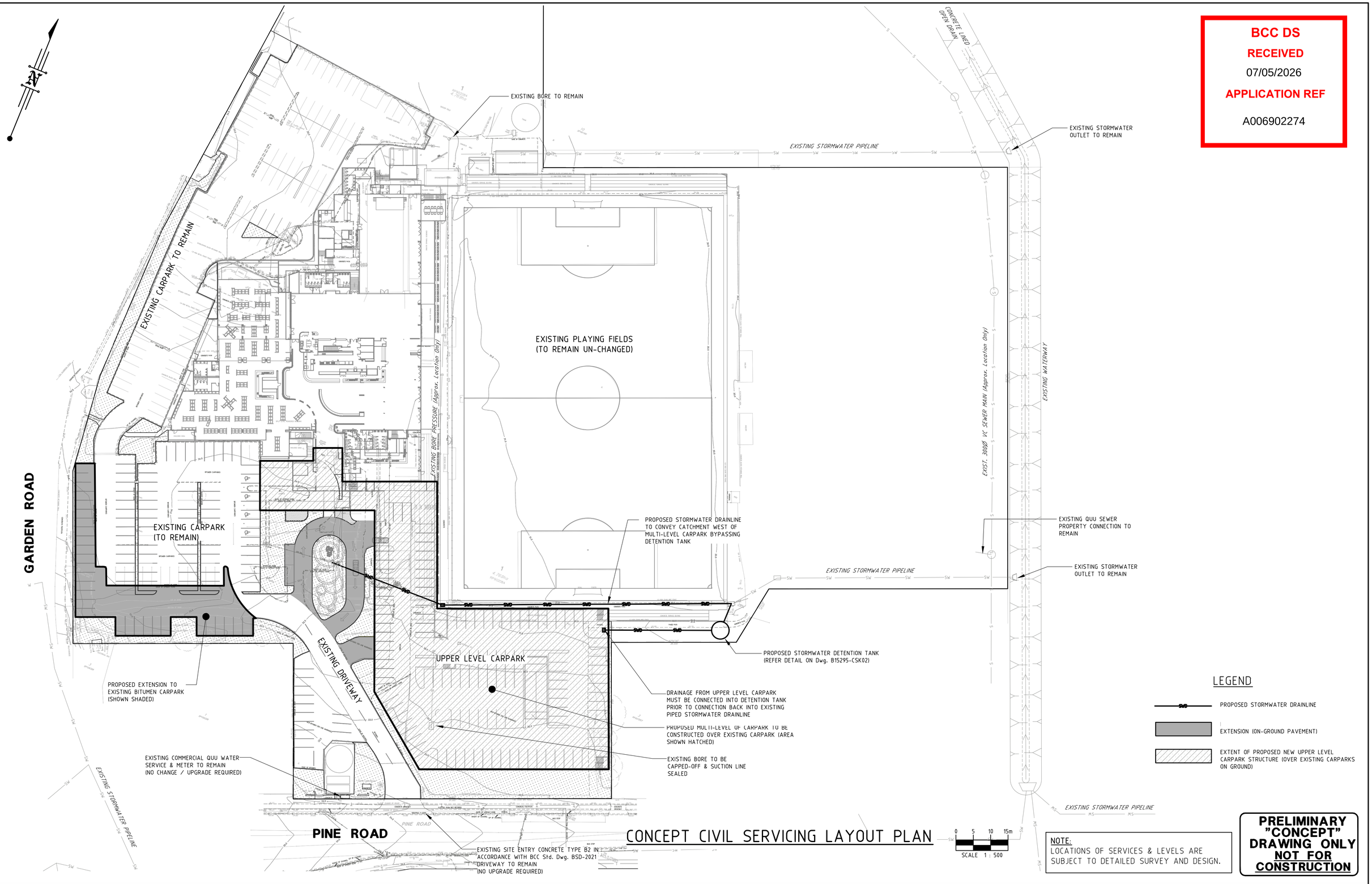
APPENDIX B

CONCEPT CIVIL SERVICING LAYOUT PLAN B15295-CSK01

DETENTION TANK GENERAL ARRANGEMENT DETAILS B15295-CSK02

PRE DEVELOPMENT STORMWATER CATCHMENT PLAN B15295-CSK03

POST DEVELOPMENT STORMWATER CATCHMENT PLAN B15295-CSK04



CONCEPT CIVIL SERVICING LAYOUT PLAN

NOTE:
LOCATIONS OF SERVICES & LEVELS ARE SUBJECT TO DETAILED SURVEY AND DESIGN.

PRELIMINARY "CONCEPT" DRAWING ONLY NOT FOR CONSTRUCTION

Associated Consultants:
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R.P. 902084
Parish of OXLEY
County of STANLEY

LEVEL DATUM
A.H.D. Derived
P.S.M. 154368 R.L. 55.615

No.	Date	By	Amendment	Checked
B	03-02-16	R.T.	STORMWATER REVISED	
A	27-01-16	R.T.	ORIGINAL ISSUE	

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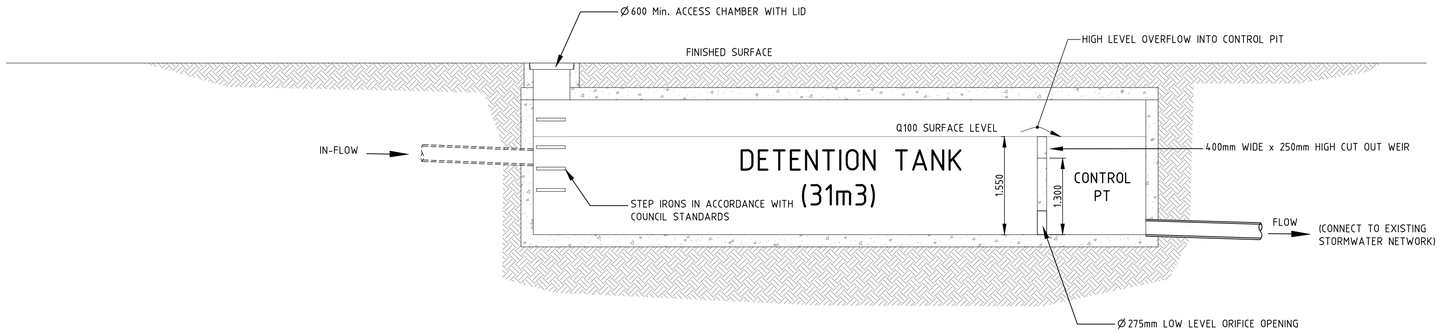
133 PINE ROAD
RICHLANDS

Title: CONCEPT CIVIL SERVICING LAYOUT PLAN

Client: *LIONS, RICHLAND*

Draftsperson: R.T.	Checked: D.L.	Sheet Size: A1	Drawing No.: B15295-CSK01
Designer: R.T.	Approved: T. CHAN RPEQ No: 4048		
Scale: AS SHOWN	Date: JAN 2016	A	B



DETENTION TANK GENERAL ARRANGEMENT DETAILS

N.T.S.

PRELIMINARY "CONCEPT" DRAWING ONLY NOT FOR CONSTRUCTION

NOTE:
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LEVEL DATUM
A.H.D. Derived
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No.	Date	By	Amendment	Checked
B	03-02-16	R.T	STORMWATER REVISED	
A	27-01-16	R.T.	ORIGINAL ISSUE	

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RICHLANDS

Title: DETENTION TANK
GENERAL ARRANGEMENT DETAILS

Client: *LIONS, RICHLAND*

Draftsperson: R.T.	Checked: D.L.	Sheet Size: A1	Drawing No.: B15295-CSK02
Designer: R.T.	Approved: T. CHAN RPEQ No: 4048		
Scale: AS SHOWN	Date: JAN 2016	A / B	

EXISTING CATCHMENT AREAS (m2)			
	CATCHMENT A	CATCHMENT B	TOTAL
IMPERVIOUS	5733.2	10612.2	16345.4
PERVIOUS	558.0	2414.6	2972.6
TOTAL	6291.2	13026.8	19318.0

PRELIMINARY "CONCEPT" DRAWING ONLY NOT FOR CONSTRUCTION

PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN

0 5 10 15m
SCALE 1 : 500

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R.P. 902084
Parish of OXLEY
County of STANLEY

LEVEL DATUM
A.H.D. Derived
P.S.M. 154368 R.L. 55.615

No.	Date	By	Amendment	Checked
A	27-01-16	R.T.	ORIGINAL ISSUE	

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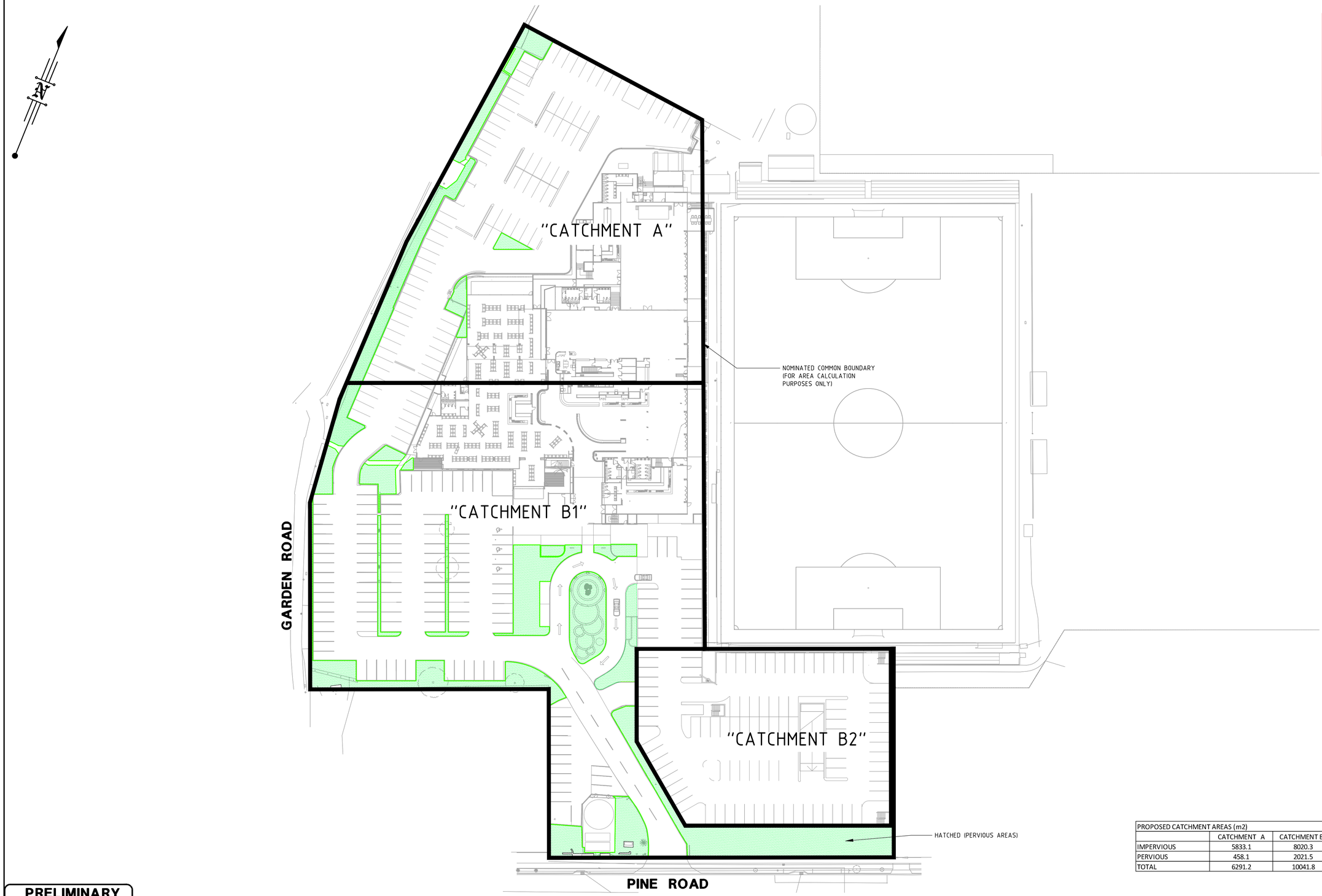
Project: LIONS RICHLANDS CLUB REFURBISHMENT
133 PINE ROAD
RICHLANDS

Title: PRE-DEVELOPMENT STORMWATER CATCHMENT PLAN

Client: *LIONS, RICHLAND*

Draftsperson: R.T.	Checked: D.L.	Sheet Size: A1	Drawing No. B15295-CSK03
Designer: R.T.	Approved: T. CHAN RPEQ No: 4048		
Scale: AS SHOWN	Date: JAN 2016	A	



PROPOSED CATCHMENT AREAS (m2)				
	CATCHMENT A	CATCHMENT B1	CATCHMENT B2	TOTAL
IMPERVIOUS	5833.1	8020.3	2985.0	16838.4
PERVIOUS	458.1	2021.5	0.0	2479.6
TOTAL	6291.2	10041.8	2985.0	19318.0

POST DEVELOPMENT STORMWATER CATCHMENT PLAN

0 5 10 15m
SCALE 1 : 500

PRELIMINARY "CONCEPT" DRAWING ONLY NOT FOR CONSTRUCTION

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Parish of OXLEY
County of STANLEY

LEVEL DATUM
A.H.D. Derived
P.S.M. 154368 R.L. 55.615

No.	Date	By	Amendment	Checked
B	03-02-16	R.T	CATCHMENT BOUNDARIES AND AREAS REVISED	
A	27-01-16	R.T.	ORIGINAL ISSUE	

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133 PINE ROAD
RICHLANDS

Title: POST DEVELOPMENT STORMWATER CATCHMENT PLAN

Client: *LIONS, RICHLAND*

Draftsperson: R.T.	Checked: D.L.	Sheet Size: A1	Drawing No.: B15295-CSK04
Designer: R.T.	Approved: T. CHAN RPEQ No: 4048		
Scale: AS SHOWN	Date: JAN 2016	A ~~A~~ B	

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE

Queensland Government

SARA ref: 2512-49704 SRA

Date: 7 May 2026

Amended in red by SARA on

7 May 2026

STORMWATER MANAGEMENT PLAN

139 Pine Road, Richlands

The Lion Richlands Club

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Table of Contents

Revision	Date	Description	Author	Verifier	Approver
DRAFT	2/07/2024	DRAFT ISSUE	SC	AA	
A	27/08/2024	ISSUE FOR APPROVAL	SC	AA	AA

Authorised by: Abbas Alkamachy, for and on behalf of Lambert & Rehbein (SEQ) Pty Ltd

_____

Position: Senior Civil Engineer
RPEQ No.: 31054

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3.0 Stormwater Quantity

3.1 Lawful Point of Discharge

The development site generally falls northeast and is captured by the internal drainage system in the existing carpark area that was constructed as part of previous carpark upgrades associated with Council Development Approval No. A004317401 (05 July 2016). It is proposed to pipe stormwater from the developed carpark to an existing grated inlet to the northeast of the site. The existing internal drainage system pipes flows east and discharges into Ric Nattrass Creek via an outlet located on Lot 6 on RP49601. It is expected that this is the lawful point of discharge for the development site.

3.2 Hydrological assessment

3.2.1 Subcatchment Analysis

The proposed development area consists of an existing fraction impervious of 15% and is anticipated to increase to approximately 80% in the developed scenario. Therefore, stormwater detention will be required to mitigate developed runoff, prior to discharging from the new carpark. Stormwater from the new carpark will be captured and conveyed to an underground detention tank. The west adjacent land (Lot 3 on SP109326) predominately falls towards the site and has been included as part of the new carpark's detained catchment.

The existing carpark adjacent to the proposed extension area will require minor modifications to the existing landscape and hardstand areas. However, the Stormwater Management Plan (SWMP) for the previous carpark upgrades (Approval No. A004317401) had considered this area as developed hardstand. The SWMP states that the detention tank was designed to over-detain captured stormwater runoff to account for bypass flows from this area. Therefore, the changes to the imperviousness of the area adjacent to the proposed carpark extension has been accounted for under the previous development and not included in this stormwater assessment.

The developed catchment delineation is depicted below in Figure 3.1.

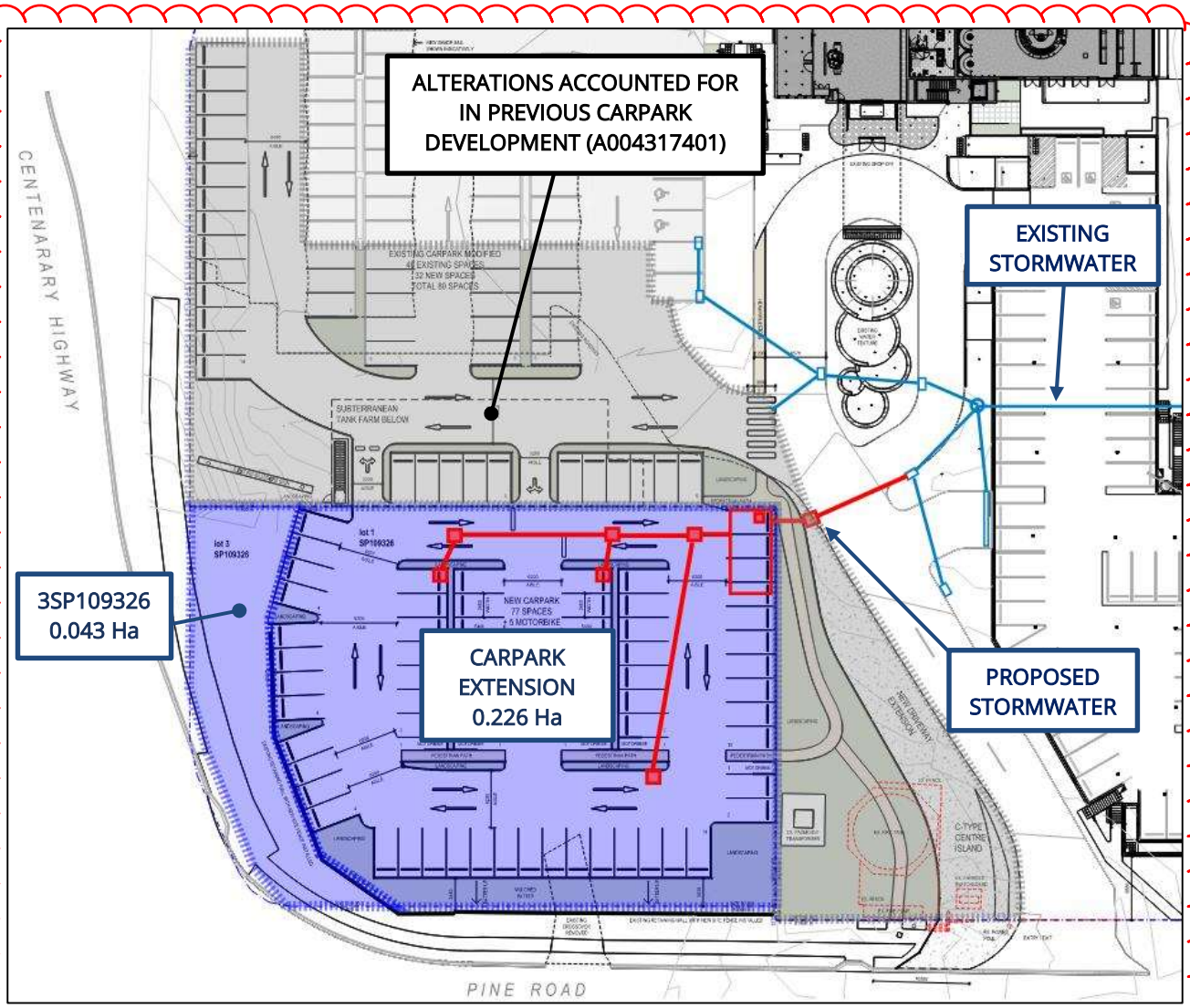


Figure 3.1. Post-Developed Subcatchment Delineation

The pre- and post-developed subcatchment details are presented in **Table 3.1**.

Table 3.1. Pre- and Post-Development Subcatchment Breakdown

SCENARIO	CATCHMENT	AREA (HA)	% IMPERVIOUS	TIME OF CONC.
Pre-Developed	**SITE**	**0.269**	15	8
Post-Developed	Developed Carpark	0.226	88	5
	3SP109326	0.043	31	5
	TOTAL	**0.269**	80	5

Table 3.6. Detention Tank Details

Parameters		Basin
$Q_{1\% AEP}$ or Q_{100} Max Ponding Depth (metres) / Water Level (m AHD)		1.00 / 32.25
Base Detention Area (square metres) / Tank Invert Level (m AHD)		45 / 31.25
Top Detention Area (square metres) / Detention Soffit Level (m AHD)		45 / 32.35
Q_{100} Max Detention Volume (m^3)		45.0
Low Flow Outlet Arrangement –	200Ø Circular Orifice	31.25m AHD (IL Orifice)
Low Flow Outlet Arrangement –	140Ø Circular Orifice	31.69m AHD (IL Orifice)
High Flow Outlet Arrangement –	210mm High x 220mm Wide Rectangular Orifice	31.93m AHD (IL Orifice)

The attenuated peak outflows and percentage difference to pre-development flows for each storm event are shown in **Table 3.7.**

Table 3.7. DRAINS Pre-developed and Mitigated Peak Flow Rates

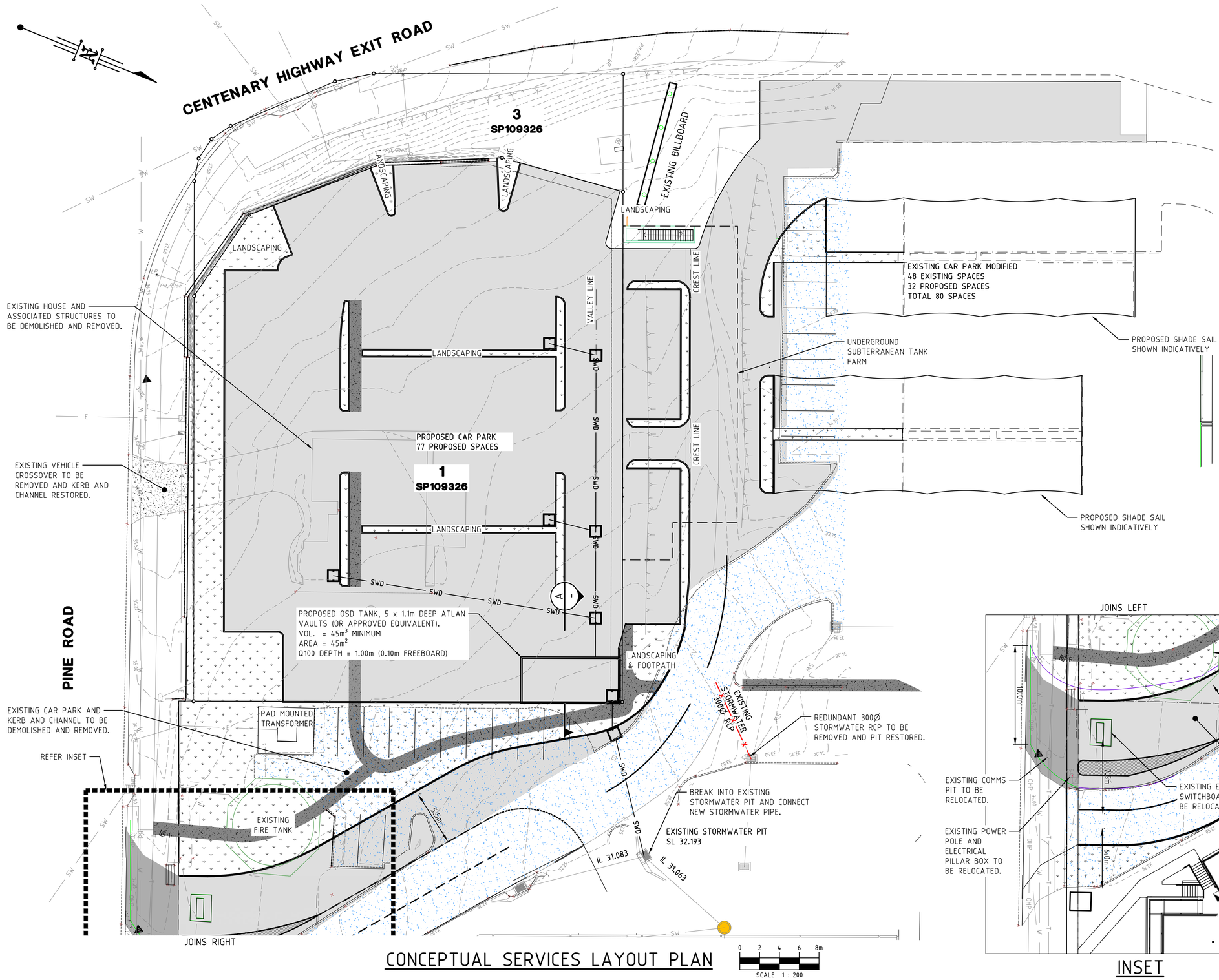
AEP (%)	PRE DEVELOPMENT (L/S)	POST DEVELOPMENT MITIGATED (L/S)	INCREASE (L/S)	DIFFERENCE (%)	PEAK STAGE (m AHD)
39%	53	53	0	0%	31.73
18%	78	77	-1	-1%	31.88
10%	97	96	-1	-1%	32.00
5%	119	118	-1	-1%	32.08
2%	149	148	-1	-1%	32.18
1%	166	163	-3	-2%	32.25

The DRAINS model has demonstrated that the proposed detention tank is able to attenuate site generated runoff to pre-development peak flows. The detained flows will be conveyed via the new internal drainage system, discharging to the existing stormwater pit within the site.

ENGINEERS
MANAGERS
SCIENTISTS

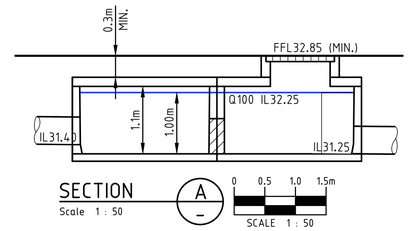
Appendix B

Concept Civil Engineering Servicing Plans



CONCEPTUAL SERVICES LAYOUT PLAN

INSET



SECTION A — Scale 1 : 50

0 0.5 1.0 1.5m
SCALE 1 : 50

LEGEND:

- PROPOSED BOUNDARY
- BOUNDARY ADJACENT
- PROPOSED DRAINAGE PITS
- SEW — PROPOSED SEWER MAIN AND MANHOLE
- SWD — PROPOSED STORMWATER MAIN AND MANHOLE
- WAT — PROPOSED WATER MAIN

LEGEND - LINEWORK (existing)

- S — EXISTING SEWER MAIN AND MANHOLES
- SW — EXISTING STORMWATER DRAINLINE
- W — EXISTING WATER MAIN, HYDRANTS AND VALVES
- EXISTING ROADWAY KERB / K&C
- 11.00 — EXISTING SURFACE CONTOUR
- x x — EXISTING SERVICE TO BE REMOVED

NOTE:-
DILAPIDATION REPORT TO BE COMPLETED PRIOR TO CONSTRUCTION. ALL DAMAGE DONE TO EXISTING INFRASTRUCTURE TO BE REINSTATED TO EXISTING CONDITIONS FOLLOWING COMPLETION OF THE WORKS.

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EXISTING SERVICES
NOTWITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE ENGINEER OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ALL UNDERGROUND SERVICES PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGES CAUSED AS A RESULT OF THE WORKS.

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-
-
PHONE: -

R.P.D.
LOT 1 ON SP109326

LEVEL DATUM
UNK RL xx.xxx

No.	Date	By	Amendment	Checked
B	27.08.24	N.H.	ISSUE FOR APPROVAL	
A	02.07.24	MAJ	DRAFT ISSUE	

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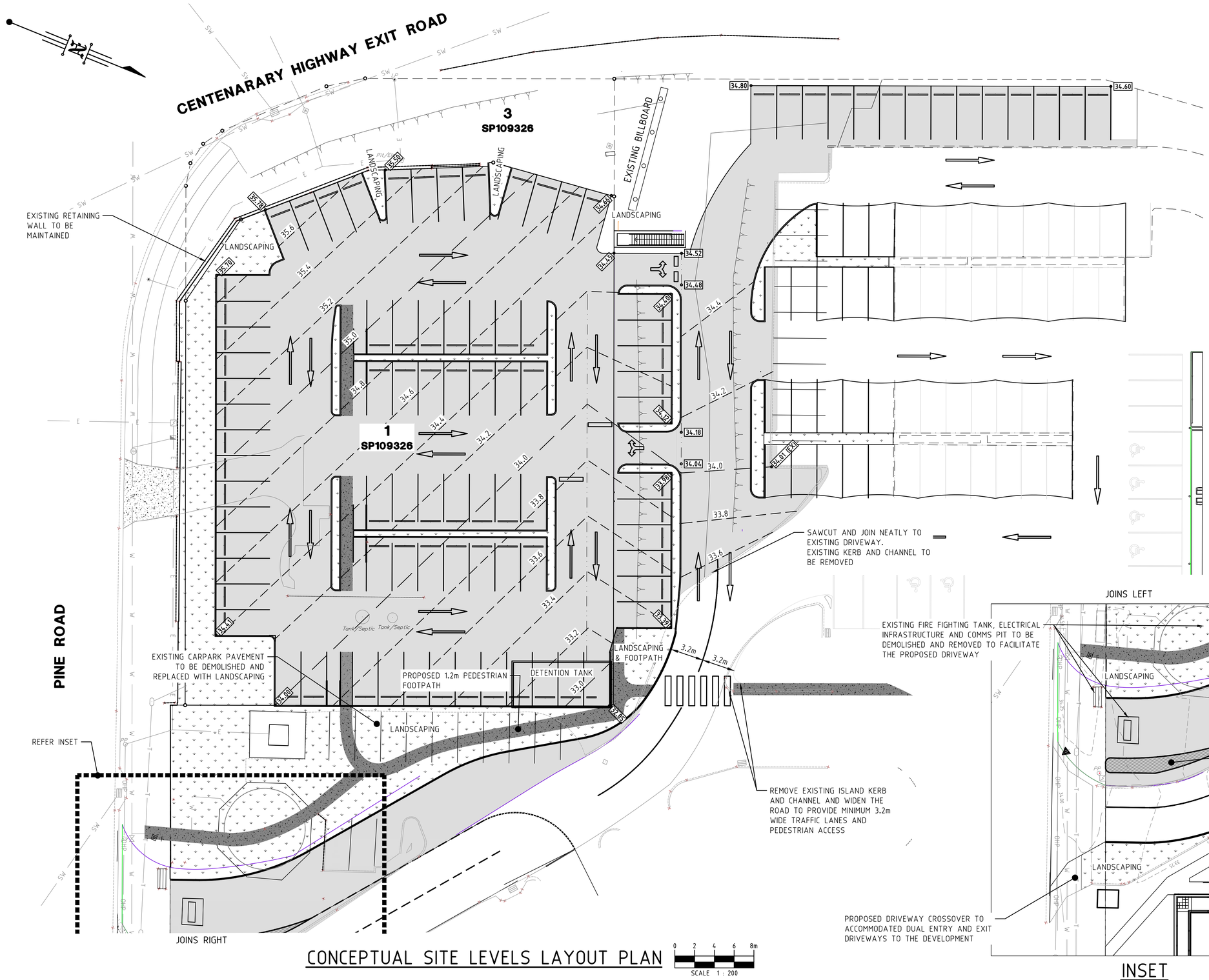
Project: PROPOSED CAR PARK UPGRADE
THE LION RICHLANDS
133 PINE ROAD, RICHLANDS, QLD, 4077

Title: CONCEPTUAL SERVICES LAYOUT PLAN

Client: *THE LION RICHLANDS CLUB*

Draftsperson:
Checked:
Designer:
Approved:
RPEQ No:
Scale: AS SHOWN
Sheet Size: A1
Drawing No.: B24156-CSK01
A B



CONCEPTUAL SITE LEVELS LAYOUT PLAN

0 2 4 6 8m

SCALE 1 : 200

INSET

LEGEND:

- PROPOSED BOUNDARY
- BOUNDARY ADJACENT
- PROPOSED DRAINAGE PITS
- SEW — PROPOSED SEWER MAIN AND MANHOLE
- SWD — PROPOSED STORMWATER MAIN AND MANHOLE
- WAT — PROPOSED WATER MAIN
- PROPOSED NEW CAR PARK PAVEMENT

LEGEND - LINEWORK (existing)

- S — EXISTING SEWER MAIN AND MANHOLES
- SW — EXISTING STORMWATER DRAINLINE
- W — EXISTING WATER MAIN, HYDRANTS AND VALVES
- EXISTING ROADWAY KERB / K&C
- 11.00 — EXISTING SURFACE CONTOUR
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NOTE:-
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EXISTING SERVICES
NOTWITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE ENGINEER OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ALL UNDERGROUND SERVICES PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGES CAUSED AS A RESULT OF THE WORKS.

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LEVEL DATUM
UNK RL xx.xxx

No.	Date	By	Amendment	Checked
B	27.08.24	N.H.	ISSUE FOR APPROVAL	
A	30.05.24	MAJ	ORIGINAL ISSUE	

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Project: PROPOSED CAR PARK UPGRADE
THE LION RICHLANDS
133 PINE ROAD, RICHLANDS, QLD, 4077

Title: CONCEPTUAL SITE LEVELS LAYOUT PLAN

Client: *THE LION RICHLANDS CLUB*

Draftsperson: | Checked:
Designer: | Approved: RPEQ No:
Scale: AS SHOWN

Sheet Size: A1
Drawing No.: B24156-CSK02
A | B

PLANS AND DOCUMENTS referred to in the REFERRAL AGENCY RESPONSE

Queensland Government

SARA ref: 2512-49704 SRA

Date: 7 May 2026

Amended in red by SARA on

7 May 2026

STORMWATER MANAGEMENT PLAN

133 Pine Road, Richlands QLD 4077

The Lion Richlands Club

L+R ENGINEERS MANAGERS SCIENTISTS

Table of Contents

Revision	Date	Description	Author	Verifier	Approver
A	16/02/2026	ORIGINAL ISSUE	SC	AA	AA

Authorised by: Abbas Alkamachy, for and on behalf of Lambert and Rehbein (SEQ) Pty Ltd

_____

Position: Principal Civil Engineer
RPEQ No.: 31054

3.0 Stormwater Quantity

3.1 Lawful Point of Discharge

The development area generally falls northeast with levels ranging from approximately 34.50m AHD in the south to 32.20m AHD in front of the existing loading bay located at the north-east extent of the Stage 2 proposed development.

Existing stormwater runoff from the carpark is captured by a series of grated inlets and pipe which outfall in a northeasterly direction through the carpark via two drainage lines (300mm and 525mm dia. pipelines). Roofwater from the western portion of the building discharges into the 300mm dia. system whilst roofed areas of the loading bay discharge into the 525mm dia. system.

Captured stormwater piped to the northern end of the carpark is ultimately discharged east into Ric Nattrass Creek.

The existing and proposed stormwater arrangement is summarised in **Figure 3.1** below.

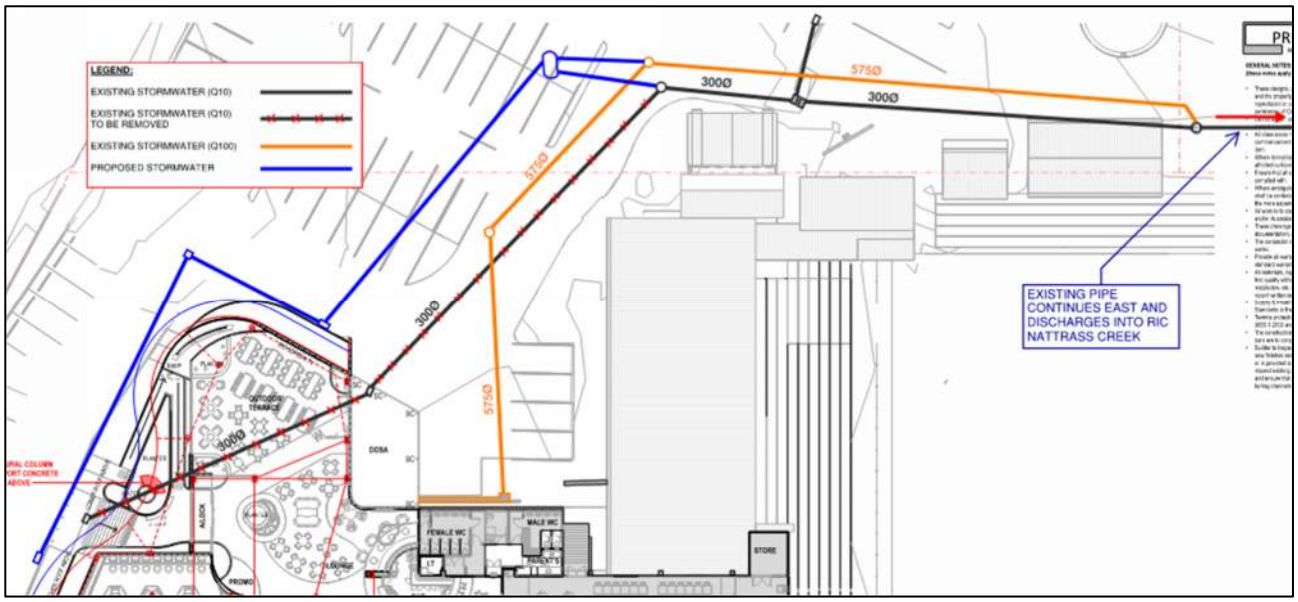

Figure 3.1. Existing and Proposed Stormwater Layout Sketch

The direction of surface flows from the development site is indicated on the conceptual services layout plan in **Appendix B**. This drawing provides preliminary details of the proposed services for the Stage 2 upgrades.

The fall of the carpark can also be observed on google Map's street view imagery. As street view shows, the carpark area and western property boundary (fronting a state railway corridor) is significantly divided by retaining along the edge of the carpark and the carpark can be observed to fall north and east through as shown in **Figure 3.2** and **Figure 3.3** below.

Figure 3.2. Existing Carpark Grades (Google Maps)

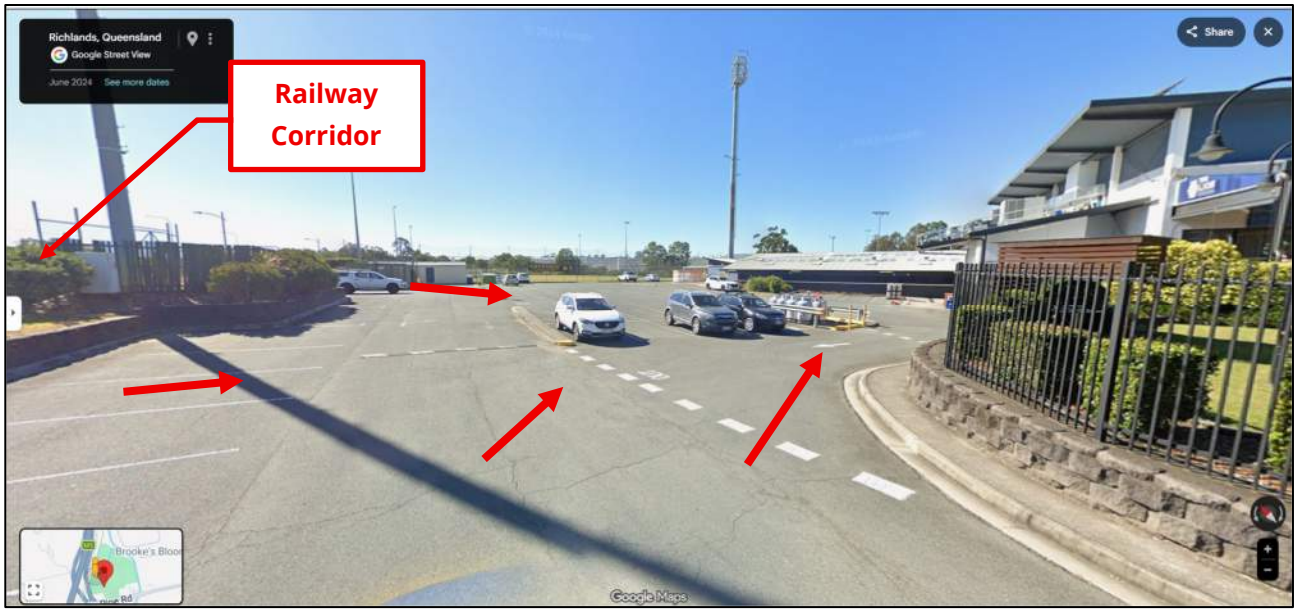

Figure 3.3. Existing Carpark Grades (Google Maps)

3.2 Previous Carpark Drainage Upgrades

The existing internal drainage system functions based on standard minor and major drainage principles in accordance with QUDM. For clarity, Lambert & Rehbein were engaged in 2021 to investigate overland flow issues within the loading bay area. The site currently contains two drainage lines: the original pipeline (300mm dia.) servicing minor storm events (10% AEP), and a second drainage line (525mm dia.) subsequently constructed through the downstream portion of the carpark to convey major storm flows (100% AEP) to address the overland flow issues. The major drainage line extends through the northeast of the site and reconnects with the existing pipeline at the end of the carpark, where flows discharge to Ric Nattrass Creek. Any surcharge flows from this location ultimately reach the creek via surface flow.

southern carpark. The impervious area has been quantified and maintains the same impervious fraction as the existing condition.

The updated pre- and post-development catchment details are provided in **Table 3.1** below.

Table 3.1. Pre- and Post-Development Subcatchment Breakdown

CATCHMENT	AREA (m^2)	PRE-DEVELOPED IMPERVIOUS (m^2)	POST-DEVELOPED IMPERVIOUS (m^2)	DIFFERENCE (m^2)	INCREASE (%)
Catchment A	6291	5730	5903	+173	+2.7%
Catchment B	3440	3143	3152	+9	+0.3%

A comparison of the pre- and post-development catchment details in **Table 3.1** above demonstrates that the imperviousness of Catchment A increases by only 2.7%, whilst the proposed upgrades to Catchment B overall retains the same imperviousness to that of the existing scenario.

3.3.2 Impact Assessment

Rational method calculations have also been undertaken and are provided in **Appendix D** of this report. A summary of the changes of Catchment A's pre- and post-development peak flows is summarised in **Table 3.2**.

Table 3.2. Pre-and Post-Development Rational Method Calculation Comparison Summary

AEP (%)	PRE-DEVELOPMENT (L/S)	POST-DEVELOPMENT (L/S)	DIFFERENCE (L/S)	PERCENTAGE INCREASE (%)
63	124.5	125.6	+1.1	+0.92%
39	150.4	151.8	+1.4	+0.92%
18	230.4	232.6	+2.1	+0.92%
10	288.3	291.0	+2.6	+0.92%
5	347.6	350.8	+3.2	+0.92%
2	443.9	443.9	+0.0*	0.00%
1	494.6	494.6	+0.0*	0.00%

** Note: 1% & 2% AEP pre and pos-development flows are equal due to the maximisation of runoff coefficient C_y = 1.0 in Rational Method calculation per Section 4.5, QUDM.*

Table 3.2 demonstrates that the proposed carpark modifications result in only minor increases in runoff. The increases are considered to have negligible impact on the downstream receiving waterway.

Appendix B

Conceptual Civil Engineering Servicing Plan

EXISTING RETAINING WALL TO BE DEMOLISHED AND REMOVED.

PROPOSED AC EXTENSION

EXISTING LIGHT POLE TO BE DEMOLISHED AND REMOVED

PROPOSED 1.0m HIGH MAXIMUM RETAINING WALL

PROPOSED AC EXTENSION

PROPOSED PMT

SPEED HUMP

EXISTING SPEED HUMP TO BE REMOVED AND REPLACED

CONNECT EXISTING 225Ø PIPE TO NEW GULLY PIT

JOIN TO EXISTING KERB AND CHANNEL

EXISTING TRAFFIC ISLAND TO BE REMOVED

EXISTING CARPARK

ROOFWATER CONNECTION

PROPOSED STAGE 2 BUILDING EXTENSION

PWD PARKING SPACES (4 No.)

PROPOSED 1350Ø MANHOLE TO ACCOMADATE NEW STORMWATER. IL 30.68

EXISTING TRAFFIC ISLAND AND GRATED PIT TO BE REMOVED

EXISTING TRAFFIC ISLAND TO BE MIANTAINED

PREVIOUS STAGE 2C CARPARK OUT OF SCOPE

EXISTING STORMWATER TO BE REMOVED

PROPOSED GROUND LEVEL FFL34.96

BASEMENT FFL32.34

EXISTING MAINTENANCE HOLE TO MAINTAINED

EXISTING GRATED PIT AND STORMWATER PIPE TO REMAIN

EXISTING SPEED HUMP TO BE MAINTAINED AND EXTENDED

EXISTING STORMWATER TO BE REMOVED

EXISTING PIPED STORMWATER OUTFALL

EXISTING BUILDING

0 2 4 6 8m

SCALE 1 : 200 @ A1
SCALE 1 : 400 @ A3

LEGEND:

- PROPERTY BOUNDARY
- PROPOSED ROADWAY KERB / K&C
- PROPOSED EW RETAINING WALL
- PROPOSED DRAINAGE PITS
- PROPOSED STORMWATER GRATED DRAIN
- SWD — PROPOSED STORMWATER MAIN AND MANHOLE
- PROPOSED PAVEMENT
- PROPOSED FOOTPATH
- PROPOSED STAGE BUILDING AREA EXTENTION

LEGEND - LINEWORK (existing)

- SW — EXISTING STORMWATER DRAINLINE
- EXISTING ROADWAY KERB / K&C
- 11.00 — EXISTING SURFACE CONTOUR
- x — x — EXISTING SERVICE TO BE REMOVED
- FLOW ARROW

BCC DS
RECEIVED
07/05/2026
APPLICATION REF
A006902274

PRELIMINARY "CONCEPT" DRAWING ONLY NOT FOR CONSTRUCTION

EXISTING SERVICES
NOTWITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE ENGINEER OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ALL UNDERGROUND SERVICES PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGES CAUSED AS A RESULT OF THE WORKS.

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R.P.D.
LOT 1 & 3 ON SP109326
LOT 1 ON RP902084

LEVEL DATUM
AHDD RL 4.769

No.	Date	By	Amendment	Checked
D	16.02.26	S.C.	INFORMATION REQUEST AMENDMENTS	
C	05.11.25	N.H.	AMENDED TO SUIT ARCHITECTURAL	
B	09.04.25	SC	ISSUE FOR APPROVAL	
A	25.03.25	MAJ	ORIGINAL ISSUE	

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Project: PROPOSED CAR PARK UPGRADE STAGE 2
THE LION RICHLANDS
133 PINE ROAD, RICHLANDS QLD 4077

Title: CONCEPTUAL SITE SERVICES LAYOUT PLAN

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Draftsperson: MAJ
Designer: SC
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Approved: RPEQ No:

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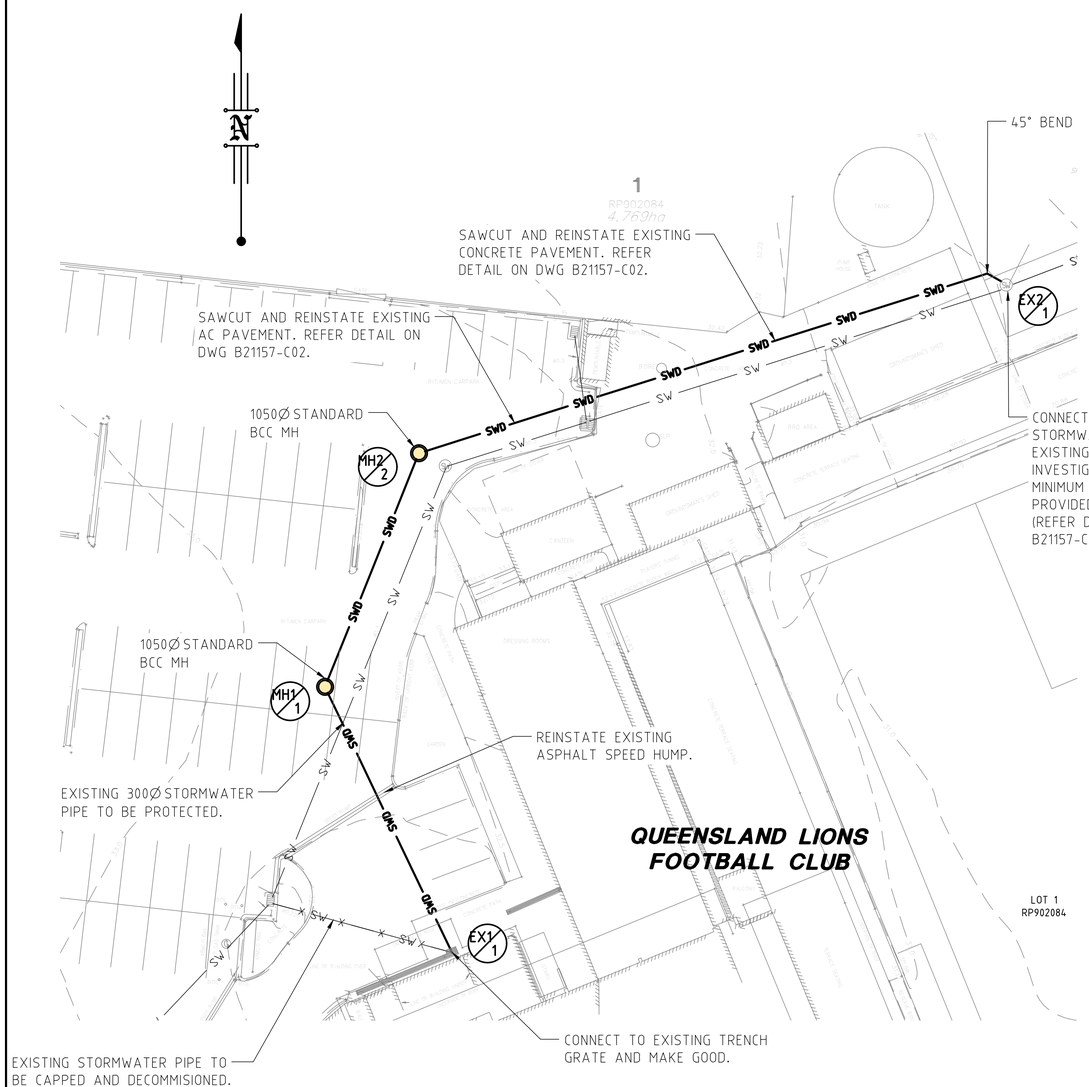
A B C D

Appendix F

Constructed Carpark Drainage Upgrade Design Drawings

CARPARK STORMWATER IMPROVEMENTS
133 PINE ROAD, RICHLANDS, QLD

EXISTING SERVICES
NOTWITHSTANDING THAT EXISTING SERVICES MAY OR MAY NOT BE SHOWN ON THESE DRAWINGS, NO RESPONSIBILITY IS TAKEN BY THE ENGINEER OR THE PRINCIPAL FOR THIS INFORMATION WHICH HAS BEEN SUPPLIED BY OTHERS. THE DETAILS ARE PROVIDED FOR INFORMATION ONLY. THE CONTRACTOR SHALL ASCERTAIN THE POSITION OF ALL UNDERGROUND SERVICES PRIOR TO EXCAVATION AND SHALL BE RESPONSIBLE FOR THE COST OF REPAIRS TO DAMAGES CAUSED AS A RESULT OF THE WORKS.



GENERAL ARRANGEMENT LAYOUT PLAN

0 5 10m
SCALE 1 : 250

GENERAL NOTES

1. ALL DIMENSIONS AND SETOUT ARE TO BE CHECKED ON-SITE BEFORE WORK COMMENCES.
2. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING THE DRAWING.
3. DURING CONSTRUCTION BARRIERS, LIGHTS & SIGNS SHALL BE MAINTAINED TO ENSURE SAFE PASSAGE OF TRAFFIC AND PEDESTRIANS IN ACCORDANCE WITH THE REQUIREMENTS OF ALL LOCAL AUTHORITY.
4. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH S.A.A. CODES & BY-LAWS AND ORDINANCES OF THE RELEVANT LOCAL AUTHORITY AND WORKPLACE HEALTH AND SAFETY REQUIREMENTS.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR NOTIFYING ALL RELEVANT AUTHORITIES AND PAYING ALL FEES NECESSARY BEFORE COMMENCING WORK.
6. IRRESPECTIVE OF SERVICES SHOWN ON THESE DRAWINGS THE CONTRACTOR SHALL BE RESPONSIBLE FOR UNDERTAKING ALL SEARCHES, ORGANISING POT-HOLLING AND ALL OTHER MEASURES NECESSARY TO CERTAIN LOCATION AND DEPTH OF EXISTING SERVICES. ANY SERVICES DAMAGED AS A RESULT OF CONSTRUCTION SHALL BE RE-INSTATED AT THE CONTRACTOR'S EXPENSE.
7. THE CLIENT'S SURVEYOR SHALL STAKE R.P. BOUNDARIES PRIOR TO CONSTRUCTION UNLESS OTHERWISE REQUESTED BY THE CONTRACTOR. ANY PEGS DAMAGED OR LOST DURING CONSTRUCTION SHALL BE RE-INSTATED AT THE CONTRACTORS EXPENSE.
8. ANY DISTURBED OR DAMAGED FOOTPATHS AND PRIVATE PROPERTY SHALL BE REINSTATED TO THEIR ORIGINAL CONDITION.
9. CONTRACTOR TO VERIFY ALL INVERT LEVELS, SURFACE LEVELS, COVER OVER DRAINAGE LINES, AND MINIMUM FALLS ARE CORRECT & OBTAINABLE PRIOR TO COMMENCEMENT OF WORK. ANY DISCREPANCIES MUST BE NOTIFIED TO THE SUPERVISING ENGINEER PRIOR TO INSTALLATION OF ANY DRAIN LINES.
10. THE CONTRACTOR'S ATTENTION IS DRAWN TO THE REQUIREMENTS OF THE WORK HEALTH AND SAFETY ACT. ALL WORK IS TO BE CARRIED OUT IN ACCORDANCE WITH THIS ACT AND IN PARTICULAR THE CONTRACTOR IS TO ENSURE THE REQUIREMENTS OF THIS SPECIFICATION WITH REGARD TO "NOTIFICATION IN RELATION TO A NOTIFIABLE PROJECT" ARE FULFILLED.
11. THE CONTRACTOR SHALL COMPLY, IN ADDITION TO THE REQUIREMENTS OF THE WHS ACT 2011 AND THE WHS REGULATIONS 2011, ALSO WITH THE CODE OF PRACTICE FOR THE MANAGEMENT AND CONTROL OF ASBESTOS IN WORKPLACES AND CODE OF PRACTICE FOR THE SAFE REMOVAL OF ASBESTOS.
12. THE CONTRACTOR SHALL ENSURE THAT ALL WORKS AREAS ARE LEFT CLEAN, TIDY AND IN SAFE CONDITION. ALL HOLES, EXCAVATIONS AND OTHER CONSTRUCTION TRAFFIC DEPRESSIONS SHALL BE BACKFILLED, COMPACTED AND TRIMMED TO AN EVENLY GRASSED PROFILE PRIOR TO COMPLETION/HANDOVER OF SITE.
13. THE CONTRACTOR SHALL NOTIFY THE CONSULTING ENGINEER OF INSPECTIONS PRIOR TO COMPLETION OF WORKS.

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SITE LOCALITY PLAN

NOT TO SCALE

STORMWATER DRAINAGE NOTES

1. ALL DRAINAGE MATERIALS, EXCAVATION AND CONSTRUCTION SHALL COMPLY WITH THE APPLICABLE LOCAL AUTHORITY SPECIFICATIONS AND DETAILS AND THE FOLLOWING PUBLICATIONS (AS APPLIES TO THE TYPE OF PIPELINE):-
   - "QUEENSLAND URBAN DRAINAGE MANUAL (QUDM)"
   - CONCRETE PIPE ASSOCIATION OF AUSTRALIA TECHNICAL ADVISORY PUBLICATIONS
   - AS 3725 "DESIGN FOR THE INSTALLATION OF BURIED CONCRETE PIPES"
   - AS 4058 "PRE-CAST CONCRETE PIPES (PRESSURE AND NON-PRESSURE)
   - AS 4139 "FIBRE REINFORCED CONCRETE PIPES AND FITTINGS"
   - AS 2566 "BURIED FLEXIBLE PIPELINES"
   - AS 3500 "NATIONAL PLUMBING CODE"
   - AS 1254 "PVC PIPES AND FITTINGS FOR STORM & SURFACE WATER APPLICATIONS"
   - AS 1273 "UNPLASTICIZED PVC (uPVC) DOWNPIPE AND FITTINGS FOR RAINWATER
2. WHERE THE DEPTH OF FILL OVER THE PIPE IS BETWEEN Min. 600mm AND Max. 1.5m HIGH:-
   - ALL uPVC PIPES SHALL BE CLASS "SN8" FOR 150Ø - 225Ø AND "SN6" FOR 100Ø
   - ALL CONCRETE PIPES SHALL BE MINIMUM CLASS "2"

   SHOULD THE DEPTH OF COVER OVER THE PIPE BE OUTSIDE THE ABOVE MAXIMUM AND MINIMUM LIMITS, OR ANY LOADING OTHER THAN NORMAL EARTH LOADS BE APPLICABLE (INCLUDING CONSTRUCTION TRAFFIC LOADS) THE DESIGN ENGINEER MUST BE CONTACTED FOR SPECIFIC DESIGN OF PIPE CLASS.
3. UNLESS DETAILED OTHERWISE PIPE CLASSES SPECIFIED ON PROJECT DRAWINGS ARE BASED ON SINGLE PIPE BARREL ONLY - WHERE MULTIPLE PIPE BARRELS ARE PROPOSED THE PIPE CLASS MUST BE REFERRED TO THE DESIGN ENGINEER FOR CONFIRMATION.
4. UNLESS SPECIFIED OTHERWISE DESIGN LOADING ON ALL PIPELINES REQUIRE "TRENCH" TYPE BEDDING AND BACKFILL INSTALLATION IN ACCORDANCE WITH AS 3725. "EMBANKMENT" TYPE INSTALLATION WILL NOT BE ACCEPTED WITHOUT WRITTEN APPROVAL. STABILITY OF TRENCH BASE AND SIDES MUST BE ADEQUATE TO PROVIDE REQUIRED SUPPORT TO THE BEDDING, HAUNCH AND SIDES OF THE TRENCH - IF ANY DOUBT EXISTS THE CONTRACTOR MUST OBTAIN GEOTECHNICAL CONSULTANT CONFIRMATION.
5. THE WIDTH OF TRENCH OUTSIDE THE PIPE SHALL BE IN ACCORDANCE WITH AS 3725 (NOMINAL 300mm Max.). ANY FURTHER WIDENING OF THE TRENCH WILL INCREASE LOAD ONTO PIPE, AND WILL REQUIRE REVIEW OF PIPE CLASS AND INSTALLATION SPECIFICATIONS. ANY ADDITIONAL ASSOCIATED PIPE OR SUPPORT COSTS WILL BE AT CONTRACTOR'S EXPENSE.
6. UNLESS SPECIFIED OTHERWISE PIPE BEDDING AND SUPPORT SHALL BE INSTALLED IN ACCORDANCE WITH AS 3725 AND SHALL BE GENERALLY AS FOLLOWS:-
   - "HS2" UNDER ROADWAYS
   - "H2" UNDER NON-TRAFFIC / NON-LOADED AREAS

   ANY CIRCUMSTANCES OUTSIDE THESE MUST BE REFERRED TO THE DESIGN ENGINEER FOR PIPE SUPPORT SPECIFICATIONS.
7. THE CONTRACTOR SHALL ENSURE THAT ALL CONSTRUCTION TRAFFIC LOADING ONTO PIPELINES IS LIMITED TO MAXIMUM VEHICLE LOADINGS AND ACHIEVES BACKFILL COVER IN ACCORDANCE WITH AS 3725 (OR ALTERNATIVELY PROVIDE ADEQUATE TEMPORARY AND PERMANENT BRIDGING). REFER C.P.A.A. PIPE CLASS SELECTION CRITERIA / SOFTWARE FOR ACCEPTABLE LOADING APPLICATIONS.
8. ANY DRAINLINE BEING INSTALLED WITH ANY PORTION OF THE DRAINLINE BELOW THE MAXIMUM TIDAL LEVEL SHALL HAVE SALTWATER EXPOSURE COVER CLASS PIPES OR CULVERTS INSTALLED. FOR ANY DEVELOPMENT WITHIN 1 KILOMETRE OF THE COASTLINE, OR WITH PIPEWORK THE HIGHEST ASTRONAMICAL TIDE (H.A.T.) THE CONTRACTOR MUST VERIFY THIS REQUIREMENT WITH THE SUPERVISING ENGINEER.
9. WHERE DRAINLINES ARE TO BE INSTALLED IN "AGGRESSIVE" PERMEABLE SOILS AS DEFINED IN AS 3600, OR ACID SULPHATE SOILS (pH <4.0) THEY MUST BE REFERRED TO THE SUPERVISING ENGINEER FOR REVIEW OF PIPE / EXPOSURE COVER CLASS. THE CONTRACTOR SHALL VERIFY SOIL CONDITION (BY TESTING) AND UNDERTAKE SOIL REMEDIATION TREATMENT (WHERE REQUIRED) PRIOR TO DRAINLINE CONSTRUCTION.
10. MINIMUM AND MAXIMUM PIPE GRADES SHALL BE IN ACCORDANCE WITH Q.U.D.M. SPECIFICATIONS. (N.B. 150Ø=1% Min. AND 375Ø=0.4% Min.)
11. ANY PIPE DOWNSTREAM OF INLETS CAPTURING GROUND RUNOFF SHALL BE Min. 150Ø.
12. WHERE PIPES AND STRUCTURES ARE TO BE LAID WITHIN THE ZONE OF INFLUENCE OF STRUCTURAL ELEMENTS (e.g. BUILDING FOOTINGS, RETAINING WALLS . . . etc.) THE BUILDER SHALL PROVIDE ADEQUATE BRIDGING / PROTECTION TO ENSURE NO UNDUE LOADING ONTO STORMWATER PIPES AND STRUCTURES. WHERE ANY DOUBT MAY EXIST REFERENCE SHALL BE MADE TO THE DESIGNER OF THE STRUCTURE AND THE STORMWATER DESIGN ENGINEER.
13. CONTRACTOR MUST VERIFY THAT ALL PIPE LEVELS AND GRADES CAN BE ACHIEVED PRIOR TO CONSTRUCTING DRAINLINES. ANY CONFLICT SHALL BE REFERRED TO THE SUPERINTENDENT FOR RE-DESIGN PRIOR TO ANY PIPELINE CONSTRUCTION.
14. BENCHING OF PIT STRUCTURES SHALL HAVE A SMOOTH FINISHED SURFACE, AND PIPES SHALL NOT PROJECT INSIDE THE SHAFT OF THE PIT.
15. WHERE RECTANGULAR PITS OR STRUCTURES ARE CONSTRUCTED, PIPES MUST NOT CONNECT INTO THE STRUCTURE AT CORNERS.
16. ALL CONSTRUCTION AND EXCAVATIONS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT WORKPLACE HEALTH AND SAFETY ACT INCLUDING AMENDMENTS SUBSEQUENT TO THE ORIGINAL PUBLICATION.
17. BASE AND SHAFT OF ALL STORMWATER STRUCTURES SHALL BE "CAST IN-SITU" CONCRETE UNLESS OTHERWISE APPROVED IN WRITING BY THE SUPERVISING ENGINEER.
18. ALL GRATED INLETS SHALL BE MINIMUM "CLASS D" TRAFFICABLE, AND SHALL BE BOLTED DOWN UNLESS OTHERWISE APPROVED BY THE SUPERVISING ENGINEER.
19. WHERE A BRANCH CONNECTION IS INDICATED DIRECTLY ONTO THE RECEIVING PIPELINE (I.E. WITHOUT JUNCTION PIT) - A PROPRIETORY OBLIQUE BRANCH FITTING SHALL BE INSTALLED ONTO RECEIVING PIPELINE SIZE UP TO 300MM, OR APPROVED SADDLE BRANCH INSTALLED IN STRICT ACCORDANCE WITH MANUFACTURER SPECIFICATIONS FOR PIPES FOR RECEIVING PIPELINE SIZE 375MM OR GREATER. THE MAXIMUM SIZE OF THE CONNECTING BRANCH LINE (WITHOUT JUNCTION PIT) SHALL BE 150MM U.N.O.

NOTES: - MANHOLES & GULLY PITS

1. DETAILS ON THIS DRAWING ARE GENERAL ARRANGEMENT DETAILS ONLY.
2. REFER TO B.C.C. STANDARD DRAWINGS No. BSD-8021, 8023, 8024 FOR MANHOLE & ROOF STRUCTURAL DETAILS.
3. ALL MANHOLES SHALL BE FITTED WITH A ACCESS OPENING AND COVER IN ACCORDANCE WITH B.C.C. STANDARD DRAWING No. BSD-8033.
4. FOR MANHOLES DEEPER THAN 3m INSTALL ACCESS LADDER IN ACCORDANCE WITH AS 1657. ALSO REFER TO SEQ CODE STANDARD SEWER DRAWING No. SEQ-SEW-1301-12 FOR LADDER CONSTRUCTION DETAILS WITHIN MANHOLE.

LEGEND - LINEWORK

SWD	PROPOSED SWD PIPE
SW	EXISTING SWD PIPE
X X	EXISTING SWD PIPE TO BE ABOUNDED

BCC DS
RECEIVED
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APPLICATION REF
A006902274

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R.P.D.
Lot 1 RP902084

LEVEL DATUM
PSM 154368
RL 55.615 AHD

No.	Date	By	Amendment	Checked
A	06.07.21	D.G.	ISSUE FOR TENDER	

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Project: CARPARK STORMWATER IMPROVEMENTS
133 PINE ROAD,
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Title: LOCALITY PLAN, GENERAL ARRANGEMENT AND GENERAL NOTES

Client: QLFC T/A THE LIONS RICHLANDS

Draftsperson: KG
Designer: KG
Scale: AS SHOWN
Checked: A.A.
Approved: A. PEZZUTTI RPEQ No: 6382
Date: JULY 2021

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