

Project No: SGS/18/E003B

23 February 2018

KN GROUP PTY LTD
LEVEL 2, 71 GREY STREET
SOUTH BRISBANE QLD 4101

Attention: Mr Robert Mander

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2020/1145

Date: 6 July 2021



Dear Sir,

RE: YARRABILBA, PRECINCT 3D – GEOTECHNICAL DESKTOP REVIEW

Introduction and Background

At the request of Mr Robert Mander of KN Group, SGS Australia has undertaken a desktop assessment in support of the Development Application for Yarrabilba Precinct 3D to provide comment on the anticipated geotechnical conditions across the development area.

The following information, pertaining to the geotechnical aspects associated with Yarrabilba Precinct 3D, was provided by KN Group:

- Bowler Geotechnical Pty Ltd, "Broadscale Geotechnical Report for the Yarrabilba Development" dated May, 2004;
- Lend Lease Pty Ltd, "Yarrabilba – Precinct 3, Context Plan Location" Drg No. YAR_P03_OLL_LOC_160405, dated 5th April, 2016;
- Lend Lease Pty Ltd, "Yarrabilba – Precinct 3, Context Plan" Drg No. YAR_P03_PCP160405, dated 5th April, 2016 (showing Precinct 3A, B, C and D); and
- RPS Australia East Pty Ltd, "Precinct 3D Concept Plan, Yarrabilba" Plan Ref. 106127-170J dated 6 February, 2018.

SGS Australia Pty Ltd has previously undertaken geotechnical investigations within Precinct 3D. These investigations included the sewer pump station SPS3A (Ref. No. SGS/17/016G dated 28 April, 2017) and proposed recycled water plant (Ref. No. SGS/15/009F dated 14 September, 2015).

Assessment and Comments

Based on a review of the above documentation and consideration of the geological profiles of the area, the following comments are provided for the proposed Yarrabilba Precinct 3D.

- Four (4) test locations undertaken by Bowler Geotechnical are relevant to Precinct 3D. Four (4) boreholes (BH 4, 5 & 6) and one (1) waterbore (WB # 2) are located within or near Precinct 3D boundary.
- The subsurface conditions are summarised below:
 - BH4 comprised deep topsoil (0.4m) overlying silty clay to 1.4m depth overlying deep sands extending to beyond 6m.
 - BH5 comprised surface sands overlying silty clay and extending to 3.5m depth, where weathered sandstone was observed. Refusal was reached at 4.2m depth in XW sandstone.
 - BH6 comprised surface sands overlying silty clay to 3.4m depth, overlying deep sands extending to beyond 6m.
 - Water Bore #2 comprised 0.3m topsoil overlying typically clay transitioning to sandstone at 7.6m depth.

- The findings of the SGS investigations were generally similar to the broadscale investigation findings:
 - Subsurface conditions encountered within Precinct 3D, generally comprised topsoil varying between 90 and 200mm overlying loose to medium dense sands over residual clays with strength ranging from very stiff to hard. Extremely to distinctly weathered sandstone and siltstone was encountered in the higher areas with strengths typically ranging from extremely low to low and some localised areas of medium strength.
- Geological mapping indicates Precinct 3D is underlain by the geological unit; (R-Jo) Woogaroo Sub-Group (Refer to Figure 2 in Bowler, 2004)
 - Previous staged works were located within the Woogaroo Sub-group and therefore ground conditions are expected to similar to those experienced in the previous Precincts 1, 2 and 3 at Yarrabilba.
 - Precinct 3D is situated between two significant watercourses located to the north and east of the proposed development area. It is anticipated that alluvial deposits and deeper topsoil deeps associated with these watercourses may overlay the above basement geology in the areas adjacent to the watercourses. Furthermore, saturated subgrade material and wet sand may be anticipated in lower lying areas of Precinct 3D.

Summary

Based on the findings of the broadscale geotechnical investigation by Bowler Geotechnical, previous geotechnical investigations and available geological mapping, the geotechnical conditions encountered in Precinct 3D are likely to be consistent / similar to those experienced in the previous Precincts 1, 2 and 3 at Yarrabilba.

However, due to the significant watercourses located in the northern and eastern portions of Precinct 3D, saturated subgrade material and wet sands, deep topsoil and sand profiles, particularly within and adjacent to the gully lines, low lying areas and creek beds, may be encountered.

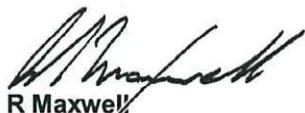
The above statements are based on the current available information and are subject to an additional detail geotechnical investigation being undertaken prior to the detailed design lodgement. Please note, that regardless of the frequency of the test pitting there remains an inherent risk that geotechnical conditions may differ than those of the investigation findings and conclusions.

We trust this is acceptable. Please do not hesitate to contact the undersigned if you require any further details.

Yours faithfully,

SGS Australia Pty Ltd

Prepared By:



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Senior Geotechnical Engineer

Reviewed By:



C Barclay
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Civil Engineer / Business Manager
SGS.18.E003B.GDR.R01.docx

Encl. Yarrabilba Precinct 3D Plans

APPENDIX A:

YARRABILBA PRECINCT 3D PLANS

- LEGEND**
- YARRABILBA SITE BOUNDARY
 - PRECINCT THREE
 - LAND USE
 - URBAN LIVING
 - MAJOR CENTRE CORE
 - MAJOR CENTRE FRAME
 - INDUSTRY AND BUSINESS
 - ENVIRONMENTAL PROTECTION
 - ELEMENTS
 - POTENTIAL GREEN SPACE
 - FAUNA CORRIDOR
 - TRANSMISSION EASEMENT
 - DISTRICT CENTRE
 - NEIGHBOURHOOD CENTRE
 - TRANSPORT NETWORK
 - REGIONAL ROAD
 - PRIMARY ROAD
 - EXISTING ROAD
 - INDICATIVE MAJOR TRANSPORT CORRIDOR
 - INDICATIVE FUTURE CONNECTION



SOURCE: YARRABILBA URBAN DEVELOPMENT AREA DEVELOPMENT SCHEME - MAP 2 - VISION

YARRABILBA PRECINCT THREE CONTEXT PLAN LOCATION

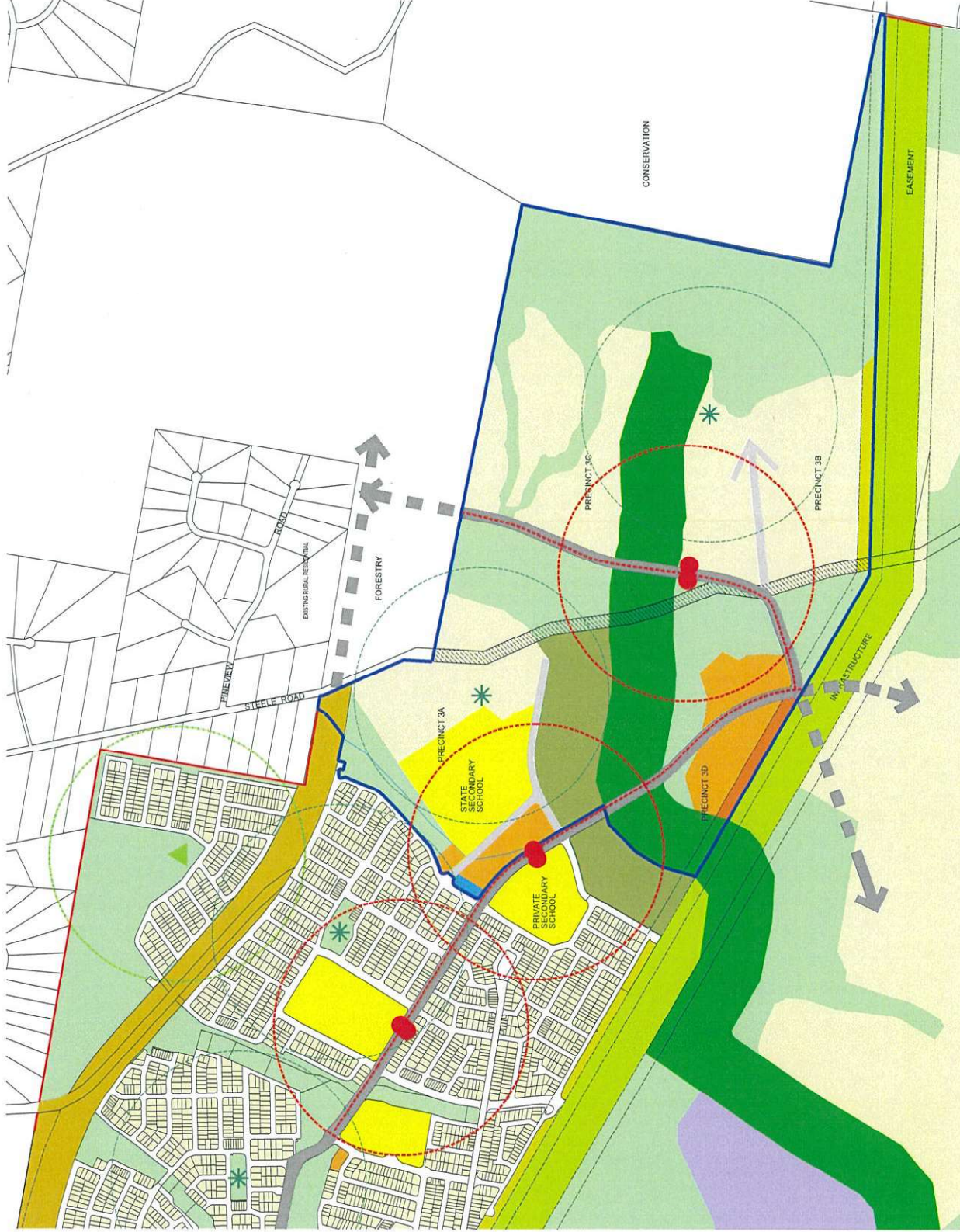
NOTE: This plan is a location plan and does not show the detailed layout of the precinct. It is intended to provide a context for the precinct within the Yarrabilba Urban Development Area. The plan is based on the Yarrabilba Urban Development Scheme, Map 2 - Vision.

- LEGEND**
- YARRABILBA SITE BOUNDARY
 - PRECINCT THREE BOUNDARY
 - ROAD TO BE CLOSED
 - NEIGHBOURHOOD CENTRE
 - RESIDENTIAL
 - URBAN RESIDENTIAL
 - EDUCATIONAL ESTABLISHMENT
 - RETAIL/COMMUNITY COMMERCIAL & MIXED USE
 - INFRASTRUCTURE
 - FORNA CORRIDOR
 - OPEN SPACE
 - MAJOR SPORTS PARK
 - NEIGHBOURHOOD RECREATION PARK & 400m RADIUS LOOP
 - DISTRICT RECREATION PARK & 400m RADIUS LOOP
 - ELECTRICITY EASEMENT
 - LANDSCAPE BUFFER
 - SOUTHERN INFRASTRUCTURE CORRIDOR
 - PRIMARY MOVEMENT NETWORK
 - SECONDARY MOVEMENT NETWORK
 - BUS ROUTE
 - BUS STOP PROPOSED BUS STOP
 - EXISTING TRAILS
 - ROAD TO BE CLOSED

TOTAL PRECINCT AREA	254 ha
GROSS RESIDENTIAL AREA	67ha
Approx 950 lots at an average density of 154/ha	
COMMUNITY FACILITIES	2.55ha
STATE SECONDARY SCHOOL	12.0ha
OPEN SPACE	157.0ha
ROAD	7.0ha

DISCLAIMER
The context plan is intended to guide development within the Yarrabilba Precinct Three area and show the preferred land use designations and infrastructure. The context plan does not constitute an offer of land or any other interest in land and is not intended to be used as a basis for any other development or investment. The context plan is subject to change without notice and the final location will be determined through further detailed design and development applications.

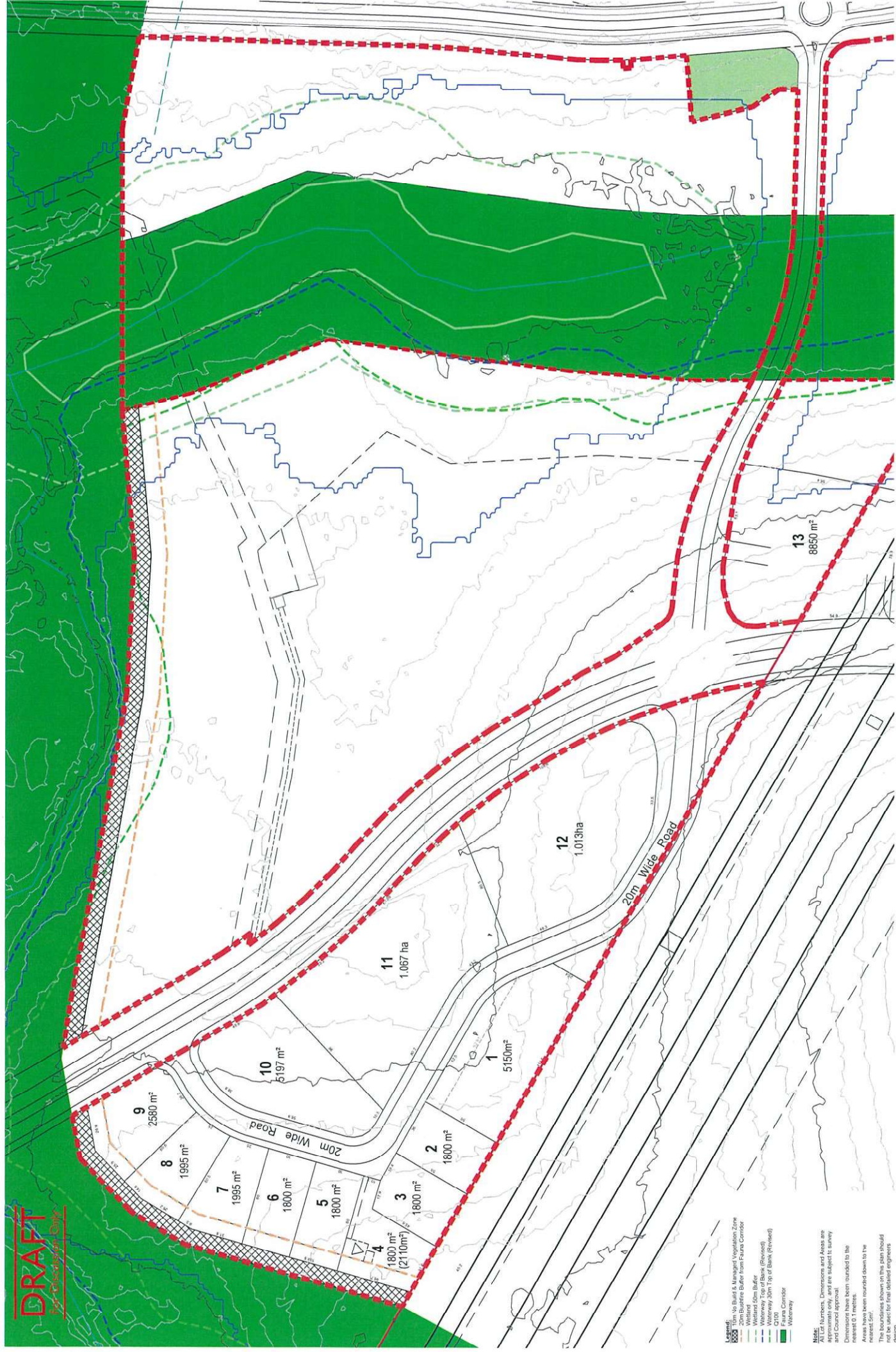
NOTES
The contents of this plan are conceptual only. All areas are approximate only and subject to relevant studies, survey engineering and relevant authority approvals.



YARRABILBA - PRECINCT THREE CONTEXT PLAN

Yarrabilba Precinct Three is a development area located within the Yarrabilba Shire Council area. The context plan is intended to guide development within the precinct and show the preferred land use designations and infrastructure. The context plan does not constitute an offer of land or any other interest in land and is not intended to be used as a basis for any other development or investment. The context plan is subject to change without notice and the final location will be determined through further detailed design and development applications.





DRAFT
For Discussion Only

Legend:
10m No Build & Managed Vegetation Zone
20m Vegetation Buffer from Fauna Corridor
Vegetation 50m Buffer
Vegetation Top of Bank (Revised)
Vegetation 30m Top of Bank (Revised)
Fauna Corridor
Vegetation

Notes:
All Lot Numbers, Dimensions and Areas are subject to survey and Council approval. Dimensions have been rounded to the nearest 0.1 metres.
Areas have been rounded down to the nearest 0.1m.
The areas shown on this plan should not be used for final detailed engineering design.

Scale: 1:1000 @ A1
0 5 10 20 30 40 50 60
Plan Ref: 106127 - 170J

Date: 08 Feb 2018
Drawn By: B.C.
Checked By: PE

106127 - 170 JWG
YARRABILBA
landscape

Precinct 3D Concept Plan YARRABILBA