Appendix D

ARCHAEOLOGICAL SURVEY

Appendix C

ABORIGINAL AND HISTORIC ARCHAEOLOGICAL SITES

C1 SURVEY STRATEGY AND FIELD CONDITIONS

In the course of an initial reconnaissance of the project area in late January several archaeological sites were noted on high ground adjacent to the estuary. At that time conditions of surface visibility were still reasonably good as there had been little vegetation growth because of the late onset of the wet season. Over the next 10 days all areas of high ground in the project area were surveyed and archaeological sites located were noted but not recorded in detail. In the course of this survey large areas of low-lying terrain were also traversed, but no sites were found in such areas. During this period wet season rains were frequent and these promoted rapid and dense vegetation growth which progressively made the locating and recording of sites more difficult.

On completion of the survey each site was re-visited and recorded in as much detail as conditions of surface visibility permitted. By this time the entire project area was covered with a dense cover of tall grass.

All the Aboriginal archaeological sites appear to occur on the crests of hills and ridges. As all such localities in the project area were surveyed it is likely that all major archaeological sites have been located. Conditions of surface visibility were, however, not conducive to the finding of sparse surface scatters of shell midden and stone artefacts and it is likely that many such sites remain unlocated.

C2 RESULTS

Seventeen archaeological sites were located and recorded as follows:

- 8 stratified Aboriginal shell middens
- 6 surface scatters of Aboriginal shell midden
- 1 surface scatter of Aboriginal stone artefacts
- 1 stratified Aboriginal shell midden with a WW2 observation post placed on it
- 1 WW2 gun emplacement constructed from Aboriginal shell midden material brought in from elsewhere
- 1 WW2 building constructed over a fill of Aboriginal shell midden material brought in from elsewhere.

Another site consisting of shell midden and a quartz artefact quarry had already been reported by NT Museum staff as occurring on the top of the pronounced quartz hill at the eastern end of the project area. This site was re-inspected and a small, very sparse scatter of shell was found on its summit. No definite quartz artefacts that might indicate that this quartz outcrop had been quarried were noted, however such artefacts are

difficult to recognize by archaeologists who do not have special expertise in quartz artefact technology. Nevertheless the field evidence (or lack thereof) inidcates that if quartz artefacts are present, their concentration is sparse. This site is referred to in this report as Site 18.

The characteristics of these sites are summarized in Table C.1 and their locations are marked on Figures C.1 and C2. Section 4 of Regulations 1991, No. 53 relating to the Heritage Conservation Act requires a person who discovers an archaeological place to advice the Director of the CCNT as soon as practicable of the discovery and its location. In accordance with this requirement, detailed site records for each site will be lodged with the Heritage Unit. As all these sites are Aboriginal, or contain a component of Aboriginal material, copies of the site forms will also be lodged in the NT Museum's register of Aboriginal archaeological sites.

C.3 DISCUSSION

Although clusters of Aboriginal shell middens are known to occur elsewhere in the vicinity of Middle Arm (e.g. along the upper tidal reaches of Elizabeth River) these have not been formally recorded and there are no records in the NT Museum site register. Hence the present study is the first systematic programme of survey and recording of such sites carried out in the area. Recognizing the need for archaeological investigations in the Darwin region, archaeological staff from the Northern Territory University and the NT Museum have recently commenced a National Estate-funded research programme which is concentrating on, in the first instance, shell middens.

In the absence of comparative data for the region it is difficult to confidently make assessments of significance for the sites located in this study. Only as a database is built up from consulting and research projects such as this and the NTU-NT Museum study will it be possible to make confident assessments of significance in the future. This is not a problem for the Haycock Reach project because, as outlined below, only one site will be directly impacted by the development and all the others can be completely protected by implementing appropriate management strategies.

C.4 ASSESSMENT OF SIGNIFICANCE

In discussing the significance of individual sites or suites of sites it is important to realize that the significance of sites varies according to the perspective of individuals and interest groups making the assessment. Some of the different perspectives on significance that might be considered include: scientific, Aboriginal, public, historical, aesthetic and educational.

In EIS investigations consultants and government authorities are concerned primarily with scientific significance (often referred to as archaeological significance), and Aboriginal significance. In this study significance refers to scientific significance only. As Bowdler (1983:39-40) has argued, two kinds of framework are most suitable for assessing scientific

significance. The first involves assessing the research potential of a site or suite of sites and the second involves assessing the representativeness of the site or sites. One aim of any heritage conservation programme is to conserve, for future research, representative samples from different environments of all classes of archaeological sites. If the sites found in the survey area are rare and/or not well represented elsewhere then their significance in terms of representativeness will be deemed to be high. In this case measures would need to be taken to ensure a high degree of protection for such sites. If however the sites are well represented elsewhere, e.g. in an adjacent national park where they are also well protected, then their significance on this criteria may well be deemed to be low and consent to destroy those sites that will be affected by the development will be given more readily.

Because of the lack of information about archaeological sites elsewhere in the Middle Arm area and its surrounds it cannot be confidently stated that the suite of sites located in the Haycock Reach project area is well represented elsewhere, although all the indications are that it is. However several of the sites have considerable research potential and this is indicated by a high to very high significance rating in Table C.1.

C.5 IMPACT ASSESSMENT AND RECOMMENDATIONS

All of the Aboriginal archaeological sites, by virtue of their being prehistoric or protohistoric occupation places, are prescribed places for purposes of Part 6 of the Heritage Conservation Act. Such sites are therefore protected as if they were the subject of an interim conservation order (S.39(1)). In the case of Site 1, the only site which would definitely need to be destroyed in the course of construction work, the developer should liaise with the Heritage Unit to determine the procedure to be followed in making an application for work in relation to this site. The developer should also liaise with the Heritage Unit to determine procedures for ensuring the remaining sites are not inadvertently damaged in the course of construction or operation of the project.

The locations and importance of these sites as a suite and individually should be made known to all construction and operations staff to avoid their being inadvertently damaged. Although some of the sites are protected by their being located on inaccessible hilltops, others are susceptible to damage by, for example, uncontrolled access by vehicles and heavy machinery.

Only Site 1 will be directly impacted, in this case by construction of the dam wall. This site has high significance in that it has considerable potential for scientific research.

This site should be salvage excavated before construction work begins. The Northern Territory University, through NTU Archaeological Services, has expressed an interest in carrying out the work required.

Sites 14 and 15, the large mounded shell middens, are rated as having very high scientific significance. Although neither will be directly impacted, both lie close to the site of the proposed spillway and the tourist fishing facilities.

Active measures will need to be taken to protect these very important sites during the construction and operations phases of the project. They should be fenced off during construction to prevent their being accidently damaged by heavy machinery. They should remain fenced off, or be otherwise protected by appropriate landscaping works, to prevent vehicle access and to control foot access by tourists.

Site 5, interpreted as a WW2 gun emplacement constructed from shell midden material, is a site type apparently not previously reported. It is of high significance mainly because of its historical context but also because of its unusual mode of construction.

This site should be fenced off during construction of the dam wall to prevent its being accidently damaged by heavy machinery. Although the western side of the reservoir will not be used for tourism activities, the present access track will remain open to the public. The fence should therefore be maintained to prevent accidental damage by vehicles driving across it. A stone axe head was found in the shell material. This should be collected and lodged with the NT Museum.

For all three sites that require fencing (Sites 5, 14 and 15), it is essential that the developer liaise in the field with a qualified archaeologist to ensure the boundaries of the sites, and hence the locations of the fences, are correctly positioned.

Sites 10, 11 and 12 are sites of high significance. All occur just above what will eventually be the western shoreline of the reservoir. At times when the reservoir is full, the areas of high ground on which these sites are located will be an island.

Tourists boating on the reservoir should be discouraged from landing on the ridge on which these three sites occur.

Sites 9, 13, and 17 are all located in areas which will not be directly impacted by construction works. Site 9 will, however, be partially flooded by the reservoir when it is full. Site 13, is a sparse scatter of shell which is located on a prominent ridge overlooking what would become the reservoir. Consequently it is likely to be walked across by visitors using the tourist facilities. This site has low scientific significance and the shell is so sparse that it would not be recognised as an archaeological site by most visitors. For these reasons special measures to completely protect it (such as fencing) are not warranted.

Site 17 is a surface scatter of stone artefacts which, because it is located close to the southwestern end of the proposed spillway, might inadvertently be driven across by construction machinery. Because of the dense cover of vegetation at the time of the survey it was not possible to record and assess the significance of this site comprehensively A number of management options should be considered for this site, namely that

the site be fenced off to protect it; or
a salvage collection of the artefacts be made; or
no specific action be taken to protect it.

It is recommended that this site be re-examined with a view to more fully assessing its significance as a basis for deciding on an appropriate management strategy. If salvage collection is deemed to be the most appropriate option, this could be undertaken in conjunction with the salvage excavation of Site 1.

Sites 2, 3, 4, 6, 7, 8 and 16 are all located in areas which will not be impacted and no action to protect them is therefore required.

Site 18, initially reported by the NT Museum as being a potential prehistoric quartz quarry, appears on closer inspection to consist of a very sparse scatter of shell and quartz artefacts and the Kinhill archaeological consultant could find no evidence for prehistoric quarrying. No further archaeological investigations are warranted.

C.6 REFERENCE

Bowdler, S. 1983. Aboriginal sites on the Crown-timber lands of New South Wales. Sydney: Forestry Commission of NSW.

Table C1. Characteristics and assessment of archaeological sites

Site no.	Site type	Description	Topographic setting	Condition & significance	Impact	Recommendations
1	Stratified shell midden	Dense concentration of shell, +30cm thick. Mainly Anadara. Quartz artefacts.	On low rock outcrop	Undisturbed except for erosion around margins. High significance	Will be destroyed by dam wall	Salvage excavate
2	Stratified shell midden	Dense concentration of shell, +20cm thick. Mainly Anadara.	On top of steep hill 15m above estuary	Undisturbed. High significance	No impact	No action required
3	Surface scatter of shell midden	Sparse scatter of shell	On low ridge near estuary	Undisturbed. Low significance	No impact	No action required
4	Surface scatter of shell midden	Dense scatter of shell, mainly Anadara	On low ground near estuary	Highly disturbed by road grading. May have been transported from another source. Low significance	No impact	No action required
5	WW2 gun emplacement constructed from shell midden material	Semicircular embankment of crushed shell 11x8m & up to 30cm high	On slight rise above road	Undisturbed. High significance	No direct impact	Should be fenced off during dam wall construction
6	WW2 building	Concrete slab overlying disturbed shell midden (probably transported to the site as fill). 2 sheets of corrugated nearby, otherwise no other remains of building	On slight rise adjacent to road	Concrete slab intact, otherwise little else remains. Moderate significance	No impact	No action required
7	Stratified shell midden & WW2 observation post	Largely intact compact shell midden +20cm thick with disturbed area with low stone wall, star pickets & empty 1942 303 bullet cartridges.	On 8m high hilltop immediately behind Site 6	Largely undisturbed. High significance	No impact	No action required
8	Surface scatter of shell midden	Sparse, discontinuous scatter of shell, mainly Anadara	On broad, flat spur overlooking estuary	Disturbed by vehicle tracks. Low significance	No impact	No action required
9	Surface scatter of shell midden	Sparse scatter of shell (Anadara & Terebralia) & quartz artefacts	On 4m high top on ridge protruding into estuary	Undisturbed. Low significance	Margins may be flooded at times dam is full	No action required
10	Stratified shell midden	Dense concentration of shell, +20cm thick. Mainly Anadara. Numerous quartz artefacts	On 6m high hill top on ridge adjacent to estuary	Undisturbed. High significance	No direct impact	Tourists boating on dam should be discouraged from landing on this ridge

Site no.	Site type	Description	Topographic setting	Condition & significance	Impact	Recommendations
11	Stratified shell midden	Dense concentration of shell, +20cm thick. Mainly Anadara. Numerous quartz artefacts	On 5m high hill top on ridge adjacent to estuary	Undisturbed. High significance	No direct impact	Tourists boating on dam should be discouraged from landing on this ridge
12	Stratified shell midden	Dense concentration of shell, +20cm thick. Mainly Anadara. Numerous quartz artefacts	On 5m high hill top on ridge adjacent to estuary	Undisturbed except north end has been cut by access track. High significance	No direct impact	Tourists boating on dam should be discouraged from landing on this ridge
13	Surface scatter of shell midden	Sparse scatter of shell (Anadara)	On top of 8m high ridge adjacent to estuary	Disturbed by animals. Low significance	No direct impact	No action required
14	Stratified shell midden	Dense concentration of shell in form of mound 10m across & 1m thick. Mainly Anadara. Quartz artefacts	On low rise 6m above estuary	Undisturbed Very high significance	No direct impact	Should be fenced off during contruction of spillway & tourist facilities. Will require ongoing management to ensure it is not damaged by tourism activities
15	Stratified shell midden	Dense concentration of shell in form of mound 16m across & 1m 1.5 m thick. Mainly Anadara. Quartz & quartzite artefacts	On low rise 6m above estuary	Undisturbed except for large pit on one side where shell has been quarried. Very high significance	No direct impact	Should be fenced off during contruction of spillway & tourist facilities. Will require ongoing management to ensure it is not damaged by tourism activities
16	Surface scatter of shell midden	Sparse scatter of shell	On low ridge near estuary	Undisturbed. Low significance	No impact	No action required
17	Surface scatter of stone artefacts	Stone artefacts, mainly quartz. No shell	On scree slope at base of hill	Undisturbed. Moderate significance	No direct impact	No action required
18	Surface scatter of shell midden and stone artefacts	Sparse scatter of shell and quartz artefacts. Possible quarry	On crest of prominent hill	Previous quarry-at base of hill	Much of this hill will be quarried	No action required

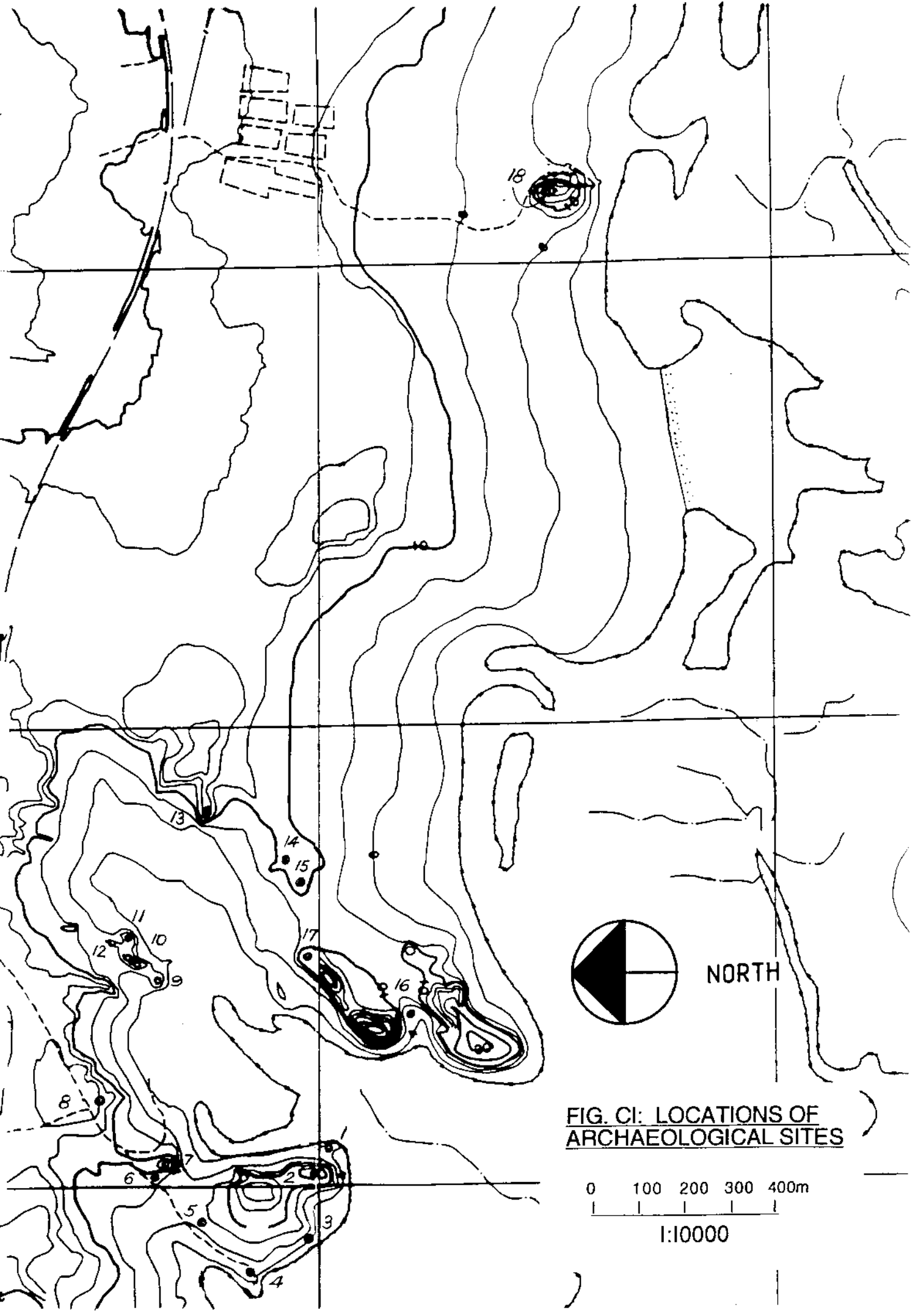
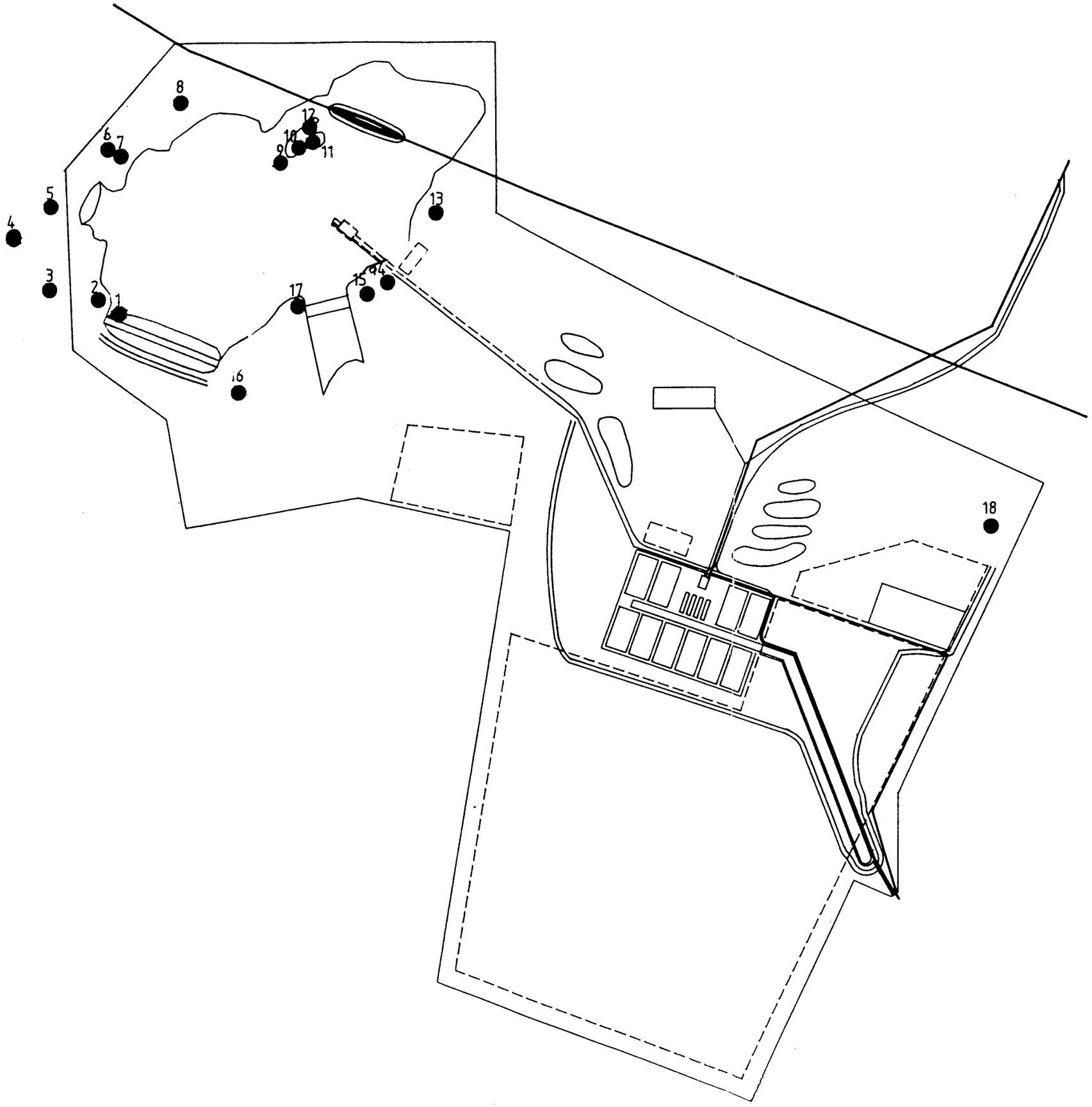


FIG. CI: LOCATIONS OF ARCHAEOLOGICAL SITES



NORTH

LEGEND

STAGE 1 WORKS

FUTURE STAGE WORKS

ARCHAEOLOGICAL SITES

HAYCOCK REACH AQUACULTURE DEVELOPMENT

0 .1 .2 .3 .4 .5 .6 .7 .8 .9 1.0

SCALE (km)

FIG. C2
ARCHAEOLOGICAL SITES IN RELATION TO THE PROJECT INFRASTRUCTURE