

Tsun Yip Civil Construction Company
Limited

Contract No. 8/WSD/10
Replacement and Rehabilitation of
Water Mains Stage 4 Phase 1
Mains in Tuen Mun, Yuen Long,
North District and Tai Po
Archaeological Watching Brief Report

October 2014

Environmental Resources Management

16/F Berkshire House
25 Westlands Road
Quarry Bay, Hong Kong
Telephone: (852) 2271 3000
Facsimile: (852) 2723 5660
E-mail: post.hk@erm.com
<http://www.erm.com>

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Reference 0138799

For and on behalf of
ERM-Hong Kong, Limited

Approved by: Frank Wan

Signed: 

Position: Partner

Certified by: 
(Licenced Archaeologist – Zheng Junlei)

Date: 22 October 2014

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CONTENTS

	<i>摘要</i>	<i>I</i>
	<i>SUMMARY</i>	<i>II</i>
<i>1</i>	<i>INTRODUCTION</i>	<i>1</i>
<i>1.1</i>	<i>TEAM MEMBERS</i>	<i>1</i>
<i>1.2</i>	<i>STRUCTURE OF THE REPORT</i>	<i>2</i>
<i>2</i>	<i>BACKGROUND</i>	<i>5</i>
<i>2.1</i>	<i>FULL COVERAGE APPROACH AWB AT LUNG KWU TAN</i>	<i>5</i>
<i>2.2</i>	<i>SELECTIVE AND SAMPLING APPROACH AWB AT TUEN MUN NORTH AND SHA TAU KOK AREA</i>	<i>7</i>
<i>3</i>	<i>SCOPE</i>	<i>17</i>
<i>3.1</i>	<i>SCOPE FOR FULL COVERAGE APPROACH AWB</i>	<i>17</i>
<i>3.2</i>	<i>SCOPE FOR SELECTIVE AND SAMPLING APPROACH AWB</i>	<i>17</i>
<i>3.3</i>	<i>CONSTRUCTION WORK</i>	<i>20</i>
<i>4</i>	<i>SUMMARY OF FINDINGS</i>	<i>23</i>
<i>4.1</i>	<i>FULL COVERAGE APPROACH AWB AT LUNG KWU TAN</i>	<i>23</i>
<i>4.2</i>	<i>SELECTIVE AND SAMPLING APPROACH AWB</i>	<i>24</i>
<i>5</i>	<i>CONCLUSIONS</i>	<i>27</i>
<i>6</i>	<i>BIBLIOGRAPHY</i>	<i>29</i>
<i>ANNEXES</i>		
<i>ANNEX A</i>	<i>FIGURES EXTRACTED FROM THE PROPOSAL FOR UNDERTAKING THE ARCHAEOLOGICAL WATCHING BRIEF</i>	
<i>ANNEX B</i>	<i>AWB LOCATIONS PLANS</i>	
<i>ANNEX C1</i>	<i>AWB RECORDS – FULL COVERAGE APPROACH AWB AT LUNG KWU TAN</i>	
<i>ANNEX C2</i>	<i>AWB RECORDS- SELECTIVE AND SAMPLING APPROACH AWB AT TUEN MUN NORTH AND SHA TAU KOK AREAS</i>	
<i>ANNEX D1</i>	<i>PHOTOGRAPHIC RECORDS –FULL COVERAGE APPROACH AWB AT LUNG KWU TAN</i>	
<i>ANNEX D2</i>	<i>PHOTOGRAPHIC RECORDS –SELECTIVE AND SAMPLING APPROACH AWB AT TUEN MUN NORTH AND SHA TAU KOK AREAS</i>	
<i>ANNEX E1</i>	<i>LIST OF FINDS –FULL COVERAGE APPROACH AWB AT LUNG KWU TAN</i>	
<i>ANNEX E2</i>	<i>LIST OF FINDS –SELECTIVE AND SAMPLING APPROACH AWB AT TUEN MUN NORTH AND SHA TAU KOK AREAS</i>	
<i>ANNEX F1</i>	<i>PHOTOS OF SPECIAL FINDS AND SELECTED GENERAL FINDS –FULL COVERAGE APPROACH AWB AT LUNG KWU TAN</i>	
<i>ANNEX F2</i>	<i>PHOTOS OF SPECIAL FINDS AND SELECTED GENERAL FINDS–SELECTIVE AND SAMPLING APPROACH AWB AT TUEN MUN NORTH AND SHA TAU KOK AREAS</i>	

摘要

受香港水務署委託新昌營造廠有限公司為合約工程編號 8/WSD/10「更換及修復水管工程第4階段第一期」之承建商，進行供水管更換及修復的工程。按合約要求，承建商需於施工期間進行考古監察工作以記錄工程中可能發現的考古遺存，而香港環境資源管理有限公司則受進業土木工程有限公司（承建商的分包商）所委託進行合約中所要求的考古監察工作。

在獲得古物古蹟辦事處審批是次考古監察工作計劃書及由考古學家鄭君雷博士獲得相關的牌照後，分別於2012年9月、12月及2013年1月在龍鼓灘地區進行全面性考古監察工作，總監察長度為748米；以及於2012年1月至2013年5月期間在屯門北及沙頭角地區進行選擇性及採樣性的考古監察，一共監察了32個考古監察地點。

在龍鼓灘地區進行全面性考古監察中，共出土11件重要文物及258件一般文物。該11件重要文物為新石器時代晚期的夾砂陶片，其中有10件在考古監察地點 LKT-19a第三層及第四層出土，1件在LKT-6附近地表採集發現。除LKT-19a 第四層出土的夾砂陶片外，其他重要文物都出土於擾土層。但由於發掘坑窄，發掘深度淺，亦難以判斷於LKT-19a 第四層出土的夾砂陶片是否原生堆積。除 LKT-19a 第四層出土的一般文物外，其他一般文物亦出土於擾土層，種類包括有瓷片、陶片、骨及錢幣。考古監察期間並無發現文化層。

在屯門北及沙頭角地區進行選擇性及採樣性的考古監察中，只有考古監察地點 2b、4f、5b及10b有出土物，一共出土7件重要文物及45件一般文物。重要文物出土於地點2b，為明末清初的青花瓷片。在地點2b及4f亦分別出土18件及8件明末清初的一般文物。其他於地點5b及10b出土的一般文物則來自擾土層，種類包括瓷片、陶片、瓦片及玻璃。

根據地點2b及4f的出土文物，確定了H1為明清時期的灰坑，並於地點2b存在一層明清時期的文化層；地點4f存在兩層明清時期的文化層。但由於發掘坑窄，發掘深度淺，未能確定H1的功用及大小，以及各文化層的延伸範圍。

總括而言，於地點LKT-19a第四層的發現反映了在該地點周邊有包含新石器時代晚期文化層的可能性。而在地點2b及地點4f所發現的文化層則為周邊兩個具考古價值地點提供了更多資料。

SUMMARY

Hsin Chong Construction Company Limited (the Main Contractor) has been commissioned by the Water Supplies Department (WSD) for the *Replacement and Rehabilitation of Water Mains Stage 4 Phase 1* (the Project) under *Contract No. 8/WSD/10* (the Contract). As part of the contract requirements, an archaeological watching brief (AWB) is required during the construction stage of relevant portions of the Works to record identified archaeological deposits that may be encountered during the excavation works. ERM-Hong Kong, Ltd (ERM) was commissioned by the Tsun Yip Civil Construction Company Limited (the sub-contractor of main contractor Hsin Chong Construction Company Limited) to conduct the AWB for the Contract.

Upon agreement with AMO regarding the AWB Proposal and relevant licences obtained by the archaeologist, Dr Zheng Junlei, a full coverage approached AWB was conducted at Lung Kwu Tan area in September and December 2012, and January 2013, where a total of 748 m of the alignments of the water main were monitored. A selective and sampling approached AWB was also conducted at the Tuen Mun North and Sha Tau Kok areas from January 2012 to May 2013, and monitoring of a total of 32 AWB locations were conducted.

Artefacts unearthed during the full coverage approach AWB at Lung Kwun Tan area comprise a total of 11 pieces of special finds and 258 pieces of general finds. The 11 pieces of special finds are coarse pottery shards probably dated to Late Neolithic period. Ten (10) pieces were unearthed at layer 3 and layer 4 of Location LKT-19a and one (1) piece was collected from the surface of adjacent area of Location LKT-6. Except for the coarse pottery shard unearthed from layer 4 of Location LKT-19a, the other shards were unearthed from the disturbed layer. However, as the excavation trench is narrow and shallow, it is difficult to determine if the coarse pottery shards unearthed at layer 4 of Location LKT-19a are primary deposit. The general finds found, including porcelain shards, pottery shards, bones and coins, except those unearthed at Location LKT-19a, were also unearthed from the disturbed layers. No cultural layer was observed during the AWB.

Concerning the selective and sampling approach AWB in the Tuen Mun North and Sha Tau Kok areas, artefacts were only recovered at AWB Locations 2b, 4f, 5b and 10b. A total of seven (7) pieces of special finds and forty-five (45) pieces of general finds were identified. The special finds are blue and white porcelain shards unearthed at Location 2b, dated to Late Ming to Qing Dynasties. Among the general finds, eighteen (18) pieces unearthed at Locations 2b and eight (8) pieces unearthed at Location 4f were also dated to Ming to Qing Dynasties. General finds unearthed at Locations 5b and 10b comprise porcelain shards, village ware shards, tiles and glass, which were found in the disturbed layer.

Based on the artefacts unearthed at Locations 2b and 4f, one (1) pit H1 dated to Ming to Qing Dynasty and a Ming to Qing Dynasties cultural layer were

observed at Location 2b; while two (2) Ming to Qing Dynasties cultural Layers were observed at Location 4f. However, the nature and size of pit H1, as well as the extent of the Ming to Qing Dynasties cultural layers could not be determined due to the narrow and shallow nature of the excavation trench being monitored.

In summary, the findings of the AWB at layer 4 of Location LKT-19a reflected the potential existence of a Late Neolithic period cultural layer at the area around Location LKT-19a. The presence of a cultural layer at Location 2b and Location 4f provided further information to understand the archaeological condition of these two sites of archaeological interest.

ERM-Hong Kong, Limited (ERM) has been commissioned by the Tsun Yip Civil Construction Company Limited (the sub-contractor of main contractor Hsin Chong Construction Company Limited) (the Contractor) to carry out an Archaeological Watching Brief (AWB) within the boundaries of archaeological sites (now known as *sites of archaeological interest*) or near historical villages during the construction of the *Replacement and Rehabilitation of Water Mains Stage 4 Phase 1* (the Project) under *Contract No. 8/WSD/10* (the Contract) for Water Supplies Department (WSD) in accordance with the requirements as stated in *Clause 31.01 (1) of Section 31 of the Particular Specification (PS)* of the Contract.

In accordance to *Clause 31.03 (1) of Section 31 of the PS*, an *Archaeological Watching Brief Proposal* (the Proposal) was prepared with reference to the *Requirements for Archaeological Watching Brief (AWB)* as enclosed in *Appendix 31.2 to the PS*, to define the AWB scope for agreement with the Antiquities and Monuments Office (AMO). Subsequently, the *Licence to Excavate and Search for Antiquities* under the *Antiquities and Monuments Ordinance (Cap 53)* (the licence) for the AWB was obtained by the qualified archaeologist, Dr Zheng Junlei on 21 November 2011, prior to the commencement of the AWB. Before the first licence expired on 20 November 2012, a new licence was obtained by Dr Zheng on 29 October 2012. The second licence was expired on 28 October 2013. The AWB comprised full coverage approached conducted at Lung Kwu Tan area in September and December 2012, and January 2013, where a total of 748 m of the trenches to be excavated as part of the Contract were monitored. The AWB also comprised a selective and sampling approach conducted at Tuen Mun North and Sha Tau Kok areas from January 2012 to May 2013, where a total of 32 AWB locations were monitored. This *AWB Report* (the Report) is prepared to presents the findings of the AWB conducted.

1.1

TEAM MEMBERS

The individuals participated in the AWB include:

Ms Peggy Wong	Project Manager
Dr Zheng Junlei	Licensed Archaeologist
Dr Guo Lixin	Experienced Archaeologist
Dr Jin Zhiwei	Experienced Archaeologist
Dr Liu Wensuo	Experienced Archaeologist
Dr Yao Chongxin	Experienced Archaeologist
Mr Raymond Ng	Experienced Archaeologist

Ms Kitty Liu	Assistant Archaeologist
Mr Edward Chiu	Assistant Archaeologist
Mr Chris Yau	Assistant Archaeologist

The post-AWB finds processing and interpretation of data retrieved from the AWB were led by Dr Zheng Junlei, who was supported by Ms Peggy Wong and Ms Kitty Liu and Mr Raymond Ng. Photography of the artefacts recovered was undertaken by Ms Kitty Liu.

Authors of this *Report* include Dr Zheng Junlei, Ms Peggy Wong, Ms Kitty Liu and Mr Raymond Ng.

1.2 *STRUCTURE OF THE REPORT*

Following this introductory section, the remainder of this *Report* comprises the following sections:

Section 2 provides the background information of areas requiring AWB;

Section 3 describes the scope of work of the areas requiring AWB;

Section 4 provides a summary of key findings of the AWB;

Section 5 presents the conclusions of the AWB;

Section 6 presents the bibliography.

The following annexes are also included:

Annex A presents the plans showing proposed AWB locations;

Annex B presents the plans showing locations where AWB conducted;

Annex C1 presents the AWB record of full coverage approach AWB at Lung Kwu Tan;

Annex C2 presents the AWB record of selective and sampling approach AWB at Tuen Mun North and Sha Tau Kok Areas;

Annex D1 presents the photographic record of full coverage approach AWB;

Annex D2 presents the photographic record of selective and sampling approach AWB;

Annex E1 presents the list of special finds and general artifacts unearthed during full coverage approach AWB;

Annex E2 presents the list of special finds and general artifacts unearthed during selective and sampling approach AWB;

- Annex F1 presents photos of special finds and selective general finds unearthed during full coverage approached AWB; and
- Annex F2 presents photos of special finds and selective general finds during selective and sampling approach AWB.

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2.1 FULL COVERAGE APPROACH AWB AT LUNG KWU TAN

2.1.1 *Geology and Topography Background*

Lung Kwu Tan is a bay with a raised sand dune situated parallel to the existing shoreline in western Hong Kong SAR, close to fishing grounds. The raised beach in Lung Kwu Tan is about 5.6 to 6.5 mPD. Behind the raised sand dune are an alluvial plain (a former lagoon) and a small terrace consisting of alluvial debris flow deposits of Pak Long Village. A few streams run from the hill through the lagoon to the sea.

The superficial deposit of Lung Kwu Tan consists mainly of beach deposits, alluvial and colluvial slope deposits. Terrestrial deposits comprise well sorted gravel, silty sand, fine to coarse sand and gravel in varying proportion with no shell fragments. Silty coarse and fine sand comprising quartz gravel with some feldspar formed during the Holocene age is found throughout the area. Geology map of Lung Kwu Tan is presented in *Figure 2.1*.

The sand dunes deposit is composed of fine to coarse sand with occasional shell fragments. These deposits are laterally continuous with littoral and sub-littoral sand. The sand dunes can be classified into two types: contemporary sand beach and raised beach (high level storm beach). The latter type usually occurs behind the contemporary sand beach and consists of gravel coarse sand with scattered pebbles. The formation of raised beach is related to storm or sea level change, which would result in sand depositing on shore area. Thermoluminescence dating of sand and shells sampled from the lower layers of the Lung Kwu Tan raised beach suggests that the formation age is around 5,200 years ago ⁽¹⁾.

Since the Middle Neolithic period, the coastal regions of Hong Kong have been settled by sea farming people and their physical remains have been found in coastal areas such as raised beach or terraces along shoreline. The discovery of ancient cultural remains in association with marine resources near the site is consistent with the trend of settlement along the coastal areas.

2.1.2 *Historical Background*

Archaeological finds discovered in Lung Kwu Tan (龍鼓灘), Yung Long (湧浪) and So Kwun Wat (掃管笏) in Tuen Mun indicate that back to the Neolithic Period, there was human settlement in this area.

Also, Lung Kwu Tan is strategically set midway between Eastern *Quangdong* region and the Pearl River Delta. As a result of the abundance of marine resources settlements were established along the shoreline of western Hong Kong. Over 15 fish culture zones are situated in the vicinity of the Pearl River Delta.

(1) 《香港屯門龍鼓灘遺址發掘報告》 中山大學 2001.

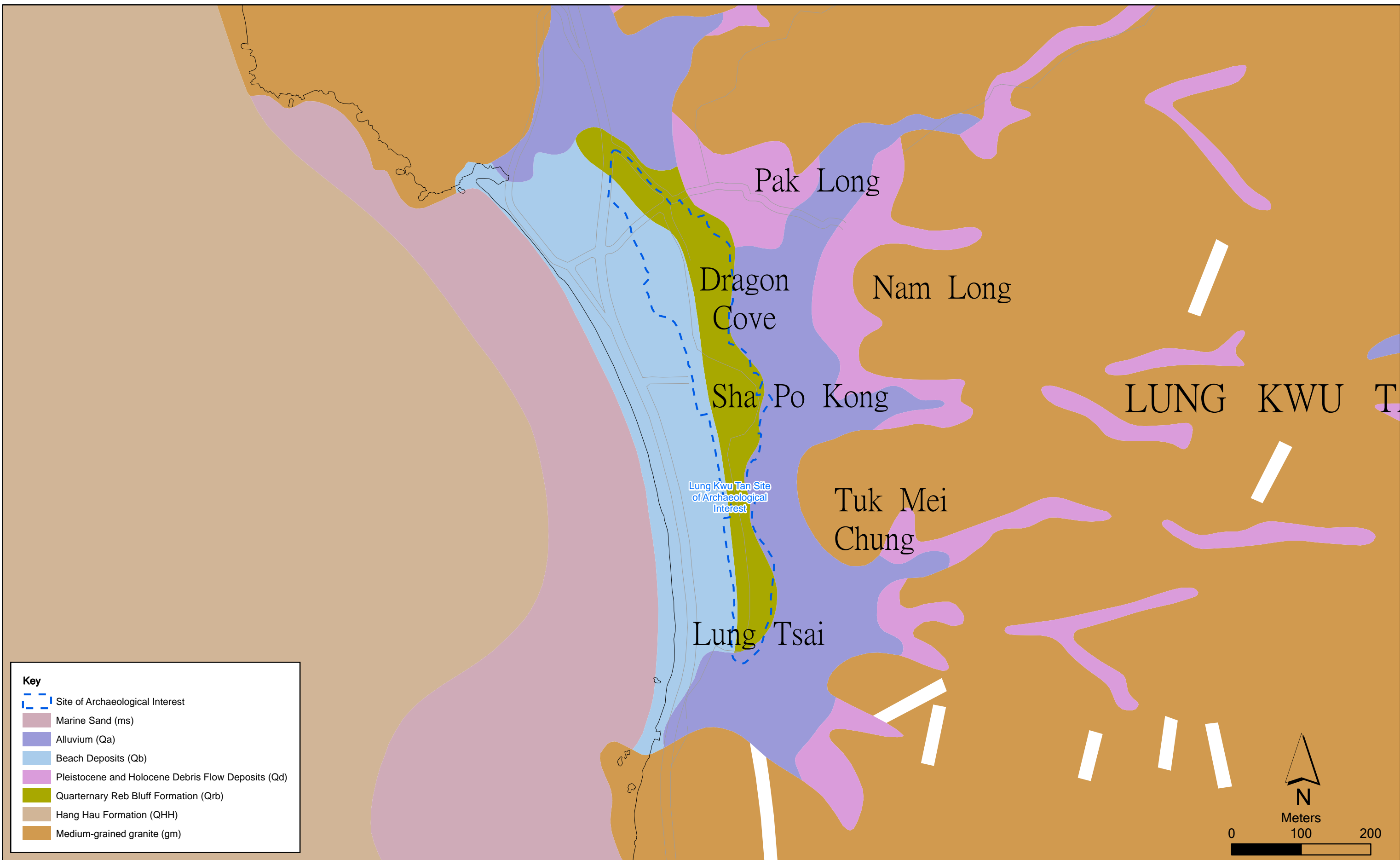


Figure 2.1

Geology Map and Site of Archaeological Interest (Lung Kwu Tan)

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Sea routes between China and Southeast Asia have long been established. During the Tang Dynasty, a navy base was set up in Tuen Mun as a military outpost of Guangzhou. This was followed by the establishment of a settlement and a lime kiln industry in the Tuen Mun Valley region, close to the present day Castle Peak area. Tuen Mun subsequently became a trade port. Supported by the local community, a Buddhist Temple was built in Castle Peak during the 4th century A.D. The role of Tuen Mun as a trade port remained unchanged during the Song Dynasty and an imperial saltpan was set up in the area.

In 1516, Portuguese ships under the command of Jorge Alvares from Malacca arrived at Tamao Island. Some scholars believed that it was the island named Nei Lingtin (内伶仃) west of Tuen Mun or St. John Island (上川島) about 50 km southwest to Macau (Ljungstedt 1832, Tang 1999). Others argued that Tamao Island was actually today's Tuen Mun mistaken by the Portuguese. The Portuguese occupied the Island for seven years. They built a trading station and erected stone tablets with inscription in Portuguese. In 1521, the conflict between the Chinese navy and the Portuguese in the water channel between Lantau Island and Tuen Mun resulted in the Portuguese relinquishing Tamao Island in the same year and establishing a new trading station in Eastern China, near Shanghai ⁽¹⁾.

During the Qing Dynasty, the imperial court encouraged the Hakka people, notably the Lau clan, to migrate from Eastern Guangdong to the coastal area of Tuen Mun. They first settled in Fa Heung Lo (花香爐) village, then move to Lung Kwu Tan and Lung Kwu Sheung Tan areas in the mid-18th century ⁽²⁾. The Fa Heung Lo village is listed in the 1819 edition of *Xin'an County Gazetteer*, but not in the 1688 edition of *Xin'an County Gazetteer*. Therefore the village was likely to have been established during the Qing Dynasty after 1688 and before 1819.

2.1.3 Archaeological Background

The full cover approach AWB falls within the Lung Kwu Tan site of archaeological interest (see *Figure 2.1*). In 1986 Peacock and Nixon listed the area in their unpublished report, *Report on Hong Kong Archaeological Survey*, as one of the five largest archaeological sites in Hong Kong. In particular, the sand dune area in Lung Kwu Tan was thought to have a high potential for archaeological remains.

In 1989 to 1990, AMO and the Chinese University of Hong Kong conducted a rescue excavation in the coastal area of Lung Kwu Tan as a result of the construction of Lung Kwu Tan Road linking Yung Long to Tuen Mun. Artefacts from three different periods were discovered and identified in the excavation: (1) the Middle Neolithic period, (2) the Late Neolithic period and (3) the Bronze Age ⁽³⁾.

(1) 《清初遷海前後香港之社會變遷》 蕭國健 1986.

(2) Ibid

(3) 《香港龍鼓灘新石器遺址發掘報告》 古物古蹟辦事處 1996.

In 1994, a small-scale rescue excavation was carried out in the northern sand dune area prior to the construction of a power sub-station. The rescue excavation revealed a hard reddish sandy floor with two groups of postholes extending into the sub layers. Shards of corded coarse ware were found in the floor and the layer was dated to the Late Neolithic period ⁽¹⁾. The excavated area is in close proximity to the Project Area of this AWB. From 1996 to 1999, a few small rescue excavations were undertaken close to the Project Area. Further postholes and the Middle Neolithic incised chalky shards were uncovered.

From 1997 to 1998, the Department of Anthropology of Sun Yat-sen University, China was appointed by the Hong Kong SAR Government to survey the southern part of Lung Kwu Tan sand dune area in which a cultural layer dated to the Han Dynasty was uncovered. In 2001, thermoluminescence dating of sand sampled from the rescue excavation in the northern section of the sand dune area by the Sun Yat-sen University indicated that the sand dune was formed some 5,200 years ago ⁽²⁾.

In 1999, a set of the Tang Dynasty lime kilns was excavated in southern part of sand dune area. In 2002, the central section of the sand dune was investigated in which artefacts of the Middle to Late Neolithic period and the Bronze Age were found ⁽³⁾.

In 2003 and 2004, a survey-cum-excavation at Small House Lots 121B and 121RP in DD137 was carried out. Three cultural layers were recorded. Two cultural layers dated to the Late and Early Phases of the Middle Neolithic Age (4500-2900 BC) located approximately 0.2m to 0.7m below ground level (bgl). A layer of pottery shards and waste quartz flakes beneath interregnum strata, which dated to the Early Phase of the Middle Neolithic period (4500-3600 BC) located 0.6m to 2.1m bgl. After incorporated with the findings of rescue excavation in 1990s, land use pattern of the Lung Kwu Tan raised beach during the Middle Neolithic period was investigated and outlined ⁽⁴⁾.

2.2 SELECTIVE AND SAMPLING APPROACH AWB AT TUEN MUN NORTH AND SHA TAU KOK AREA

2.2.1 Geology, Topography Background

The geology and topography of Tuen Mun North and Sha Tau Kok Area are presented in *Tables 2.1 and 2.2*, and *Figures 2.2 and 2.3*, respectively.

(1) Ibid

(2) 《香港屯門、荃灣地區考古調查發掘報告》中山大學 1998; 《香港屯門龍鼓灘遺址發掘報告》中山大學 2001.

(3) 《屯門龍鼓灘遺址2002年考古發掘報告》中港考古研究室 2003

(4) *Survey-cum-Excavation at Small House Lots No. 121B & 121RP in DD137, Lung Kwu Tan, Tuen Mun Stage 1 – Archaeological Survey Report*. ERM. 2003; *Survey-cum-Excavation at Small House Lots No. 121B & 121RP in DD137, Lung Kwu Tan, Tuen Mun Stage 2 – Archaeological Rescue Excavation Report*. ERM. 2004.



Figure 2.2

Geology Map and Site of Archaeological Interest (Tuen Mun North Area)

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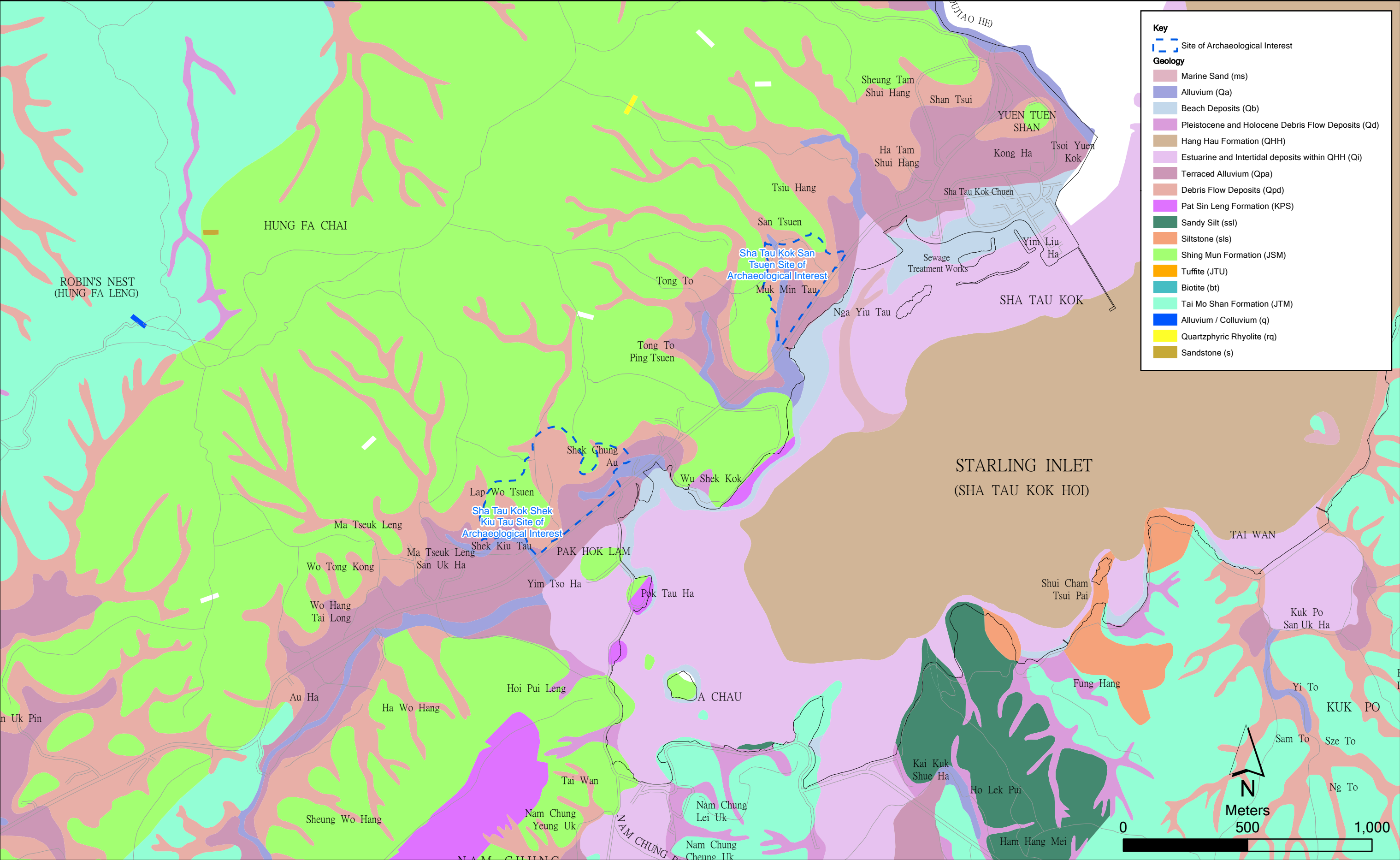


Table 2.1 **Tuen Mun North Area**

Regions	Topography	Geology	mPD Level
Fu Tei Ha Tsuen	The proposed fresh water main alignments are located along village footpaths or abandoned fields within Fu Tei Ha Tsuen. Some alignments are situated next to a nullah.	Pleistocene terraced alluvium and debris flow deposits	+8.1 to 16mPD
Nai Wai & Sun Fung Wai	The proposed fresh water main alignments are located along village access roads and village footpaths within Sun Fung Wai and Nai Wai.	Pleistocene terraced alluvium and Holocene alluvium	+10.2 to 12.9 mPD
Kei Lun Wai	Kei Lun Wai is situated near the original coastline of Castle Peak Bay. The proposed fresh water main alignments are located along village footpaths within Kei Lun Wai.	Pleistocene debris flow deposits	+9.6 to 15.8 mPD
Siu Hang Tsuen and Po Tong Ha	The proposed fresh water main alignments are located along Tong Hang Road, village access roads and village paths within Siu Hang Tsuen and Po Tong Ha.	Pleistocene debris flow deposits and terraced alluvium; Tuen Mun Formation, undivided, consisting of andesite with tuff and tuffite; Holocene alluvium	+8 to 28 mPD
Tsz Tin Tsuen	Tsz Tin Tsuen is situated between Po Tong Ha and San Hing Tsuen. The proposed fresh water main alignments are located along village footpaths within Tsz Tin Tsuen.	Pleistocene debris flow deposits and terraced alluvium; Tuen Mun Formation, undivided, consisting of andesite with tuff and tuffite; Holocene alluvium	+5.2 to 23 mPD
Tuen Tsz Wai	The proposed fresh water mains alignments are located along Castle Peak Road - Lam Tei Section and village footpaths within Tuen Tsz Wai. Some alignments are located next to existing ponds and nullah.	Pleistocene debris flow deposits and terraced alluvium; Holocene alluvium	+5.6 to 12 mPD

Table 2.2 **Sha Tau Kok Area**

Regions	Topography	Geology	mPD Level
Man Uk Pin	The historical village of Man Uk Pin is situated in lower hill slope to the east of Min Keng. The proposed fresh water main alignments are located along village footpaths and access road within Man Uk Pin.	Pleistocene and Holocene debris flow deposits and a small area of Pleistocene terraced alluvium	+26.6 to 33 mPD
Wo Tong Kong	The proposed fresh water main alignment is located along village footpath near a stream. The area is situated to the south of Ma Tseuk Leng and is mainly occupied by temporary structures.	Mainly Pleistocene debris flow deposits and a small area of Pleistocene terraced alluvium	+5.2 to 13 mPD
Lap Wo Tsuen	The proposed fresh water main alignments are mainly located along village footpaths and adjacent areas.	Pleistocene debris flow deposits; Shing Mun Formation, undivided, consisting of fine ash to coarse ash tuffs, tuff-breccia and tuffite	+6.5 to 16.3 mPD
San Tsuen	The proposed fresh water main alignments are located along village footpaths within San Tsuen, Nga Yiu Tau and Muk Min Tau. Some of these alignments are situated along Sha Tau Kok Road - Shek Chung Au Section and its causeway.	Pleistocene debris flow deposits	+5 to 18.7 mPD

2.2.2 *Historical Background*

Tuen Mun North Area

Historically speaking, Tuen Mun was a very important port and military base along the southern coastal China. The name of Tuen Mun comes from its importance of being a coastal military base in Tang dynasty, with “Tuen” meaning military deployment whereas “Mun” meaning its coastal location performing the role of military defence. Maritime transportation is closely related to Tuen Mun’s historical development in terms of immigration, commercial trade, military and cultural development since Tang Dynasty.

The importance of Tuen Mun during Tang Dynasty was underscored by its designation in AD734 as a Zhen (鎮), with a key imperial garrison of 2,000 soldiers headed by a general.

Tolo Harbour became the main pearl harvesting centre during the 8th century. In the 9th century, Hong Kong established itself as a major salt production centre. From the 9th century onwards, the salt production fields were distributed all around Hong Kong and the west bank of Pearl River. The

northern New Territories area became favourable settlement areas. During Southern Song dynasty (南宋) (AD1127-1279), Hong Kong became known as one of the famous thirteen salt production centres in China. It is believed that many salt workers' settlements were established at that time and that inland areas were also settled by people cultivating the land to provide food. According to oral history and local genealogical records, a large group of people from mainland China migrated to the New Territories area during the southern Song Dynasty when Mongol was conquering China. The study of local genealogy indicates that five major clan groups, the Pangs, the Lius, the Haus, the Mans and the Tangs, were believed to be the first settlers in the New Territories during this time.

During the Yuan Dynasty (元) (AD1271 - 1368), permanent settlements were found in the New Territories including the Tang clan in Lung Yeuk Tau and Ping Shan, Liu clan in Tuen Mun, Cheung Muk Tau and Sheung Shui, the Tao clan in Tuen Mun, the Hau clan in Ho Sheung Heung and the Man clan in Tai Po and San Tin etc. The inhabitation history for areas within the project boundaries can be traced back to AD 13th century (South Song Dynasty to Yuen Dynasty) when the Pang, Hau and Liu clans moved to Sheung Shui. The Pang clan inhabited Fanling, the Hau clan the west and south of Long Valley and the Liu clan the Sheung Shui plain.

During the 15th century the coastal areas of Dongguan County were attacked by marauding bandits and pirates. In order to protect against the bandits and pirates, Xin'an County was set up in 1573. According to the record of the Xin'an Gazetteer (新安縣志), the whole area now known as the New Territory, Kowloon and Hong Kong was zoned within the Xin'an County. This area covered two fifths of the County. In 1586 and 1643 two editions of the Xin'an Gazetteer were published but both of them were lost.

In 1661, the Coastal Evacuation was promulgated by the Qing Dynasty (清) Emperor in order to stifle the supply of the Anti-Manchu troops in Taiwan, people living along the coast of Guangdong were moved 50 li (里) inland. The New Territories settlers were forced to move back to China until 1669 when the Boundary Extension was promulgated and the New Territories settlers moved back to their villages. In the 1680s the Chinese government established a garrison station in Ping Che village.

The population and economy of Xin'an County was strongly affected by the Coastal Evacuation. In 1594, the population of Xin'an County was 13,302 people, but it dropped to 3,912 people in 1677. When the Boundary Extension was promulgated, newcomers in particular the Hakka (客家) people were encouraged to migrate to the New Territories and they did so during the late 17th and early 18th century.

Regarding the textual historical record of Tuen Mun, it can be dated back to the legend of the Pui To monk (杯渡禪師). Pui To monk lived around the time of the late Eastern Jin Dynasty. His legend is recorded in an ancient book «高僧傳». Pui To monk spent his life travelling around ancient China

and during the latter part of his life he visited Tuen Mun. According to the ancient book, he was fascinated by the spiritual atmosphere of Tsing Shan (青山) in Tuen Mun and therefore stayed to cultivate his way there. The story of Pui To monk had passed from generation to generation and up to Ming and Qing dynasties, it is generally regarded as the origin of Tuen Mun's history.

Regarding the settlement history,

- Fu Tei Ha Tsuen (虎地下村): Fu Tei Tsuen composed of Fu Tei Sheung Tsuen (虎地上村), Fu Tei Chung Tsuen (虎地中村) and Fu Tei Ha Tsuen (虎地下村). It is a multi-surname Hakka local village ⁽¹⁾.
- Nai Wai (泥圍): Also named as Wong Kong Wai (黃崗圍), is a local village belongs to the To (陶) Clan. ⁽²⁾ It was a walled village though the wall has been largely modified or demolished nowadays ⁽³⁾. A kiln dated to the Qing Dynasty was revealed at the southeast of the village ⁽⁴⁾.
- Kei Lun Wai (麒麟圍): It is a multi-surname Hakka local village, which has its origin from So Kwun Wat and Luk Keng. The Yung Muk Ancestral Hall (雍穆家祠) is featured with nine altars for ancestors of nine clans, including Huang (黃), Lai (黎), Chan (陳), Cheung (張), Ho (何) and Man (萬).
- Siu Hang Tsuen (小坑村): It is a local village belongs to the Tse Clan. It was established a few hundred years ago ⁽⁵⁾.
- Po Tong Ha (寶塘下): It is a local village with multi-surname, including Tsui, Ho and Tse Clans. Tsui Clan is the majority. The village was established a few hundred years ago ⁽⁶⁾.
- Tsz Tin Tsuen (紫田村): It is a local village branched from Tang Clan in the Yuen Long. It is the second influential village in Tuen Mun ⁽⁷⁾.
- San Hing Tsuen (新慶村): It is a local village with the majority of residents as Siu (蕭) Clan. Siu Clan was originally lived in Tuen Tsz Wai. They moved to San Hing Tsuen in the early 20th century to ease the crowded environment due to population increase ⁽⁸⁾.
- Tuen Tsz Wai (屯子圍): It is a local village belongs to the To (陶) Clan. It was first named as Tin Tsz Wai (田子圍). It is the oldest village of Tuen Mun, which was established about 700 years ago when the To Clan migrated to Tuen Mun from Guangxi (廣西).

(1) Tuen Mun Rural Committee (TMRC). "Fu Tei Tsuen" http://www.hktmlrc.com/fu_tei_tsuen

(2) TMRC. "Nai Wai" http://www.hktmlrc.com/nai_wai

(3) Ibid

(4) AMO Geographical Information System on Hong Kong Heritage, "Nai Wai Kiln" <http://www5.lcsd.gov.hk/gishinter/detail.jsp?SYSID=1346&LANG=TCNAME>

(5) TMRC "Siu Hang Tsuen" http://www.hktmlrc.com/siu_hang_tsuen

(6) TMRC "Po Tong Ha" http://www.hktmlrc.com/po_tong_ha

(7) TMRC "Tsz Tin Tsuen" http://www.hktmlrc.com/tsz_tin_tsuen

(8) TMRC "San Hing Tsuen" http://www.hktmlrc.com/san_hing_tsuen

The Sha Tau Kok Area was mainly agricultural land occupied by village settlements. Some villages have been established for over 300 years such as Kong Ha Tsuen (崗下村), San Tsuen (新村) and Shan Tsui (山咀)⁽¹⁾. Cultural heritage resources including ancestral halls, post-1950s residential houses, study halls/schools, watch towers, boundary stones, wells etc could still be found in the villages. In addition to agricultural and fishery activities, salt production was formerly a major industry in Sha Tau Kok. However, the salt industry declined in the early 20th century and the salt fields were abandoned.

In 1949, following two separate incidents where policemen were ambushed, attacked and killed at the border with mainland China, a Frontier Closed Area (FCA) (邊境禁區) was introduced along with the MacIntosh Forts along the border with mainland China. This was to improve the border defence system. The FCA was established in June 1951 and expanded to its current limit in 1962. The FCA originally covers an area of approximately 28 km² of northern Hong Kong, but over 50 per cent of the original FCA has been excised in two stages of reduction of FCA in 2012 and 2013. Those who are not residents of the FCA cannot enter the area unless they hold a valid permit issued by the Police.

Sha Tau Kok is one of the three FCA sections. It is with a complement of observation posts and controlled by a separate police station. The FCA was established with the intention of preventing migration into Hong Kong from mainland China, and in order to restrict illegal activities. The establishment of the area has also resulted in a freeze in development within the area and thus many features with cultural heritage value still survive.

Regarding the settlement history,

- Man Uk Pin (萬屋邊): Man Uk Pin village is a historical multi-surname Hakka village. The majority of residents are currently belongs to the Chung, Tong, Lo and Fu clans⁽²⁾. There are a number of ancestral halls in the village. Tong Ancestral Hall is a Grade 3 historical building. Small ancestral halls of the Lo clan, Cheung clan, Fu clan, Lau clan and Lam clan could also be found within the village⁽³⁾.
- Wo Tong Kong (禾塘崗): This area is located between Ma Tseuk Leng (麻雀嶺) village and Wo Hang Tai Long (禾坑大朗). Up on the Ma Tseuk Leng mountain was once an important military spot in Qing dynasty that a beacon was built for guarding the Starling Inlet (沙頭角海)⁽⁴⁾. The Lee (李) Clan settled at Wo Hang (禾坑) in the 1680s

(1) Shown on the map of 1866 edition of the Map of Xin'an District. 《深圳舊誌三種》張一兵校點 2006

(2) AMO, AM04-2005.

(3) 頭條日報, <萬屋邊村>, http://travel.hk/hk/travel/travel_attraction.asp?contid=6738. Other related passage included: 新浪旅遊, <禾徑山尋百年古迹 北區寫意遊>, <http://travel.sina.com.hk/news/127/4/1/6616/1.html>; 星島網新聞回顧, <北區禾徑山—炎夏逍遙半天遊>, <http://www.singtao.com.hk/archive/fullstory.asp?andor=or&year1=2006&month1=7&day1=1&year2=2006&month2=7&day2=1&category=all&id=20060701m04&keyword1=&keyword2=>.

(4) 蘇萬興, <海防與炮台>, <http://www.somanhing.com/gotowalk/heritage/fort/fort.pdf>.

and consecutively established villages namely Sheung Wo Hang (上禾坑), Ha Wo Hang (下禾坑) and Wo Hang Tai Long ⁽¹⁾.

- Lap Wo Tsuen (立和村): It is a small village with a few village houses. Lap Wo Sai Kui (立和世居) comprising the main building and entrance gate, was identified as Grade 3 historical building. It was built by a rich businessman surnamed Chan in 1935. The Chan clan originated from Chenkeng and moved to Lap Wo Tsuen ⁽²⁾.
- San Tsuen (新村): It is a historical village that was recorded in Xin'an Gazetteer as early as 1688.
- Tam Shui Hang (担水坑): It is a historical village that was recorded in Xin'an Gazetteer as early as 1819.

2.2.3 *Archaeological Background*

The Selective and Sampling Approach AWB at Tuen Mun North and Sha Tau Kok Areas falls within the following Sites of Archaeological Interest. Locations of Sites of Archaeological Interest are presented in *Figures 2.2 and 2.3*.

(1) 古物古蹟辦事處，“組合價值”，〈新界沙頭角下禾坑1至5號發達堂文物價值評估報告〉，
[http://www.aab.gov.hk/form/162meeting/AAB_8_2013-14%20\(Annex%20A\)%20\(Chinese\).pdf](http://www.aab.gov.hk/form/162meeting/AAB_8_2013-14%20(Annex%20A)%20(Chinese).pdf)

(2) AMO Geographical Information System on Hong Kong Heritage, “Lap Wo Sai Kui, Entrance Gate”,
<http://www5.lcsd.gov.hk/gishinter/history.jsp?SYSID=1998&LANG=ENAME>

Table 2.3 Site of Archaeological Interest

Sites of Archaeological Interest	Location	Figure No.
Tuen Mun North		
<u>Fu Tei Ha Site of Archaeological Interest</u>	Fu Tei Ha Tsuen	Figure 2.2
This site was identified during the 1998 Territory Wide Survey in the Tuen Mun- Tsuen Wan district carried out by the Sun Yat-sen University. Historical materials in the form of tiles, pottery and porcelain sherds dating from the Song to Ming/ Qing dynasties were recovered from the test pits located near a farm in Fu Tei Ha Tsuen ⁽¹⁾ .		
<u>Kei Lun Wai Site of Archaeological Interest</u>	Kei Lun Wai and Tsz Tin Tsuen	Figure 2.2
This site was identified during the 1998 Territory Wide Survey in the Tuen Mun- Tsuen Wan district carried out by the Sun Yat-sen University. Ming and Qing archaeological materials as well as modern burial fill were identified ⁽²⁾ .		
<u>Siu Hang Tsuen Site of Archaeological Interest</u>	Siu Hang Tsuen and Po Tong Ha	Figure 2.2
This site was identified during the 1998 Territory Wide Survey in the Tuen Mun - Tsuen Wan district carried out by the Sun Yat-sen University. In situ historical materials in the form of tiles and pottery shards dating from the Song/ Ming Qing periods were recovered. A piece of Late Neolithic soft pottery shard was also found. The survey has revealed that a Song/ Ming settlement site with Siu Hang Tsuen is present ⁽³⁾ .		
<u>San Hing Tsuen Site of Archaeological Interest</u>	San Hing Tsuen (western part)	Figure 2.2
This site was identified during the 1998 Territory Wide Survey in the Tuen Mun- Tsuen Wan district carried out by the Sun Yat-sen University. Historical materials in the form of tiles and porcelain shards dating from the Song to Ming dynasties were recovered in the test pits excavations ⁽⁴⁾ . A subsequent rescue excavation was conducted in the same year prior to the construction of a small village house. The result confirmed		

(1) 《香港屯門、荃灣地區考古調查發掘報告》中山大學 1998

(2) Ibid

(3) Ibid

(4) Ibid

Sites of Archaeological Interest	Location	Figure No.
that Song and Ming deposits are present in the site ⁽¹⁾ . Another archaeological survey was carried out in 2003 for a small house construction project. Archaeological materials dated to Ming and Qing dynasties were recovered in the test pit excavations and auger hole tests. Song dynasty artefacts were also collected on surface in the San Hing Tsuen area ⁽²⁾ .		
<u>Tuen Tsz Wai Site of Archaeological Interest</u>	Tuen Tsz Wai	Figure 2.2
The site was first identified in 1997-1998 Territory-wide Survey. Historical materials and features in the form of ash pit, tiles, pottery and porcelain sherds dating from the Song to Qing dynasties were recovered ⁽³⁾ .		
<u>Nai Wai Site of Archaeological Interest</u>	Nai Wai	Figure 2.2
This site was identified during the 1998 Territory Wide Survey in the Tuen Mun- Tsuen Wan district carried out by the Sun Yat-sen University. Historical materials in the form of pottery shards dating from the Song to Qing dynasties were recovered in test pits excavated on abandoned land to the northeast of Nai Wai and Sun Fung Wai ⁽⁴⁾ . Several archaeological investigations including the excavation of a kiln have been carried out in this area between 2001 and 2002. The kiln was constructed in Late Ming and was abandoned in Late Qing ⁽⁵⁾ .		

(1) Ibid

(2) 《屯門新慶村丈量約份130約地段452C3及193D號小型屋宇工程考古調查報告》天意亞洲有限公司 2003.

(3) 《香港屯門、荃灣地區考古調查發掘報告》中山大學 1998

(4) Ibid

(5) 《香港屯門龍鼓灘遺址發掘報告》中山大學 2001

Sites of Archaeological Interest	Location	Figure No.
Sha Tau Kok		
<u>Sha Tau Kok Shek Kiu Tau Site of Archaeological Interest</u>	Lap Wo Tsuen	Figure 2.3
<p>The site was first recorded during the Second Territory-wide Archaeological Survey. Surface finds of net pattern pottery sherds were collected in low-lying fields at Shek Kiu Tau. However, no finds were identified in the auger hole tests conducted at Wo Hang Tai Tong ⁽¹⁾. Two field investigations were conducted in 2000. The first investigation (two auger holes and two test pits) discovered prehistoric cultural remains and ceramic sherds of Song and Ming periods. It was suggested that the site was a possible prehistoric hill-slope site ⁽²⁾. The second investigation (two test pits) revealed similar stratigraphy to that of the First Re-investigation, with the discovery of four sherds of Song Dynasty Longquan celadon, two shards of Ming Dynasty pottery and eight shards of Ming Dynasty glazed pottery and cloth-pattern tile fragments ⁽³⁾.</p>		
<u>Sha Tau Kok San Tsuen Site of Archaeological Interest</u>	San Tsuen	2.3
<p>The site was first identified during the Second Territory-wide Archaeological Survey, with the discovery of Qing Dynasty materials ⁽⁴⁾. Field investigations in 2000 revealed that the site contained rich prehistoric cultural deposits including Warring States hard pottery shards and Late Neolithic stone implements ⁽⁵⁾. An archaeological excavation was conducted in the centre of this archaeological site in 2001 prior to the construction of a small village house. Four cultural layers (Early Neolithic, Mid Neolithic, Late Neolithic and Bronze Age), as well as a large number of stone artefacts, and some features including 3 postholes, 2 pits and traces of stone working areas were identified ⁽⁶⁾.</p>		

(1) *Second Territory-wide Archaeological Survey* Shenzhen Museum 1998

(2) 《新界大埔、沙頭角地區考古覆查工作報告》古物古蹟辦事處 2000

(3) 《新界大埔、元朗、沙頭角地區第二次考古覆查工作報告》古物古蹟辦事處 2000

(4) *Second Territory-wide Archaeological Survey* Shenzhen Museum 1998

(5) 《新界餘下偏僻村落供水計劃第二期考古調查工作報告》古物古蹟辦事處 2000

(6) 《香港沙頭角新村遺址小型屋宇610 B工地考古調查報告》古物古蹟辦事處 2001

In accordance with *Clause 31.01 (1) of Section 31 of the PS*, AWB shall be carried out within the boundaries of sites of archaeological interest during the construction phase. *Annex A* presents a set of figures (*Figures 1.3 to 1.15*) extracted from the agreed AWB Proposal showing the proposed sections of the water main alignments (sections) which require AWB.

3.1 SCOPE FOR FULL COVERAGE APPROACH AWB

As required in *Clause 31.04 of Section 31 of the PS*, the archaeologist shall conduct a full coverage approach AWB at Lung Kwu Tan area in the Lung Kwu Tan Site of Archaeological Interest. The sections require AWB are located at Lung Tsai (龍仔), Sha Po Kong (沙埔崗), and Pak Long (北朗) and Nam Long (南朗) as shown in *Figure 1.3 of Annex A*. The total length of proposed water mains alignment sections requiring AWB is 748 m.

3.2 SCOPE FOR SELECTIVE AND SAMPLING APPROACH AWB

As required in *Clause 31.05 of Section 31 of the PS*, the archaeologist shall conduct selective and sampling approach AWB at Tuen Mun North and Sha Tau Kok areas at the following locations:

- Fu Tei Ha Tsuen
- Nai Wai Kiln
- Kei Lun Wai
- Siu Hang Tsuen and Po Tong Ha
- Tsz Tin Tsuen
- San Hing Tsuen
- Tuen Tsz Wai
- Man Uk Pin
- Wo Tong Kong
- Lap Wo Tsuen
- San Tsuen
- Tam Shui Hang

The agreed locations and length of the AWB require for each section of the proposed water main alignments are presented in *Table 3.1* and as shown in *Figures 1.4 to 1.15 of Annex A*.

Table 3.1 **Locations and Length of AWB Recommended at Tuen Mun North and Sha Tau Kok Areas**

Location	Water Mains Alignment Section No.	Total Length of water mains alignment Sections (m)	Recommended AWB Location No.	Length of Each AWB(m)	Figure No. in Annex A
Fu Tei Ha Tsuen	1	369	1a	9	Figure 1.4
			1b	9	
Nai Wai Kiln	2	97	2a	2.5	Figure 1.5
			2b	2.5	
Kei Lun Wai	3	682	3a	7	Figure 1.6
			3b	7	
			3c	6	
			3d	7	
			3e	7	
Siu Hang Tsuen and Po Tong Ha	4	1,389	4a	12	Figure 1.7
			4b	11	
			4c	11	
			4d	12	
			4e	11	
			4f	12	
Tsz Tin Tsuen	5	221	5a	4	Figure 1.8
			5b	4	
			5c	3	
San Hing Tsuen	6	1,442	6a	14	Figure 1.9
			6b	14	
			6c	15	
			6d	14	
			6e	15	
Tuen Tsz Wai	7	1,073	7a	14	Figure 1.10
			7b	14	
			7c	13	
			7d	13	
Man Uk Pin	8	59	8a	3	Figure 1.11
Wo Tong Kong	9	153	9a	8	Figure 1.12
Lap Wo Tsuen	10	453	10a	8	Figure 1.13
			10b	8	
			10c	7	
San Tsuen	11	527	11a	5	Figure 1.14
			11b	5	
			11c	5	
			11d	6	
			11e	60	
Tam Shui Hang	12	645	12a	8	Figure 1.15
			12b	8	

Location	Water Mains Alignment Section No.	Total Length of water mains alignment Sections (m)	Recommended AWB Location No.	Length of Each AWB(m)	Figure No. in Annex A
			12c	8	
			12d	8	

Notes:

- (a) It should be noted the recommended AWB locations are selected based on desktop analysis. It is subject to refinement depending on site conditions. AMO was informed if amendment is required during the course of the AWB.

In case of discovery of antiquities / archaeological deposits in the course of the water main excavation works at the two areas (i.e. Tuen Mun North and Sha Tau Kok), AMO had been informed; and the archaeologist recommended and agreed with AMO appropriate mitigation measures.

During the course of construction work, all the alignments at San Tsuen and Tam Shui Hang Village; as well as some of the alignments at San Hing Tsuen and Tuen Tsz Wai were cancelled. Thus, the AWB works of Sections 11 and 12, AWB locations 6a, 7a and 7b were cancelled. Moreover, AWB Location 5a in Tsz Tin Tsuen was also cancelled due to the refinement of the alignment. The actual AWB works conducted is presented in *Table 3.2*.

Table 3.2 *Locations and Length of AWB Conducted at Tuen Mun North and Sha Tau Kok Areas*

Location	Water Mains Alignment Section No.	Total Length of water mains alignment Sections (m)	Recommended AWB Location No.	Length of Each AWB(m)	Figure No. in Annex A
Fu Tei Ha Tsuen	1	369	1a	9	Figure 1.4
			1b	9	
Nai Wai Kiln	2	97	2a	2.5	Figure 1.5
			2b	2.5	
Kei Lun Wai	3	682	3a	7	Figure 1.6
			3b	7	
			3c	6	
			3d	7	
			3e	7	
Siu Hang Tsuen and Po Tong Ha	4	1,389	4a	12	Figure 1.7
			4b	11	
			4c	11	
			4d	12	
			4e	11	
			4f	12	
Tsz Tin Tsuen	5	221	5b	4	Figure 1.8
			5c	3	
San Hing Tsuen	6	1,442	6b	14	Figure 1.9
			6c	15	
			6d	14	

Location	Water Mains Alignment Section No.	Total Length of water mains alignment Sections (m)	Recommended AWB Location No.	Length of Each AWB(m)	Figure No. in Annex A
			6e	15	
Tuen Tsz Wai	7	1,073	7c	13	Figure 1.10
			7d	13	
Man Uk Pin	8	59	8a	3	Figure 1.11
Wo Tong Kong	9	153	9a	8	Figure 1.12
Lap Wo Tsuen	10	453	10a	8	Figure 1.13
			10b	8	
			10c	7	

3.3

CONSTRUCTION WORK

The works under the Contract involve soil excavation for replacement of water mains and the associated service connections, construction of chambers associated with pipework, and installations of fire hydrants.

Open cut method was adopted for laying the water mains for the Contract. According to the *Method Statement for Water Mains Laying by Open Cut Method* (Hsin Chong 2011) provided by the Contractor, the general construction procedures are as follows:

- excavate to level 0.2m below the first layer of strut using an excavator;
- install waling and struts as the guarding frame;
- install sheet pile with the required toe penetration;
- further excavate to level 0.3m below second layer of strut;
- install second layer of waling and strut;
- continue process of excavation and lateral supports until formation level;
- make good the condition of formation level and inform the Engineer for checking;
- at the base of excavation a 75mm thick blinding layer will be laid, if required.

The AWB programme is shown in *Table 3.3*.

Table 3.3 **AWB Programme**

Location	Proposed Water Mains Alignment Section No./Code	Commencement Date of AWB Work	Completion Date of AWB Work
Lung Kwu Tan	LKT	Sep 2012	Jan 2013
Fu Tei Ha Tsuen	1	July 2012	July 2012
Nai Wai Kiln	2	Feb 2012	Feb 2012
Kei Lun Wai	3	May 2012	May 2012
Siu Hang Tsuen and Po Tong Ha	4	Feb 2012	May 2012
Tsz Tin Tsuen	5	June 2012	June 2012
San Hing Tsuen	6	June 2012	May 2013
Tuen Tsz Wai	7	Feb 2012	May 2013
Man Uk Pin	8	Jan 2012	Jan 2012
Wo Tong Kong	9	Jan 2012	Jan 2012
Lap Wo Tsuen	10	Jan 2012	Jan 2012

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A full coverage approach AWB was conducted at Lung Kwu Tan area in September and December 2012, and January 2013. A total of 748 m trench alignments were monitored. Artefacts unearthed comprise a total of 258 pieces of general finds and 11 pieces of special finds.

Selective and sampling approach AWB was conducted at Tuen Mun North and Sha Tau Kok areas from January 2012 to May 2013. A total of 32 AWB locations were monitored. AWB Locations 2b, 4f, 5b and 10b were the only locations that artefacts were recovered. A total of 7 pieces of special finds and 45 pieces of general finds were identified

Detailed AWB results are presented in *Annex C1* and *C2*. Photographic records of the AWB are presented in *Annexes D1* and *D2*.

4.1

FULL COVERAGE APPROACH AWB AT LUNG KWU TAN

The findings at Lung Kwu Tan area are grouped and presented as four segments. Segments A, B and C as a whole starts from Sha Po Kong (沙埔崗) at the south, to Pak Long (北朗) at the north. Segment A is located at the middle part of Sha Po Kong, running along the village path from south to north, starting in front of the east face of Sha Po Kong No. 196 and end at the east face of Sha Po Kong No. 123. Alignment continues running to the north is Segment B. Alignment turned west at the corner of Sha Po Kong No.131 is Segment C. Segment D is located at the southern part of Lung Kwu Tan, namely Lung Tsai (龍仔). The locations of the four segments are shown in *Figure B1* in *Annex B*. Detailed AWB results are presented in *Annex C1* and photographic records are shown in *Annex D1*.

A total of 11 pieces of special finds and 258 pieces of general finds were found during the AWB at Segments A, B and C. No remains of archaeological significance were identified at Segment D. Artefacts unearthed comprise with porcelain shards, pottery shards, tiles, bones, coins and 3 pieces of unidentified lime lumps.

The 11 pieces of special finds are shards of coarse pottery which may probably date to the Late Neolithic period according to their typology. One piece was collected during surface scan at adjacent area of Location LKT-6. Seven pieces were unearthed in layer 4 and three pieces were unearthed in layer 3 of Location LKT-19a. Layer 3 of Location LKT-19a is a disturbed layer as the coarse pottery shards were unearthed together with opium container, which could be dated to Late Qing Dynasty to early republic of China period. The coarse pottery shards unearthed at layer 4 of Location LKT-19a were small in pieces, from very sandy soil and the excavation trench being monitored was too narrow and shallow. Therefore further interpretation of the soil profile to determine if they are primary deposits would be difficult.

For general finds, there were a total of 48 pieces of porcelain shards unearthed, comprising celadon shards, white porcelain shards and blue and white porcelain shards. The celadon shards are in small pieces and only three pieces were revealed, they are products of Fujian kilns which could be dated to Song-Yuan Dynasties. The white porcelains shards are modern products which can still be found nowadays. For blue and white porcelains shards, according to their typology, they are products of Wun Yiu Kiln of Hong Kong which can be dated to Late Qing Dynasty to Republic of China period ⁽¹⁾.

For pottery shards, a total of 206 pottery shards unearthed. Most of them are household wares which can be dated to modern period, while some others are unidentified in shape and type due to their small sizes. A few pieces of coarse pottery shards were also included as general finds. They were unearthed from Location LKT-19a but without decoration pattern to examine their dating. One opium container was also discovered and could be dated to Late Qing Dynasty to Republic of China period.

Three small pieces of bones and a HKD 10 cents dated to the colonial period were revealed and included as general finds.

The list of artefacts unearthed could be found in *Annex E1*. Photographs of special finds and selected general finds could be referred to *Annex F1*.

Except the seven pieces of coarse pottery shards special finds unearthed from layer 4 of Location LKT-19a that may be from primary deposit but cannot be confirmed due to the limitations as discussed above, all the finds identified are from disturbed layers.

4.2

SELECTIVE AND SAMPLING APPROACH AWB

Among all the selective and sampling AWB conducted (i.e. Locations 1ab, 2ab, 3a-e, 4 a-f, 5bc, 6bcde, 7cd, 8a,9a, 10abc), only four locations, Location 2b of Section 2 (Nai Wai Kiln) , Location 4f of Section 4 (Siu Hang Tsuen and Po Tong Ha) and Location 5b of Section 5 (Kei Lun Wai) in Tuen Mun North; and Location 10b of Section 10 (Lap Wo Tsuen) in Sha Tau Kok are consider to have some archaeological significance. One feature and a total of seven pieces of special finds and 45 pieces of general finds were identified in these four AWB locations. Ming to Qing Dynasties cultural layers were identified at Locations 2b and 4f. The locations of the AWB Locations are shown in *Figures B2 to B11* in *Annex B*. Detailed AWB records were presented in *Annex C2* and photographic records are shown in *Annex D2*.

For Nai Wai Kiln (Location 2b of Section 2), one cultural layer and one feature (pit H1) dated to Ming to Qing Dynasties were identified. The pit H1 was identified in most of the east and middle parts of the trench, below Layer 2 and cut into Layer 3. As the monitored excavation trench was narrow and

(1) 《香港大埔碗窯青花瓷窯址——發掘及研究》區家發等2000

shallow, the function of pit H1 cannot be determined. A total of seven pieces of special finds and 18 general finds were found in pit H1, comprising blue-and-white porcelain shards, glazed village wares shards, tiles fragments and fragments of burned soil. The revealing of burnt soil at AWB Location 2b indicated that archaeological deposits which related to the Nai Wai Kiln were extended to the southern-most part of the open area of Nai Wai Kiln. Moreover, the blue and white porcelain shards unearthed, which are regarded as special finds, are likely products of Tai Po Wun Yiu Kiln dated to the Late-Ming to Qing Dynasties based on their morphology and decorations.

For Siu Hang Tsuen (Location 4f of Section 4), ceramics shards were identified in two Ming to Qing Dynasties cultural layers (layers 3 and 4), which suggested the existence of archaeological potential in this area. A total of 8 artefacts were identified in the cultural layers, comprising grey tile fragments, red tile fragments, orange red flat roof tile fragments and porcelains shards.

For Kei Lun Wai (Location 5b of Section 5), artefacts unearthed comprise a piece of tile shard, a piece of white porcelain bowl bottom shard dated to late Qing Dynasty to Republic of China period and a modern glass shard. These general finds are from disturbed layer.

For Lap Wo Tsuen (Location 10b of Section 10), artefacts unearthed comprise blue and white porcelain shards and village ware shards. Based on the morphology and decorations, the blue and white porcelain are likely products of Tai Po Wun Yiu Kiln probably dated to the Late Qing Dynasty to Republic of China period. These general finds are recovered from the disturbed layer.

For the remaining AWB locations, no artefacts were identified.

The list of artefacts unearthed could be found in *Annex E2*. Photos of special finds and selected general finds unearthed are presented in *Annex F2*.

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An AWB was conducted for the Project to record archaeological deposit that may be encountered during construction stage of the Project. Upon agreement with AMO regarding the scope of work for the AWB and relevant licence obtained, the AWB was conducted from January 2012 to May 2013.

A full coverage approach AWB was conducted at Lung Kwu Tan area in September and December 2012, and January 2013, where a total of 748 m trench alignments were monitored. A selective and sampling approach AWB was conducted at Tuen Mun North and Sha Tau Kok areas from January 2012 to May 2013, where monitoring of a total of 32 AWB locations was conducted. Summary of findings are presented below:

Artefacts unearthed during the AWB at Lung Kwun Tan area comprise a total of 11 pieces of special finds and 258 pieces of general finds. The 11 pieces of special finds are coarse pottery shards probably dated to Late Neolithic period. Ten (10) pieces were unearthed at layer 3 and layer 4 of Location LKT-19a and one piece was collected from the surface of adjacent area of Location LKT-6. Except coarse pottery shard unearthed from layer 4 of Location LKT-19a, the others were unearthed from the disturbed layer. However, as the excavation trench is narrow and shallow, it is difficult to determine if the coarse pottery shards unearthed at layer 4 of Location LKT-19a are primary deposit. The general finds found, including porcelain shards, pottery shards, bones and coins, except those unearthed at Location LKT-19a, were also unearthed from the disturbed layers. No cultural layer was observed during the AWB period.

For the AWB undertaken in Tuen Mun North and Sha Tau Kok areas, all the AWB locations, except AWB Locations 2b, 4f, 5b and 10b, are highly disturbed by existing modern utilities in place due to previous construction works in the past decades. AWB Locations 2b, 4f, 5b and 10b were the only locations that had artefacts revealed. A total of 7 pieces of special finds and 45 pieces of general finds were identified. The special finds are blue and white porcelain shards unearthed at Location 2b, dated to Ming to Qing Dynasties. Among the general finds, 18 pieces unearthed at Location 2b and 8 pieces unearthed at Location 4f were also dated to Ming to Qing Dynasties. General finds unearthed at Locations 5b and 10b comprise porcelain shards, village ware shards, tiles and glass, which were revealed from the disturbed layer.

Based on the artefacts unearthed at Location 2b and 4f, one pit H1 dated to Ming to Qing Dynasty and a Ming to Qing Dynasties cultural layer were observed in Location 2b; while two Ming to Qing Dynasties cultural Layers were observed in Location 4f. However, the nature and size of pit H1 and the extent of the Ming to Qing Dynasties cultural layers could not be determined due to the narrow width of the trench being monitored.

In summary, the AWB findings at layer 4 of Location LKT-19a reflected the potential existence of Late Neolithic period cultural layer at the area around

Location LKT-19a. The presence of cultural layer at Location 2b and Location 4f provided further information to understand the archaeological condition of these two sites of archaeological interest.

Due to the nature of the trench excavation work being narrow and shallow, the disturbance of archaeological remains arising from the construction work is considered minimal and necessary archaeological recording work had been conducted during the AWB to preserve the identified remains by record.

English

AMO, AM04-2005.

Black & Veatch Hong Kong Limited (B&V). 2011. *Agreement No. CE 10/2008 Replacement and Rehabilitation of Water Mains Stage 4 Mains in New Territories – Investigation, Design and Construction: Heritage Impact Assessment Report (Final)*. Unpublished, Water Supplies Department, the Government of the Hong Kong Special Administrative Region (HKSAR).

Environmental Resources Management (ERM). 2003. *Survey-cum-Excavation at Small House Lots No. 121B & 121RP in DD137, Lung Kwu Tan, Tuen Mun Stage 1 – Archaeological Survey Report*. Unpublished, Antiquities and Monuments Office.

ERM. 2004. *Survey-cum-Excavation at Small House Lots No. 121B & 121RP in DD137, Lung Kwu Tan, Tuen Mun Stage 2 – Archaeological Rescue Excavation Report*. Unpublished, Antiquities and Monuments Office.

Lands Department. 1898 *Map of Hong Kong and Kowloon (1898)*. Map of Hong Kong and of the Territory Leased to Great Britain Under the Convention Between Great Britain and China Signed at Peking on the 9th of June 1898.

Peacock, B.A.V. and T.J.P. Nixon. 1986. *Report of the Hong Kong Archaeological Survey*. Hong Kong, Antiquities & Monuments Office (unpublished).

Shenzhen Museum. 1998. *Second Territory-wide Archaeological Survey*. Unpublished, Antiquities and Monuments Office.

Chinese

中山大學 1998 《香港屯門、荃灣地區考古調查發掘報告》，廣州，中山大學。(未刊)

中山大學 2001 《香港屯門龍鼓灘遺址發掘報告》，廣州，中山大學。(未刊)

中港考古研究室 2003 《屯門龍鼓灘遺址2002年考古發掘報告》，香港，中港考古研究室。(未刊)

古物古蹟辦事處 1996 《香港龍鼓灘新石器遺址發掘報告》，香港，古物古蹟辦事處。(未刊)

古物古蹟辦事處 2000 《新界大埔、沙頭角地區考古覆查工作報告》，香港，古物古蹟辦事處。(未刊)

古物古蹟辦事處 2000 《新界大埔、元朗、沙頭角地區第二次考古覆查工作報告》，香港，古物古蹟辦事處。(未刊)

古物古蹟辦事處 2000《新界餘下偏僻村落供水計劃第二期考古調查工作報告》，香港，古物古蹟辦事處。(未刊)

古物古蹟辦事處 2001《香港沙頭角新村遺址小型屋宇610 B工地考古調查報告》，香港，古物古蹟辦事處。(未刊)

屯門區議會 2007《屯門歷史與文化》，香港，屯門區議會。

區家發等 2000《香港大埔碗窰青花瓷窰址——發掘及研究》，香港，康樂及文化事務署。

張一兵校點 2006《深圳舊誌三種》，深圳，海天出版社。

天意亞洲有限公司 2003《屯門新慶村丈量約份130約地段452C3及193D號小型屋宇工程考古調查報告》，香港，古物古蹟辦事處。(未刊)

蕭國健 1986《清初遷海前後香港之社會變遷》，台北，台灣商務印書館。

Internet Resources

AMO Geographical Information System on Hong Kong Heritage, “Lap Wo Sai Kui, Entrance Gate”,
<http://www5.lcsd.gov.hk/gishinter/history.jsp?SYSID=1998&LANG=ENAME>

AMO Geographical Information System on Hong Kong Heritage, “Nai Wai Kiln”
<http://www5.lcsd.gov.hk/gishinter/detail.jsp?SYSID=1346&LANG=TCNAME>

Tuem Mun Rural Committee (TMRC). “Fu Tei Tsuen”
http://www.hktmlrc.com/fu_tei_tsuen

TMRC. “Nai Wai” http://www.hktmlrc.com/nai_wai

TMRC. “Siu Hang Tsuen” http://www.hktmlrc.com/siu_hang_tsuen

TMRC. “Po Tong Ha” http://www.hktmlrc.com/po_tong_ha

TMRC. “Tsz Tin Tsuen”http://www.hktmlrc.com/tsz_tin_tsuen

TMRC. “San Hing Tsuen” http://www.hktmlrc.com/san_hing_tsuen

頭條日報，〈萬屋邊村〉，
http://travel.h1.hk/travel/travel_attraction.asp?contid=6738.

新浪旅遊，〈禾徑山尋百年古迹 北區寫意遊〉，
<http://travel.sina.com.hk/news/127/4/1/6616/1.html>

星島網新聞回顧，〈北區禾徑山—炎夏逍遙半天遊〉，
<http://www.singtao.com.hk/archive/fullstory.asp?andor=or&year1=2006&>

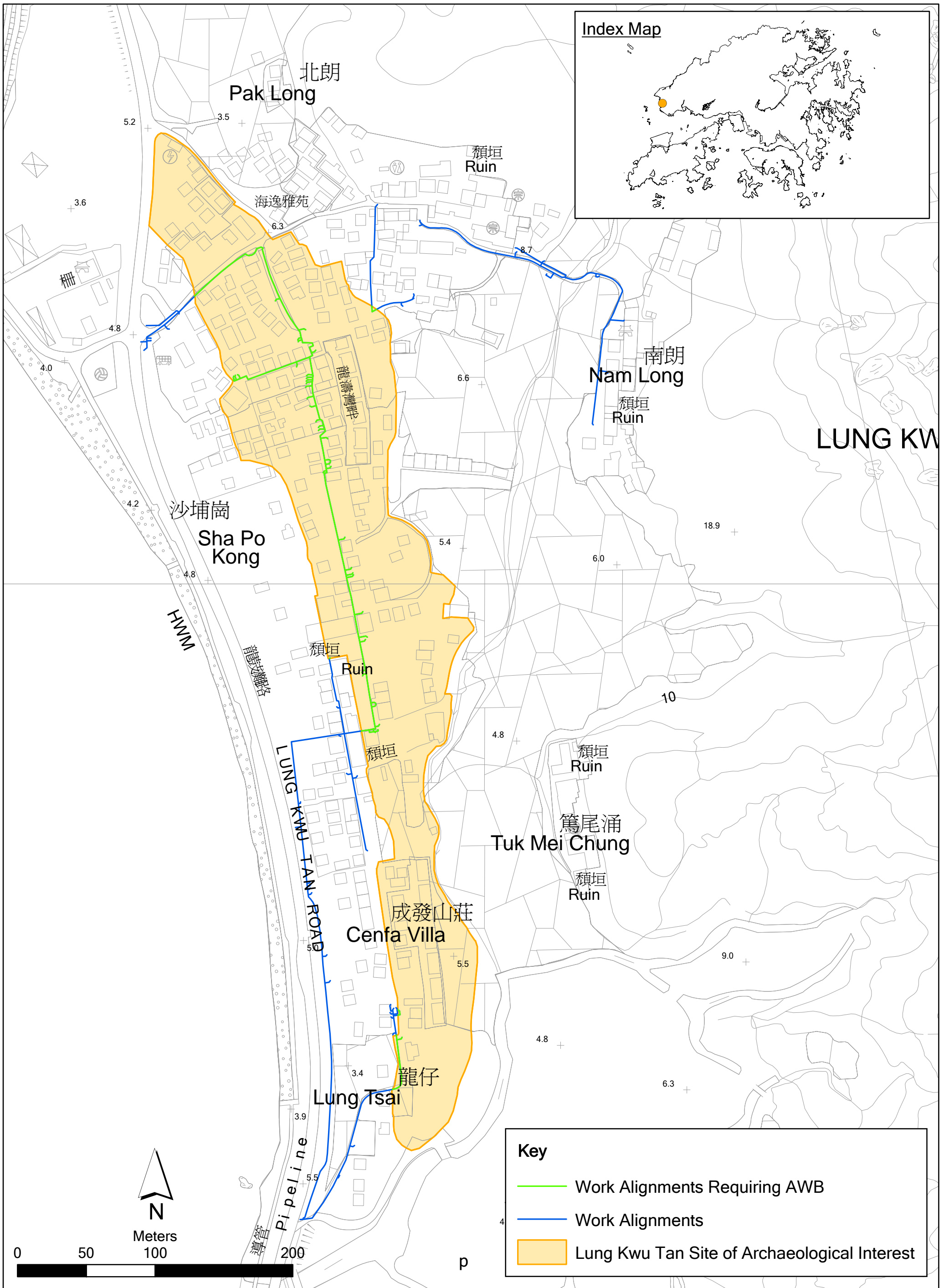
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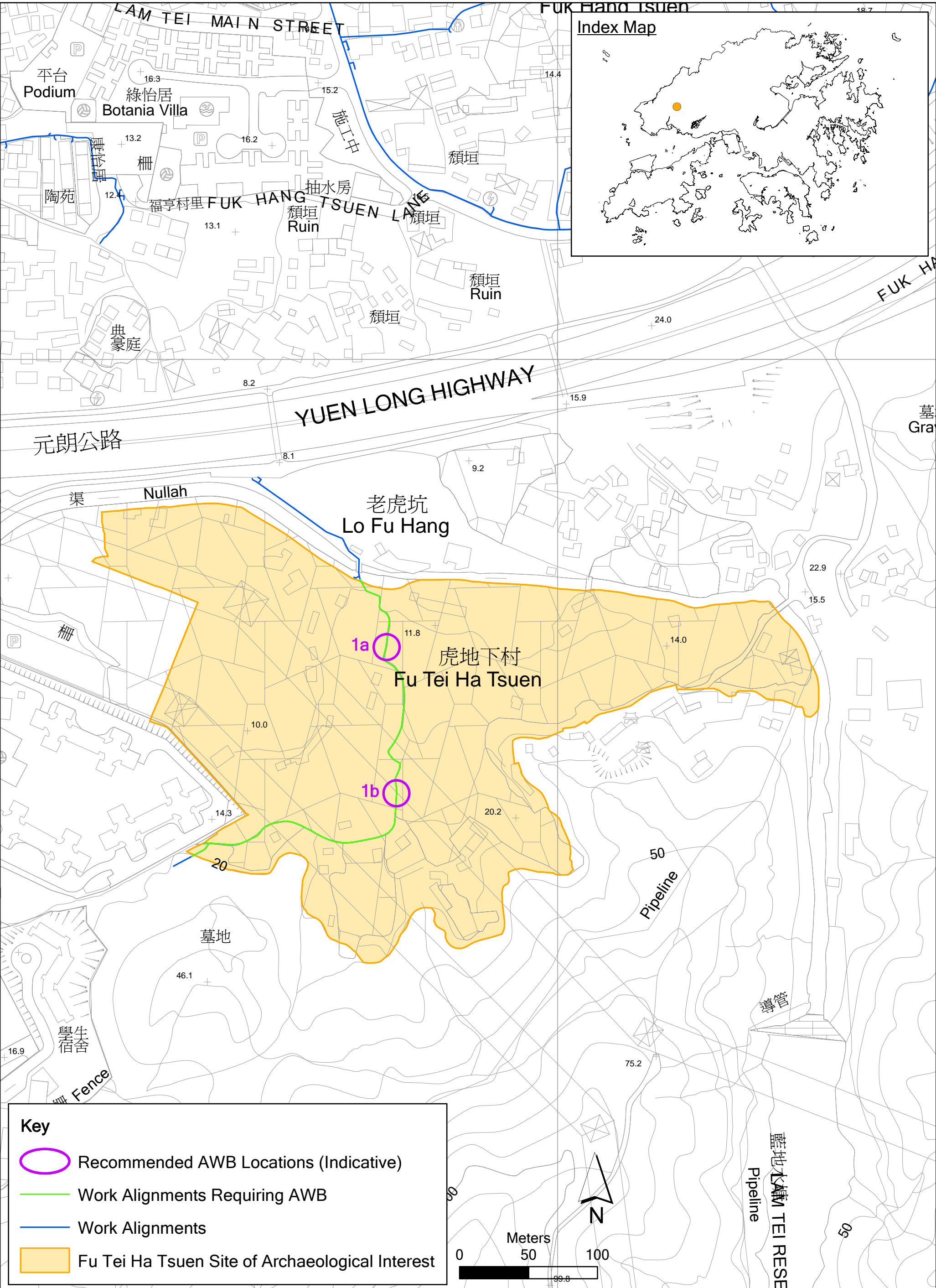
古物古蹟辦事處，〈新界沙頭角下禾坑1至5號發達堂文物價值評估報告〉
[http://www.aab.gov.hk/form/162meeting/AAB_8_2013-14%20\(Annex%20A\)%20\(Chinese\).pdf](http://www.aab.gov.hk/form/162meeting/AAB_8_2013-14%20(Annex%20A)%20(Chinese).pdf)

蘇萬興，〈海防與炮台〉，
<http://www.somanhing.com/gotowalk/heritage/fort/fort.pdf>

Annex A

Figures Extracted from the Archaeological Watching Brief Proposal





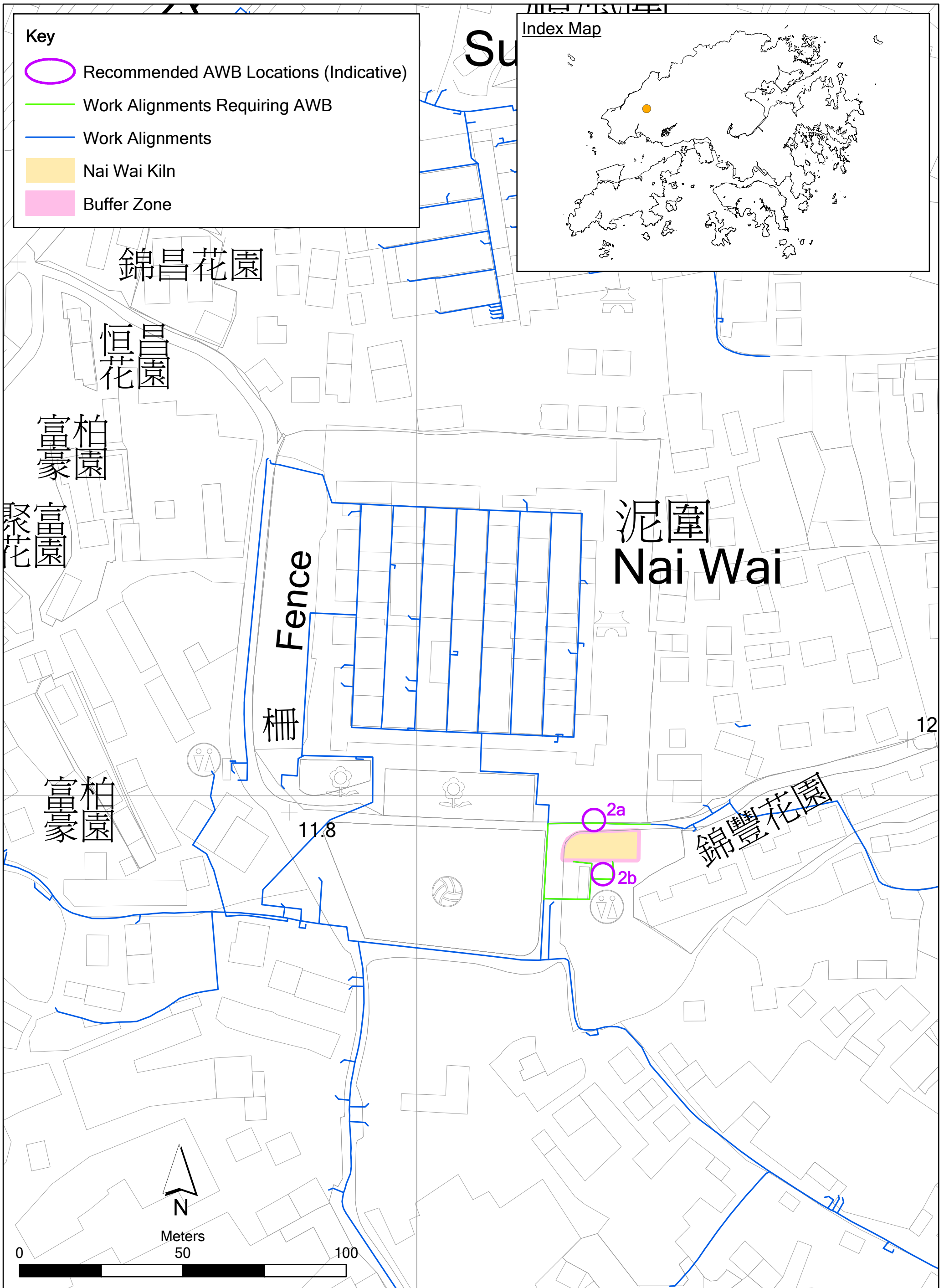


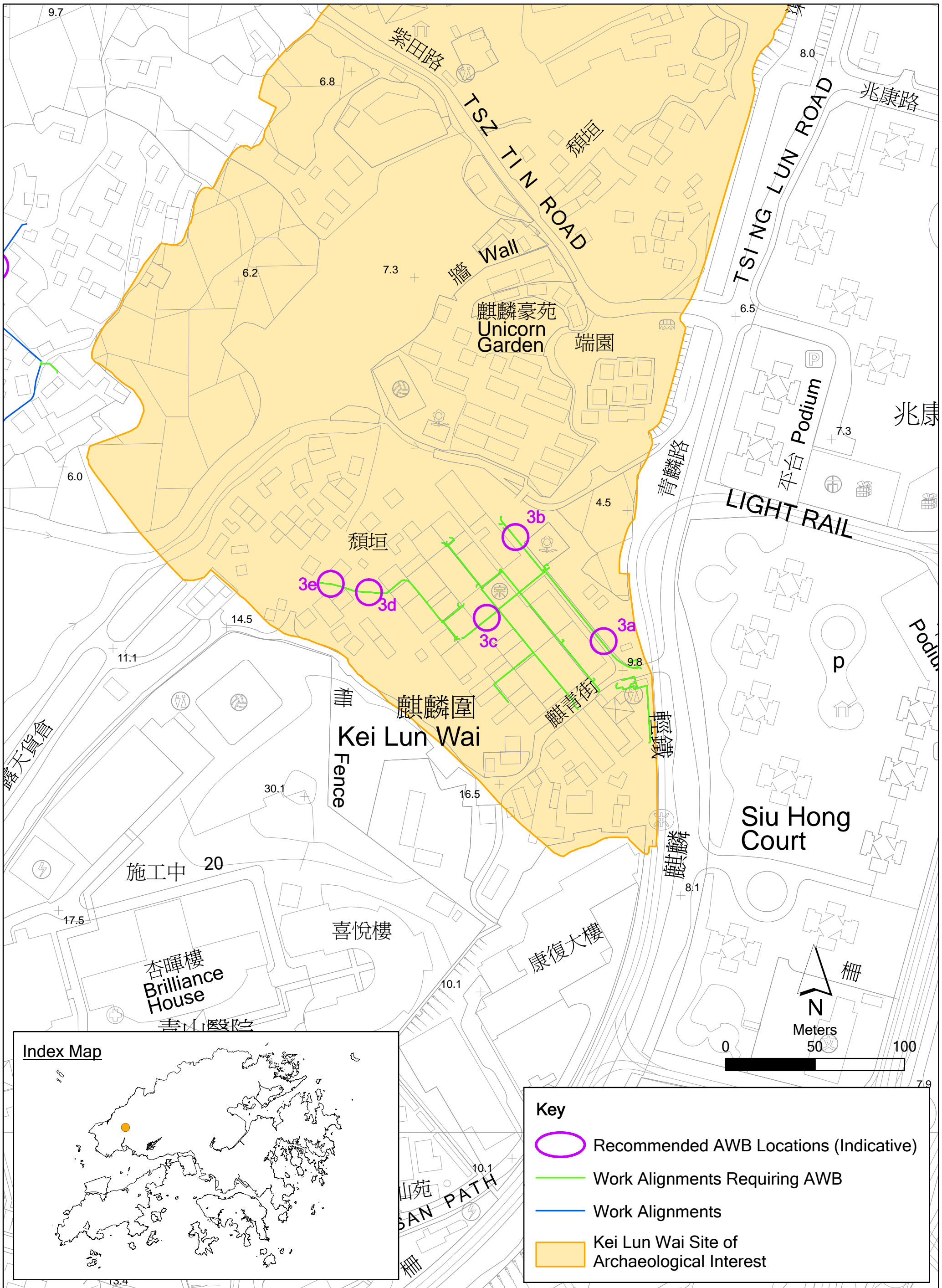
Figure 1.5

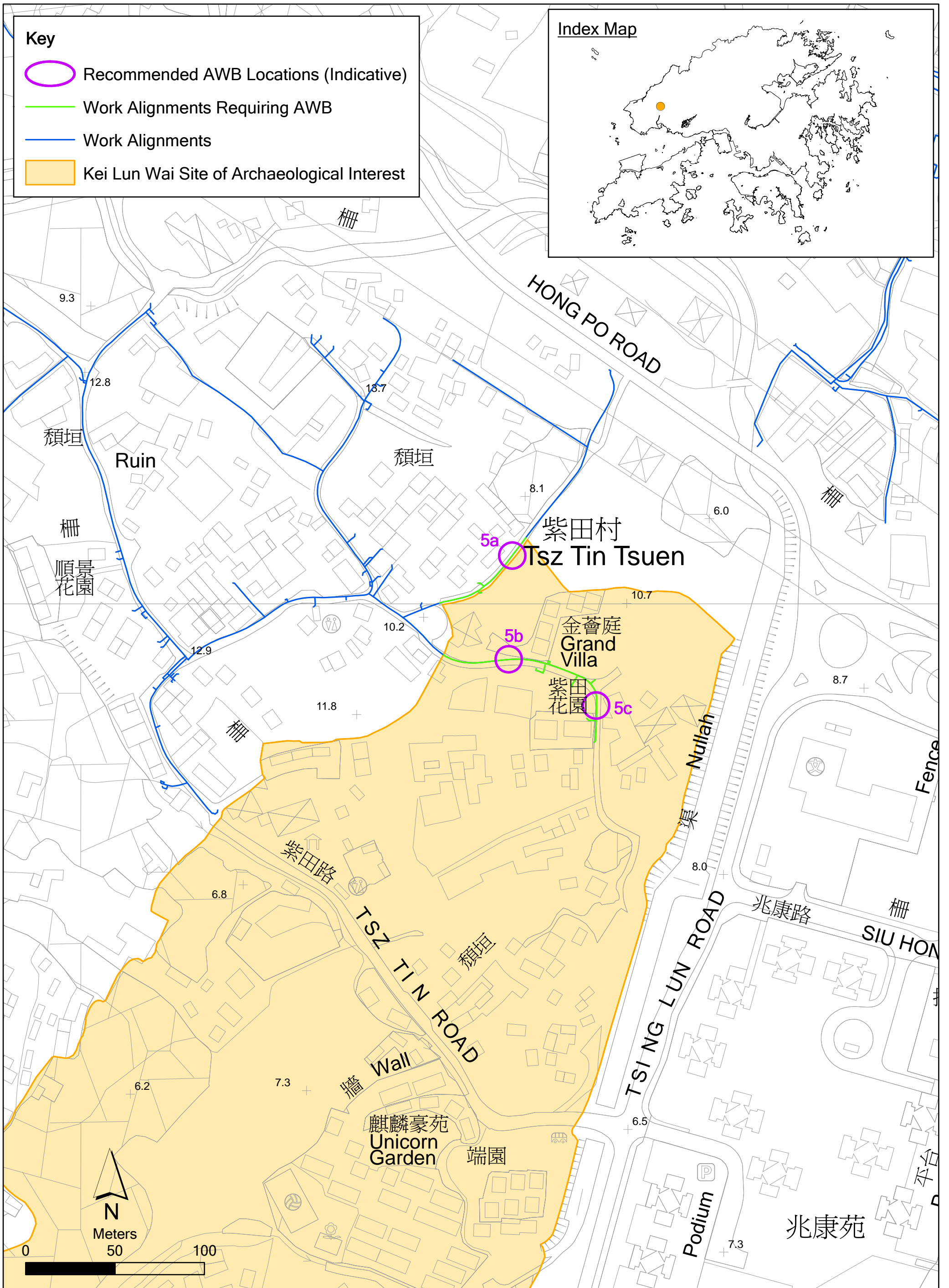
Areas Requiring AWB at Nai Wai Kiln (Section No.2)

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Date: 19/09/2011

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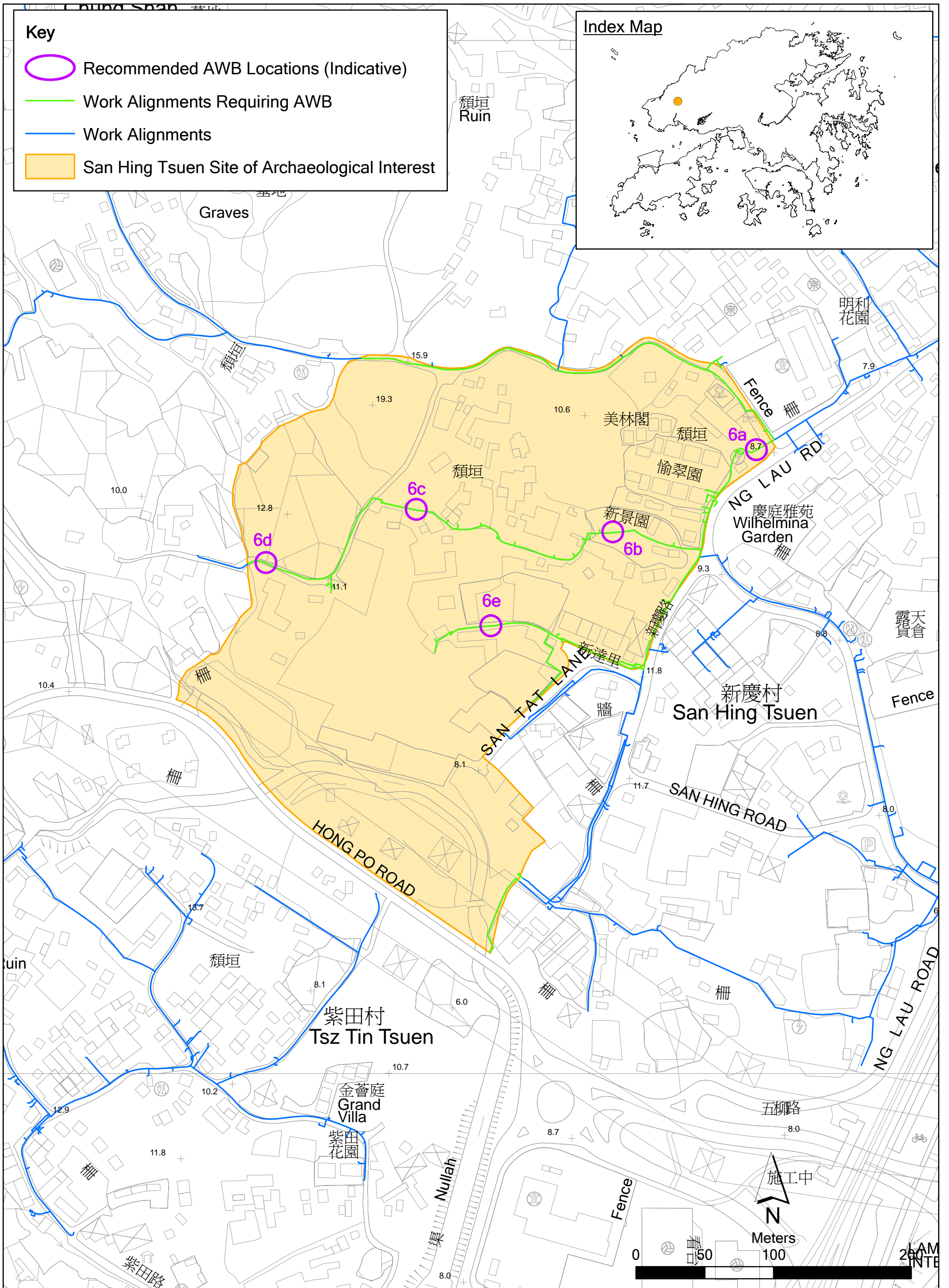


Figure 1.9

Areas Requiring AWB in San Hing Tsuen (Section No.6)

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Date: 21/09/2011

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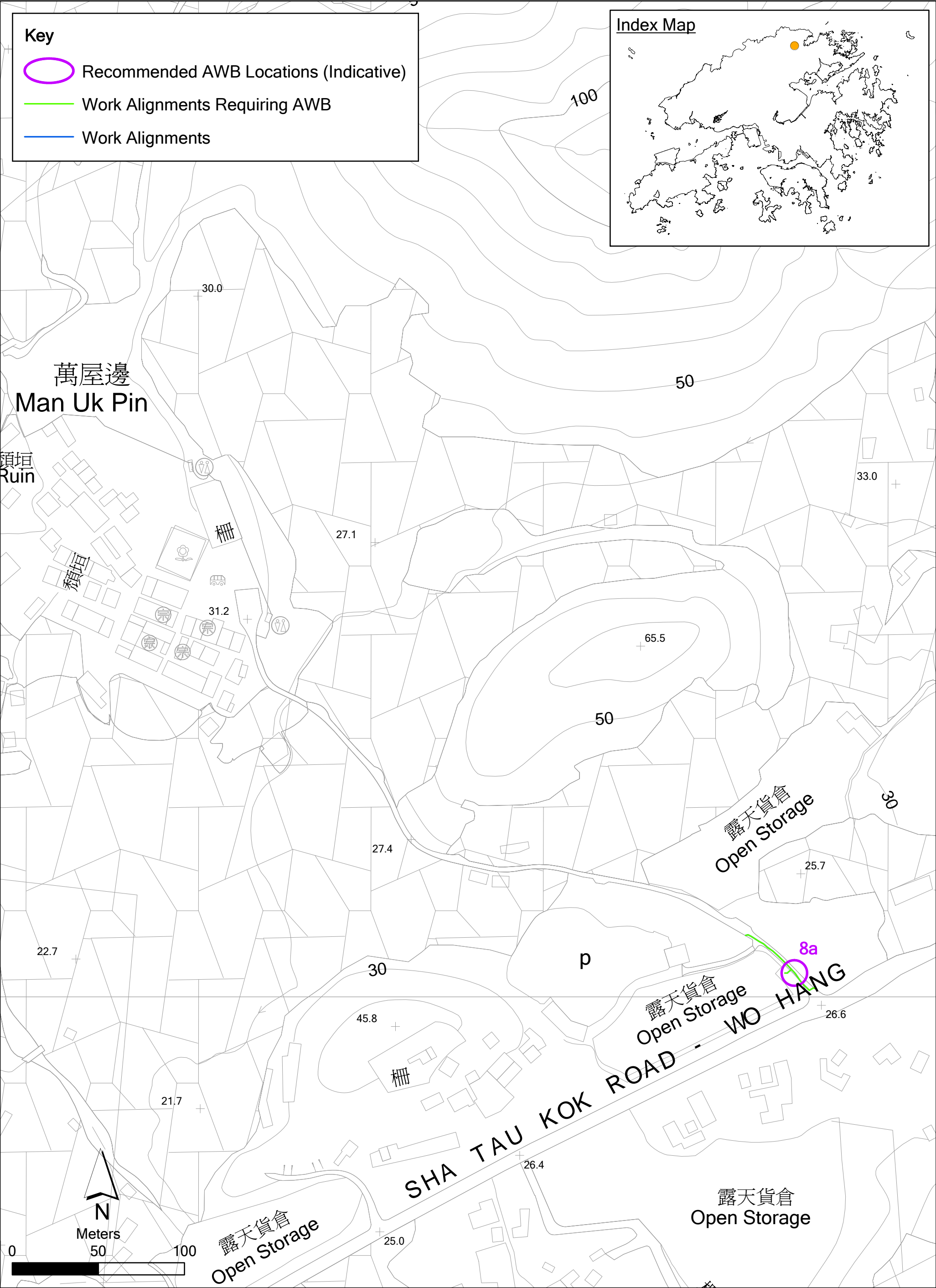


Figure 1.11

Area Requiring AWB in Man Uk Pin (Section No.8)

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Date: 19/09/2011

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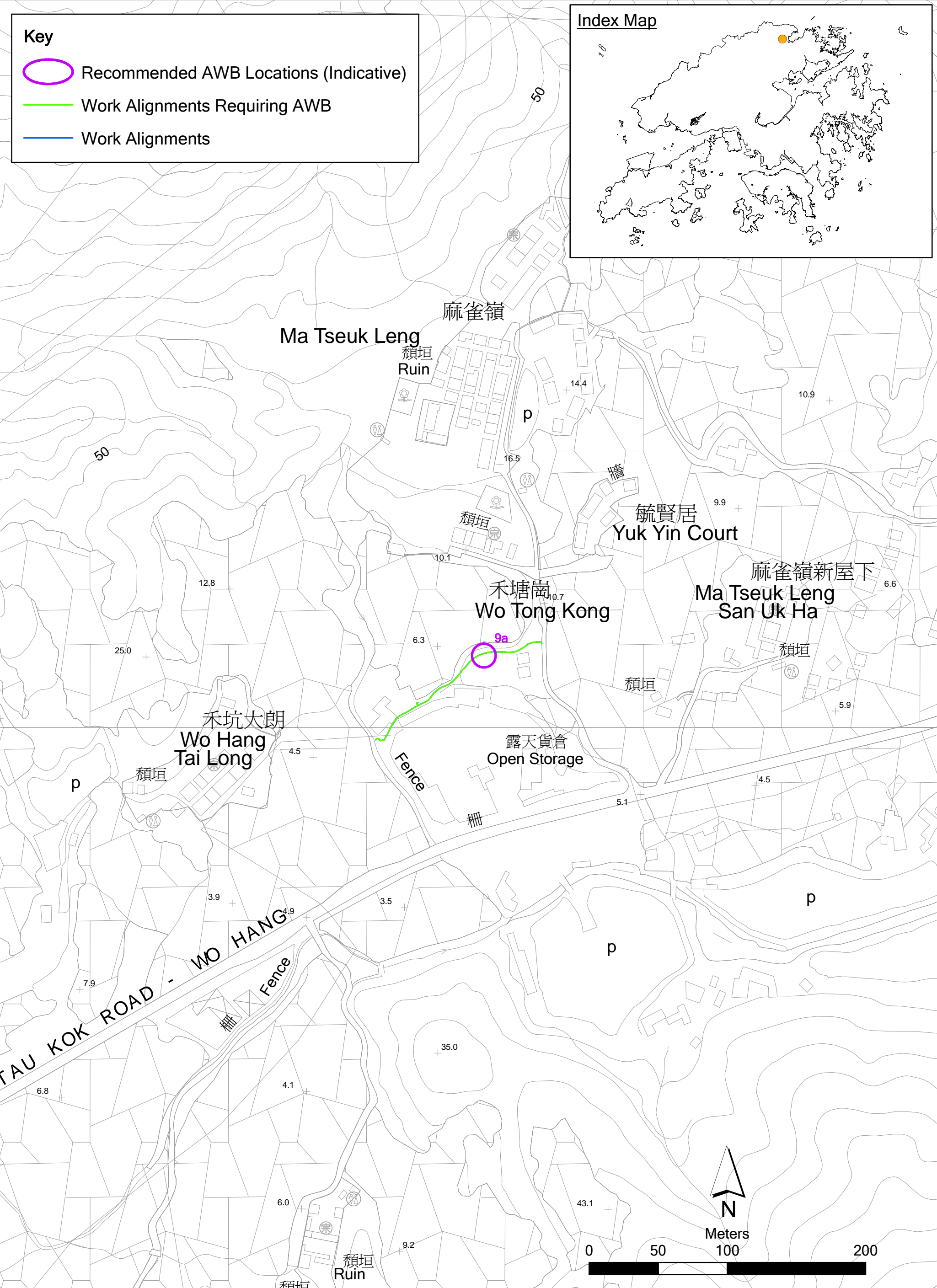


Figure 1.12

Area Requiring AWB in Wo Tong Kong (Section No. 9)

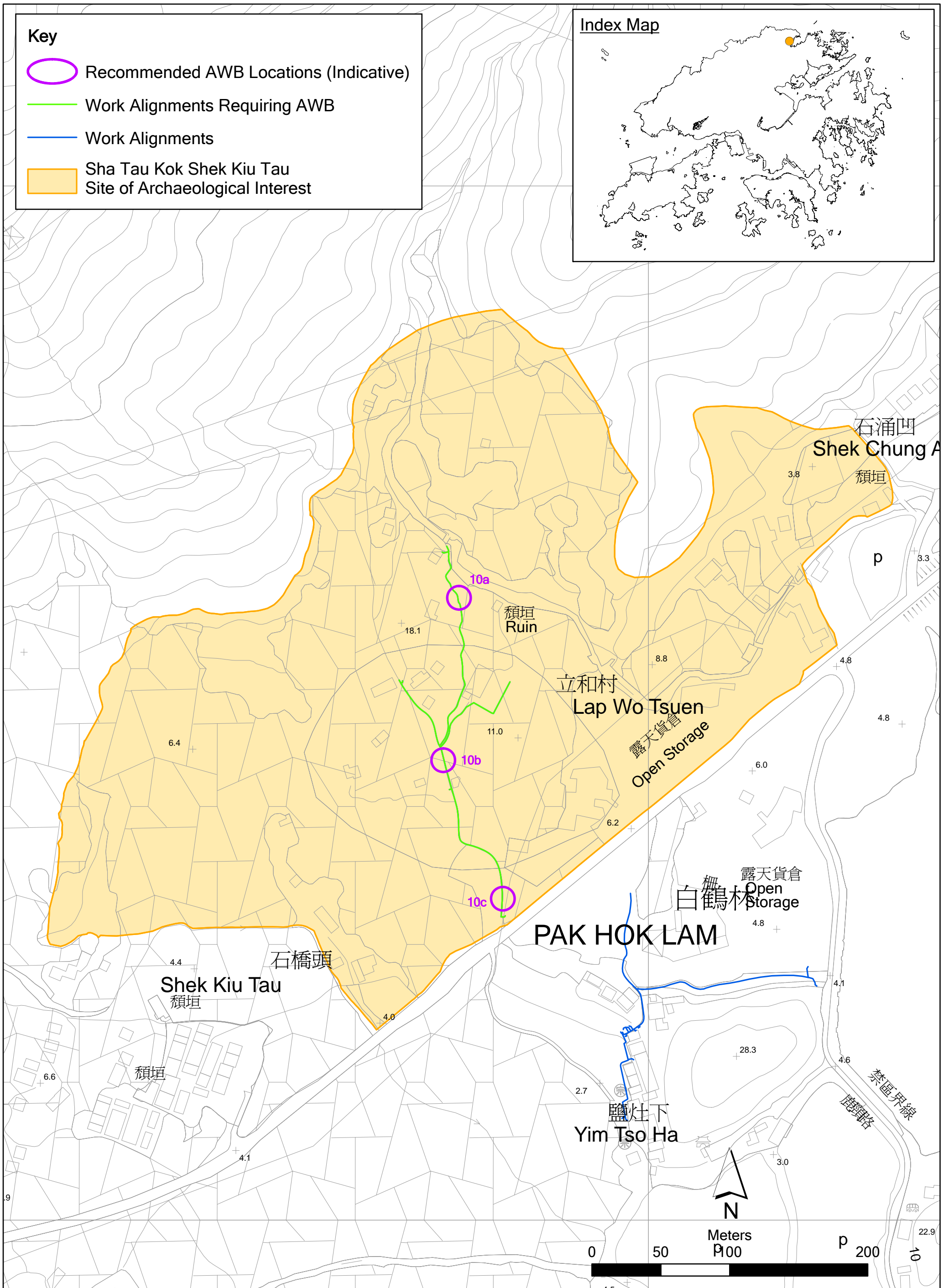


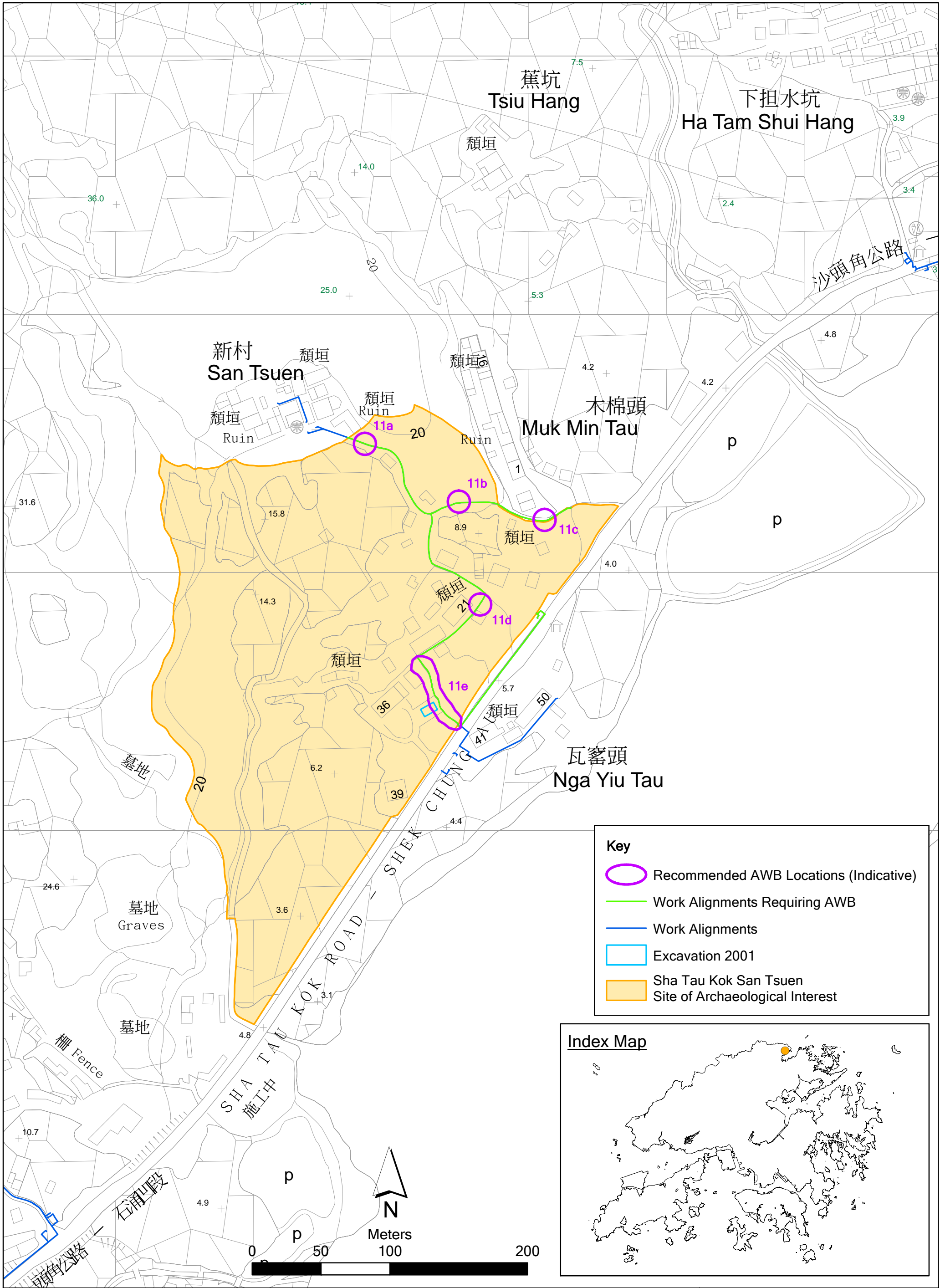
Figure 1.13

Area Requiring AWB in Lap Wo Tsuen (Section No.10)

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Shek_Kiu_Tau.mxd
Date: 21/09/2011

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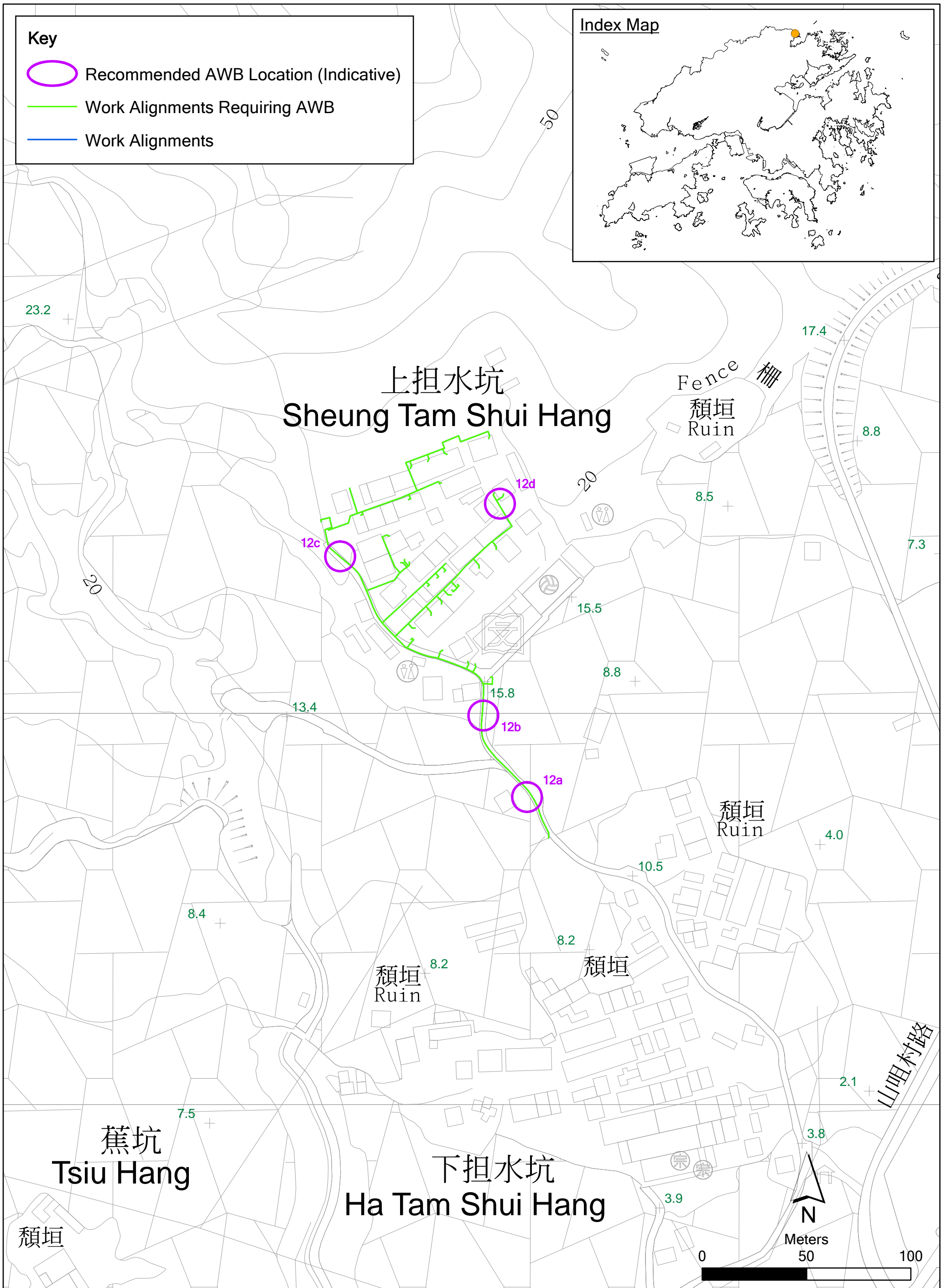


Figure 1.15

Area Requiring AWB in Tam Shui Hang (Section No. 12)

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0138799_Tam_Shui_Hang.mxd
Date: 19/09/2011

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Annex B

AWB Locations Plans

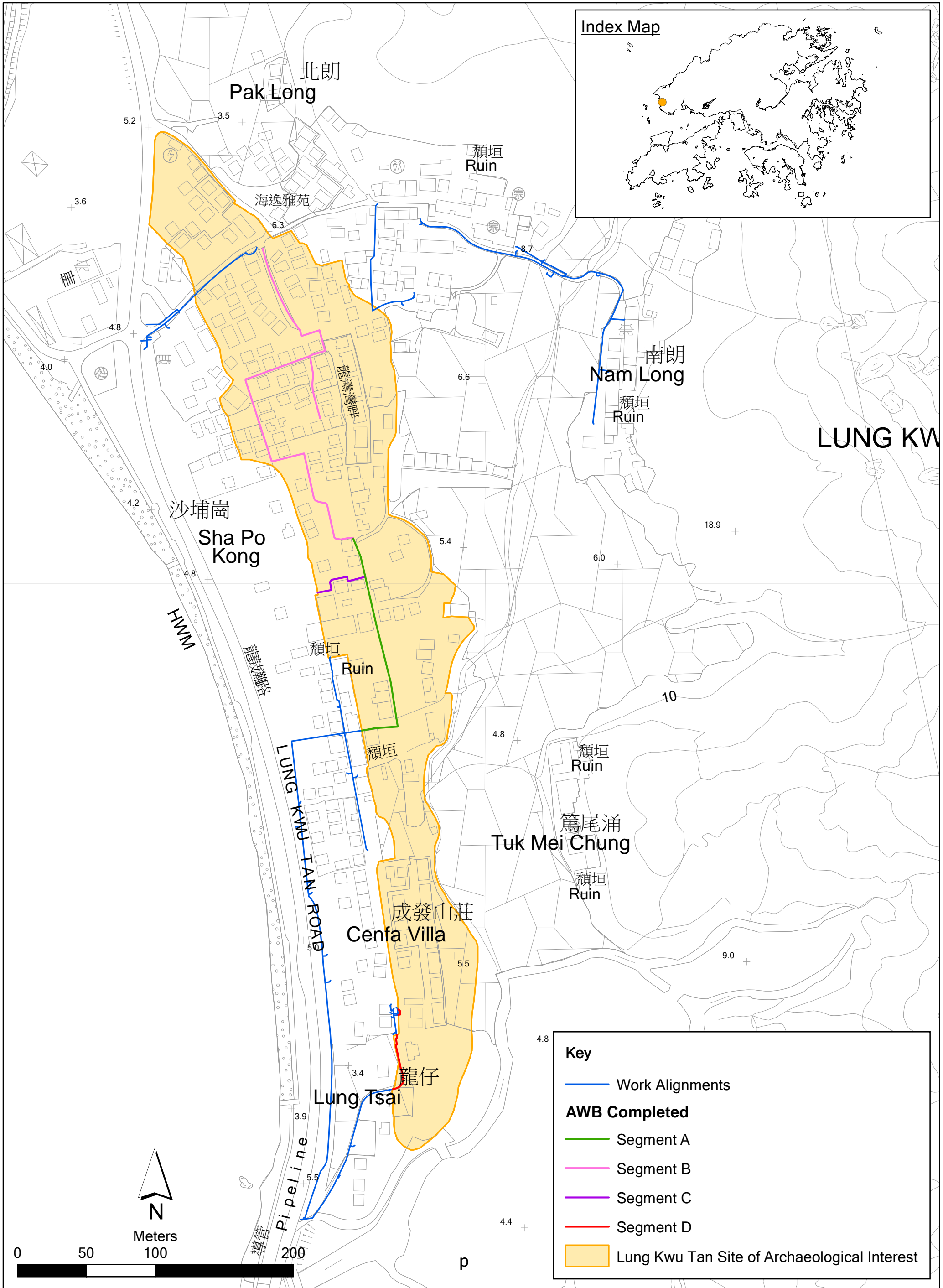



Figure B1

AWB Completed in Lung Kwu Tan

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Date: 20/11/2013

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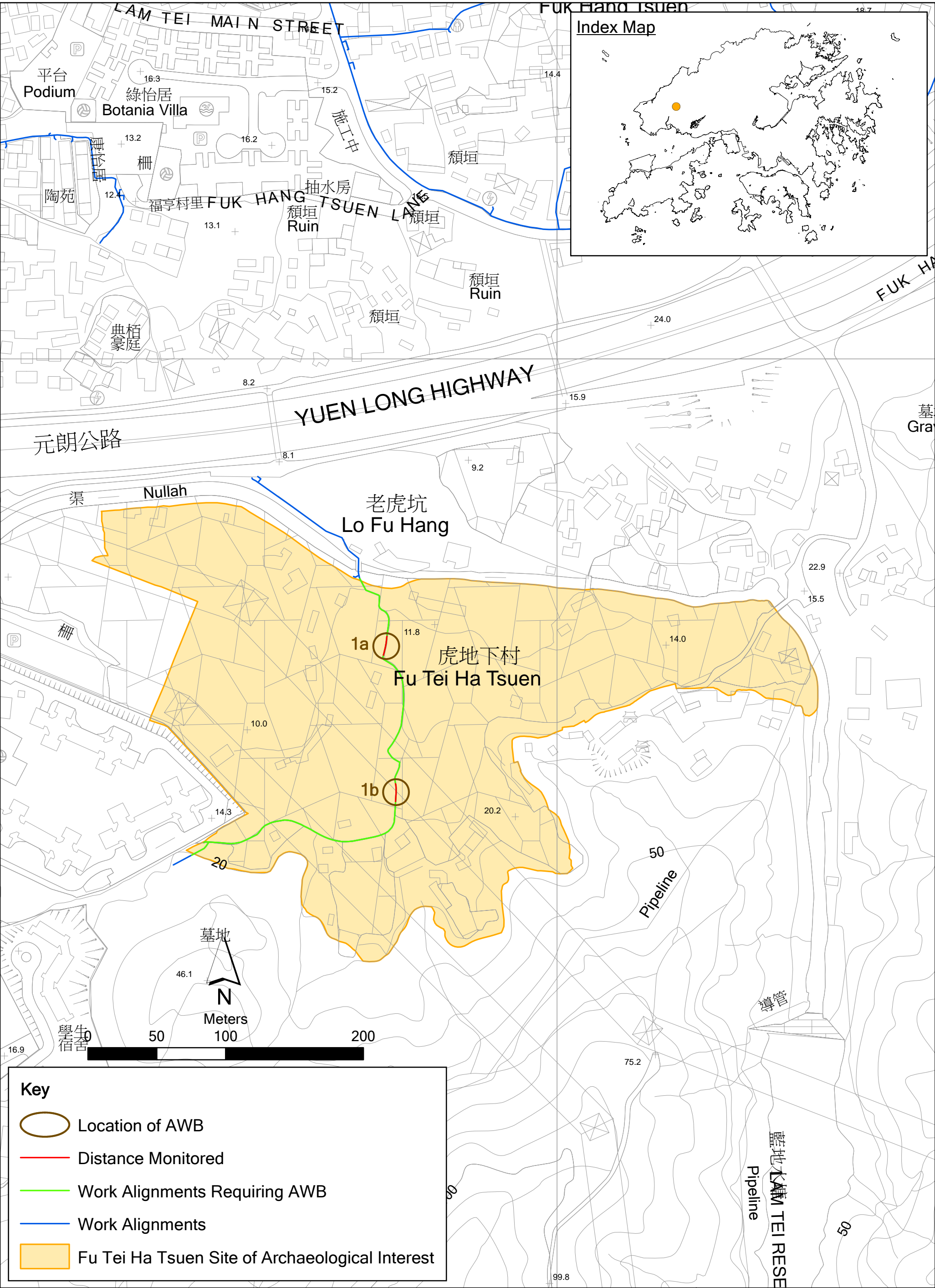


Figure B2

Areas Requiring AWB in Fu Tei Ha Tsuen (Section No.1)

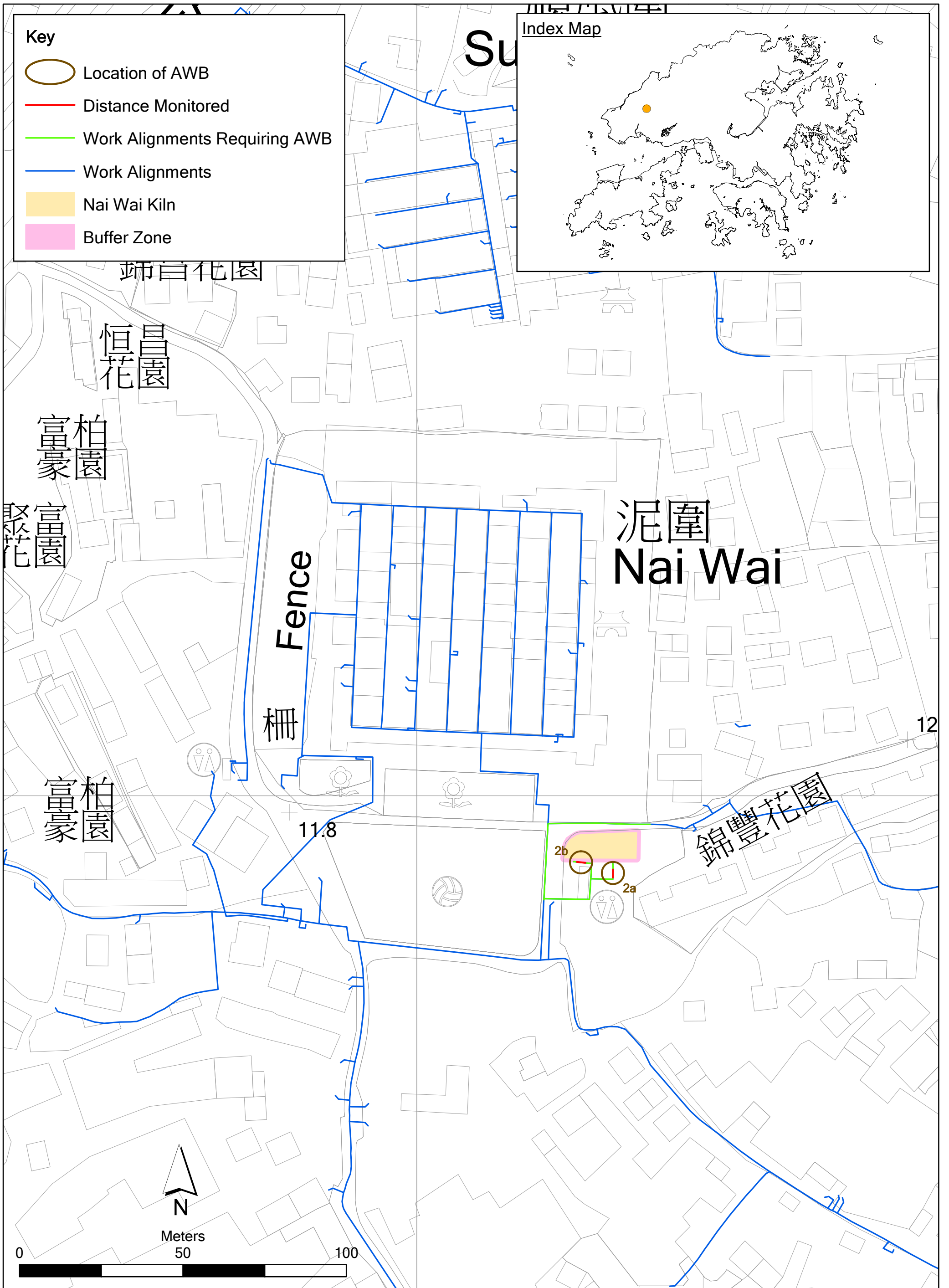


Figure B3

AWB Completed at Nai Wai Kiln (Section No.2)

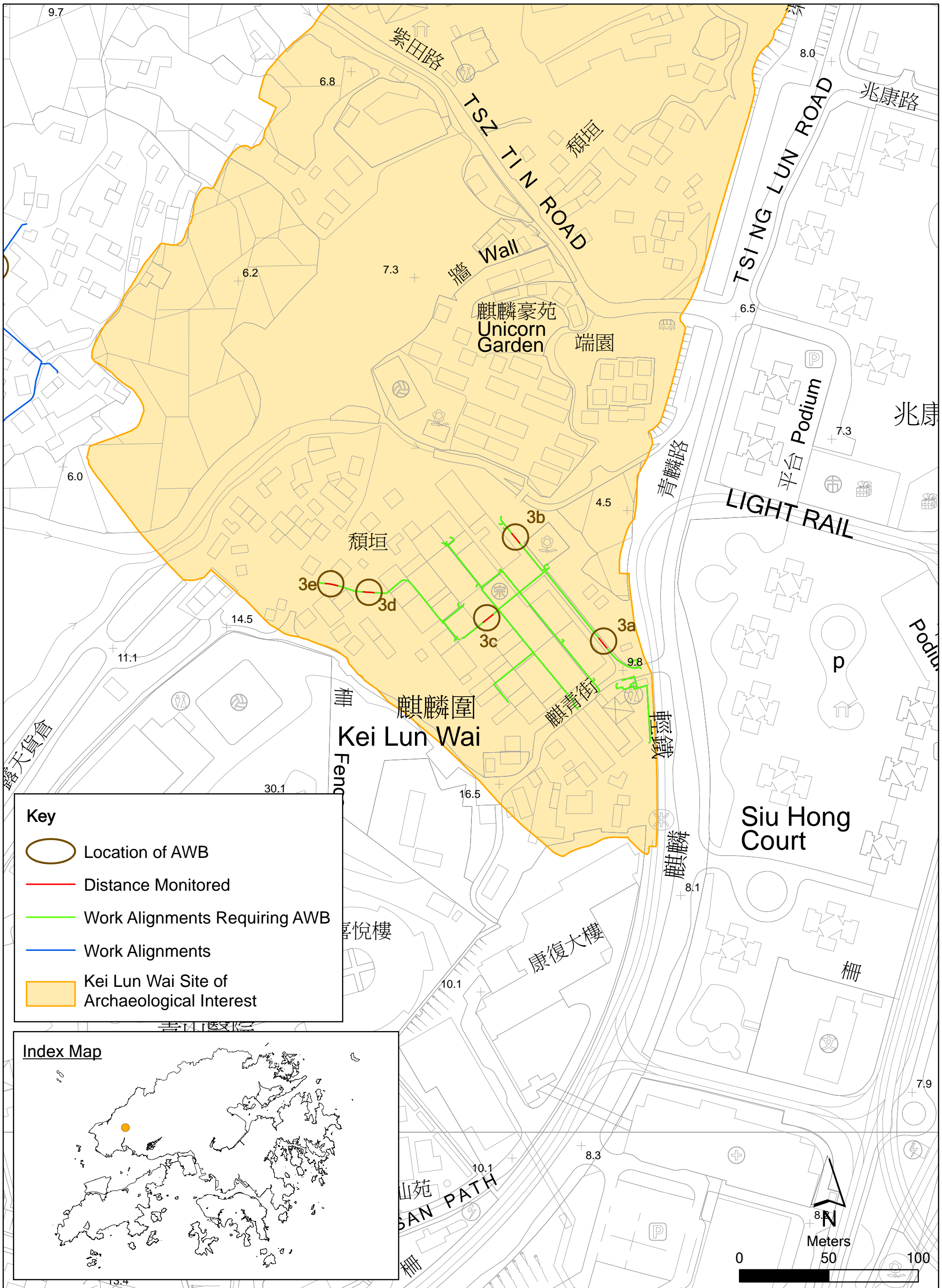


Figure B4

Areas Requiring AWB in Kei Lun Wai (Section No.3)

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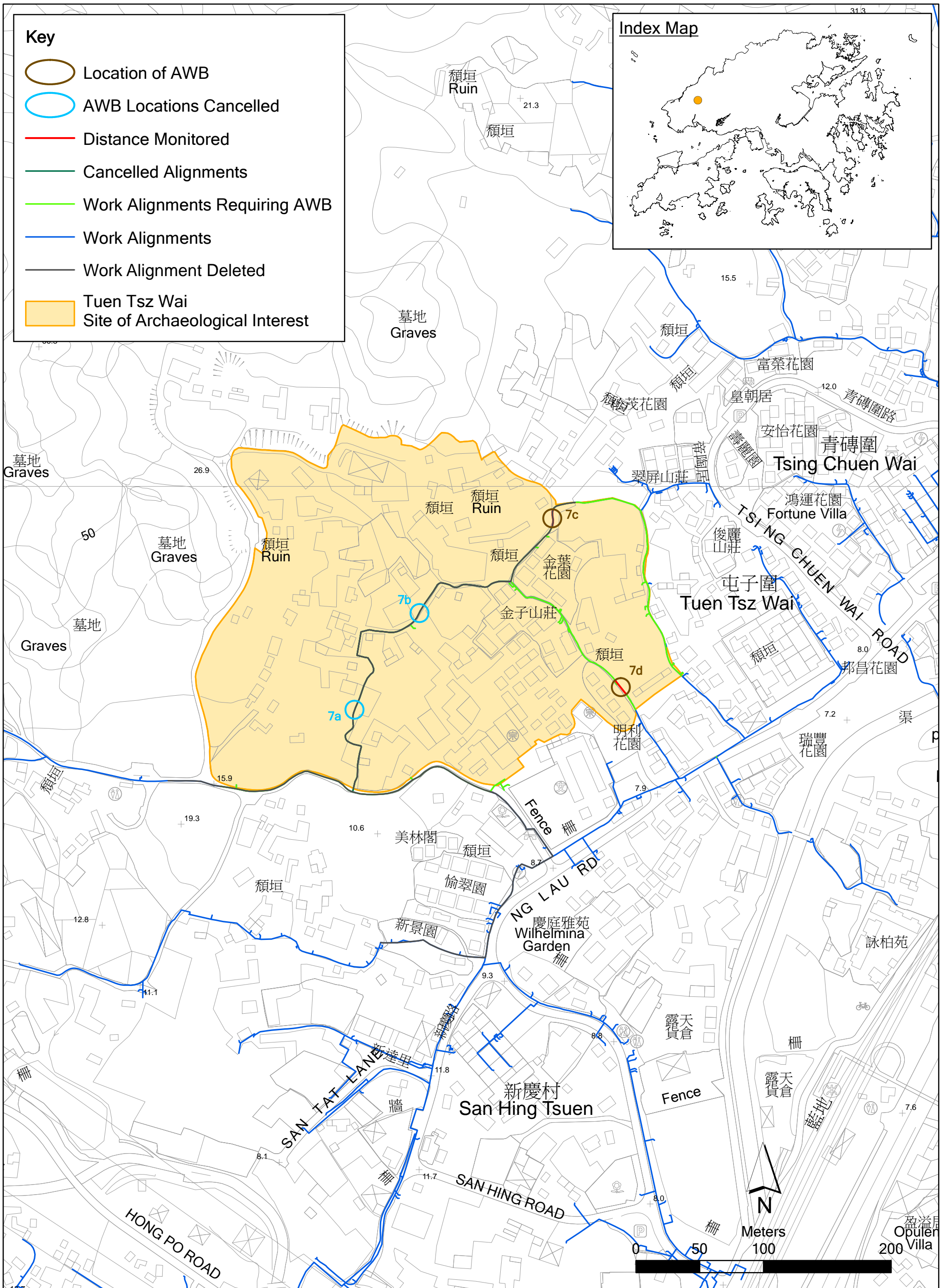


Figure B6

AWB Completed in Tuen Tsz Wai (Section No.7)

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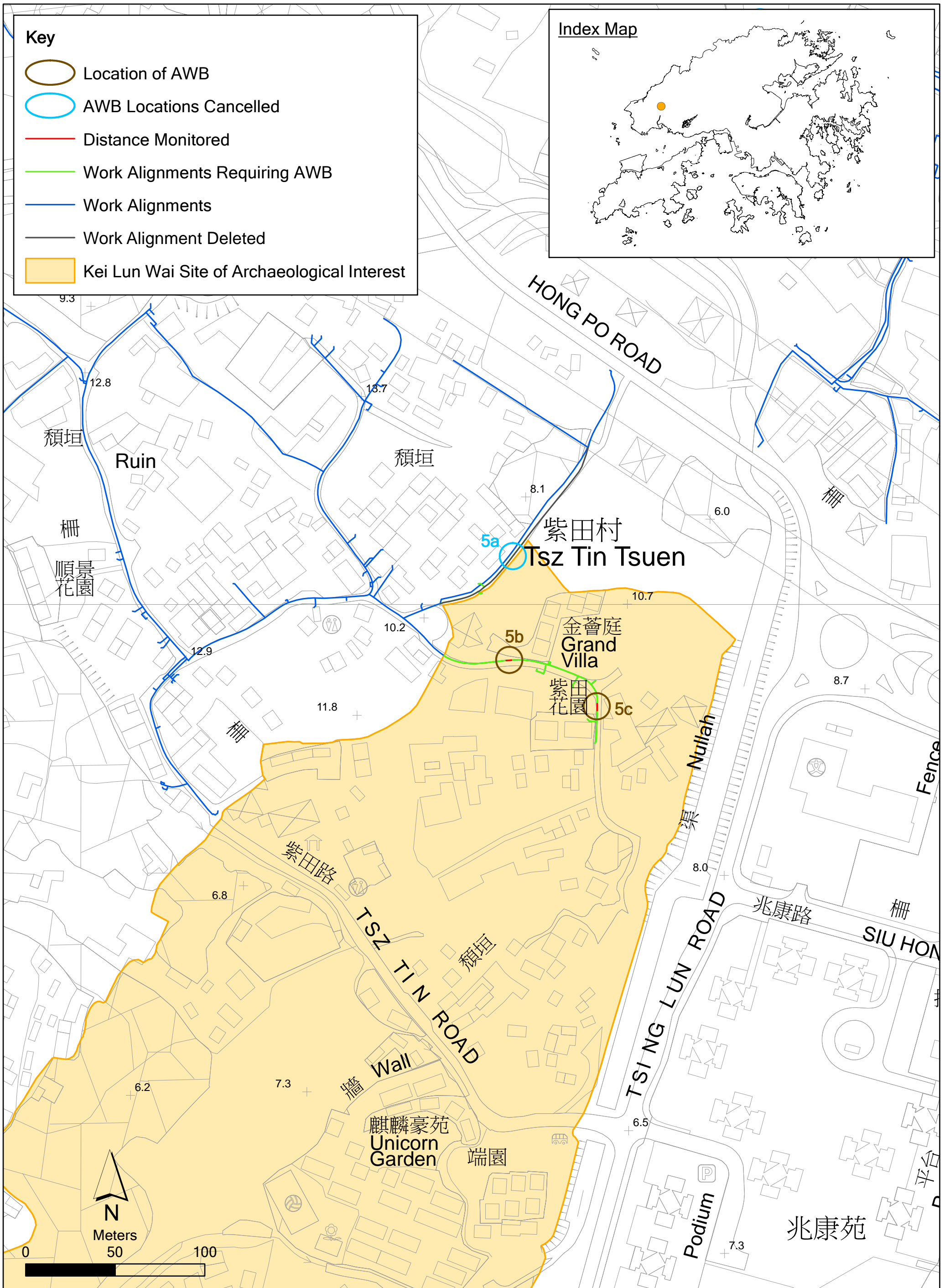


Figure B7

AWB Completed in Tsz Tin Tsuen (Section No.5)

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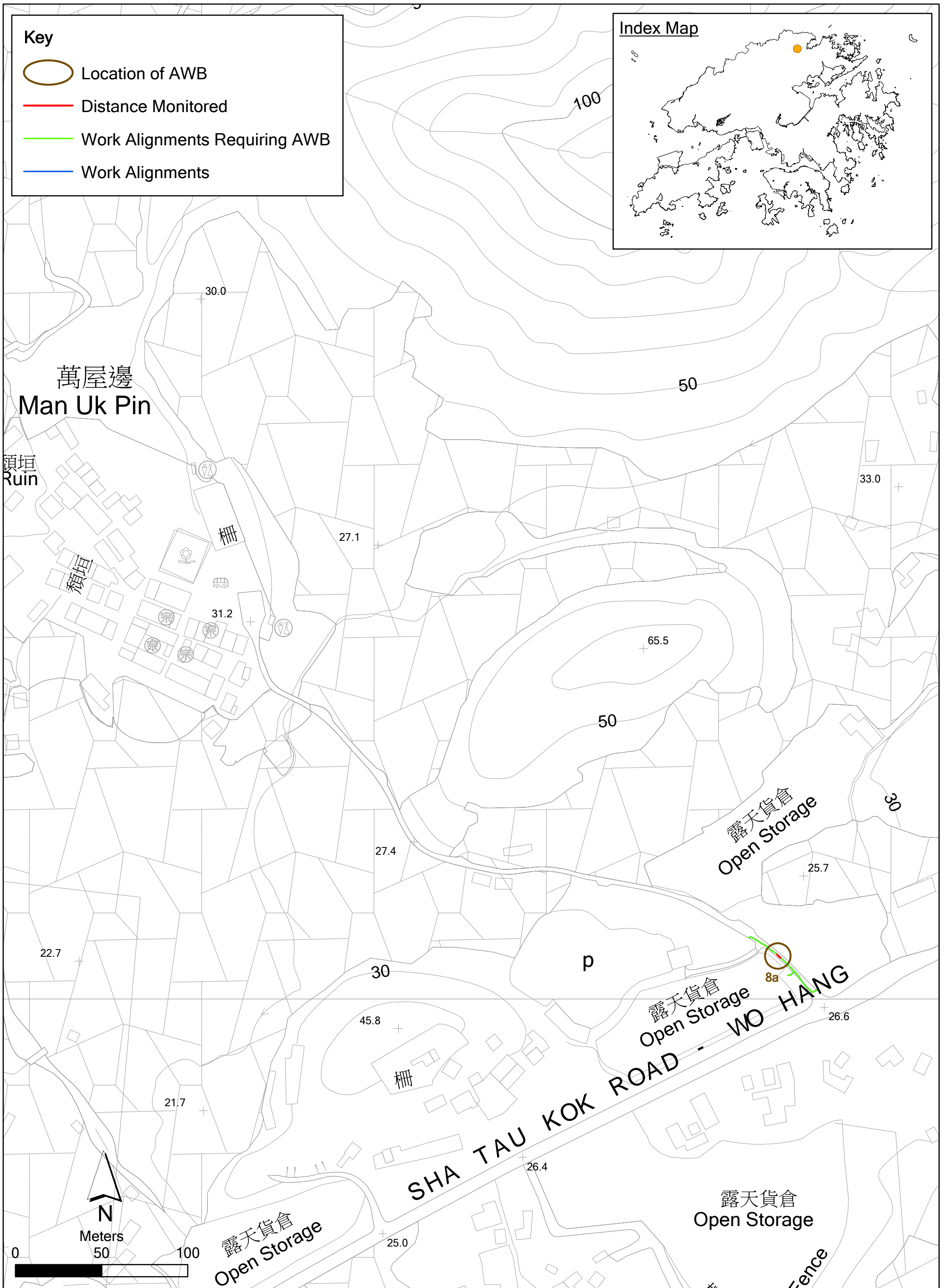


Figure B9

AWB Completed in Man Uk Pin (Section No.8)

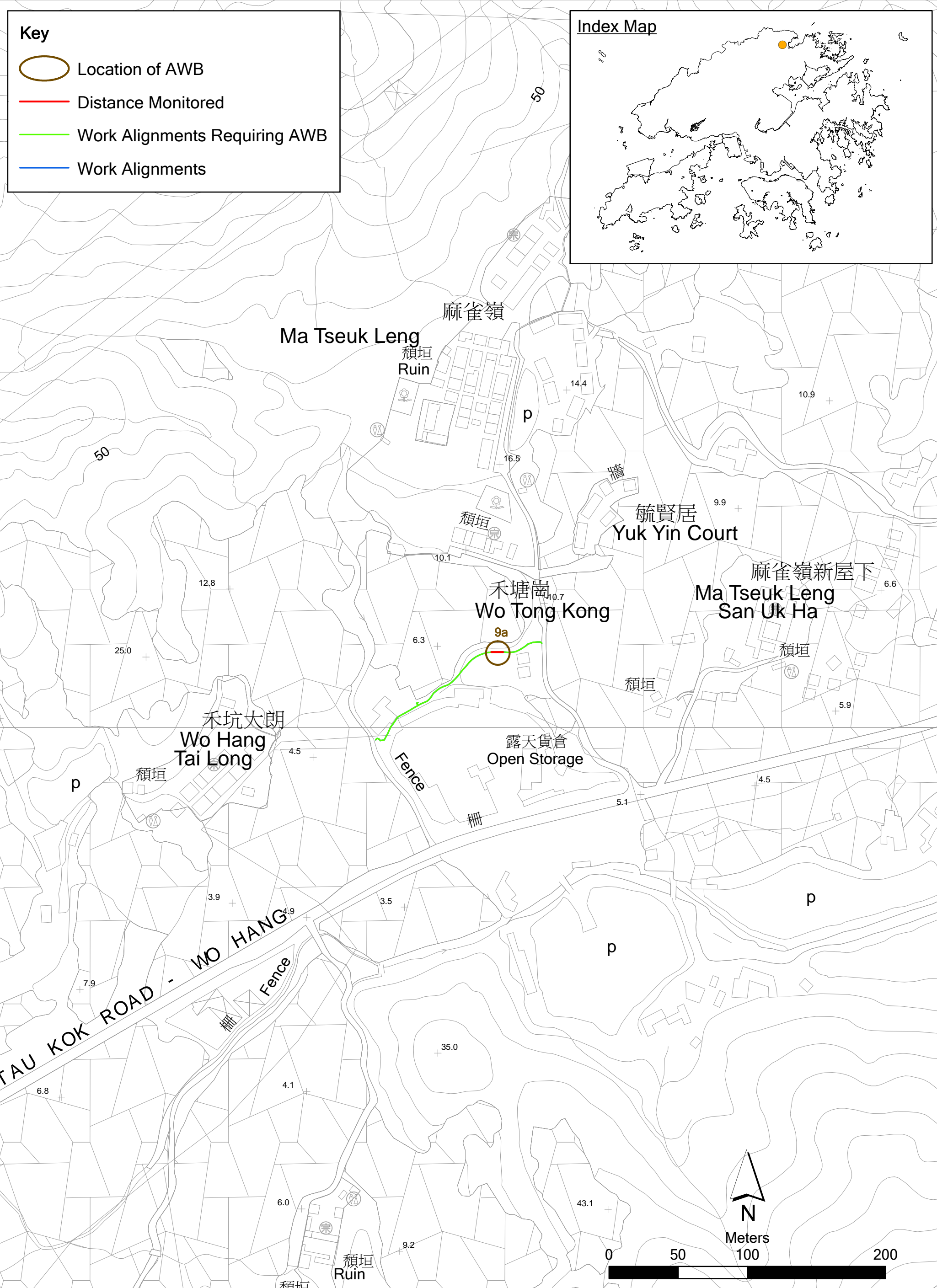


Figure B10

AWB Completed in Wo Tong Kong (Section No. 9)

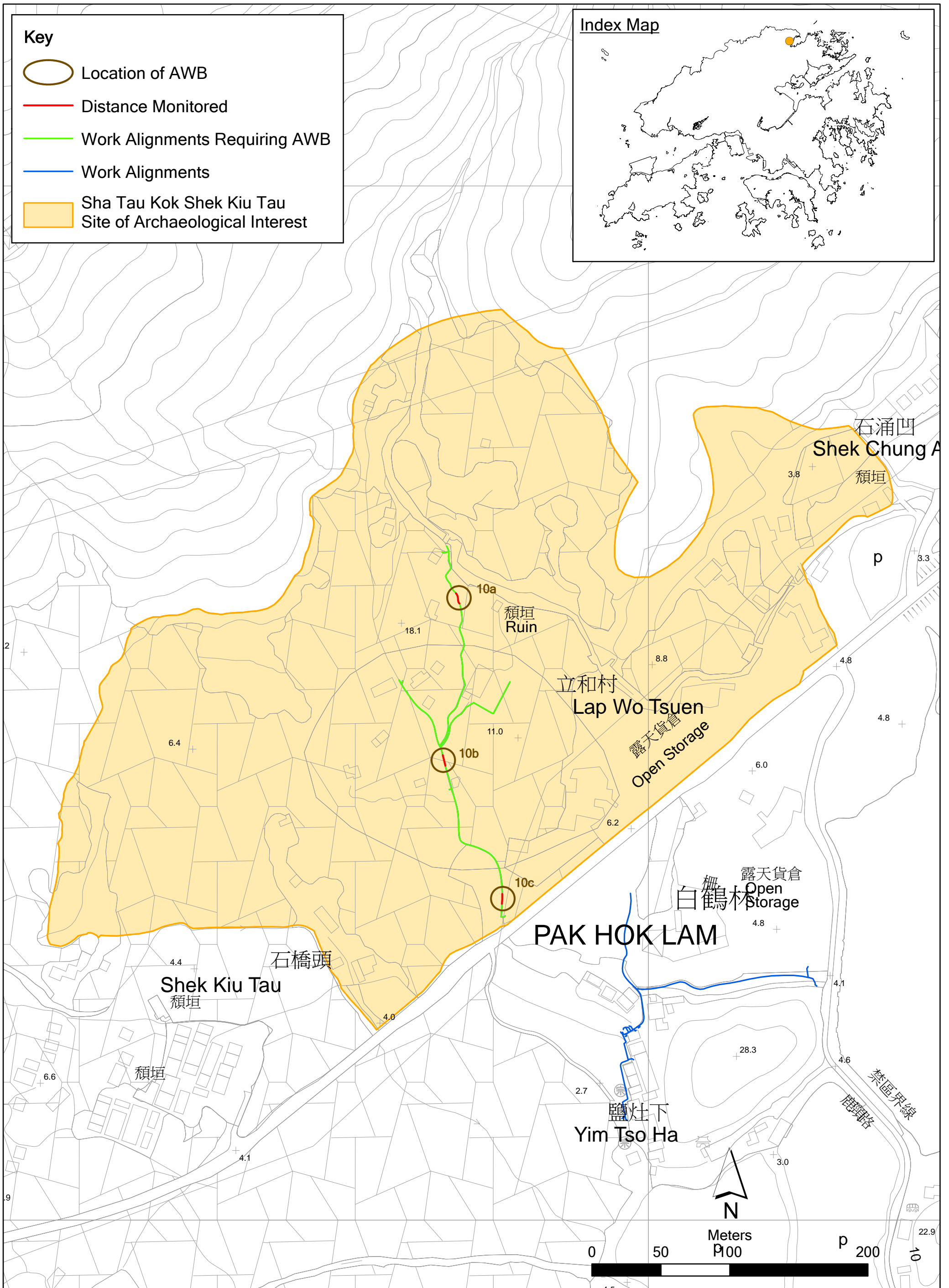


Figure B11

AWB Completed in Lap Wo Tsuen (Section No.10)

Annex C1

AWB Records –
Full Coverage Approach
AWB at Lung Kwu Tan

Section No.	Segment A: LKT1, 2, 3 and 4	Location No. (Recorded)	LKT1a, 2a, 2b, 3a and 4b
Monitoring Date	4, 5, 10 and 11 December 2012	Reference Figure No. in Annex D	D1
Monitored Length	Approximately 136m		

Excavation Method:

This segment was excavated by open trench excavation method using small backhoe and manual labours. The width of the trench varies between 0.25m to 0.3m, and the depth varies between 0.45m to 0.6m from ground level.

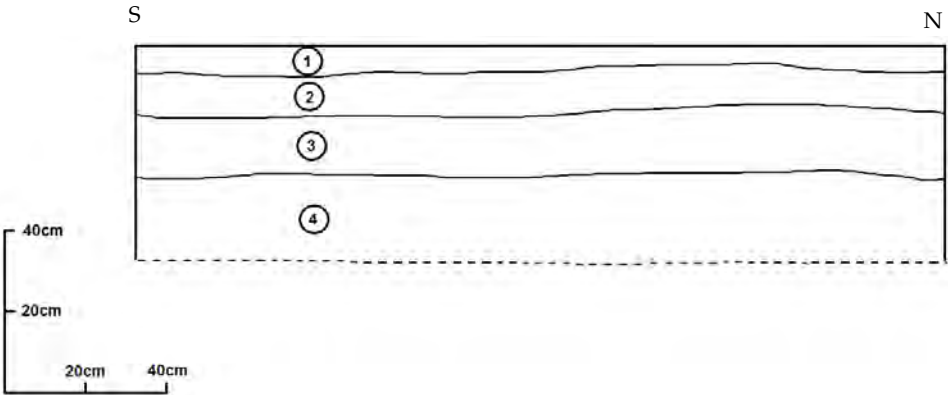
Findings and discovery:

Only one piece of porcelain shard was found in a disturbed layer with low archaeological significance.

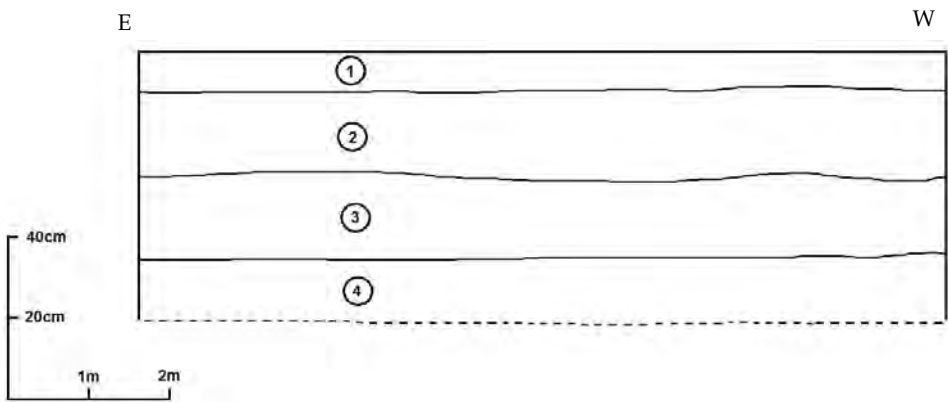
Stratigraphy:

Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern	0	7
2	Loose yellowish brown sandy soil	None	Modern fill	7	7
3	Loose greyish brown sandy soil	None	Modern fill	17	17
4	Loose brownish sandy soil	None	Possible with Primary Deposits	32	N/A

* Depth is measured from the ground level to the surface of each layer

Section No.	Segment A: LKT1, 2, 3 and 4	Location No. (Recorded)	LKT1a, 2a, 2b, 3a and 4b
<p>The stratigraphy in Segment A in general consists of three to four strata. The top two to three layers are considered modern and disturbed layers and the third or fourth layer is considered possible primary deposits. The trench at Location 3a measured approximately 2m long, 0.3 wide and 0.52m deep.</p> <p>Illustration:</p>  <p><i>Illustration of West Section at Location 3a of Section 3 (VE=1)</i></p> <p>Note: Scale for all illustration, "VE" stands for vertical exaggeration.</p>			

Section No.	Segment B: LKT13, 28 and 29	Location No. (Recorded)	LKT13a, 28a, 29a&b and 30		
Monitoring Date	21 December 2012, 11 and 12 January 2013	Reference Figure No. in Annex D	D1		
Monitored Length	43.6m				
Excavation Method: This segment was excavated by open trench excavation method using small backhoe and manual labours. The width of the trench is approximately 0.3m, and the depth varies between 0.5m to 0.7m from ground level. Findings and discovery: Some pottery and porcelain shards were found in the disturbed layers in a number of locations. (See <i>Annex F1</i> for photographic records of the typical finds). They are considered not of high archaeological significance. Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern	0	10
2	Loose greyish green sandy soil	None	Modern fill	10	20
3	Loose black sandy soil	None	None	30	20
4	Loose brown sandy soil	None	Possible Primary Deposits	50	15
* Depth is measured from the ground level to the surface of each layer					

Section No.	Segment B: LKT13, 28 and 29	Location No. (Recorded)	LKT13a, 28a, 29a&b and 30
<p>The stratigraphy in Segment B in general consists of one to two layers of concrete and modern fill, a disturbed layer and a layer of possible primary deposits approximately 40 to 50cm below the ground level. The stratigraphy at Location 29a of Section 29 represents the general stratigraphy of Segment B. The trench at Location 29a measured approximately 10m long, 0.3 wide and 0.65m deep.</p>			
<p>Illustration:</p>  <p><i>Illustration of South Section at Location 29a of Section 29 (VE=5)</i></p> <p>Note: Scale for all illustration, "VE" stands for vertical exaggeration.</p>			

Section No.	Segment C: LKT5 to 12 and 14 to 27	Location No. (Recorded)	LKT5a&b, 6a&b, 7a-c, 8a&b, 9a – 11a, 12a&b, and 14a – 27a.
Monitoring Date	12 to 15, 17 to 20, 22, 27 to 29 December 2012 and 2 to 5 and 7 to 10 January 2013		
Monitored Length	Approximately 363.9m	Reference Figure No. in Annex D	D1
<p>Excavation Method:</p> <p>This segment was excavated by open trench excavation method using small backhoe and manual labours. The widths of the trench vary between 0.2m to 0.35m, and the depth varies between 0.4m to 1.4m from ground level.</p> <p>Findings and discovery:</p> <p>Some pottery and porcelain shards and a few bone fragments were found in disturbed layers and therefore not considered to have high significance. A few coarse pottery pieces dated to the Neolithic period were found from excavated soil in Section 19 (see <i>Annex F1</i> for photographic records of the typical finds). It is possible that they may be primary deposits. However, due to small scale of the construction work, further examination of the soil profile was not feasible.</p>			

Section No.	Segment C: LKT5 to 12 and 14 to 27	Location No. (Recorded)	LKT5a&b, 6a&b, 7a-c, 8a&b, 9a – 11a, 12a&b, and 14a – 27a.		
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern	0	13
2	Loose brownish yellow sandy soil	None	Modern	13	20
3	Loose brown sandy soil	None	None	33	25 - 27
4	Loose brownish red sandy soil	Coarse Pottery Pieces, Jade stone	Possible Primary Deposits	58 - 60	40
* Depth is measured from the ground level to the surface of each layer					
The stratigraphy in Segment C in general consists of one to two layers of concrete and modern fill, occasionally a disturbed layer and a layer of possible primary deposits approximately 40 to 50 cm below the ground level. The stratigraphy at Location 19a of Section 19 represents the general stratigraphy of Segment C. The trench at Location 19a measured approximately 1m long, 0.3 wide and 1m deep.					

Section No.	Segment C: LKT5 to 12 and 14 to 27	Location No. (Recorded)	LKT5a&b, 6a&b, 7a-c, 8a&b, 9a – 11a, 12a&b, and 14a – 27a.
<p>Illustration:</p> <p><i>Illustration of West Section at Location 19a of Section 19 (VE=1)</i></p> <p>Note: Scale for all illustration, “VE” stands for vertical exaggeration.</p>			

Section No.	Segment D: Lung Tsai	Location No. (Recorded)	N/A
Monitoring Date	15 September 2012	Reference Figure No. in Annex D	D1
Monitored Length	approximately 50m		

Excavation Method:

This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 50m long, 0.20m wide and 0.50m deep.

Findings and discovery:

No remains of archaeological significance were identified.

Stratigraphy:

Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Yellow soil	None	Modern fill	0	20
2a	Loose greyish brown soil with pebbles and plastic sheets	None	Modern topsoil	20	30

* Depth is measured from the ground level to the surface of each layer

Illustration:

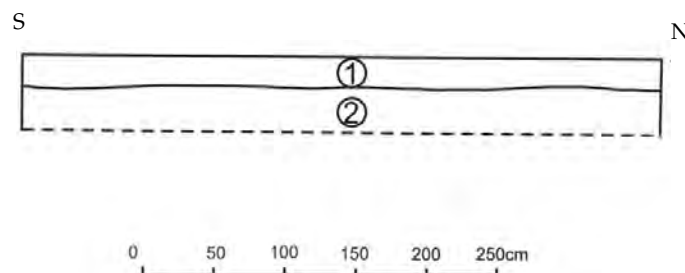


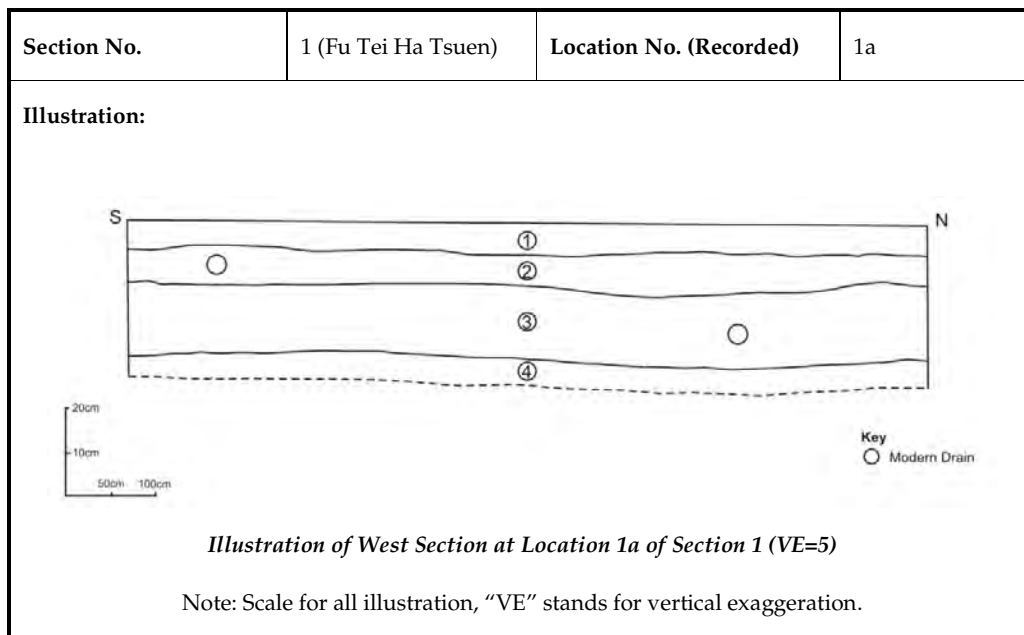
Illustration of West Section at South part(Lung Tsai) of Lung Kwu Tan

Annex C2

AWB Records –
Selective and Sampling
Approach AWB at Tuen
Mun North and Sha Tau
Kok Areas

Section 1

Section No.	1 (Fu Tei Ha Tsuen)	Location No. (Recorded)	1a		
Monitoring Date	10 July 2012	Reference Figure No. in Annex B	B2		
Monitored Length	approximately 9m				
Excavation Method:					
This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 9m long, 0.35m wide and 0.35m deep.					
Findings and discovery:					
No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete and fill soil	None	Modern road in use	0	7
2	Loose yellowish grey fill soil	None	Modern fill	7	7
3	Loose greyish sandy soil	None	Modern fill	14	17
4	Loose greyish yellow sandy soil	None	Modern fill	31	N/A
* Depth is measured from the ground level to the surface of each layer					



Section No.	1 (Fu Tei Ha Tsuen)	Location No. (Recorded)	1b
Monitoring Date	10 July 2012	Reference Figure No. in Annex B	B2
Monitored Length	approximately 9m		

Excavation Method:

This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 9m long, 0.35m wide and 0.30m deep.

Findings and discovery:

No remains of archaeological significance were identified.

Stratigraphy:

Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Greyish black sandy soil	None	Modern topsoil	0	10-12
2	Loose greyish yellow sandy soil	None	Modern	10-12	20

* Depth is measured from the ground level to the surface of each layer

Illustration:

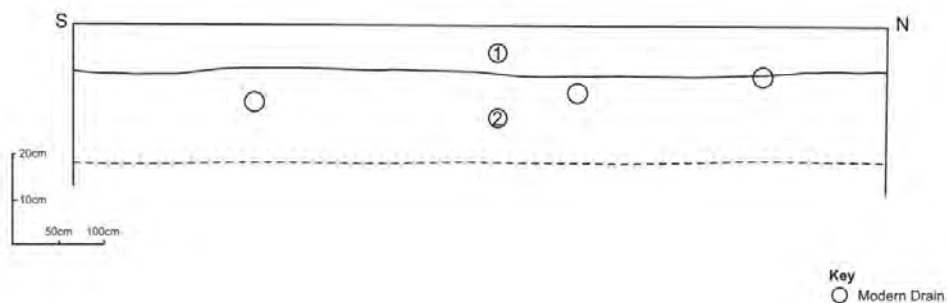


Illustration of West Section at Location 1b of Section 1 (VE=5)

Note: Scale for all illustration, "VE" stands for vertical exaggeration.

Section 2

Section No.	2 (Nai Wai Kiln)	Location No. (Recorded)	2a
Monitoring Date	22 February 2012	Reference Figure No. in Annex B	B3
Monitored Length	approximately 2.5m		

Excavation Method:

This section was excavated by open trench excavation method using manual labours. The trench measured approximately 2.5m long, 0.4m wide and 0.5m deep.

Findings and discovery:

No remains of archaeological significance were identified.

Stratigraphy:

Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Deposit of construction waste	Modern construction materials	Modern	0	50

* Depth is measured from the ground level to the surface of each layer

Illustration:

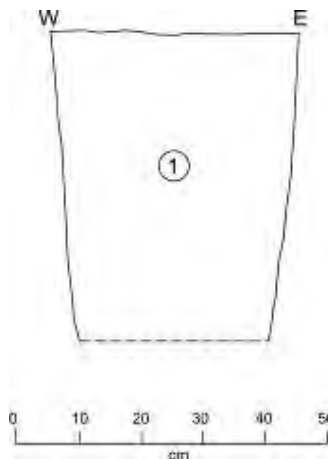
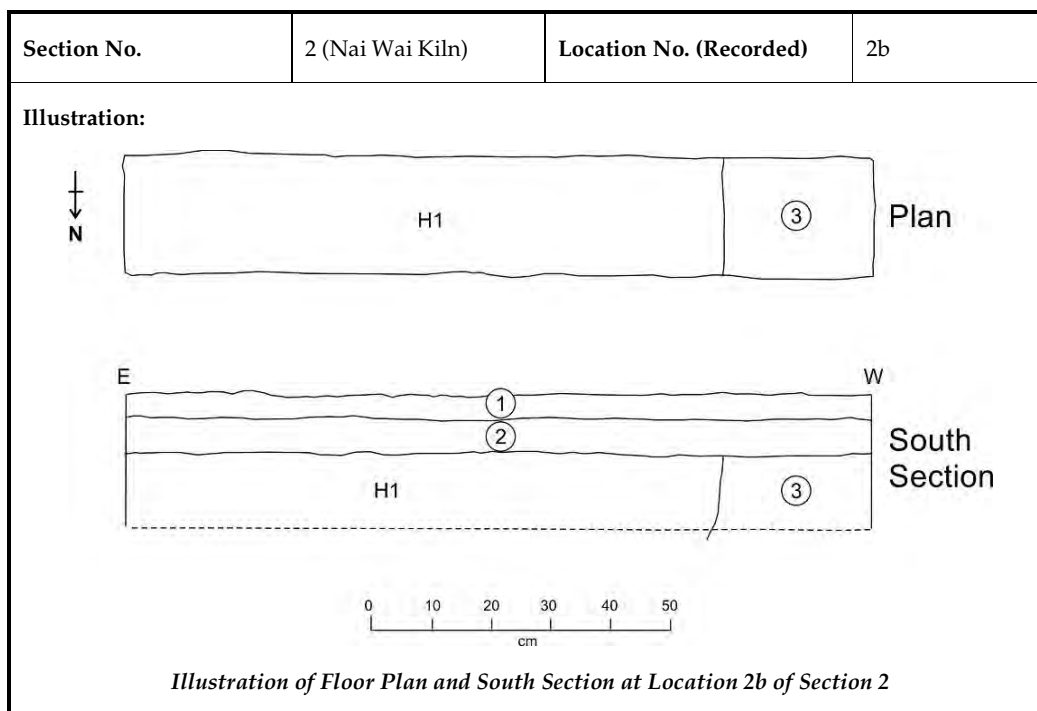


Illustration of North Section at Location 2a of Section 2

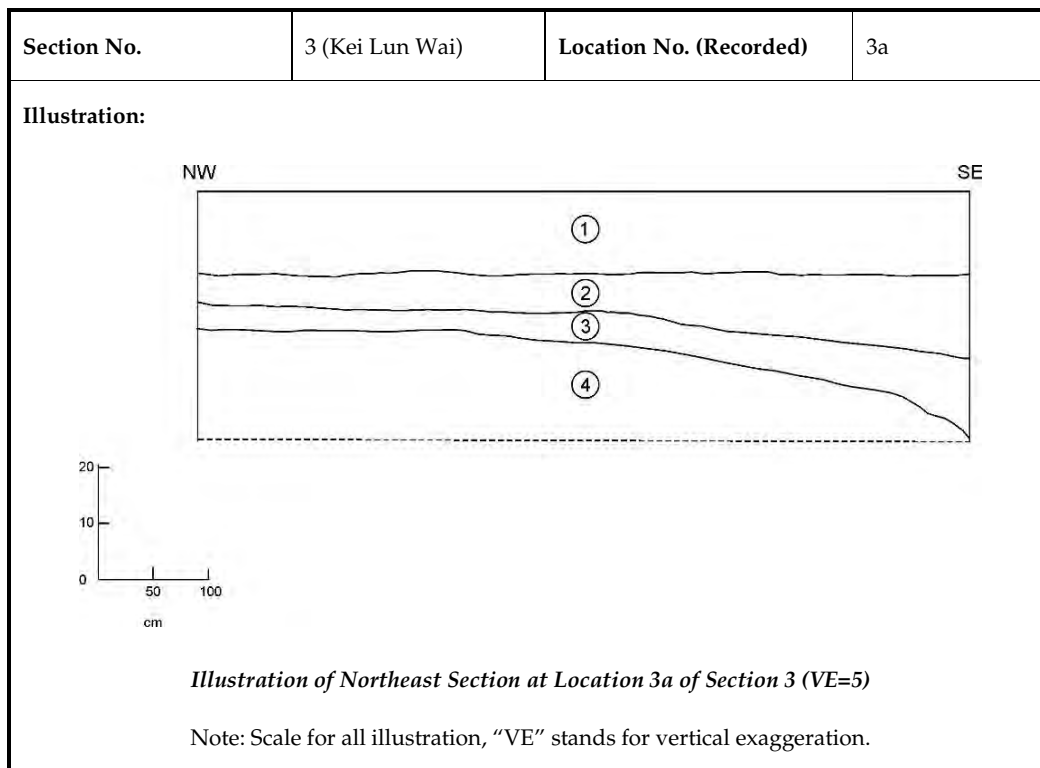
Section No.	2 (Nai Wai Kiln)	Location No. (Recorded)	2b
Monitoring Date	22 February 2012	Reference Figure No. in Annex B	B3
Monitored Length	approximately 2.5m		
<p>Excavation Method:</p> <p>This section was excavated by open trench excavation method using manual labours. The trench measured approximately 2.5m long, 0.4m wide and 0.45m deep.</p> <p>Findings and discovery:</p> <p>An archaeological feature H1 and 25 artefacts comprising blue-and-white porcelain shards, glazed village wares shards, tiles fragments and fragments of burned soil. The feature H1 was identified in most of the east and middle part of the trench, below Layer 2 and cut into Layer 3. Blue-and-white porcelain shards, glazed village wares shards, tiles fragments and fragments of burned soil were found in H1.</p>			

Section No.	2 (Nai Wai Kiln)	Location No. (Recorded)	2b		
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Loose Black surface soil with abundant organic materials	Nil	Modern	0	8
2	Loose greyish white cemented soil	Nil	Modern	8	12
H1	Greyish black soil	Blue-and-white porcelain shards, glazed village wares shards, tiles fragments and fragments of burned soil	Ming to Qing Dynasties	20	25
3	Packed greyish yellow soil	Porcelain shards and tile fragments	Ming to Qing Dynasties	20	>25
* Depth is measured from the ground level to the surface of each layer					



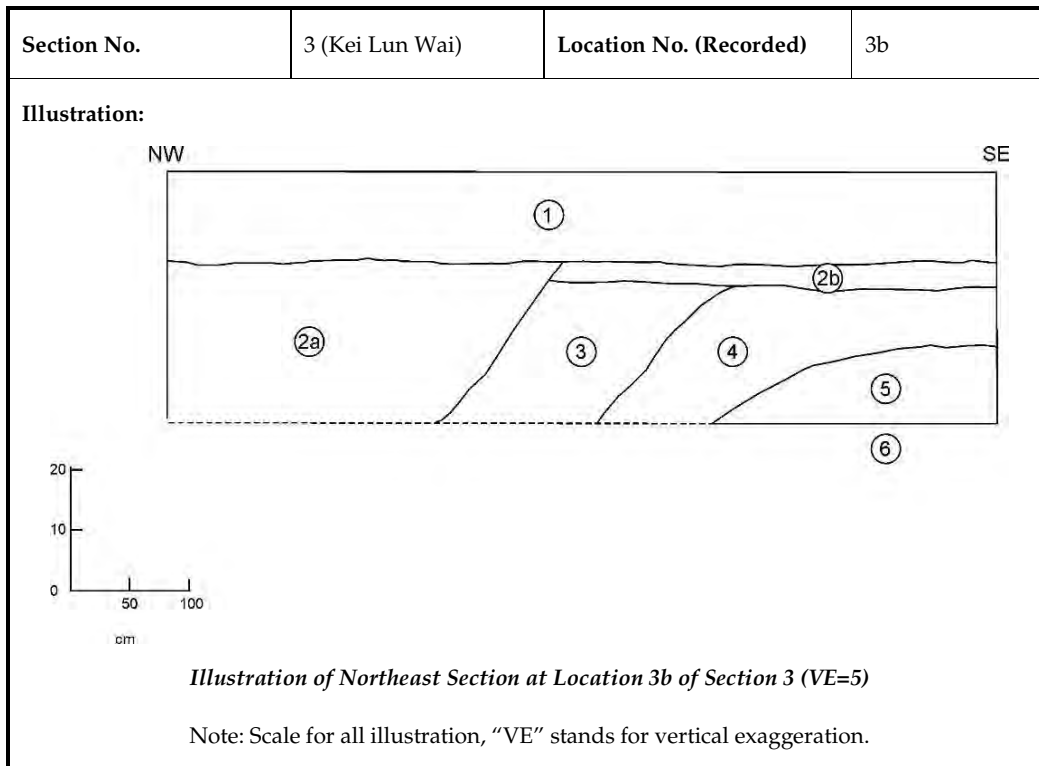
Section 3

Section No.	3 (Kei Lun Wai)	Location No. (Recorded)	3a		
Monitoring Date	29 and 30 May 2012	Reference Figure No. in Annex B	B4		
Monitored Length	approximately 7m				
Excavation Method:					
This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 7m long, 0.45m wide and 0.45m deep.					
Findings and discovery:					
Three shards of village wares and one shard of tile were identified in Layer 3. All of them are too small and have no diagnostic characteristic for proper dating. Therefore, they are not of archaeological significance.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete and fill soil	None	Modern road in use	0	15
2	Loose black fill soil with pebble	None	Modern fill	15	5-15
3	Loose reddish brown fill soil	Shards of village wares and tile	Modern fill	20	5-15
4	Compact pure reddish brown soil	None	Sterile	25	0-20
* Depth is measured from the ground level to the surface of each layer					

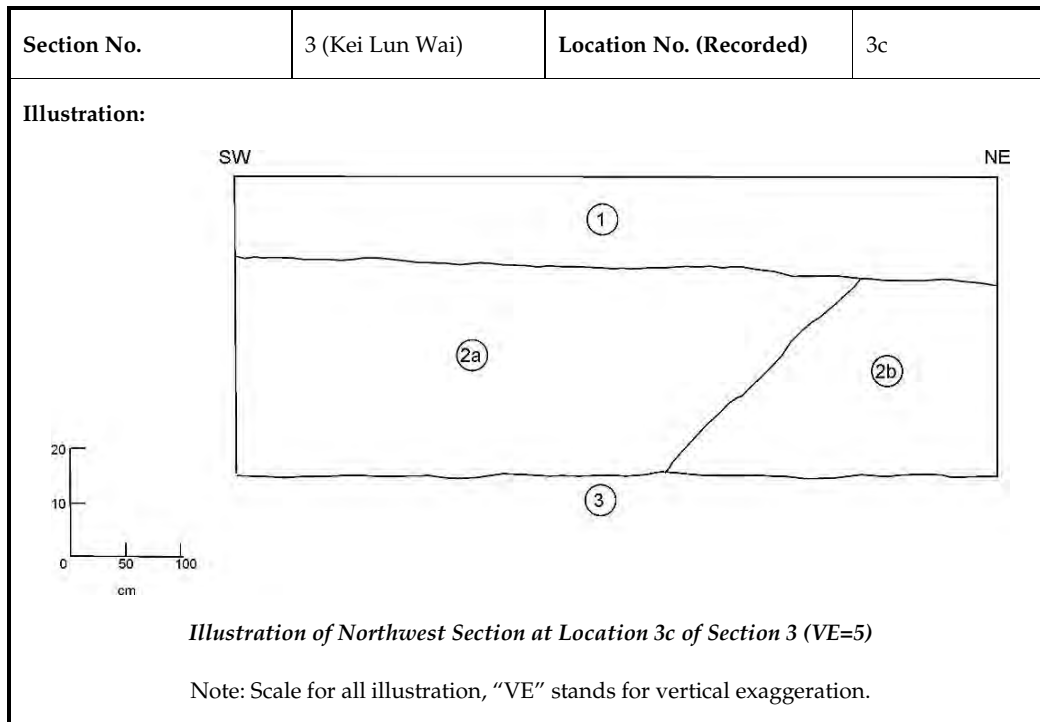


Section No.	3 (Kei Lun Wai)	Location No. (Recorded)	3b
Monitoring Date	29 and 30 May 2012	Reference Figure No. in Annex B	B4
Monitored Length	approximately 7m		
<p>Excavation Method:</p> <p>This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 7m long, 0.42m wide and 0.45m deep.</p> <p>Findings and discovery:</p> <p>No remains of archaeological significance were identified.</p>			

Section No.	3 (Kei Lun Wai)		Location No. (Recorded)	3b	
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete and fill	None	Modern road in use	0	15
2a	Loose red fill soil with pebble	None	Modern	15	0-27
2b	Loose reddish brown fill soil with pebble	None	Modern	15	0-5
3	Compact yellowish brown poorly sorted soil	Modern porcelain shards	Modern fill	18	0-24
4	Compact pure red soil	None	In-situ soil (possibly sterile)	19	0-19
5	Compact pure yellowish brown soil	None	In-situ soil (possibly sterile)	29	0-13
6	Yellow sandy soil with pebble	None	In-situ soil (possibly sterile)	42	>1
* Depth is measured from the ground level to the surface of each layer					

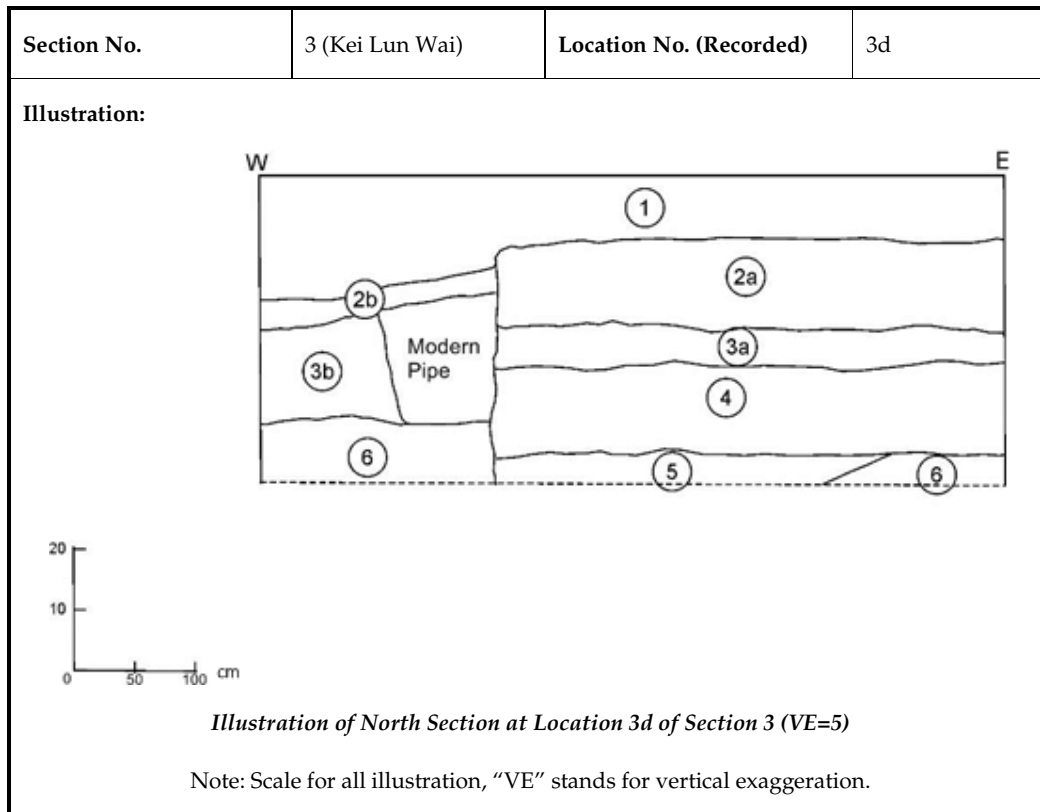


Section No.	3 (Kei Lun Wai)	Location No. (Recorded)	3c		
Monitoring Date	29 and 30 May 2012	Reference Figure No. in Annex B	B4		
Monitored Length	approximately 7m				
Excavation Method: This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 7m long, 0.45m wide and 0.55m deep.					
Findings and discovery: No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern	0	15-20
2a	Loose brownish yellow soil with trace of brown clay	None	None	15	30-35
2b	Compact brownish yellow soil	None	Possibly sterile	15	30-35
3	Compact pure yellow soil	None	Possibly sterile	55	>1
* Depth is measured from the ground level to the surface of each layer					

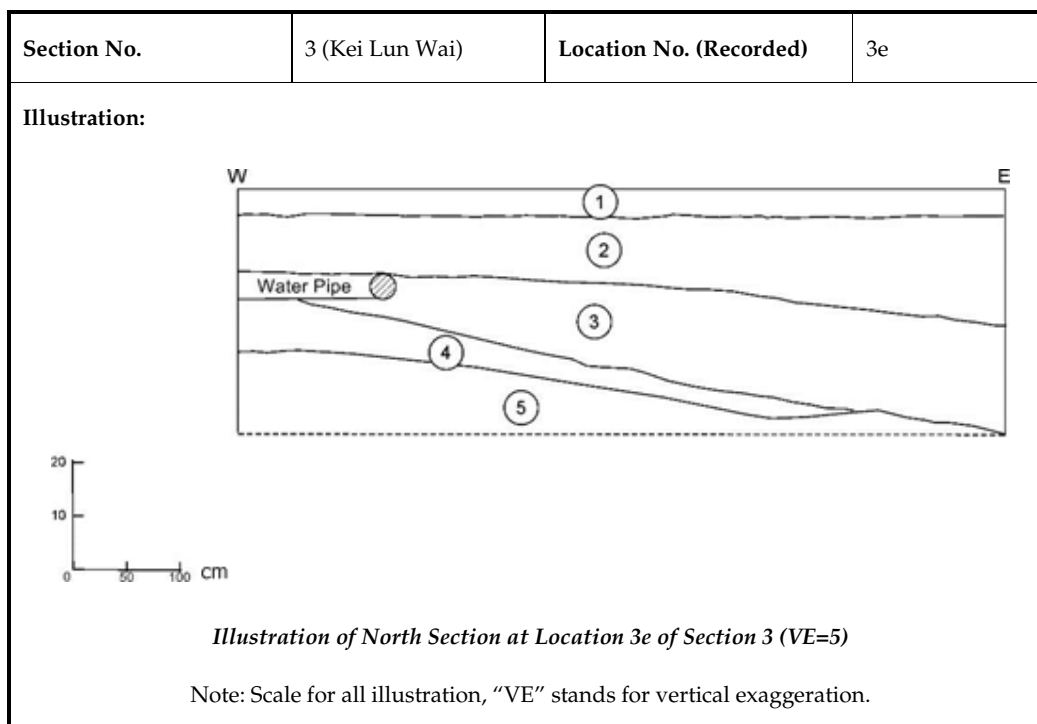


Section No.	3 (Kei Lun Wai)	Location No. (Recorded)	3d
Monitoring Date	29 and 30 May 2012	Reference Figure No. in Annex B	B4
Monitored Length	approximately 6m		
<p>Excavation Method:</p> <p>This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 6m long, 0.4m wide and 0.5m deep.</p> <p>Findings and discovery:</p> <p>No remains of archaeological significance were identified.</p>			

Section No.	3 (Kei Lun Wai)	Location No. (Recorded)	3d		
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern path	0	10-20
2a	Loose yellow sandy soil with pebble, with occasional red patches	None	Modern fill	10	0-15
2b	Loose brownish yellow soil with pebble	None	Modern fill	15-20	0-5
3a	Compact black sandy soil with pebble	None	Modern	24	0-7
3b	Compact greyish soil	Red brick pieces	Modern	22-25	0-18
4	Hard reddish brown soil	None	Possible Modern Fill	30	0-15
5	Compact grey clay soil with charcoal silt	None	None	45	0-5
6	Compact pure brownish red soil	None	None	40	0-10
* Depth is measured from the ground level to the surface of each layer.					
* Layers 5 and 6 are suspected to be primary deposit layers.					

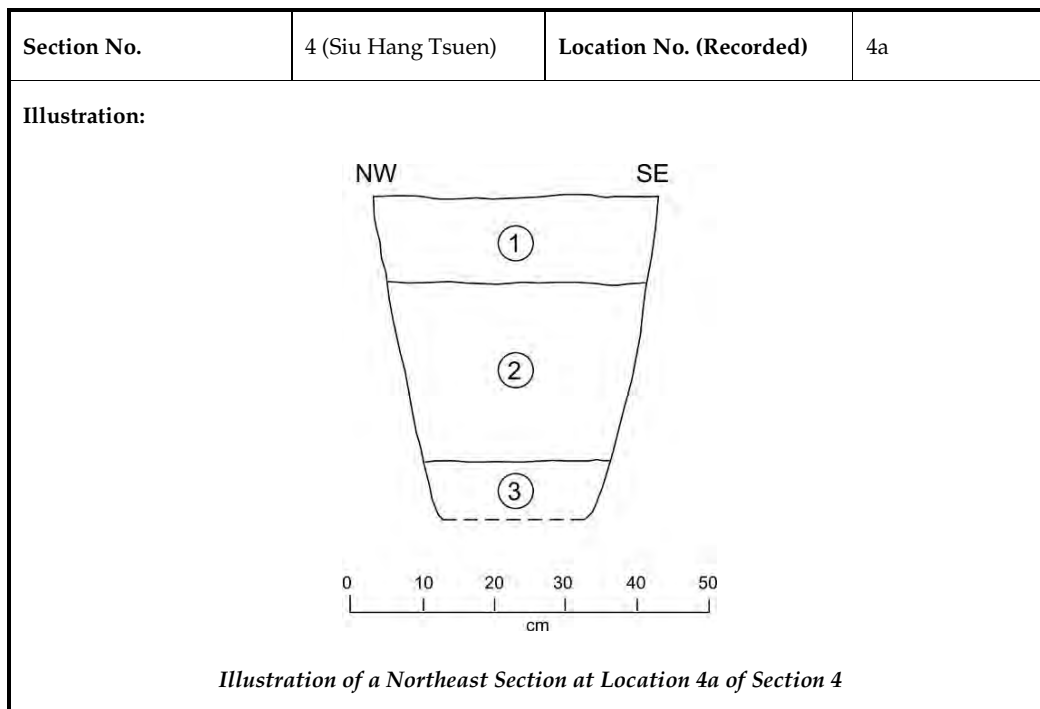


Section No.	3 (Kei Lun Wai)	Location No. (Recorded)	3e																																				
Monitoring Date	29 and 30 May 2012	Reference Figure No. in Annex B	B4																																				
Monitored Length	approximately 7m																																						
<p>Excavation Method:</p> <p>This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 7m long, 0.4m wide and 0.45m deep.</p> <p>Findings and discovery:</p> <p>No remains of archaeological significance were identified.</p>																																							
<p>Stratigraphy:</p> <table border="1"> <thead> <tr> <th>Layer</th> <th>Description</th> <th>Cultural Remains</th> <th>Dating and Interpretation</th> <th>Approximate Depth from Ground Level (cm)*</th> <th>Thickness (cm)</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>Concrete</td> <td>None</td> <td>Modern path</td> <td>0</td> <td>5</td> </tr> <tr> <td>2</td> <td>Pebble and sand</td> <td>None</td> <td>Modern fill</td> <td>5</td> <td>10-20</td> </tr> <tr> <td>3</td> <td>Compact red clay soil with grey sand</td> <td>Nylon cloth piece</td> <td>Modern fill</td> <td>15-25</td> <td>0-20</td> </tr> <tr> <td>4</td> <td>grey cement with pebble and sand</td> <td>None</td> <td>Modern</td> <td>20-40</td> <td>0-10</td> </tr> <tr> <td>5</td> <td>Loose pure yellow sand soil</td> <td>None</td> <td>Possibly in-situ soil</td> <td>30-45</td> <td>0-15</td> </tr> </tbody> </table> <p>* Depth is measured from the ground level to the surface of each layer</p>				Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)	1	Concrete	None	Modern path	0	5	2	Pebble and sand	None	Modern fill	5	10-20	3	Compact red clay soil with grey sand	Nylon cloth piece	Modern fill	15-25	0-20	4	grey cement with pebble and sand	None	Modern	20-40	0-10	5	Loose pure yellow sand soil	None	Possibly in-situ soil	30-45	0-15
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)																																		
1	Concrete	None	Modern path	0	5																																		
2	Pebble and sand	None	Modern fill	5	10-20																																		
3	Compact red clay soil with grey sand	Nylon cloth piece	Modern fill	15-25	0-20																																		
4	grey cement with pebble and sand	None	Modern	20-40	0-10																																		
5	Loose pure yellow sand soil	None	Possibly in-situ soil	30-45	0-15																																		

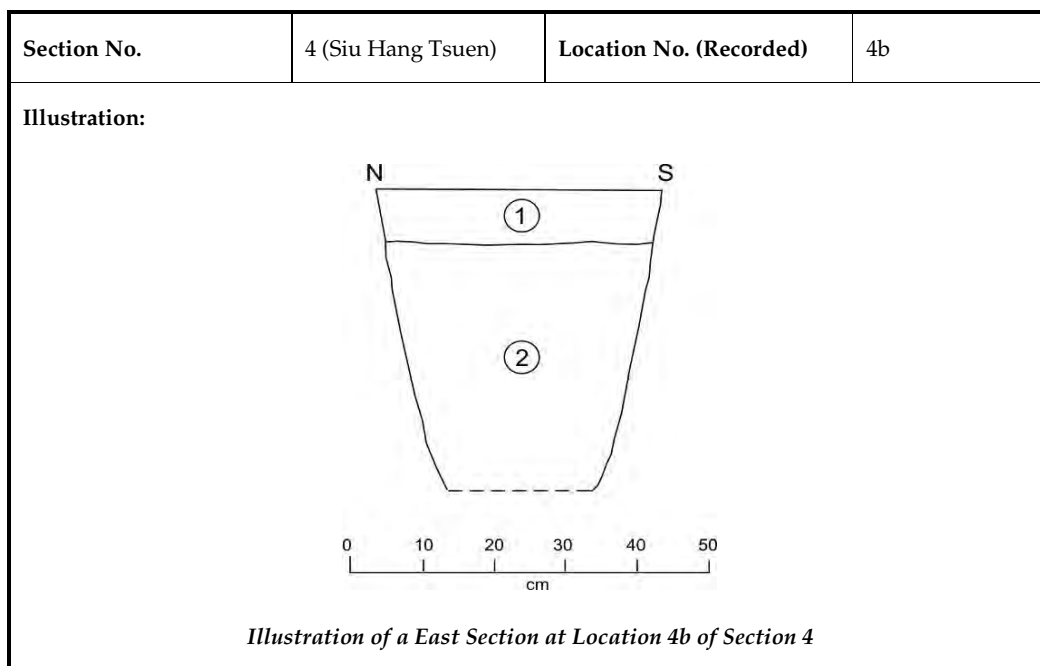


Section 4

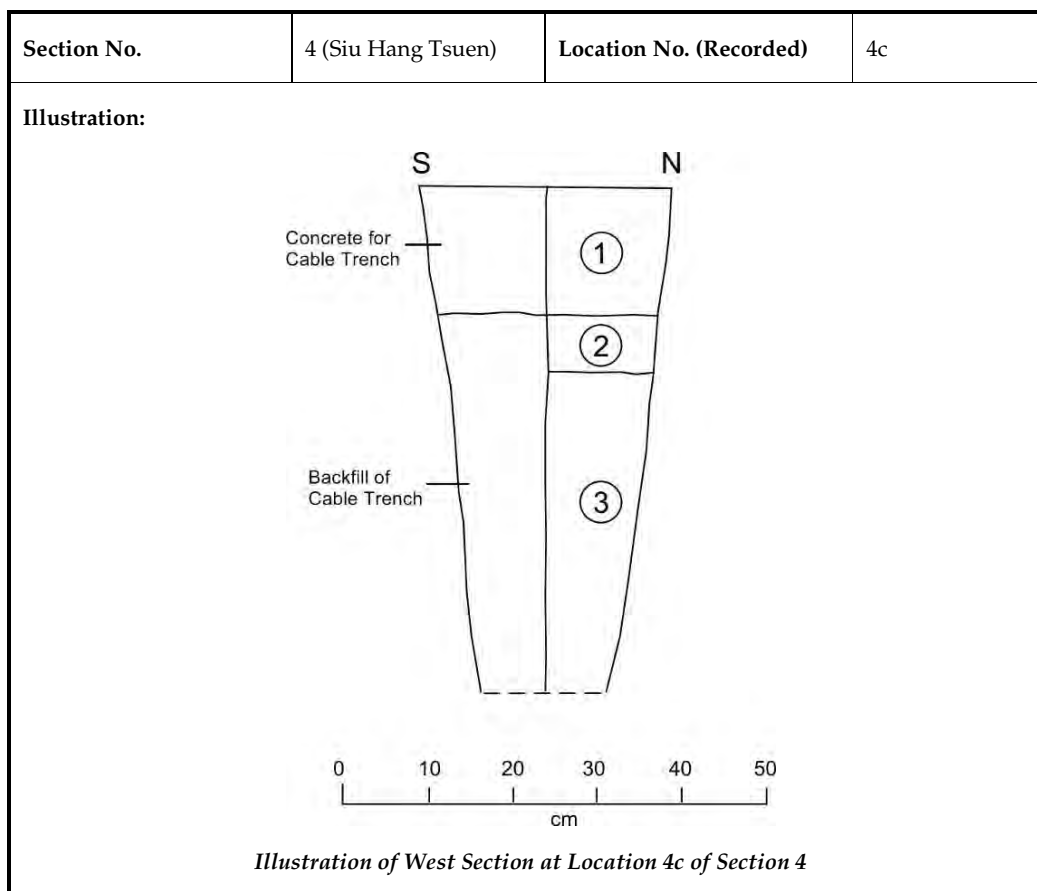
Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4a		
Monitoring Date	20, 21 and 22 February 2012	Reference Figure No. in Annex B	B5		
Monitored Length	approximately 12m				
Excavation Method: This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 12m long, 0.4m wide and 0.45m deep. Findings and discovery: No remains of archaeological significance were identified. Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Loose Greyish Black soil with organic matter	Nil	Modern surface soil	0	12
2	Slight loose greyish brown sandy soil	Nil	Nil	12	25
3	Compact red clayey soil	Nil	Sterile hillside soil	37	>8
* Depth is measured from the ground level to the surface of each layer					



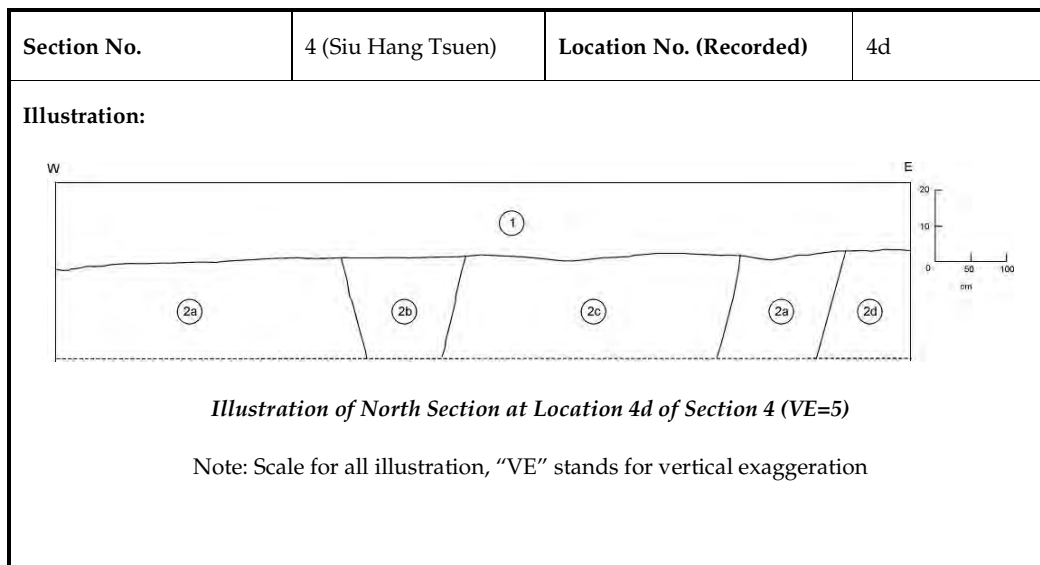
Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4b																		
Monitoring Date	20, 21 and 22 February 2012	Reference Figure No. in Annex B	B5																		
Monitored Length	approximately 11m																				
<p>Excavation Method:</p> <p>This section was excavated by open trench excavation method with a small backhoe excavator and assisted by manual excavation. The trench measured approximately 11m long, 0.4m wide and 0.45m deep.</p> <p>Findings and discovery:</p> <p>No remains of archaeological significance were identified.</p> <p>Stratigraphy:</p> <table border="1"> <thead> <tr> <th>Layer</th><th>Description</th><th>Cultural Remains</th><th>Dating and Interpretation</th><th>Approximate Depth from Ground Level (cm)*</th><th>Thickness (cm)</th></tr> </thead> <tbody> <tr> <td>1</td><td>Concrete</td><td>Nil</td><td>Modern path</td><td>0</td><td>8</td></tr> <tr> <td>2</td><td>Greyish brown soil with orange red hillside soil</td><td>Beer can</td><td>No earlier than 1990</td><td>8</td><td>>37</td></tr> </tbody> </table> <p>* Depth is measured from the ground level to the surface of each layer</p>				Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)	1	Concrete	Nil	Modern path	0	8	2	Greyish brown soil with orange red hillside soil	Beer can	No earlier than 1990	8	>37
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)																
1	Concrete	Nil	Modern path	0	8																
2	Greyish brown soil with orange red hillside soil	Beer can	No earlier than 1990	8	>37																



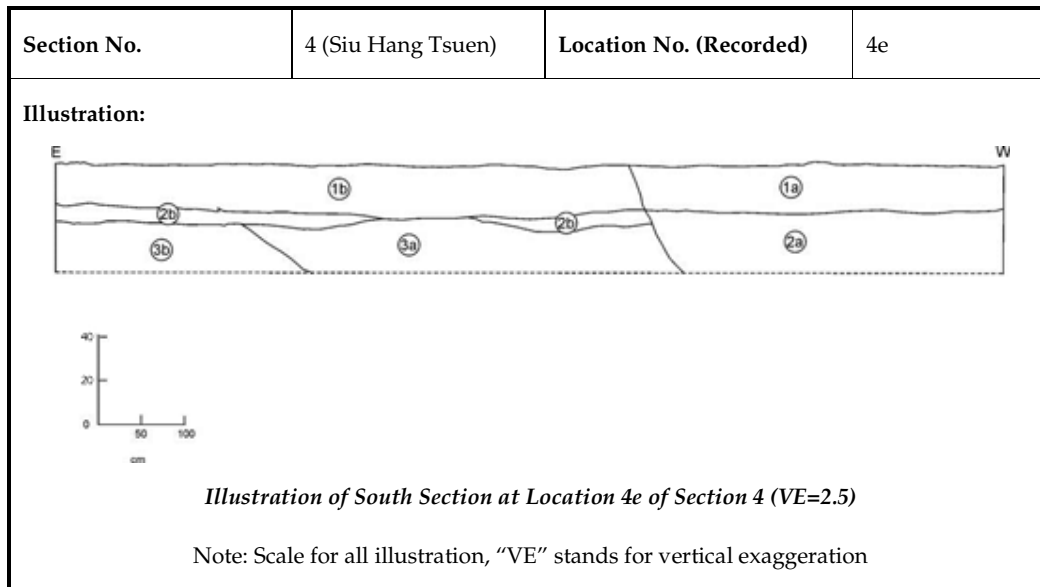
Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4c		
Monitoring Date	20, 21 and 22 February 2012	Reference Figure No.	B5		
Monitored Length	approximately 11m				
Excavation Method: This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 11m long, 0.3m wide and 0.5 - 0.6m deep.					
Findings and discovery: A cable trench is found running along the south side of the trench of 4c. No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
Cable Trench	Concrete and brown backfill, cut into Layer 1, 2 and 3	Nil	Modern	0	>60
1	Concrete	Nil	Modern path	0	15
2	Concrete; loose, comparing with Layer 1	Nil	Modern	15	7
3	Pure brownish yellow soil	Nil	Sterile hillside soil	22	>38
* Depth is measured from the ground level to the surface of each layer					



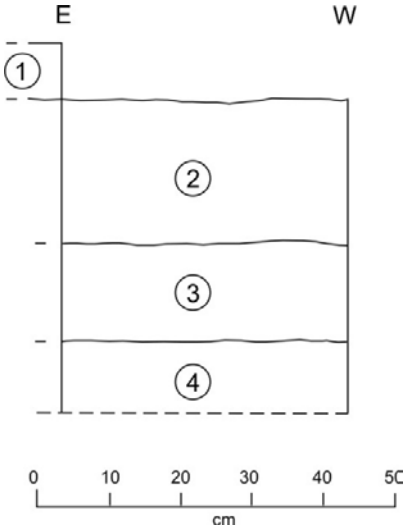
Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4d		
Monitoring Date	21 May 2012	Reference Figure No. in Annex B	B5		
Monitored Length	approximately 12m				
Excavation Method:					
This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 12m long, 0.45m wide and 0.50m deep.					
Findings and discovery:					
Cable was found below Layers 2a, 2b, 2c and 2d. No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern road	0	20-25
2a	Loose yellow sandy soil, with red burnt clay	None	Modern fill	20-25	0-30
2b	Loose black sandy soil, with pebbles	None	Modern fill	20-25	0-30
2c	Hard greyish white sandy soil with greyish white and red sand patches	None	Modern fill	20-25	0-30
2d	Loose brownish grey sandy soil	None	Modern fill	20-25	0-30
* Depth is measured from the ground level to the surface of each layer					



Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4e		
Monitoring Date	21 May 2012	Reference Figure No. in Annex B	B5		
Monitored Length	approximately 11m				
Excavation Method:					
This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 11m long, 0.40m wide and 0.50m deep.					
Findings and discovery:					
No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1a	Loose yellowish brown soil, with pebble	Plastic	Modern surface soil	0	0-22
1b	Concrete, sand and red clayey fill	None	Modern path and fill soil	0	0-25
2a	Loose greyish brown pebble and sand	Plastic	Modern fill	22	0-30
2b	Grey sand	None	Modern fill	20-25	0-10
3a	Loose fill, various color	Plastic	Modern fill	22-30	0-26
3b	Compact black clay	None	None	26-28	0-24
* Depth is measured from the ground level to the surface of each layer					

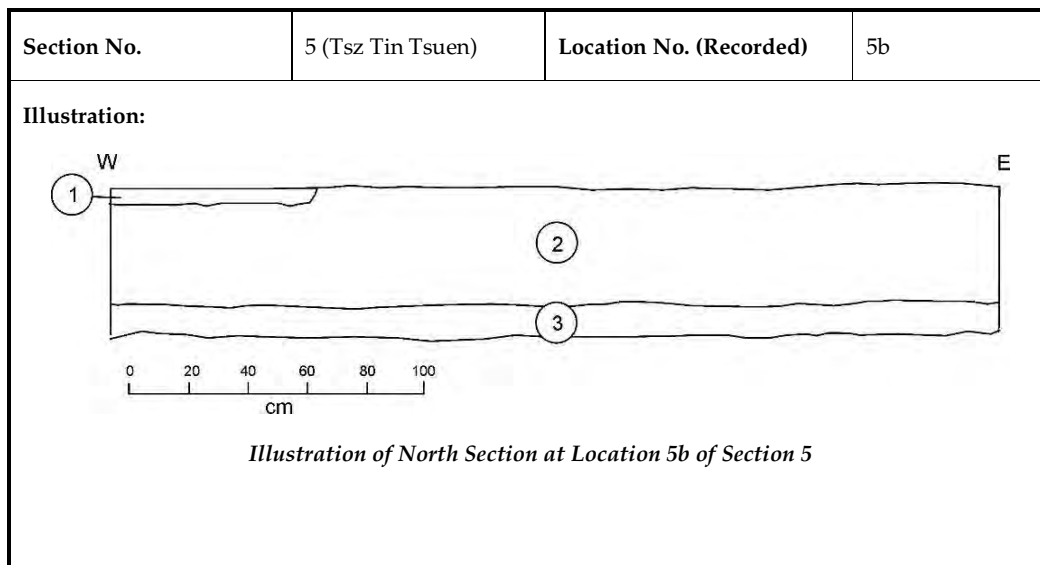


Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4f		
Monitoring Date	20, 21 and 22 February 2012	Reference Figure No. in Annex B	B5		
Monitored Length	approximately 12m				
Excavation Method: This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 12m long, 0.34 – 0.4m wide and 0.5m deep.					
Findings and discovery: Two cultural layers, Layers 3 and 4, were identified and dated to Ming to Qing Dynasties. A total of 8 artefacts were identified in Layer 3, comprising grey tile fragments and red tile fragments. Orange red flat roof tile fragments and porcelains shards were identified in Layer 4.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	Nil	Modern path	0	8
2	Loose black soil	Glass shards and goods packaging	Modern soil surface	8	20
3	Loose and soft greyish yellow clayey soil	Grey tile fragments and red tile fragments	Ming to Qing Dynasties	28	14
4	Loose and soft orange clayey soil	orange red flat roof tile fragments and porcelains shards	Ming to Qing Dynasties	42	>10
* Depth is measured from the ground level to the surface of each layer					

Section No.	4 (Siu Hang Tsuen)	Location No. (Recorded)	4f
<p>Illustration:</p>  <p><i>Partial Illustration of a SouthSection at Location 4f of Section 4</i></p>			

Section 5

Section No.	5 (Tsz Tin Tsuen)	Location No. (Recorded)	5b		
Monitoring Date	15 June 2012	Reference Figure No. in Annex B	B7		
Monitored Length	approximately 3m				
Excavation Method: This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 3m long, 0.6m wide and 0.50m deep. Findings and discovery: Cable was found below Layer 3. No remains of archaeological significance were identified. Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern path	0	0-6
2	Greyish Black sandy soil, with red brick, red tile, reddish brown burnt clay fragments	red brick, red tile, white porcelain, glass fragments	Modern surface soil	0-6	34-40
3	Greyish yellow sandy soil relatively pure	None (cable below this layer)	Modern fill	40	10
* Depth is measured from the ground level to the surface of each layer					



Section No.	5 (Tsz Tin Tsuen)	Location No. (Recorded)	5c
Monitoring Date	15 June 2012	Reference Figure No. in Annex B	B7
Monitored Length	approximately 4m		

Excavation Method:

This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 4m long, 0.40m wide and 0.55m deep.

Findings and discovery:

No remains of archaeological significance were identified.

Stratigraphy:

Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern path	0	25
2	Greyish yellow sandy soil, with small amount of red burnt clay, brick fragments	Red brick building part, greyish black ash	Modern disturbance	25	30

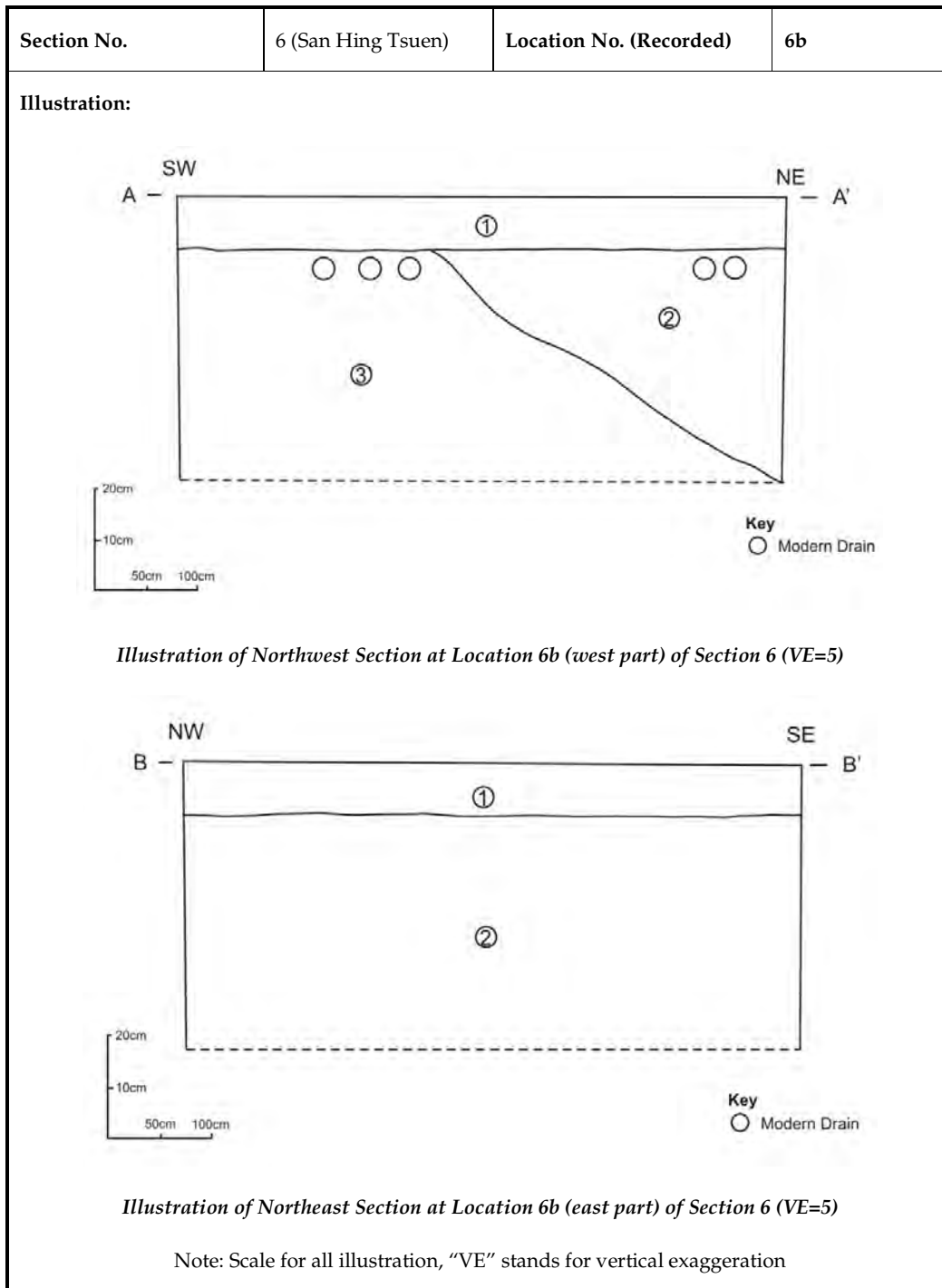
* Depth is measured from the ground level to the surface of each layer

Illustration:

Illustration of East Section at Location 5c of Section 5

Section 6

Section No.	6 (San Hing Tsuen)	Location No. (Recorded)	6b		
Monitoring Date	10 July 2012	Reference Figure No. in Annex B	B8		
Monitored Length	approximately 12m				
Excavation Method:					
This section was excavated by open trench excavation method using small backhoe and manual labours. The trench could be divided into two even parts which totally measured approximately 12m long with 6m of each part, 0.32m wide and 0.55m deep.					
Findings and discovery:					
No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	None	Modern	0	8-10
2	Loose yellow sandy soil with pebbles and plastic sheets	None	Modern fill	8-10	45
3	Black silt soil	None	Modern fill	8-10	45
* Depth is measured from the ground level to the surface of each layer					



Section No.	6 (San Hing Tsuen)	Location No. (Recorded)	6c
Monitoring Date	16 June 2012	Reference Figure No. in Annex B	B8
Monitored Length	approximately 15m		

Excavation Method:

This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 15m long, 0.35m wide and 0.40m deep.

Findings and discovery:

Cable was found below Layer 1. No remains of archaeological significance were identified.

Stratigraphy:

Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Greyish yellow sandy soil, with plant roots	Glass, plastic, porcelain shards	Modern surface soil	0	40

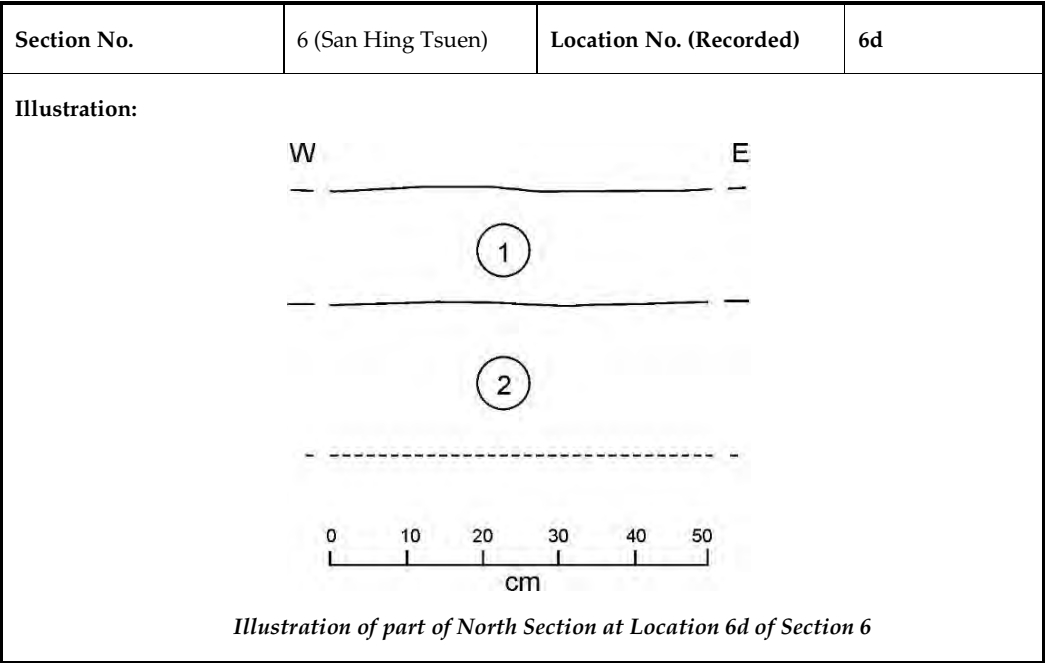
* Depth is measured from the ground level to the surface of each layer

Illustration:

Illustration of Northwest Section at Location 6c of Section 6 (VE=5)

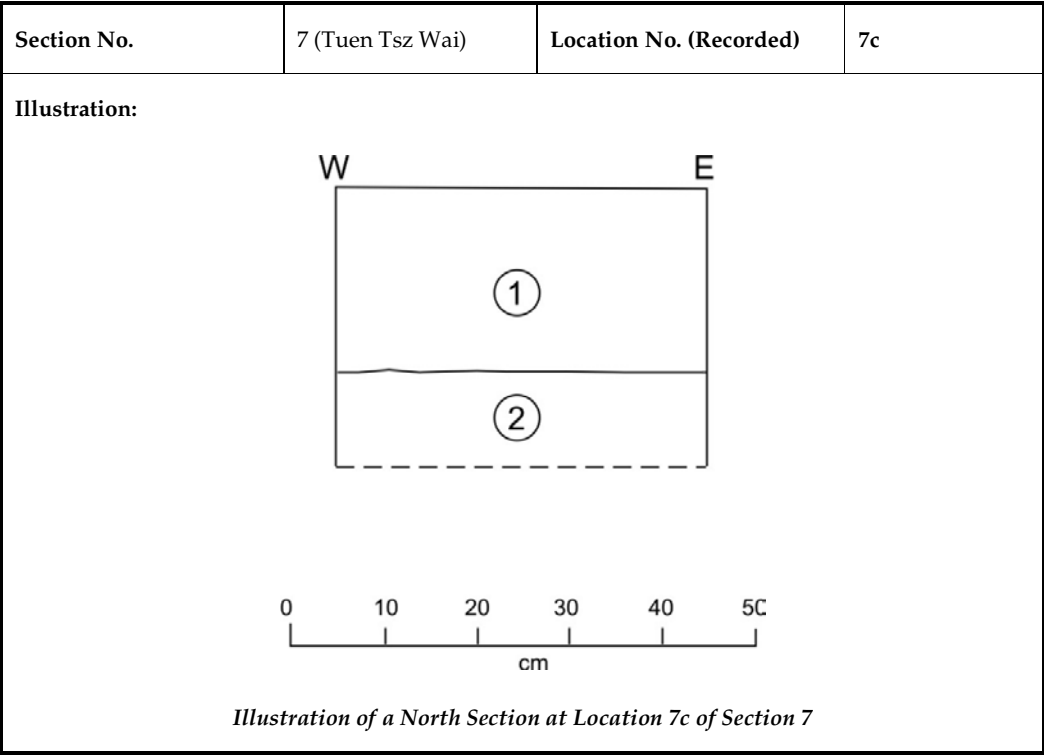
Note: Scale for all illustration, "VE" stands for vertical exaggeration

Section No.	6 (San Hing Tsuen)	Location No. (Recorded)	6d		
Monitoring Date	16 June 2012	Reference Figure No. in Annex B	B8		
Monitored Length	approximately 14m				
Excavation Method:					
This section was excavated by open trench excavation method using small backhoe and manual labours. The trench measured approximately 14m long, 0.60m wide and 0.35m deep.					
Findings and discovery:					
No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Loose greyish black soil with plant roots, pebble	Plastic, red brick fragments	Modern agriculture land	0	15
2	Loose greyish yellow sandy soil, relatively pure	Brick fragments and glass	Modern fill	15	20
* Depth is measured from the ground level to the surface of each layer					

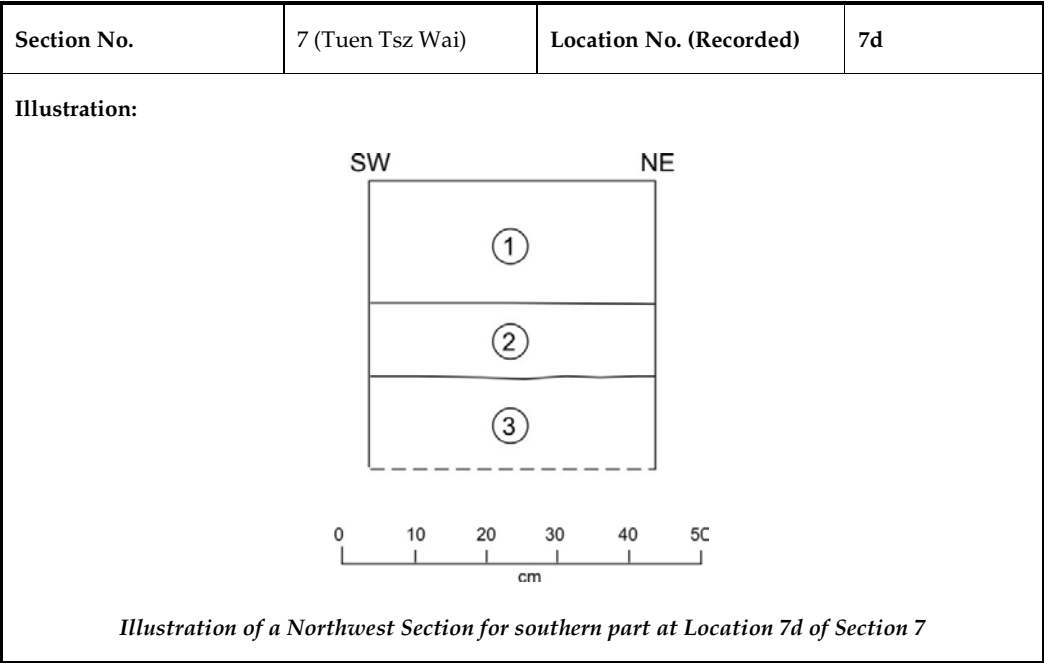


Section 7

Section No.	7 (Tuen Tsz Wai)	Location No. (Recorded)	7c		
Monitoring Date	20 and 21 February 2012	Reference Figure No. in Annex B	B6		
Monitored Length	approximately 13m				
Excavation Method: This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 13m long, 0.4m wide and 0.3m deep. According to the Contractor’s findings, an existing pipe below the proposed trench was identified during the excavation. Therefore, the new water main pipe will be placed on top of the existing pipe.					
Findings and discovery: No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	Nil	Modern path	0	20
2	Orange red soil	Modern refuse	Modern; fill layer	20	>10
* Depth is measured from the ground level to the surface of each layer					

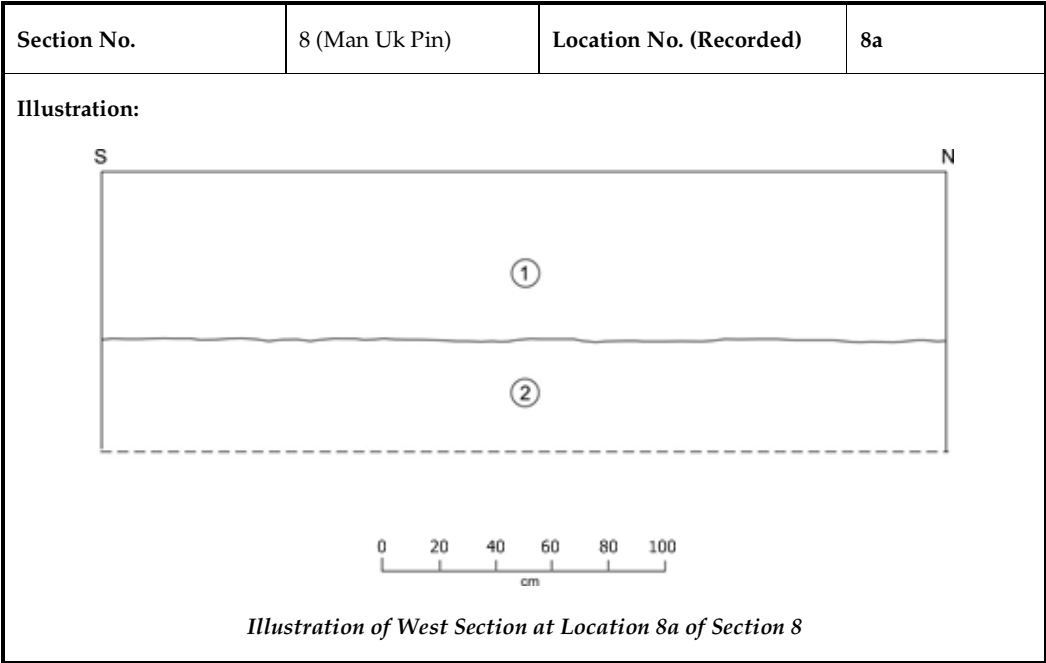


Section No.	7 (Tuen Tsz Wai)	Location No. (Recorded)	7d		
Monitoring Date	20 and 21 February 2012	Reference Figure No. in Annex B	B6		
Monitored Length	Approximately 13m				
Excavation Method:					
This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 13m long, 0.4m wide and 0.4m deep.					
Findings and discovery:					
An existing cable alignment was found located below the southern part of the excavated trench (see <i>Annex D2</i> for photographic record); while an abandoned concrete drainage was found below the northern part of the excavated trench. A modern red brick built north-south oriented drainage was identified in the southern part of the trench below Layer 1 and cut into layer 2. No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete	Nil	Modern path	0	17
Red brick drainage	Red brick built drainage	Nil	Modern drainage	17	23
2	Concrete	Nil	Earlier floor	17	10
3	Well sorted moist grey clayey soil	Plastic packaging for food	Fill layer	27	13
* Depth is measured from the ground level to the surface of each layer					



Section 8

Section No.	8 (Man Uk Pin)	Location No. (Recorded)	8a		
Monitoring Date	4 January 2012	Reference Figure No. in Annex B	B9		
Monitored Length	approximately 3m				
Excavation Method: This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 3m long, 0.4m wide and 1m deep.					
Findings and discovery: No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Concrete, bitumen and fill soil	Nil	Modern Road	0	60
2	greenish grey sandy soil, with coarse and fine sand	Nil	Modern	60	>40
* Depth is measured from the ground level to the surface of each layer					



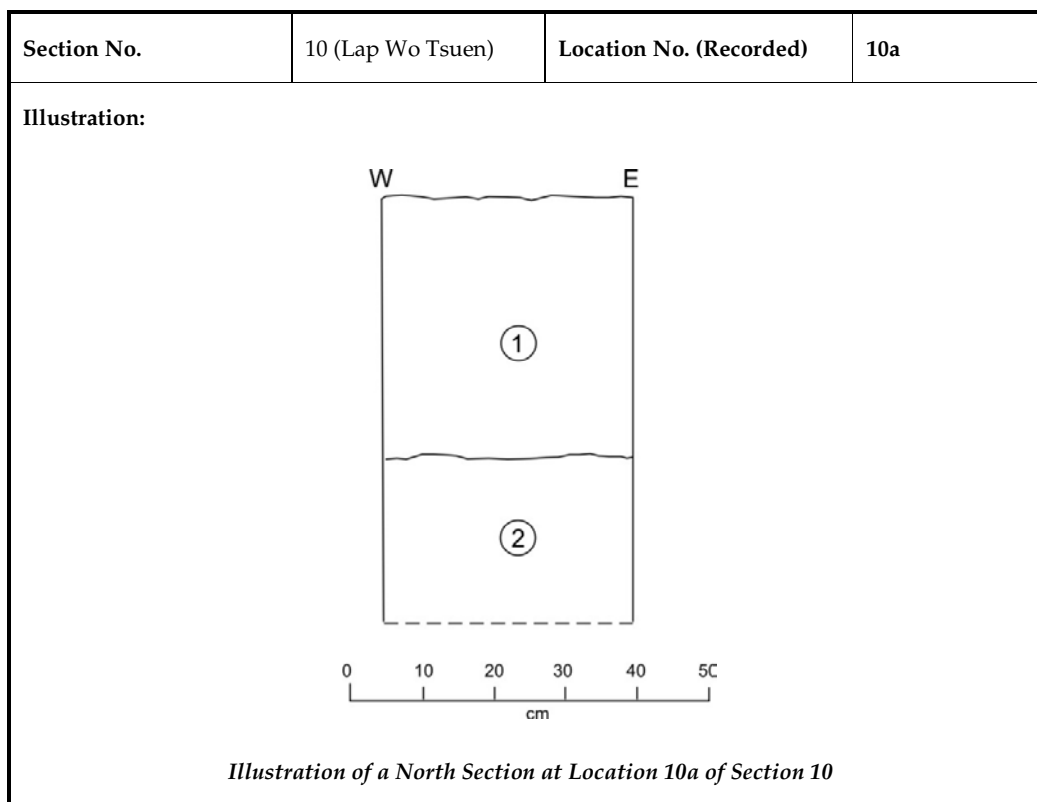
Section 9

Section No.	9 (Wo Tong Kong)	Location No. (Recorded)	9a		
Monitoring Date	3 January 2012	Reference Figure No. in Annex B	B10		
Monitored Length	approximately 8m				
Excavation Method:					
This section was excavated by open trench excavation method using a small backhoe excavator. The trench measured approximately 8m long, 0.35m wide and 0.6m deep.					
Findings and discovery:					
No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Loose grey clay with small quantity of gravels and a lot of plant root	Nil	Modern	0	10
2	Compact hard greyish yellow clay with a lot of gravels and small amount of plant root (only found at the east part of the trench)	Nil	Nil	10	20
3	Pure hard yellow soil, with occasion small patches of red sandy soil and gravels	Nil	Sterile	30	>30
* Depth is measured from the ground level to the surface of each layer					

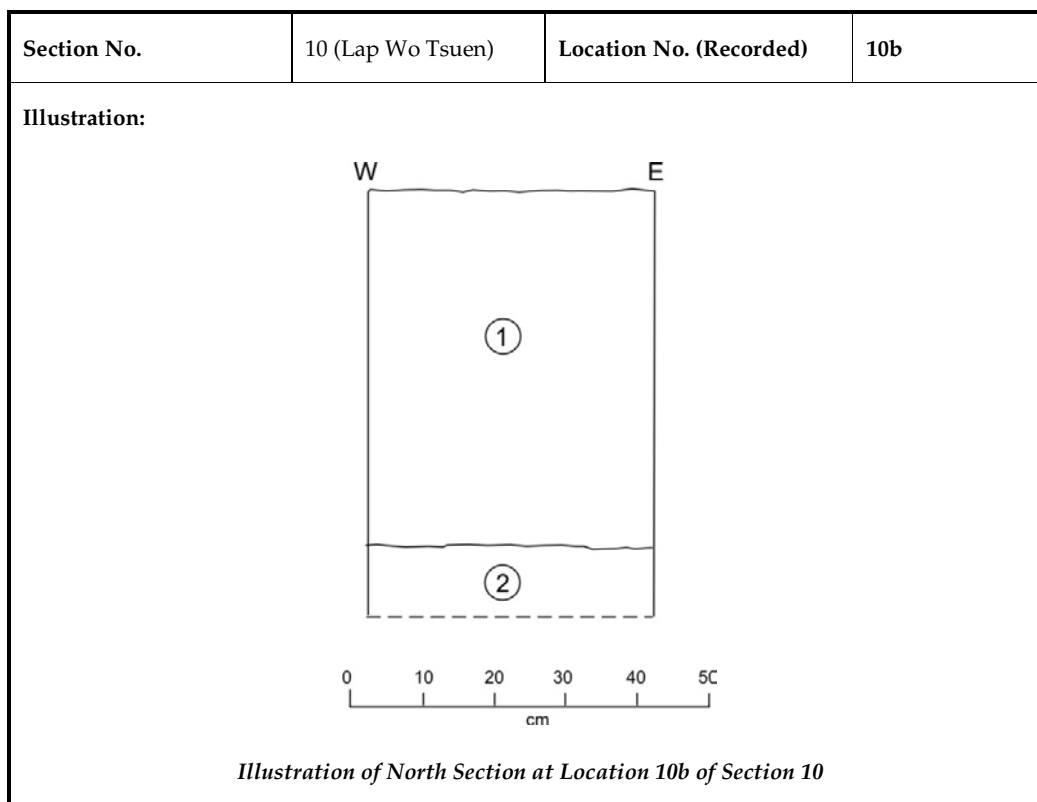


Section 10

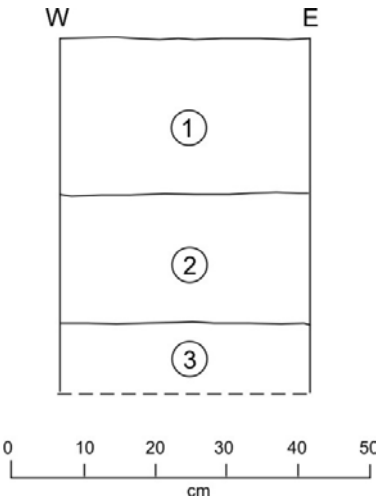
Section No.	10 (Lap Wo Tsuen)	Location No. (Recorded)	10a		
Monitoring Date	3 and 4 January 2012	Reference Figure No. in Annex B	B11		
Monitored Length	approximately 8m				
Excavation Method:					
This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 8m long, 0.35m wide and 0.6m deep.					
Findings and discovery:					
No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Slightly hard and compact grey sandy soil with small quantity of gravels	Nil	Modern	0	37
2	Stone and grey sand	Nil	Nil	37	>23
* Depth is measured from the ground level to the surface of each layer					



Section No.	10 (Lap Wo Tsuen)	Location No. (Recorded)	10b		
Monitoring Date	3 and 4 January 2012	Reference Figure No. in Annex B	B11		
Monitored Length	approximately 8m				
Excavation Method: This section was excavated by open trench excavation method with a small backhoe excavator. The trench measured approximately 8m long, 0.35 - 0.4m wide and 0.6m deep.					
Findings and discovery: A total of 27 artefacts were identified in Layer 1, comprising ceramic shards, glass shards and iron piece. No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Loose sandy soil with a lot of pebbles	ceramic shards, glass shards and iron piece**	Modern	0	50
2	Compact and hard sandy soil (only found at the northern most part)	Nil	Modern	50	>10
* Depth is measured from the ground level to the surface of each layer.					
** Among the findings, only porcelain shards and village ware shards were collected.					

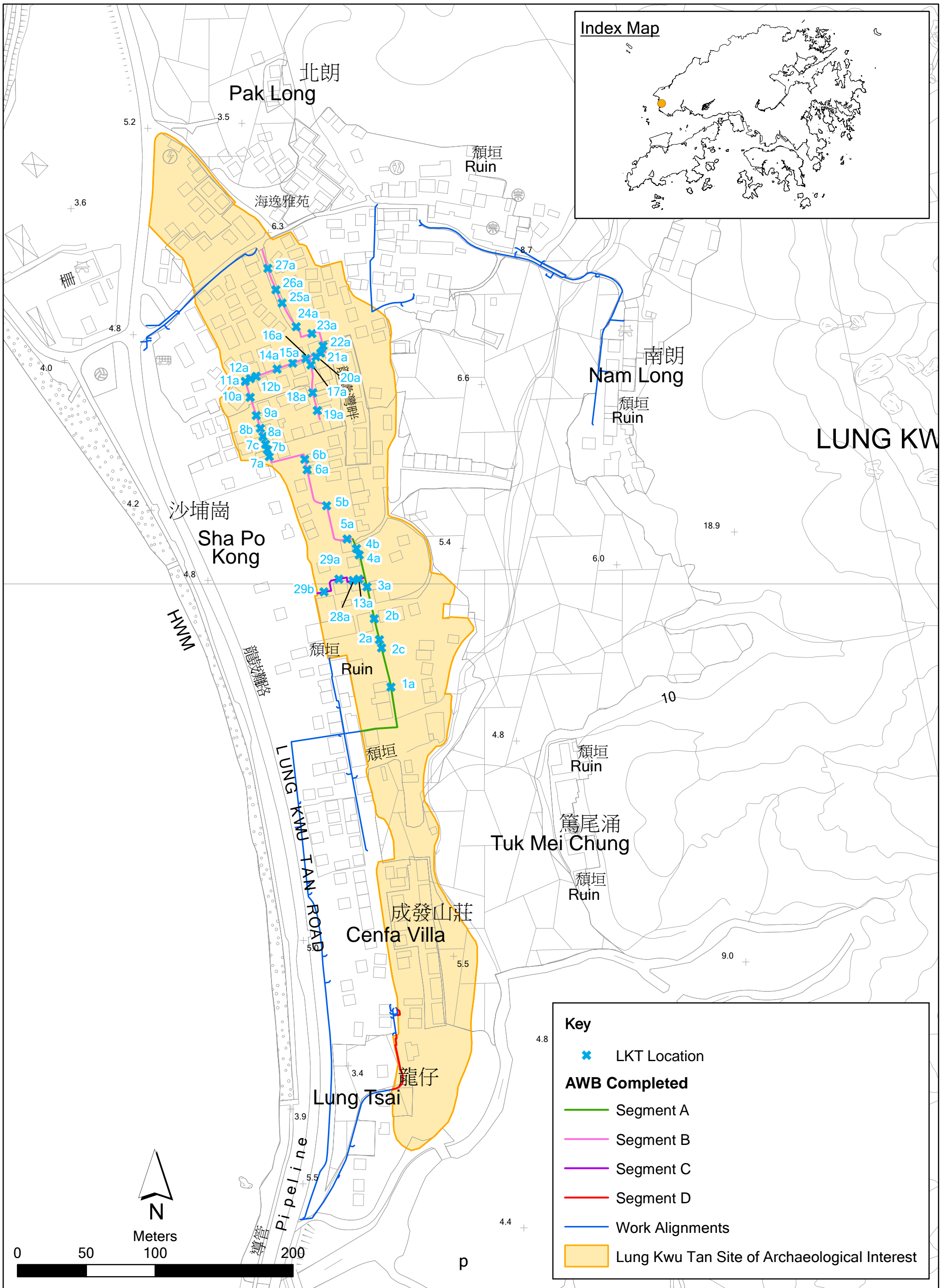


Section No.	10 (Lap Wo Tsuen)	Location No. (Recorded)	10c		
Monitoring Date	3 and 4 January 2012	Reference Figure No. in Annex B	B11		
Monitored Length	approximately 7m				
Excavation Method:					
This section was excavated by open trench excavation method using a small backhoe excavator. The trench measured approximately 7m long, 0.35m wide and 0.5m deep.					
Findings and discovery:					
A lot of daily refuse and small amount of red bricks were identified (see <i>Annex D2</i> for photographic record) in Layer 1; while two pieces of iron sheet were identified in Layer 2. No remains of archaeological significance were identified.					
Stratigraphy:					
Layer	Description	Cultural Remains	Dating and Interpretation	Approximate Depth from Ground Level (cm)*	Thickness (cm)
1	Loose grey soil with stones and plant root	A lot of daily refuse and small amount of red bricks	Modern	0	22
2	Compact and hard grey sandy soil with small amount of gravels	Two pieces of iron sheet	Modern	22	18
3	Yellow decomposed bedrock	Nil	Sterile	40	>10
* Depth is measured from the ground level to the surface of each layer					

Section No.	10 (Lap Wo Tsuen)	Location No. (Recorded)	10c
<p>Illustration:</p>  <p><i>Illustration of a North Section at Location 10c of Section 10</i></p>			

Annex D1

Photographic Records –
Full Coverage Approach
AWB at Lung Kwu Tan



Site Photos of Location LKT-1a



**(1) General view of the trench
(view to North)**



**(2) Excavation in-progress
(view to North)**



(3) West section of the trench

Site Photos of Location LKT-2a



**(1) General view of the trench
(view to North)**



(2) East section of the trench

Site Photos of Location LKT-2b



(1) West section of the trench



**(2) General view of the trench
(view to North)**

Site Photos of Location LKT-2c



**(1) Shells
(view to West)**

Site Photos of Location LKT-3a

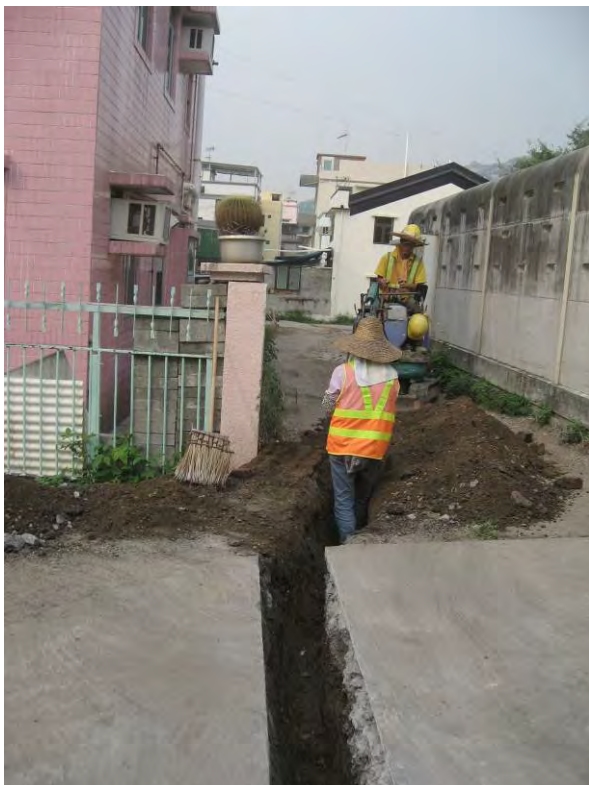


**(1) Excavation in-progress
(view to North)**



(2) West section of the trench

Site Photos of Location LKT- 4a



**(1) Excavation in-progress
(view to North)**



**(2) General view of the abandoned brick well
(view to North)**

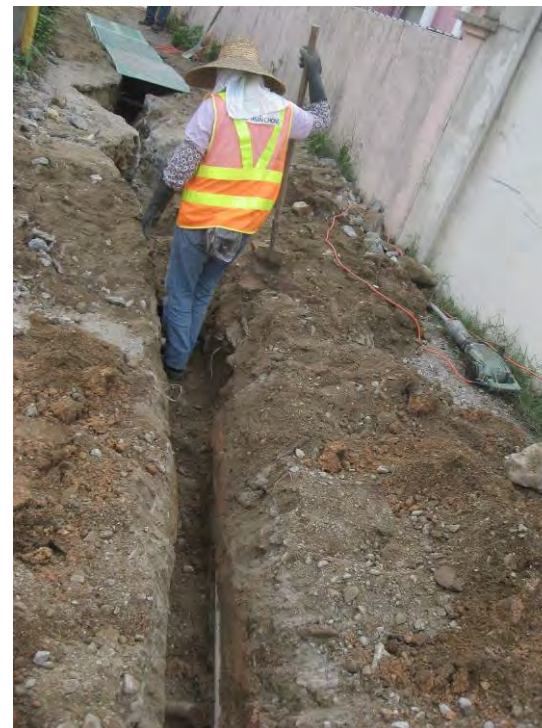


**(3) Interior of the abandoned well
(view to North)**

Site Photos of Location LKT- 4b



(1) West section of the trench



**(2) General view of the trench
(view to South)**

Site Photos of Location LKT- 5a



**(1) Excavation in-progress
(view to West)**

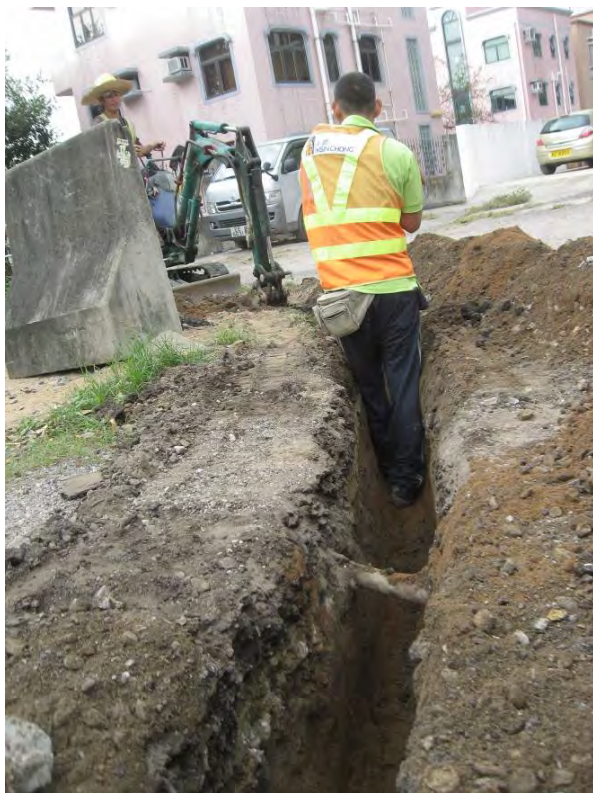


**(2) Excavation in-progress
(view to North)**



(3) West section of the trench

Site Photos of Location LKT- 5b



**(1) Excavation in-progress
(view to Northwest)**



**(2) General view of the trench
(view to Northwest)**



(3) West section of the trench

Site Photos of Location LKT- 6a



**(1) Excavation in-progress
(view to Northwest)**



**(2) General view of the trench
(view to Northwest)**



(3) West section of the trench

Site Photos of Location LKT- 6b



**(1) Excavation in-progress
(view to West)**



(2) Findings



**(3) General view of ground surface sampling area
(view to North)**

Site Photos of Location LKT- 7a



**(1) Excavation in-progress
(view to North)**



**(2) General view of the trench
(view to North)**



(3) Southwest section of the trench

Site Photos of Location LKT-7b



**(1) Covered sewer
(view to North)**



**(2) Covered sewer
(view to North)**

Site Photos of Location LKT-7c



**(1) General view of the trench
(view to North)**



(2) East section of the trench

Site Photos of Location LKT-8a



**(1) Concrete stairs
(view to North)**

Site Photos of Location LKT-8b

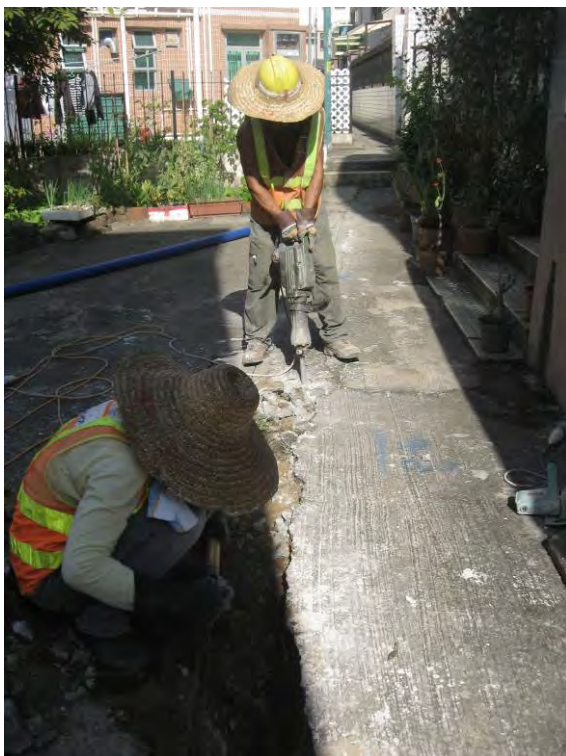


**(1) General view of the trench
(view to North)**



(2) West section of the trench

Site Photos of Location LKT-9a



**(1) Excavation in-progress
(view to North)**



**(2) General view of the trench
(view to North)**



(3) West section of the trench

Site Photos of Location LKT-10a



**(1) Excavation in-progress
(view to North)**



**(2) General view of the trench
(view to North)**



(3) East section of the trench

Site Photos of Location LKT-11a



**(1) General view of the trench
(view to North)**



**(2) Excavation in-progress
(view to East)**



(3) North section of the trench

Site Photos of Location LKT-12a



**(1) Concrete stairs
(view to East)**

Site Photos of Location LKT-12b



**(1) Excavation in-progress
(view to East)**



**(2) General view of the trench
(view to East)**



(3) North section of the trench

Site Photos of Location LKT-13a



**(1) Excavation in-progress
(view to West)**



**(2) General view of the trench
(view to West)**



(3) North section of the trench

Site Photos of Location LKT-14a



**(1) Excavation in-progress
(view to East)**



**(2) General view of the trench
(view to East)**



(3) North section of the trench

Site Photos of Location LKT-15a

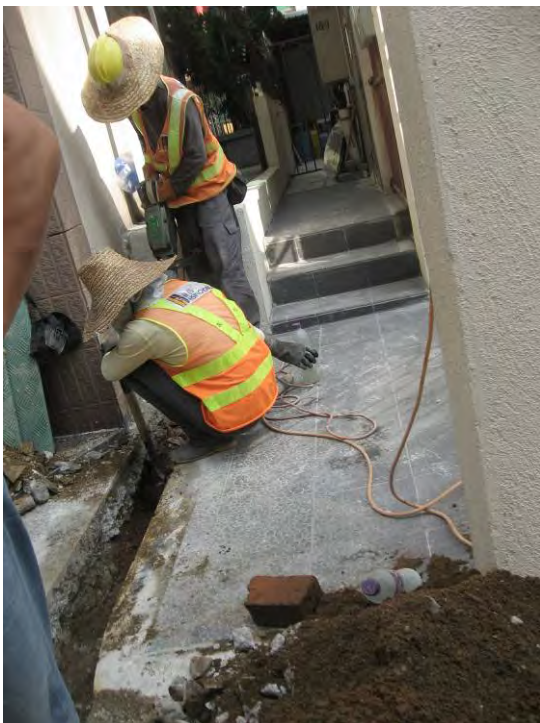


**(1) General view of Location LKT-15a
(view to East)**



(2) North section of the trench

Site Photos of Location LKT-16a



**(1) Excavation in-progress
(view to East)**



**(2) General view of the trench
(view to East)**



(3) North section of the trench

Site Photos of Location LKT-17a



**(1) General view of the trench
(view to South)**



(2) East section of the trench

Site Photos of Location LKT-18a



**(1) Excavation in-progress
(view to South)**



**(2) General view of the trench
(view to South)**



(3) West section of the trench

Site Photos of Location LKT-19a



**(1) Excavation in-progress
(view to West)**



(2) West section of the trench



(3) Archaeological Remains found in Section 19

Site Photos of Location LKT-20a



**(1) General view of the trench
(view to East)**



**(2) Excavation in-progress
(view to East)**



(3) North section of the trench

Site Photos of Location LKT-21a



**(1) Excavation in-progress
(view to East)**



(2) North section of the trench

Site Photos of Location LKT-22a



**(1) General view of the trench
(view to North)**

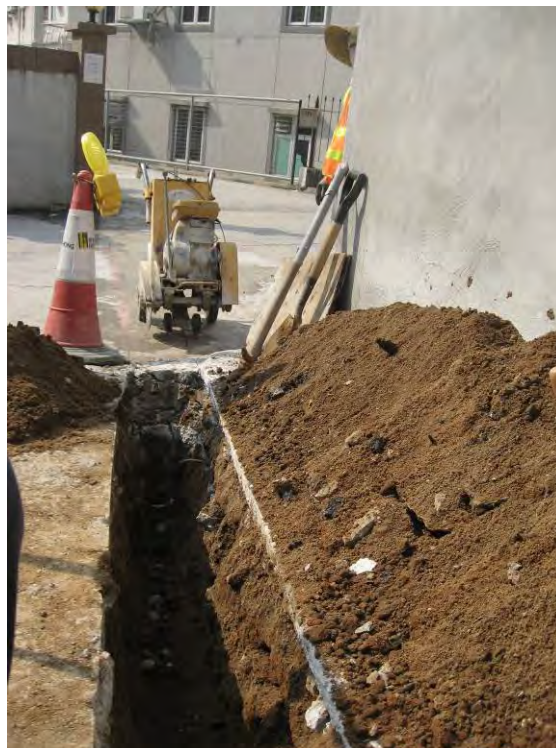


(2) West section of the trench

Site Photos of Location LKT-23a



**(1) Excavation in-progress
(view to West)**



**(2) General view of the trench
(view to West)**



(3) North section of the trench

Site Photos of Location LKT-24a



**(1) Excavation in-progress
(view to North)**



**(2) General view of the trench
(view to North)**



(3) West section of the trench

Site Photos of Location LKT-25a



**(1) Excavation in-progress
(view to North)**



(2) East section of the trench



(3) Findings

Site Photos of Location LKT-26a



**(1) Excavation in-progress
(view to North)**



(2) West section of the trench



(3) Findings

Site Photos of Location LKT-27a



**(1) Excavation in-progress
(view to North)**



(2) West section of the trench



(3) Findings

Site Photos of Location LKT-28a



**(1) General view of the trench
(view to West)**



(2) North section of the trench



(3) Findings

Site Photos of Location LKT-29a



**(1) General view of the trench
(view to West)**



(2) South section of the trench

Site Photos of Location LKT-29b



**(1) Excavation in-progress
(view to West)**



(2) South section of the trench



(3) Findings of Location LKT-29a and 29b

Site Photos of the Segment D (Lung Tsai)



(1) General view of North part of the trench (view to North)



(2) West section of southern part of the trench



(3) General view of middle part of the trench (view to South)

Annex D2

Photographic Records –
Selective and Sampling
Approach AWB at Tuen
Mun North and Sha Tau
Kok Areas

Site Photos of Location 1a



(1) Excavation in-progress



**(2) General view of the trench
(view to North)**



(3) West section of the trench

Site Photos of Location 1b



(1) Excavation in-progress



**(2) General view of the trench
(view to South)**



(3) Middle part of West section

Site Photos of Location 2a



(1) General view around Location 2a



(2) Excavation in-progress



(3) West section of the trench

Site Photos of Location 2b



**(1) Location 2b after excavation
(view to East)**



(2) H1 on the North section



**(3) Blue-and-White porcelain shards unearthed from
H1**

Site Photos of Location 3a



(1) Excavation in-progress



**(2) General view of the trench
(view to Southeast)**



**(3) Shards identified in Layer 3
(Scale: 5cm per section)**

Site Photos of Location 3b



(1) Excavation in-progress



**(2) General view of the trench
(view to North)**



(3) Middle part of Northeast section

Site Photos of Location 3c



(1) General view of the trench



(2) Southwest end of the Northwest section



(3) Northeast end of the Northwest section

Site Photos of Location 3d



(1) General view of the trench (view to west)



(2) West end of the North section



(3) East end of the North section

Site Photos of Location 3e



(1) Excavation in-progress



**(2) General view of the trench
(view to West)**



(3) East end of the North section

Site Photos of Location 4a



(1) General view around Location 4a



(2) Trench after excavation (view to Southwest)



(3) Stratigraphy of Northwest section

Site Photos of Location 4b



(1) Excavation in-progress



(2) Beer can unearthed from Layer 2



(3) Trench after excavation (view to Southwest)

Site Photos of Location 4c



(1) General view around Location 4c



(2) Northwest section of the trench



(3) Trench after excavation (view to Northwest)

Site Photos of Location 4d



(1) Archaeologist conducting recording



**(2) General view of the trench
(view to North)**



(3) South end of the West section

Site Photos of Location 4e



(1) Excavation in-progress



**(2) General view of the trench
(view to East)**



(3) Part of South section

Site Photos of Location 4f



(1) General view around Location 4f



(2) Stratigraphy of East section



(3) Porcelain shards unearthed from Layer 4

Site Photos of Location 5b



**(1) General view of the trench
(view to East)**



(2) West end of North Section



(3) East end of North Section

Site Photos of Location 5c



(1) Archaeologist conducting recording



**(2) General view of the trench
(view to North)**



(3) Red brick building material dump

Site Photos of Location 6b



(1) General view of the trench (view to Northeast)



(2) Middle of the Northwest section



(3) General view of the trench (view to Northwest)

Site Photos of Location 6c



(1) General environment of Location 6c



(2) South end of West section



(3) North end of West Section

Site Photos of Location 6d



**(1) General view of the trench
(view to North)**



(2) West end of North Section



(3) East end of North Section

Site Photos of Location 7c



(1) Trench after excavation (view to North)



(2) Trench after excavation (view to South)



(3) Stratigraphy of West section

Site Photos of Location 7d



(1) Existing cable in the excavated trench



(2) Trench (southern part) after excavation (view to North)



(3) Trench (northern part) after excavation (view to North)

Site Photos of Location 8a



(1) Excavation in-progress



(2) Trench after excavation (view to Northwest)



(3) General View of the Excavated Soil

Site Photos of Location 9a



(1) Excavation in-progress



(2) Trench after excavation (view to West)



(3) Stratigraphy of South section

Site Photos of Location 10a



(1) Excavation in-progress



(2) Trench after excavation (view to North)



(3) Stratigraphy of West section

Site Photos of Location 10b



(1) Excavation in-progress



(2) Trench after excavation (view to South)



(3) Stratigraphy of West section

Site Photos of Location 10c



(1) A lot of daily refuse and small amount of red bricks were identified



(2) Trench after excavation (view to North)



(3) Stratigraphy of East section

Annex E1

List of Finds –
Full Coverage Approach
AWB at Lung Kwu Tan

List of Special Finds

SF Number	Location	Stratigraphy	Name	Quantity (pcs)
LKT20126SSF1	6	Surface collection	One piece of earthen ware shard impressed with geometric pattern dated to Late Neolithic period	1
LKT201219L3S F1	19b	Layer 3	Three pieces of coarse pottery shards impressed with geometric pattern dated to Late Neolithic period	3
LKT201219L3S F1	19b	Layer 4	Seven pieces of earthen ware shards impressed with geometric pattern dated to Late Neolithic period	7
Total:				11

List of General Finds

Section	Bag	Location	Stratigraphy	Material					
				Porcelain	Village ware	Tiles	Bones	Coins	Others
LKT2012	1	2	Layer 2	1	4				
LKT2012	1	5	Layer 2		4				
LKT2012	1	6	Surface collection		1				
LKT2012	1	6b	Layer 2	1	4				
LKT2012	1	9	Layer 4		1				
LKT2012	1	10	Layer 2		1				
LKT2012	1	13	Layer 2		2				
LKT2012	1	14	Layer 2	2	3				
LKT2012	1	16	Layer 3		4				
LKT2012	1	17	Layer 3	4	3				
LKT2012	1	18	Layer 2	1	7				
LKT2012	1	19b	Layer 3		4		2		
LKT2012	1	19b	Layer 4		16				
LKT2012	1	20	Layer 2	2	1				
LKT2012	1	23	Layer 3		2				
LKT2012	1	24	Layer 2		4				
LKT2012	1	25	Layer 2	11	39		1		
LKT2012	1	26	Layer 2	1	4			1	
LKT2012	1	26	Layer 3	14	32				
LKT2012	1	27	Layer 2	4	41				
LKT2012	1	28	Layer 3	2	7				
LKT2012	1	29	Layer 1	2	7				
LKT2012	1	29	Layer 3	3	15				
Total:				48	206	0	3	1	0

Annex E2

List of Finds –
Selective and Sampling
Approach AWB at Tuen
Mun North and Sha Tau
Kok Areas

List of Special Finds

SF Number	Location	Stratigraphy	Name	Quantity (pcs)
TMNWK2011	2b	H1	Seven pieces of blue and white porcelain shards which are products of Tai Po Wun Yiu Kiln probably dated to the Late Ming to Qing Dynasties	7
Total:				7

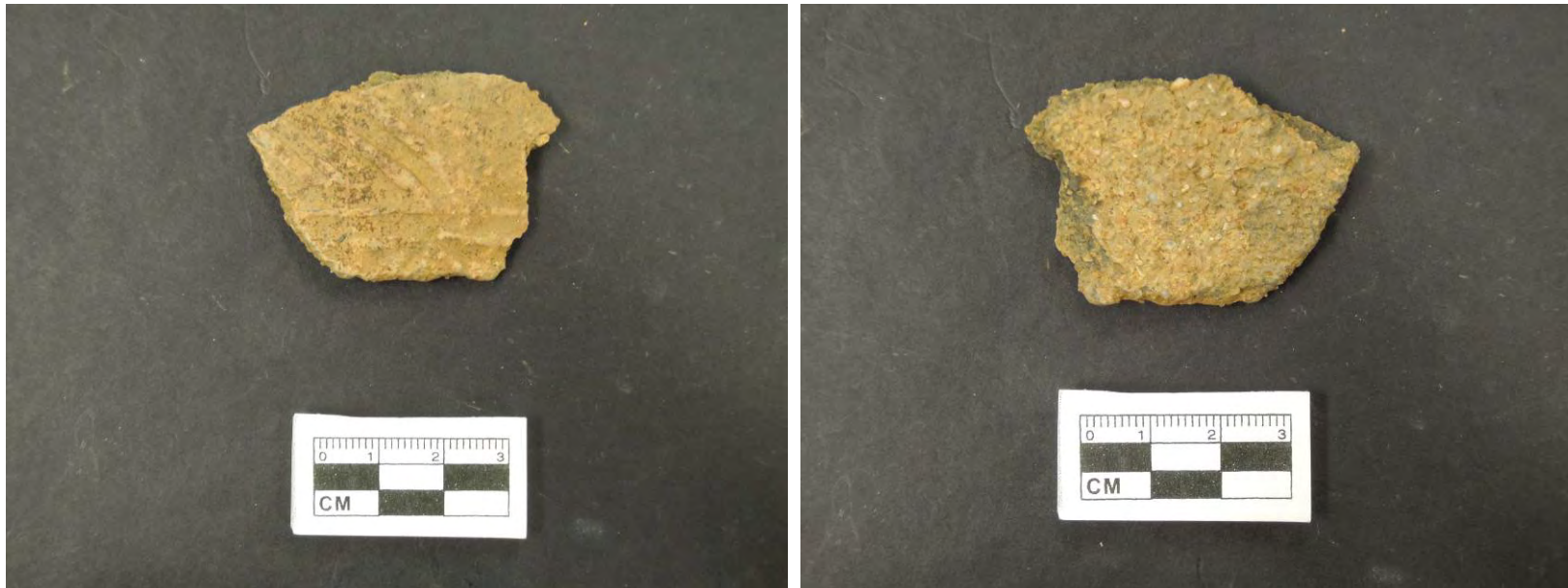
List of General Finds

Section	Bag	Location	Stratigraphy	Material					
				Porcelain	Village ware	Tiles	Bones	Coins	Others
TMNWK2011	1	2b	H1		3				
TMNWK2011	2	2b	H1						3 fragments of burnt soil
TMNWK2011	3	2b	H1		2	2			
TMNWK2011	4	2b	H1		8				
TMSIU2011	1	4f	Layer 3	1	1				
TMSIU2011	2	4f	Layer 4		4				
TMSIU2011	3	4f	Layer 4	2					
TMKLWII2011	1	5b	Layer 2	1	1				
NSKT2011	1	10b	Layer 1	5	12				
Total:				9	31	2	0	0	3

Annex F1

Photos of Special Finds and
Selected General Finds -
Full Coverage Approach
AWB at Lung Kwu Tan

SF No.: LKT20126SSF1



One piece of coarse pottery shard impressed with geometric pattern dated to Late Neolithic period was collected at the surface layer of location LKT-6.

SF No.: LKT201219L3SF1



Three pieces of coarse pottery shards impressed with geometric pattern were unearthed at Layer 3 of location LKT-19. The pieces in the middle and on the right are impressed with angular pattern, but the type of geometric pattern of piece on the left is unidentified. They are dated to Late Neolithic period.

SF No.: LKT201219L4SF1



Seven pieces of coarse pottery shards were unearthed at Layer 4 of location LKT-19. Shard No 1 is impressed with striated pattern. Shards No 2 and 5 are impressed with net pattern. Shards No 3, 4 and 7 are impressed with angular pattern. Shard No 6 has two variations on the geometric pattern, which one of the patterns is impressed interlocking square spirals and the other one unidentified. They are dated to Late Neolithic period.

Example of combination of finds within one bag of GF



LKT201225L2GF1: including tiles, blue and white porcelain shards, white porcelain shards, brownish glazed pottery shard.



LKT201225L2GF1: including pottery shards, tile shards, modern white porcelain shards and HKD 10 cents.



LKT201220L2GF1: including a leg of a pottery, modern blue and white porcelain shards and modern polychrome porcelain.

Typical Porcelain Shards



LKT201217L3GF1: Celadon shards



LKT20122L2GF1: blue and white porcelain bowl bottom on the left

LKT201217L3GF1: blue and white porcelain shards on the right



LKT201226L3GF1: Celadon bottom on the left, blue and white porcelain bottom on the right.

Typical pottery shards



LKT201214L2GF1



LKT20125L2GF1



LKT20126bL2GF1



LKT20126bL2GF1



LKT201219L4GF1: earthen ware-like shards

Bones



LKT201219L3GF1: two pieces of bones on the right

LKT201225L2GF1: circular bone on the left

Annex F2

Photos of Special Finds and
Selected General Finds -
Selective and Sampling
Approach AWB at Tuen
Mun North and Sha Tau
Kok Areas

SF No.: TMNWK20112bH1SF1



Seven pieces of blue and white porcelain shards unearthed at H1 of AWB Location 2b, which are products of Tai Po Wun Yiu Kiln probably dated to the Late-Ming to Qing Dynasties.



TMNWK20112bH1GF3 and GF4: village wares



TMNWK20112bH1GF3: tiles



TMNWK20112bH1GF1



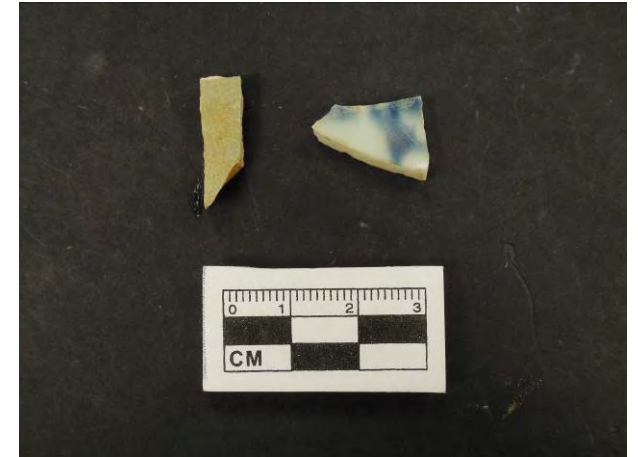
TMNWK20112bH1GF2: Unidentified pieces



TMSIU20114fL3GF1



TMSIU20114fL4GF2



TMSIU20114fL4GF3



TMKLWII20115bL2GF1



NSKT201110bL1GF1: porcelain



NSKT201110bL1GF1: village ware