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16 March 2011

Our ref: 101007-1

Andrews Neil Urban Design Group
PO Box 1476
Gosford, NSW 2250

Attn: Andrew Roach, Senior Urban Planner

Re: Aboriginal Heritage Due Diligence Assessment Report –
5 Anderson Road, Glenning Valley

Dear Andrew,

In October 2010, Archaeological and Heritage Management Solutions Pty Ltd (AHMS) was commissioned by Andrews Neil Urban Design Group Advice to undertaken an Aboriginal heritage due due diligence assessment, in accordance with the NSW Department of Environment, Climate Change and Water's (DECCW) (2010) *Due Diligence Code of Practise for the Protection of Aboriginal Objects in New South Wales* (hereafter 'the Code') for 5 Anderson Road, Glenning Valley.

The due diligence assessment was subsequently undertaken in accordance with Section 8 of the Code. The due diligence assessment identified that 'further investigation and/or impact assessment' **did not appear to be** required as:

- A review of existing literature and a site inspection did not identify any Aboriginal objects within the study area or any *undisturbed* landforms of archaeological interest;
- Regional archaeological models only identified that a small area of the southwestern corner of the site was of potential archaeological interest due to its proximity to Quandong Creek. The eroding and previously ploughed nature of this area noted during site inspection, however, did not suggest that survival of intact archaeological deposits in that location was likely;
- A previously documented site, #45-3-3061 (grinding grooves and waterhole), was thought to be within (or very close to) the study area curtilage, but was found to be

located adjacent the driveway of 2 Gordon Vaughn Drive, some 20 m southeast of the study area; and

While further assessment does not appear warranted, it must be noted that the study area was heavily vegetated which resulted in poor ground surface visibility, consequently it cannot be concluded that Aboriginal objects would not survive at the site and caution should be adopted during any development. Specific areas of interest include the western and southwestern edge of the study area closest to Quandong Creek and the southeast corner were shallow sandstone bedrock may be present. Based on the previously documented site to the southeast, the latter has potential to contain engravings and/or grinding grooves.

This document has been developed based on the criteria of the Code and indicates that further assessment does not appear to be required. However, this does not guarantee that Aboriginal objects are not present on the site.

Appendix 2 provides a summary of the considerations and process AHMS undertook to reach these conclusions.

If you have any further questions or enquiries, please contact me or Alan Williams on 02 9555 4000.

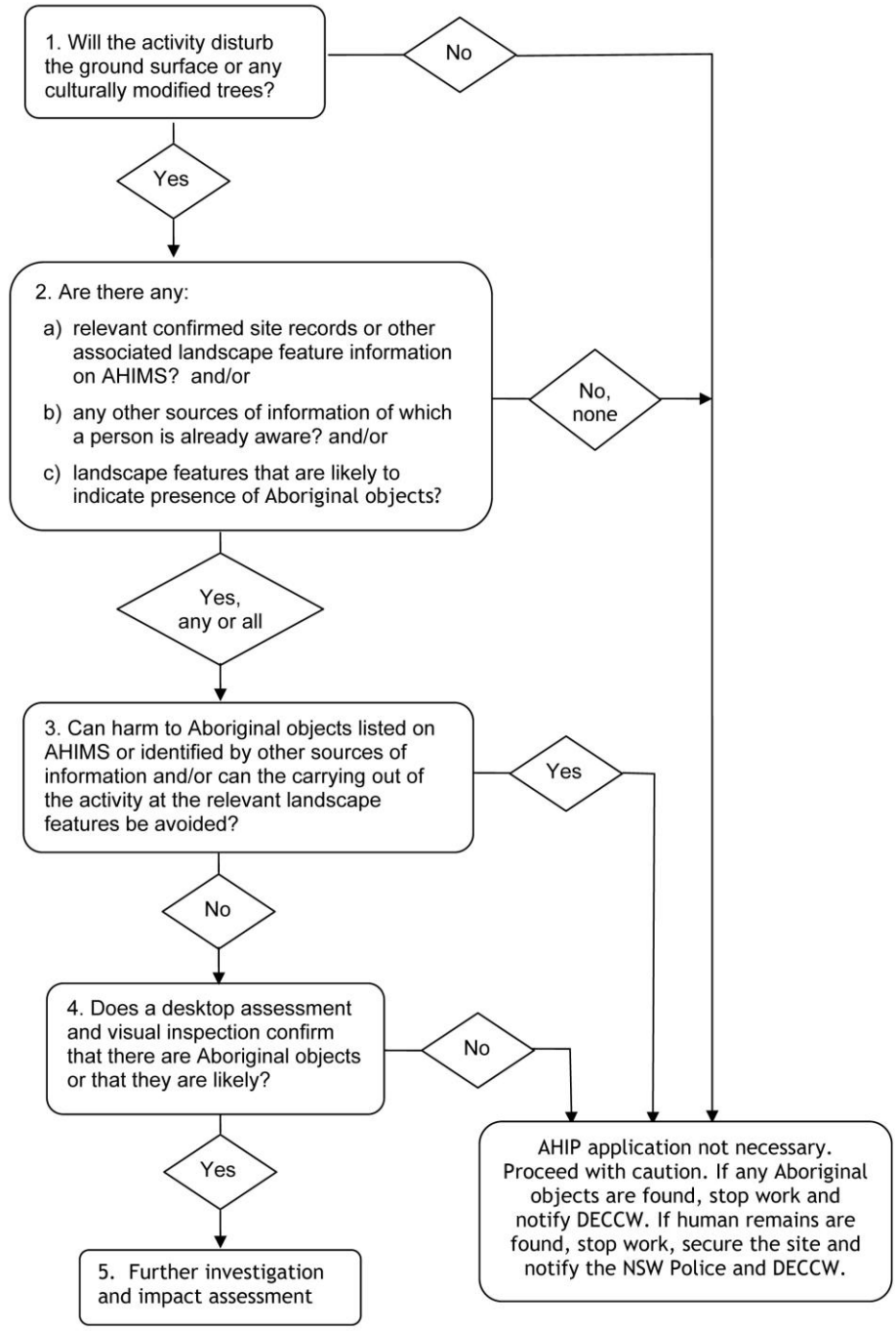
Yours sincerely,

Lisa Newell

Associate Director

Appendix 1: Due Diligence Code of Practise Flow Chart.

8 The generic due diligence process



(Source: DECCW, 2010)

Appendix 2: Summary Table identifying the Due Diligence Assessment and Findings in Regards to Proposed Development at 5 Anderson Road, Glenning Valley

Table A4-1. Summary of the due diligence process outlined in DECCW's (2010) guidelines to determine whether or not further investigation and/or impact assessment is required.

Question #	Question	Explanation	Response for the project	Requirement	Reasons for Response in Relation to this Project
1	Will the activity disturb the ground surface or any culturally modified tree?	Will the proposed development impact the ground surface (e.g. excavation, digging, grading, etc) and/or modified trees (e.g. vegetation removal)?	Yes ~~No~~	Continue to Question 2. ~~AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.~~	This document has been prepared to accompany a rezoning application to Wyong Shire Council. Currently the subject site is zoned as Scenic Protection: Small Holdings -7c under the Wyong Local Environmental Plan; it is proposed for rezoning to 2b: Multiple Dwelling Zone, allow for subdivision and residential development. Although, no specific plans have yet been made available for the subject site, it seems likely that some earthworks and implementation of infrastructure (e.g. roads, water, electricity) would be undertaken prior to the sale of the land. Ultimately, residential structures would be situated on the site, which would lead to ground disturbance.
2	Are there any: a) relevant confirmed site records or other associated landscape feature information on AHIMS that relate to the study area? and/or	This question requires a search of DECCW's AHIMS database, which lists known Aboriginal objects/sites/places and landscape features of interest.	~~Yes~~ No	~~Continue to Question 3.~~ Continue to Question 2b.	A search of DECCW's AHIMS database on 19 November 2010 showed one registered site, #45-3-3061, within an approximately 750 m radius surrounding the subject site (**Appendix 3-1**). This registered site was an axe grinding groove with an associated waterhole. The co-ordinates of the site indicated that it is situated on the southeastern border of the study area. A site inspection, as well as discussions with several Gordon Vaughn Road residents (most notably Mr and Mrs Kevin Pearce), however, indicated that the site is located adjacent the driveway of 2 Gordon Vaughn Road (Lot 131 DP 884250) (see **Appendix 3-1** for discussion). The specific site could not be relocated due to extensive vegetation cover, but large sections of sandstone were evident in this area. Therefore, while the AHIMS search indicated an AHIMS site within (or very close) to the site curtilage subsequent information demonstrated it was not within the study area. This question has, therefore, been answered 'no'.
	b) other sources of information of which a person is already aware? and/or	This question requires a review of previous reports or other sources of information for the study area to identify any previous areas of archaeological or cultural interest. Informal Aboriginal consultation may be considered to address this question.	~~Yes~~ No	~~Continue to Question 3.~~ Continue to Question 2c.	AHMS found no local studies that provided specific information on the archaeological resource (if any) of the study area or local area. Only one site, #45-3-3061, is known in the vicinity of the study area, and this is discussed in **Appendix 3-1**. The report for this site was sought from the NSW Department of Environment, Climate Change and Water, but was not provided. Given it was recorded by a local landowner, it is not considered that the report will provide significant information on the surrounding area, rather more likely a specific description of the site and how it was located. Discussions with local residents only identified one archaeological site, #45-3-3061, in the local area. No reference to further archaeological sites was suggested or provided. Further information on archaeological models of the region is provided below, but no site specific information was available at the time of this report to indicate any Aboriginal objects/sites within the study area.

	c) landscape features that are likely to indicate the presence of Aboriginal objects?	The Due Diligence guidelines identify a number of landscape features, which are of archaeological interest and require further consideration. Specifically: • within 200m of waters, or • located within a sand dune system, or • located on a ridge top, ridge line or headland, or • located within 200m below or above a cliff face, or • within 20m of or in a cave, rock shelter, or a cave mouth • and is on land that is not disturbed land. Further definitions on these landscape features are provided in the guidelines.	Yes	Continue to Question 3.	In general the study area is situated between two very different archaeological landscapes. To the south and west, landscapes are dominated by sandstone geology and steep relief. Studies at nearby Upper Mangrove Creek by Val Attenbrow suggest that occupation began around 12,000 years ago and that Aboriginal people exploited a range of resources and landform types, most notably the subsidiary ridge-sides and periphery ridge-tops (i.e. the most likely areas for sandstone rockshelter development).[1] The occurrence of grinding grooves, due to the presence of sandstone and water in close proximity, as well as isolated artefacts and/or artefact scatters, are also prevalent in these areas. To the north and east, Aboriginal people are well documented as having exploited the marine resources of the Brisbane Waters and coastline (Vinnicombe 1980), as well as the freshwater tributaries feeding into them. Archaeological material is, therefore, dominated by artefact scatters and middens frequently in close proximity to the water's edge, either the coastline or lower slopes/terraces of nearby creeks.[2] Hence, for the purpose of this study, the potential for archaeological material will be highly dependent upon the presence of sandstone overhangs or escarpments and/or in close proximity to freshwater resources, although isolated artefacts and other artefactual material can occur in any location. Based on a background review of geology and soil landscapes, the study area retained no evidence of sandstone escarpments or outcrops.[3] There was, however, reference to Narrabeen Group Terrigal Formation sandstone outcrops to the southeast of the study area, and these were confirmed during the site inspection (below) and the presence of an archaeological site composed of grinding grooves (**Appendix 3-1**). It does not appear that this outcrop extended into the study area. The study area was composed of undulating hills and revealed no evidence of subsidiary ridgelines or periphery ridge-tops. In general, the study area was greater than 200 m from any freshwater source, although the southwest corner of the site was within a 200 m buffer of Quandong Creek (**Figure 3-1-6**). The study area was also within 200 m of a linear depression to the south, which in some maps has been identified as a water course most likely due to the presence of a series of modern dams. It seems unlikely, however, that this depression (amongst two steep hills) would have retained water without modification and has not been included here. Aerial photographs of the site taken between 1954 and 1991 reveal that previous disturbance has occurred in the form of orchards and agricultural practises (**Appendix 3-2**). While these practices are generally minor in terms of
			~~No~~	~~AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.~~	

[1] *Attenbrow, V. (2004) What's Changing? Population size or land-use patterns? The archaeology of Upper Mangrove Creek, Sydney Basin. Terra Australis. No. 21.*

[2] *Vinnicombe, P. (1980) Predilection and Prediction: a study of Aboriginal sites in the Gosford-Wyong Region, Unpublished report to the NSW NPWS.*

[3] *Murphy, C.L. and P.J. Tille, 1993. Soil Landscapes of the Gosford-Lake Macquarie 1:100 000 Sheet Map. Department of Conservation and Land Management.*

					disturbance, the clearance of vegetation on the moderate slopes of the study area would have led to significant soil destabilisation and erosion. It, therefore, seems unlikely that an intact soil profile (or associated archaeological material if present) would be present. This is clearly apparent in the southeast corner of the 1965 photograph (**Figure 3-2-1**), which showed extensive exposures from loss of topsoil; and in northwest corner on the 1985 photograph, which has numerous linear exposures indicative of soil creek or mass movement (i.e. extensive movement of the topsoil downslope) (**Figure 3-2-3**). For the purpose of this question, the study area generally did not retain any landforms of interest or any undisturbed areas. However, the southwest corner of the site was 'within 200 m of a water source' (**Figure 3-1-6**) and this question has, therefore, been answered 'yes'.
3	Can harm to Aboriginal objects listed on AHIMS or identified by other sources of information and/or can the carrying out of the activity at the relevant landscape features be avoided?	This question is a summary of Questions 1 and 2 above and is only required if undisturbed and/or Aboriginal objects have been identified. This question requires consideration of the project's ability to avoid these areas.	~~Yes~~ No	~~AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.~~ Continue to Question 4.	The proposed development will impact the southwest corner of the study area, which was the only location identified exhibiting landforms of archaeological interest in accordance with Question 2. No Aboriginal objects or sites were identified in the background literature, although a grinding groove site was identified immediately (<20 m) southeast of the study area. It was determined due to the spatial uncertainty of #45-3-3061 and the proximity to Quandong Creek, that this question must be answered 'no' and that a site investigation was undertaken by a qualified archaeologist.
4	Does a desktop assessment and visual inspection confirm that there are Aboriginal objects or that they are likely?	This question is only required if undisturbed and/or Aboriginal objects This question is a collation of Questions 1 - 3 and requires consideration of the whole study area, not just areas of interest (if present). A site inspection and subsequent considerations by a qualified representative is also required. When referring to the Code, this question can be divided into two main parts: 1. Does the study area retain Aboriginal	~~Yes~~ No	~~Continue to Question 5.~~ AHIP not required. Proceed with caution. If any Aboriginal objects are found, stop work and notify DECCW. If human skeletal remains are found, stop work, secure the site and notify the NSW Police and DECCW.	A site visit was conducted by Alan Williams, AHMS Senior Archaeologist on 8 December 2010. The study area could be characterised as a range of undulating gentle to moderate slopes leading down to Anderson Road (**Appendix 3-3: Figures 3-3-1** and **3-3-2**). The latter indicating the beginning of an open depression/lower slope, within which Quandong Creek was situated to the west. The edges of the study area were generally raised indicating either a movement of soil profile into these areas (common in ploughed fields were the soil is pushed to the edges), an accumulation of vegetation and leaf litter, and/or the natural movement of both soil and vegetation down slope through erosion. The central study area was heavily vegetated with low-lying vegetation. Re-growth Eucalypt sp. and/or dense weeds were present around the periphery of the site. Due to the dense vegetation at the time of the survey, visibility was generally low (<10%). However, the landform of interest – the southwest corner of the study area – did retain extensive exposures along the Anderson Road section due to a range of services cutting into the soil profile (**Appendix 3-3: Figures 3-3-3-** and **3-3-4**). No Aboriginal objects were identified along these exposures. Similarly, the soil profile revealed a poorly developed shallow topsoil overlying basal clays, indicating historic disturbance. Investigations along the study area edge in this location revealed undulations and potholing,

		objects? 2. Does the proposed activity impact the Aboriginal objects identified, or are the Aboriginal objects with the proposed *activity area*?			all indicative of disturbance, most likely from the installation of Anderson Road and associated services. Other exposures were present in the form of small market gardens in the northeast corner and along the edge of the forested area to the southeast (**Appendix 3-3: Figure 3-3-5**). In both cases, no Aboriginal objects were identified and an undeveloped topsoil (indicating a young age) was present. Based on historical photographs, both areas have been extensively ploughed in the past. No sandstone outcropping was evident within the study area with an increasing B horizon (basal clays) occurring towards the base of the slopes (along the western edge). It is considered that sandstone outcropping may occur (or be close to the surface) in the southeastern corner not far from a known Aboriginal site, and caution should be exercised during development in this area. It must be noted, however, that the Aboriginal site was situated on a raised sandstone slab, which allowed views south for several hundred metres. Due to the rising ground to the north, a similar situation would not occur within the study area. Based on the findings of the site inspection, no Aboriginal objects were identified within the study area. The landform of interest appeared heavily disturbed and unlikely to retain any *in situ* or significant archaeological materials. This question has, therefore, been answered 'no'. However, it must be emphasised that visibility was poor and an Aboriginal site was located within 20 m of the study areas curtilage. Therefore, extreme caution should be undertaken during any development, most notably along the western fringe of the study area (where soil profile deposits, albeit disturbed, were deepest) and in the southeastern corner were shallow buried sandstone bedrock (that may retain further grinding grooves and/or engravings) may occur.
~~5~~	~~Further investigation and impact assessment~~				

Appendix 3: Additional Information

Appendix 3- 1 - Previously Documented Sites and Landforms of Interest

The DECCW AHIMS database showed one registered site within 750 m of the subject site. It was AHIMS # 45-3-3061, listed as an axe grinding groove and waterhole and was located on the subject site boundary.

Given the close proximity of the AHIMS site to the study area, it formed a focus of the site inspection. The GPS co-ordinates for the site were clearly artificial conversions from the now defunct topographic maps system used to record the site in the mid 1980's. This was evident through the ending of the easting and northing co-ordinates in generic '100' denominations (as in this case 354*200*E, 6308*100*N) rather than a specific point - a process regularly found in the DECCW AHIMS database for sites recorded prior to the widespread use of GPS equipment, and where conversion was required.

The re-location of the site was, therefore, heavily based on the locational information on the AHIMS site card. Specifically, the site was recorded as being 'at the end of Gordon Vaughn Road on the right hand side and approximately 10 m from the road way'. Initially, this caused confusion, since it did not state which end of Gordon Vaughn road was being referenced. However, a detailed investigation around the corner of Anderson Road and Gordon Vaughn Road s in the east revealed no sandstone. In contrast, several exposures of sandstone were evident in the properties at the western end of Gordon Vaughn Road, and this was considered the more likely location.

Unfortunately, several modifications to properties #2, 3 and 15 Gordon Vaughn Road over the last 20 years did not allow for the specific location to be accurately identified based purely on the description above. This was further hindered by extensive vegetation and tree cover in this area reducing visibility. Alan Williams (AW), subsequently, sought further information from local residents. Mr and Mrs Kevin Pearce (3 Gordon Vaughn Road) knew of the site in question and guided AW to a ridge and gentle sloping hill to the west of the driveway of #3 Gordon Vaughn Road (**Figures 3-1-2** to **3-1-5**). These areas were highly vegetated and the site could not be positively identified, however, several slabs of sandstone were evident beneath 5-10 cm of leaf litter suggesting the location was probably accurate. On the ridgeline immediately north of the sandstone slab (<20 m) was highly undulating and reflected previous excavation or quarrying. Reference in the site card to nearby quarrying potentially impacting the site lends further credibility to this being the correct area. Sandstone blocks now lining the driveway were probably removed from this quarrying activity.

The site is, therefore, postulated to be between (MGA, Area 56) 354300E, 6308254N; 54323E, 6308239N; 345316E, 6380246N; 354311E, 6380243N (**Figure 3-1-6**). This location is only some 20 – 40 m from the original GPS co-ordinates of the site card. This site is situated some 20 m to the southeast of the study area.

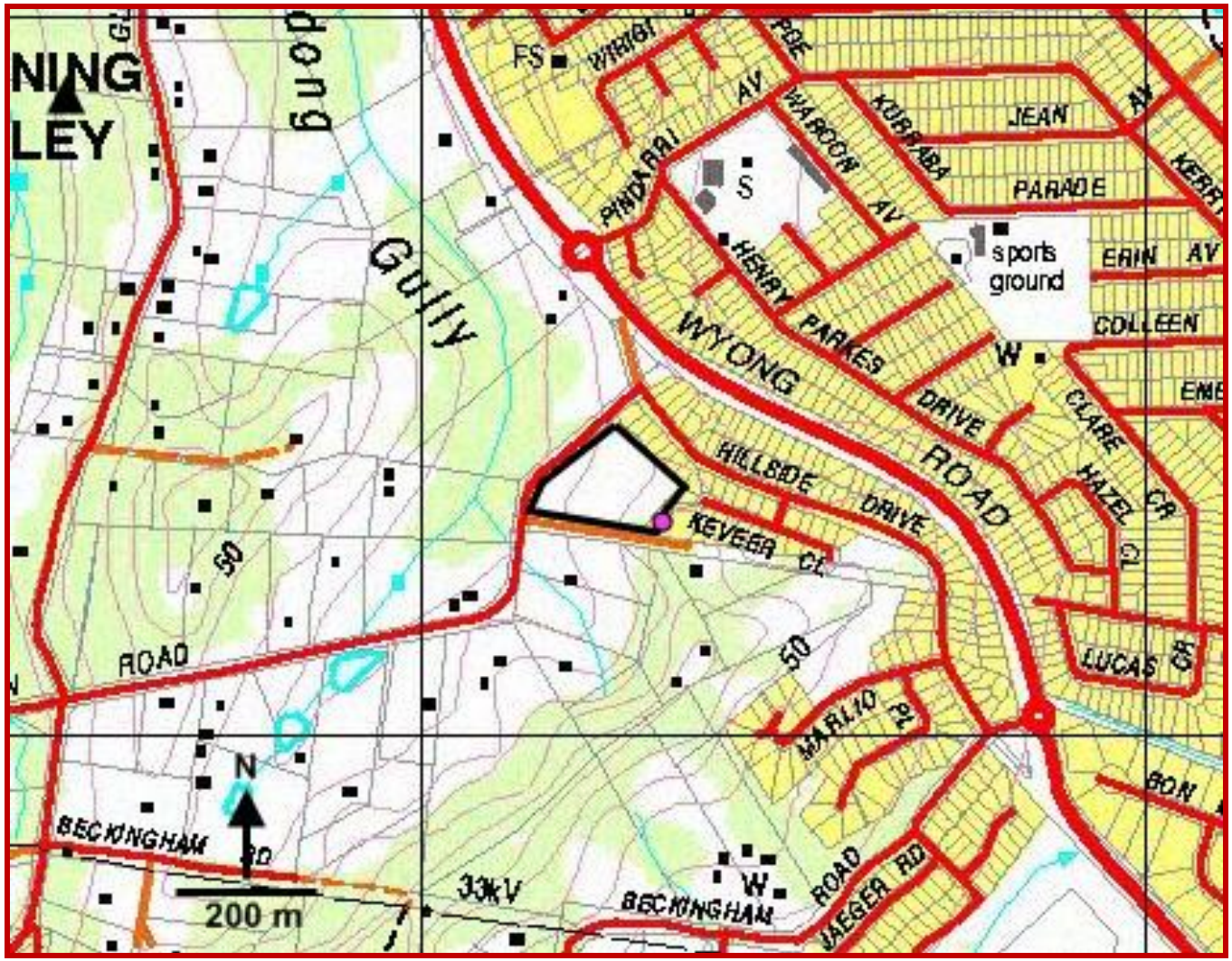


Figure 3-1-1. Map of AHIMS data. (Registered AHIMS site marked as pink dot. Subject site outlined in black.)

Figure 3-1-2. Photograph showing the driveway of 2 Gordon Vaughn Road, looking west. The sandstone slab containing the site based on the site card and local residents is to the left (north) of the driveway just past the gate.

Figure 3-1-3. The sandstone slab (evident through its vertical exposure highlighted) just inside the gate of 2 Gordon Vaughn Road, looking north).

Figure 3-1-4. This photograph was taken further up (west) the driveway from Figure 3-1-3, and reveals exposed sandstone (highlighted), looking northwest.

Figure 3-1-5. Photograph taken from a similar location as Figure 3-1-4, but looking west. Note the sandstone retaining wall. This was composed of both natural and artificial blocks, indicating both natural bedrock exposure and likely quarrying activities undertaken on the top of the ridge (just out of photograph in the upper left corner).

Figure 3-1-6. Map of the study area (red) showing the location of AHIMS site #45-3-3061 (purple outline) and landforms within 200 m of Quandong Creek (orange).

Appendix 3-2 Historic Aerial Photographs

Figure 3-2-1. 1954 aerial photograph of site. (Source: Land and Property Management Authority, 1954. Gosford, 129-5144)

Figure 3-2-2. 1965 aerial photograph of site. (Source: Land and Property Management Authority, 1965. Gosford, 1357-5143)

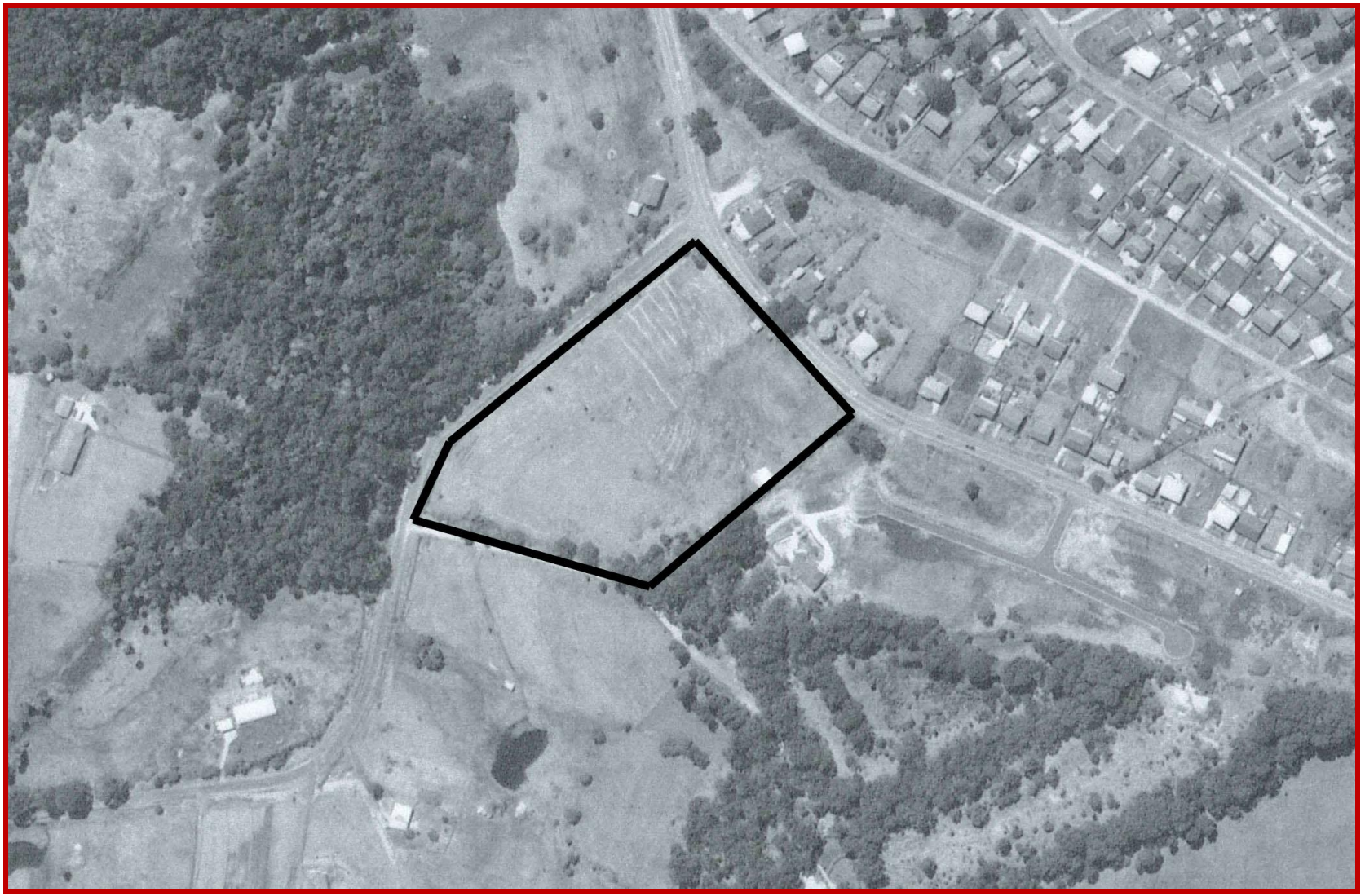


Figure 3-2-3. 1985 aerial photograph of site. (Source: Land and Property Management Authority, 1985. Gosford, 3470-124)

Figure 3-2-4. 1991 aerial photograph of site. (Source: Land and Property Management Authority, 1991. Gosford, 161)

Appendix 3-3 Site Inspection

Figure 3-3-1. The study area, looking southeast. The study area was characterised by densely vegetated moderate to gentle slopes with a small area of regrowth woodland in the southeast corner.

Figure 3-3-2. The study area, looking south. The southwestern corner of the study area (right of the photograph) is within 200 m of Quandong Creek and formed an area of interest for investigation.

Figure 3-3-3. The southwestern edge of the study area from Anderson Road, looking northeast. The Road has been extensively cut into the surrounding landscape and provided good exposures along the edge of the study area. No Aboriginal objects were identified along these exposures. A relatively disturbed soil profile was also identified in here.

Figure 3-3-4. The northwestern edge of the study area from Anderson Road, looking south. Good exposures were also identified in this area, with no Aboriginal objects being identified.

Figure 3-3-5. The northeastern corner of the study area, looking northwest. Two market gardens were identified here (one to the left of the photographer and one immediately behind the boat). No Aboriginal objects were identified. A relatively undeveloped A topsoil, heavily modified by historical and currently ploughing was also identified.