

FLOOD IMPACT ASSESSMENT REPORT

for Proposed Palliative Care Unit Redevelopment at Wyong Hospital

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Client: Health Infrastructure

Property: Lots 4, DP 1248441
664 Pacific Highway, Hamlyn Terrace 2259

Date: 21 February 2024

Document Identification

Our Reference: NA230258

For and on behalf of ACOR Consultants Pty Ltd

Quality Information

Version	Description	Date	Author	Reviewer	Signature
R01	Flood Impact Assessment Report	20.02.2024	Rory Silk	Gregory Lyell	

Distribution

No. of Copies	Format	Distributed to	Date
1 (v 1.0)	PDF	Capital Insight Pty Limited	21.02.2024

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1.0 Introduction

ACOR Consultants Pty Ltd (ACOR) has been engaged to prepare a Flood Impact Assessment Report in accordance with the requirements of Section 3.1 (Floodplain Management and Water Cycle Management) of the Central Coast DCP 2022 and the Central Coast Local Environmental Plan (LEP) 2022. This report is to support the REF submission for the proposed development of the palliative care facility at Wyong Hospital.

In the preparation of this report ACOR has relied upon certain data and information contained within the following documents:

- Architectural Schematic Design Workshop 3 prepared by BVN, dated 29 January 2024;
- Site survey prepared by Bee & Lethbridge Pty Ltd, Project Number 19152, dated 04 August 2017;
- Central Coast Development Control Plan 2022;
- Central Coast Local Environmental Plan 2022;
- 'Porters Creek Flood Study' prepared by Cardno Ltd dated July 2009;
- 'Wyong River Catchment Floodplain Risk Management Study & Plan,' prepared by Catchment Simulation Solutions dated January 2020;
- The Central Coast Council's 'Region-Wide Online Mapping Tool';
- 'Floodplain Development Manual: the management of flood liable land' published by NSW Department of Infrastructure, Planning and Natural Resources (NSW DIPNR), dated April 2005; and
- 'Flood Risk Management Manual 2023: the policy and management of flood liable land' published by NSW Department of Planning and Environment (NSW DPE), dated 2023.

The purpose of this report is to provide the private certifying authority with sufficient information to assess the proposed development which is located on flood affected lands.

2.0 Site Description

The site is known as Lot 4, DP1248441, Pacific Highway, Hamlyn Terrace, NSW. The surrounding developments include Low-Density Residential, Productivity Support, and an Environmental Conservation and Management area.

The site is a small zone eastward of the Wyong Hospital campus, with a proposed development area of approximately 1700 square meters. The site is zoned SP2 Health Services Facility. An aerial photograph of the hospital campus with the extent of the proposed development is provided in Figure 1.



Figure 1 - Aerial photo of Wyong Hospital Campus and Proposed Development

The site generally falls from the edges of the site boundary towards the centre, with an overflow path from the east towards the west, away from Pacific Highway, and from the north to the south, away from Yellow Rose Terrace. Elevations on site are generally within the range of 27.50 m AHD to 28.50 m AHD.

The proposed development includes the refurbishment of an existing building to home a 12-bedroom palliative care facility, as well as living and dining rooms, offices, workstations and a staff room. Additionally, the project includes the redevelopment of the external courtyard and gardens, connected to the bedrooms for easy access for patients and family.

The principal features of the proposed development are depicted in the architectural schematic design prepared by BVN, dated 29 January 2024. Copies of these plans are enclosed in Annexure A.

3.0 Flood Characteristics

3.1 1% AEP Storm Event

The site is located within the Porters Creek catchment area. Flooding of this area is the subject of the 'Porters Creek Flood Study' prepared by Cardno Ltd dated July 2009. The site is also included in the catchment area of the 'Wyong River Catchment Floodplain Risk Management Study & Plan,' prepared by Catchment Simulation Solutions dated January 2020, although, this study lacks specificity for the site. These studies have been used to create the Central Coast Council's online mapping tool, which was used to ascertain the flooding extent, and can be accessed using the following URL: [Flood risk tools | Central Coast Council \(nsw.gov.au\)](https://www.centralcoast.nsw.gov.au/flood-risk-tools)

The site is shown not to be flood effected by any storm up to and including the 1% AEP. Refer to Figure 2 below for the 1% AEP flood extents.



Figure 2 - 1% AEP Flood Map (Central Coast Council Interactive Online Flood Mapping)

3.2 PMF Storm Event

The site is not inundated by the PMF flood, nor is it identified by Council as a High Hazard, Flood Storage, or Flood Planning Area. Refer to Figure 3 below for the PMF flood extents.

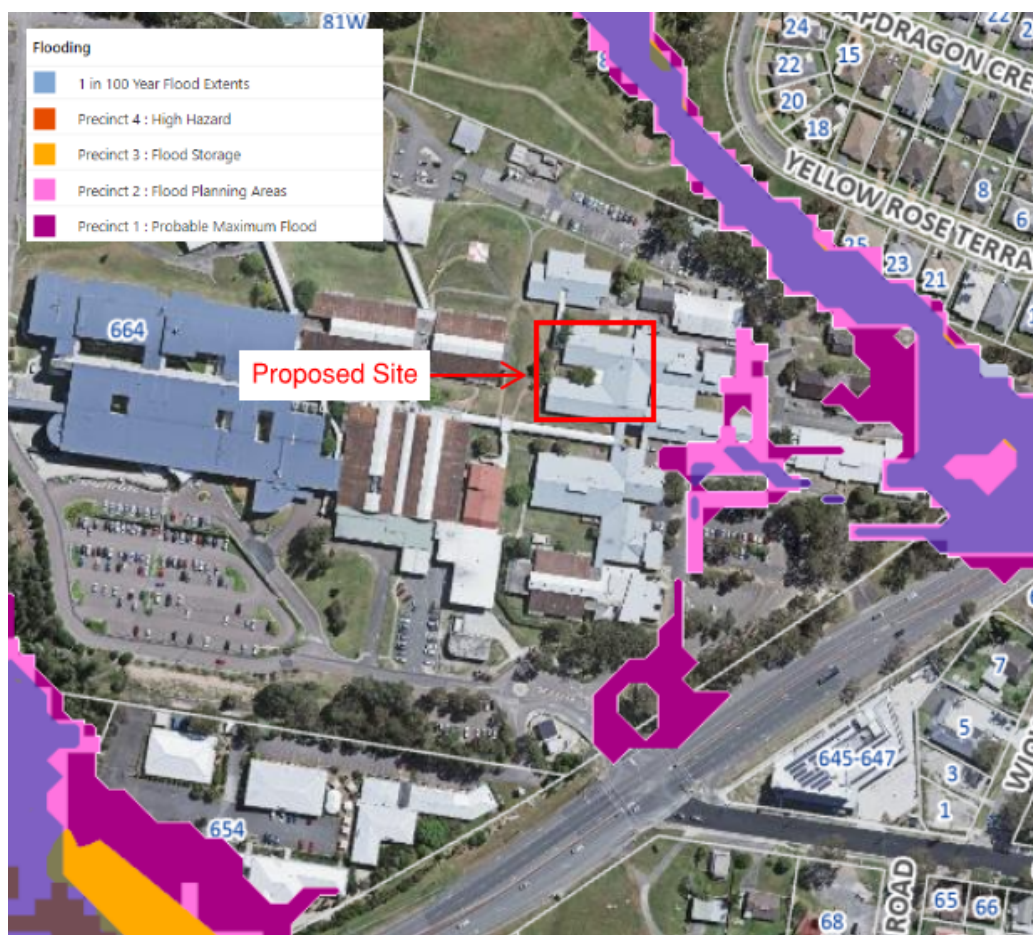


Figure 3 – PMF Flood Map (Central Coast Council Interactive Online Flood Mapping)

4.0 Flood Risk Management

Based on the foregoing, we offer the following response, having due regard for the requirements of Section 3.1 (Floodplain Management and Water Cycle Management) of the Central Coast DCP 2022, Central Coast LEP 2022, and 'Floodplain Development Manual' (NSW DIPNR 2005).

4.1 Floor Level

The flood planning level (FPL) for habitable floor levels on the site would be determined based on the 1% AEP flood level plus a nominal freeboard of 0.5m. As the site is **not** impacted by the 1% AEP flood level, nor the PMF flood level, the FPL is not applicable to the works being undertaken.

4.2 Building Components and Method

All proposed buildings are located outside of the PMF flood extents. There is therefore no requirement to consider flood compatible building components for the proposed development.

4.3 Flood Affection

As the site is not flood effected, the development will have no impact on the existing 1% AEP flood storage or extents.

4.4 Evacuation

The State Emergency Service of New South Wales (SES) is responsible for providing flood updates and issuing Flood Evacuation Warnings and Flood Evacuation Orders. Flood information issued by the SES may be received by local radio and television news, SMS messaging, Facebook, and doorknocking in effected communities. The timing for evacuation of persons is to be established in consultation with the SES.

As the site is located outside the PMF floodwater extents and the development will not impact the flood characteristics on site, an evacuation plan is not necessary for the proposed palliative care works.

5.0 Conclusion

The site is not impacted by any flood event up to and including the PMF flood event.

Given the lack of flood affection in the adjacent areas on the Wyong Hospital campus, the proposed development will not impact local flood characteristics. Due to the identified lack of flooding on site there is little need for ongoing flood risk management on the site.

Notwithstanding, the proposed development complies with the flood control requirements of Central Coast Council as stipulated in the Central Coast Development Control Plan.

6.0 References

Cardno Ltd. (2009). *Porters Creek Flood Study*. Sydney, NSW: Author.

Central Coast Council. (2022). *Central Coast Development Control Plan 2022*.

Central Coast Council. (2022). *Central Coast Local Environmental Plan 2022*.

New South Wales Department of Infrastructure, Planning and Natural Resources (NSW DIPNR). (2005). *Floodplain Development Manual: the management of flood liable land*. Sydney, NSW: Author.

New South Wales Department of Planning and Environment (NSW DPE). (2023). *Flood Risk Management Manual: the policy and manual for the management of flood liable land*. Sydney, NSW: Author.

ANNEXURE A

Architectural plans prepared by BVN, dated 29 January 2024

Feedback

PLAN

FROM SD#2 WORKSHOP

- Visibility to acute bedrooms north of the Staff Station
- Relocate resus bay and wash hand basin to less public areas
- Provide wheelchair access to staff station
- Ease of access to clean store & medication room

COMMUNITY SURVEY RESULTS

- Homely interior
- Outdoor spaces
- Private, single bedrooms
- Place where family can stay overnight
- Space for 5 family members per bedroom
- Areas to prepare food & a fridge in each room is essential
- Space for a coffee table and chairs
- Securing personal belongings
- Dimmable lights
- Laundry was bottom of the preference list.



Feedback

PLAN

POST SD#2 WORKSHOP

SUMMARY OF INFECTION CONTROL

COMMENTS

- Carpets not permitted in clinical areas and corridors
- Carpet tiles permitted in lounge, interview room & offices
- Rugs not permitted (trip hazard)
- Provision for smooth and waterproof wall finish in clinical areas
- Textured natural products should have a smooth finish and be used as a featured finish behind reception
- Sealed natural timber and plywood not recommended in patient rooms
- Roller blinds are ideal. Curtains or venetian blinds are not recommended
- Any fabric used for furniture should be able to be disinfected



Schematic Design UPDATES PLAN

- Four back to back bedrooms changed to inboard to allow for fitted daybed opposite patient bed
- Staff Station amended improving visibility to acute rooms north. Easy access to clean store/med room
- Relocation of resus bay and HWB to a less public area
- Amendment to bays to allow for new bed configuration and briefed area



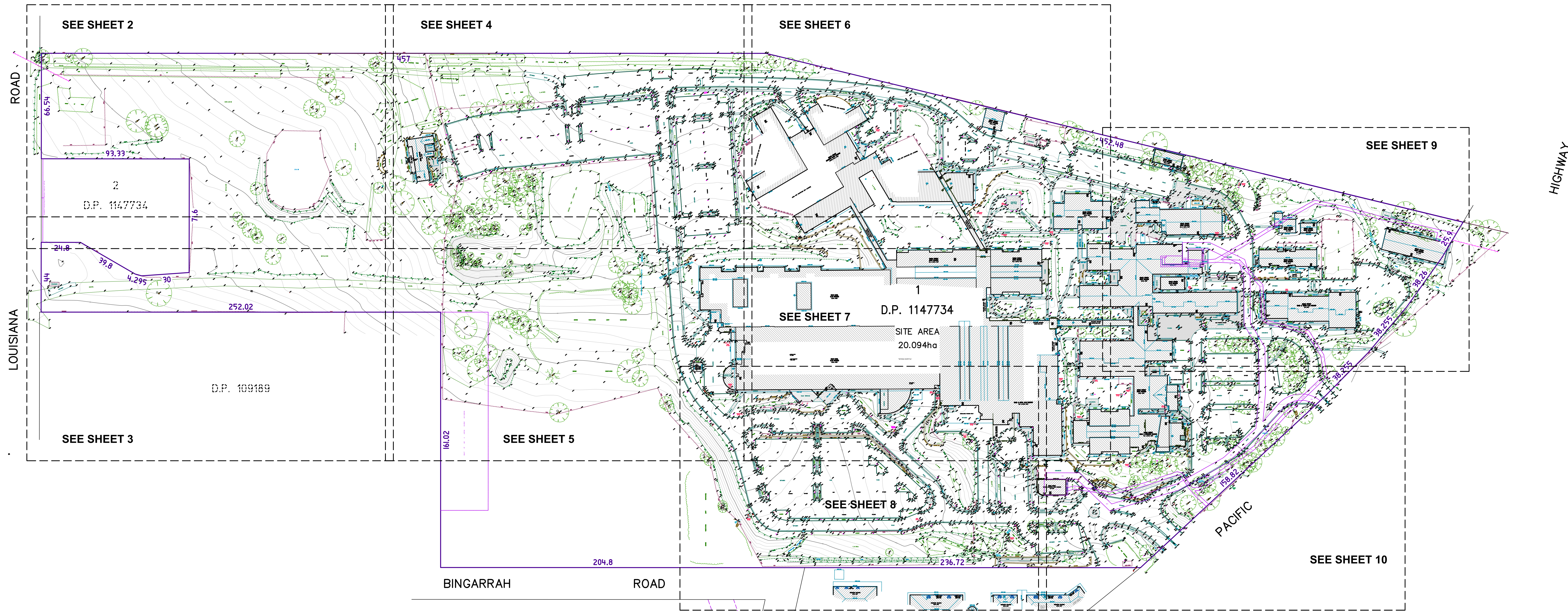
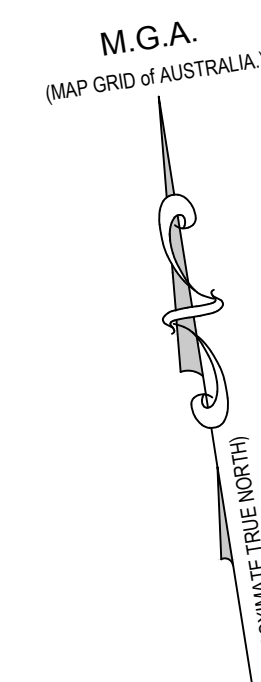
Overall Landscape Plan

- 1 The Verandahs
- 2 Central Garden
- 3 Spiritual meeting
- 4 Communal meeting
- 5 Staff retreat
- - - Existing Path
- - - Secure Line



ANNEXURE B

**Site survey prepared by Bee & Lethbridge Pty Ltd, Project Number
19152, dated 04 August 2017**



TREE TABLE				
No.	TREE TYPE	DIAMETER	HEIGHT	SPREAD
1	EUCALYPT	0.30	18	9
2	EUCALYPT	0.40	18	11
3	EUCALYPT	0.30	15	7
4	EUCALYPT	0.30	15	9
5	EUCALYPT	0.30	15	9
6	EUCALYPT	0.40	15	11
7	EUCALYPT	0.50	16	10
8	EUCALYPT	0.50	16	10
9	EUCALYPT	0.40	14	10
10	EUCALYPT	0.40	14	10
11	EUCALYPT	240.40	17	20
12	EUCALYPT	0.30	15	8
13	EUCALYPT	0.40	17	9
14	MELALEUCA	0.30	14	7
15	TREE	0.50	14	5
16	EUCALYPT	0.40	17	7
17	EUCALYPT	0.30	16	9
18	EUCALYPT	0.30	16	9
19	EUCALYPT	0.50	18	10
20	EUCALYPT	0.30	12	7
21	EUCALYPT	0.40	10	12
22	EUCALYPT	0.30	10	7
23	EUCALYPT	0.50	16	12
24	EUCALYPT	0.60	16	14
25	EUCALYPT	0.40	13	10
26	EUCALYPT	0.40	13	10
27	EUCALYPT	0.40	10	7
28	EUCALYPT	0.40	10	8
29	EUCALYPT	0.30	8	7
30	EUCALYPT	0.50	8	8
31	EUCALYPT	0.70	18	8
32	EUCALYPT	0.70	18	12
33	EUCALYPT	0.90	22	14
34	EUCALYPT	0.40	12	10
35	EUCALYPT	0.40	14	10
36	EUCALYPT	0.30	10	6
37	EUCALYPT	0.30	10	6
38	EUCALYPT	0.30	10	6
39	EUCALYPT	0.70	14	10
40	EUCALYPT	0.30	15	10
41	EUCALYPT	0.50	14	12
42	EUCALYPT	0.40	14	12
43	EUCALYPT	0.40	10	7
44	EUCALYPT	0.70	14	10
45	EUCALYPT	0.40	12	8
46	EUCALYPT	0.60	14	12
47	EUCALYPT	0.35	10	6
48	EUCALYPT	0.35	12	7
49	EUCALYPT	0.40	18	8
50	EUCALYPT	0.40	16	8

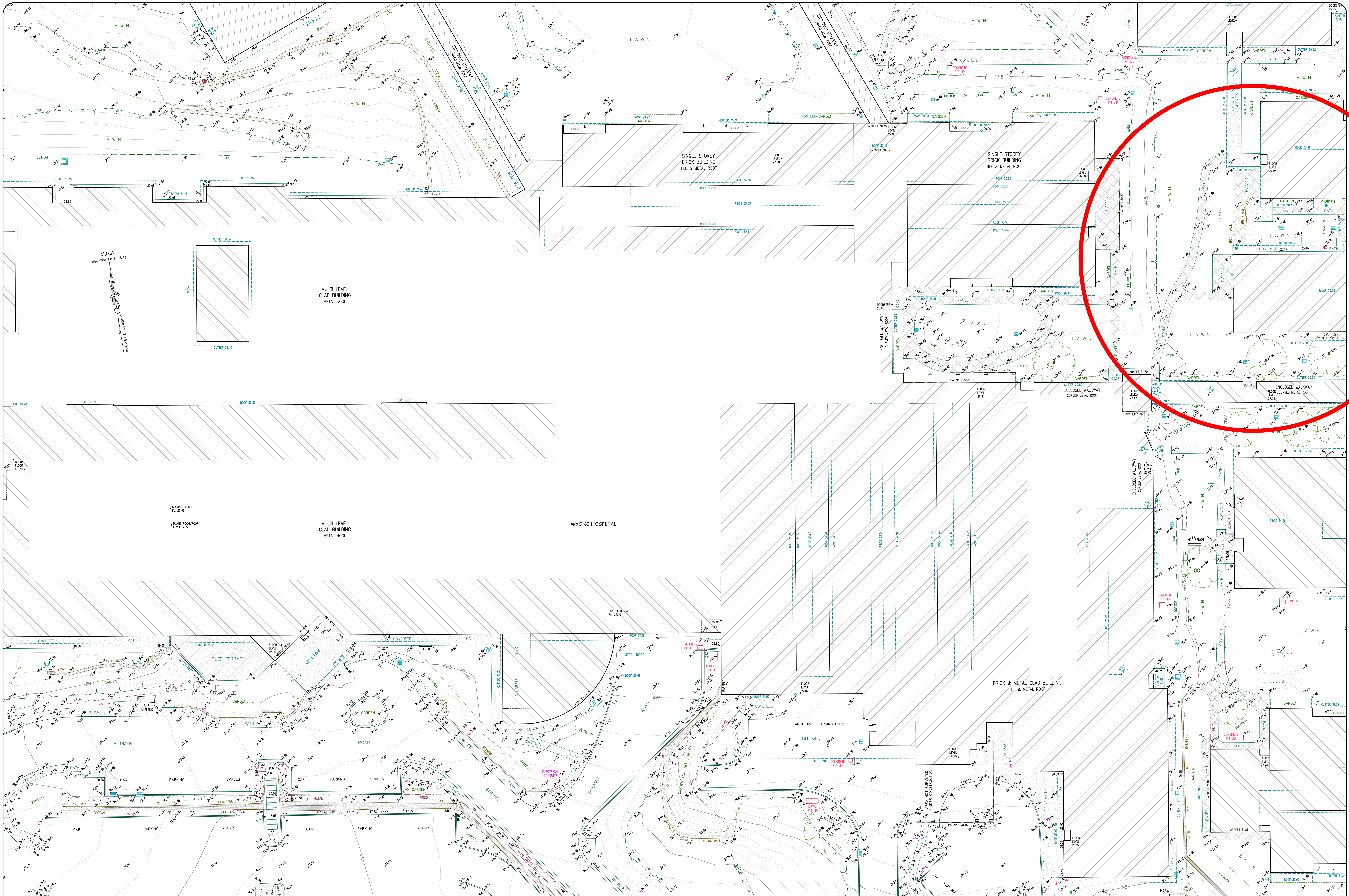
TREE TABLE				
No.	TREE TYPE	DIAMETER	HEIGHT	SPREAD
51	EUCALYPT	0.50	18	12
52	EUCALYPT	0.50	16	12
53	EUCALYPT	0.40	16	8
54	EUCALYPT	0.30	10	8
55	EUCALYPT	0.30	10	8
56	EUCALYPT	0.40	14	8
57	TREE	0.40	12	10
58	EUCALYPT	0.35	9	8
59	EUCALYPT	0.35	14	8
60	EUCALYPT	0.90	16	12
61	MELALEUCA	240.30	7	5
62	EUCALYPT	0.50	20	10
63	EUCALYPT	0.50	20	10
64	EUCALYPT	0.50	20	10
65	EUCALYPT	0.50	20	10
66	EUCALYPT	0.50	20	10
67	EUCALYPT	0.70	20	12
68	EUCALYPT	0.80	20	14
69	EUCALYPT	0.50	18	10
70	EUCALYPT	0.50	20	12
71	EUCALYPT	0.60	20	12
72	EUCALYPT	0.50	20	12
73	EUCALYPT	0.50	18	12
74	EUCALYPT	0.40	18	8
75	EUCALYPT	0.40	16	8
76	EUCALYPT	0.70	18	10
77	EUCALYPT	0.60	12	8
78	EUCALYPT	0.80	18	14
79	EUCALYPT	0.50	14	8
80	EUCALYPT	0.50	14	8
81	EUCALYPT	0.50	20	14
82	TREE	MULTI 0.40	5	6
83	TREE	MULTI 0.40	5	6
84	TREE	MULTI 0.40	5	6
85	TREE	0.30	5	7
86	EUCALYPT	0.40	12	6
87	CASUARINA	0.40	12	9
88	CASUARINA	0.40	12	9
89	EUCALYPT	0.80	18	12
90	EUCALYPT	0.80	12	5
91	EUCALYPT	0.80	20	14
92	EUCALYPT	0.80	20	14
93	EUCALYPT	0.70	20	14
94	EUCALYPT	MULTI 1.30	20	10
95	EUCALYPT	MULTI 1.30	20	12
96	EUCALYPT	0.60	18	10
97	EUCALYPT	0.60	18	10
98	EUCALYPT	0.60	18	10
99	EUCALYPT	0.50	20	10
100	TREE	0.60	20	10

TREE TABLE				
No.	TREE TYPE	DIAMETER	HEIGHT	SPREAD
101	EUCALYPT	0.80	16	10
102	EUCALYPT	0.80	14	10
103	EUCALYPT	0.40	14	7
104	EUCALYPT	0.40	16	8
105	EUCALYPT	0.50	12	6
106	EUCALYPT	0.80	22	16
107	EUCALYPT	0.50	15	10
108	EUCALYPT	0.40	12	7
109	EUCALYPT	0.40	12	7
110	EUCALYPT	0.55	15	9
111	EUCALYPT	0.50	10	8
112	EUCALYPT	0.50	10	8
113	EUCALYPT	0.65	12	8
114	EUCALYPT	240.40	10	10
115	EUCALYPT	0.60	14	10
116	EUCALYPT	0.60	20	10
117	EUCALYPT	0.40	12	10
118	EUCALYPT	0.40	12	8
119	EUCALYPT	0.40	12	5
120	EUCALYPT	0.40	10	8
121	EUCALYPT	0.70	20	12
122	EUCALYPT	0.50	20	12
123	EUCALYPT	0.50	9	10
124	EUCALYPT	0.80	15	15
125	TREE	0.40	14	18
126	EUCALYPT	0.70	18	9
127	EUCALYPT	0.50	12	8
128	EUCALYPT	0.50	12	8
129	EUCALYPT	0.50	12	8
130	EUCALYPT	0.40	12	8
131	EUCALYPT	0.50	12	12
132	EUCALYPT	0.60	14	10
133	EUCALYPT	0.70	14	10
134	EUCALYPT	0.40	10	8
135	EUCALYPT	0.50	14	10
136	EUCALYPT	0.50	14	7
137	EUCALYPT	0.80	14	10
138	EUCALYPT	0.50	12	10
139	EUCALYPT	0.80	18	10
140	EUCALYPT	0.80	16	9
141	EUCALYPT	0.80	16	12
142	EUCALYPT	0.80	16	12
143	EUCALYPT	0.50	16	8
144	EUCALYPT	1.20	18	14
145	EUCALYPT	0.70	18	14
146	EUCALYPT	0.40	18	7
147	EUCALYPT	0.60	16	8
148	EUCALYPT	0.60	16	8
149	EUCALYPT	0.50	12	8
150	EUCALYPT	0.80	20	12

TREE TABLE				
No.	TREE TYPE	DIAMETER	HEIGHT	SPREAD
151	EUCALYPT	0.80	20	10
152	EUCALYPT	0.40	17	8
153	EUCALYPT	1.10	20	12
154	EUCALYPT	0.90	20	16
155	EUCALYPT	0.70	16	7
156	EUCALYPT	0.40	16	7
157	EUCALYPT	0.40	12	7
158	EUCALYPT	0.40	12	7
159	EUCALYPT	0.40	12	7
160	EUCALYPT	0.50	10	7
161	CASUARINA	0.40	10	7
162	CASUARINA	0.50	18	8
163	CASUARINA	0.50	18	8
164	EUCALYPT	240.55	16	14
165	EUCALYPT	0.70	18	10
166	EUCALYPT	0.50	14	9
167	EUCALYPT	MULTI 0.80	16	14
168	EUCALYPT	0.70	14	11
169	EUCALYPT	0.70	24	15
170	EUCALYPT	0.40	14	10
171	EUCALYPT	0.60	20	10
172	EUCALYPT	0.60	17	10
173	EUCALYPT	0.50	16	8
174	EUCALYPT	0.60	18	10
175	EUCALYPT	0.60	18	10
176	EUCALYPT	0.70	17	5
177	EUCALYPT	0.60	21	10
178	EUCALYPT	0.40	20	8
179	EUCALYPT	0.50	14	10
180	EUCALYPT	0.50	16	10
181	EUCALYPT	0.40	16	10
182	EUCALYPT	0.50	16	10
183	EUCALYPT	0.40	14	10
184	EUCALYPT	0.50	14	10
185	EUCALYPT	0.40	12	9
186	EUCALYPT	0.40	12	9
187	CASUARINA	0.40	12	6
188	TREE	0.40 MULTI	10	4
189	TREE	0.60 MULTI	8	8
190	EUCALYPT	0.80	12	10
191	CASUARINA	0.40	12	7
192	EUCALYPT	0.60	20	12
193	EUCALYPT	0.60	18	12
194	TREE	0.60 MULTI	8	6
195	TREE	0.20	8	6
196	TREE	0.20	8	7
197	TREE	0.40	18	10
198	TREE	0.70	20	18
199	TREE	0.40	12	8
200	TREE	0.30	10	8

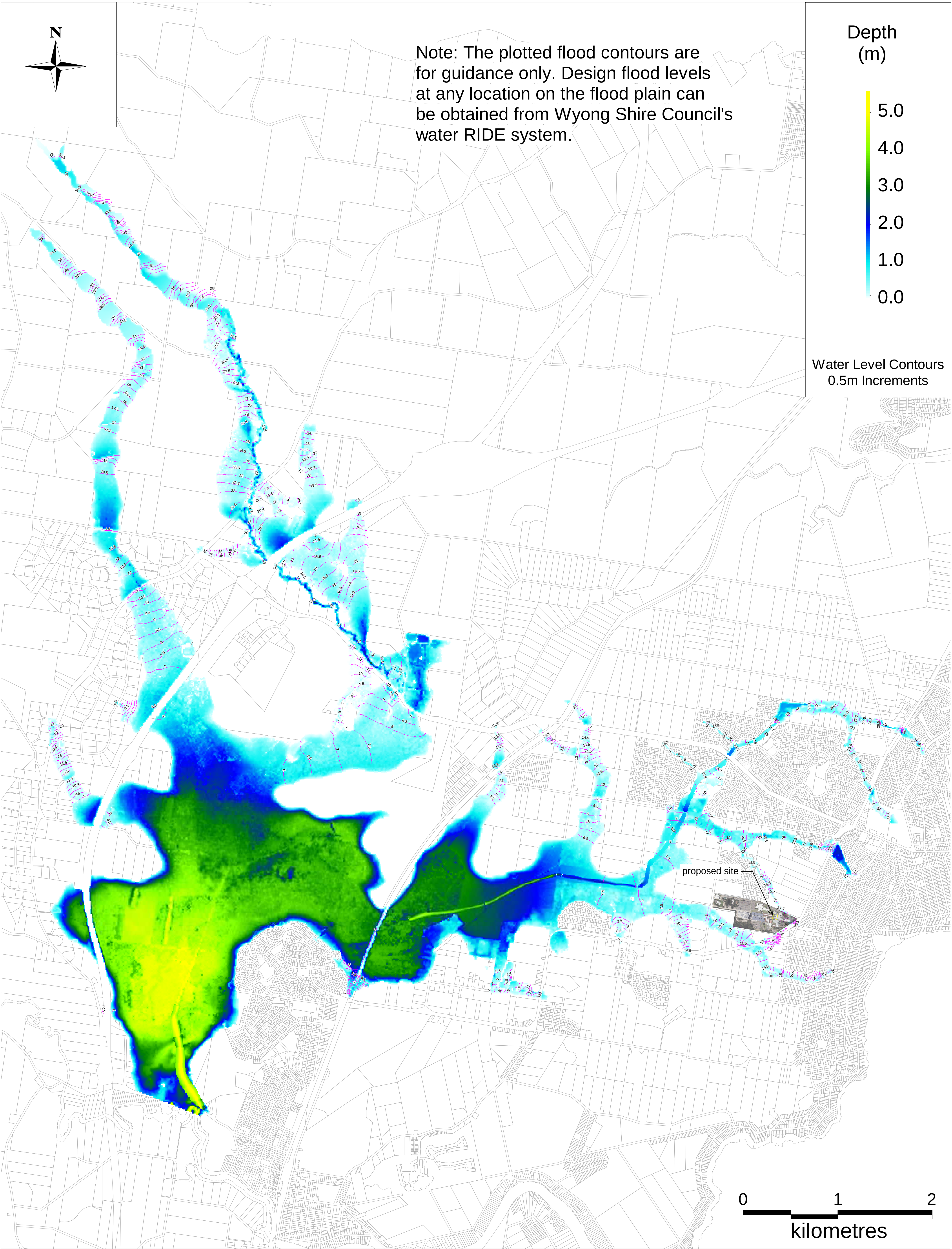
TREE TABLE				
No.	TREE TYPE	DIAMETER	HEIGHT	SPREAD
201	TREE	0.60	20	16
202	TREE	0.70	20	18
203	TREE	0.40	10	8
204	TREE	0.30	12	9
205	TREE	0.60	20	13
206	TREE	0.30	8	5
207	TREE	0.30	8	5
208	MELALEUCA	0.40	12	5
209	MELALEUCA	0.40	12	5
210	CASUARINA	0.40	16	7
211	CASUARINA	0.30	16	7
212	EUCALYPT	0.30	12	7
213	CASUARINA	0.40	16	8
214	TREE	0.60 MULTI	9	9
215	EUCALYPT	0.70	20	12
216	TREE	0.30	8	6
217	EUCALYPT	0.30	12	8
218	TREE	0.50	9	6
219	EUCALYPT	0.20	8	6
220	EUCALYPT	0.30	10	6
221	EUCALYPT	0.30	10	6
222	EUCALYPT	0.30	10	6
223	EUCALYPT	0.20	10	3
224	EUCALYPT	0.20	10	3
225	DEAD	0.40	8	4
226	CASUARINA	0.30	11	5
227	MELALEUCA	240.30	12	5
228	MELALEUCA	240.30	7	6
229	MELALEUCA	240.30	12	6
230	TREE	0.50	12	10
231	CASUARINA	0.20	12	3
232	CASUARINA	0.20	12	3
233	CASUARINA	0.20	12	3
234	CASUARINA	0.20	12	3
235	CASUARINA	0.20	12	3
236	CASUARINA	0.30	12	4
237	CASUARINA	0.30	12	4
238	CASUARINA	0.30	12	7
239	TREE	0.40	7	6
240	CASUARINA	0.20	12	4
241	CASUARINA	0.30	14	4
242	EUCALYPT	0.30	8	5
243	EUCALYPT	0.30	11	5
244	EUCALYPT	0.30	14	5
245	CASUARINA	0.30	14	4
246	CASUARINA	0.30	14	4
247	EUCALYPT	0.90	14	12
248	DEAD	0.80	14	10
249	EUCALYPT	0.50	20	14
250	EUCALYPT	0.50	16	10
251	EUCALYPT	0.60	10	8
252	EUCALYPT	0.50	15	8
253	EUCALYPT	0.40	14	7
254	CASUARINA	0.30	16	6
255	CASUARINA	0.50 MULTI	16	6
256	TREE	0.30	10	6
257	TREE	0.30	10	6

TREE TABLE				
No.	TREE TYPE	DIAMETER	HEIGHT	SPREAD
251	EUCALYPT	0.60	10	8
252	EUCALYPT	0.50	15	8
253	EUCALYPT	0.40	14	7
254	CASUARINA	0.30	16	6
255	CASUARINA	0.50 MULTI	16	6
256	TREE	0.30	10	6
257	TREE	0.30	10	6



ANNEXURE C

**Figure E2: '100yr ARI Flood Depth & Flood Level' by Cardno Ltd,
'Porters Creek Flood Study' dated July 2009**



ANNEXURE D

Figure E6: 'PMF Flood Depth & Flood Level' by Cardno Ltd, 'Porters Creek Flood Study' dated July 2009

