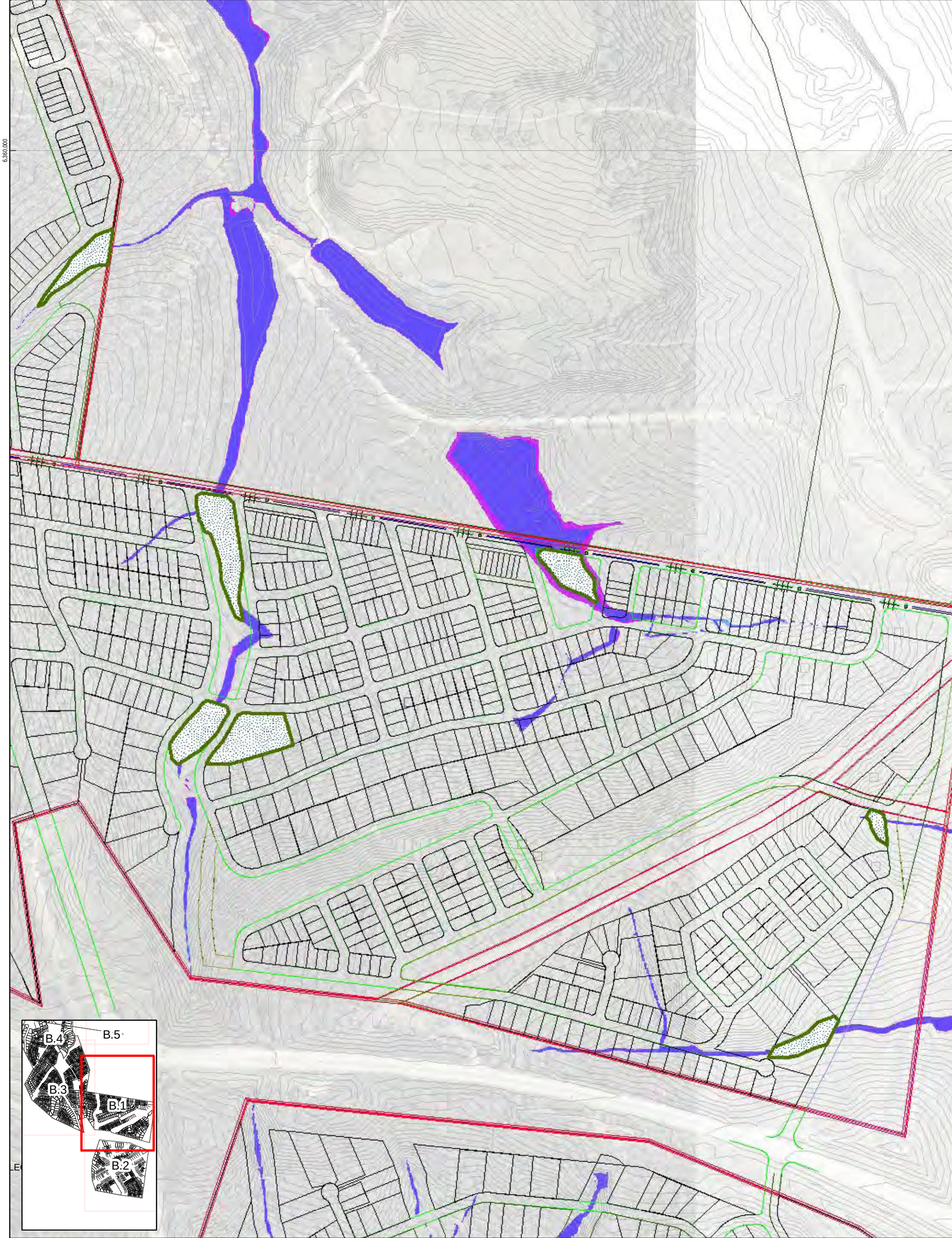




Appendix C

Climate Change Flood Maps



1:5,000
012.5 50 75 100 125
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

O

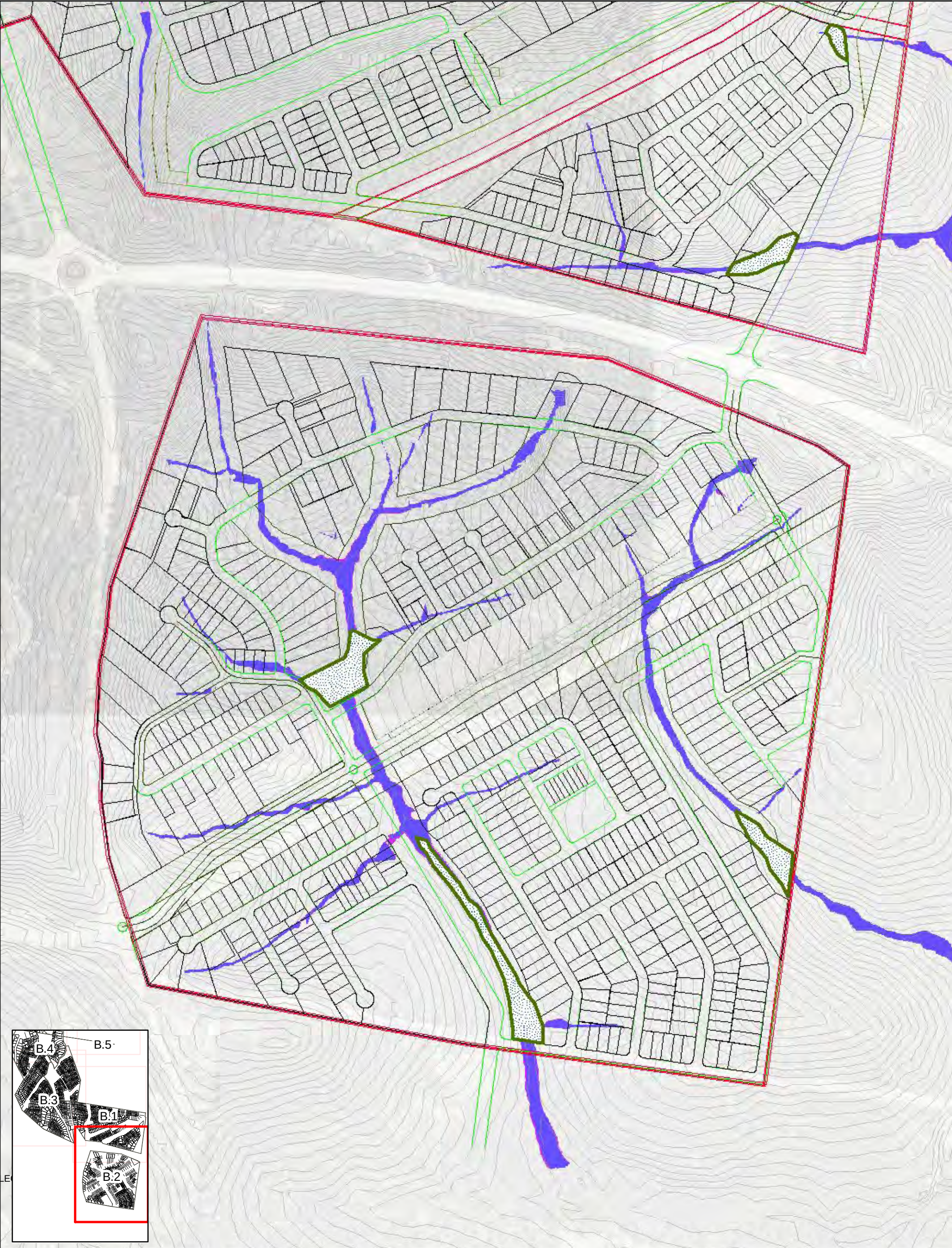


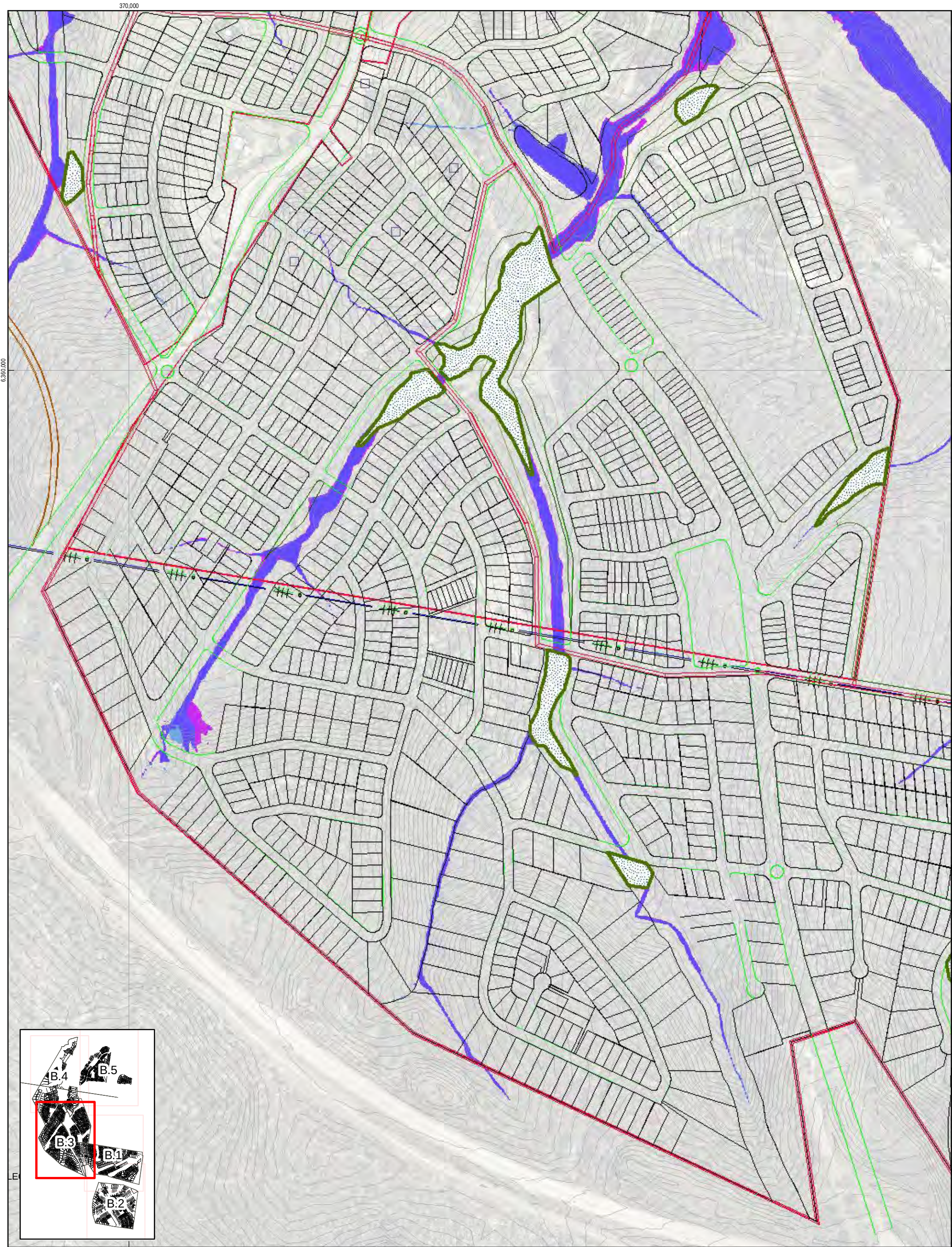
100-yr ARI Flood Extents (Existing Climate)
100yr ARI Flood Extents 2100 climate

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Figure C.11





1:5,000
012.5 50 75 100 125
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56



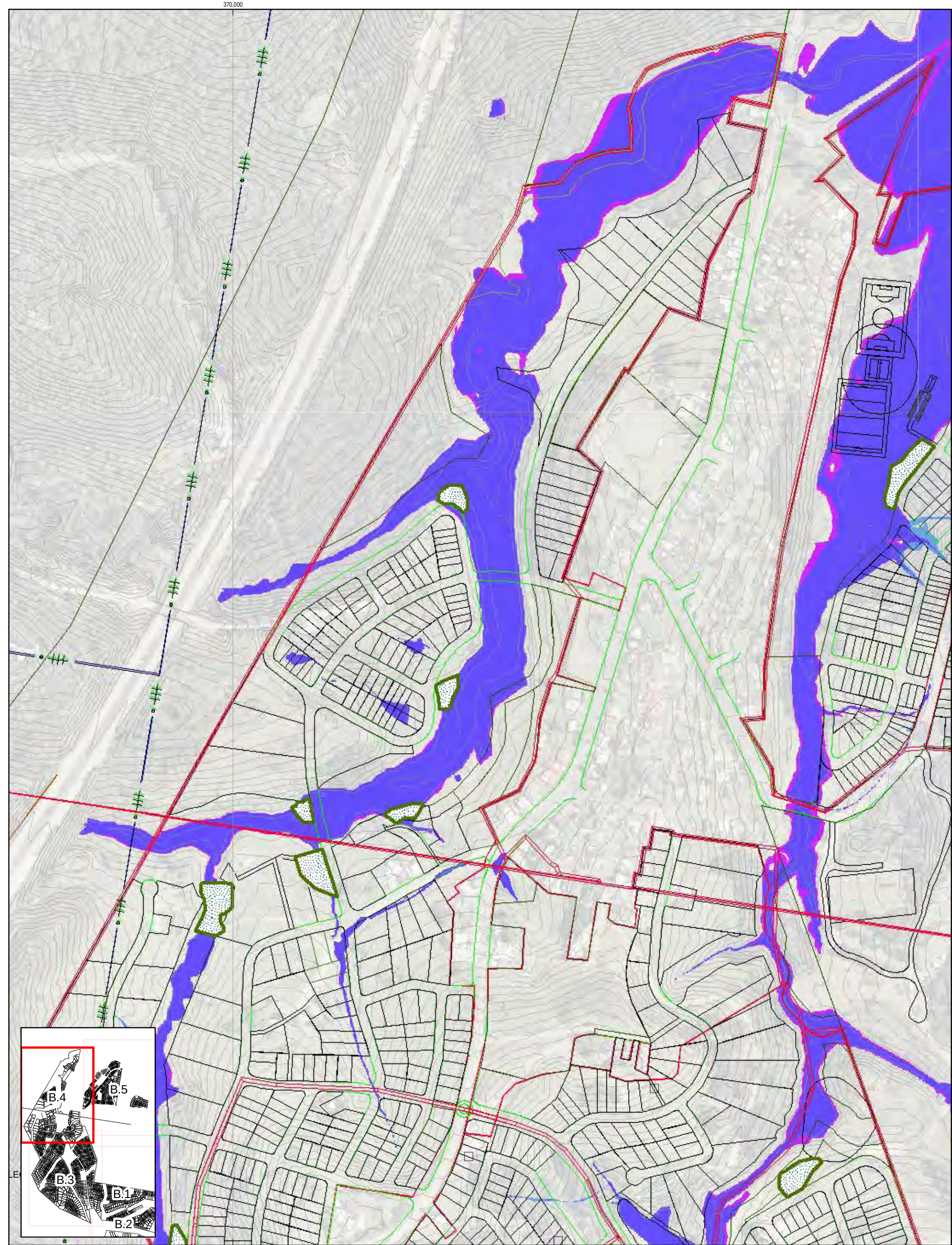
100-yr ARI Flood Extents (Existing Climate)

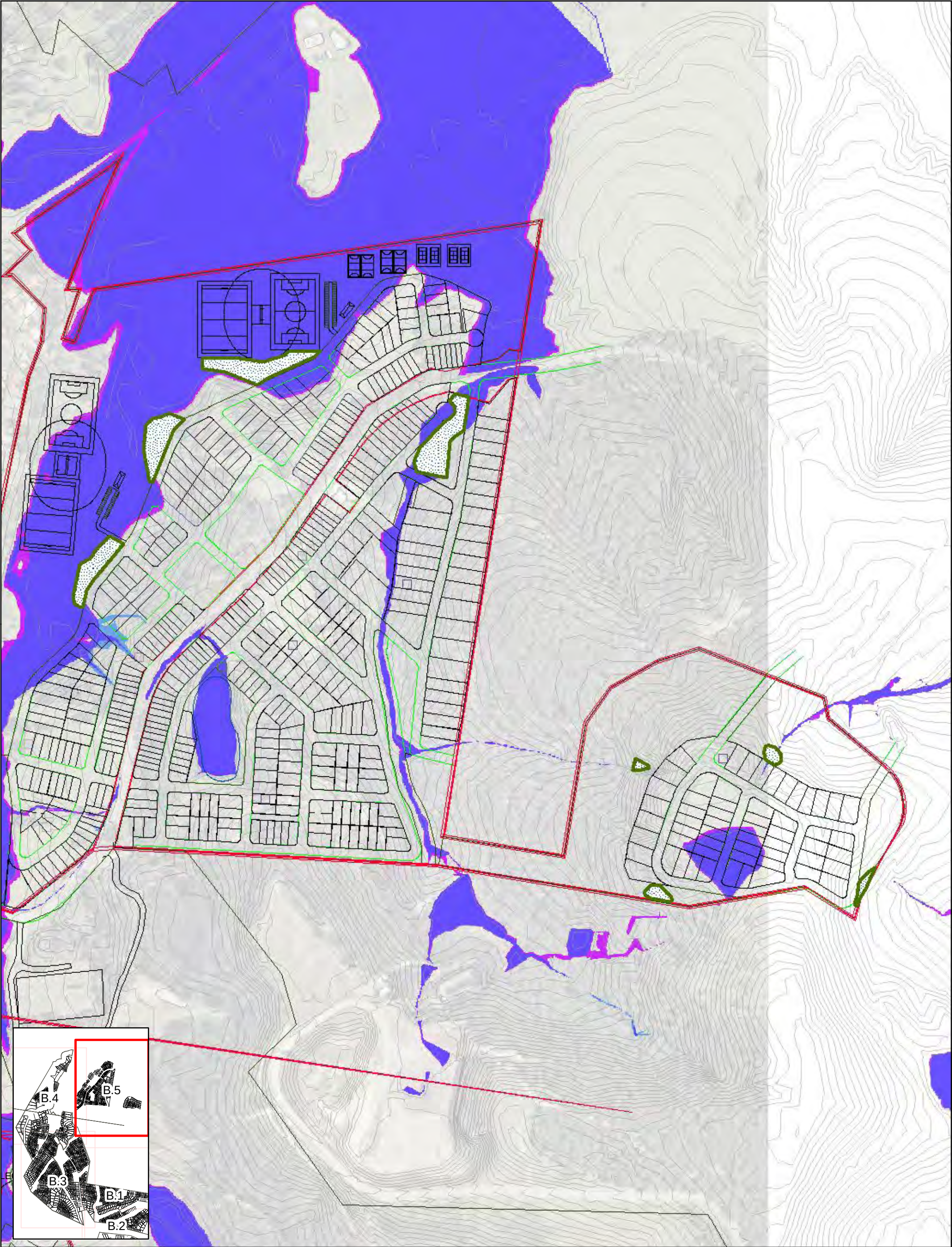
100yr ARI Flood Extents 2100 climate

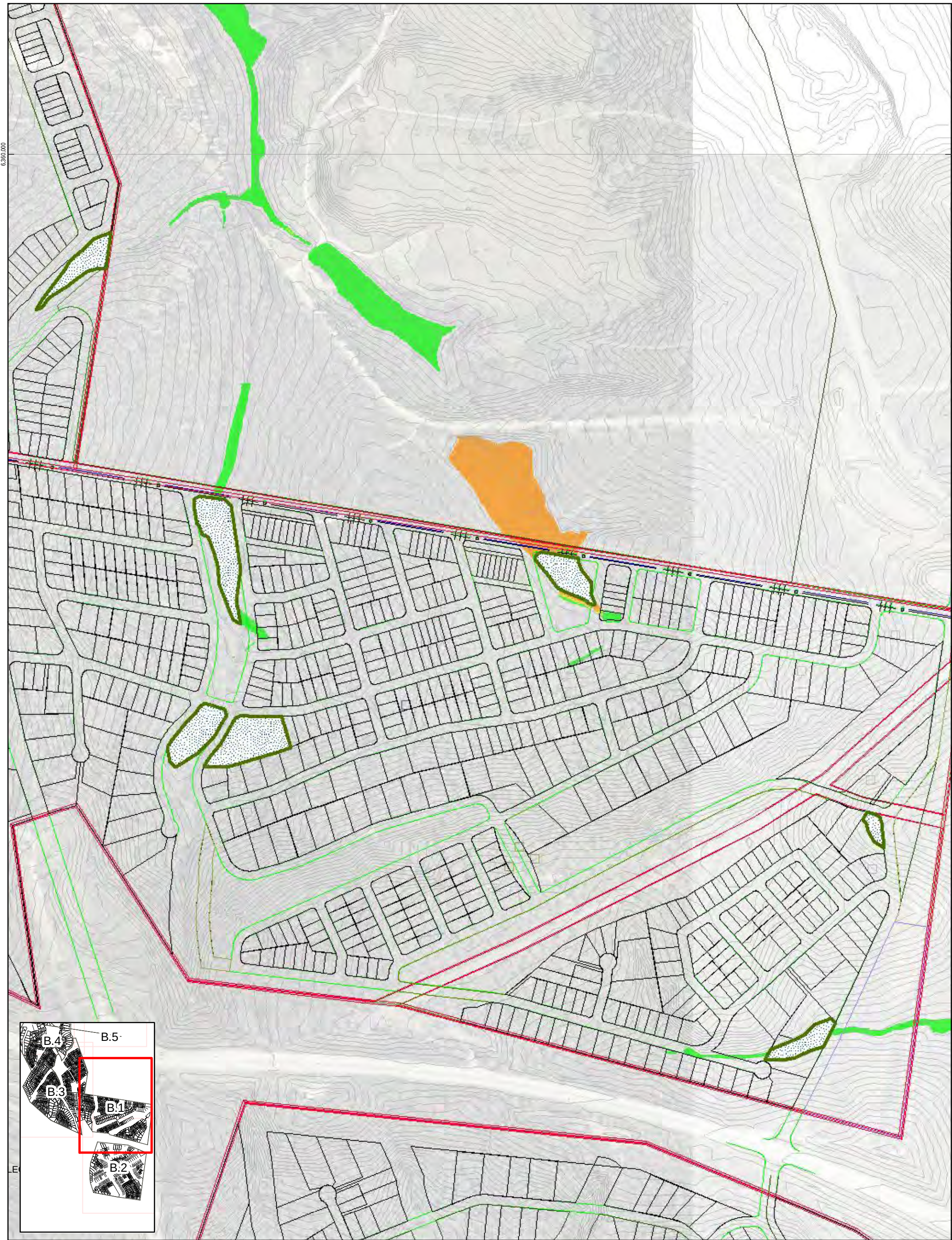

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Figure C.13







1:5,000
012.5 50 75 100 125
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

Climate Change Increase (m) 30% Increased Rainfall Intensity

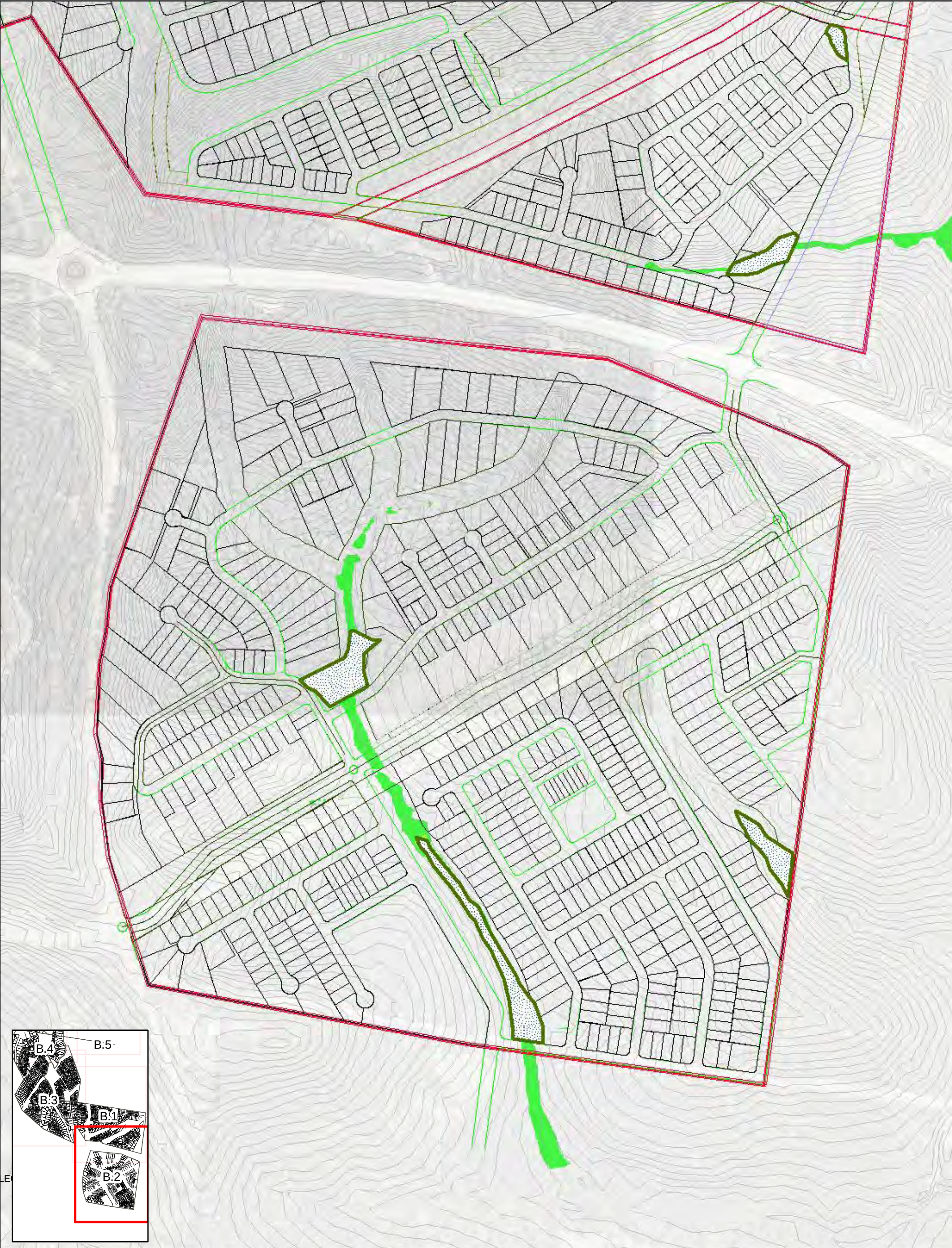
0.05 - 0.25
0.25 - 0.5
0.5 - 0.75
0.75 - 1.5
1.5 - 3

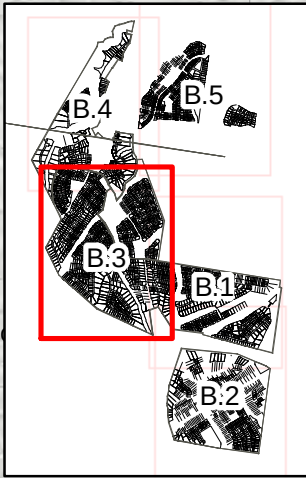
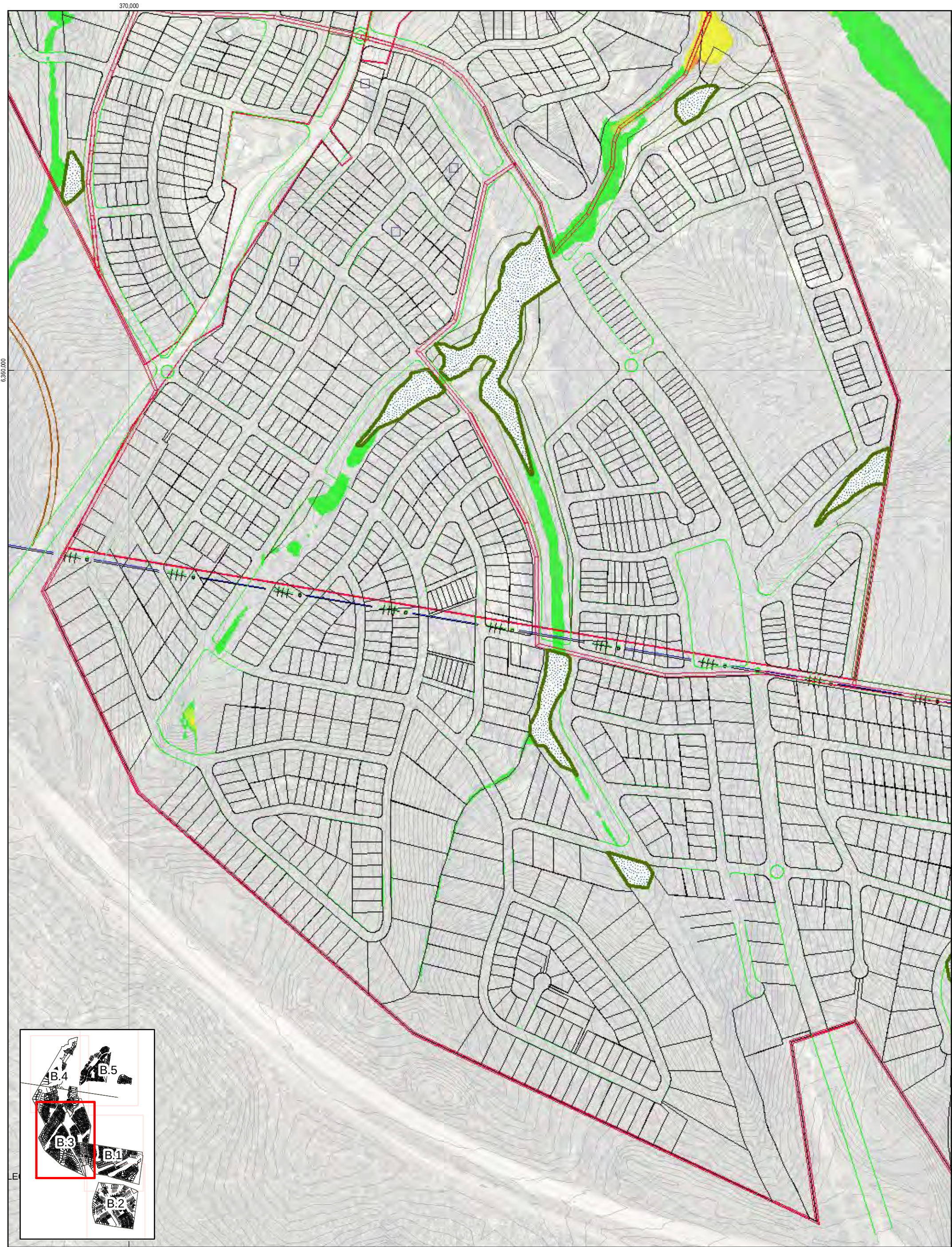
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Flooding Impact

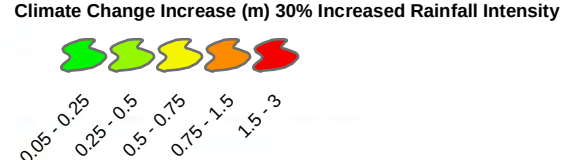
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Figure C.21





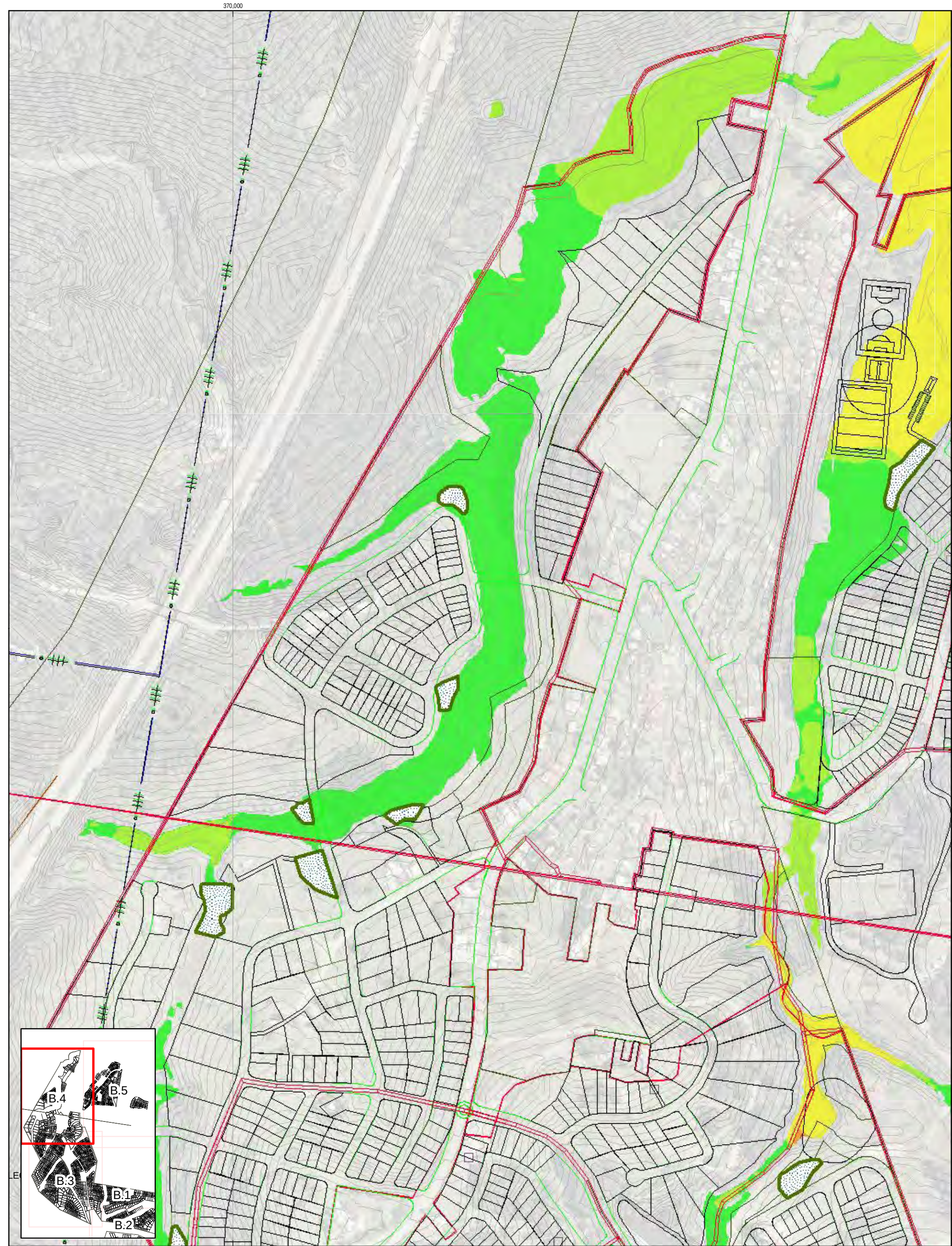
1:5,000
012.5 50 75 100 125
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56



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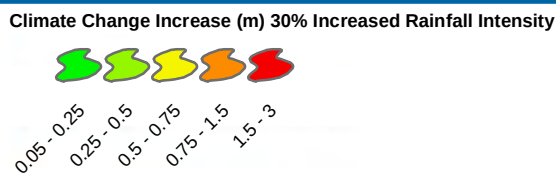
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Figure C.23



1:5,000
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Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

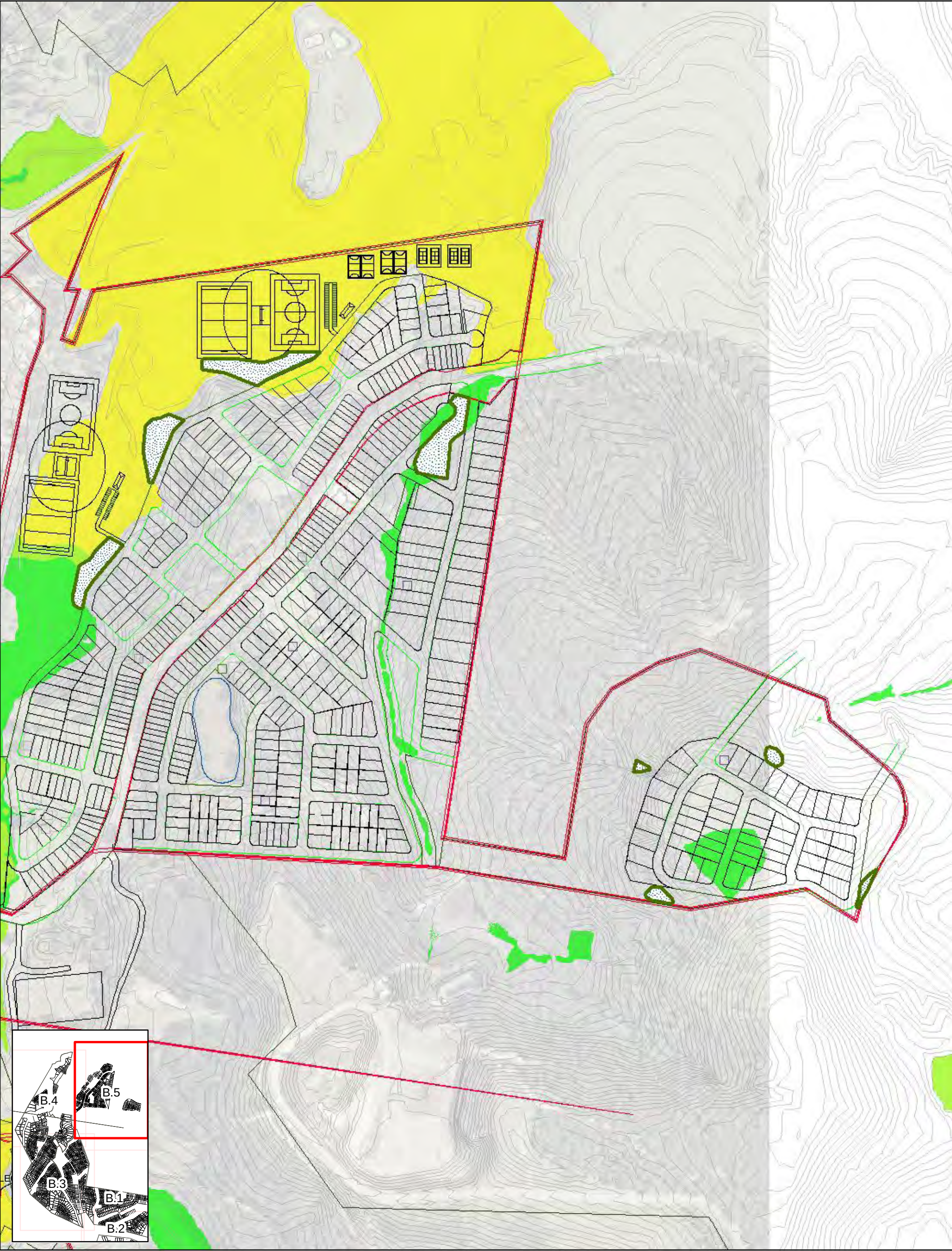
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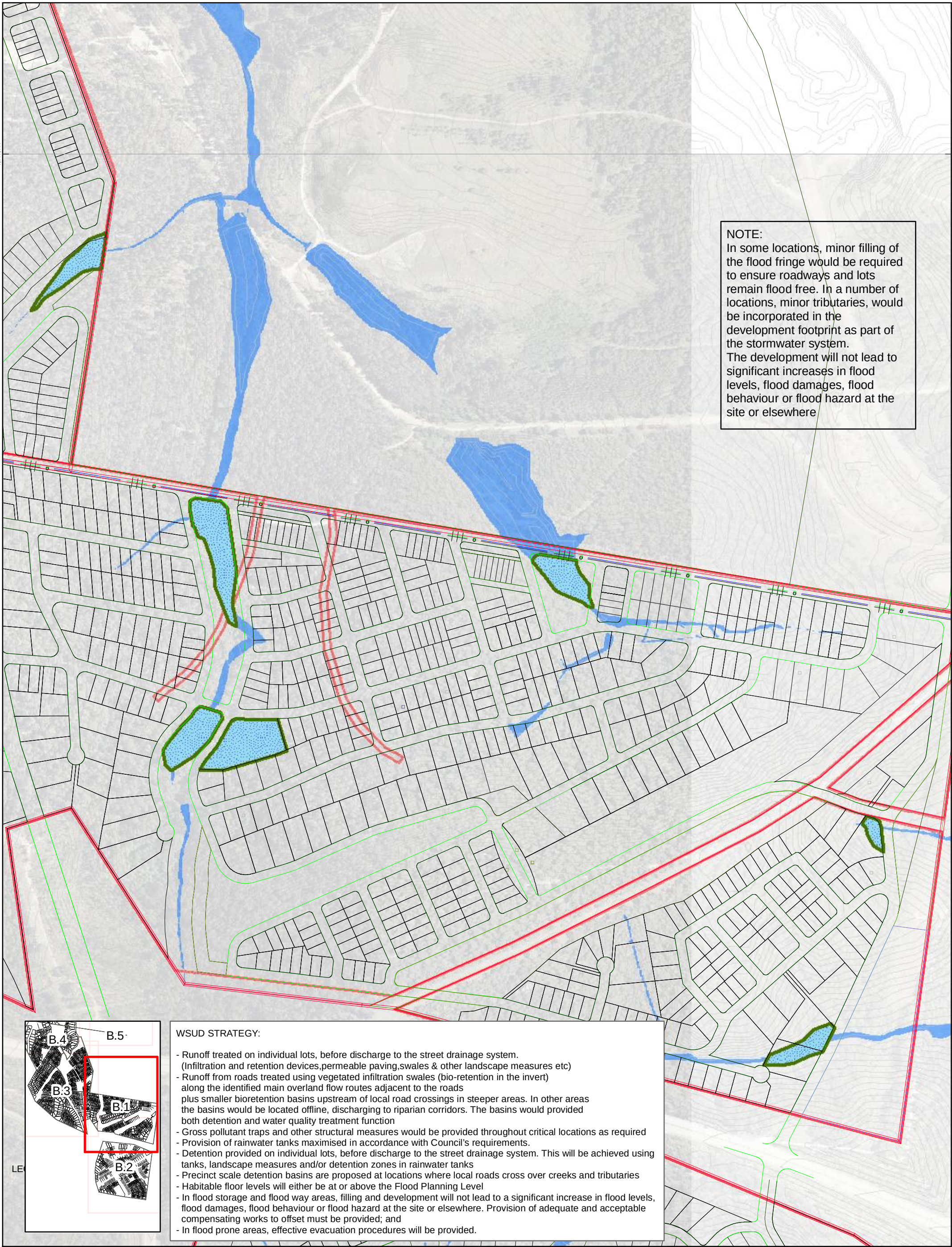
Figure C.24



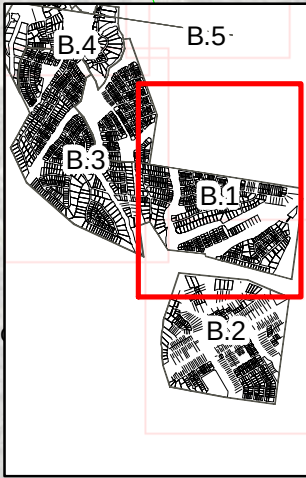


Appendix D

Water Sensitive Urban Design Strategy



NOTE:
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.
The development will not lead to significant increases in flood levels, flood damages, flood behaviour or flood hazard at the site or elsewhere



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) along the identified main overland flow routes adjacent to the roads plus smaller bioretention basins upstream of local road crossings in steeper areas. In other areas the basins would be located offline, discharging to riparian corridors. The basins would provided 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
- Precinct scale detention basins are proposed at locations where local roads cross over creeks and tributaries
- 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
- In flood prone areas, effective evacuation procedures will be provided.

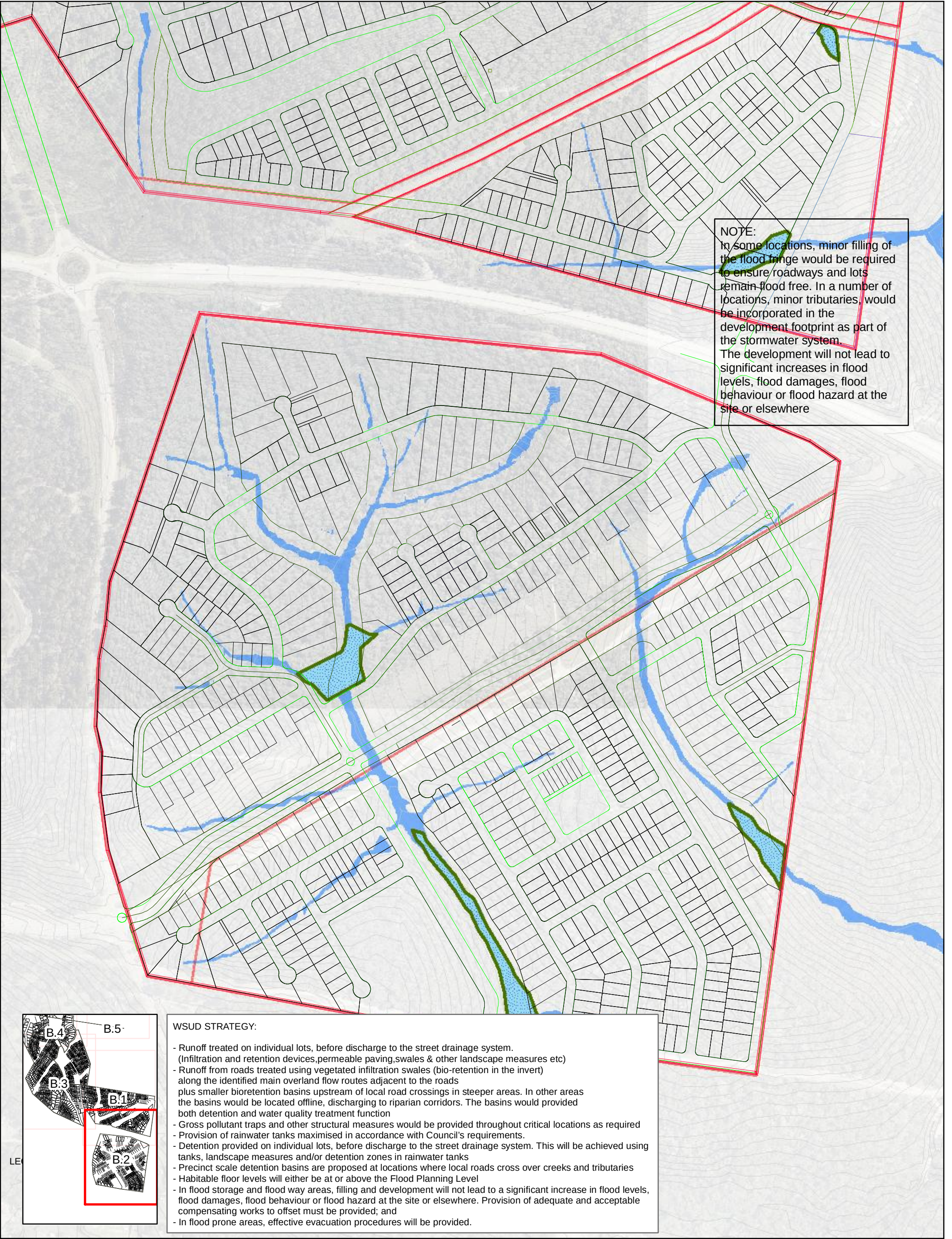
1:5,000
0 20 40 80 120 160 200
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56

O

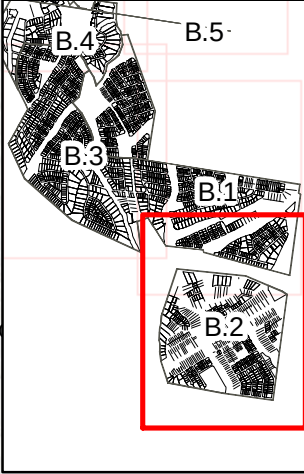


Bioretention/Detention Basins
100-yr ARI Flood Extents (existing)

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Figure D.1



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1:5,000
0 20 40 80 120 160 200
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56



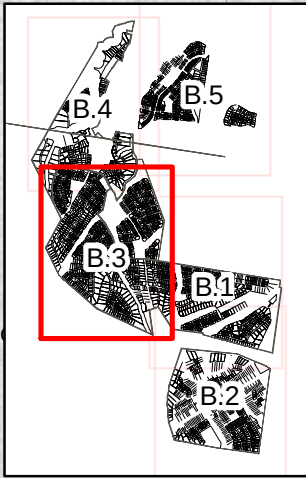
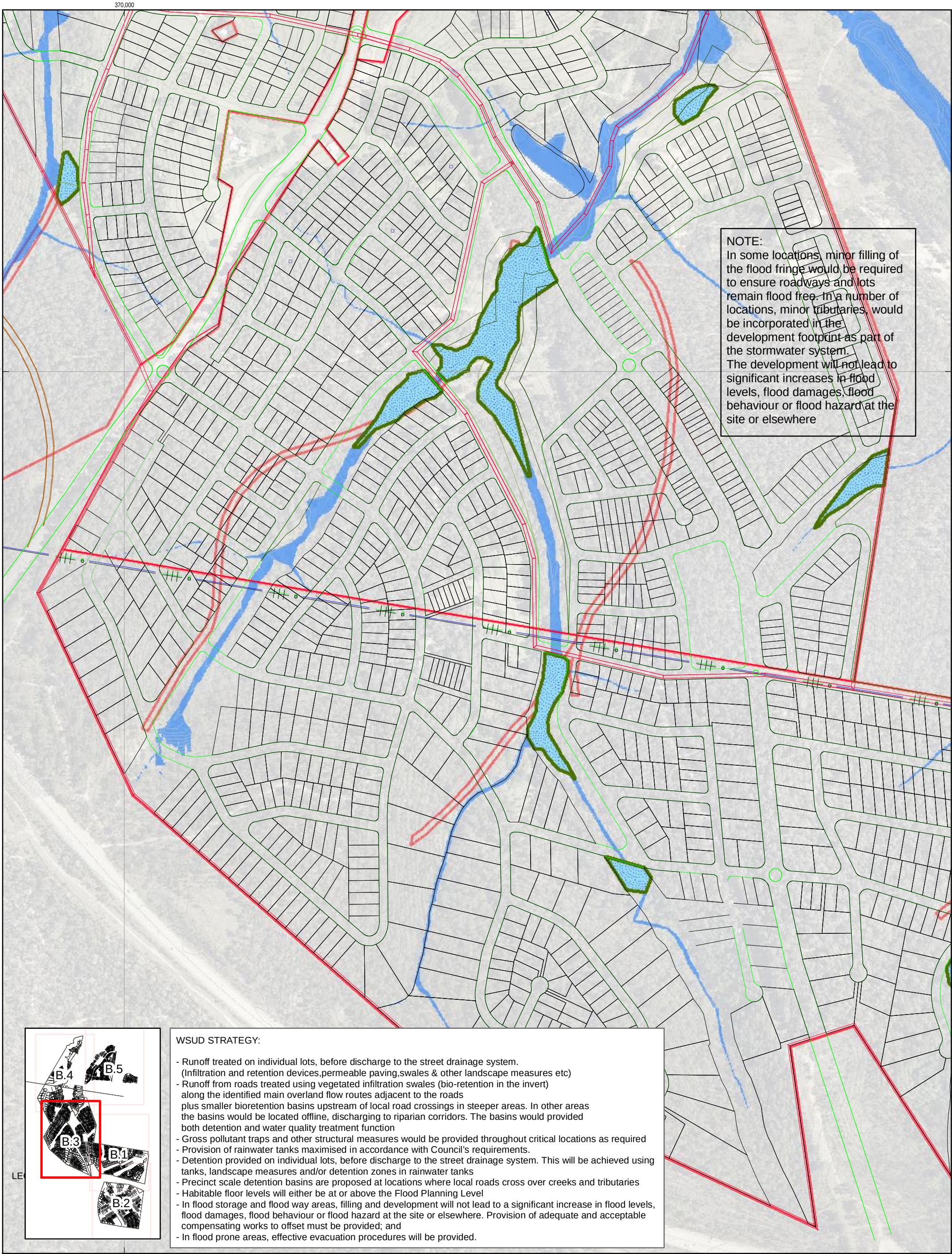
Bioretention/Detention Basins

100-yr ARI Flood Extents (existing)

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Figure D.2



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)
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1:5,000
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Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56



Bioretention/Detention Basins

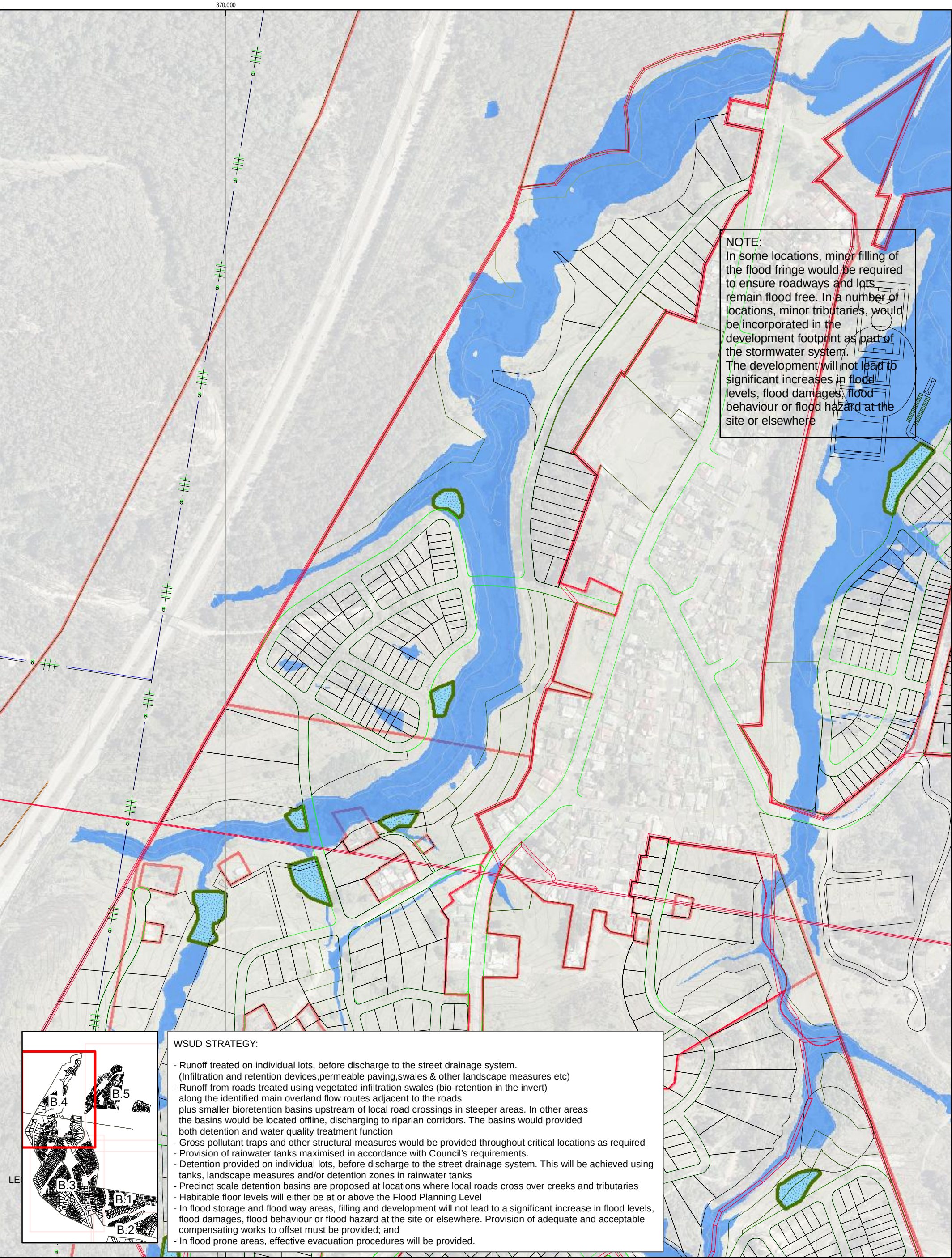
100-yr ARI Flood Extents (existing)

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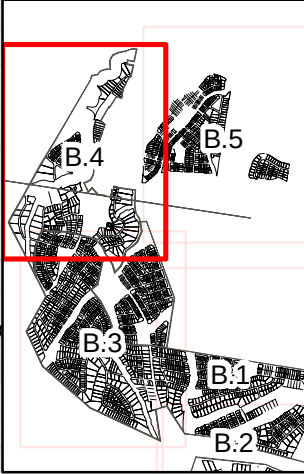
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Figure D.3

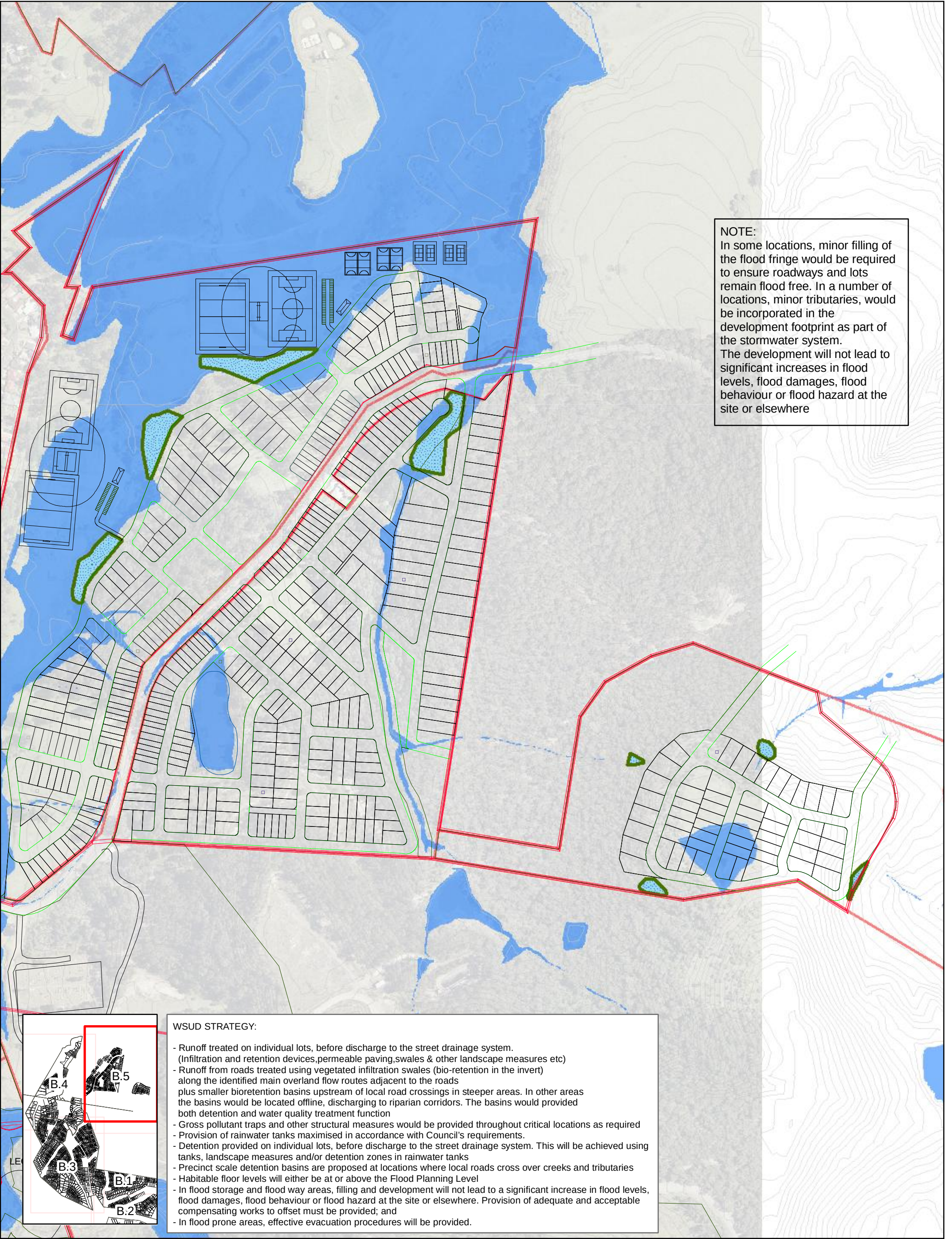


NOTE:
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1:5,000
0 20 40 80 120 160 200
Metres
Map Projection: Transverse Mercator
Horizontal Datum: Geocentric Datum of Australia 1994
Grid: Map Grid of Australia, Zone 56



Bioretention/Detention Basins
100-yr ARI Flood Extents (existing)

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Figure D.5



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Document Status

Rev No.	Author	Reviewer		Approved for Issue		
		Name	Signature	Name	Signature	Date
Draft A	R Berg	MJ Piggott	<i>MJ Piggott</i>	R Berg	<i>R Berg</i>	
Draft B	R Berg	J Maslem	<i>JFlo</i>	R Berg	<i>JFlo</i>	6/10/2008
Final1	R Berg	minor	<i>JFlo</i>	R Berg	<i>JFlo</i>	23/10/2008
Final2	R Berg	minor	<i>JFlo</i>	R Berg	<i>JFlo</i>	27/10/2008
Final3	R Berg	minor	<i>JFlo</i>	R Berg	<i>JFlo</i>	04/11/2008
Final3	R Berg	minor	<i>JFlo</i>	R Berg	<i>JFlo</i>	12/11/2008
Final4	R Berg	minor	<i>JFlo</i>	R Berg	<i>JFlo</i>	18/11/2008
Final5	R Berg	minor	<i>JFlo</i>	R Berg	<i>JFlo</i>	26/11/2008