Stantec

Queensland Government

Technical Memo

To:	Jessica La Roche, Stockland Kate Evans, Evolve Planning	Date:	19 February 2025
Project:	304702002 – Aura P14 Childcare Centre	File:	304702002
Action Required:	For Approval		

Reference: Civil Engineering Services Report

1. INTRODUCTION

Stantec has been commissioned to provide an engineering assessment of a proposed childcare centre to be located on Lot 865 within Stage 1433B of the Aura Precinct 14 development. The architectural plan for the childcare centre was supplied by 77 Architecture, dated 3/02/2025, and is included within **Appendix A**.

Stockland is developing a childcare centre in Precinct 14 of the Aura development. The development is located within the Sunshine Coast Regional Council (SCRC) local government area with Unitywater the responsible distributor-retailer water authority. Aura sits within the Caloundra South Priority Development Area which is administered by Economic Development Queensland (EDQ).

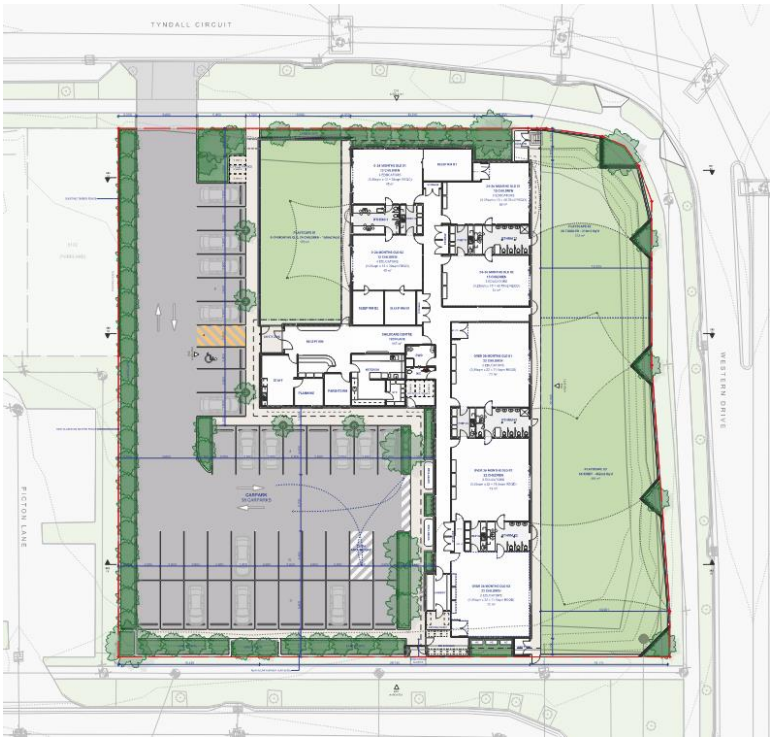

Figure 1 Architectural site plan

The purpose of this engineering assessment is to demonstrate that the proposed change of use for the site can be serviced from a civil engineering perspective, including earthworks, roadworks, stormwater, water supply and sewerage, electrical and telecommunications infrastructure.

2. ASSESSMENT EARTHWORKS & ROADWORKS

Earthworks to the site and surrounds were undertaken previously as part of the Precinct 14 Stage 1433A, 1438 & 1476 works to provide a flat pad falling generally from the north-west to the south-east corner of the site.

Concept earthworks design has been undertaken for the site to provide a suitable building pad with adequate freeboard to the major storm event and compliant carpark grading to ensure surface stormwater flows can be adequately managed and discharged from the site into the existing stormwater network. Refer to the concept civil engineering plans included within **Appendix B** for concept earthworks plans and site sections.

The site is proposed to be accessed via a vehicle crossover from Tyndall Circuit to the north with on-site carparking proposed to suit the intended occupancy of the centre. For additional details regarding traffic engineering items refer to the Traffic Impact Assessment dated prepared by PTT.

The proposed site and carparking layout is shown on the *Proposed Site Plan* prepared by 77 Architecture included within **Appendix A** and the concept civil engineering plans included within **Appendix B**.

3. ASSESSMENT WATER & SEWER

3.1 Development Population

The following table shows the Equivalent Population (EP) derived for the proposed development for water and sewerage services. The EP is calculated in accordance with Caloundra South Infrastructure Agreement (Water and Wastewater Infrastructure).

Estimated Development EP Demand			
Land Use	Demand Rate (EP/100m^2 GFA)	GFA (m^2)	Total EP
Childcare Centre	1.4	922	13

Note: Based on Equivalent Person Assumptions for Non-Residential Lots, Schedule 10 Table 3, Caloundra South Infrastructure Agreement (Water and Wastewater Infrastructure), Ref 40769743v9.

3.2 Demand

Based on the adopted design criteria stated in SEQ Water Supply and Sewerage Design & Construction Code (SEQ WS&S D&C Code), 2020, the tables below show a summary of the projected water supply demand and sewerage flow for the proposed development.

3.2.1 Water

Estimated Total Water Supply Demand				
Demand (EP)	Average Day (L/s) (AD)	Peak Day Demand (L/s) (PD)	Peak Hour Demand (L/s) (PH)	Fire Fighting (L/s)
13	0.035	0.074	0.102	30

Note: Non-Revenue Water (NRW) allowance was incorporated in the above water supply demands.

3.2.2 Sewerage

Estimated Total Sewerage Flow			
Demand (EP)	Average Dry Weather Flow (L/s) (ADWF)	Peak Dry Weather Flow (L/s) (PDWF)	Peak Wet Weather Flow (L/s) (PWWF)
13	0.027	0.181	0.235

The calculated peak water and sewerage demands for the proposed childcare facility will not adversely impact the existing Precinct 14 network as the childcare centre use was incorporated in the Master Planning – Caloundra South Water Supply and Sewerage Infrastructure Master Plan (dated 4/08/2016) so demand assumptions do not differ from those considered at the network planning phase.

3.3 Water Supply and Sewerage Strategy

3.3.1 Water

A 100mm diameter PVC-O water main was constructed to the south-eastern corner of the site as part of previous Stage 1438 development works. This water main stub will be utilised as the service connection point and is shown on the as-constructed plans included within **Appendix C**.

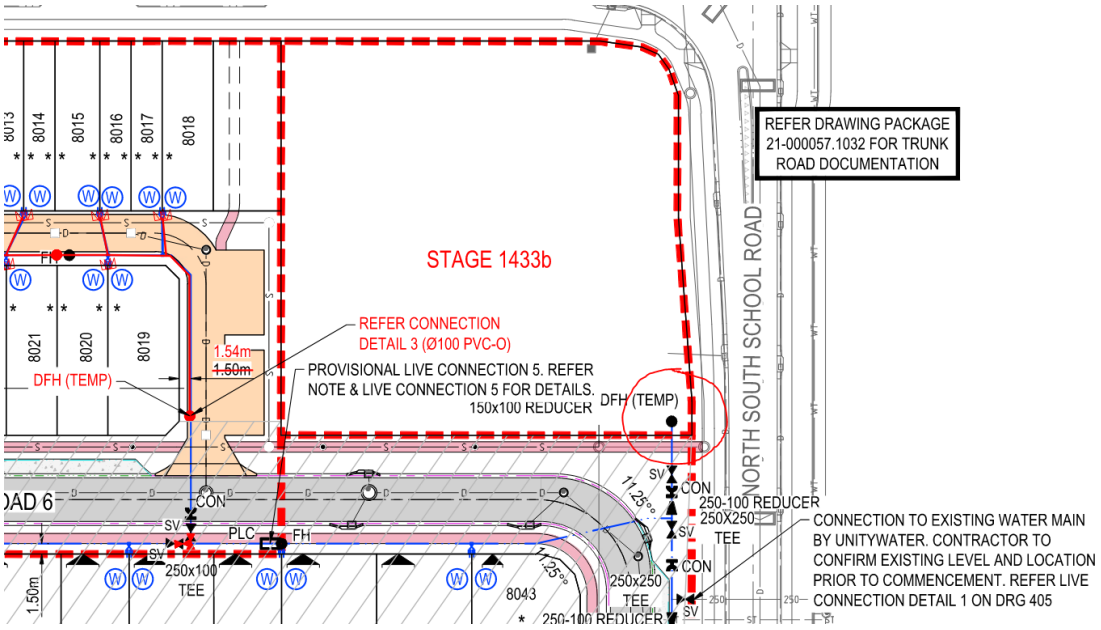

Figure 2 Water main service connection point

The internal water reticulation and water meter design will be undertaken as part of a future application by others to demonstrate adequate water servicing of the site. The 30L/s of fire-flow is available near this connection point through the existing fire hydrant.

The concept civil engineering plans included within **Appendix B** show the proposed location of the water servicing point.

3.3.2 Sewerage

A DN160 PE100 sewer stub was constructed to the south-eastern corner of the site as part of previous Stage 1438 development works. This sewer main stub will be utilised to convey the sewage generated from the proposed child-care use and is shown on the as-constructed plans included within **Appendix C**.

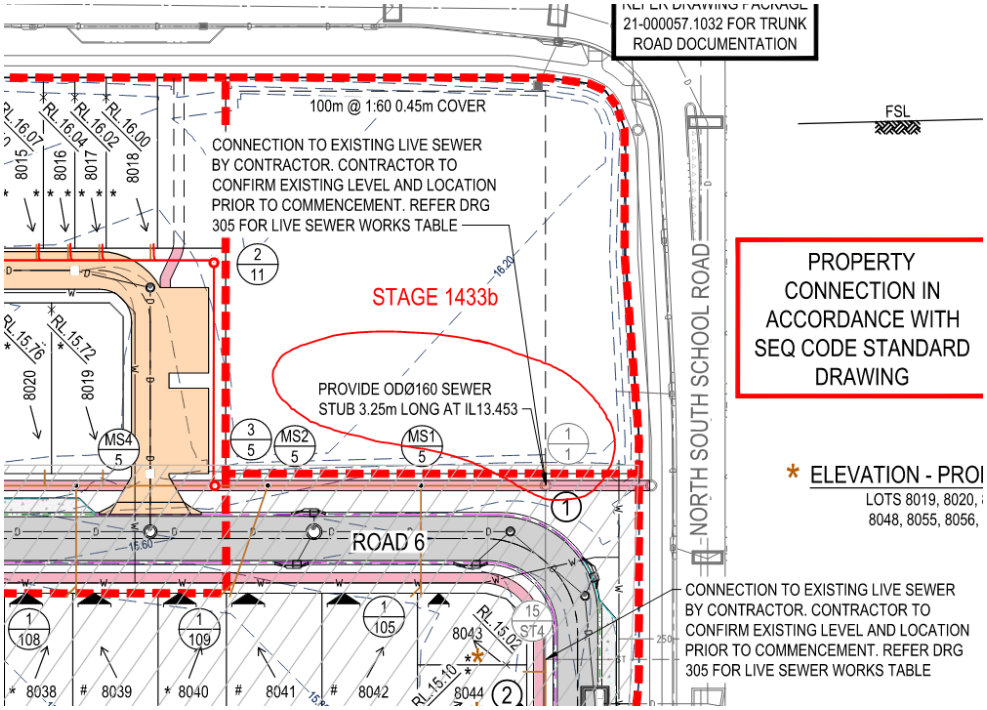

Figure 3 Sewer main service connection point

The internal sewer reticulation design will be undertaken as part of a future application by others to demonstrate adequate sewer servicing of the site. The existing sewer stub was constructed at IL13.702 according to the survey as-constructed information which is anticipated to be sufficiently deep to ensure the site can be serviced via gravity while avoiding potential service conflicts.

The concept civil engineering plans included within **Appendix B** show the proposed location of the sewer servicing point.

4. ASSESSMENT STORMWATER

4.1 Rainwater Tank

The Aura Precinct Design Guidelines requires childcare development to incorporate rainwater collection tanks in stormwater design to be used for the irrigation of landscaping and recreational areas as a part of the Aura sustainability vision. The requirement for non-residential development is 1.0kL per toilet or urinal or 25kL/ha, and for a minimum of 50% roof area to be directed to the tanks. While the tanks serve an important water conservation role, they also act to reduce the volume of stormwater runoff (and associated pollutants) from reaching downstream waterways. Based upon the proposed development characteristics and using 1kL per toilet, a total tank size of approximately 16kL is required.

Concept locations for rainwater tanks are shown on the *Proposed Site Plan* prepared by 77 Architecture included within **Appendix A**, with the total volume split over multiple tanks to fit with the building layout.

4.2 Stormwater Quality

Stormwater quality for the proposed Child Care Centre is addressed in the *Aura Precincts 11-14 Stormwater Quality Management Plan* prepared by DesignFlow dated July 2020 (the SWQMP). Stormwater from this catchment is proposed to be treated via an end of line bioretention basin to achieve the water quality objectives specified in the *State Planning Policy 2017* prior to discharging to receiving waterways, which is shown for Catchment S2 in drawing *4344 FIGURE 7 Rev C* prepared by DesignFlow included within **Appendix D**.

For childcare sites, the SWQMP recommends the provision of a Gross Pollutant Trap (GPT) for the collection of litter and coarse sediment. The details for the provision of a GPT within the stormwater system has been shown conceptually on the concept civil engineering drawings included within **Appendix B**.

5. PAVEMENT DESIGN

5.1 Pavement Design

A concept pavement design for the proposed carpark has been prepared in accordance with *Austroads Guide to Pavement Technology Part 2: Pavement Structural Design* herein referred to as AGPT02-24 and DTMR requirements.

Minimum design traffic of $6x10^5$ (DESAs) has been considered with an assumed CBR value of 5% (4-days soaked) and low shrink-swell potential of existing subgrade materials. A detailed pavement design will be required prior to construction and following site-specific geotechnical testing of the existing subgrade material to confirm the above assumptions.

The thickness of material required over the in-situ subgrade is determined using the empirical design chart/equation given in section 8.3 of AGPT02-24 for pavements with thin bituminous surfacing.

Pavement Design			
Pavement Thickness (mm)	**Pavement Layers**	**Minimum 4-day Soaked CBR (%)**	**Layer Thickness (mm)**
375	Base (Subtype 2.1)	80	125
	Sub-base (Sub-type 2.3)	45	125
	Lower Sub-base (Sub-type 2.5)	15	120
40	**Pavement Surfacing (Dense Graded Asphalt) – 40mm Thick**		
Mix Design	AC10M to MRTS30		
Binder	A15E to MRTS18		

Note: The pavement types, material and construction to be in accordance with MRTS05 Specifications

6. ELECTRICAL RETICULATION AND TELECOMMUNICATIONS

Electrical reticulation and telecommunications infrastructure have previously been constructed to the surrounding street frontages as part of the Precinct 14 Stage 1433a, 1438 & 1476. Building services designs will be undertaken by others at the detailed design phase to demonstrate how the site will be adequately connected to these networks.

It is anticipated that agreements will be entered into with the relevant service providers.

SUMMARY

On the basis of the above, and subject to the recommendations made, the development will be adequately serviced for use as a childcare centre.

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Attachments:

- Proposed Site Plan (77 Architecture) – Appendix A
- Concept Civil Engineering Plans (Stantec) – Appendix B
- As-constructed information (Various) – Appendix C
- Stormwater Quality Management Plan Extract (DesignFlow) – Appendix D

Appendix A – Proposed Site Plan

TYNDALL CIRCUIT

PICTON LANE

WESTERN DRIVE

8012 8013 8014 8015 8016 8017 8018

9132
(PARKLAND)

8022 8021 8020 8019

EXISTING TIMBER FENCE

NEW ALUMINIUM BATTEN FENCE

LANDSCAPE

CYCLE PARKS

CARPARK
38 CARPARKS

TURN AROUND BAY

PLAYSCAPE 01
0-24 MONTHS OLD, 24 CHILDREN - 168m2 Rq'd
176 m²

PLAYSCAPE 02
30 TODDLER - 210m2 Rq'd
212 m²

PLAYSCAPE 03
66 KINDY - 462m2 Rq'd
464 m²

0-24 MONTHS OLD 01
12 CHILDREN
4 EDUCATORS
(3.25sqm x 12 = 39sqm REQD)
45 m²

0-24 MONTHS OLD 02
12 CHILDREN
4 EDUCATORS
(3.25sqm x 12 = 39sqm REQD)
45 m²

24-36 MONTHS OLD 01
15 CHILDREN
3 EDUCATORS
(3.25sqm x 15 = 48.75m2 REQD)
52 m²

24-36 MONTHS OLD 02
15 CHILDREN
3 EDUCATORS
(3.25sqm x 15 = 48.75m2 REQD)
51 m²

OVER 36 MONTHS OLD 01
22 CHILDREN
2 EDUCATORS
(3.25sqm x 22 = 71.5sqm REQD)
73 m²

OVER 36 MONTHS OLD 02
22 CHILDREN
2 EDUCATORS
(3.25sqm x 22 = 71.5sqm REQD)
73 m²

OVER 36 MONTHS OLD 03
22 CHILDREN
2 EDUCATORS
(3.25sqm x 22 = 71.5sqm REQD)
72 m²

CHILDCARE CENTRE
120 PLACE
917 m²

RECEPTION
STAFF
PLANNING
PARENTS RM
KITCHEN
PWD
WC
STR
SAFETY ZONE
SLEEP RM B1
SLEEP RM B2
STORAGE
BTHRM I1
PREP I1
BTHRM T1
PREP T1
BTHRM K1
PREP K1
BTHRM K2
PREP K2
LAUNDRY
DRYING COURT
BIN STORAGE
WATER TANK
PEDESTRIAN ACCESS

12,200
13,951
52,300
15,425
29,740
15,111
6,600
5,400
1,500
9,000
13,610
2,000

E03
A-WD-0701
E04
A-WD-0701
E01
A-WD-0701
E02
A-WD-0701
S01
S02
S03

05 PROPOSED SITE PLAN 1:350

STCK004 | AURA CHILDCARE CENTRE | 30/01/2025 | REV 07

77ARCHITECTURE

Appendix B – Concept Civil Engineering Drawings

Stantec

Stockland

AURA

AURA PRECINCT 14
PROPOSED CHILDCARE CENTRE
CONCEPT DESIGN

LOT 865 - TYNDALL CIRCUIT

Project Number: 304702002

1. GENERAL NOTES:

1.1. ALL WORKS SHALL BE CARRIED OUT IN ACCORDANCE WITH THE APPROVED CONDITIONS OF CONSENT.

1.2. ALL DRAWINGS LISTED ON IN THE DRAWING SCHEDULE ARE TO BE READ AS A WHOLE AND NOT IN ISOLATION.

1.3. ALL DRAWINGS TO BE READ IN CONJUNCTION WITH PROJECT SPECIFICATION AND ALL RELEVANT STANDARD DRAWINGS.

1.4. PRIOR TO COMMENCEMENT OF WORK, FENCE OFF AND CLEARLY DELINEATE ALL AREAS WHERE WORK CANNOT BE CARRIED OUT AROUND THE SITE OF WORKS.

1.5. SHOULD SITE WORKS EXPOSE ANY ARCHAEOLOGICAL OR CULTURAL MATERIAL, ALL WORKS SHALL CEASE AND OFFICIALS OF THE NATIONAL PARKS AND WILDLIFE, ABORIGINAL LAND COUNCIL AND LOCAL AUTHORITY TO BE NOTIFIED.

1.6. ALL WORKS ARE TO COMPLY WITH THE REQUIREMENTS OF THE ENVIRONMENTAL PROTECTION ACT, 1994.

1.7. DISPOSAL/MOVEMENT OF MATERIALS IN AREAS OF RED IMPORTED FIRE ANTS ARE TO COMPLY WITH THE DAF REGULATIONS. REFER THE DEPARTMENTS WEBSITE: **www.ants.daf.qld.gov.au** FOR THE CURRENT INFORMATION

1.8. THE CONTRACTOR SHALL ADHERE TO ALL REQUIREMENTS OF THE DEPARTMENT OF ENVIRONMENT AND SCIENCE.

1.9. WHERE IN THIS SET OF DRAWINGS REFERENCE IS MADE TO THE ENGINEER, CONSULTING ENGINEER AND OR COUNCIL ENGINEER IT SHALL MEAN THE SUPERINTENDENT UNDER THE CONTRACT FOR THE WORKS.

1.10. THE CONTRACTOR IS TO VERIFY LOCATION AND LEVELS OF ALL SERVICES AND TO LIAISE WITH THE LOCAL AND SERVICE AUTHORITIES PRIOR TO COMMENCING CONSTRUCTION.

1.11. THE CONTRACTOR IS TO INFORM THE LOCAL AUTHORITY AND THE ENGINEER PRIOR TO COMMENCEMENT OF WORK.

1.12. PRIOR TO COMMENCEMENT OF WORK, A SIGN DETAILING THE PROJECT AND CONTAINING THE NAMES AND CONTACT NAMES OF THE DEVELOPER, CONTRACTOR AND PRINCIPAL CONSULTANT SHALL BE ERECTED AND MAINTAINED IN A PROMINENT POSITION AT THE SITE TO THE SATISFACTION OF THE LOCAL AUTHORITY. THE SIGN SHALL REMAIN IN PLACE UNTIL COMPLETION OF THE CONTRACT.

1.13. INFORMATION ON THESE DRAWINGS SHALL TAKE PRECEDENCE IF THERE IS ANY DISCREPANCY AND OR CONFLICT BETWEEN THESE DRAWINGS AND STANDARD DRAWINGS. ADVISE DESIGN SERVICES IMMEDIATELY OF ANY AND ALL DISCREPANCIES.

1.14. LEVELS SHOWN AT ALL INTERFACES ARE TO BE CONFIRMED PRIOR TO COMMENCEMENT OF CONSTRUCTION.

1.15. ALL MATERIALS AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE RELEVANT AND CURRENT AUSTRALIAN STANDARDS, IPWEA, WSAA, NATSPEC/AUS-SPEC, THE BUILDING CODE OF AUSTRALIA AND WITH THE POLICIES, BY-LAWS, CODES AND SPECIFICATIONS OF THE RELEVANT LOCAL AUTHORITIES.

1.16. WHERE PROVIDED, THE ACCOMPANYING BILLS OF QUANTITIES SHALL ONLY SERVE AS A SUPPLEMENT FOR PRICING PURPOSES. THE CONTRACTOR SHALL ALLOW FOR ALL WORKS REQUIRED TO COMPLY WITH THE DRAWINGS. THIS INCLUDES ANY TEMPORARY, INTERMEDIATE OR PROTECTIVE WORKS REQUIRED TO FACILITATE FINAL CONSTRUCTION.

1.17. ELECTRONIC SETOUT DATA SUPPLIED TO ASSIST WITH CONSTRUCTION SHALL BE UTILISED IN CONJUNCTION WITH THE ENGINEERING PLANS. ANY INCONSISTENCIES BETWEEN THE ELECTRONIC DATA AND ENGINEERING DRAWINGS SHALL BE REFERRED TO THE SUPERINTENDENT IMMEDIATELY FOR RESOLUTION.

2. EXISTING FEATURES

2.1. UNLESS OTHERWISE SPECIFIED ALL EXISTING SERVICES AND STRUCTURES ARE TO BE MAINTAINED IN GOOD ORDER FOR THE DURATION OF THE CONTRACT AND WHERE RELOCATION IS REQUIRED REFER SPECIFICATION.

2.2. ALL WORK JOINING TO EXISTING CONSTRUCTION TO BE DONE NEATLY & TO THE SATISFACTION OF THE SUPERINTENDENT;

2.3. ALL BENCHMARKS TO BE LEVEL CHECKED BY CONTRACTOR PRIOR TO COMMENCEMENT OF CONSTRUCTION.

2.4. THE LOCATION OF EXISTING SERVICES AS SHOWN ON THE PLAN IS INDICATIVE ONLY AND THE CONTRACTOR MUST ASCERTAIN THE POSITION OF ALL SERVICES (I.E. WATER, ELECTRICITY, TELECOM, GAS ETC.), BEFORE COMMENCING CONSTRUCTION.

2.5. LEVELS AND GRADIENTS AT JUNCTIONS WITH EXISTING WORKS MAY BE VARIED AS REQUIRED TO ACHIEVE SATISFACTORY CONNECTIONS AND THE COSTS DEEMED INCLUDED IN THE RELEVANT SCHEDULE ITEMS;

2.6. IF THE LOCATION, LINE AND / OR LEVEL OF ANY EXISTING SERVICE IS NOT AS DESCRIBED ON THE DRAWINGS THE SUPERINTENDENT IS TO BE NOTIFIED IMMEDIATELY AND PRIOR TO PROCEEDING WITH FURTHER WORK;

2.7. IT IS THE CONTRACTORS RESPONSIBILITY TO ENSURE REPAIR OR REPLACE EXISTING SERVICES DAMAGED DURING THE WORKS TO THE SATISFACTION OF THE SUPERINTENDENT.

2.8. EXISTING DRIVEWAYS AFFECTED BY WORKS SHALL BE RECONSTRUCTED IN THE SAME MATERIAL AS EXISTING OR AS DIRECTED BY THE LOCAL AUTHORITY.

2.9. CLEARING AND GRUBBING AS DIRECTED, INCLUDING REMOVAL AND DISPOSAL OF CLEARED VEGETATION BY METHODS APPROVED WITHIN THE DEVELOPMENT APPROVAL.

2.10. SERVICES SHOWN ON THESE PLANS ARE ONLY THOSE EVIDENT AT THE TIME OF SURVEY, FROM AS CONSTRUCTED SURVEY AND FROM 'BEFORE YOU DIG AUSTRALIA' SEARCHES. THERE MAY BE ADDITIONAL SERVICES WHICH ARE NOT SHOWN ON THESE DRAWINGS.

2.11. THIS PROJECT HAS BEEN DESIGNED ON CALOUNDRA SOUTH PROJECT GRID AS SUPPLIED BY RPS.

3. SAFETY IN DESIGN NOTES:

3.1. POTENTIAL SAFETY HAZARDS CONSIDERED BY THE DESIGNERS TO HAVE A HIGHER RISK THAN NORMAL CONSTRUCTION ACTIVITY ARE THAT IDENTIFIED WITH APPROPRIATE NOTES ON THESE DRAWINGS. IT SHOULD BE NOTED THAT DESIGNERS HAVE A LOWER LEVEL OF UNDERSTANDING OF THE RISKS INVOLVED IN CONSTRUCTION COMPARED TO THAT OF A COMPETENT CONTRACTOR. IT IS THEREFORE ESSENTIAL THAT AN ADEQUATE SAFETY PLAN IS PREPARED BY THE CONTRACTOR FOR THE WORKS. THE DESIGNERS MAY NOT BE AWARE OF ALL SAFETY RISKS AND HAZARDS INVOLVED IN THIS PROJECT AND THE ABSENCE OF COMMENT DOES NOT IMPLY THAT THERE ARE NO RISKS OR HAZARDS INVOLVED IN THIS PROJECT.

3.2. THE CONTRACTOR SHALL COMPLETE AND WILL SOLELY BE RESPONSIBLE FOR THE IMPLEMENTATION OF ANY NECESSARY SAFETY PLANS TO COMPLETE THE WORKS.

3.3. THE CONTRACTOR MUST COMPLY WITH ANY GUIDELINE ACTS OR CODE OF PRACTICE AND OTHER RELEVANT DOCUMENTS REGARDING SAFE WORK PRACTICES.

3.4. THE CONTRACTOR WILL HAVE A NOMINATED WH&S OFFICER FOR THE DURATION OF THE CONTRACT. THE WH&S OFFICER WILL BE RESPONSIBLE FOR ALL THE WH&S ISSUES ON THE SITE.

3.5. ALL PERSONS ENTERING THE SITE SHALL COMPLETE A SAFETY INDUCTION WITH THE NOMINATED WH&S OFFICER. THIS IS TO INCLUDE REFERENCE TO SAFETY IN DESIGN ISSUES RELEVANT TO THE PROJECT.

3.6. ALL CONSTRUCTION UNDERTAKEN BY THE CONTRACTOR IS TO COMPLY WITH THE REQUIREMENTS OF THE CURRENT EDITION OF THE WORKPLACE HEALTH AND SAFETY ACT.

4. GENERAL SERVICES:

4.1. ELECTRICAL AND COMMUNICATIONS CONDUIT LOCATIONS ARE SHOWN FOR INFORMATION ONLY. FOR EXACT LOCATIONS REFER TO ELECTRICAL CONSULTANTS LAYOUT PLANS. FOR WATER CONDUIT LOCATIONS REFER WATER RETICULATION DRAWINGS.

4.2. ALL CONDUITS ARE TO HAVE BRASS CONDUIT MARKERS INSTALLED IN THE KERB AND CHANNEL FOR THE APPROPRIATE SERVICE.

4.3. SERVICE AUTHORITY INFRASTRUCTURE ADJUSTMENTS ARE TO BE PERFORMED BY AUTHORIZED CONTRACTORS APPROVED BY THE RELEVANT SERVICE AUTHORITY.

5. ROADWORKS

5.1. GENERAL:

5.1.1. FOR DETAILS OF CONCRETE FOOTPATHS, REFER TO IPWEA STANDARD DRAWING RS-065.

5.1.2. WARNING AND DIRECTIONAL TACTILE GROUND SURFACE INDICATORS (TGSI'S) SHALL CONFORM WITH AS/NZS 1428.4.1 AND IPWEA STANDARD DRAWINGS RS-090 TO RS-094.

5.1.3. TGSI SHALL BE SURFACE FIXED MAT TYPES, FASTENED WITH ADHESIVE AND CONCRETE FASTENERS IN ACCORDANCE WITH THE SUPPLIER'S SPECFICIATIONS

5.2. KERB \ KERB AND CHANNEL NOTES AND SET-OUT

5.2.1. ALL KERB RADII SHOWN ARE TO LIP LINE.

5.2.2. ALL LEVELS SHOWN REFER TO:-
LIP OF KERB AND CHANNEL
EDGE OF BITUMEN

5.2.3. SIDE DRAINS TO BE PROVIDED UNDER ALL KERB AND CHANNEL AND KERB ONLY.

5.2.4. WHERE DIFFERENT KERB TYPES MEET, TRANSITION TO BE TAKEN OUT OVER 1.0m (MIN).

5.2.5. FOR RESIDENTIAL AND COMMERCIAL DRIVEWAY CROSSOVERS, REFER TO IPWEA STANDARD DRAWINGS RS-049 TO RS-051.

5.2.6. FOR DETAILS OF KERBS AND CHANNELS REFER TO IPWEA STANDARD DRAWING RS-080.

5.2.7. ALL ALLOTMENTS NOT PROVIDED WITH ROOFWATER DRAINAGE PIPED CONNECTION SHALL HAVE TWO POWDER COATED ALUMINIUM KERB ADAPTORS, ONE ON EACH COMMON BOUNDARY OFFSET 0.5m AND IN ACCORDANCE WITH IPWEA STANDARD DRAWING RS-081.

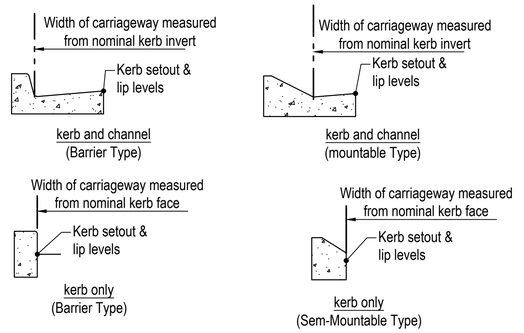
5.2.8. ALL KERBS TO BE CONSTRUCTED IN ACCORDANCE WITH LOCAL AUTHORITIES STANDARD DRAWINGS.

5.2.9. THE CONTRACTOR SHALL ENSURE THAT ALL KERB AND CHANNEL GRADES SHALL NOT FALL BELOW 0.5% AT ANY POINT IRRESPECTIVE OF ROAD CENTRE LINE GRADING SHOWN ON LONGITUDINAL SECTIONS.

5.2.10. WHERE NEW KERB AND CHANNEL AND/OR AC MEET EXISTING SURFACES THE CONTRACTOR SHALL VERIFY THE LEVELS WITH THE SUPERINTENDENT.

5.2.11. SUBSOIL DRAINAGE SHALL BE CONTINUOUS WITH ADJOINING KERB AND CHANNEL WHERE CONCRETE INVERT IS CONSTRUCTED. REFER IPWEA STANDARD DRAWINGS RS-140 TO RS-142

5.2.12. FOR KERB / KERB AND CHANNEL SETOUT REFER BELOW:



6. PAVEMENT

6.1. ALL PAVEMENT DEPTHS SHALL BE CONFIRMED BY SUBGRADE TESTING PRIOR TO CONSTRUCTION, IN ACCORDANCE WITH THE SPECIFICATION. IN-SITU DCP SAMPLES TO USE DTMR METHOD Q114B.

6.2. WHERE STENCIL PRINT/STAMPED AC FINISH IS TO BE CONSTRUCTED, USE AN ADDITIONAL 10mm DENSE GRADED AC ON TOP OF THE SPECIFIED AC SURFACING DEPTH AND SUB-BASE ADJUSTED TO MAINTAIN OVERALL PAVEMENT THICKNESS.

6.3. FINAL SURFACING DESIGN TO BE PROVIDED FOR APPROVAL BY THE SUPERINTENDENT. DESIGNS NOMINATED ON THE PROJECT DRAWINGS TO BE ADJUSTED TO SUIT SITE CONDITIONS.

6.4. ARCHITECTURAL FINISHES TO VEHICULAR PAVEMENTS SHALL NOT COMPROMISE THE NOMINATED AGGREGATE SIZE, LIMIT THE EFFECTIVENESS OF LINEMARKING OR COMPROMISE SKID RESISTANCE. FULL DEPTH COLOUR TREATMENTS AND BROOM FINISHES ARE GENERALLY ACCEPTABLE. ANY OTHER TREATMENTS MUST BE APPROVED BY THE SUPERINTENDENT PRIOR TO USE.

6.5. CLEAN OUT PITS SHALL BE PROVIDED TO BLIND ENDS OF 100mm DIA. SUBSURFACE DRAINAGE PIPES IN ACCORDANCE WITH IPWEA STANDARD DRAWING NO RS-142.

6.6. THE CONTRACTOR SHALL INITIALLY EXCAVATE THE PAVEMENT BOX TO THE FOLLOWING DEPTHS:

- IN CUT AREAS - LOCAL AUTHORITY MINIMUM BOX PAVEMENT BOX DEPTH
- IN FILL AREAS - PROPOSED PAVEMENT DESIGN BOX DEPTH

7. LINEMARKING AND SIGNAGE

7.1. ALL ROAD SIGNS AND LINEMARKING TO BE IN ACCORDANCE WITH AS4049.1 AND AS1742 "MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES" (MUTCD).

7.2. ALL LINEMARKING TO BE WHITE UNLESS NOTED OTHERWISE;

7.3. ALL SIGNS ARE TO BE SIZE "A" UNLESS NOTED OTHERWISE;

7.4. SIGN SUPPORTS TO BE IN ACCORDANCE WITH DTMR STD. DWG. NO.S 1363 & 1368.

7.5. SIGNS LOCATED IN MEDIANS TO BE INSTALLED USING LOC SOCKET OR APPROVED EQUIVALENT.

7.6. STREET SIGNS TO BE 'BLACK POWDER COATED' IN ACCORDANCE WITH THE LANDSCAPE ARCHITECT'S DRAWINGS.

7.7. STREET SIGN LOCATIONS TO BE IN ACCORDANCE WITH IPWEA STANDARD DRAWING RS-130 OR DTMR.

7.8. DIMENSIONS TO LINEMARKING ARE MEASURED FROM THE NOMINAL KERB AND CHANNEL INVERT AND OR FROM NOMINAL KERB FACE OF ISLANDS AND MEDIANS;

7.9. INSTALL OR REINSTATE VALVE AND HYDRANT IDENTIFICATION MARKERS IN ACCORDANCE WITH THE SEQ WATER SUPPLY AND SEWERAGE DESIGN AND CONSTRUCTION CODE - STANDARD DRAWING SEQ-WAT-1300-1

7.10. ALL BUS STOP INFRASTRUCTURE INCLUDING SIGNAGE, TGSI'S, SEATS, BINS AND SHELTERS ARE SHOWN INDICATIVELY ONLY. ALL BUS STOP INFRASTRUCTURE IS TO BE TO BE CONSTRUCTED IN ACCORDANCE WITH DETAILS AS PROVIDED IN TRANSLINK'S PUBLIC TRANSPORT INFRASTRUCTURE MANUAL (PTIM 2015), FOR THE BUS TYPE AS NOMINATED.

7.11. ENSURE THAT SIGNAGE HAS CLEAR SIGHT DISTANCE, OTHERWISE ADJUST LOCATION ACCORDINGLY.

7.12. SUPERSEDED LINEMARKING AND SIGNAGE TO BE REMOVED. PAINTING BLANK IS NOT ACCEPTED.

7.13. GREEN SURFACE TREATMENT OF BICYCLE LANES SHALL BE IN ACCORDANCE WITH T.R.U.M- VOLUME 1, SIGNING AND PAVEMENT MARKING, SECTION 1.34 COLOURED SURFACE TREATMENTS FOR BICYCLE LANES.

7.14. BICYCLE LANE SYMBOLS TO BE LOCATED AS SHOWN, AT THE BEGINNING AND END OF ALL GREEN PAINTED TREATMENTS AND OTHERWISE AT 150m INTERVALS U.N.O.

7.15. DISABLED PARKING SYMBOL BE WHITE ON BLUE BACKGROUND THE BLUE SHALL BE B21, ULTRAMARINE OF AS2700, OR SIMILAR

7.17. ROAD EDGE GUIDE POSTS ARE TO BE INSTALLED IN ACCORDANCE WITH D.T.M.R STANDARD DRAWING 1356 AND SPACED IN ACCORDANCE WITH THE M.U.T.C.D. (PART 2 - SECTION 4.2.4.4 SPACING)

7.18. RAISED REFLECTORISED PAVEMENT MARKERS ARE TO BE PROVIDED TO ALL BARRIER AND MEDIAN LINEMARKING IN ACCORDANCE WITH AUS. STD. 1742 'MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES'.

7.19. PAVEMENT ARROWS ARE TO BE AT 25m SPACING, WITH A MINIMUM OF 3 ARROWS UNLESS NOTED OTHERWISE.

7.20. DELINEATORS SHALL BE FIXED AT 6.0m MAXIMUM CENTRES ATOP OF GUARDRAIL.

7.21. ALL GUARDRAILS TO BE BLACK POWER COATED.

7.22. GENERALLY LINES SHALL BE MARKED IN THE FOLLOWING MATERIALS:

- CONTINUITY LINES, INTERSECTION DIRECTION ARROWS AND TRANSVERSE MARKINGS ACROSS INTERSECTIONS — THERMOPLASTIC.
- ALL OTHER TRANSVERSE MARKINGS (EXCEPT CHEVRON MARKINGS) — PAINTED WITH ANTI-SKID TREATMENT
- ALL OTHER LINEMARKING — PAINTED.

8. TRAFFIC MANAGEMENT

8.1. ANY WORKS UNDERTAKEN IN THE VICINITY OF PUBLIC ROADS MUST BE APPROPRIATELY SIGNED, LIT AND BARRICADED TO ENSURE THE SAFETY OF THE PEDESTRIAN AND VEHICULAR TRAFFIC IN THEIR VICINITY.

8.2. WORKS WILL BE SO ORDERED TO ENSURE THAT PUBLIC ACCESS ALONG THE ROADS IS MAINTAINED AT ALL TIMES TO THE SATISFACTION OF COUNCIL REQUIREMENTS.

8.3. WHERE REQUIRED, BEFORE COMMENCEMENT OF THE WORKS THE CONTRACTOR SHALL OBTAIN THE REGULATORY AUTHORITIES APPROVAL AND OPERATING REQUIREMENT FOR THE TRUCK ROUTES TO BE USED BY ALL VEHICLES ASSOCIATED WITH THE CIVIL WORKS. APPROPRIATE CLEANSING DEVICES SHALL BE INSTALLED ON SITE TO ENSURE THERE IS NO ADVERSE IMPACT FROM VEHICLES ALONG THESE ROUTES.

Notes

Issued/Revision	By	Appd	YYYY.MM.DD
1 ORIGINAL ISSUE	SR	AJR	2024.11.08

Issue Status

PRELIMINARY

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Notes

File Name: 304702002-STN-00-000-DR-CI-001001

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Client/Project Logo

Stockland

AURA

Client/Project

STOCKLAND DEVELOPMENT PTY LTD

AURA PRECINCT 14
PROPOSED CHILDCARE CENTRE
CONCEPT DESIGN

Authorised	YYYY.MM.DD	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD
RPEQ		SR	SR	AJR	2024.11.08

Title

GENERAL NOTES AND DETAILS - SHEET 1

Project No. 304702002

Scale AS SHOWN A1

Revision 1

Drawing No. STN-00-000-DR-CI-001001

ORIGINAL SHEET - ISO A1 COORD - LOCAL DATUM - AHD

9. STORMWATER NOTES

9.1. GENERAL

9.1.1. STORMWATER STRUCTURES AND CONNECTIONS ARE TO BE LOCATED AS INDICATED ON THE PLAN. ADJUSTMENTS TO THE DESIGN LAYOUT WHERE REQUIRED TO SUIT ACTUAL AS-CONSTRUCTED GEOMETRY SHALL REQUIRE THE ENGINEERS APPROVAL.

9.2. STRUCTURES

9.2.1. ALL DRAINAGE STRUCTURES ARE TO HAVE HALF HEIGHT BENCHING AS PER QUDM SECTION S.21.8.

9.2.2. ALL GULLIES ARE TO BE LIP IN LINE GRATED GULLY UNLESS SHOWN OTHERWISE. REFER SUNSHINE COAST COUNCIL STANDARD DRAWINGS FOR DETAILS.

9.2.3. ALL DRAINAGE STRUCTURES WITHIN ROAD RESERVE AND FRONT OF LOTS TO HAVE CLASS D (TRAFFICABLE) COVERS / GRATES & FRAMES UNLESS NOTED OTHERWISE.

9.2.4. FINAL PIT LOCATION AND ORIENTATION TO BE CONFIRMED ON SITE BY THE SUPERINTENDENT;

9.2.5. FIELD INLET PITS IN ALLOTMENTS SHALL BE FITTED WITH BOLT DOWN LIGHT DUTY M.S. GRATED LID. PITS SHALL BE FITTED WITH 150 DIA. UPVC (S.W.) STUB SUPPLIED WITH BLANKING PIECE. STUB SHALL EXTEND 1.0m (MIN.) BEYOND SEWER LINE WHERE APPLICABLE.

9.2.6. FOR STORMWATER PIT SETOUT LOCATIONS REFER TO DETAIL ON NEXT PAGE.

9.3. PIPES

9.3.1. ALL REINFORCED CONCRETE PIPES TO COMPLY WITH A.S. 4139-2003.

9.3.2. ALL REINFORCED CONCRETE BOX CULVERTS AND LINK SLABS TO COMPLY WITH A.S. 1597.1-2010 AND A.S. 1597.2.2

9.3.3. ALL REINFORCED CONCRETE PIPES

> 600mm NOMINAL AND UNDER DIAMETER ARE TO BE RCP CLASS 3.

> OVER 600mm NOMINAL DIAMETER ARE TO BE RCP CLASS 2 UNLESS NOTED OTHERWISE;

9.3.4. PIPES SHALL BE BEDDED IN ACCORDANCE WITH AS3725-H2/HS2.

9.3.5. ALL REINFORCED CONCRETE PIPES TO BE RUBBER RING JOINTED (RRJ)

9.3.6. uPVC PIPES SHALL BE CLASS SN6 UNLESS NOTED OTHERWISE.

9.3.7. WHERE ROOFWATER DRAINS AND SEWER MAINS ARE TO BE CONSTRUCTED PARALLEL TO EACH OTHER, THE ROOFWATER DRAINAGE CONNECTION SHALL EXTEND 1.00m BEYOND THE SEWER MAIN.

9.3.8. MINIMUM COVER TO ROOFWATER PIPES TO BE 450mm EXCEPT WHERE LESS COVER IS NECESSARY TO DISCHARGE TO STREET KERB AND CHANNEL.

9.3.9. ROOFWATER DRAINAGE SYSTEMS SHALL DISCHARGE INTO A GULLY OR STORMWATER MANHOLE WHEREVER POSSIBLE.

9.3.10. ROOFWATER CONNECTION POINTS SHALL BE IDENTIFIED BY A 100 x 100 WHITE HW POST MARKED AS "ROOFWATER DRAINAGE".

9.4. TRENCHES

9.4.1. TRENCH EXCAVATIONS FOR DRAINAGE SHALL COMPLY WITH WORKPLACE HEALTH AND SAFETY REQUIREMENTS.

9.4.2. ALL TRENCHES SHALL BE BACKFILLED IN LAYERS OF LOOSE AGGREGATES OR GRANULAR MATERIAL THICKNESS APPROPRIATE TO THE TYPE OF COMPACTION EQUIPMENT BEING USED AND NOT GREATER THAN 250mm.

9.5. SCOUR PROTECTION

9.5.1. ROCK PROTECTION TO EXTEND UP THE BANKS TO EITHER THE HEIGHT OF THE PIPE'S OBVERT OR TO THE DESIGN TAILWATER LEVEL (WHICHEVER IS THE HIGHEST);

9.5.2. ROCK PROTECTION TO BE PROVIDED AROUND THE HEADWALL, WINGWALLS AND APRON AND WHERE APPLICABLE ABOVE THE HEADWALL WHERE THE HEADWALL IS LOCATED WITHIN AN OVERLAND FLOW PATH;

9.5.3. GEOTEXTILE TO BE CONSTRUCTED OUT OF WATER PERMEABLE MATERIAL USUALLY SYNTHETIC MATERIAL SUCH AS POLYPROPYLENE. TO BE USED AS PART OF EROSION AND SEDIMENT CONTROL METHOD IN CONSTRUCTION AND STORMWATER MANAGEMENT SITUATIONS TO TRAP OR PREVENT CLOGGING OF AGGREGATES BY SOIL/CLAY/SILT PARTICLES;

9.5.4. GEOTEXTILE MUST BE OF SUFFICIENT STRENGTH/DURABILITY TO WITHSTAND BREAKAGE FROM WATER FLOW, SEDIMENT BUILDUP, AND EXPOSURE TO SUNLIGHT;

9.5.5. CONSULT WITH MANUFACTURER OF GEOTEXTILE TO VERIFY THAT IT CAN PERFORM THE FUNCTION THAT IS REQUIRED OF IT;

9.5.6. IF SLOPE OF CHANNEL / TABLE DRAIN IS BETWEEN 1:1 AND 1:10 , EXCAVATE OUT TO A DEPTH OF 300mm WHERE THE ROCK CHECK DAMS ARE GOING TO BE EMBEDDED;

9.5.7. LAY DOWN GEOTEXTILE OVER THE WHOLE AREA THE ROCK CHECK DAMS IS TO BE CONSTRUCTED UPON;

10. OPEN DRAINS

10.1. SWALE DRAINS ARE TO BE GRADED EVENLY BETWEEN PROVIDED INVERT LEVELS.

10.2. UNLESS NOTED OTHERWISE, DRAINS TO BE TURFED.

12. COMPACTION

12.1. THE CONTRACTOR IS RESPONSIBLE FOR COMPACTION TECHNIQUES OVER ALL STORMWATER PIPES TO BE IN ACCORDANCE WITH THE MANUFACTURER'S SPECIFICATIONS;

13. CONCRETE NOTES:

13.1. NON-VEHICULAR PATHS ONLY MAY USE DANLEY 'EXPANDA' JOINT SYSTEMS

13.2. CONCRETE PAVEMENTS < $1x10^6$ ESA TO BE DETAILED IN ACCORDANCE WITH CPAA RESIDENTIAL STREETS / AUSTROADS LIGHT TRAFFIC DESIGN GUIDES.

13.3. CONCRETE PAVEMENTS ≥ $1x10^6$ ESA TO BE DETAILED IN ACCORDANCE WITH NSW TRANSPORT ROADS AND MARITIME SERVICES (RTA) STANDARD DRAWINGS (JRCP AND SFCP SERIES) AND RESPECTIVE SPECIFICATIONS (AS REFERENCED IN AUSTROADS AGPT02 - STRUCTURAL DESIGN). ANY DISCREPANCY BETWEEN THE TRMS (RTA) STANDARDS & THE PROJECT SPECIFICATION IS TO BE BROUGHT TO THE ATTENTION OF THE DESIGN ENGINEER.

13.4. GRANULAR SUB-BASE UNDER CONCRETE TO BE CRUSHED ROCK, ROADBASE OR APPROVED ALTERNATIVE (CBR15 MIN.) FOR VEHICLE PAVEMENTS. 'CRUSHER DUST' TO BE USED UNDER PATHS AND NON TRAFFICABLE CONCRETE.

13.5. GRANULAR SUB-BASE SHALL BE COMPACTED AS SPECIFIED, TO A UNIFORMLY SMOOTH, FLAT SURFACE TO THE SATISFACTION OF THE SUPERINTENDENT PRIOR TO CONCRETE PLACEMENT.

13.6. ARCHITECTURAL FINISHES TO VEHICULAR PAVEMENT SHALL NOT COMPROMISE THE NOMINATED AGGREGATE SIZE, LIMIT THE EFFECTIVENESS OF LINEMARKING OR COMPROMISE SKID RESISTANCE. FULL DEPTH COLOUR TREATMENTS AND BROOM FINISHES ARE GENERALLY ACCEPTABLE. ANY OTHER TREATMENTS MUST BE APPROVED PRIOR TO USE.

13.7. ALL SERVICE COVERS WITHIN SHARED / BICYCLE PAVEMENTS TO BE INFILL TYPE, WHERE POSSIBLE, TO MINIMISE SLIP HAZARD

13.8. FIXED INTERNAL PENETRATIONS AND EDGES ABUTTING STRUCTURES TO BE ISOLATED WITH A 10mm FLEXIBLE (ABLEFLEX) JOINT. VALVE COVERS AND OTHER 'FLOATING' SERVICES MAY BE CAST DIRECTLY INTO THE SLAB.

13.9. ALL INTERNAL CORNERS AND PENETRATIONS REQUIRE 2X PARALLEL N12 TRIMMERS (900mm LONG) ACROSS EACH CORNER TO CONTROL CRACKING, UNLESS ALIGNED WITH AN APPROPRIATE FORMED OR INDUCED JOINT.

13.10. FOR SLABS ≤100mm THICK, SUFFICIENT COMPACTION IS ACHIEVED THOUGH SCREENING PROCESS. FOR >100mm THICK AN IMMERSION VIBRATOR MUST BE USED TO ADEQUATELY DISPEL ENTRAINED AIR

13.11. SURFACE SHALL BE TREATED WITH A MOISTURE EVAPORATION RETARDANT (ALIPHATIC ALCOHOL) AFTER SCREEDING AND PRIOR TO FLOATING.

13.12. AN ADDITIONAL CURING COMPOUND MUST BE APPLIED OVER FINISHED WORKS. THE PRODUCT MUST BE APPROPRIATE FOR THE NOMINATED ARCHITECTURAL FINISH AND APPLIED IN ACCORDANCE WITH MANUFACTURES RECOMMENDATIONS

13.13. LMC SUB-BASE TO BE CURED BY THE APPLICATION OF A WAX EMULSION HYDROCARBON RESIN.

13.14. CONCRETE CUTTING SHALL BE UNDERTAKEN WITHIN 8 HOURS OF PLACEMENT. A SOFF-CUT SAW IS RECOMMENDED TO ENSURE CORRECT DEPTH OF CUTS, MINIMISE SPALLING AT ARRISES AND PERMIT CUTTING WITHIN THE APPROPRIATE TIME.

13.15. FINISHED SURFACE SHALL NOT BE TRAFFICKED EARLIER THAN 10 DAYS AFTER PLACEMENT.

14. EARTHWORKS NOTES

14.1. GENERAL

14.1.1. ALL EARTHWORKS QUANTITIES ARE NETT VOLUMES. CONTRACTOR TO MAKE ALLOWANCE FOR BULKING AND COMPACTION'

14.1.2. GEOTECHNICAL SUPERVISION OF EARTHWORKS IS TO BE CARRIED OUT IN ACCORDANCE WITH THE EARTHWORKS SPECIFICATION BY A N.A.T.A. REGISTERED GEOTECHNICAL TESTING AUTHORITY AT THE CONTRACTORS COST.

14.1.3. THE CONTRACTOR SHALL PROVIDE DETAILS OF ALL TESTING TO THE ENGINEER PROGRESSIVELY THROUGH THE WORKS AND NOTIFY THE ENGINEER OF ANY NON-CONFORMANCES.

14.1.4. ALL ALLOTMENTS TO FALL TO ROADWAY WITH A MINIMUM GRADE OF 0.5%.

14.1.5. EXCESS SPOIL TO BE TRANSPORTED TO A LOCATION CONFIRMED BY SUPERINTENDENT.

14.1.6. PRELIMINARY INVESTIGATION INTO ROAD CORRIDORS. TEST PIT EXCAVATION WITHIN NEW ROAD CARRIAGEWAYS SHALL BE UNDERTAKEN TO INVESTIGATE SUBGRADE MATERIALS, PRIOR TO IMPORT OF ANY FILL TO IDENTIFY. OPPORTUNITY TO EXCAVATE AND REPLACE POOR SUBGRADE WITH IMPORTED MATERIAL AND USE EXCAVATED MATERIAL AS FILL ON ALLOTMENTS.

14.1.7. FOR COMPACTION FILL DEPTHS OVER PIPES REFER TO TABLE B1AS/NZS 3275:2007

14.1.8. MATERIAL OVER PIPE COMPACTED TO 95% AT MAXIMUM DRY DENSITY FOR STANDARD COMPACTION.

14.1.9. MINIMUM FILL OVER PIPE INCLUDES MATERIAL BEING COMPACTED, AS MEASURED AFTER COMPACTION.

14.1.10. THE BEDDING SUPPORT TYPE CHOSEN HAS LITTLE OR NO EFFECT ON THE CLASS OF THE PIPE FOR LOW FILLS AND HIGH TRAFFIC LOADS

14.2. FILLING AND COMPACTION

14.2.1. FILLING IS TO BE CARRIED OUT IN STRICT ACCORDANCE WITH THE SPECIFICATIONS AND AS3798, APPENDIX B, LEVEL 1.

14.2.2. ALL FILL UNDER ROADS SHALL BE COMPACTED TO 100% STANDARD COMPACTION;

14.2.3. FILLING ON ROAD EMBANKMENT TO BE COMPACTED TO 95% STANDARD DRY DENSITY AS1289 5.1.1 AND TRIMMED TO BE FREE DRAINING. ALL ROAD EMBANKMENT FILL SHALL BE SUPERVISED BY A QUALIFIED GEOTECHNICAL ENGINEER TO LEVEL 1 REQUIREMENTS IN ACCORDANCE WITH THE AS.3798-2007.

14.2.4. PLACE FILL IN LAYERS OF LOOSE AGGREGATES OR GRANULAR MATERIAL THICKNESS APPROPRIATE TO THE TYPE OF COMPACTION EQUIPMENT BEING USED AND NOT GREATER THAN 200mm. COMPACT EACH FILLING LAYER TO THE MINIMUM DRY DENSITY SPECIFIED. THE MOISTURE CONTENT OF FILL MATERIAL SHOULD BE MAINTAINED WITHIN THE RANGE OF -1% TO +2% OF THE OPTIMUM MOISTURE CONTENT.

14.2.5. FILLING MATERIAL AS REQUIRED TO COMPLETE THE WORKS SHALL BE SOURCED FROM MATERIAL EXCAVATED FROM SITE. ALL FILLING MATERIAL MUST BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO ITS INCORPORATION INTO THE WORKS.

14.2.6. FILL SHALL BE PLACED AND COMPACTED TO THE FOLLOWING STANDARDS:

(I) COHESIVE MATERIALS:- ALLOTMENT FILL SHALL ACHIEVE A MINIMUM DRY DENSITY RATIO (M.D.D.R.) OF 95% STANDARD. COMMERCIAL ALLOTMENT FILL SHALL ACHIEVE A 98% STANDARD. DENSITY RATIO (M.D.D.R.)

ROAD EMBANKMENTS SHALL ACHIEVE THE FOLLOWING MINIMUM STANDARDS.

(A) GREATER THAN OR EQUAL TO 0.3m BELOW PAVEMENT SUBGRADE: 95% STD. M.D.D.R.

(B) LESS THAN 0.3m BELOW PAVEMENT SUBGRADE: 100% STD. M.D.D.R.

(II) NON COHESIVE MATERIALS:- FILL SHALL ACHIEVE A MINIMUM DENSITY INDEX RATIO OF 75%.

15. STRIPPING, STOCKPILE AND TOPSOIL

15.1. PRIOR TO THE COMMENCEMENT OF FILLING THE SITE IS TO BE STRIPPED - DEPTH TO BE NOTED & CONFIRMED BY CONTRACTOR. PLACEMENT OF FILL ON PREPARED AREAS SHALL NOT COMMENCE UNTIL AUTHORISED BY A QUALIFIED GEOTECHNICAL ENGINEER.

15.2. EARTHWORKS SPOIL IS TO BE STOCKPILED AS DIRECTED BY THE SUPERINTENDENT;

15.3. TOPSOIL IS TO BE RE-SPREAD FROM STOCKPILE AT MIN. 150mm IN ACCORDANCE WITH AS3798;

15.4. SILT FENCING IS TO BE PLACED ON THE DOWNSTREAM SIDE OF ALL STOCKPILE SITES AND AN ADEQUATE CUTOFF DRAINS ARE TO BE PLACED ON THE UPSTREAM SIDE OF ALL STOCKPILE SITES;

FIRE ANT TREATMENT ZONE

HIGH RISK FIRE ANT RESTRICTED AREA (RED ZONE). MOVEMENT OF RESTRICTED ITEMS SHALL BE IN ACCORDANCE WITH DEPARTMENT OF AGRICULTURE, FISHERIES AND FORESTRY REQUIREMENTS. REFER TO www.daff.qld.gov.au

WARNING.

BEFORE YOU DIG www.byda.com.au

Zero Damage - Zero Harm

PLEASE CONTACT THE SCRC'S ARBORIST PRIOR TO ANY CONSTRUCTION FOR ADVICE ON TREE ROOT PROTECTION IN THE VICINITY OF THE WORKS TO BE CARRIED OUT.

SERVICE LOCATIONS

IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO CONTACT THE RELEVANT SERVICE AUTHORITIES TO ASCERTAIN THE EXACT LOCATION OF SERVICES PRIOR TO CONSTRUCTION. ALSO TO OBTAIN THE REQUIRED APPROVALS AND PERMITS.

ENERGY SERVICE PROVIDERS

AGL, origin, ERGON. ENERGY, energex

NOTE: SERVICE LOCATIONS ARE APPROXIMATE ONLY FROM PROVIDERS PLANS. LOCATIONS ARE TO BE CONFIRMED PRIOR TO START OF CONSTRUCTION. PHONE DBYD SERVICE LOCATIONS ON **1100** FOR DETAILS.

TELECOMMUNICATION SERVICE PROVIDERS

'yes' OPTUS, Telstra, visionstream, NBNCo Limited, superloop

NOTE: SERVICE LOCATIONS ARE APPROXIMATE ONLY FROM PROVIDERS PLANS. LOCATIONS ARE TO BE CONFIRMED PRIOR TO START OF CONSTRUCTION. PHONE DBYD SERVICE LOCATIONS ON **1100** FOR DETAILS.

Notes

1	ORIGINAL ISSUE	SR	AJR	2024.11.08
Issued/Revision		By	Appd	YYYY.MM.DD

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PROPOSED CHILDCARE CENTRE
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RPEQ	SR	SR	AJR	2024.11.08
Authorised YYYY.MM.DD	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title

GENERAL NOTES AND DETAILS - SHEET 2

Project No. 304702002

Scale AS SHOWN A1

Revision 1

Drawing No. STN-00-000-DR-CI-001002

Plotted: 8/11/2024 3:50:05 PM, By: RYDGE, SIMON
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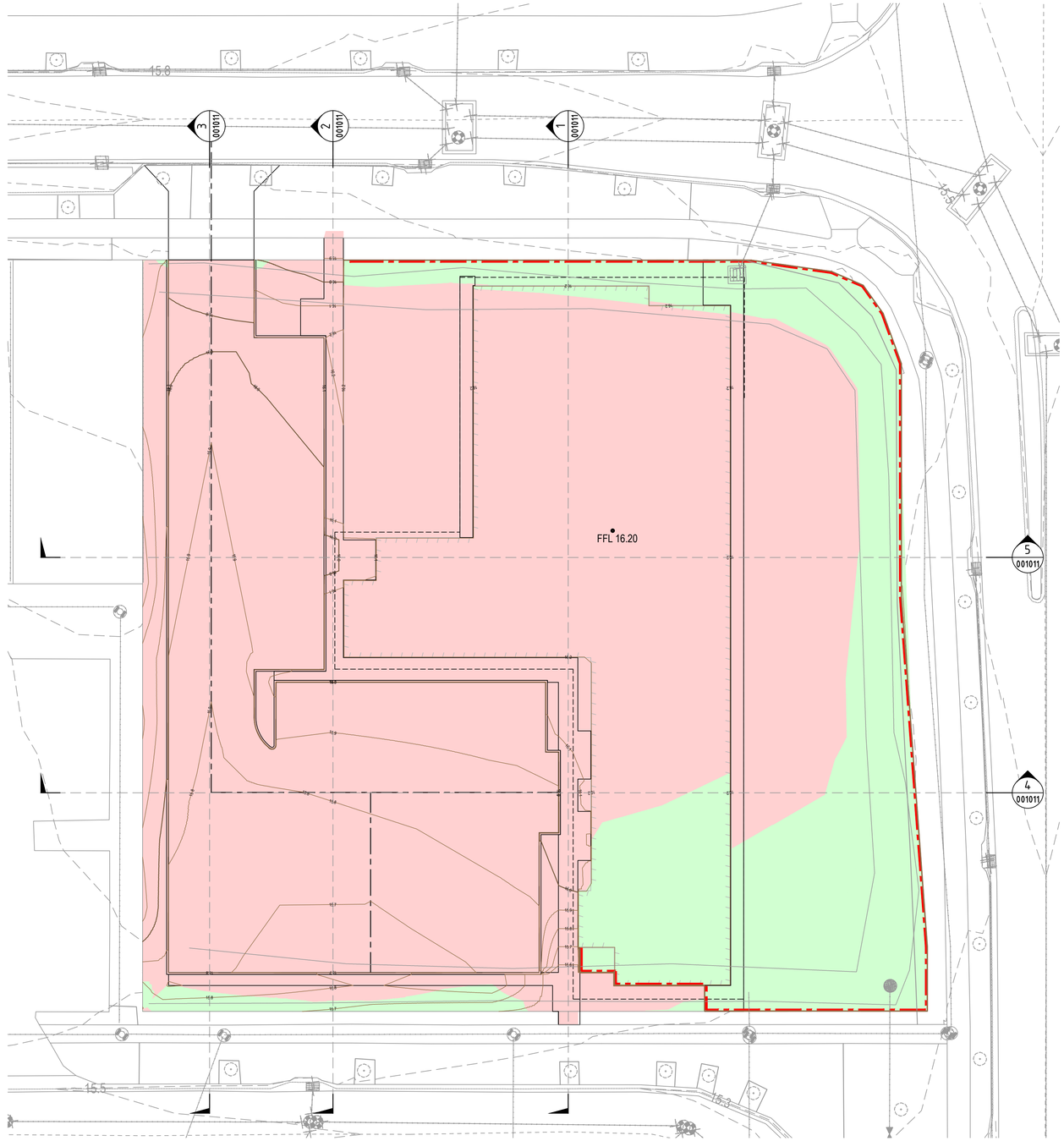
ORIGINAL SHEET - ISO A1 COORD - LOCAL DATUM - AHD



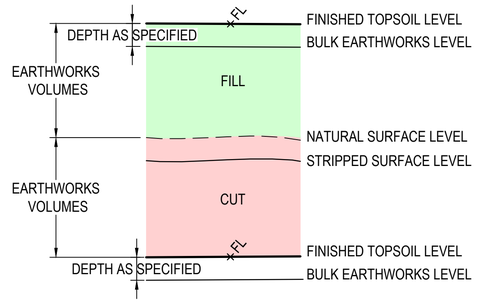
PLAN

SCALE A1 - 1 : 200
A3 - 1 : 400

LEGEND:

- ROAD CENTRELINE
- RP BOUNDARY
- B2 — IPWEA TYPE KERB
- PROPOSED BUILDING/STRUCTURE
- PROPOSED BUILDING/STRUCTURE ROOF OVERHANG
- CONCEPT RETAINING WALL
- CONCEPT EARTHWORKS CONTOURS (0.1m)
- CONCEPT EARTHWORKS CONTOURS (1.0m)

NORTH



EARTHWORKS PAYLINES

N.T.S.

PRELIMINARY BULK EARTHWORKS VOLUMES

VOLUMES FROM EXISTING SURVEY TO CONCEPT DESIGN FSL

CUT VOLUMES ARE NEGATIVE
FILL VOLUMES ARE POSITIVE

TOTAL CUT (m^3)	-698
TOTAL FILL (m^3)	175
TOTAL BALANCE (m^3)	-523

I.E. EXCESS OF CUT OVER FILL

NOTES:

1. REFER TO DRAWINGS 304702002-STN-00-000-DR-CI-001001 to 001002 FOR GENERAL NOTES & DETAILS.
2. REFER TO DESIGNFLOW'S *AURA PRECINCTS 11-14 STORMWATER QUALITY MANAGEMENT PLAN* FOR STORMWATER TREATMENT DETAILS.
3. REFER TO PTT'S TRAFFIC IMPACT ASSESSMENT DATED 08.11.24 FOR TRAFFIC MANAGEMENT DETAILS.
4. STORMWATER GROSS POLLUTANT TRAP (GPT) TO BE DESIGNED AND SPECIFIED AT THE DETAILED DESIGN PHASE.
5. PAVEMENT DESIGN TO BE CONFIRMED FOLLOWING SITE-SPECIFIC GEOTECHNICAL TESTING.
6. BULK EARTHWORKS ARE CONCEPT ONLY TO BE CONFIRMED THROUGH DETAILED DESIGN.
7. RETAINING WALLS SHOWN INDICATIVELY TO BE CONFIRMED WITH BUILT FORM DESIGN.

Notes

0 5 10 15 20m
SCALE 1:200 @A1

1	ORIGINAL ISSUE	SR	SR	2025.02.13
Issued/Revision		By	Appd	YYYY.MM.DD

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Stockland
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STOCKLAND DEVELOPMENT PTY LTD

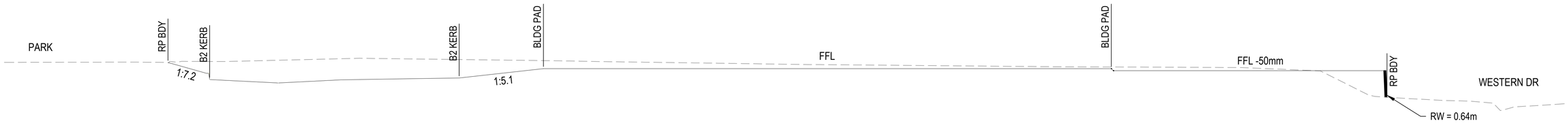
AURA PRECINCT 14
PROPOSED CHILDCARE CENTRE
CONCEPT DESIGN

RPEQ	SR	SR	PR	2025.02.13
Authorised YYYY.MM.DD	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
CONCEPT BULK EARTHWORKS LAYOUT PLAN

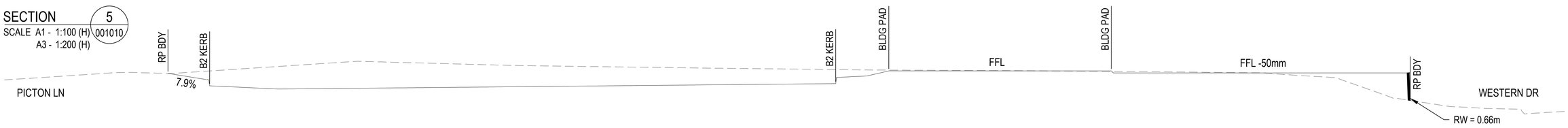
Project No. 304702002
Scale AS SHOWN A1
Revision 1
Drawing No. STN-00-000-DR-CI-001010

Plotted: 13/02/2025 8:53:14 AM By: JEROE, SHON
LOCATION: TECHNICAL\DRAWINGS\SHEETS
ORIGINAL SHEET - ISO A1 COORD - LOCAL DATUM - AHD



DATUM RL 14.00

SECTION 5
SCALE A1 - 1:100 (H) 001010
A3 - 1:200 (H)



DATUM RL 14.00

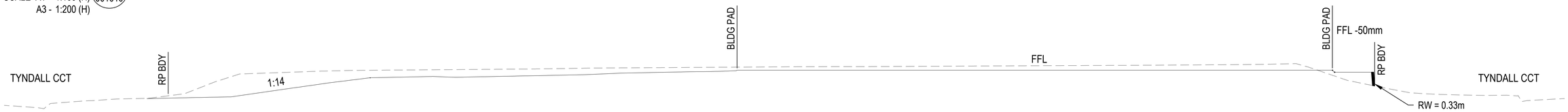
SECTION 4
SCALE A1 - 1:100 (H) 001010
A3 - 1:200 (H)

DATUM RL 15.00

SECTION 3
SCALE A1 - 1:100 (H) 001010
A3 - 1:200 (H)

DATUM RL 15.00

SECTION 2
SCALE A1 - 1:100 (H) 001010
A3 - 1:200 (H)



DATUM RL 14.00

SECTION 1
SCALE A1 - 1:100 (H) 001010
A3 - 1:200 (H)

NOTES:
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3. REFER TO PTT'S TRAFFIC IMPACT ASSESSMENT DATED 08.11.24 FOR TRAFFIC MANAGEMENT DETAILS.
4. STORMWATER GROSS POLLUTANT TRAP (GPT) TO BE DESIGNED AND SPECIFIED AT THE DETAILED DESIGN PHASE.
5. PAVEMENT DESIGN TO BE CONFIRMED FOLLOWING SITE-SPECIFIC GEOTECHNICAL TESTING.
6. BULK EARTHWORKS ARE CONCEPT ONLY TO BE CONFIRMED THROUGH DETAILED DESIGN.
7. RETAINING WALLS SHOWN INDICATIVELY TO BE CONFIRMED WITH BUILT FORM DESIGN.

Notes

1:100 2 1 0 2 4 A1
1:200 HORIZONTAL A3

1:50 1 0.5 0 1 2 A1
1:100 VERTICAL A3

1	ORIGINAL ISSUE	SR	PR	2025.02.13
Issued/Revision		By	Appd	YYYY.MM.DD

Issue Status

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Notes

File Name: 304702002-STN-00-000-DR-CI-001011

Stantec
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Tel: 07 5443 2555 | Web: www.stantec.com.au

Client/Project Logo
Stockland
AURA

Client/Project
STOCKLAND DEVELOPMENT PTY LTD

AURA PRECINCT 14
PROPOSED CHILDCARE CENTRE
CONCEPT DESIGN

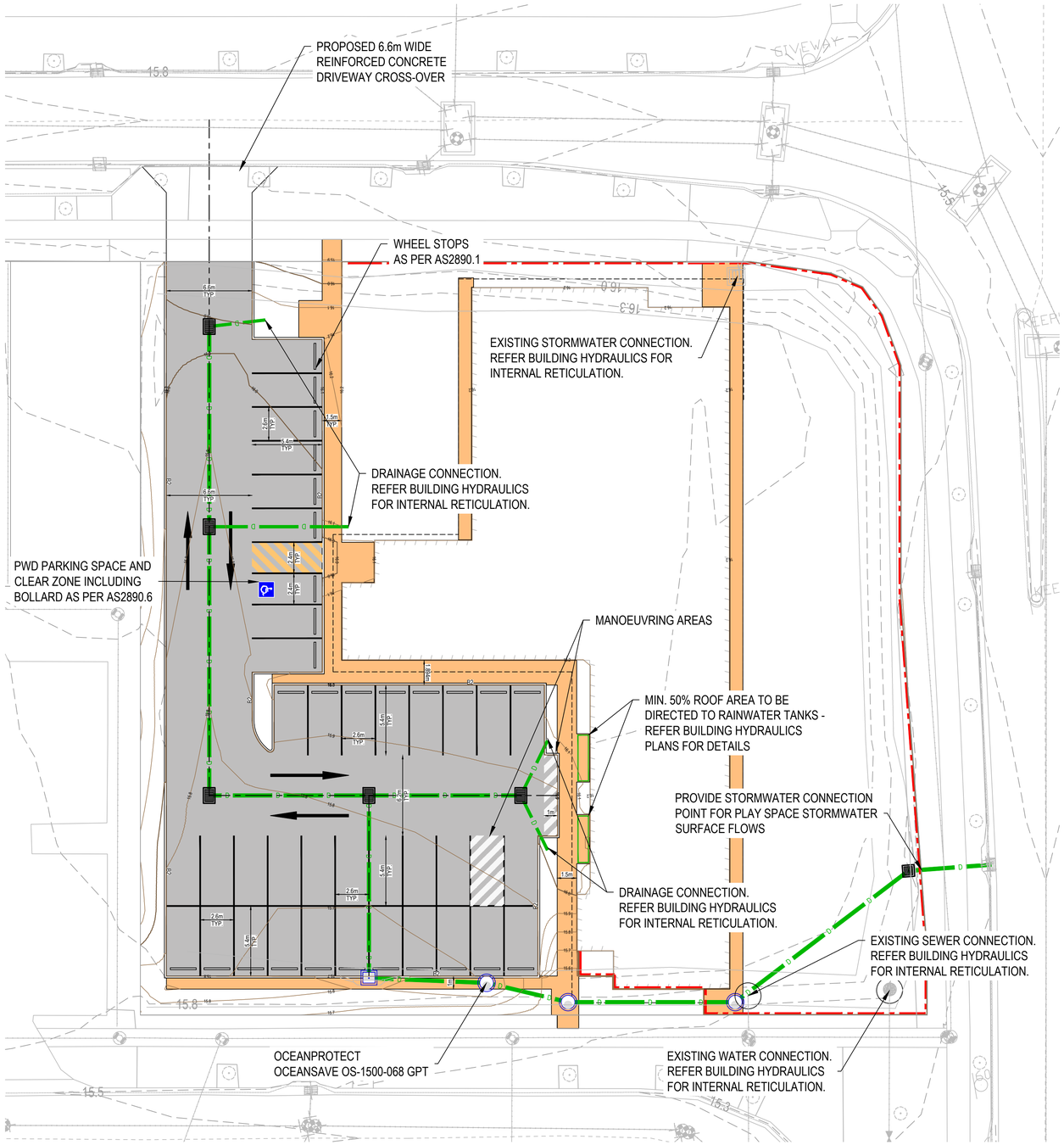
RPEQ		SR	SR	PR	2025.02.13
Authorised	YYYY.MM.DD	Dwn.	Dsgn.	Chkd.	YYYY.MM.DD

Title
CONCEPT BULK EARTHWORKS SITE SECTIONS

Project No. 304702002
Scale AS SHOWN A1
Revision 1
Drawing No. STN-00-000-DR-CI-001011

Plotted: 13/02/2025 9:56:28 AM By: BIDGE, SHAUN
S:\AURA\000\TECHNICAL\04_CAD\WORKS\001010

ORIGINAL SHEET - ISO A1 COORD - LOCAL DATUM - AHD



LEGEND:

- ROAD CENTRELINE
- RP BOUNDARY
- IPWEA TYPE KERB
- PROPOSED BUILDING/STRUCTURE
- PROPOSED BUILDING/STRUCTURE ROOF OVERHANG
- STORMWATER PIPE AND MANHOLE/PIT
- PAVEMENT TYPE P1 - AC PAVEMENT
- PAVEMENT TYPE C1 - CONCRETE FOOTPATHS
- LANDSCAPED MEDIAN

TYPE	DESCRIPTION	ASSUMED CBR	DESIGN ESA	STREET CLASSIFICATION
P1	40mm A.C. SURFACING (AC10M WITH A15E BINDER) 7mm PRIMER SEAL 125mm COMPACTED BASE SUB-TYPE 2.1 (MIN. CBR80) 125mm COMPACTED SUB-BASE TYPE 2.3 (MIN. CBR45) 120mm COMPACTED LOWER SUB-BASE TYPE 2.5 (MIN. CBR15) PAVEMENT TO BE CONSTRUCTED IN ACCORDANCE WITH MRTS05, MRTS18 AND MRTS30 OR AS APPROVED BY THE SUPERINTENDENT	5% (SOAKED)	6.0×10^5	CARPARK
C1	125mm CONCRETE SLAB (N25, SL72 MESH CENTRAL) 50mm SAND BEDDING, SAWCUT JOINTS AT 2m CRS. MAX., EXPANSION JOINTS AT 12m CRS. MAX. ADDITIONAL 1m WIDE STRIP OF PLASTIC SHEETING PLACED UNDER JOINT. REFER IPWEA STD DWG RS-065 FOR CONSTRUCTION DETAILS. REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR SURFACE FINISHES.	-	-	CONCRETE FOOTPATH (NON-TRAFFICABLE)

NOTES:

1. REFER TO DRAWINGS 304702002-STN-00-000-DR-CI-001001 to 001002 FOR GENERAL NOTES & DETAILS.
2. REFER TO DESIGNFLOW'S *AURA PRECINCTS 11-14 STORMWATER QUALITY MANAGEMENT PLAN* FOR STORMWATER TREATMENT DETAILS.
3. REFER TO PTT'S TRAFFIC IMPACT ASSESSMENT DATED 08.11.24 FOR TRAFFIC MANAGEMENT DETAILS.
4. STORMWATER GROSS POLLUTANT TRAP (GPT) TO BE DESIGNED AND SPECIFIED AT THE DETAILED DESIGN PHASE.
5. PAVEMENT DESIGN TO BE CONFIRMED FOLLOWING SITE-SPECIFIC GEOTECHNICAL TESTING.

PLAN

SCALE A1 - 1 : 200
A3 - 1 : 400

Notes

0 5 10 15 20m
SCALE 1:200 @A1

Issued/Revision	By	Appd	
2 RFI RESPONSE	SR	PR	2025.02.13
1 ORIGINAL ISSUE	SR	PR	2024.11.08

Issue Status

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Notes

File Name: 304702002-STN-00-000-DR-CI-001101

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Client/Project Logo
Stockland
AURA

Client/Project
STOCKLAND DEVELOPMENT PTY LTD

AURA PRECINCT 14
PROPOSED CHILDCARE CENTRE
CONCEPT DESIGN

Authorised		Dwn.	Dsgn.	Chkd.	
RPEQ	YYYY.MM.DD	SR	SR	PR	2025.02.13 YYYY.MM.DD

Title
GENERAL ARRANGEMENT PLAN

Project No. 304702002
Scale AS SHOWN A1
Revision 2
Drawing No. STN-00-000-DR-CI-001101

ORIGINAL SHEET - ISO A1 COORD - LOCAL DATUM - AHD

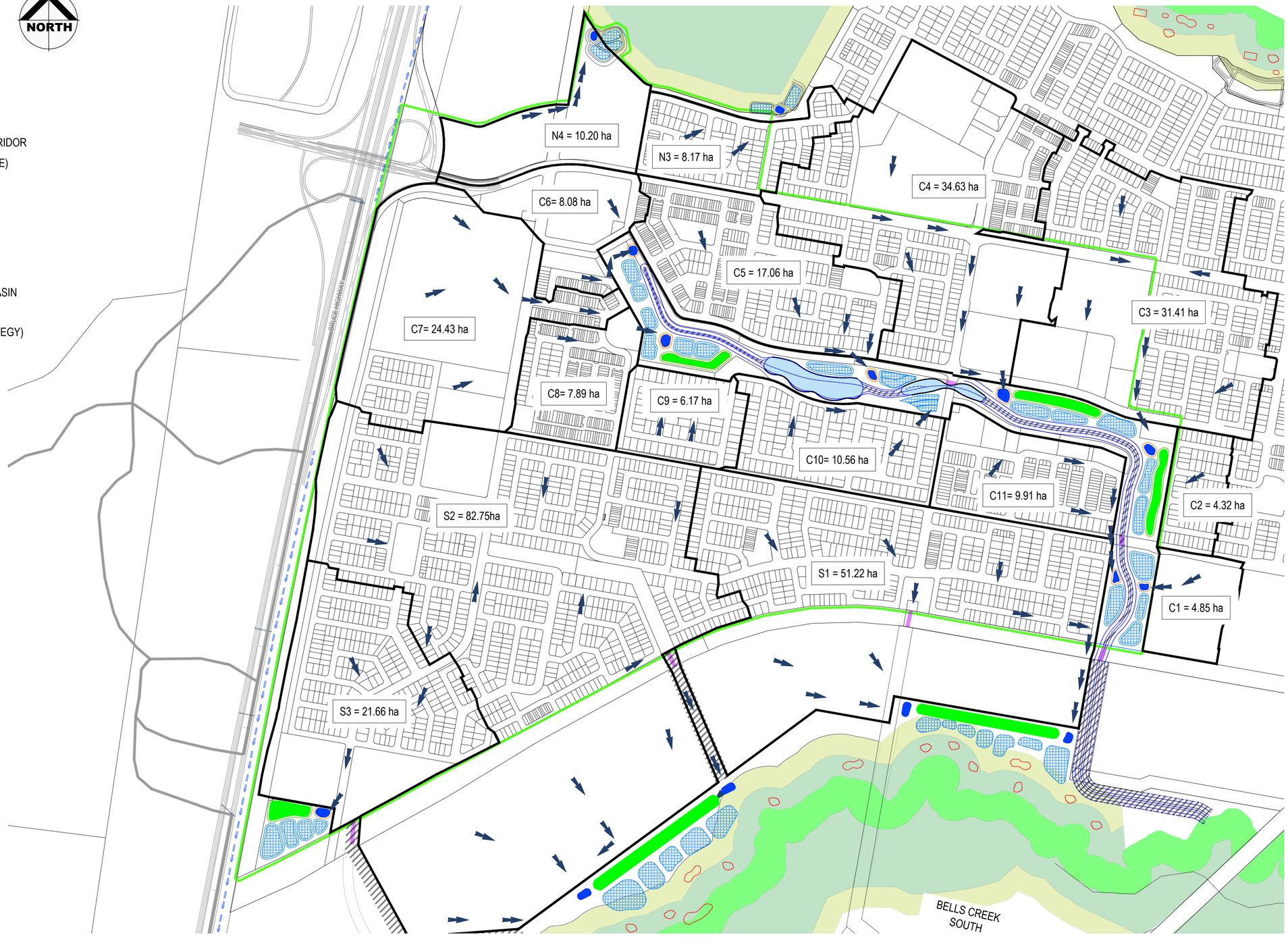
Appendix C – As-Constructed Information

Appendix D – Stormwater Quality Management Plan Extract

NORTH

LEGEND

- PROPOSED STORMWATER CATCHMENT
- PROPOSED DRAINAGE STRUCTURE
- CATCHMENT FLOW DIRECTION
- PROPOSED WSUD AND DRAINAGE CORRIDOR
- PROPOSED DRAINAGE CHANNEL (SWALE)
- FROG PONDS
- RIPARIAN BUFFER ZONE
- FROG ZONE
- FROG BUFFER
- SITE BOUNDARY
- END OF LINE STORMWATER QUALITY BASIN
- LAKE (NOT PART OF TREATMENT STRATEGY)
- INLET POND (SEDIMENT BASIN)
- WETLAND
- BIORETENTION



CONCEPTUAL STORMWATER TREATMENT STRATEGY

SCALE 1:5000

SCALE 1:5000 @ A1
(1:10000 @ A3)

0 100 200 300 400 500m

REVISION	DESCRIPTION	DRAFTED BY	INITS	DATE	CHECKED BY	INITS	DATE
C	CATCHMENTS UPDATED		MJM	16.07.20	SL		16.07.20
B	PLAN UPDATED		MJM	29.07.19	SL		29.07.19
A	PRELIMINARY ISSUE		MJM	09.11.18	SL		09.11.18

CONCEPT
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CLIENT	STOCKLAND
DRAWN	MJM
DATE	16.07.20
DESIGNED	SL
DATE	16.07.20
SCALE	1:5000
	A1
PROJECT	AURA - STORMWATER PLANNING
DRAWING TITLE	CONCEPTUAL STORMWATER TREATMENT STRATEGY FOR PRECINCTS 11-14
PROJECT No	4344
DRAWING No	FIGURE 7
REVISION	C

XREF:
FILE: \\192.168.4.3\SHARED\PROJECTS\QLD ACTIVE\4344 AURA PRECINCT 11-15\CORRESPONDENCE\SIMON YOUNG\2019-08-01 SQMP FIGURES\4344-FIGURE 6 & 7.DWG