

BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT FORM

BUILDING IN BUSHFIRE PRONE AREAS
AUSTRALIA STANDARD AS3959 (2009)

SECTION 1: SITE DETAILS

LOCAL GOVERNMENT: City of Swan

LOCAL GOVT. PROPERTY FILE No: Pin 1333844 DP P 24340

DATE ASSESSED: 7.04.15

PERSON ASSESSING: Bill Harris

COMPANY: FirePlan WA Tel: (08) 9493 1692

APPLICANT: Shannon de Bie

☒ Property owner ☐ Architect ☐ Builder ☐ Building Surveyor ☐ Other

CONTACT (H): (W): (M): 0416 073 012 (E): Shannon@prosoundproductions.com.au

APPLICANT ADDRESS : PO Box 447 Wanneroo WA 6946

SITE ADDRESS : Lot 557 (#118) Coondaree Parade Upper Swan

SHIRE HAZARD MAPPING ASSESSMENT: ☐ Non-Bush Fire Prone ☒ Bush Fire Prone
☐ Buffer

IS THERE A CURRENT FIRE MANAGEMENT PLAN IN PLACE: ☐ Yes ☒ No

TYPE OF DEVELOPMENT PROPOSED: ☐ Residential ☒ Semi-Rural ☐ Rural

☐ Special Use ☐ New home ☐ Other ☐ Shed ☐ Outbuilding

☐ Home Extension (IF OTHER PROVIDE DETAILS):

SECTION 2: BUSHFIRE ATTACK LEVEL (BAL) (AS3959 - 2009)

RELEVANT FDI - Table 2.4.3 AS3959 (2009): 80 (WA)

VEGETATION CLASSIFICATION -TABLE 2.3 AS3959 (2009): Class B Woodland

SLOPE: ☒ All up-slopes & flat land (0°) ☐ 0°to <5° ☐ 5° to <10° ☐ 10° to <15°

☒ 15° to <20°



Site 1 – downslope
Site 2 – upslope

Vegetation is Located 30 metres to dwelling

THE BAL (Table 2.4.3) FOR THIS DEVELOPMENT PROPOSAL = AS 3959-2009 **BAL – 19**

TABLE 2.4.3
DETERMINATION OF BUSHFIRE ATTACK LEVEL (BAL)—FDI 80 (1090 K)

Vegetation classification	Bushfire Attack Levels (BALs)				
	BAL—FZ	BAL—40	BAL—29	BAL—19	BAL—12.5
	Distance (m) of the site from the predominant vegetation class				
	All upslopes and flat land (0 degrees)				
A. Forest	<16	16–<21	21–<31	31–<42	42–<100
B. Woodland	<10	10–<14	14–<20	20–<29	29–<100
C. Shrubland	<7	7–<9	9–<13	13–<19	19–<100
D. Scrub	<10	10–<13	13–<19	19–<27	27–<100
E. Mallee/Mulga	<6	6–<8	8–<12	12–<17	17–<100
F. Rainforest	<6	6–<9	9–<13	13–<19	19–<100
G. Grassland	<6	6–<8	8–<12	12–<17	17–<50
Downslope >0 to 5 degrees					
A. Forest	<20	20–<27	27–<37	37–<50	50–<100
B. Woodland	<13	13–<17	17–<25	25–<35	35–<100
C. Shrubland	<7	7–<10	10–<15	15–<22	22–<100
D. Scrub	<11	11–<15	15–<22	22–<31	31–<100
E. Mallee/Mulga	<7	7–<9	9–<13	13–<20	20–<100
F. Rainforest	<8	8–<11	11–<17	17–<24	24–<100
G. Grassland	<7	7–<9	9–<14	14–<20	20–<50
Downslope >5 to 10 degrees					
A. Forest	<26	26–<33	33–<46	46–<61	61–<100
B. Woodland	<16	16–<22	22–<31	31–<43	43–<100
C. Shrubland	<8	8–<11	11–<17	17–<25	25–<100
D. Scrub	<12	12–<17	17–<24	24–<35	35–<100
E. Mallee/Mulga	<7	7–<10	10–<15	15–<23	23–<100
F. Rainforest	<11	11–<15	15–<22	22–<31	31–<100
G. Grassland	<8	8–<10	10–<16	16–<23	23–<50
Downslope >10 to 15 degrees					
A. Forest	<33	33–<42	42–<56	56–<73	73–<100
B. Woodland	<21	21–<28	28–<39	39–<53	53–<100
C. Shrubland	<9	9–<13	13–<19	19–<28	28–<100
D. Scrub	<14	14–<19	19–<28	28–<39	39–<100
E. Mallee/Mulga	<8	8–<11	11–<18	18–<26	26–<100
F. Rainforest	<14	14–<19	19–<28	28–<39	39–<100
G. Grassland	<9	9–<12	12–<18	18–<26	26–<50
Downslope >15 to 20 degrees					
A. Forest	<42	42–<52	52–<68	68–<87	87–<100
B. Woodland	<27	27–<35	35–<48	48–<64	64–<100
C. Shrubland	<10	10–<15	15–<22	22–<31	31–<100
D. Scrub	<15	15–<21	21–<31	31–<43	43–<100
E. Mallee/Mulga	<9	9–<13	13–<20	20–<29	29–<100
F. Rainforest	<18	18–<25	25–<36	36–<48	48–<100
G. Grassland	<10	10–<14	14–<21	21–<30	30–<50

COMMENTS ON BAL CALCULATIONS:

It is proposed to Construct a habitable building 30 metres from the northern boundary of the Site with a private driveway constructed as shown in Section 4 of this report. The habitable building is to be constructed to AS 3959-2009 BAL 19.

Width of Building Protection Zone and Hazard Separation Zones to Achieve BAL 19 around habitable Building

	North	East	West	South
Slope°	0-5	Up Slope	15-20	upslope
BPZ - metres	30	25	50	40
HSZ - metres	0	10	10	10

. The proposed garage is to be located on the near flat ground near the western boundary of the site. A 20 metre Building Protection Zone is to be installed around the proposed Shed.

Section 3.2.3 of AS 3959-2009 Adjacent Structures

“Where any garage, carport or similar roofed structure is not attached to a building required to comply with this Standard, the entire garage, carport or similar roofed structure on the subject allotment shall comply with the construction requirements of this Standard.

Alternatively, the adjacent structure shall be separated from the subject Building by one of the following;

- (a) A distance of not less than 6 metre from the building required to comply with this standard”.

Therefore the Shed is to be constructed to BAL Low provided it is not used as a habitable building.

Compliance with the conditions outlined in the City of Swan annual Firebreak Notice is part of the ongoing mitigation strategies for property bush fire prevention.



Looking to the west from Building Envelope



Looking to the NW from Building Envelope





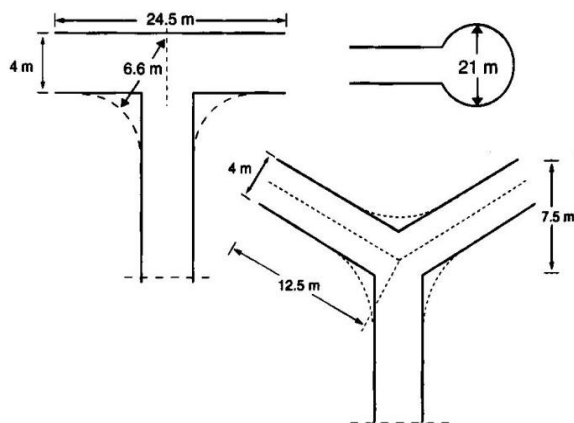
As a guide property Owners should carry out the following fire prevention activities:

Timing	Activity
Autumn to winter (May - August)	<p>Tree Pruning - remove lower branches; check that power lines are clear.</p> <p>Reduce fuel levels around the house - clear long grass, leaves, twigs & flammable shrubs.</p> <p>Ensure petrol and other flammables are safely stored away from the main dwelling.</p> <p>Make sure your firefighting equipment is in good working order and serviced where required.</p> <p>Make sure all residents are aware of your emergency plan including evacuation routes.</p> <p>Chemical spraying of firebreaks and low fuel zones – first and second applications.</p>
Spring (September - November)	<p>Move woodpiles and stacked timber away from the main dwelling</p> <p>Keep grass short</p> <p>Clean gutters and roof debris.</p> <p>Install firebreaks in accordance with this plan and the Firebreak Notice (November 30 to 31 May each and every year).</p> <p>Chemical spraying of firebreaks and low fuel zones – final applications and maintenance.</p>
Summer (November - May)	<p>Water lawns, trees & shrubs near the buildings to keep them green</p> <p>Re-check firefighting equipment, screens, water supplies and that gutters remain clear</p> <p>Maintain firebreaks in accordance with this plan and the firebreak notice by mechanical means or by use of chemical spraying.</p>
Long term precautions	<p>Ensure firebreaks are prepared in accordance with this Fire Management Plan, the latest Firebreak Notice and any Variation to Fire Order issued by council.</p> <p>Ensure that any planting of wind breaks or trees is in accordance with this Fire Management Plan and will not be detrimental to fire suppression requirements in years to come.</p> <p>Make sure that the buildings are safe - fit wire fly screens and shutters, fill gaps into roof/wall spaces, fit fire screens to evaporative air conditioners and have them operable to provide a water only supply.</p> <p>Give consideration to installing external building sprinkler systems and backup power for emergencies.</p> <p>Ensure the access to emergency water supply has the correct fittings, is unobstructed and the route trafficable.</p> <p>Get basic training in firefighting from your local Bush Fire Brigade or even join your local Brigade.</p>

The private driveway is to be constructed to cleared to 6 metres wide with a minimum 4 metre wide trafficable surface and a minimum 4 metre vertical clearance. Passing bays 20 metres Long and 6 metres wide trafficable surface is to be installed every 200 metres along the driveway is to be installed.

Turn around areas suitable for 15 tonne (11 metres long) fire appliances are to be installed within 3 metres of the domestic water supply and every 500 metres with on turn around within 10 metres of the dwelling. See Below.

Turn Around Standards



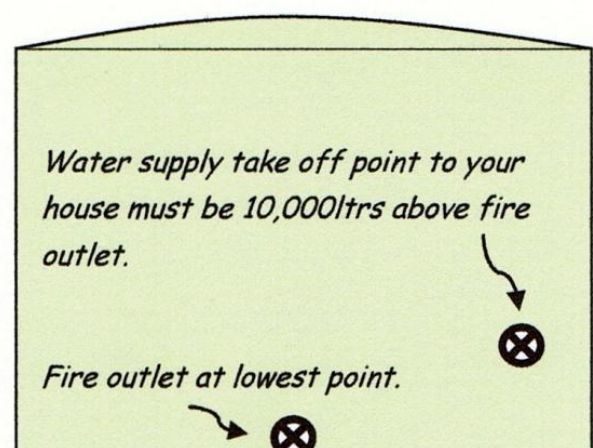
Turn around area measurements.

Water Supplies

To enable standardisation of access to this supply, each private domestic vessel shall be fitted with a minimum 50mm Gate Valve and a 50 mm male camlock fitting with a blanking cap. This coupling and valve shall be installed and maintained in a correct operating condition at all times at the property owner's expense. The fire fighting outlet is to be placed at the bottom of the tank and the domestic outlet above to bottom of the tank so that 10,000 litres of water remain in the tank at all times.

The water tank is Located to the rear of the Shed.

Domestic Water Supply with Fire fighting outlet.



SECTION 3: LOCAL AUTHORITY / GOVERNMENT, VEGETATION MODIFICATION REQUIREMENTS

The recommendations made within this report relating to the clearing or modification of vegetation to meet setback requirements does not constitute an approval or authority to modify or remove vegetation.

Width of Building Protection Zone and Hazard Separation Zones to Achieve BAL 19 around habitable Building

	North	East	West	South
Slope°	0-5	Up Slope	15-20	upslope
BPZ - metres	30	25	50	40
HSZ - metres	0	10	10	10

The proposed garage is to be located on the near flat ground near the western boundary of the site. A 20 metre Building Protection Zone is to be installed around the proposed Shed.

THE SPECIFIED WORK REQUIRED IN THESE ZONES MUST BE COMPLETED PRIOR TO THE COMMENCEMENT OF ANY CONSTRUCTION OF THE BUILDING/ DWELLING.

NOTE: ANY VEGETATION MODIFICATION (EITHER THE ADDITION OF OR REMOVAL OF VEGETATION) AFTER THE DATE OF THIS BAL ASSESSMENT WILL ALTER THE BAL CALCULATION SHOWN IN SECTION 2 OF THIS ASSESSMENT (this does not include vegetation modification in the Building Protection Zone). IT IS THEREFORE A REQUIREMENT TO HAVE THE LOCATION REASSESSED TO ENSURE THE BAL CALCULATION REFLECTS THE VEGETATION MODIFICATION UNDERTAKEN AND THE PROPOSED DWELLING CONSTRUCTION STILL MEETS THE LOCAL AUTHORITY / GOVERNMENTS AND THE AUSTRALIAN STANDARDS REQUIREMENTS.

Please use Local Authority Firebreak Notice and/or Current DFES standards for most current specifications.

- Loose flammable material within the BPZ should be removed to reduce the fuel load to less than 2 tonnes per hectare and this is to be maintained to this level.
- All dry grasses within the BPZ are to be maintained to a height of a maximum 50mm.
- The crowns of trees within the BPZ should be separated where practical such that there is a clear separation distance between adjoining tree crowns.
- Prune lower branches of trees within the BPZ (up to 2 metres off the ground) to stop a surface fire spreading to the canopy of the trees.
- Remove dead trees from the site.
- There are to be no tree crowns or branches overhanging the building or asset and a minimum horizontal clearance of 2 metres is required between tree branches and buildings or assets.
- Do not clump shrubs close to building. Ensure that there is a gap of at least 3 times the height (at maturity) of the shrub away from the building.
- Trees or shrubs in the BPZ are to be cleared of any dead material.
- Fences, sheds and structures within the BPZ should be constructed of non-flammable material and be clear of trees and shrubs as per building requirements.

- Gas Cylinders should be isolated from the Flame Zone and should be stored in an area that is clear of all flammable material. Gas vent valves should face away from the building and anything flammable. Gas cylinders should be securely tethered with non-flammable fastenings to prevent toppling over.
- Fire wood storage should be at least 20 metres from the building unless contained in sealed non-flammable container.
- Driveways and access ways must allow for the safe passage of a fire appliance 2.4 to all buildings and assets on the land.
- Roof gutters should be free of leaves and other combustible material.
- Roof mounted evaporative air coolers should be fitted with ember proof screens to the filter media to reduce the possibility of bushfire embers igniting the air cooler.

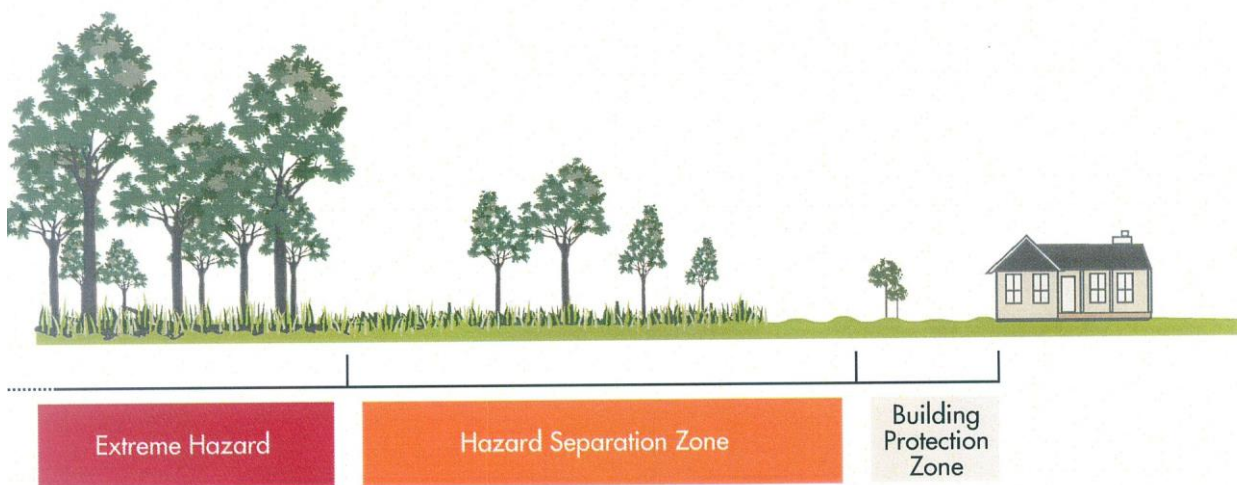
It is further recommended that property owners, where possible and practical, further extend the width of the defendable space around assets by reducing fuel loads and fire hazards.

NOTE:

- The purpose of the BPZ is to reduce flammable fuel in the immediate vicinity of structures and other assets to reduce the bushfire attack level in accord with Australian Standard AS3959 section 2.
- The requirements for BPZ within Western Australia for new buildings are specified in the Guidelines.
- Maintained gardens are not classed as flammable for the defendable space.
- Areas such as pathways, drives, lawn, vegetable gardens, pools etc. all serve to reduce fire intensity and will form an integral part of any BPZ. The effectiveness of these in reducing the risk of fire damage to a building is enhanced if these areas are close to the building.

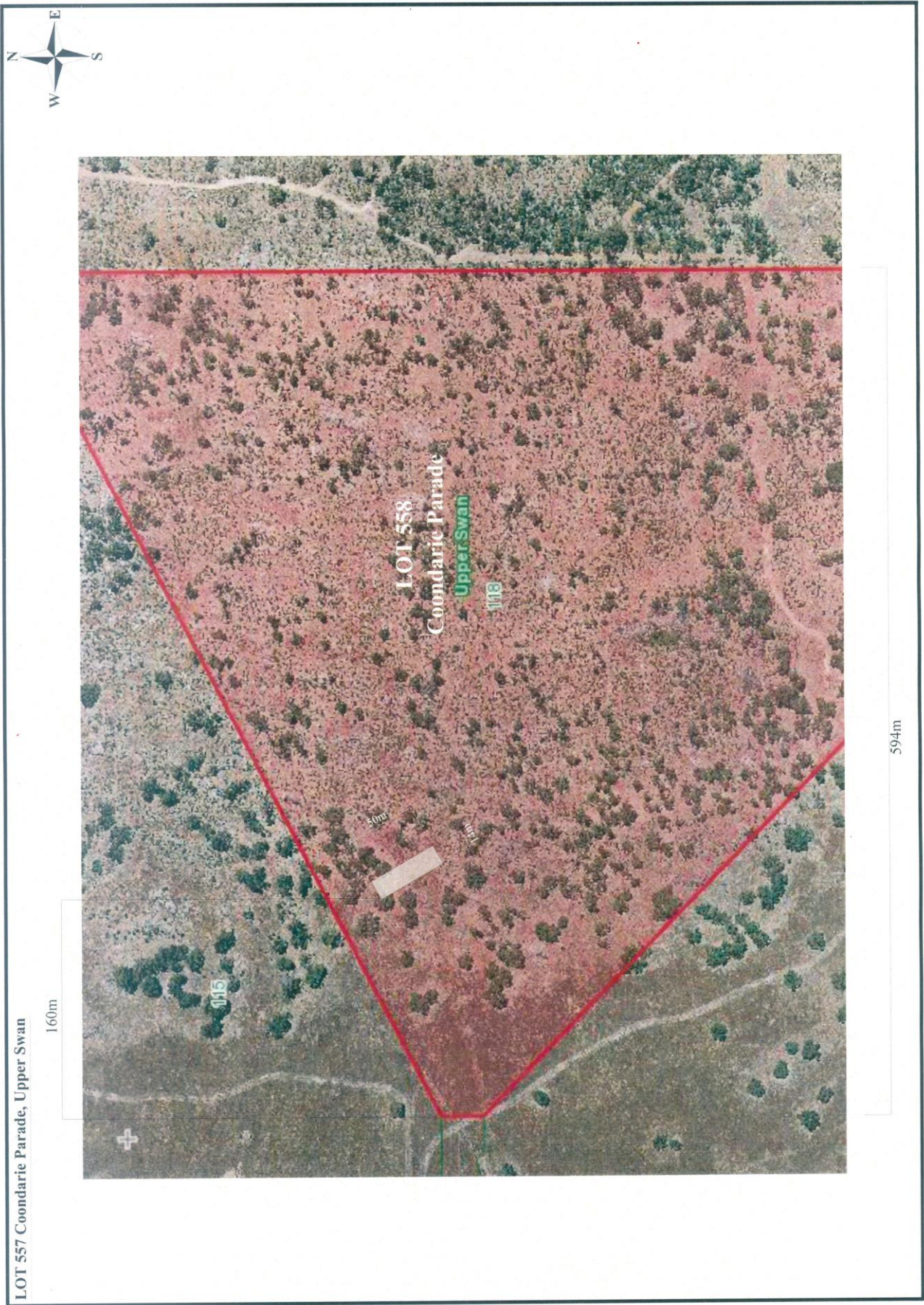
Hazard Separation Zone Standards are:-

1. A Hazard Separation Zone is to be installed around the Building Protection Zones;
2. Bush fire fuel loadings must be maintained within the Hazard Separation Zone to a maximum of 4-6 tonnes/ha;
3. Dry grass is to be slashed to 50 mm in height
4. All accumulated litter, twigs, bark of trees, fallen tree branches and logs should be removed from the area on a regular basis prior to and during the Bush Fire Season.

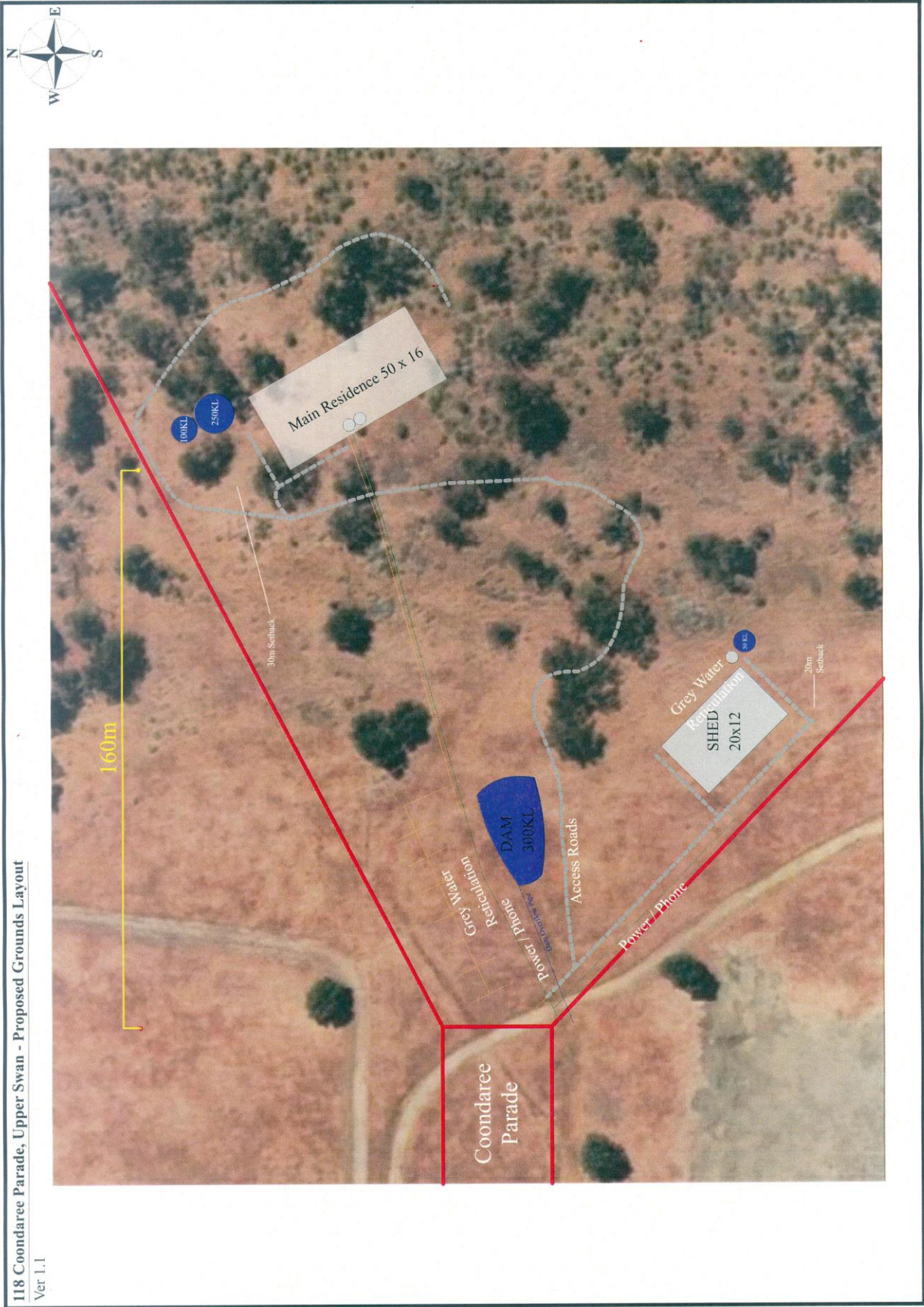


Cross section of Building Protection Zone and Hazard Separation Zone.

SECTION 4: SITE



Location of Site



Site Plan

SECTION 5: DISCLAIMER

The recommendations and measures contained in this assessment report are based on the requirements of the Australian Standards 3959 – Building in Bushfire prone Areas, FESA’s “Planning for Bushfire Protection” and CSIRO’s research into Bushfire behaviour. These are considered the minimum standards required to balance the protection of the proposed dwelling and occupants with the aesthetic and environmental conditions required by local, state and federal government authorities. They DO NOT guarantee that a building will not be destroyed or damaged by a bushfire. All surveys and forecasts, projections and recommendations made in this assessment report and associated with this proposed dwelling are made in good faith on the basis of the information available to the fire protection consultant at the time of assessment. The achievement of the level of implementation of fire precautions will depend amongst other things on actions of the landowner or occupiers of the land, over which the fire protection consultant has no control. Notwithstanding anything contained within, the fire consultant/s or local government authority will not, except as the law may require, be liable for any loss or other consequences (whether or not due to negligence of the fire consultant/s and the local government authority, their servants or agents) arising out of the services rendered by the fire consultant/s or local government authority.

SECTION 6: ENDORSEMENT

SIGNED, ASSESSOR:

B.W. Harris

FirePlan WA

DATE: 08/06/2015

SIGNED, OWNER OR BUILDER:DATE:

COMMENTS by City of Swan Fire Officer:

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SIGNED, by City of Swan Fire Officer: DATE:

COMMENTS by City of Swan Building Inspector:

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SIGNED, by City of Swan Building Inspector: DATE:.....

Note: Copy of this report must accompany Building Licence Application.