JANDRA QUARRY EXTENSION

Archaeological Assessment

For:
CSR CONSTRUCTION MATERIALS

October 1999
58110RP2

Report No. 58110RP2

This report was prepared in accordance with the scope of services set out in the contract between ERM Mitchell McCotter Pty Ltd ACN 002 773 248 (ERMMM) and CSR. To the best of our knowledge, the proposal presented herein accurately reflects the CSR's intentions when the report was printed. However, the application of conditions of approval or impacts of unanticipated future events could modify the outcomes described in this document. In preparing the report, ERMMM used data, surveys, analyses, designs, plans and other information provided by the individuals and organisations referenced herein. While checks were undertaken to ensure that such materials were the correct and current versions of the materials provided, except as otherwise stated, ERMMM did not independently verify the accuracy or completeness of these information sources.

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Chapter 1

INTRODUCTION

1.1 SUMMARY

Jandra Quarry is owned and operated by CSR Pty Ltd. The quarry produces blue metal utilised as road base. CSR propose to extend the quarry void and create an additional administration - facilities area.

This report outlines the archaeological assessment of the proposed works. The location of the quarry is Lot 2, 11, 12, 13, 14, & 15 DP 790056, Parish of Beryan, County of Gloucester (now referred to as the study area). The study area lies on the boundary of two land councils. The field survey was conducted in conjunction with Taree-Purfleet Local Aboriginal Land Council and Forster Local Aboriginal Land Council.

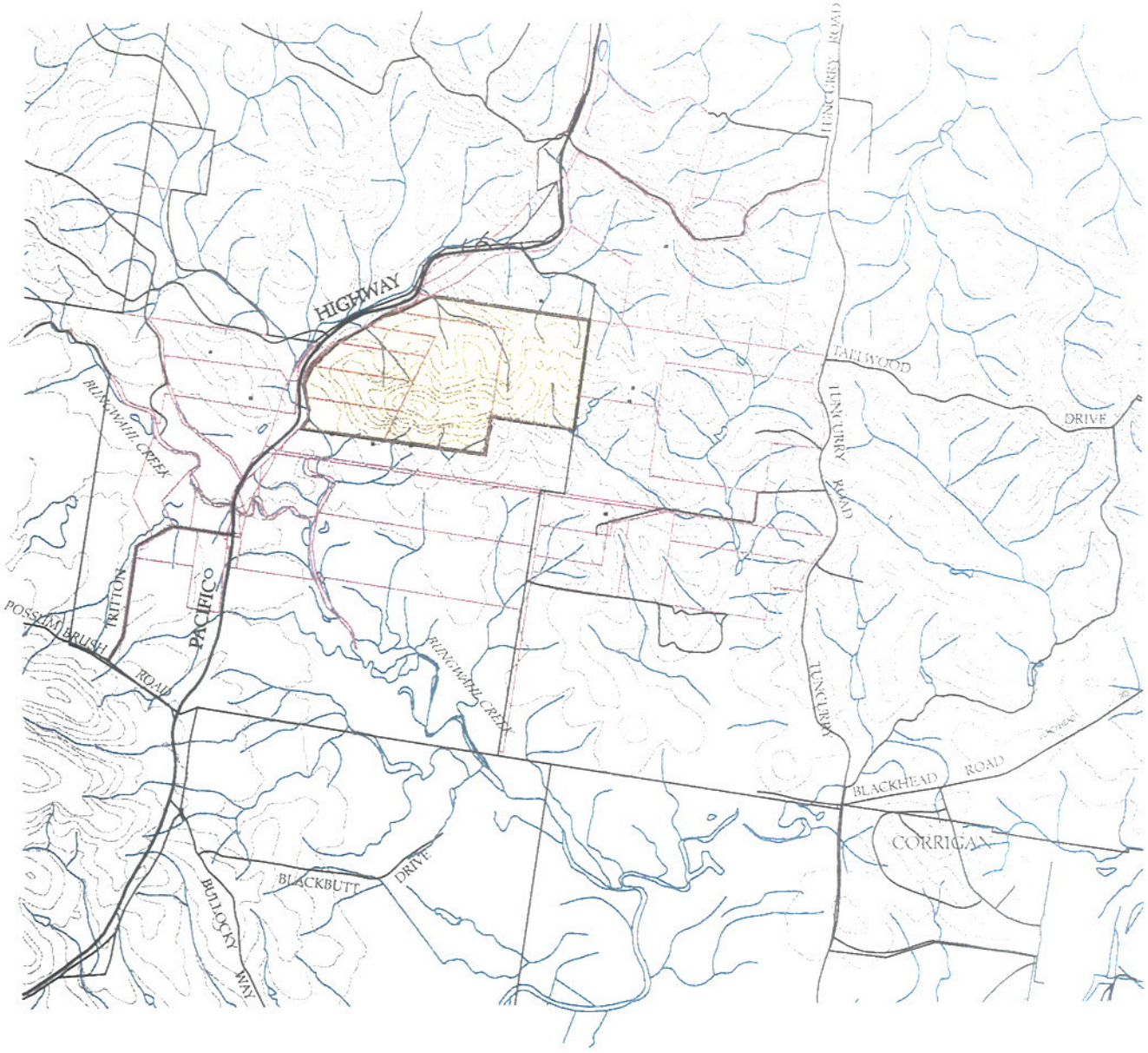
Seven sites were located including a historic scarred tree related to the timber felling industry. The remaining sites, with the exception of the PAD 2, are disturbed.

A preliminary research permit (# 1174) was granted to sub-surface test areas which would be disturbed by the proposed development. The Taree-Purfleet and Forster Land Councils participated at all stages of the investigations and their report is included as *Appendix A*.

The management results recommend protection for sites J4 (historic site) and PAD 2 the small creek terrace which will not be impacted by the proposal. The other sites have been recommended to become subject to consent to destroy applications with the support of the Forster and Taree-Purfleet Local Aboriginal Land Councils. Site J6 was found to contain archaeological material and can be conserved for educational purposes until the quarry void is extended into the site in approximately 20 to 25 years time.

1.2 INTRODUCTION

CSR Pty Ltd propose to extend their hardrock operations at Jandra Quarry which is located 12 kilometres south of Taree (*Figure 1.1*). The continued operations at the quarry require an expansion of the existing pit to the east and west and a new site facilities area to the north west of the existing site office. This report documents a



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CSR PROPERTY BOUNDARY

RESIDENCES

CADASTRAL BOUNDARIES

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Figure 1.1 SITE LOCALITY

2.4 SURVEY COVERAGE DATA

The coverage achieved was confined to the ridgetops and saddles (*Figure 2.1*). The track had good visibility of eighty per cent in areas which were relatively level near saddles and ridgetops. On the slopes in between variable amounts of road base limited visibility to between ten and fifty per cent.

Houses had been constructed in the two saddles which occur within the study area. One of these houses has been partly demolished, the other remains occupied. The surrounds of the demolished house afforded good visibility however the surface appears excavated down to the B horizon in the process of levelling the house and shed site.

The slopes were only sampled by transects 5, 7 and 8. In general, the slopes within the study area are unlikely to have provided suitable camping areas due to moderate to steep slopes. All slopes generally are heavily timbered and with the exception of one track, which had no visibility. This track had a moderate cover of road base and only offered five per cent visibility.

i. Survey Limitations

There are several limitations which require recognition in order for the survey to be assessed accurately. The most significant of these are geomorphic processes and clearing of the landscape for agriculture and timber getting will have resulted in downslope soil movement which could displace artefacts from ridges and bury material at the foot of slopes.

The limited visibility of the study area and the high impact nature of quarry operations renders the area difficult to assess on the basis of the visibility available at the time of survey.

To supplement the limited visibility, this assessment has used the current understanding of the nature of Aboriginal land use in relation to topography in the Hastings Region. An overall summary of the survey coverage data can be found in *Table 2.1*.

Chapter 2

ARCHAEOLOGICAL ASSESSMENT

2.1 STUDY PLAN

The study area comprises a ridge line which would have provided a travelling route from the mountains and plateau's to the west, to the flats of Bungwahl Creek and swamp to the east and on to the coast in the Black Head area. Oral tradition places a large base camp area on Bungwahl Creek (Mick Leon FLALC pers. comm.).

The review of previous archaeological investigations in the region would indicate that ridge lines, saddles, spurs adjacent to water and river terraces are areas likely to contain material culture of Aboriginal society. Large sites could be expected on the river flats and elevated river terraces a hundred metres south of the study areas' southern boundary. Within the study area smaller sites along the ridgeline and within the saddles may occur.

The site is predominantly a ridgeline, and therefore the survey concentrated on the ridgetops, crests, spurs and saddles. The slopes in the study area are generally too steep to have been suitable for camp sites.

2.2 SURVEY STRATEGY

The survey strategy was to utilise all exposures. The exposures tended to occur along the ridgelines in the form of dirt tracks with minimal camber. The site types which would be expected to be found are small artefact scatters and isolated finds. Other heritage items relating to the timber cutting history and banana farm phase of land use may be located.

2.3 FIELD METHODS

The field team surveyed the area on foot along the ridgelines. Other vehicle tracks up and down the slopes were inspected by vehicle initially and re-inspected if any reasonable exposure, more than 10 per cent, was present. As the quarry is a functioning roadbase quarry very few road surfaces had not been coated in crushed gravel to some degree.

The vegetation of the area has been modified by timber felling and clearing, with the study area comprising a few old growth trees and regrowth eucalypt forest approximately 30 years in age. Understorey species which would have provided food resources in the past include *Lomandra longifolia, Acacia, Persoonia, Exocarpus* and ferns. The quarry manager has frequently seen wallabies and snakes within the study area.

The geology of the site comprises shale and greywacke hornfels. The soils of the site are weathered in-situ apart from where downslope movement has moved soil along the drainage lines which are generally located outside the study area.

More recent land uses in the study area are soldier settlement block post 1918, timber getting for a local mill and banana plantation (Stockton 1983).

ridgelines. Rich (in Haglund 1992) suggested that Aboriginal use of the forests may increase in frequency (therefore density of material remnants) closer to the coast.

The assessment of archaeological potential for the Bulahdelah to Failford upgrade of the Pacific Highway located sites on gentle slopes near water courses. The sites located comprised three isolated finds and three areas of potential deposit. Two of the isolated artefacts were chert (Navin and Klaver 1993).

The assessment of various different options for the duplication of the Pacific Highway from Coolongolook to Possum Brush found that undulating ridges, slopes and river flats were considered to have the highest potential for archaeological sites (Klaver 1993).

A survey of Minimbah land fill site (Appleton 1997) did not locate any sites in spite of containing the potentially sensitive land form of undulating spurs with elevation of 20 to 50 metres AHD. The lack of sites was attributed to the broad swampy nature of the Bundacree Creek valley in this location.

An investigation of the Taree to Coopernook bypass north of Taree (Collins 1998), found that the low lying back-plain which comprised the majority of the study area were unlikely to contain archaeological material because of poor drainage. Two areas of potential deposit were identified on a relatively well drained river terrace. The report also referred to the salvage of sites 30-5-22 and 30-5-43 located on adjacent ridgelines. Natural outcrops of mudstone, chert, jasper, quartz, quartzite and volcanics had been a focus of stone procurement at site 30-5-43 where stone was tested and the early stages of core reduction undertaken. The adjacent ridge 30-5-22 showed evidence of tool production and use with material selected from the previously discussed ridge (in Collins 1998).

The results of work to date would indicate that Aboriginal land use patterns in the forested ridges, peaks and valleys adjacent to the coast have not been tested. Further, inland ridges appear to have been used as travelling routes and the saddles on the ridges are the most likely location of concentrations of artefactual material. Whether saddles closer to the coast which also have access to broad river valleys contain the same frequency of camp sites is not known.

1.7 LANDSCAPE CONTEXT

The study area comprises slopes and ridges with elevation between 20 metres and 110 metres above sea level. The study area forms part of a ridgeline which effectively divides the more coastal landscape from the elevated and heavily dissected country to the west. The study area is 8 kilometres from the coast.

While 30 sites are recorded on the register a total of 32 for the different site types is due to some sites being recorded under one site number but are recorded for two different site types (ie. bora/ ceremonial and carved tree).

The closest sites are a stone arrangement (NPWS 38-2-19) located within forestry reserves on the top of a steep ridge. The second was an open artefact scatter located within a minerals sand mining lease which has since been destroyed (NPWS 38-2-73). The site occurred to the east on Pleistocene sand dunes and has limited comparative value. The third is an isolated orange chert flake (NPWS 38-2-0097) at Possum Brush quarry a kilometre south of the study area. The artefact was located on a spur elevated to 20 metres overlooking a creek (Appleton, 1998).

Archaeological surveys conducted in the wider area have, over time, indicated that sites can be located within a variety of environmental settings. Klaver and Heffernan (1991), found that the estimated site density of one per 100 kilometres square based on the forty two recorded sites within the City of Greater Taree, was not an accurate reflection of Aboriginal cultural material. They conducted a survey of less than a square kilometre and added fifty-nine sites to the forty two known sites in the NPWS register. The survey results indicated that sites occur in rugged to steep slopes as well as on creek flats and indicated Aboriginal land use throughout the landscape (Klaver & Heffernan 1991). The site register search of the study area would indicate that the majority of these sites were located in coastline contexts.

Jandra Quarry was surveyed prior to the excavation of the existing pit (Stockton and Haglund 1983). An isolated find was located on the southern boundary although it does not appear on the site register. The 1983 survey concentrated on a strip of land which had been cleared for the erection of a boundary fence, old logging tracks and vehicle tracks. Visibility in these areas was better than the remainder of the site which was considered very low. Due to the general steep slope of the land no further work was recommended.

Investigations related to the Coolongolook - Bulahdelah bypass undertaken by Haglund (1992) occurred directly south of the study area on the Wootton 1:25,000 map sheet. Sub-surface testing of sites BC5 and BC9 and analysis of surface material indicated at the very least intermittent use of the forests by small groups of highly mobile people. The site types were overnight camp sites and activity areas (ie. a stop to sharpen implements). Artefacts appeared to have been swept into hearths when the occupants moved on after short-term use. A clear preference for ridge tops, saddles or spurs was indicated however the results may be skewed by poor visibility on the slopes (Haglund 1992).

Byrne who conducted a study of Aboriginal sites within rainforests (1987) found that Aboriginal land use patterns comprised base camps located in open river valleys or low elevated areas around lakes. Travel routes between these areas utilised

1.5 OBJECTIVES OF THE STUDY

The objectives of the study are to:

- work in conjunction with the appropriate Aboriginal community representatives;
- formulate a study plan based on environmental factors and existing records of archaeological patterns within the broader area;
- survey the study area to identify archaeological sites;
- conduct sub-surface probes where necessary; and
- provide a report detailing the process above.

1.6 ARCHAEOLOGICAL CONTEXT

A site register search revealed thirty sites within a twenty kilometre radius. A variety of site types have been recorded in the vicinity. The variety of environments also exist in the surrounding area including beach, Pleistocene dunes, broad river flats, low ridges and spurs elevated to 20 to 30 metres AHD and steeper ridges with elevations to 120 metres as in the study area. The frequency of site types can be seen in *Table 1.1*.

Table 1.1 RECORDED SITES IN A TWENTY KILOMETRE RADIUS OF JANDRA

Site type	No. recorded the NPWS Site Register
Carved tree / scarred tree	5
Bora / ceremonial site	3
Midden	11
Stone arrangement	1
Isolated find	4
Open camp site	2
Shelter with midden	3
Natural mythological site	2

Notes: 1. Source NPWS Sites Register 22.6.1999. AMG 43800 to 45800 E and 6444000 to 6464000 N Nabiac 1:25,000

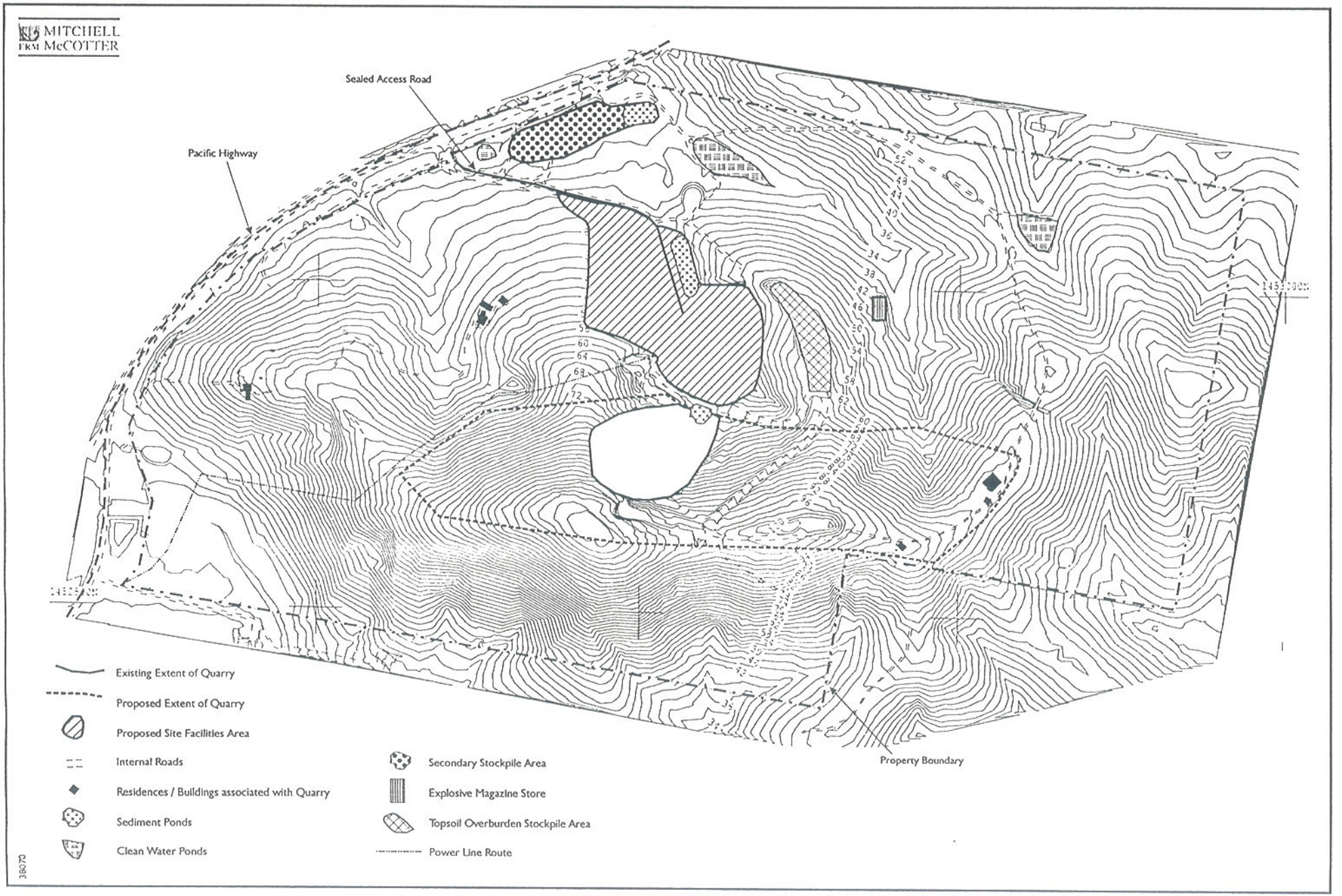


Figure 1.2 PROPOSED QUARRY LAYOUT

survey and subsurface testing of the study area. The project was undertaken by Angela Besant (ERM Mitchell McCotter) and field officers of Forster and Taree-Purfleet Local Aboriginal Land Councils.

1.3 ABORIGINAL COMMUNITIES COLLABORATION

The study area is located on the boundary of Taree-Purfleet Local Aboriginal Land Council and Forster Local Aboriginal Land Council. The survey was conducted by field officers of both representative bodies, Mick Leon and Bob Paulson (Forster LALC) and Vienna Maslin (Taree-Purfleet LALC). The field team concurred with the decision to undertake further sub surface testing in the prescribed areas.

The preliminary research methodology was reviewed by Mick Leon and members of both Land Councils were involved in the sub surface testing program.

1.4 DESCRIPTION OF IMPACT

The extension of the quarry will involve the complete clearing and excavation of the landscape in the area of the pit. The proposed facility area would require clearing of vegetation and some cut and fill to allow level pads for construction of sheds etc. The impact would be sufficient to destroy any sites within the area of works. The 132 kva powerline which is located to the north west of the pit will require relocation to the west of the pit where it shall be brought up a steep slope and then follow the top of the pit to the site facility area to the north-east.

The landform units which will be effected are ridge crest and slope *(Figure 1.2)*. The area of land in which the quarry operates is approximately 40 hectares, the area of proposed development is approximately 10 hectares or a maximum of one quarter of the available area. The proposed extension to operations is confined to the ridge slopes and ridge tops. There is a small amount of drainage line flats which will not be impacted by the proposal.

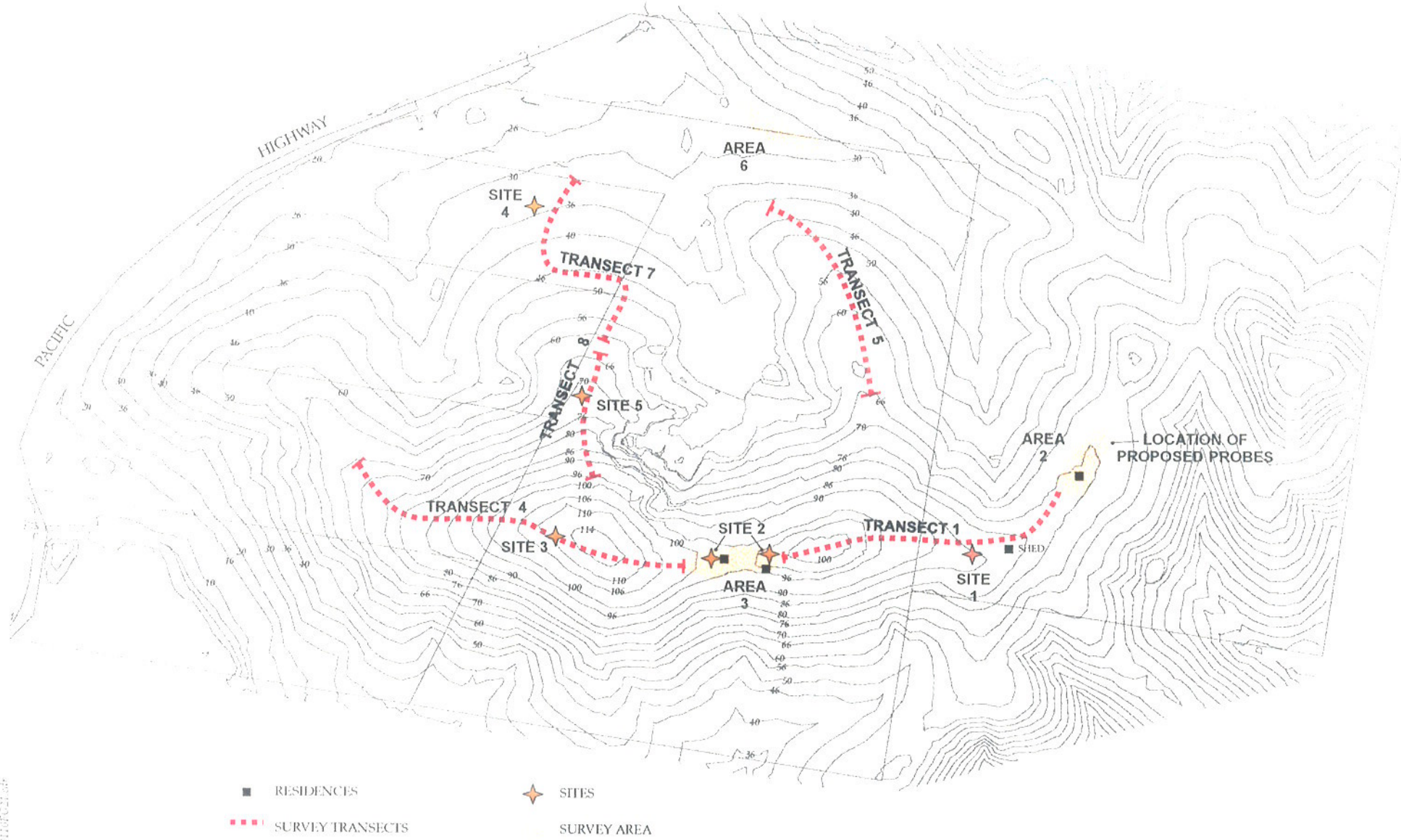


Figure 2.1 AREAS SURVEYED AND RESULTS

Table 2.1 SURVEY COVERAGE DATA

Survey unit no.	Environment	Length x width	Exposure (%)	Visibility (%)	Effective cover
1	ridge tops	500m x 2.5m	70%	80%	700 sq metres
2	level area on spur	200m x 100m	25%	50%	2500 sq metres
3	saddle	200m x 75m	25%	70%	2625 sq metres
4	ridgetop	250m x 2.5m	80%	50%	250 sq metres
5	creek flats	250m x 3m	10%	1%	0.75 sq metres
6	slope	250m x 2m	50%	50%	125 sq metres
				total cover	0.55 hectares

Notes: *1. Exposure and visibility are averaged over the transect or survey area.*

2.5 DEFINITION OF A SITE

A site is defined by different means dependant upon the environment in which it may occur. Within the study area the following sites are considered more likely to occur based on the topography of the area and previous archaeological work within the region.

i. Open sites

Open sites can range from a single stone artefact (often referred to as an isolated find) to an extensive scatter of a wide range of artefact types (usually designated an open site, open camp site or artefact scatter). There may be evidence of a working floor where stone has been knapped and artefacts may include stone tools, cores, flakes, flaked material, hammerstones or ground stone implements. Associated cultural remains may include hearths and charcoal, ochre, shell or bone.

Such sites may be found on the surface or stratified in subsurface levels which may be capable of dating. An area of potential subsurface material is recognised by characteristics such as an area of likely site location, which has been covered by soil movement due to geomorphic processes, is known as a potential archaeological deposit (PAD). PAD is considered a site until it has been defined by further investigation such as sub-surface testing.

Raw materials found in open sites may be local or introduced and can provide evidence of population movement and exchange systems. Open camp sites or artefact scatters are the most common site types in the Hastings Region.

ii. Scarred trees

Trees were scarred by the removal of bark for a number of purposes. Bark was used to make containers, shields and canoes but scarring can also be due to cutting toe-holds for climbing or holes for access to hollows to secure honey, grubs or possums. Scars vary in size according to purpose. Cultural scarring is distinguishable from natural scarring, using criteria such as:

- the maturity of the tree, usually trees need to be at least 100 years old;
- generally regular shape of scarring, usually elongated or oval;
- termination of scar above ground level;

- exposed heartwood exhibits no signs of major irregularities;
- absence of branching at the top of the scarring;
- in some circumstances, scarring may be modified by carving in traditional cultural patterns; and
- the presence of stone tools or other sites in the vicinity of the tree can also be an indicator.

Scarred trees may also indicate later human activity in the landscape in the form of surveyors marks or timber felling with the use of planks and hand axes. These sites can have historic importance.

A number of carved trees have also been recorded in the vicinity of Jandra. Carvings generally tend to be geometric designs cut to the heartwood of the tree after the removal of the bark.

iii. Stone Arrangements

A stone arrangement is located at Breakneck Hill, four kilometres north west along the ridgeline from the study area (NPWS 38-2-19). The site comprised clusters of small granite stones placed in a circular arrangement. The majority of the site has been destroyed. Stone arrangements are recognised by the appearance of rocks placed in a regular pattern, which will appear out of context to the general landscape.

An inspection of topographic map and aerial photographs indicated that it is unlikely for rock shelters to occur in the area.

2.6 ARCHAEOLOGICAL RECORDING OF SITES

A total of seven sites were recorded during the initial field survey (*Figure 2.1*). Sites J1 - J5 contained artefacts. Site J1 consisted of one isolated artefact, a massive flaked quartzite pebble, one margin step flaked and grinding striations on a cortical surface. Sites J3 and J5 are small open artefact scatters, site J2 contained potential midden material and J4 is a historic scared tree. Sites J6 and J7 were identified as potential archaeological deposits (PADs). The environmental setting of the site location and site contents are described in *Table* 2.2.

Table 2.2 SITE CONTENTS AND ENVIRONMENT

Survey unit & AMG	Environment	Site contents	Site area	Comments
J1 Nabiac 1:25K 448800E 6453750N	ridgetop vehicle track mid slope	core broken grey FGS 6 neg scars	N/A	located in middle of track signs of vehicle damage
J2 Nabiac 1:25K 44863050E 6453750N	saddle part site on south end part on north. Disrupted by roads and house	south end of saddle contain possible midden material 12 shells oyster, cockle, whelk, pipi North contents 9 small flakes, 7x FGS secondary flakes, 1 x mottled grey FGS, 1 x cream FGS	6m x 3-4m	the midden and artefact scatter may well have extended over the saddle. now house, shed and vehicle tracks cut through
J3 1:25K Nabiac 44850E 6453250N	ridgetop vehicle track, little camber, artefact on top of 100 metre contour knoll adjacent to previous saddle	artefact scatter contents 10 pieces, 6 pieces split pebble FGS, 1 x flake piece FGS, 1x flake chert pink-grey, 2 x flakes FGS	10m x 2m	on vehicle track high level background gravel
J4 1:25K Nabiac 6454250N 448450E	on footslope to north west of quarry surrounded by regrowth	eucalypt stump 3m high with 3x wedges cut for boards for axemen to stand on	N/A	Post contact site related to timber felling for the timber industry or land clearing
J5 1:25K Nabiac 448500E 6454100N	on slope north west of quarry 70m contour	artefact scatter 3x bleached FGS flakes, 1x white chert, 1 white chert chip	5m x 2m	eroded to B horizon exposure adjacent to powerline
J6 1:25k Nabiac	saddle	PAD 1	60m x 45m	Saddle. House and outbuildings, road and services. Some area of natural land surface and areas of fill, perhaps over natural surface
J7 1:25K Nabiac	narrow creek flats	PAD 2	140m x 40m	Narrow creek flats colluvial deposit.

1. FGS fine grain siliceous unless stated otherwise grey in colour.

2. AMG references refer to the Nabiac 1:25,000 topographic mapsheet

The isolated find recorded by Stockton (1989), was not relocated. The artefact was located in an area which had been cleared for a fence line which has now regrown resulting in very low visibility. Dull wet conditions also hindered visibility.

2.6.1 Survey effectiveness

Visibility was a limitation in most of the areas surveyed. The reduced visibility resulted from very high levels of background gravel and rock where exposures did occur. The use of crushed rock on sections of road with a steep gradient for filling wheel ruts and wash-outs also obscured exposures on slopes. However where road base had been used on the road along the ridgeline artefacts were found. This would indicate that the absence of artefacts on the slopes was indicative of site distribution not visibility.

2.7 ANALYSIS

Sites were located in all landforms other than steeper slopes. PAD 1 (J6) was identified on the northern saddle and the narrow creek flat. The saddle is of adequate size to have been utilised as a camping place, and in a good position with access to the ridgeline extending west and swamps and coast to the east. The area has an occupied house with gardens which combines to obscure visibility. The similarity to the site BC5 located by Haglund (1992) during the survey of the Bulahdelah to Coolongolook Bypass was noted by the representatives of the LALC's. The team noted the distribution of imported topsoil related to lawns etc. Areas of exposure on the southern side of the house were inspected, however this area is on the shoulder of the spur and due to the increased slope, could be expected to have few artefacts (Haglund 1992).

No artefacts were located on the level area of the spur. The A horizon was eroded on the southern side. The heavily grassed areas have some potential to retain material under the layers of imported soil and soil moved down slope from the spur shoulder. The house lies on the edge of the north eastern side of the proposed expansion of the quarry and is scheduled for destruction toward the end of the project, in at least 25 years time.

The materials most commonly found was greywacke which occurs on the site. No further quartzite was located (f. previously located artefact). Chert was found in the study area which is consistent with other findings in the wider area (Appleton 1998, Navin & Klaver 1993, Collins 1998). Sources of chert could occur locally where outcrops of the Bundook Beds could provide greywacke, mudstone and chert (Appleton 1998).

All the sites located were disturbed, generally to a degree which reduces the potential significance of the material. The post contact site (the tree) however appears in good condition. The material does comply with the hypothesis put forward by Klaver and Heffernan (1991), that Aboriginal peoples utilised all forms of landscape in this region and sites can be expected to be found in a wide variety of topographic units. Chert outcrops also occur north of the study area in the Carboniferous Byabarra formations at Taree and in the conglomerates of the Camden Haven group north-west of Coopernook.

The environmental similarity of J6 (PAD 1) to other areas which have revealed archaeological information (BC5, Haglund 1992) warranted further investigation. The investigations of BC5 revealed that intermittent use was made of such areas for stop-over camps. The question has been raised by Rich (in Haglund 1992), that the time between visits would decrease with less distance between the landform and the coast. The level area on the spur has the potential to test this hypothesis if cultural material remains beneath the fill related to the house site.

Chapter 3

SUB-SURFACE TESTS

3.1 SUB-SURFACE PROBES

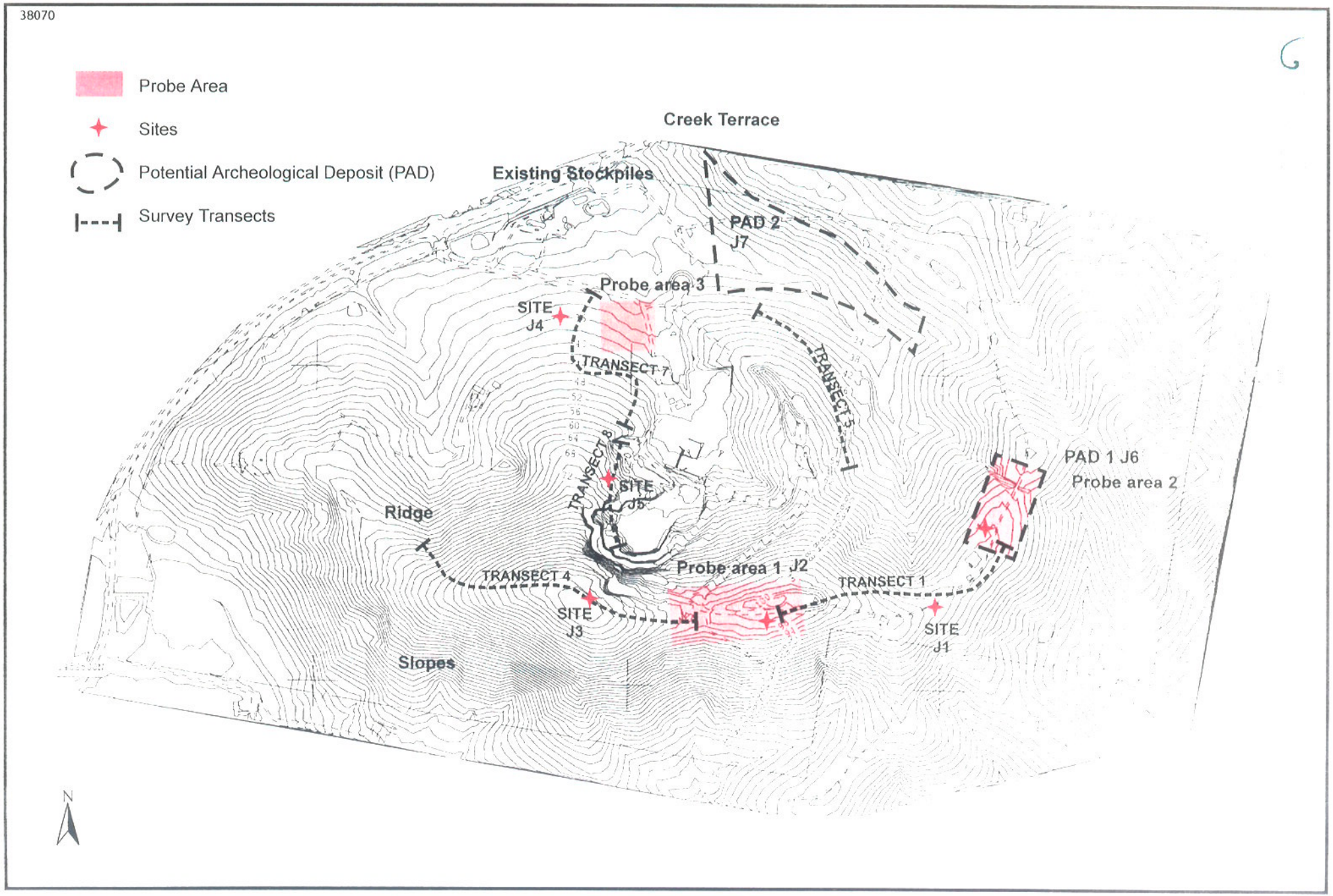
A preliminary research permit was granted by NPWS for the conducting of a sub-surface probe program (*Appendix B*). The sub-surface probe program was designed to test the areas considered to have archaeological potential and which would be subject to destruction by the proposed development. The areas tested were found to have insufficient visible surface to allow an adequate assessment of the archaeology which they may have contained. The sub-surface probes were located to test two landform units, ridge and slope, areas of which would be destroyed by the proposed development (*see Figure 3.1*).

It was not considered necessary to test the narrow creek terrace which drains the study area to the north - western as the proposed development shall not impact this landform.

Three areas were selected for testing. The first was the location of the potential midden material and artefact scatter (site J2). This site was highly disturbed and as it occurred within an excavated area for a house, it was uncertain if the shell was in-situ or if it may have been brought in by occupants of the house or as part of a load of sand (*see Figure 3.1*).

The second was PAD 1 (J6) identified during the survey. This area was first tested by a series of auger holes to determine the extent of fill, again associated with a house site. This area was located on a saddle 500 metres north-east of the first area tested. The saddle had been cut or eroded on the southern slope and fill used to level the site for building on the central part of the saddle. The remainder of the saddle landform to the north of the test area was not probed as it will not be impacted by the proposal and the surface has been very disturbed by a road and earthworks probably related to the procurement of fill.

A third area was tested on slopes on the western portion of the study area in which it is proposed to construct new site facilities. This area had limited visibility due to the dense vegetation. Here a sample area was selected which had the greatest break of slope and which would have offered the least steep ground for campsites or other activities. An area of four metres by 25 metres with a slope of approximately 5 degrees.


38070
Probe Area
Sites
Potential Archeological Deposit (PAD)
Survey Transects
Creek Terrace
Existing Stockpiles
PAD 2
J7
Probe area 3
SITE
J4
TRANSECT 7
TRANSECT 8
TRANSECT 5
SITE
J5
PAD 1 J6
Probe area 2
Ridge
TRANSECT 4
Probe area 1 J2
TRANSECT 1
SITE
J3
SITE
J1
Slopes
N

3.2 METHODOLOGY

The excavation was carried out by hand auger in Test Areas 1 and 2. Shovel probes were resorted to in Test Area 3 due to the dense root zone in the A1 soil horizon, which made auguring slow. Excavated material was placed in buckets which were marked with the individual probe identification number and letter.

The material was sieved through a 3.13 mm sieve. Test Area 2 required wet sieving as the clayey soil was wet from recent rains. The wet sieving was carried out at the facilities building in the area of the existing quarry pit.

Each probe was backfilled with spoil from the excavation with the exception of area two, where material was sieved away from the excavation site. Fill for these holes was taken from the disturbed area of earthworks on the northern end of the saddle.

The available area to probe at site J2 (Test Area 1) was extremely limited due to road cuttings on the north and south of the site, the house excavation which extended from the west across to the east of the saddle and an excavated area above the house between the 100 metre and 114 metre contour. A small area of relatively undisturbed ground (approx. 15 metres x 3 metres) was found on the western side of the saddle immediately above the location of the shells. This area was probed on a two metre grid.

Test Areas 2 and 3 were tested by auger holes, 30 centimetres in diameter. The probes were sunk to the B soil horizon. Probes were laid out systematically over a five metre grid.

3.3 RESULTS

3.3.1 Test Area 1, Site J2

Test Area 1 was probed on a two metre grid in a small relatively undisturbed area (*Figure 3.2 & Photographs 1 & 2*). Immediately east of the probe area was the top of the cut to provide a level area for the rear of the house. Immediately west of the probe site was disturbed by a chicken shed above which further excavation has created another level area deeply incised to the B horizon.

No artefacts or further shell material was found. The soil profile revealed by the probes was original however the area suitable for testing between the disturbed areas was small (4 metres x 4 metres) and therefore the opportunity to test for the presence of insitu material was extremely limited given the area of the saddle (approx. only 16 square metres of a total area of 100 metres x 40 metres). The pH of

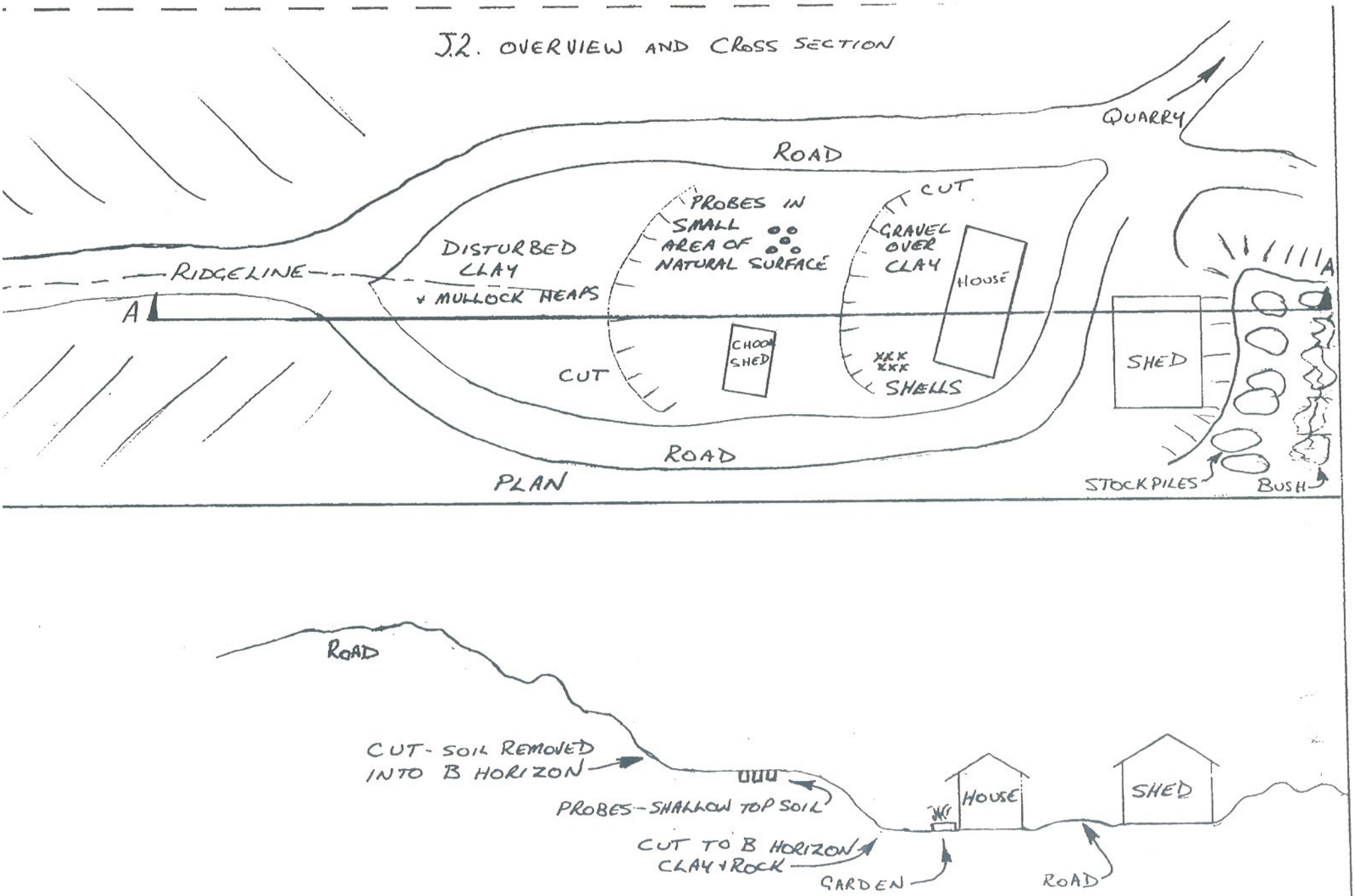


Figure 3.2 Field sketch of J2

Photograph 1. Shell found at J2.

Photograph 2 Context of J2.

the soil in the test probes was 6 which is slightly acid and not ideal for the preservation of midden material. The pH may have been altered in recent times by runoff and leaching from the bird droppings and organic matter in the shed.

3.3.2 Test Area 2, PAD 1

i. Soil profile tests

Prior to the probe program Test Area 2 was investigated to determine the extent and nature of fill which was apparent over the majority of the area (*see Figure 3.3*). The investigation identified that an orange clay had been imported as fill and laid over the natural surface. To the east and west of the area the fill layer was greater than two hundred and fifty millimetres thick. The soil profile in the filled areas revealed a profile of humic loam over orange clay over the majority of the southern side of the site. (*see Figures 3.4 & 3.5*). The original surface appears to have been scraped and the A horizon soil probably stockpiled to backfill over the imported fill. The impact of this process upon the archaeological resource is considerable as archaeological material is generally located in the A horizon. The areas of fill are unlikely to have preserved any undisturbed sites. Generally the impact of house construction and roads has been significant over the majority of the landform.

ii. Site Probes

The soil profile tests revealed the areas of intact soil profiles and here probes for cultural material were placed. The northern fifty metres of the area of PAD was found to have A1 and A2 horizon soil over white - cream clay. The profiles appeared relatively undisturbed with a distinct humic layer and underlying brown soil to a depth of 160 cm overlying the clay. Area two was probed at five metre intervals along three parallel 35 metre transects (*Figure 3.3 & Photographs 3 & 4*). Each probe was taken down to a depth of 13 to 16 centimetres until the pale white - cream B horizon clay was reached. An auger was used to extract the soil and due to wet conditions the material was wet sieved at the facilities area at the quarry in 3.13 mm sieves. The results of the probes are documented in *Table 3.1*.

Artefacts were found at the eastern end of the grid. The grid could not be extended further to the east because of disturbance by the road, Telstra service lines and then fill which has been used to extend the level area to the east.

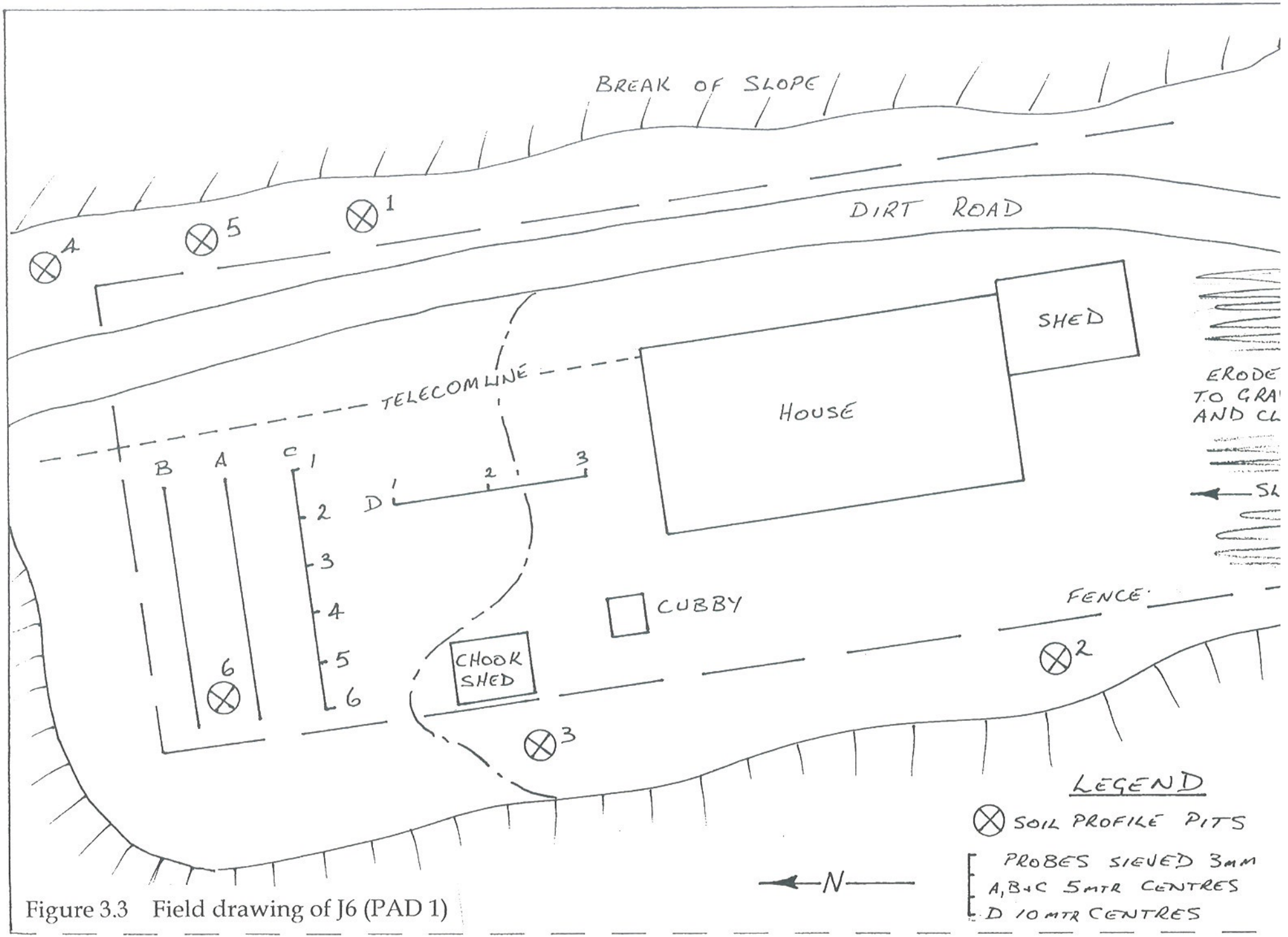
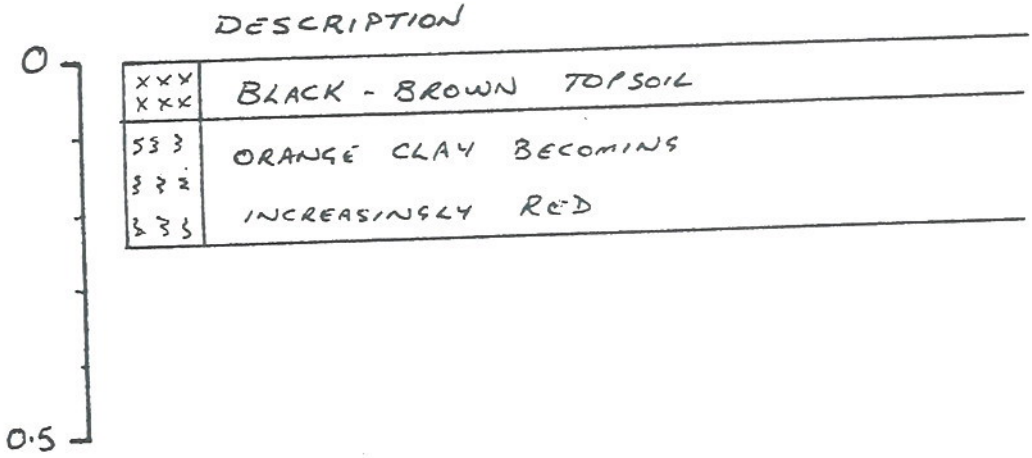


Figure 3.3 Field drawing of J6 (PAD 1)

SOIL PROFILE TEST

HOLE 1

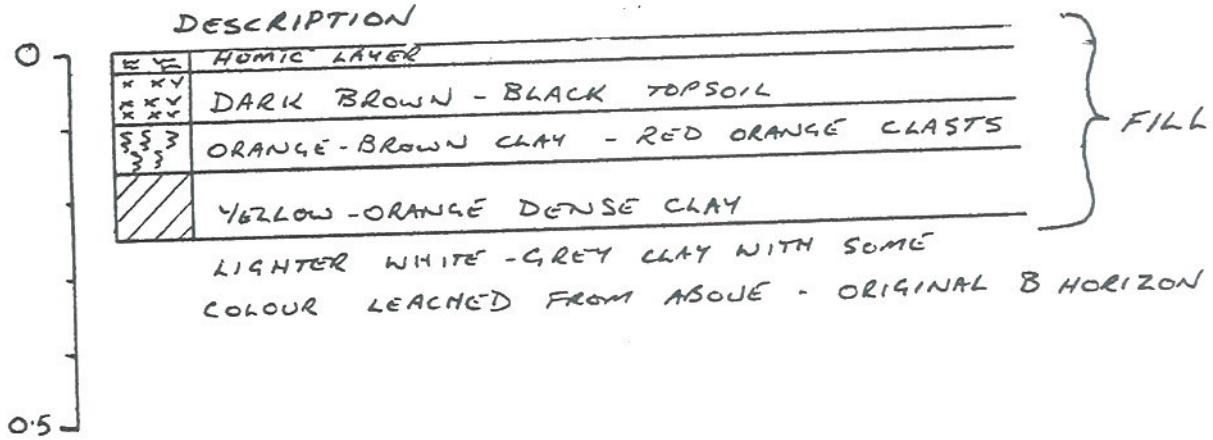
SURFACE CONDITION: GRASS



SOIL PROFILE TEST

HOLE 2

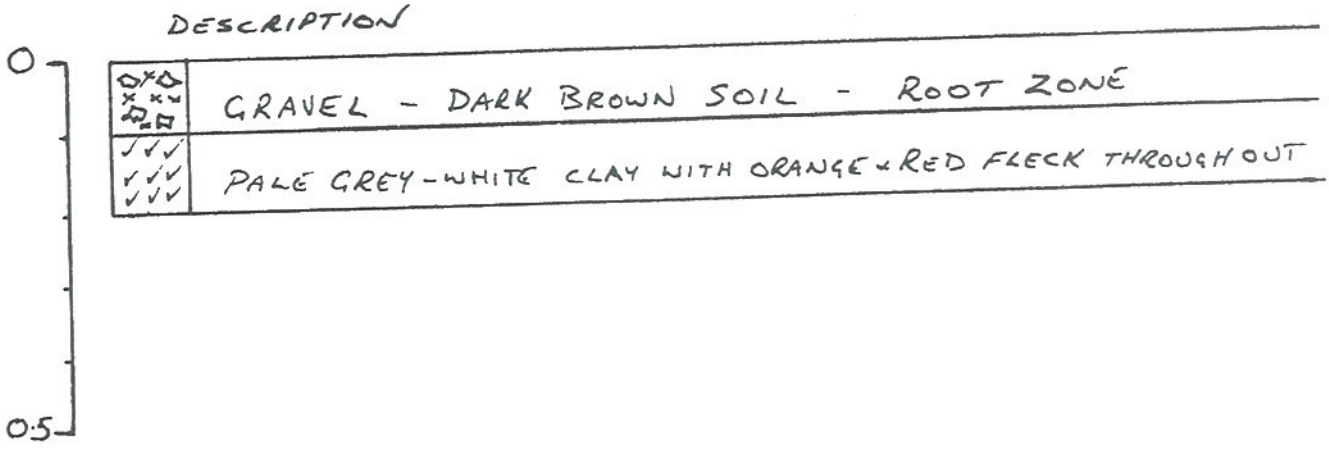
SURFACE CONDITION: GRASS



SOIL PROFILE TEST

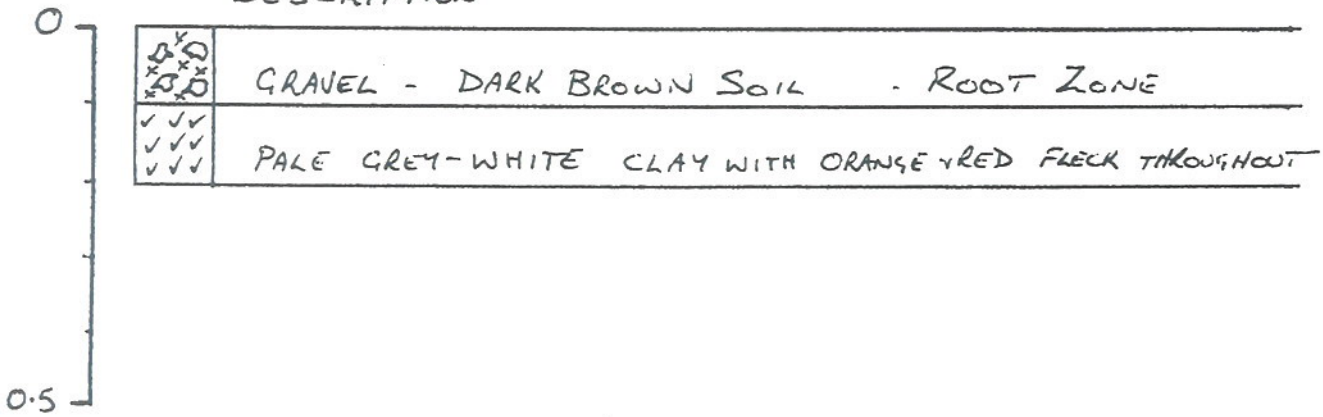
HOLE 4

SURFACE CONDITION: GRASS

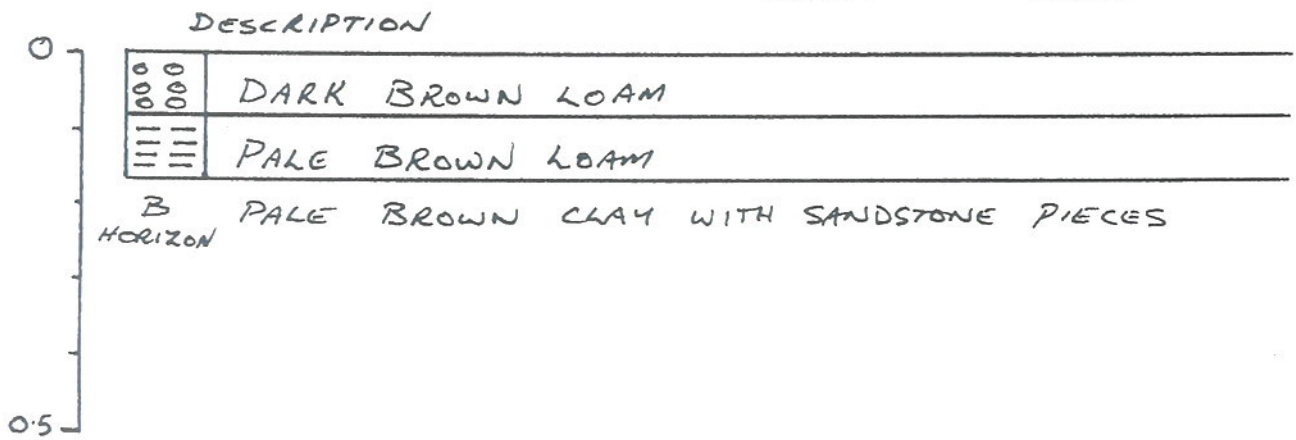


SOIL PROFILE TEST
HOLE 6

SURFACE CONDITION: GRASS



SOIL PROFILE PAD 1
PROBE 1 - TRANSECT A
SURFACE CONDITION: GRASS



SOIL PROFILE PAD 1
PROBE 3 TRANSECT D
SURFACE CONDITION: GRASS

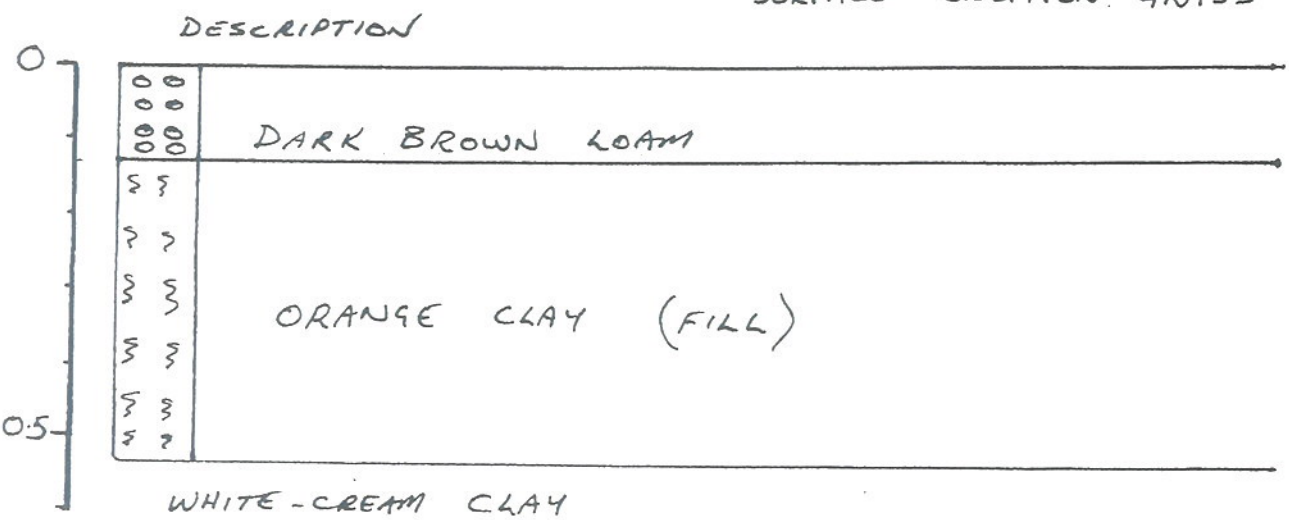


Figure 3.5 Soil profiles J 6 (cont.)

Photograph 3. Context of J6 (PAD 1) view to the south

Photograph 4. J6 view to the north along transect D. Note the fill at the northern end of the transect.

Table 3.1 PROBE RESULTS AREA TWO - PAD 1

Transect and Probe	Depth to clay in millimetres	Artefacts in mm	Characteristics
A1	160	flake greywacke 7 x 10 x 3 flake greywacke 6x 7x 2	no evidence of usewear
A2	165	nil	5 fragments of burnt bone. Unable to conclude Aboriginal origin without doubt due to proximity to house. Fragments too small for species identification.
A3	170	flake piece 12 x 13 x 3	no sign of usewear
A4	140	nil	
A5	140	nil	
A6	100	nil	
B1	140	flake greywacke 13 x 12 x 4	no sign of usewear
B2	140	flake greywacke 10 x 15 x 4	no sign of usewear
B3	160	nil	
B4	130	nil	
B5	150	nil	
B6	170	nil	
C1	130	nil	
C2	140	nil	
C3	150	nil	
C4	160	nil	
C5	155	nil	
C6	150	nil	

Table 3.1 PROBE RESULTS AREA TWO - PAD 1

Transect and Probe	Depth to clay in millimetres	Artefacts in mm	Characteristics
D1	160	nil	Probes placed at ten metre intervals at right angles to A B & C. Continued to the south until intersected with fill.
D2	130	nil	
D3	530	nil	evidence of 400 mm of orange clay fill placed over white - cream B horizon clay

It was found that the results from probes at ten metre intervals would have produced the same result as the probes at five metre intervals.

A second transect (D) was placed at right angles to the second probe in the first transect. This transect was taken to the south toward the house site until it reached fill, 30 metres to the south. The fill was evident as a orange coloured clay which lay directly over the paler original B horizon clay. The probes demonstrated that where fill had been placed the original surface had been scraped to remove the A horizon. The topsoil may have been used to top dress the fill. This process would have destroyed any archaeological evidence over the majority (approx. 60 per cent) of the saddle.

3.3.3 *Test Area 3*

Test Area 3 was located within the proposed new facilities area. The area is sloped with an average slope greater than 5 degrees. The area selected for probes was located between mid slope and base slope where a slight break of slope created a small more level area with a slope of approx. 5 degrees.

Two transects, placed parallel five metres apart, were probed at five metre intervals for a distance 30 metres (*Figure 3.1, Photographs 5 & 6*). No artefacts were located.

3.4 DISCUSSION

A total of 38 probes were excavated in three different areas. Two distinct landforms were tested, ridge line (saddle) and slope. The slope landform revealed no archaeological material. A total of five artefacts were retrieved from the saddle environment. The high degree of disturbance is considered to be the main contributing factor to the failure to locate more archaeological evidence.

In Test Area 1 (site J2), which was focused around the residential buildings of "Jandra", the undisturbed ground available for testing was limited by roads, earthworks and structures, and the break of slope which formed the east and west side of the saddle. The ridgeline generally is narrow, at times only a matter of a few metres across. The ridgeline has been heavily utilised by the previous residents for travel routes, storage sheds and buildings.

The origins of the shell are important to ascertain to establish the significance of the site. The shell does exhibit characteristics of midden shell (ie. edible species known to be utilised by Aboriginal People) as they are all large shells and the variety of

Photograph 5. Context of Area 3 - proposed facility area.

Photograph 6 Area 3 test probe. All areas had very similar soil profiles reflecting the consistent underlying geology

shell is consistent with middens. There are signs of predator attack with borer holes in the cockle shell *(Anadara trapezia)* and the whelk (*Pyrazus ebeninus) (see Photograph 1)*. The location of the shells may have been altered by the excavations of the house as the shell is separated from the artefacts on the north side of the site. The shell could have been brought to the site by the residents of the house.

Test Area 2 (site PAD 1), revealed a total of five artefacts predominantly at the eastern end of the transects. The slope of the saddle is orientated toward the west however for the length of the transects it was not greater than three degrees. The undisturbed area of the saddle feature is relatively small and it is probable that any archaeological material retrieved is not representative of all the material originally on the site. The site may reveal more artefacts if it were excavated over a broad area however it is not likely that such an excavation would retrieve a statistically viable sample of artefacts for analysis.

The artefacts were all small and manufactured from greywacke a material abundant in the local area (Stockton 1983). There was no variation in material found unlike the field survey which located two small chert flakes. Chert has been noted previously in the general area at Possum Brush Quarry (Appleton 1998) and at Failford (Navin and Klaver 1993). It is quite possible that a local source of chert outcrops in the form of pebbles within conglomerate and it is not considered necessarily indicative of people travelling long distances to the site.

The evidence of Aboriginal use of the ridgeline is present however because of the recent heavy use of the ridgeline for roads and building this evidence no longer remains in-situ in sufficient quantities to warrant further investigation.

PAD 2 (J7) has remained untested as it is not going to be disturbed by the proposed extensions to quarry activities. This area is worthy of testing should it come under threat in the future. The topography of the study area indicates that this creekline leads to a saddle of lower elevation directly north of J6-PAD 1. The lower saddle could potentially have made an ideal point to cross the range.

Chapter 4

MANAGEMENT RECOMMENDATIONS

4.1 SIGNIFICANCE ASSESSMENT

The basic processes of assessing significance for items of heritage are outlined by *The Australian International Council on Monuments and Sites (ICOMOS) Charter for the Conservation of Places of Cultural Significance: The Burra Charter* and its associated *Guidelines*. Sites may be significant according to several criteria, including scientific or archaeological significance, significance to Aboriginal people, aesthetic value, representativeness and value as an educational resource. The nature of significance relates to historic, aesthetic, social, scientific, cultural or educational. Sites are also assessed on the degree to which they rare representative or characteristic, or whether they exhibit historic or cultural connections.

4.1.1 Scientific Significance

In order to determine scientific significance it is necessary to first place sites within a local and regional context. This process enables the assessment of any individual site in terms of merit against other sites of similar nature within similar contexts.

Within a regional context the sites reinforce a pattern of site distribution noted by Klaver and Heffernan (1991), Haglund (1992) and Kuskie (1994). The distribution of sites demonstrates the wide use of the majority of landforms by Aboriginal people. The scientific significance of site distribution implies that all sites are significant because they impart information about that particular landscape unit, and collectively about variations in site patterning in different regions.

The conservation of sites requires the selection of sites which have the ability to impart further information or those which are rare or representative of their type. The majority of the sites located in the study area by surface survey and sub-surface testing do not retain the ability to add further information to the scientific record because they are not undisturbed examples and retain little or no integrity. The small artefact scatters are unlikely to be rare and it is highly probable that the infrequency with which they are reported in the general area is a result of the few development related studies which produce such reports.

The midden material at J2 may have been a rare example of a midden - open site if it could be shown that the shell's location was a result of Aboriginal activity.

Unfortunately the location of the shell, on top of a layer of imported gravel within what was a garden does not provide this evidence. The moderately acid soil of the test probes also indicates conditions which are not as conducive to the preservation of shell material however it is also possible that the pH of the soil has been modified by leaching from the chicken shed located upslope a few metres south east of the probes.

4.1.2 Public Significance

The sites have limited educational value to the general community as the greywacke artefacts are small and difficult to see against the natural background gravels. Site J6 which will be subject to destruction toward the end of the life of the current proposal can be conserved to provide educational value to researchers in the interim. Site J4 (historic site) and site J7 (PAD 2) can be conserved for future educational purposes after the life of the quarry.

4.1.3 Cultural Significance

Generally, all sites are of significance to the Aboriginal people. It has been recognised however that with the widespread nature of site distribution, sites will eventually be impacted upon by development. It is however necessary to conserve where possible sites which are of high significance to the community.

The cultural significance of the material located has been assessed by the Forster Local Aboriginal Land Council and the Taree - Purfleet Local Aboriginal Land Council. The view of these representatives can be found in *Appendix A*.

4.1.4 Site significance

Site significance is rated low, medium or high. The significance of individual sites is determined by comparison with known sites in the region which have not been destroyed. These ratings apply to the sites located by the survey as shown in *Table 4.1*.

Table 4.1 SITE SIGNIFICANCE AND IMPACT OF DEVELOPMENT

Site	Significance	Degree of impact
J1	Low - due to disturbance this isolated artefact appears out of context (ie mid-slope in centre of road)	Increased traffic and road resurfacing will effectively destroy the site
J2	Low - while midden material at this elevation is of significance there is no evidence to exclude transportation to the site by activity related to the house site. The stone material has been pushed to one side by earthmoving.	Site will be destroyed by the expansion of the void.
J3	Low - open camp site highly disturbed by road with break of slope either side diminishing potential for sub-surface material	Site will be destroyed by the increase in the quarry void in stages 1 to 3.
J4	Medium - a historic site of general interest to community, however this site type is fairly common in the area.	No need for impact. Avoidance to be recommended
J5	Low - Open camp site highly disturbed. The steep slope and broad area of erosion to the B horizon presents little opportunity for in-situ material.	Shall be impacted by powerline realignment.
J6 (PAD 1)	Medium - The presence of artefacts at PAD 1 confirms the use of the saddle area by Aboriginal People. The restricted portion of the landform undisturbed reduced the significance of the site to low- moderate as only a portion of the potential activities which have occurred on the landform can be expected to be represented.	Shall be impacted in approx. 20 years time. To be conserved in the interim as possible research resource.
J7 (PAD 2)	Unknown - The potential for PAD on the narrow creek terrace was not tested within this program. Therefore it is not possible to define the significance of the site.	This site will not be impacted by any of the proposed development.

4.2 MANAGEMENT RECOMMENDATIONS

Management recommendations are made taking the following in to account;

- the National Parks and Wildlife Act 1974 which states that it is an offence to damage or destroy any Aboriginal relic without the written consent of the Director;
- the Environmental Planning and Assessment Act, 1979 Section 79C (b) which states that the impacts of any development on the environment must be addressed within land use planning and decision making;
- the assessment of the cultural significance of the area by the Forster LALC and the Taree - Purfleet LALC;
- the results of fieldwork; and
- the plan of the proposed quarry extension and facilities area.

The management recommendations are as follows;

- consent to destroy permits should be sought for sites J1, J2, J3 and J5;
- site J6 (previously PAD 1), can be conserved until the quarry extension impacts on this area in at least 25 years time, at which time a consent to destroy should be applied for. This would enable the site to be available for further study in the interim;
- sites J4 and J7 (PAD 2) should be protected from unintentional damage throughout the life of the quarry. As these sites are not located near any of the main quarry areas and as they have remained unharmed to the present, awareness of their presence by key quarry staff should be adequate protection. Site J4 is protected under the Heritage Act 1977 (Heritage Office - Dept. Urban Affairs & Planning) and J7 under the National Parks and Wildlife Act 1974.

REFERENCES

Acacia Environmental Planning, 1996

Pacific Highway Bulahdelah to /Coolongolook Deviation: Review of Environmental Assessments Recommendations. Report to the Roads and Traffic Authority.

Appleton J, 1997

The Archaeological Investigation of a Proposed Solid Waste Landfill Site Minimbah Mid-North Coast NSW. Report to TW Perram & Partners Pty Ltd.

Byrne D, 1987

The Aboriginal and Archaeological Significance of the New South Wales Rainforests. Report to the NSW Forestry Commission, Sydney.

Collins J, 1998

SH 10 Pacific Highway - Proposed Upgrade Taree Bypass To Coopernook Bypass: Aboriginal Heritage Assessment. Report to the RTA by Connell Wagner P/L.

Haglund L, 1992

Pacific Highway Bulahdelah to Coolongolook Deviation: Archaeological survey 2 and test excavations. Report to the Roads and Traffic Authority.

Klaver J, 1993

Pacific Highway EIS: Coolongolook to Possum Brush, NSW Stage one: Option selection analysis. Report to Mitchell McCotter and Associates.

Klaver J and Heffernan K, 1991

Greater Taree Aboriginal Heritage Study. Report to Greater Taree City Council.

Koettig M, 1994

Bulga Lease Authorisation 219 Salvage Excavations. Report to Saxonvale Coal Pty Ltd.

Kuskie P, 1994

An Archaeological Assessment of the Proposed Route of Optus Communications' Fibre Optic Cable Between Taree and Wingham, NSW. Report to Optus Communications Pty Ltd.

Navin K and Klaver J, 1993

Pacific Highway Realignment Bulahdelah to Failford Deviation. Report to the Road and Traffic Authority NSW.

Rich E, 1990

Pacific Highway S.H. No. 10 - Taree Traffic Relief Route: Archaeology survey for Aboriginal Sites. Report to GHD Group.

Stockton J, 1983

Jandra Blue Metal Quarry - A report to Jandra Blue Metal Quarries Pty. Ltd.

APPENDICES

Appendix A

FORSTER AND TAREE-PURFLEET LALC REPORTS

Forster Local Aboriginal Land Council Culture & Heritage Unit

Jandra Quarry Auger Test Pits

Further Report on Auger Testing at Jandra Quarry 27th & 28th May 1999

Prepared by M.Leon and R.Paulson

Chapter 1

Summary

CSR propose to extend their operations at the current locality of the crushing plant, Jandra near Nabiac Mid North Coast NSW over the next 20 years.

Initial survey reveled cultural material existing at site and further sub surface investigation will be required during extension operations.

Forster Local Aboriginal Land Council Culture & Heritage Unit and Consultant Archaeologist, Angela Besant did carry out auger test pit operations.

1) It was decided to conduct a number of augers around this property.

2) The augers are to be 5 meters apart and approximately 1 meter deep.

3) 2 locations were selected for the auger testing.

4) The first being beside the pigeon pen next to the remnants of a house. This is above the quarry, where some estuarine shell was seen on the first survey.

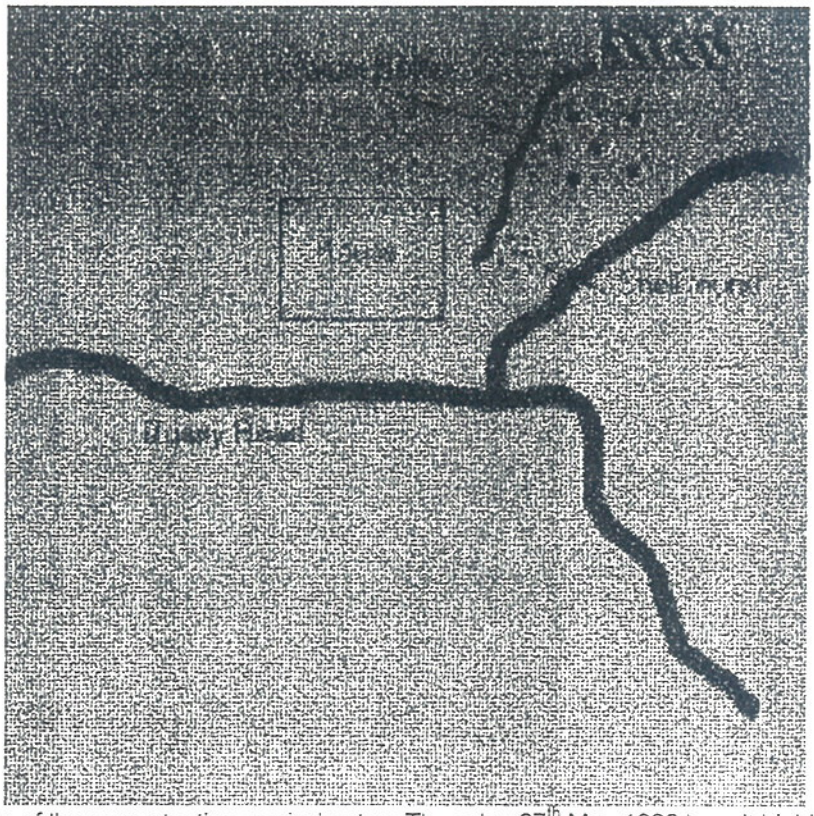
5) There was to be 5 auger pits excavated at this location.

Wet Sieve

- To conduct a proper analysis of the samples taken a wet sieve was required. Prior to the auger testing, dry sieve tests concluded that the ground needed some form of softening to obtain a proper evaluation of the sub surface contents.

NPWS required that certain conditions be adhered to while carrying out these excavating operations. All field staff were informed and complied with the conditions.

Shell Auger (South)



The above diagram is of the auger testing carried out on Thursday 27th May 1999.box. It highlights the pproximate location of the shell and a pigeon pen.

1) At this location no archaeological material was sighted. This was despite the number shells existing on the surface.

2) The material must have been transported to this site from another

3) The use of shell for aviary birds is unknown and the only synopsis offered would be to create a vehicle or pedestrian driveway.

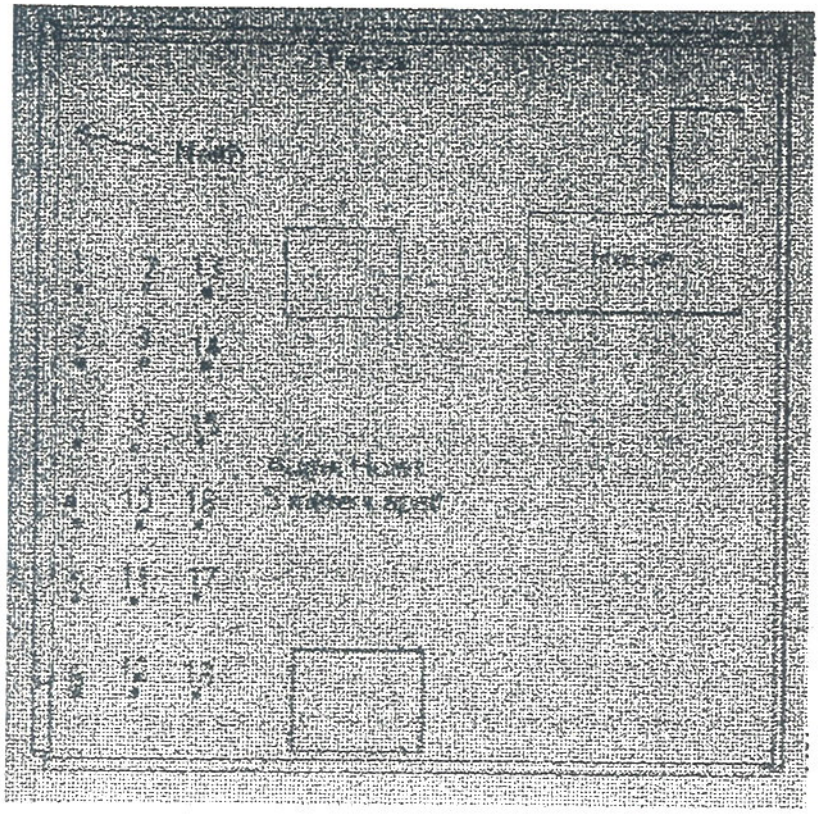
Northern Auger

18 auger holes were dug in an east – west configuration. Their numbering system 1-18, commenced along the northwest fence line of this property. The area to be tested was directly north of the house in a natural saddle. The site aspect is to the west and east.

Results

Only one auger contained material similar to artifacts. This was close to the area where on a prior inspection material believed to be artifactual was recorded. The auger, which contained this material was # 2. It is sited close to the fence. The contents of #2 were:

Auger Number	Flakes	Cores
1	Ni	Ni
2	3	2
3	Ni	Ni



The above diagram is of the northern most auger pits

Conclusion

The test operations completed with Rob Paulson and Angela Besant over 27th and 28th May 1999 concluded that the suspected site near the pigeon pen where 5 augers were dug were not consistent to being of traditional Aboriginal manufacture.

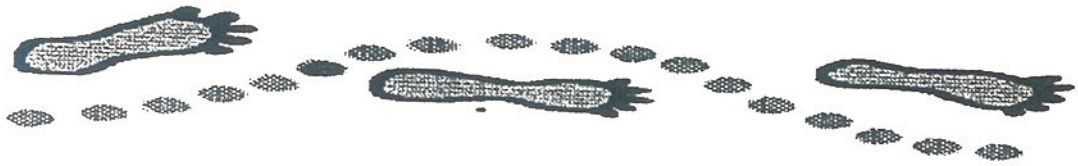
The 18 augers dug at the northern end of the saddle on Friday 28th May were inconclusive

At auger #2 (of 18) 5 suspected relics were recorded. At other test pits no material whatsoever was seen. This suggests that the traditional people using the area (before white settlement) had minimal visitation or association with the area. From the stone material recorded in this area most would have been brought into via trade or barter. Much of the material has been worked to it's potential and from the many small broken pieces it can be assumed that larger core pieces had been taken to other locations.

The sites, which do remain around the quarry, require monitoring if expansion operations commence. The Aboriginal Land Council at Forster should be contacted before these operations begin.

Salvage of cultural material requires that appropriate consent conditions (from NPWS) be followed through. The Land Council may want to put special conditions on the consent as well as NPWS standard conditions.

The material collected through auger testing is analysed by the Archaeologist and this report is forwarded to the Land Council for review. Also that the material be deposited in care to Forster Local Aboriginal Land Council. (A further consent may be sought to cover this).



Forster Local Aboriginal Land Council
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Phone: (02)65 55 5411 Fax: (02)65 55 5532 Mobile: 015214804
E-Mail:flalcmic@iniaccess.net.au
amleon@one.net.au

Monday, June 28, 1999

To Angela Besant,
Archaeologist
Insite Heritage
Dobell Drive
Wangi Wangi

Re: Further Testing at Jandra Quarry 3rd June 1999

Hi Angela,
Mick Leon here for Robert Paulson. I have just finalised the report for the last testing you fellas did at Jandra. Robert wanted the original report recommendations as the final say on the site. Vienna has also indicated this would be fine with Taree. So any work that occurs over the next 20 years we can safely say the report will address and safeguard the relics in situ at Jandra.

From the Culture & Heritage Unit's viewpoint on the excavation works proposed, that works should be limited to the specific designated places where necessary. Too many disturbances to traditional Aboriginal relics have already occurred and further removal of material will degrade the integrity and spiritual value of this place.

Excavation work being carried out will need to be monitored by a representative from the Aboriginal Land Council if and when work carries over into identified Aboriginal sites.

Mick Leon
ASO FLALC

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REVIEW OF TEST PIT OPERATIONS AT JANDRA QUARRY PACIFIC HIGHWAY FAILFORD 3RD JUNE 1999

Robert Paulson (Forster LALC) along with Vienna Bungie (Taree Purfleet LALC) arranged to meet Angela Besant (Consultant Archaeologist) at Jandra Quarry for further auger testing . The purpose of this investigation was to perform test pit (using shovels) operations. The work required was due to a previous survey conducted which revealed up to 5 identified Aboriginal sites. These sites have been recorded with NPWS and FLALC.

The area concerned with is situated on a natural saddle, around 400 meters East of the existing quarry. Over the next 20 years Jandra will expand their operations into this area. From previous surveys completed in similar terrain, results have concluded that saddle places between two high points were likely to contain traditional Aboriginal material.

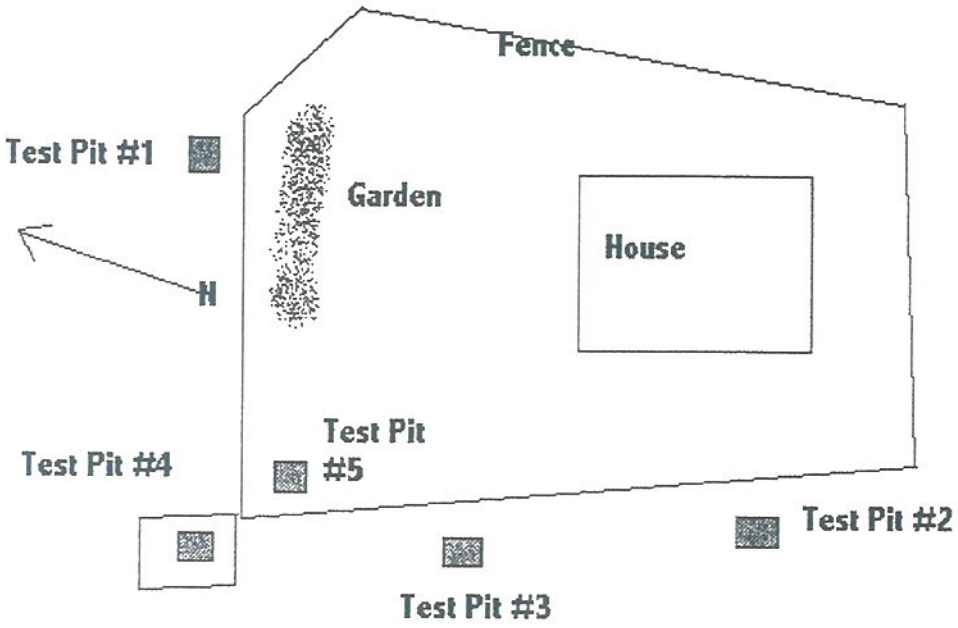
5 test pits were excavated around an existing house. The house is situated in the middle of this saddle. Each pit averaged 25mm deep x 60mm long x 30mm wide. The first pit was sited east of the house in an area which has not been too disturbed. Many areas across the saddle have been bulldozed and artificial material layered on top of the existing surface.This has made determination of natural surfaces difficult.

other pits investigated contained no artifactual material. Test pit #4 did not reveal any material, but 2 unconfirmed relics were recorded an exposed surface area adjacent to the pit. Despite further intensive investigation of this area no other material was sighted.

Archaeologist, Angela Besant has indicated that further test pits (via use of an auger) will be carried out within the next 2 weeks. The occurance of traditional Aboriginal material in this locality is highly probable and further investigations are justified.

Forster and Taree LALC's have agreed that further work need to be conducted and they monitor and participate in the operation.

The following page contains a schematic diagram of the area being investigated.


Fence
Test Pit #1
Garden
House
N
Test Pit
#5
Test Pit #4
Test Pit #2
Test Pit #3

Purfleet/ Taree - Forster Local Aboriginal Land Council
Culture & Heritage Section

CSR Jancra Quarry
Aboriginal Sites Investigation

Contents

Summary

- CSR propose to extend their operations at the current locality of the crushing plant, Jandra near Nabiac Mid North Coast NSW.
- Aboriginal sites have been recorded in nearby locations.
- The Aboriginal community at Forster have been involved in survey work for this location.
- A number of Aboriginal sites were recorded during the survey.
- Forster Aboriginal community have written history, which tells of traditional Aboriginal people using the Bundacree Creek, area as a campsite.
- Sub surface investigation may be required during extension operations.

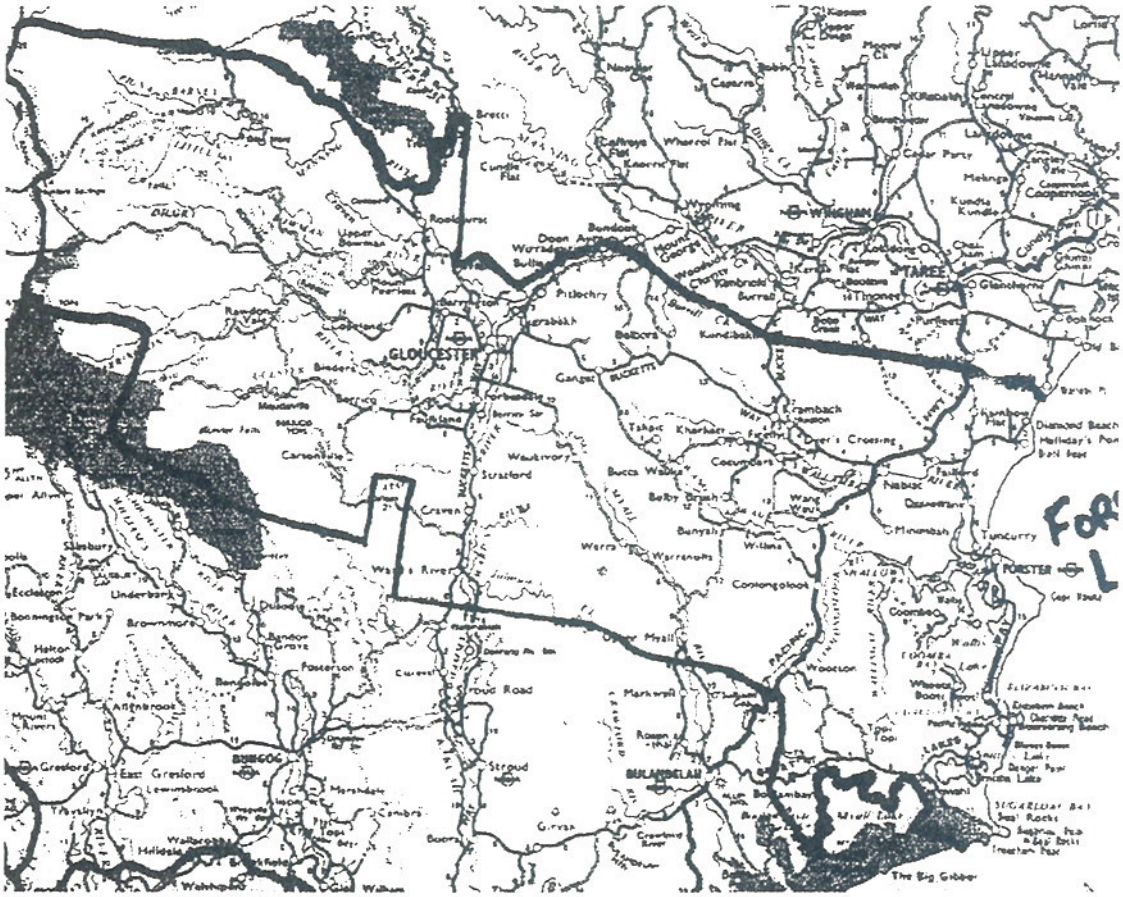
Introduction

This report deals with the Aboriginal Heritage assessment through the study area.

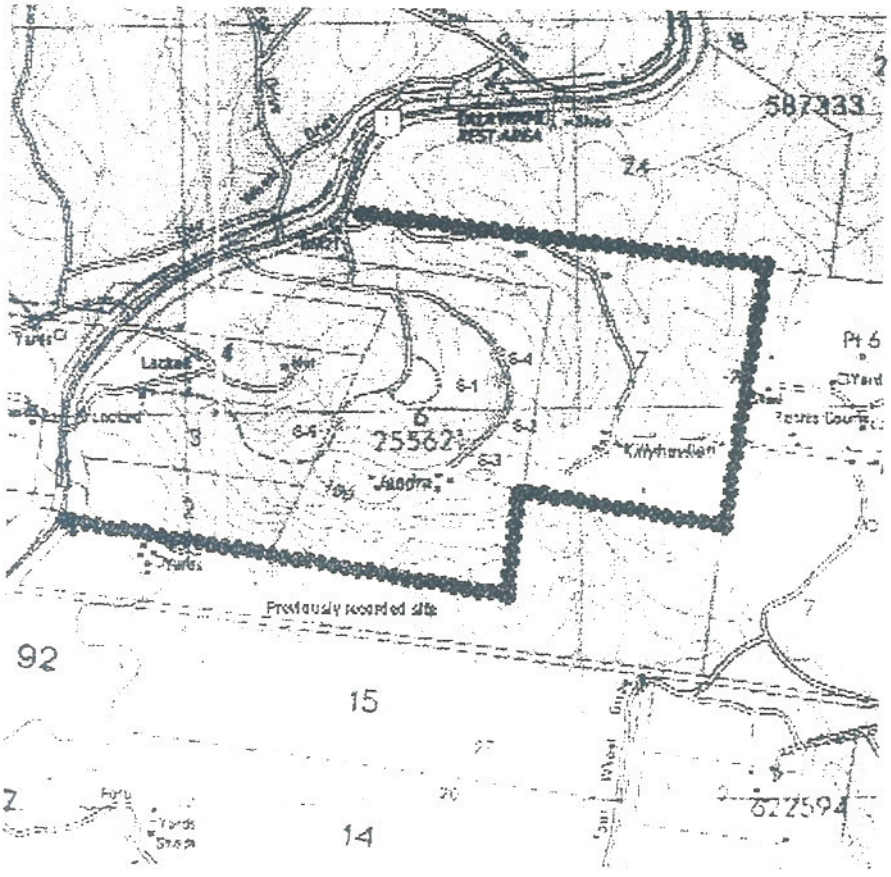
The report was commissioned by Angela Besant, Archaeologist with ERM Mitchell McCotter on behalf of CSR, and is the Aboriginal Heritage component.

The Assessment aims to provide identification of Aboriginal Sites and relics within the study area. It also aims to assess the significance of sites to Aboriginal people, and what if any impacts to these sites occurs. Recommendations can and will be sought from the Aboriginal community concerned, if required.

- The report will contain the Aboriginal community consultation and their recommendations.
- It will also have topographical description of the area(s) focused.
- Provide geological information.
- Describe any traditional Aboriginal material located.
- Consultative work carried out with the Project Archaeologist and National Parks & Wildlife staff.



Forster Local Aboriginal Land Council
Boundary with survey area- shaded yellow.



Nabiac 1:25,000 Map showing areas

investigated and containing Aboriginal sites in red.

Land Use

In the area which encompasses DP - 255621, Lots 2,3,4,6 &7 there are specific uses of the land.

- To the South is mainly pastoral use,
- to the North is Kirrawak State Forest;
- On the Eastern margins, there is a quarry, currently being used for a crushing plant as road base;
- To the West and in the immediate area is a major vehicular thoroughfare;
- Some traditional Aboriginal use of the area includes open campsites, ceremonial sites, scarred trees and isolated artefacts.

Most of the area has been extensively cleared; there are little remaining old growth areas. Although there may be some isolated pockets in the State Forest.
If traditional sites did exist in these locations most would have been destroyed through changes made by early settlers to the environment.

Historical Reference

The traditional Aboriginal people that inhabited this area were part of the tribal group known as the Worimi. The Worimi were a Katthung speaking people whose traditional tribal boundaries extended from Port Stephens in the South to Forster in the North and West to the Barrington Tops.

The traditional Worimi people had a distinctive way of life.
They utilised many of the natural resources available to them.
Periodic visitation by the inland Worimi people to the coast coincided with seasonal movements of seafood.
This also adhered to coastal people visiting the inland regions when food sources were plentiful there.
People also attended various locations for ceremonial purposes.

Natural stone material used for manufacturing tools was obtained within the Worimi's area and through trade with neighboring tribal groups. Some of the stone material, which was worked, has recently been located through development in some areas.

Some early observations made by explorers give an insight into how the traditional people were living.

One view was described by John Oxley in 1817, while exploring the coastline near Forster / Tuncurry:

"...Rising forest land of pleasant appearance."(Ibid.). He noted that "the natives are extremely numerous along this part of the coast: these extensive lakes which abound with fish, being extremely favourable (sic) to their subsistence; large troops of them appear on the beaches: whilst their canoes on the lakes are equally numerous. In the morning their fires are to be observed in every direction....." (Oxley in Fitzpatrick 1924:177)

Early settler's oftened employed aborigines (sic) around their selections, sometimes in clearing, or in collecting honey for which one pound per barrel was paid. The natives quickly cut toe-holes in tree trunks and climbed to the bees' nests. The comb was dropped on to sheets of bark spread out below. Footholds in old trees are reported from many parts of the district."

In early times, trouble occurred with the aborigines (sic). John Oxley was a witness to this, and runaway convicts from Port Macquarie told Robert Dawson of the A. A. Company about 1830:

'that no hostility was exhibited towards them by any other tribes than those inhabiting the coast about Cape Hawke and the river Myall, near both of which the timber-cutters were at work, and that the natives were exasperated in the highest degree against them.'

Waterloo is said to have been named after a batle (sic) with the natives there, and poisoned damper was used against natives by some stockmen besieged in a hut at Gangat in the 1830's.

Local campsites are known to have existed at:

- 'Glenora' (The late Mrs E McMaster has a wooden nulla-nulla made by local natives),
- on the bank of the Candoormakh Ck, near C. Bowser's place,
- at Tipperary on Schneider's place,
- at Bucca Wauka on Val. Wisemantel's property,
- Jun's property at Darawank
- and on Bungwahl Creek. Recent investigations indicate extensive middens existing at the lower reaches of the creek.

Sir William Edward Parry, Surveyor, made another observation at Nabiac for the Australian Agricultural Company in 1830:

"FURTHER EXPLORATIONS.

Sir Edward delighted in his excursions into the bush. After his trip to Newcastle he spent a gruelling patches and investigating the accountancy system. This so disgusted him that he decided to make a further trip over his dominions. Of that notable expedition he chronicles:-

June 2, 1830.- "I left Tahlee at 6.30, accompanied by Mr. Donelan and Dr. Nisbet and reached the cattle station at 8.30, where I found our party, consisting of Messrs. Chas. Hall and Armstrong and six men, together with three blacks, preparing for our departure. We started at nine o'clock, accompanied also by Mr. Henry Hall, who proposed going with us as far as Booladeela. in order to look about for the cattle in that neighborhood, which is about the extent of their present run. We traveled over some extensive flats, generally very wet, but tolerably good grazing. We passed a few good-looking hills, but no sheep pastures. Halted at 3.15p.m. about a mile from the Myall, having killed two kangaroo. We had heavy rain at night, but were very comfortable in our tents.

June 3.- "Started at 8.40a.m. From a rather clean hill, at half a mile distant we saw "Broadwater," southeast. At 4 to 5 miles, thick bush (I measured a tree 44 feet in circumference) with Crawford's River running through it. We were one and half-hours going one fifth of a mile. We marked this road well upon the trees. Crawford River is two inches deep and eight yards wide. After crossing the river, a better country, and at two miles beyond it two good sheep hills appearing to extend to some hills one mile westward. Immediately afterwards crossed a curious rocky ridge like a saddle, with deep valleys on wither side; from this we saw Boola-deela hill, some parts of which appear bare rock. In one and a quarter miles from the good sheep hills above mentioned came to the Myall River, which is here stagnant, black colored, and twelve yards wide, with an average depth of seven inches. Here we rested for the night and marked a crossing place so as it could be easily distinguishable.

THE LAKE COUNTRY.

June 4.-"Mr henry hall and his men left us this morning, and I directed them to examine as much of the country in this neighborhood as they could before their return. We crossed the Myall at nine o'clock and crossed, or rounded, some steep hills. At one we crossed a small but

difficult creek, as the rivulets in this country are absurdly called. Afterwards, abundance of swamp, scrub and ugly waterholes. The stone upon the hills I observed to be a bluish clay-stone. We then passed some grassy but poor, forest land, and halted at 3.30 near a small creek at a distance of one-third of a mile from a place on the north-western corner of the Myall Lake called Boolambate. We encamped upon a flat; grassy but poor. Abundance of kangaroos seen and two killed.

June5- "We proceeded at 9a.m. over hilly but grassy country, though not of a kind fit for sheep . After one mile traveling in an E.N.E. direction we obtained a view of the lake northeast by east, after which we kept to the north of N.N.E. along it. Just before noon Mr. Armstrong and myself halted while the bullocks proceeded. I obtained the meridian altitude, while he went down to the lake and took bearings of every remarkable object. After five miles more in an N.N.E. and E.N.E. direction we halted at 4pm. At the Wollongut River. Since noon we have passed over several swamps, many grassy hills, about none of the kind, which are at all fit for sheep. The whole is a poor country. We killed some wonga-wonga pigeon's to day and a kangaroo. In the evening the sky became overcast and we had a most inclement night, a southerly gale blowing with considerable violence, with heavy and incessant rain for several hours. Our blacks would not even get a sheet of bark to cover themselves, but lay very comfortable at the fire with only a blanket over them.

June 6-"Started at 9am. Crossed a creek and then the Wollongut river, which is here very narrow and after traveling N.N.E. and north for a short time came to it again in a wider part about 60 yards across, and apparently of a considerable depth. Kept along its banks N.N.E. with a large brush on our left. Abundance of good alluvial soil. In a large fern flat, on which the fern grew as high as the horses backs, we had great difficulty in getting along at all, or in finding a place to cross a creek which falls into the river here, in which we at length succeeded after losing much time. We then came to the Wollongut again, a quarter of a mile wide and still appearing deep-a handsome river. We halted at 3pm having passed over in the course of our day's journey, a very irregular country, with a few grassy hills, but on the whole unfit for sheep. Pudding-stone and claystone were chiefly observable today. Our general course has been true north.

Monday June7, 1830-Proceeding at 9am we had a high hill to cross at first, from which we took one or two bearings. Then proceeded north and N.N.W. for about two miles, over flat and sloping grassy land, thickly timbered with much oak: and poor land. This brought us to Maclean's river, 100 yards wide, with a high hill on the opposite bank, along the

south of which we turned. After a mile we halted (not the bullocks, which always went on these occasions), and I obtained the meridian altitude of the sun (69degrees 42min. 2 sec) After this we followed an irregular course circumstances rendered necessary, south, W.S.W., and S.S.E., teased for two hours in a thick bush. Then crossed Maclean"s River, 10 yards wide and very shallow, on a ledge of stones. Brush again on opposite bank: then westward to some grassy hills. Halted at 4pm after a laborious day's work, though without much progress. Good grass and water.

ON MACLEAN"S RIVER.

"Tuesday, June 8.-Rounded on a north-west course one mile through some brush and over grassy hills; then over high hills between two other ranges, with puddingstone and claystone (principally the former) on the hills, and red and white sandstone near the foot. Northwest one and a half miles; north and west two miles, on grassy slopes, irregular but good grazing for cattle and only for cattle to Maclean's River, just where a creek falls in it.. Good crossing on rocks of slate-clay. Traveled N.N.E., and W.N.W. a few miles crossing two or three bushy creeks, the country being very heavily wooded and generally poor. Thence over two or three scrubby hills, a mile into undulating grassy grazing land where we halted. At halting place, stratified clay-slate, with oxide of iron found in creek.

TALLOWAH HILL.

Wednesday, 9th-As the country hereabouts appeared better than usual, the bullocks rested for the day while Messrs. Armstrong, Hall and myself rode abut to examine the land. At one mile east I saw the ill, called Tallowah, by the blacks, about 6 miles distant N.E. We went eastward two miles the whole being second-rate forest, thickly timbered with much oak and pleasant-looking enough but with not much grass. Here, about three miles east from the tents we came upon the marked trees showing Mr Dangar's homeward track. Again traveled two miles east through oak scrub. very poor. With some swamps in sight occasionally. Again half a mile east. Through oak scrub to a very extensive open swamp "

L.A. Gilbert wrote of the Worimi in 1954 making reference to burial procedures. Gilbert wrote: "the Worimi wrapped their dead in bark and buried them horizontally, but in nearby areas three other methods were practiced. Full length, on one side with legs folded at the knee or a bundle burial.

Forster Local Aboriginal Land Council Culture & Heritage unit and an Elderly non- Aboriginal person living in the Forster area met recently regarding an Aboriginal gorget.

The item is a breastplate given to Elderly Aboriginal people recognising them as the King or Queen of that particular tribal group. The person who deposited the item to the Land Council has asked not to be named in any report and his request is respected. He mentions that the gorget was in possession of his family for over 150 years and before that time with another family for approximately 70 years.

The information passed on indicates the item originating from the Darawank area where Aboriginal people were camped in the post-contact period.

Ethnohistorical records from a variety of sources indicate the use of specific areas by Aboriginal people.
Traditional people used mountain ridges to traverse either to coastal areas or to the inland. These ridges contain evidence of this activity. Also where the ridges meet estuarine systems shell middens can be located. In some places shellfish has been seen on some of these ridges. This indicates people carrying seafood with them while moving from place to place.

Many settlers whose descendants still live in these areas have in their possession artefacts, which were recovered from the ground when clearing land.

Some areas can and will contain conflict places where Aboriginal people encountered confrontations with Non- Aboriginal people. These places may be massacre sites, and records show massacres were widespread in this region (if not all regions of NSW).

Site Types occuring in this area

- **Open Campsites** - these sites occur where people have traveled and may be a short stop over place or a location to construct stone tools.
- **Middens** - these sites are deposits of shell left after consuming the mollusc. They can also serve as a signpost or boundary marker. Some other contents of middens include stone tools, animal bones and in some instances burials.
- **Scarred Trees** - are the result of bark being removed from trees to make a shield , canoe or carrying container. They may also be foot holes cut for climbing trees.
- **Carved Trees** - These sites are specific design work carved into trees for ceremonial purposes.

Sites in area:

There are 4 known sites in the nearby area.
All these sites are recorded with NPWS.

- ⊕ *NPWS registered site 38-20016. This site is a carved tree and has, according to reports recently been destroyed.*
- ⊕ *FLALC registered site Nabiac 1. This site is an isolated recording of an artefact, made 24\ 7\ 96 by M. Leon.*
- ⊕ *FLALC registered site Glen-Ora 1. This site is or has been destroyed, as it was recorded in 1954 by L. A. Gilbert.*
- ⊕ *FLALC registered site Wallamba River 1. This site is a scarred tree recorded in 1993 by Navin.*

Methodology

FLALC Sites Officer Mick Leon was informed by Tony Fish ERM Mitchell Mc Cotter to attend the site on Thursday 22nd January 1998 at 9 am.

Resource Material used:

- Archaeological survey for proposed quarry and crushing plant at Nabiac; produced by Denis Byrne October 1984.

Fieldwork:

Survey was conducted on Thursday 22nd January 1999. Field staff from FLALC included Mick Leon Robert Paulson. Purfleet/ Taree LALC were represented by Vienna Bungie.
Angela Besant, Archaeologist from ERM Mitchell McCotter

Most of survey area was walked as access was restricted because of heavy machinery operating on the property. 5 selected locations were inspected.

Sensitive areas thought to contain archaeological material were investigated. The first area surveyed was near the open cut face of the quarry towards the Northern most residential premises. The residents were informed about the survey. The house is situated in the middle of a natural saddle and has similar aspects to those of Bulahdelah - Coolongolook Pacific Highway deviation.

All fieldstaff agreed that probable survey area to investigate would be some of the undisturbed knolls on the property.

Surface visibility through all areas 40 - 90%.

Maps used for survey work:
⌘ 1:25,000 Nabiac 9333-I-N

Results

One suspected relic was recorded from the first location along the track above the house. This core piece was located near to the summit area.
The artefact has significance to this area as there is only written recordings of Aboriginal people being in the locality. There is now positive proof that traditional Aboriginal people were using this area.
Angela Besant Archaeologist determined the authenticity of the artefact.

The second recording is approximately 60 - 70 meters above the first along the existing track. Robert Paulson identified a small flake lying beside a disused truck. Upon further investigation, nine further relics were recorded by Vienna Bungie and Angela Besant.

The third site may be relocation of shell material by other means other than by traditional Aboriginal people. There a quite a number of mud whelk, cockle and oyster shell lying on the Southern side of a disused house. The former house is close to the quarry face, about 30 meters West.

At site four, two small silcrete flakes were recorded directly above the quarry face on a track.
Site 5 exists on the Southern side of quarry. The powerlines that runs through this portion traverses the site.