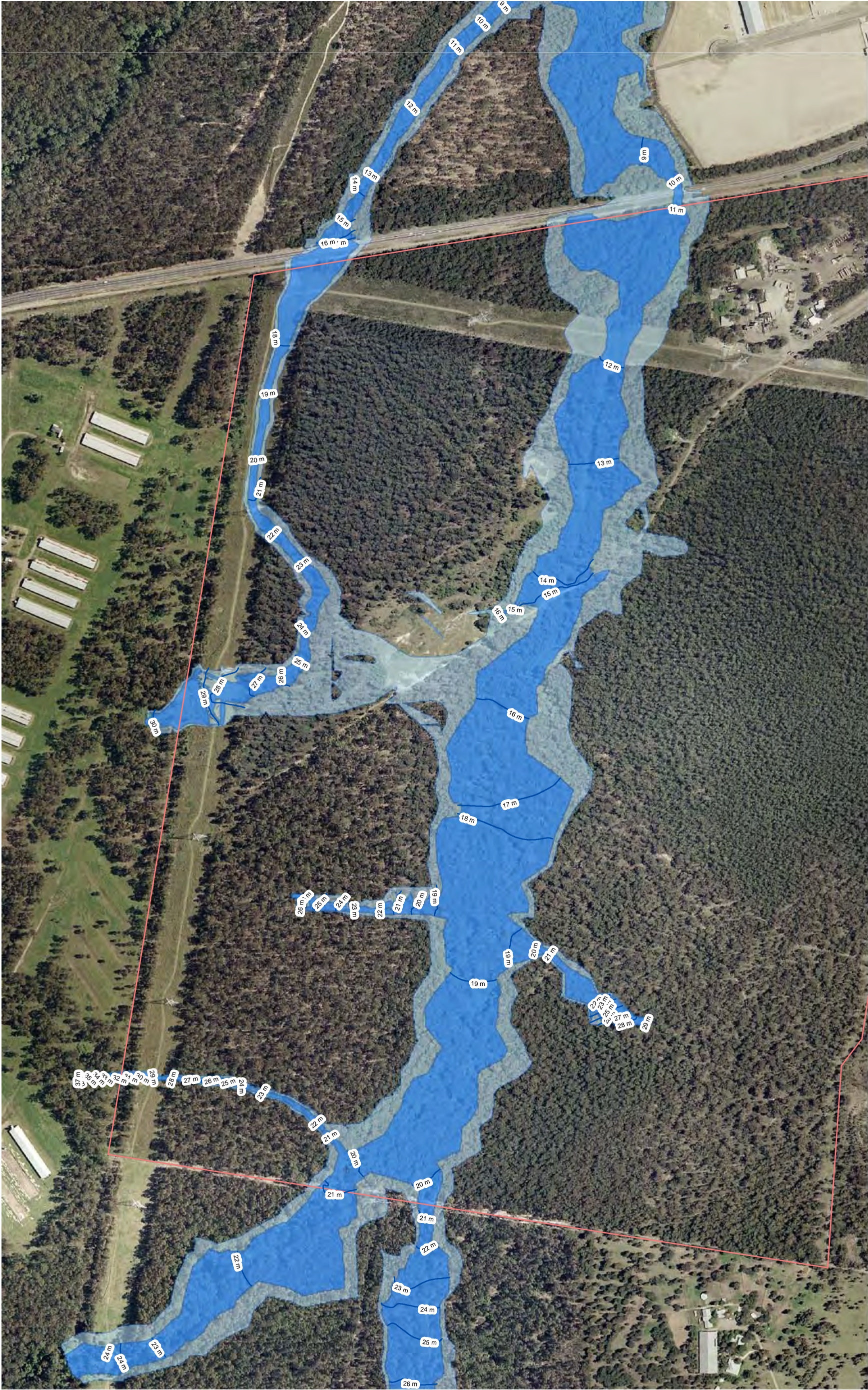
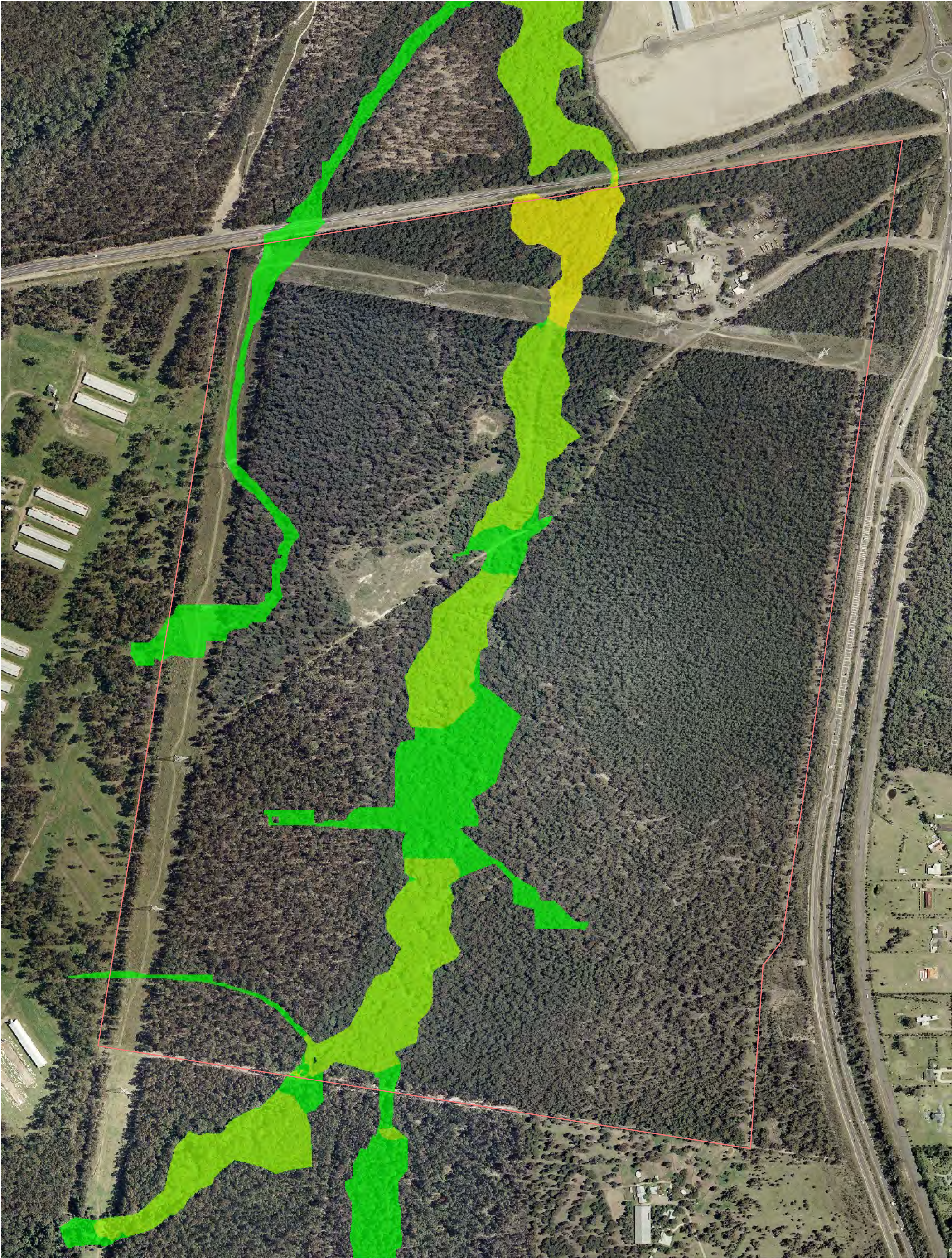


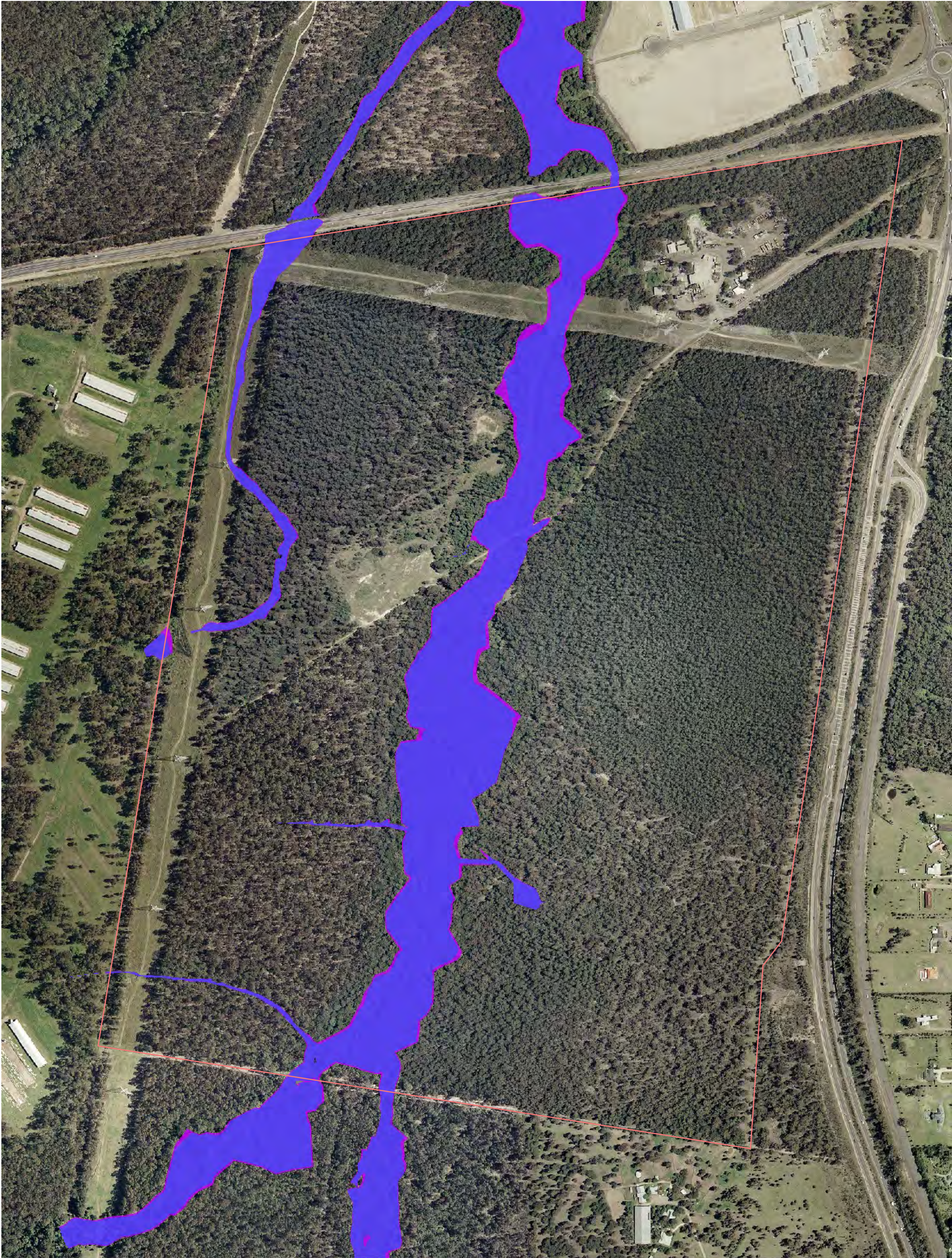


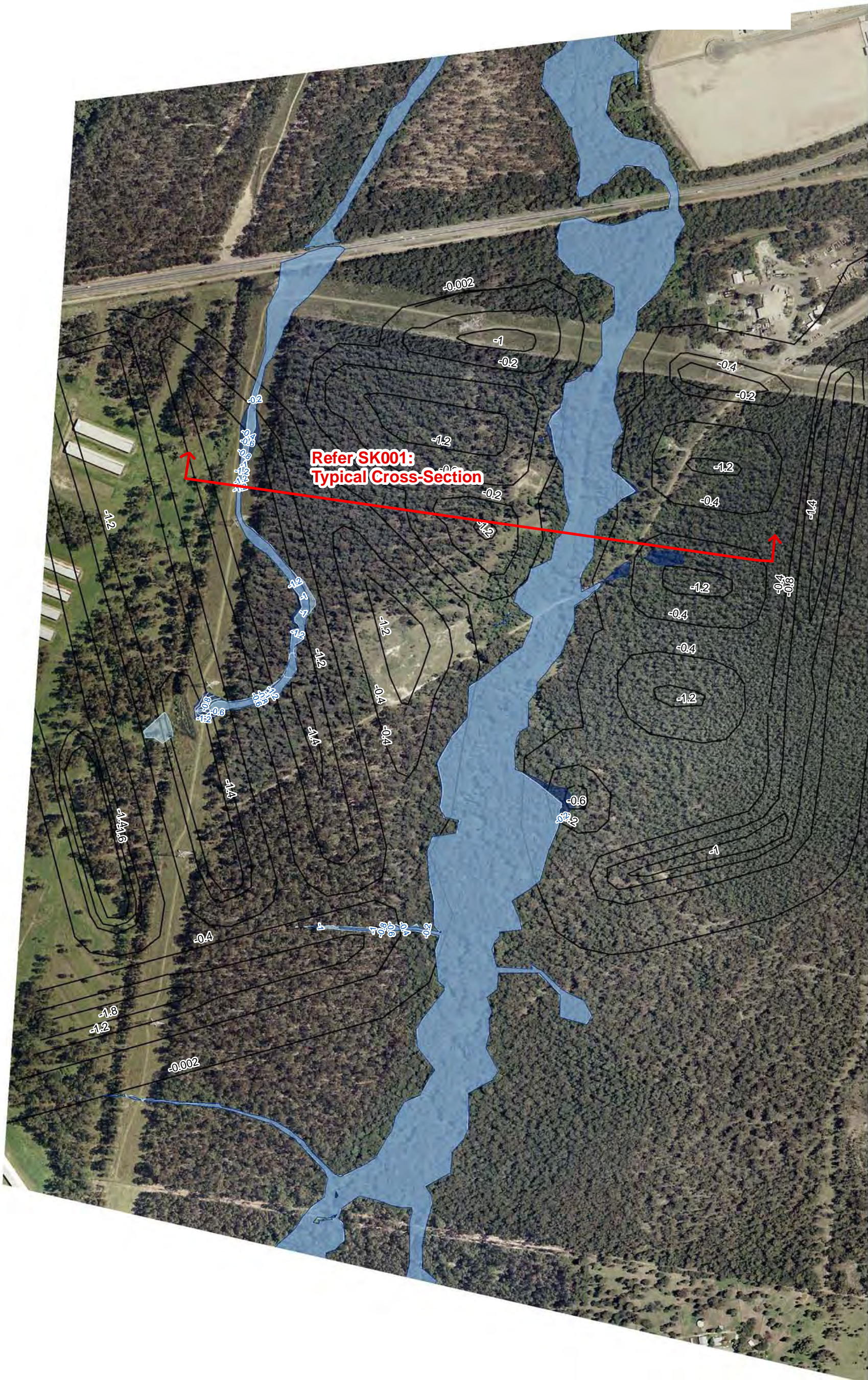
Appendix B

Flood Maps

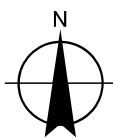








1:6,000
0 0.025 0.05 0.1 0.15 0.2 0.25
Kilometers



Post-Subsidence minus Pre-Subsidence Flood Level Contours (m)
100yr ARI Flood Extents Pre-Subsidence
100yr ARI Flood Extents Post-Subsidence
Mining Subsidence Contours (m)

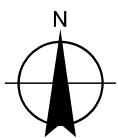
Coal and Allied
Report for Lower Hunter Lands
Project - Phase 2
Subsidence Flooding Assessment
100-year ARI Event

Job Number	21-16058
Revision	A
Date	2nd Oct 2009

Figure 4



1:6,000
0 0.025 0.05 0.1 0.15 0.2 0.25
Kilometers



Post-Subsidence minus Pre-Subsidence Flood Level Contours (m)
PMF Flood Extents Pre-Subsidence
PMF Flood Extents Post-Subsidence
Mining Subsidence Contours (m)

Coal and Allied
Report for Lower Hunter Lands
Project - Phase 2
**Subsidence Flooding Assessment
PMF**

Job Number 21-16058
Revision A
Date 2nd Oct 2009

Figure 5

G:\21\16058\CADD\GIS\ArcMap\Maps\2009.09.17 Black Hill Flooding Subsidence.mxd

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Data source: Data Custodian, Data Set Name/Title, Version/Date. Created by: C Pappin, mlsquier

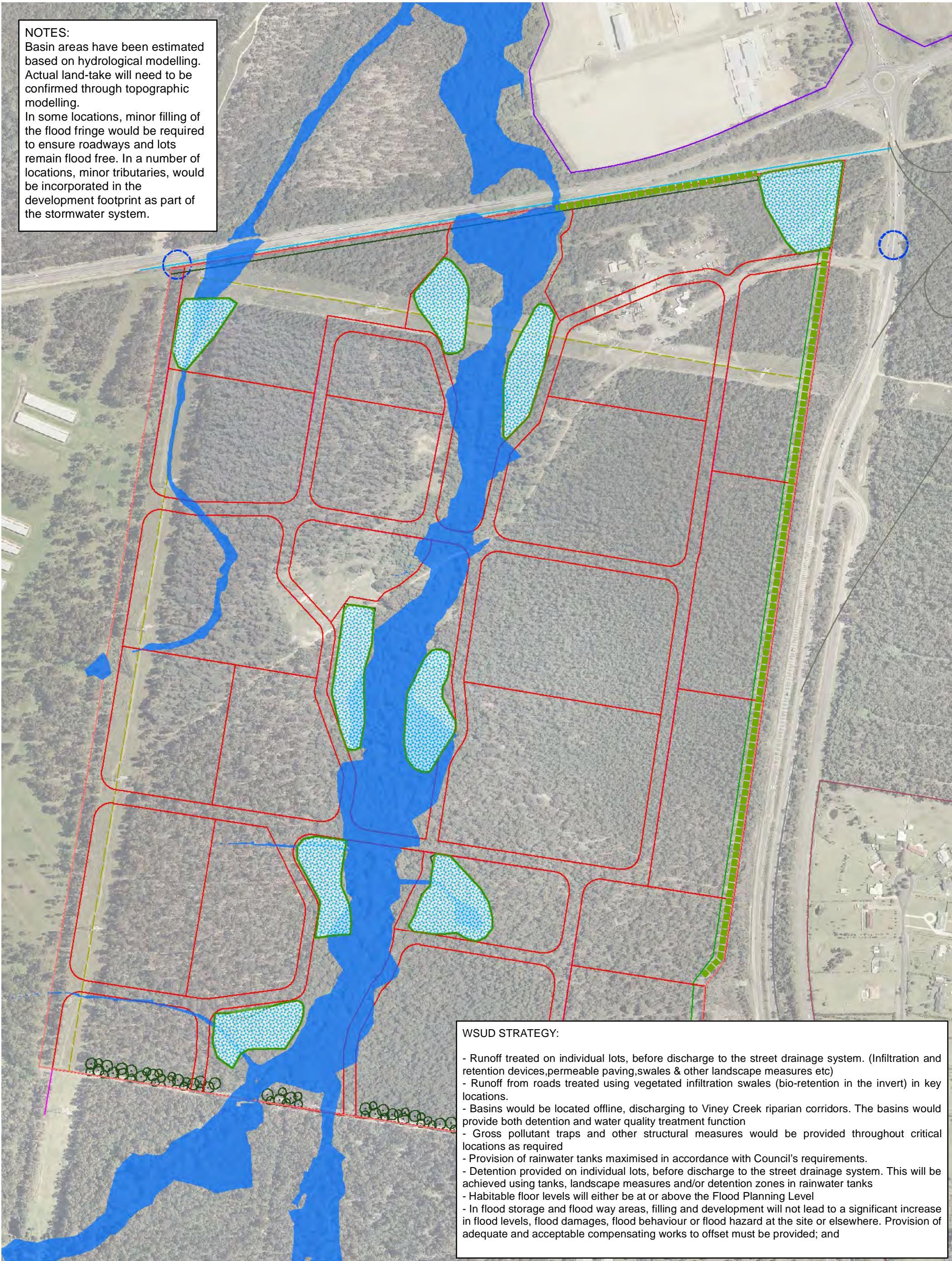
10 Bond Street Sydney NSW 2000 T 61 2 9238 7100 F 61 2 9238 7199 E sydmall@ghd.com.au W www.ghd.com.au



Appendix C

Water Sensitive Urban Design Strategy

NOTES:
Basin areas have been estimated based on hydrological modelling. Actual land-take will need to be confirmed through topographic modelling.
In some locations, minor filling of the flood fringe would be required to ensure roadways and lots remain flood free. In a number of locations, minor tributaries, would be incorporated in the development footprint as part of the stormwater system.



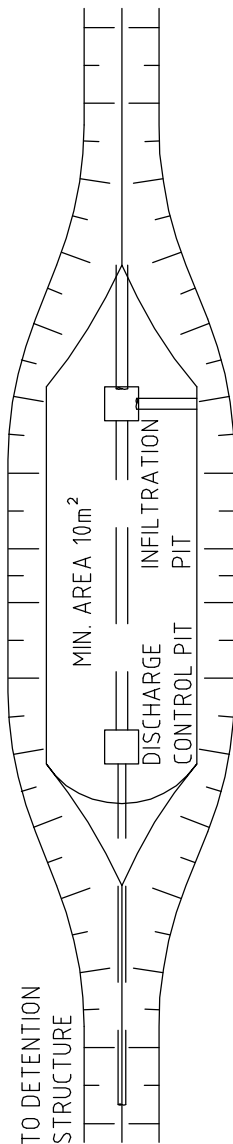
WSUD STRATEGY:

- Runoff treated on individual lots, before discharge to the street drainage system. (Infiltration and retention devices, permeable paving, swales & other landscape measures etc)
- Runoff from roads treated using vegetated infiltration swales (bio-retention in the invert) in key locations.
- Basins would be located offline, discharging to Viney Creek riparian corridors. The basins would provide both detention and water quality treatment function
- Gross pollutant traps and other structural measures would be provided throughout critical locations as required
- Provision of rainwater tanks maximised in accordance with Council's requirements.
- Detention provided on individual lots, before discharge to the street drainage system. This will be achieved using tanks, landscape measures and/or detention zones in rainwater tanks
- Habitable floor levels will either be at or above the Flood Planning Level
- In flood storage and flood way areas, filling and development will not lead to a significant increase in flood levels, flood damages, flood behaviour or flood hazard at the site or elsewhere. Provision of adequate and acceptable compensating works to offset must be provided; and

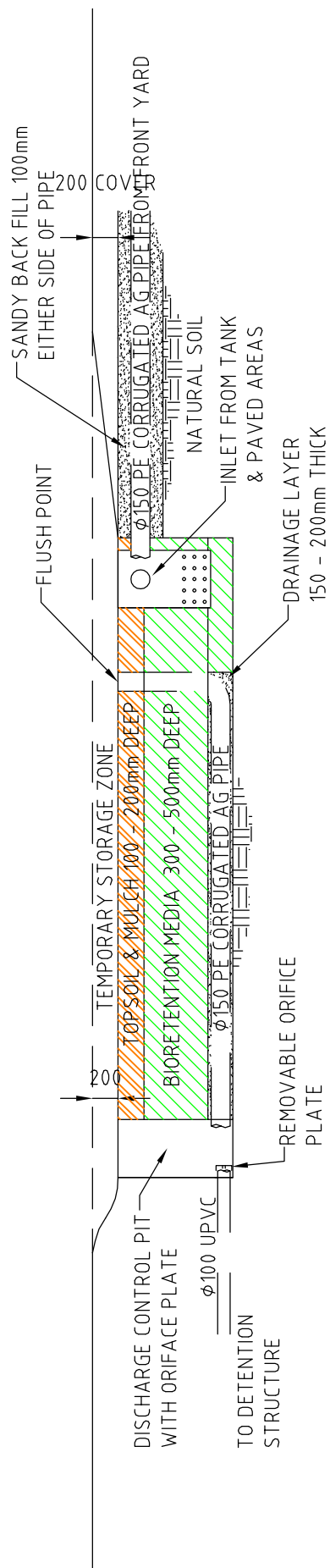


Appendix D

Typical on-lot Stormwater Management Configuration



SCALE 1:100



SCALE 1:200



CLIENTS | PEOPLE | PERFORMANCE

COAL & ALLIED
SOUTHERN ESTATES CATHERINE HILL
BIORETENTION AREA DETAIL

job no. 21-16058
rev no. A

scale NTS for A4 date OCTOBER 2007

Figure 1



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133 Castlereagh St Sydney NSW 2000

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T: 2 9239 7100 F: 2 9239 7199 E: sydmail@ghd.com.au

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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Number of DRAFT Versions	R Berg	A number of internal reviews have taken place, on previous versions including a Client's review. Minor changes in all cases		R Berg		Jan, Feb, May Sep 2010
Review of Adequacy	R Berg	Client and Scott Fraser		R Berg		2010.10.23
Review of Adequacy	R Berg	Client and Scott Fraser	minor	R Berg		2011.01.18