Annex A

HERITAGE IMPACT ASSESSMENT IN RESPECT OF THE IMPLEMENTATION OF WATER INTELLIGENT NETWORK IN KOWLOON EAST, SHA TIN, ISLANDS, YUEN LONG AND SHEUNG SHUI & FANLING MAJOR SUPPLY ZONES

BACKGROUND

1. The Water Supplies Department ("WSD") proposes to adopt a strategic Water Intelligent Network ("WIN") system in Hong Kong in order to maintain the healthiness of the water distribution network, and to enable the effective management of water supply network in an integrated and coordinated manner.

2. The project consists of investigation, design and construction supervision for the installation of the necessary network monitoring and sensing equipment, the establishment of an intelligent network management system and development of associated analytical tools for the fresh water distribution systems (including distribution systems for temporary water mains for flushing), in Kowloon East ("KE"), Sha Tin ("ST"), Islands ("I"), Yuen Long ("YL") and Sheung Shui & Fanling ("SS&F") Major Supply Zones ("MSZs").

3. The above project is undertaken by two subdivided projects, i.e. CE37/2016 (WS) for Kowloon East, Sha Tin and Islands MSZs and CE38/2016 (WS) for Yuen Long and Sheung Shui & Fanling MSZs. To facilitate the implementation of WIN, it is proposed to construct chambers at various locations of the existing water distribution network within the MSZs to establish the remaining district metering areas ("DMAs") and the associated pressure management areas ("PMAs"), together with the installation of the necessary network monitoring and sensing equipment, and the establishment of an intelligent network management system and development of associated analytical tools for the fresh water distribution systems (including distribution systems for temporary water mains for flushing).

HERITAGE IMPACT ASSESSMENT

A. Identified Heritage Sites

4. In accordance with the HIA Mechanism stipulated in Development Bureau Technical Circular (Works) No. 6/2009, the works agent needs to confirm with the Antiquities and Monuments Office ("AMO") whether there are any Sites of Archaeological Interest ("SAIs"), declared monuments, proposed monuments, sites and buildings graded by the Antiquities Advisory Board ("AAB"), or government historic sites identified by AMO (hereafter together referred to as "heritage sites") within or in the vicinity of the project boundary.

5. A summary showing the number of heritage sites that fall within 50m boundary of the proposed works is listed in the tables below.

CE37/2016 (WS) – Kowloon East, Sha Tin and Islands MSZs

Type of Heritage Sites	Number of Identified Heritage Sites within 50m of the Proposed Works	Number of Proposed Works Involved
Declared Monuments	0	0
Proposed Monuments	0	0
Graded Historic Buildings	22	13*
SAIs	(i) 8 (with works within the SAIs)(ii) 14 (with works within 50m of the SAIs)	(i) 29 (ii) 22
Government Historic Sites	0	0

CE38/2016 (WS) – Yuen Long and Sheung Shui & Fanling MSZs

Type of Heritage Sites	Number of Identified Heritage Sites within 50m of the Proposed Works	Number of Proposed Works Involved
Declared Monuments	2	3*
Proposed Monuments	0	0
Graded Historic Buildings	26	22*
SAIs	(i) 3 (with works within the SAIs) (ii) 6 (with works within 50m of the SAIs)	(i) 3 (ii) 10
Government Historic Sites	0	0

Note: *The proposed works are only in vicinity of the Declared Monuments/Graded Historic Buildings.

B. Identified Heritage Sites for HIA

Sites of Archaeological Interest

6. Adverse impacts on archaeology are usually limited to direct impacts from excavation of potential archaeological deposits within chamber locations. As such, the proposed chambers within SAIs have the potential to cause adverse impacts on suspected archaeological deposits. Possible direct impacts on chambers within 50m but outside the areas of archaeological potential (close but not within SAIs) are deemed to have less impacts on the known archaeological potential.

Built Heritage Sites

7. The proposed works identified to be near the built heritage sites will be positioned away from the structures as far as possible to avoid disturbance and physical damages during

the course of the works. Moreover, the works are discrete and no major equipment is involved beyond the hand breaker, small excavator and lorry. The impact on built heritage is considered minimal with no adverse long-term impact and appropriate precautionary measures shall be proposed before commencement of works where necessary subject to approval by AMO.

8. Further assessment is required for proposed works falling within the SAIs as shown in Table 1 below. The proposed works in the eleven (11) SAIs are also shown in **Figure 1** to **11**.

Table 1 Heritage sites identified in HIA for both CE37/2016 (WS) and CE38/2016 (WS)

Item No.	AMO Research File Ref.	Name of Historic Sites	MSZs	Figure No.
1	(AM00-1600)	Che Ha Site of Archaeological Interest	KE, ST & I	1
2	(AM10-0002/A)	Shap Long Site of Archaeological Interest	KE, ST & I	2
3	(AM77-0040)	Yung Shue Wan Site of Archaeological Interest	KE, ST & I	3
4	(AM77-0042)	Hung Shing Ye Site of Archaeological Interest	KE, ST & I	4
5	(AM96-0752)	Tung Wan Site of Archaeological Interest, Cheung Chau	KE, ST & I	5
6	(AM96-0772)	San Tau Site of Archaeological Interest	KE, ST & I	6
7	(AM98-0926)	Tai Long Wan Site of Archaeological Interest, Shek Pik	KE, ST & I	7
8	(AM00-1615)	Tai Tung Site of Archaeological Interest	KE, ST & I	8
9	(AM98-0916)	Long Jok Tsuen Site of Archaeological Interest	YL, SS&F	9
10	(AM98-0910)	Fu Tei Au Site of Archaeological Interest	YL, SS&F	10
11	(AM04-1983)	Ngau Hom Sha Site of Archaeological Interest	YL, SS&F	11

C. Assessment of Heritage Impact

9. The proposed works consist of construction of chambers and other associated works below ground in relatively small and defined areas. The works coincide with locations of existing water mains and each works area has a level of existing impact which may have affected archaeological potential.

10. The evaluation of archaeological potential is based on the review of previous investigations, topographical and geological background within each SAI. The existing information is used to determine whether the discrete area is of archaeological potential. Level of determined archaeological potential of the proposed works is based mainly on availability of previous archaeological testing, similarity of topography or geological deposits with known potential and recorded archaeological deposits in the vicinity, while the nature of the works means that each location has some known disturbance from previous water works.

11. It should be noted that the archaeological potential within the same SAI may vary, subject to previous and existing disturbance other than those caused by previous water main works, locations of previous archaeological findings, associated geological and topographical settings, and the locations of the proposed works. Individual evaluation of the archaeological potential of each proposed works area will therefore be provided (please refer to the HIA reports for details). Based on the archaeological review and proposed works, mitigation is recommended at each works location in the following section.

D. Mitigation Measures

12. The proposed chambers are relatively small in size and in locations currently under hard surface and known to have been previously disturbed to some extent. Thirty-two (32) proposed works locations are within known boundary of SAIs. Among these thirty-two (32) proposed works locations, archaeological watching brief ("AWB") was recommended at eighteen (18) proposed works locations, which are listed below:

CE37/2016 (WS) – Kowloon East, Sha Tin and Islands MSZs

13. Based on existing information and assessment results, AWB was recommended at seventeen (17) proposed works locations where some archaeological data are expected. The impact from the proposed works is considered acceptable with mitigation.

14. The list of proposed works which require AWB is provided below.

- F1 (MOS-DM23-1/ PRV23-1) (F1)
- F2 (MOS-CPP (PMA23)) (F2)
- F4 (SLM-DM01C-1 / PRV01C-1) (F4)
- F13 PRV (LI-DM4-1/PRV04-1) (F13)
- F15 Enabling works (DBV) (F15)
- F16 CC-DM07G-1 & CC-PRV07-2 (F16)
- F17 Enabling works (11m mains) (F17)
- F18 CC-DM07G-2 & CC-PRV07-3 (F18)
- F19 CC-DM07G-3 (F19)
- F20 CC-DM07G-4 (F20)
- F21 CC-CPP (DMA07G) (F21)
- F22 CC-DM07EA-2 (F22)
- F23 CC-CPP (PMA07EA) (F23)
- F24 CC-PRV04-1 & CCDM04-1 (F24)
- F25 CC-DM05-1 (F25)
- F26 CC-DM07EA-1 (F26)
- F29 (F29 MOS-DM26-1 / PRV26-1) (F29)

CE38/2016(WS) – Yuen Long and Sheung Shui & Fanling MSZs

15. Based on existing information and assessment results, AWB was recommended at one (1) proposed works location W14 with some archaeological potential. The impact from the proposed works is considered acceptable with mitigation.

16. AWB should be undertaken by a qualified and licensed archaeologist during excavation works at the construction stage. In this case, whereby the works are relatively small, the entire excavation process for the chamber should be inspected by the licensed archaeologist. Details of the scope, programme and methodology for AWB, as well as the application of a Licence to Excavate and Search for Antiquities under the Antiquities and Monuments Ordinance (Cap. 53) for conducting AWB should be prepared by an archaeologist and submitted to AMO for agreement prior to applying for a licence.

CONCLUSION

17. Based on existing information and assessment results, AWB was recommended at the eighteen (18) proposed works locations which fall with the SAIs. The impact from the proposed works is considered acceptable with mitigation.

18. For other proposed works within 50m from the boundaries of the heritage sites, the impact to the concerned heritage is considered minimal. After reviewing the construction procedures, insignificant impact is anticipated during construction stage for all proposed works. If there are any antiquities or supposed antiquities found within the proposed works areas, AMO will be consulted and notified.

Water Supplies Department
December 2018

Note: The nodes indicate the proposed location only

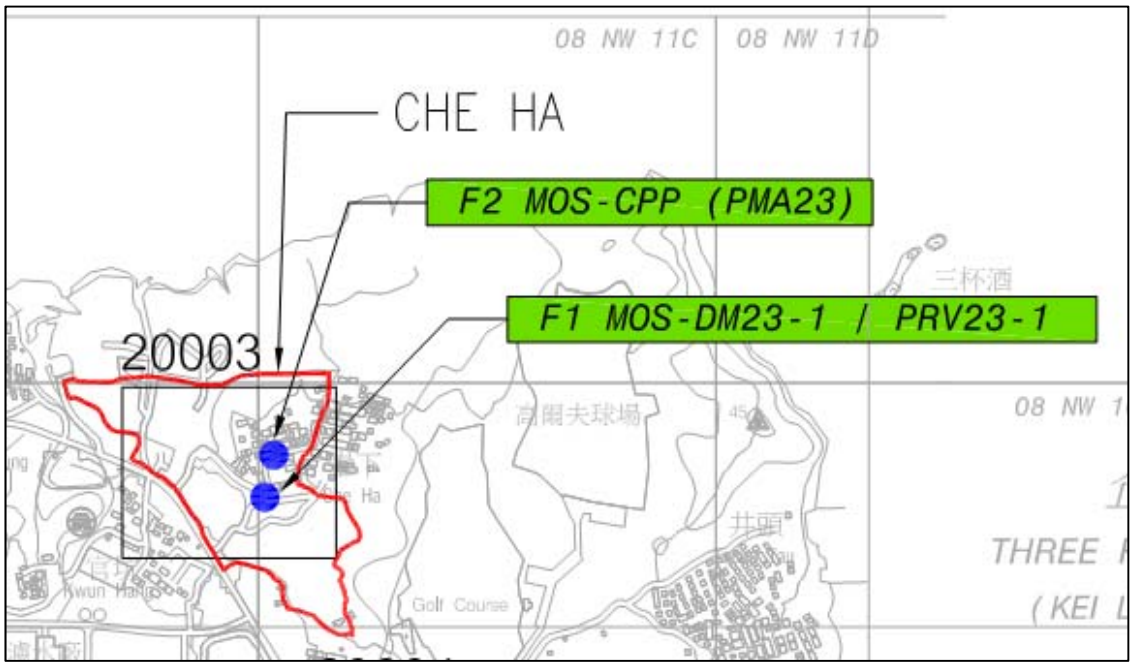

Figure 1 Che Ha Site of Archaeological Interest (AM00-1600) and works locations F1 and F2 inside the SAI boundary.

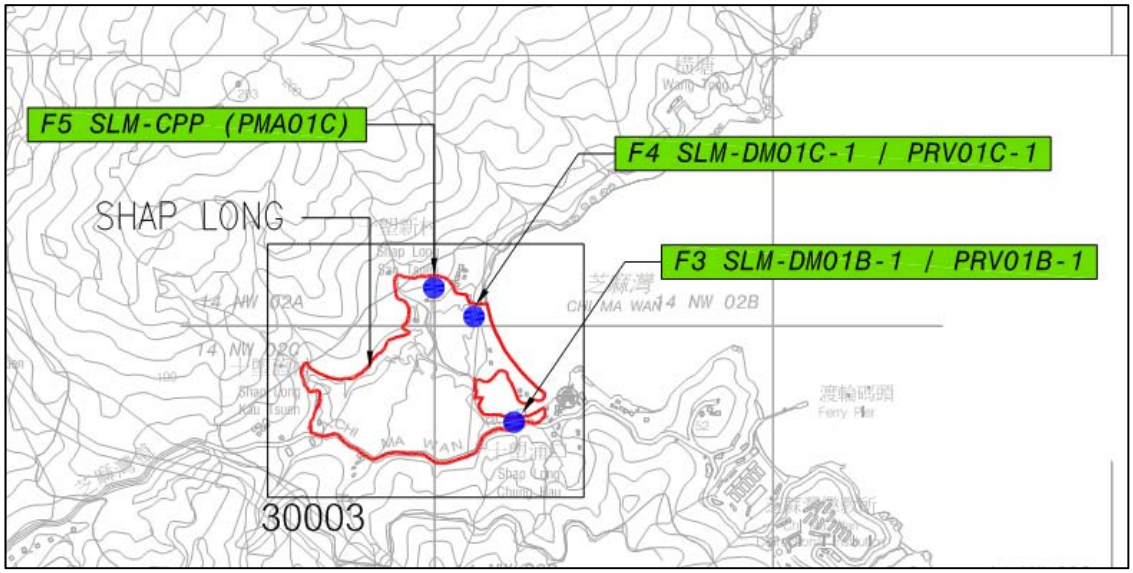

Figure 2 Shap Long Site of Archaeological Interest, Lantau Island (AM10-0002/A) and works locations F3, F4 and F5 inside the SAI boundary.

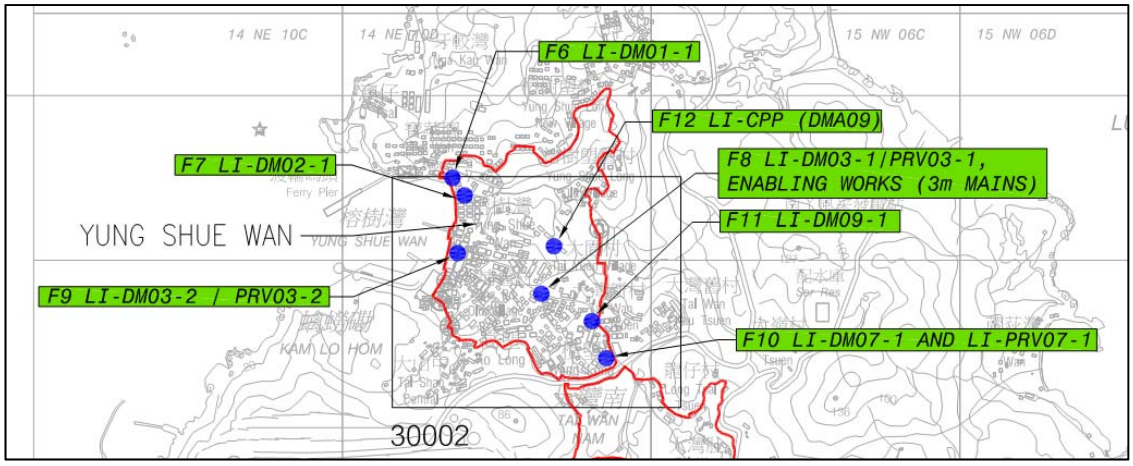

Figure 3 Yung Shue Wan Site of Archaeological Interest, Lamma Island (AM77-0040) and works locations F6 – F12 inside the SAI boundary.

Figure 4 Hung Shing Ye Site of Archaeological Interest, Lamma Island (AM77-0042) and works location F13 inside the SAI boundary.

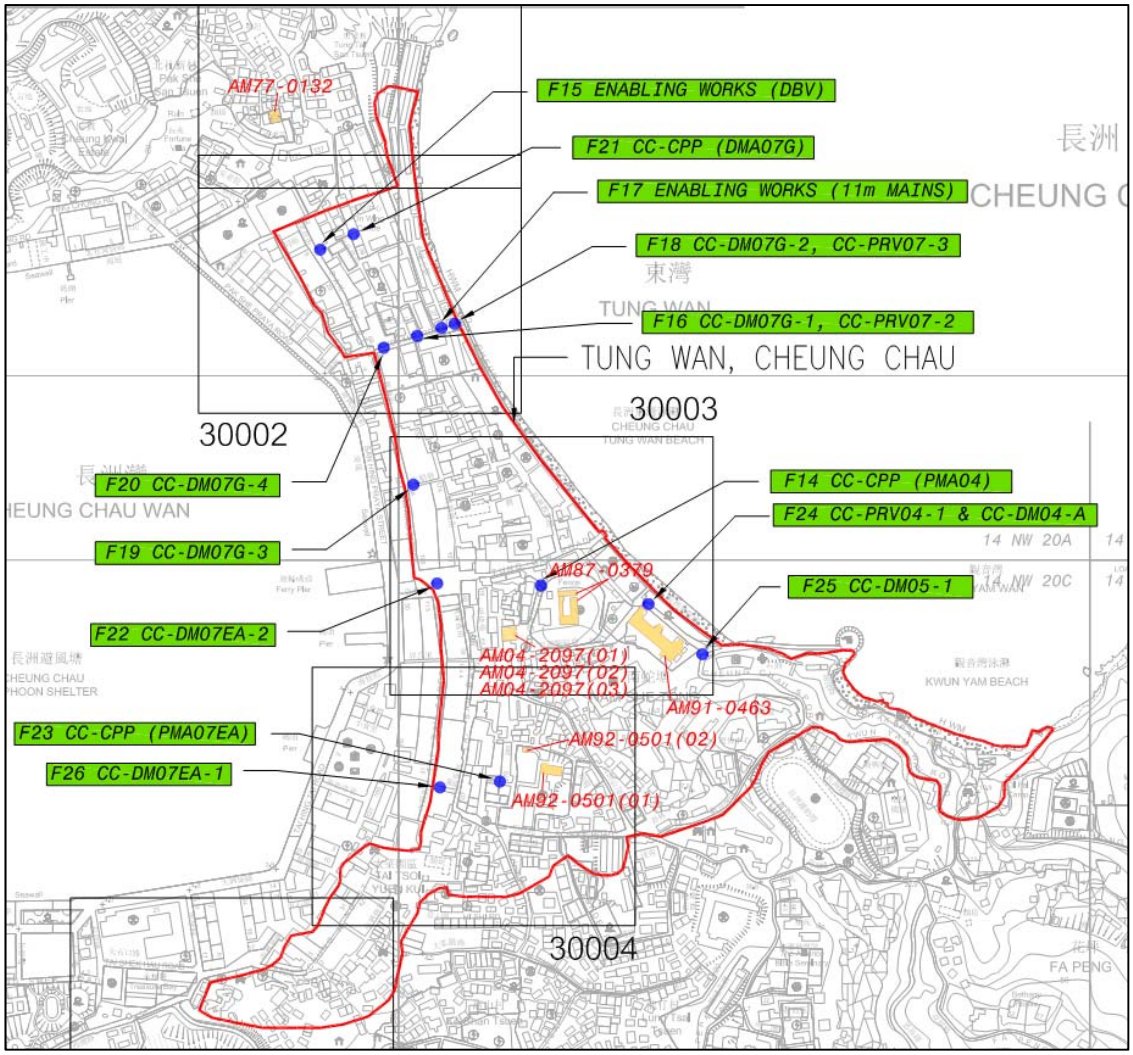

Figure 5 Tung Wan Site of Archaeological Interest, Cheung Chau (AM96-0752) and works locations F14 – F26 inside the SAI boundary.

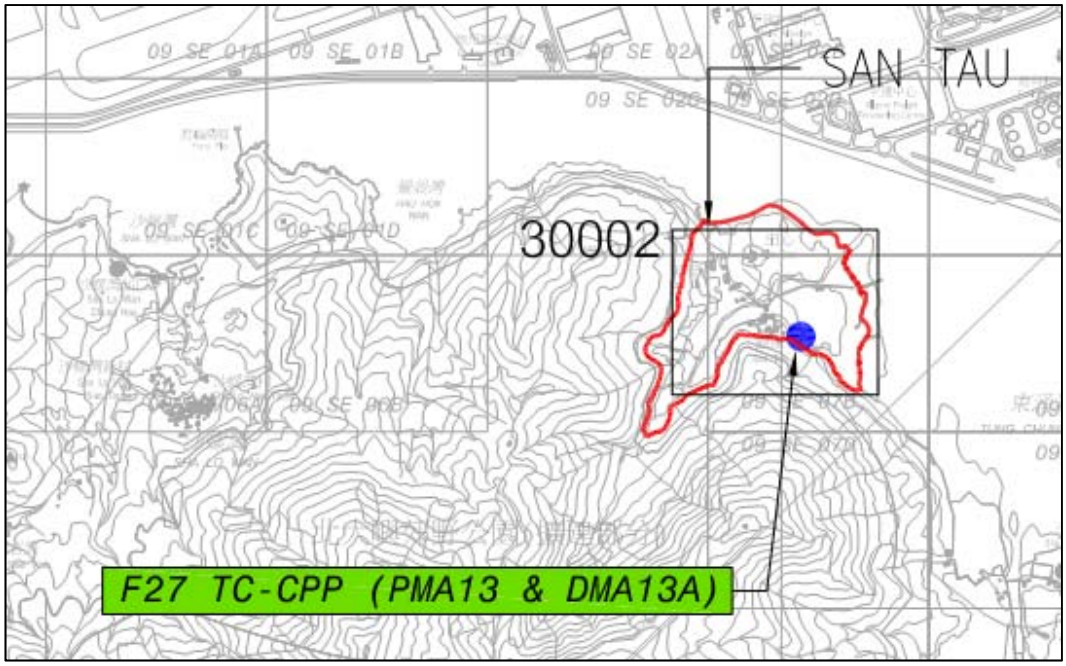

Figure 6 San Tau Site of Archaeological Interest, Lantau Island (AM96-0772) and works location F27 inside the SAI boundary.

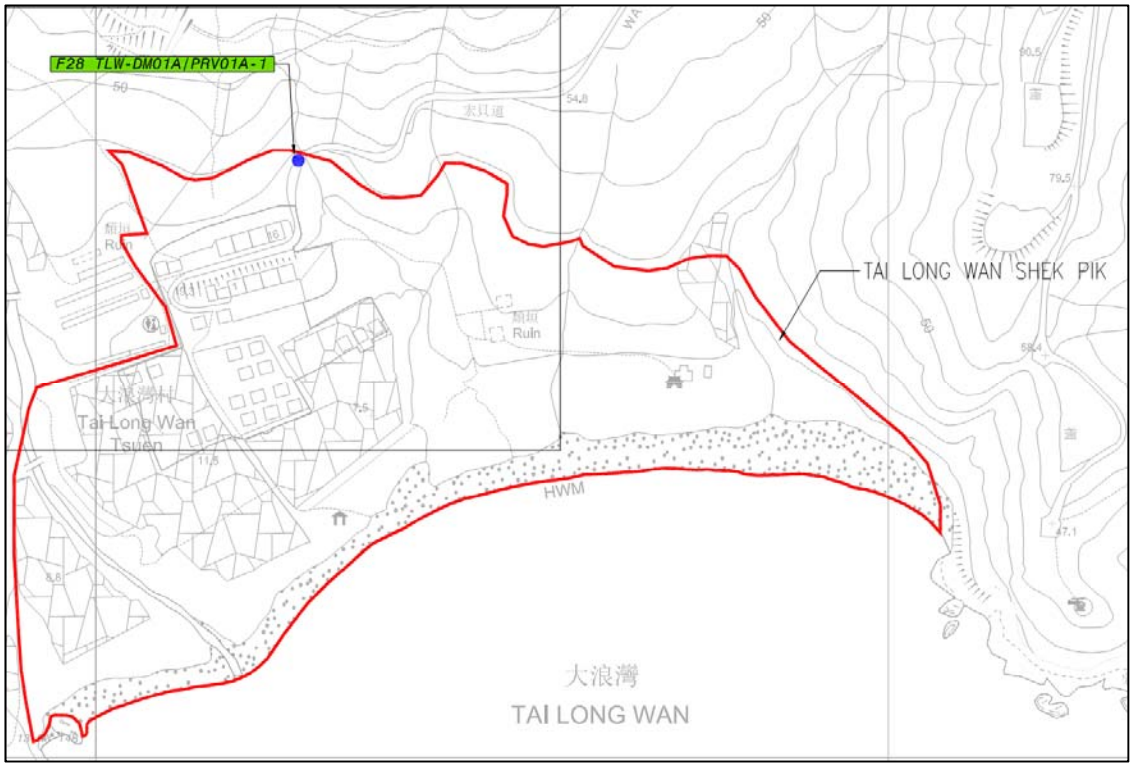

Figure 7 Tai Long Wan Site of Archaeological Interest, Shek Pik (AM98-0926) and works location F28 inside the SAI boundary.

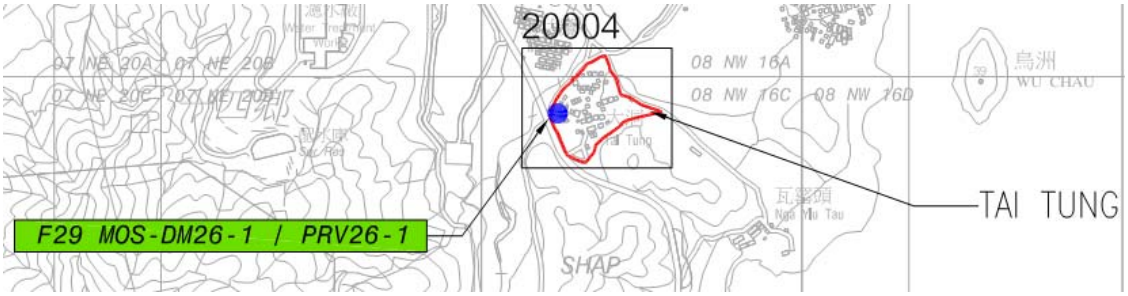

Figure 8 Tai Tung Site of Archaeological Interest (AM00-1615) and works location F29 inside the SAI boundary.

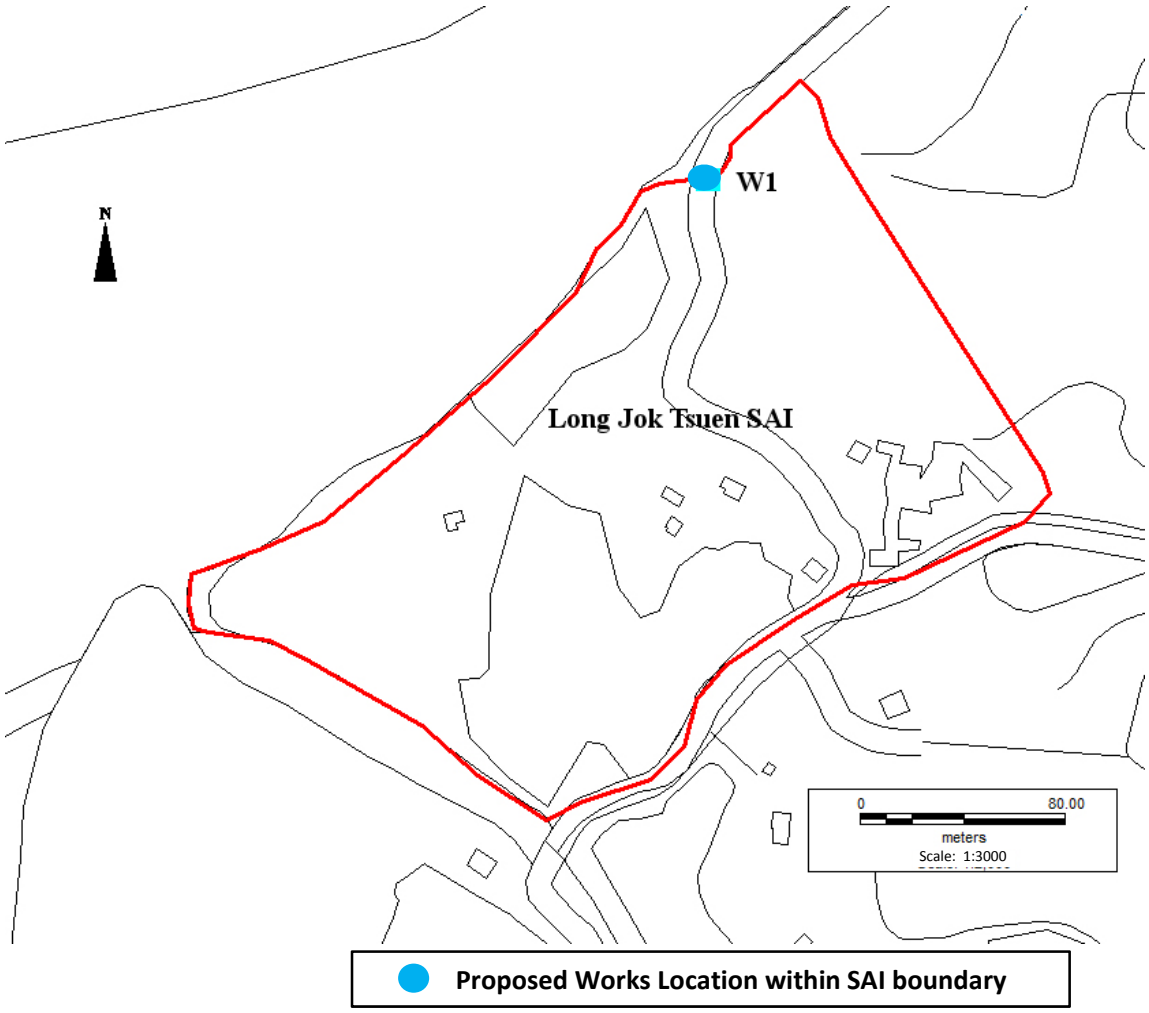

Figure 9 Long Jok Tsuen Site of Archaeological Interest (AM98-0916) and works location W1 inside the SAI boundary.

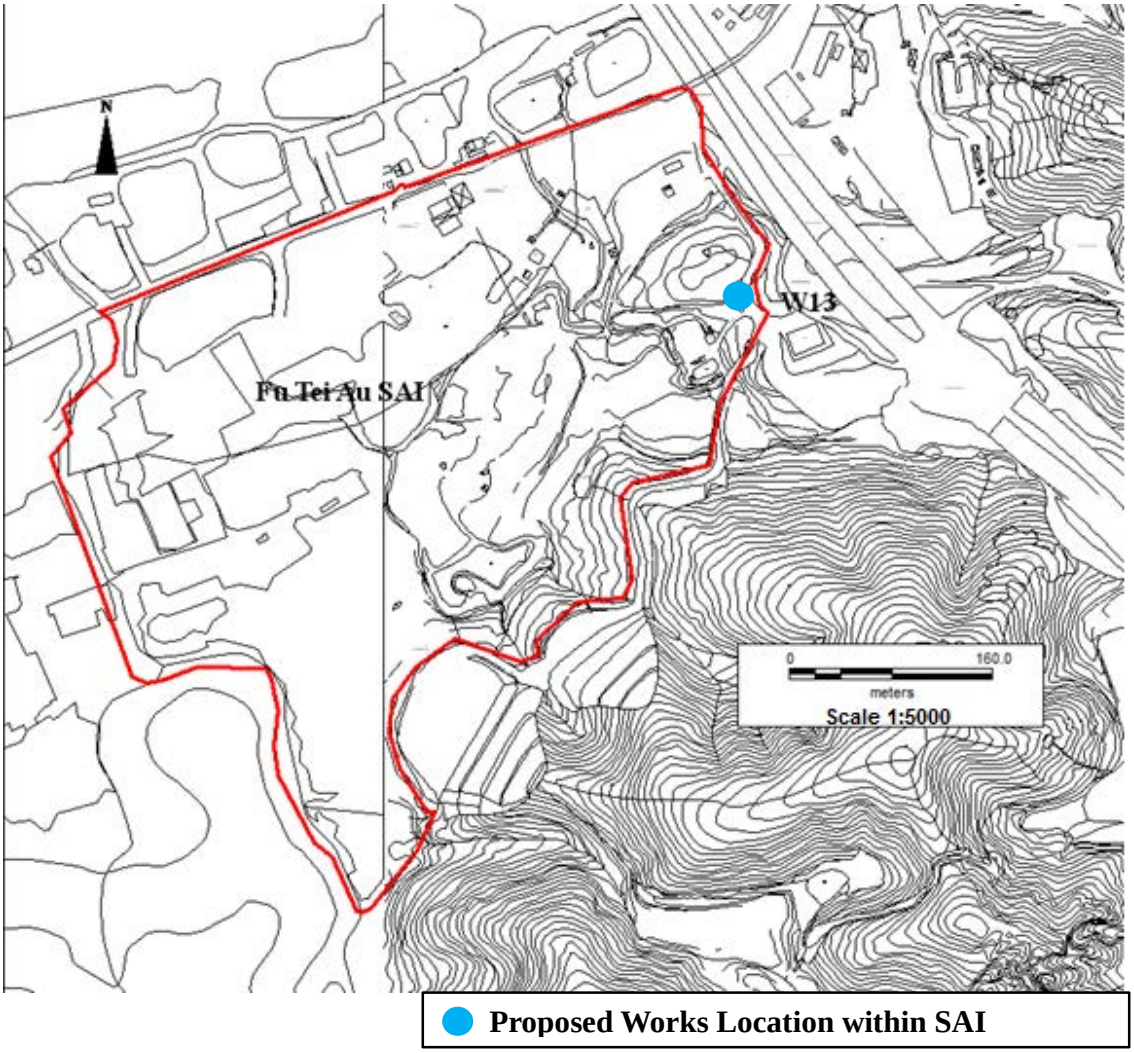

Figure 10 Fu Tei Au Site of Archaeological Interest (AM98-0910) and works location W13 inside the SAI boundary.

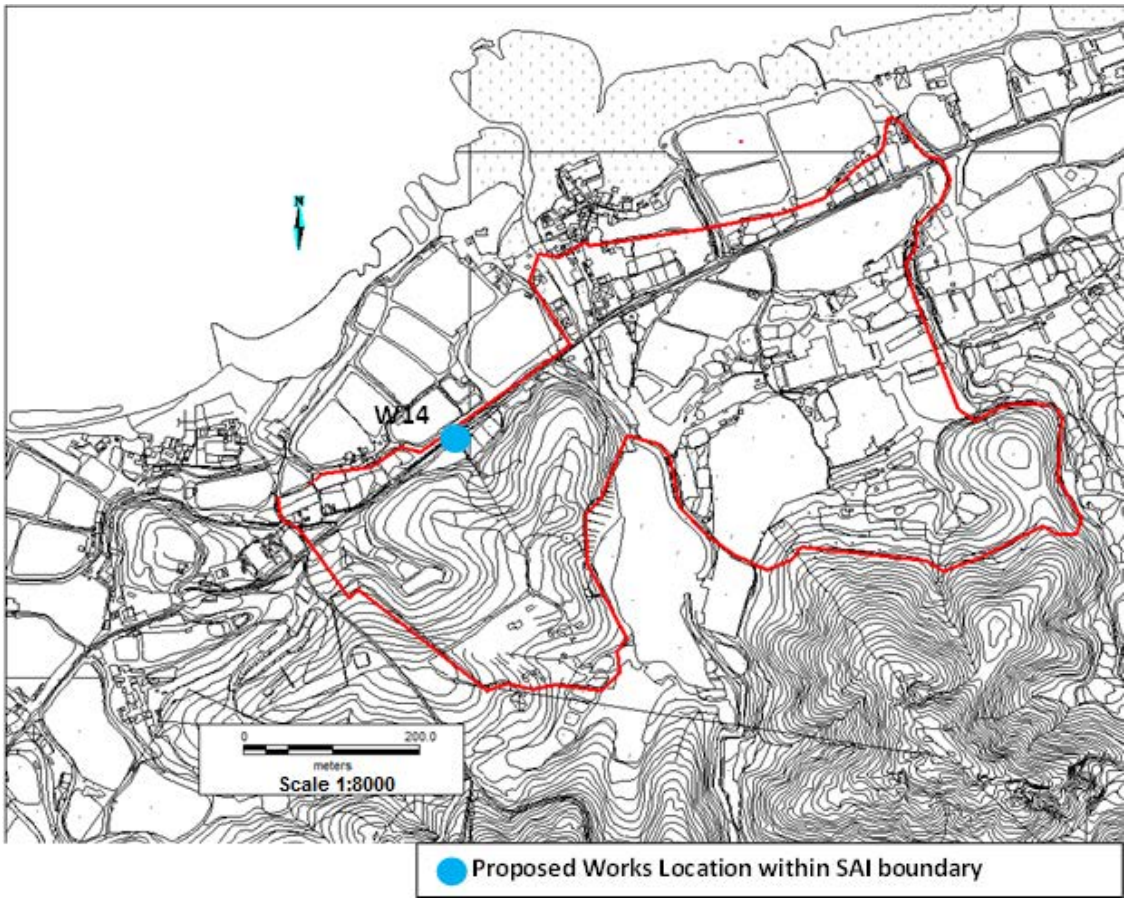

Figure 11 Ngau Hom Sha Site of Archaeological Interest (AM04-1983) and works location W14 inside the SAI boundary.