MTR Corporation Limited

Tung Chung Line Extension

Archaeological Report

(Condition 2.23 of EP-614/2022)

Verified by: James Choi

Position: Independent Environmental Checker

Date: 19 May 2023

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Tung Chung Line Extension

Archaeological Report

(Condition 2.23 of EP-614/2022)

Certified by: Edan Li

Position: Environmental Team Leader

Date: 19 May 2023

Archaeological Field Investigation for Environmental Consultancy No. C1202 Environmental Impact Assessment Study for Tung Chung Line Extension

Final Report

Archaeological Assessments Ltd.

March 2023

LICENCE TO EXCAVATE AND SEARCH FOR ANTIQUITIES

Licence Nos. 458 and 461

TITLE OF THE REPORT

Archaeological Field Investigation for Environmental Consultancy No. C1202, Environmental Impact Assessment Study for Tung Chung Line Extension

PREPARED BY

Archaeological Assessments Ltd.

AUTHORIZED SIGNATURE AND SEAL

For and on behalf of
ARCHAEOLOGICAL ASSESSMENTS LIMITED
博古通有限公司

Authorized Signature(s)

DATE

Version 3. March 2023

Executive Summary

As part of the Environmental Consultancy No. C1202, Environmental Impact Assessment Study for Tung Chung Line Extension, an archaeological field investigation was undertaken as part of the Archaeological Impact Assessment (AIA) under the Cultural Heritage Impact Assessment (CHIA) in order to obtain the necessary information needed to adequately assess the potential impacts.

Archaeological Assessments Limited (AAL) was appointed on 30 August 2020 by Ove Arup and Partners HK Limited to carry out the Archaeological Investigation. The initial fieldwork was undertaken between 15 and 26 March 2021 and the second field work on 1 and 2 September 2022.

A total of ten test pit excavations, a field scan and forty-six auger tests were conducted within the Licence Area on accessible Government Land and private land with permission of owner. No *in situ* pre-Qing cultural layers were identified. Redeposited materials including a prehistoric stone adze fragment, a prehistoric pebble tool, three Song celadon sherds, 1 possible Bronze Age sherd and 2 possible Tang dynasty sherds were found in upper disturbed layers.

The Archaeological Field Investigation Report includes the survey under Licence No.458 and No.461. The results indicate that the archaeological potential within the proposed TCW Station is limited to redeposited materials and there is no evidence for Tang/Song dynasty kilns at the northern part of the Licence Area. Antiquities and Monuments Office, however, should be informed immediately in case of discoveries of antiquities or supposed antiquities in the course of works.

行政摘要

作為《環評諮詢編號C1202 東涌綫延綫環境評估研究》的組成部分，在其文化遺產影響評估之下的考古影響評估環節中，因應需要進行了一項考古田野調查，以便獲取充分評估潛在影響的必要資料。

考古通有限公司（AAL）於 2020 年 8 月 30 日受奧雅納工程顧問香港有限公司委任，執行是項考古調查。田野工作於 2021 年 3 月 15 日至 26 日期間首次進行，其後又在 2022 年 9 月 1 日至 9 月 2 日之間二次進行。

在牌照區域內可進入的政府土地以及獲得允許的私人土地範圍中，總共進行了十個探方測試，一項地表調查，以及四十六個鑽孔測試。調查並未發現早於清代的原生文化層。在上層擾亂地層中發現了二次堆積的文物，包括：一件史前石錛殘件、一枚史前卵石工具、三片宋代青瓷碎片、一片疑似青銅時代陶片，以及兩片疑似唐代陶片。

此項考古田野調查報告包含根據第 458 號和第 461 號考古牌照進行的調查。調查結果表明，擬議中的東涌西站內的考古潛力僅限於二次堆積遺存，並且，在牌照範圍北部區域沒有發現唐/宋代窯址存在的證據。但是，如施工過程中發現了古物或假定古物，應立即通知古物古蹟辦事處。

Contents

1. INTRODUCTION

1.1 Background

1.1.1 As part of the *Environmental Consultancy No. C1202, Environmental Impact Assessment Study for Tung Chung Line Extension*, an archaeological field investigation was undertaken as part of the Archaeological Impact Assessment (AIA) under Cultural Heritage Impact Assessment (CHIA) of the Environmental Impact Assessment (EIA) study in order to obtain the necessary information needed to adequately assess the potential impacts. Further archaeological field investigation was conducted to complete the remaining archaeological work as recommended by EIA Report on Tung Chung Line Extension ("EIA Report") with recommendation of mitigation measures if necessary.

1.1.2 The EIA Report for Tung Chung Line Extension (AEIAR-235/2022) was approved on 12 July 2022; the EIA recommended further investigation at the inaccessible area located at the extreme north end of the Proposal Tung Chung West (TCW) Station. Subsequently, an Environmental Permit (EP, EP-614/2022) for this project was issued on 9 August 2022. According to Clause 2.23 of the EP, further archaeological testing at the inaccessible area located at the extreme north end of the Proposal Tung Chung West (TCW) Station is required upon granting of site access.

1.1.3 In a further fieldwork stage, access to private land at the northern end of proposed TCW Station was gained and archaeological investigation was undertaken under Licence No. 461. The current report includes all findings within the proposed TCW Station and concludes the archaeological impact assessment for the entire Station impact area.

1.1.4 Archaeological Assessments Limited (AAL) was appointed to undertake both field investigation and assessment. The initial Archaeological Field Survey and Assessment was undertaken by Ms. Kennis Yip under Licence No. 458 between 15 and 26 March 2021, and Ms. Julie Van Den Bergh conducted the final works under Licence No. 461 on 1 and 2 September 2022.

1.2 Aims and objectives of AI

1.2.1 The aim of the archaeological field investigation is to obtain additional information to assess the archaeological potential of the Licence Area by undertaking the following:

1) Gain basic understanding of the Licence Area through desk-based review of background information, including geological, topographical, archaeological and historical background ;

2) Conduct field visits to assess the site condition;

3) Assess the character, extent, and significance of any archaeological deposits and/or features encountered within the Licence Area through a field programme comprising field scan, auger testing and test pit excavations, while also taking into consideration the on-site constraints.

4) Undertake a scientific study of the field data and material findings and report on findings.

2. BRIEF BACKGROUND REVIEW OF STUDY AREA

2.1 Topographic and Geological Background

2.1.1 Tung Chung is situated in the middle of the western North Lantau shoreline. The Tung Chung Valley is bounded by hills and mountains on three sides and opens to the sea. The two streams which run from the southeast to the northeast through the valley and flow into the bay in the north provided stable fresh water supply. In the past the area was named "Tung Sai Chung", meaning the East and West Streams (Siu 2015).

2.1.2 The valley is somewhat sheltered due to the position of Chek Lap Kok Island in front of its mouth. The proximity of the island creates a narrow sea channel and a safe harbour. Tung Chung hence had strategic significance regarding maritime traveling since the ancient time and ships sailing to and from the Pearl River Estuarine used to stop here and obtain supplies.

2.1.3 The Licence Area covers the eastern part of Tung Chung Bay. The north-eastern section of the proposed works run through Rocky Lion Hill hillock along Shun Tung Road and connect to the new Tung Chung Town area. The feldsparphyric rhyolite and granite hillock with veins of microgranite has elevations between 1.9 to 5mPD at the low-lying coastal areas and ascends to peak at 74.7mPD. The central section of the proposed works will traverse below low-lying Holocene beach, alluvium and estuarine deposits which are bordered by Pleistocene terraced alluvial deposits (**Figure 2**).

2.1.4 Ma Wan Chung Site of Archaeological Interest (SAI), which is located on the east side of Tung Chung Bay is sheltered by the low hillock/headland to the north. Two stream distributaries flow divergently into the Bay in the area and form a low-lying estuary which lays in between 2.9 to 9.5mPD. The SAI principally sits on Pleistocene terraced alluvial deposits and Holocene beach deposits bordered by Pleistocene and Holocene slope debris, Holocene estuarine and alluvial deposits (**Figure 2**). The proposed alignment will partially run in a tunnel below the SAI.

2.1.5 Sha Tsui Tau SAI is located on the west side of Tung Chung Bay on mainly Pleistocene terraced alluvium with some estuarine deposits in the northeast. The elevations range from 2.8 (on estuarine deposits) to 4.5mPD (terraced alluvial fields). The SAI is outside of the works but may be representative in topographical and geological situation to some of the associated work areas and the TCW Station.

2.1.6 The latest alignment tunnels through Rocky Lion Hill along Shun Tung Road after which it traverses on Pleistocene terraced alluvium to the alternative station. The associated works areas are located on Pleistocene terraced alluvium. (**Figure 2**)

2.1.7 In the 1990s, the reclamation and construction of the town have altered the natural landscape of the area. Part of the alteration also took place within the Licence Area, as seen in road works, drainage, slope remodelling and housing development.

2.2 Historical Background

2.2.1 In the Tang dynasty, Tung Chung was already situated on a busy maritime route as evidenced by the discovery of a Tang dynasty cemetery thought to have been used for the burial of non-locals (Atha & Yip 2017). Vibrant coastal industrial activities were also revealed in the series of Tang dynasty kilns recorded along the coast of Tung Chung Bay (Antiquities and Monuments Office (AMO) web site).

2.2.2 As shown in the Ming dynasty document Yue Da Ji (Guo 1595), a settlement named Tung Sai Chung already existed in Tung Chung in Ming dynasty (Siu 1985, 2015). Most of the pre-1898 villages in the Tung Chung area were established after the Coastal Evacuation Edict was repealed in 1669. A stone plaque dated 1777 in the Hau Wong Temple in Sha Tsui Tau recorded quarrels over rents between tenant farmers and landlords (Siu 1990).

2.2.3 Throughout the Qing period, piracy posed a severe threat to the security of coastal southern China. Tung Chung Bay, which is shielded by Chek Lap Kok Island, provided a hide-out for pirates, including the notorious pirate Cheung Po Tsai (Coates 1957). As is shown in a Qing document called the Guangdong Annals (《廣東通志》; Ruan 1822), the Qing government established a number of coastal fortifications on the northern shore of Lantau Island in order to protect the coast and waters around Tung Chung. In 1810, the Qing Navy—with assistance from Portuguese warships—defeated the infamous Tung Chung-based pirate Cheung Po Tsai and his gang. A Portuguese drawing captured this naval engagement that took place in Tung Chung Bay (Coates 1957).

2.2.4 Since then, the Qing authorities saw the need to strengthen the coastal defences in Tung Chung. Guangdong Annals (Ruan 1822) records a number of coastal fortifications on Lantau, as well as the construction of naval outpost facilities and batteries (including the Tung Chung Battery which can still be seen today) in Tung Chung in 1817. In 1832, a walled fort of the naval headquarters of the Dapeng Right Battalion, which is now referred as Tung Chung Fort, was built at Ha Ling Pei of Tung Chung (AMO 2017). The fort was the headquarters for all the naval defences built on Lantau and around the coastline of Hong Kong (Siu 1990). In 1898, when Britain took control of the New Territories, all fortifications set up by the Qing authorities in Tung Chung were abandoned.

2.2.5 The villagers of Ma Wan Chung share the surname Fung (Siu 1985). Due to the proximity of the settlement to the Qing fortifications, no village wall was built (Siu 1990). A recent survey identified 24 graves on the low hillock behind the village, and none were more than 100 years old (Golder 2015).

2.3 Archaeological Background

2.3.1 Archaeological evidence suggests that human occupation in Tung Chung dates back to the Late Neolithic (GZIA 1998; Peacock & Nixon 1985-86; CUHK 1992). Occasional presence of Tang/Song dynasties and a small quantity of Ming/Qing dynasties ceramics were also identified in the area (GZIA 1998; Golder Associates

2015). The archaeological findings no doubt hint at the rich unrecorded history of Tung Chung.

2.3.2 There are two sites of archaeological interest near the Licence Area (**Figure 3**):

Ma Wan Chung Site of Archaeological Interest *(AM96-0762)*

2.3.3 Within and outside the SAI boundary, previous archaeological investigation relevant to the current Licence Area were undertaken. The areas and locations of previous investigation are mapped on **Figure 3** and the results briefly described below:

2.3.4 The SAI was first identified during an archaeological investigation conducted by the Hong Kong Archaeological Society from 1992 to 1993. Surface inspection, ten auger tests (X26, X28 and X30 to X37) and seven test pits (A to G) were conducted (HKAS 1993; Figure 3). The results show presence of Tang/Song dynasty cultural materials including kiln debris and some Neolithic pottery. X30 within the Private Area did not include any archaeological findings. Remains of two *in situ* kilns were observed on the surface of a strip of cultivated land, possibly of Tang dynasty date. The two kilns were also sighted in a 1997 survey commissioned by the Territory Development Department (TDD 1999; Golder Associates 2015: 11).

2.3.5 As part of the Second Territory-wide Survey, the Guangzhou Institute of Archaeology conducted in 1997 an archaeological survey on Lantau. According to the report, field scan and auger tests were conducted within Ma Wan Chung, including locations of cultivated land, Ma Wan, Wong Nai Uk and Tung Chung Old Pier. Artefacts identified in the cultivated land in Ma Wan Chung include blue and white porcelain sherds dated to the Ming/Qing period alongside pottery and tile fragments of more recent date (AMO 1998:12). Thirty-two auger tests however, failed to identify cultural deposits in the area (AMO 1998:13). According to an area highlighted in a recent survey report (Golder Associates 2015: Appendix C Inset 3), the 1997 survey covered an area now known as Yat Tung Estate.

2.3.6 In 2014, an archaeological survey conducted for the Tung Chung New Town Development project covered an extensive area in Tung Chung and presented an archaeological predictive model based on the local landscape, previously identified archaeological sites and recognised landforms/ landscapes associated with archaeological deposits.

Sha Shui Tau Site of Archaeological Interest (*AM78-0220)*

2.3.7 Since 1970s, large quantities of kiln debris have been observed at the surface of a sand terrace at the site of the current football ground and surrounding areas (HKAS 1993). Despite various attempts to locate the original source of the kiln debris in the past few decades, no definite *in situ* kiln structure was identified. Cultural layers dated to the Late Neolithic, Tang (as early as Southern Dynasties), Song and Qing dynasties were however, excavated. Summaries of findings of each period are provided below:

Late Neolithic

2.3.8 Although prehistoric materials including a stone adze and a small number of pottery sherds dated to both Late Neolithic and Bronze Age were recorded in the modern beach, area to the south of the football ground and at the terrace further south of the Sha Tsui Tau SAI (Peacock and Nixon 1986, HKAS 1993, Drewett 1996, Golder 2015), the only evidence of *in situ* prehistoric deposit was identified in the south-western corner of the SAI: in 1993, a very sparse *in situ* Late Neolithic deposit was confirmed in a test pit (Test Square C) carried out in response to the discovery of one Neolithic coarse ware sherd found in an auger test located in the south-western corner of the SAI. Eight coarse corded sherds possibly of the same pot were recorded in this deposit, which probably indicates a brief activity on the spot (HKAS 1993).

Tang Dynasty

2.3.9 The focus of Tang findings was primarily located near the football ground and between the two Youth Camp structures (Peacock 1986, CUHK 1991, AMO 1995, Drewett 1996, AMO 1998), and also to the south-east of the Camp structure (HKAS 1993). Although rich Tang dynasty cultural layer with abundant kiln debris and pottery was recorded in various investigations, no definite *in situ* kiln structure was identified. Hints of the proximity of a kiln(s), however, was reflected in the heat-reddened sand layer that produced intense kiln debris (Context 8, Trench 6, AMO 1995 excavation), and the intense spread of post-abandonment kiln debris (Layer 3, AMO 1995).

2.3.10 Other Tang dynasty features such as postholes and pits were also recorded in the 1995 research excavation (AMO 1995). A total of five postholes of random distribution were identified in Trench Ab, whilst three Tang dynasty pit features were recorded and according to the interpretation, two adjoining pit features located in Trench Bd and Cc are the site of an abandoned kiln or a rubbish pit (AMO 1995).

2.3.11 The range of kiln related materials include kiln furniture such as kiln bars and flat-ended props, and kiln structural remains such as kiln bricks, kiln wall fragment and burnt clay fragment, while Tang dynasty pottery was dominated by green glazed and slipped ware of low-fired domestic ware. Apart from pottery, iron tools such as cha, fishhooks, axe and chisels, and copper alloy coins were also excavated. Based on the analysis of the pottery, the 'Tang cultural layer' could be dated to as early as late Southern dynasties and up to mid-late Tang dynasty (AMO 1995).

Song Dynasty

2.3.12 A Song dynasty cultural layer was recorded across the SAI, particularly behind the football ground and in the south-eastern part of the site (HKAS 1993, AMO 1995, Drewett 1996, Golder 2015). Apart from the typical Song dynasty pottery such as pottery of clay fabric, celadon and black glazed porcelain, some Six Dynasties to Tang dynasty kiln debris, pottery and coins were also found in this layer (HKAS

1993, AMO 1995, Drewett 1996). Identified Song dynasty features include a Song/Yuan dynasty rubbish pit and a Southern Song dynasty burial (AMO 1995).

Qing Dynasty

2.3.13 Significant Qing dynasty findings include the discoveries of several Qing dynasty burials identified behind the football ground during two excavations conducted in 1995. A total of twenty-one late Qing dynasty burials with some evidence of intercutting were identified. In general, most of the skeletal remains were well preserved, which allows the identification of age and gender (AMO 1995, Drewett 1996).

2.3.14 The archaeological survey conducted for the Tung Chung New Town Development project in 2014, mentions widely recorded Ming/Qing dynasty materials on the fringe of the SAI (Golder 2015).

Other previous testing within the Licence Area

2.3.15 The archaeological investigation undertaken as part of the Tung Chung New Town Extension project was conducted within the current Licence Area; AH11, 12 and AH-13 (later excavated as TP-2) were set on the open land west of Yat Tung Estate within the Licence Area.

2.3.16 The auger holes did not produce any cultural remains (Golder Associates 2015: Appendix E 2, 6 and 10). Result of TP-2 located within the proposed TCW Station only yielded on disturbed topsoil findings, including a Ming/Qing dynasty Wun Yiu blue and white porcelain rim, a Tang dynasty pottery rim, undiagnostic tile fragments, and a black polishing pebble (Golder Associates 2015: Appendix F 4).

2.4 Existing Impacts

Existing Impacts and Field Visit at the Proposed TCW Station

2.4.1 Review of aerial photographs since 1924 indicate that Tung Chung Valley remained largely untouched until the mid-1990s.

2.4.2 The area seems to have been in use for agriculture and later abandoned. The main disturbance is the site formation for and construction of nearby Yat Tung Estate. The site formation is visible on 1996 aerial photograph (Lands Department Ref. A4280) at the northern end and on the 1998 aerial photograph (Lands Department Ref. A47708) covers the entire future Estate. At the same time in 1998, the river to the west of the proposed TCW Station is channelled. The extend of existing impact in the current TCW Station area seems to be limited and some archaeological potential should remain.

2.4.3 A field visit to identified areas of archaeological potential was undertaken on August 2020 and August 2022 to verify the potential areas for archaeological testing.

2.4.4 Three areas within the station footprint were identified for testing including two areas on Government Land and one private area. The Government Land concerns the southern part which occupies Pleistocene terraced alluvium and an area to the

southwest of Ma Wan Chung SAI (**Figure 1**) while the private area is located to the north of the TCW Station and equally occupies Pleistocene terraced alluvium.

2.4.5 The field visit shows that Yat Tung Estate is constructed on a platform. A concrete, bitumen in parts, path meanders along the Estate platform. Evidence for some limited cultivation and fruit/papaya trees is evident at the southern end. Rubbish and remnants of human occupation is left along the path. Most of the area to the west is fenced off and inaccessible, including the Government Land to the southwest of Ma Wan Chung SAI. The private area concerns a former agricultural area now in private commercial recreational use; no significant existing impacts were noted. The locations for test pit excavation and auger survey were identified and agreed with private owner.

2.5 Proposed Development

2.5.1 As described in the latest EIA Study Brief (EIA SB No.: ESB-329/2020), the Project comprises the following elements:

- Construction of an underground railway tunnel of approximately 1.3 km extending from existing overrun of the Tung Chung Station (TUC) to the new TCW Station and the overrun tunnel and associated Emergency Access Point (EAP)/ Emergency Egress Point (EEP) building;
- Construction of 2 new stations, namely TCW station and Tung Chung East (TCE) station and realignment of a section of the existing Tung Chung Line (TCL) near TCE new reclamation area to connect to the new TCE station; and
- Stations associated facilities.

3. METHODOLOGY

3.1.1 The following four-step methodology is to be implemented according to the requirements of the AMO's Guidelines for Archaeological Impact Assessment:

Field Scan

3.1.2 Field walking is conducted in the archaeological survey areas to identify archaeological deposits on the surface. The scanning of the surface for archaeological material is conducted, under ideal circumstances, in a systematic manner and covers the entire archaeological survey areas. Particular attention is given to exposed areas such as riverbed cuts, erosion areas, terraces, etc.

3.1.3 Material and concentrations of finds are recorded, mapped on 1:1000 scale and collected during the field scanning and form part of the archive. Topography, surface conditions and existing impacts are noted during the field walking.

3.1.4 In case archaeological potential areas are identified from field scanning where additional auger holes and test pits are required, the AMO and the Engineer will be notified for on-site meetings to discuss on the way forward.

Auger Survey

3.1.5 Auger survey of the identified areas which are considered to be impacted by proposed works is carried out in order to establish soil sequence, the presence/absence of cultural soils or deposits and their horizontal extent.

3.1.6 The auger tool consists of a bucket, pole and handle and is vertically drilled by hand into the surface. When the bucket is filled with soil the auger is extracted and the soil emptied from the bucket. Soils are described and depth changes are measured inside the hole. The depth of any material found is also measured. The auger hole is abandoned when water table, the end of the auger or rock is reached or the auger bucket fails to hold the soil. The location of each auger hole test is marked on a 1:1000 scale map.

Test Pit Excavation

3.1.7 Test pit excavations are carried out to verify the archaeological potential identified in the desk-based review.

3.1.8 Hand digging of test pits measuring between 1 x 1 and 1.5 x 1.5 meters will be carried out in order to determine the presence/absence of archaeological deposits and their stratigraphy. The size may depend on close proximity to large trees, narrow terraces or other external factors. The test pit is hand excavated, contexts, finds and features are recorded, soils described, and relevant depths measured. Artefacts are recorded and collected. Photographs of sections and other relevant information are taken and section and ground plans, if required, are drawn.

3.1.9 Hand excavation will continue until rock or decomposed rock are reached and no potential for archaeological soils or deposits exist. Additionally, the test pit will be abandoned when the water table is reached or when the depth of excavation poses safety problems (i.e. deeper than 1.2m vertical section). Respectively, assessment and mitigation, if required, will be conducted to address the objectives of the archaeological field investigation.

3.1.10 The hand excavated test pit is backfilled after full recording. Field records containing information regarding the physical location of the test pit, weather conditions, size and benchmark, description of the soils and their measured depths, artefact and feature finds are kept for each pit. Photographs are taken and drawings and plans produced, finds are bagged, labelled and stored for transport. The location of the test pit is mapped on a 1:1000 scale map.

Reporting

3.1.11 The Draft and Final Archaeological Field Investigation Report of the findings were prepared after analysis of the findings of the archaeological field investigation. The reports were prepared in accordance with the Guidelines for Archaeological Reports issued by the AMO. Five hard copies and two digital copies of the Final Archaeological Field Investigation Report will be submitted to AMO upon finalisation of the Report. The Final Archaeological Field Investigation Report will be kept in the Reference Library of the Hong Kong Heritage Discovery Centre and uploaded onto the project proponent's website and hyper-linked to AMO's website

for public viewing. Progress reports and reports as necessary were submitted on request to AMO.

Post Excavation Analysis

3.1.12 Artefacts and recorded archaeological information were processed, analysed and interpreted. The finds were prepared and the paper, finds, archives, photographic and video records will be submitted to AMO following the Guidelines for Handling Archaeological Finds and Archives after finalisation of the Archaeological Field Investigation Report.

4. RESULTS OF THE ARCHAEOLOGICAL FIELD INVESTIGATION

4.1.1 Field survey comprising a field scan, forty-six auger holes and ten test pits was undertaken in March 2021 and September 2022. As mentioned in Section 2.4, the western and northern part of the Licence Area were largely inaccessible and thus field survey was only conducted in accessible areas within Government Land down the eastern side, which is further divided into two areas: Northern Area and Southern Area (**Figure 4**), and at private land with permission of the owner at the northern end: Private Area. These three areas are situated on Holocene alluvium and Pleistocene terraced alluvium, respectively. Summaries of the field investigations are provided below; Please note that the auger test and test pit excavation results of the Private Area are described as part of the Northern Area.

4.2 Field scan

4.2.1 The field scan was conducted everywhere within accessible parts of the Licence Area and revealed no surface materials.

4.2.2 The Northern Area is mostly covered in concrete, except for a small patch of existing orchard located at the southern edge; while there are in general more areas with exposed soil in the Southern Area. The Private Area included by artificial grass covering or vegetation and the surface visibility was poor. No archaeological deposits, features, and materials beyond modern rubbish (not kept) were identified in the areas.

4.3 Auger testing

4.3.1 A total of forty-six auger tests were conducted within the Licence Area. As shown in **Figure 4**, fourteen of the forty auger holes (AH18-AH25, AH26-AH28, AH38-AH40) were located in the Northern Area, twenty-six (AH01-AH17, AH29-AH37) in the Southern Area and six in the Private Area (AH41-AH46).

4.3.2 In order to provide a more comprehensive picture of the accessible area, the auger holes were distributed as evenly as possible. Prior to commencing augering, it was therefore necessary for the contractor to remove a 40 x 40cm area of concrete cover for fifteen auger holes (AH29-AH37 in Southern Area and AH26-AH28 and AH38-AH40 in Northern Area).

4.3.3 The areas are proved to be very rocky and most auger tests were drilled until solid rock was encountered. No archaeological materials or ancient cultural deposits were

recorded in the auger tests. Brief summaries of individual areas are provided below, while the tabulated auger data can be found in **Annex A**.

Northern Area

4.3.4 With the permission of the occupants, eight auger holes were conducted within the existing orchard along the southern edge (AH18 to AH25) (**Plate 3**), and the rest (AH26-AH28, AH38-AH40) were located along the concrete path below Yat Tung Estate.

4.3.5 As revealed in Test Pits 1-3, the six auger holes conducted along the concrete path (AH26-28, AH38-40) were shallow due to rocky fill layers.

4.3.6 The eight auger holes (AH18-25) conducted within the orchard west of the concrete footpath were not very informative either. The general soil sequence comprised a modern topsoil followed by rocky fill layers with a maximum depth of 0.4m from surface and all were abandoned due to rocks. According to local informants, approximately 0.5m fill was dumped in this area in the 1990s.

4.3.7 The area further to the north (Private Area) proved to be very rocky and most auger tests (AH42-AH46) were halted due to rock around half a metre or less with the upper strata consisting of topsoil followed by rock or stiff soil. AH41 revealed a natural sequence of soils down to 1.08m below the surface where a rock was encountered. No archaeological materials or ancient cultural deposits were recorded in the auger tests.

Southern Area

4.3.8 Similar to the Northern Area, this area proved to be very rocky near the surface and most of the auger tests were shallow due to rocks (**Plates 1 to 2**).

4.3.9 The only exceptions were AH17 and AH31, where soil sequences over 1m in depth were recorded.

4.3.10 AH17 was located to the immediate east of TP4. It comprised a modern topsoil and original (buried) topsoil, followed by sterile alluvial deposits. The lowest recorded layer at 2.09-2.29mPD included a few decayed wood fragments, which was reflected in the dark/ organic rich appearance. The water table was encountered at 1.10m below surface.

4.3.11 AH31 was situated near TP5 and TP6 with a maximum depth of 1.14m from surface. It comprised a modern topsoil and fill layers over a possible original topsoil (around 2.7 to 3mPD) and sterile alluvial deposits.

4.4 Test pit excavation

4.4.1 A total of ten test pits (TP) were excavated within the accessible part of the Licence Area, of which three were located in the Northern Area (TP1 to TP3), five in the Southern Area (TP4 to TP8) and two in the Private Area (TP9 and TP10). All measured 1.5 by 1.5m in size and each was excavated either down to sterile natural deposits or the safety limit of 1.2m was reached. For each test pit the sequence of

deposits is discussed from the surface downwards. **Figures 19 and 20 of Annex H** shows the positions of the ten test pits within the Licence Area, while the supporting contextual, finds data and survey data are tabulated respectively in **Annexes B, G and H**. Summaries and discussion of individual test pits are provided below.

Northern Area

4.4.2 The Northern Area is located on Holocene alluvium at the mouth of an old stream near Ma Wan Chung SAI. Little archaeological information exists for the area between the SAI and the previous testing conducted in the centre of the TCW Station and some archaeological potential cannot be discounted. However, the accessible part of the Northern Area is at present very limited due to private land, existing structures, or existing concreted-over public footpaths. Three test pits (TP1 to TP3) were situated on the existing concrete footpath along the eastern edge of the Licence Area while two further test pit excavation are located within private area to the north (**Figure 4**).

Test Pit 1

4.4.3 Test Pit 1 (TP1), with a surface elevation (concrete) of 3.2mPD, was located at the northern end of the concrete footpath between a temporary structure and a drainage channel below the artificial concrete slope of Yat Tung Estate (**Plate 4**). TP1 was positioned to provide stratigraphical information for the alluvial delta in the northern part of the Licence Area near Ma Wan Chung SAI.

4.4.4 The drawn and photographic details of the excavated test pit can be found in **Figure 7 of Annex C**, and **Plates 5 to 10 of Annex E**.

4.4.5 The test pit measured 1.5 by 1.5m and was orientated north-south. Prior to excavation, a 0.08 to 0.17m thick layer of concrete surfacing was removed by the contractor. As seen in **Plate 5**, after the removal of concrete surfacing, in the north-west corner of the trench there was a concrete structure associated with previous construction work for Yat Tung Estate. The structure measured c.0.5 x 0.5m and was at least 0.8m in depth and was retained within the trench for safety reasons, leaving TP1 an L-shaped trench.

4.4.6 Test Pit 1 was excavated to 1.20m below surface and then augered a further 0.17m below limit of excavation (thereafter 'l.o.e.'). The uppermost excavated stratum was a 0.05 to 0.18m thick modern fill [**101**] of firm yellowish brown (10 YR 5/4) very slightly silty and slightly gravelly sand. Apart from some modern rubbish such as a plastic bottle and iron nail (not kept), a C19-20 tile fragment was found in this layer (**Plate 73**).

4.4.7 Underneath fill [**101**] in the south-eastern part of the trench was a modern pit feature [**105**] cutting into [**102**], [**103**] and [**104**]. The modern feature [**105**] appeared rectangular in plan and measured 0.85m in width, 1.30m in length and had a maximum depth of 0.34m. The pit contained two fill layers. The upper fill layer [**105a**] was a 0.26m thick brown (10 YR 5/3) clayey and gravelly sand, while the

lower fill [**105b**] was 0.03 to 0.23m thick and comprised a mixture of firm brown (10 YR 5/3) and yellowish brown (10 YR 5/6) very sandy and slightly gravelly clay.

4.4.8 Below [**101**] was a 0.12 to 0.40m thick firm dark grey (10 YR 4/1) clayey sand [**102**], which should be the original topsoil. Beneath [**102**] was a 0.07 to 0.16m thick firm yellowish brown (10 YR 5/6) very sandy and slightly gravelly clay [**103**]. Both deposits [**102**] and [**103**] were truncated by the modern feature [**105**] in the south-eastern part of the trench.

4.4.9 Underneath the sterile alluvium [**103**] was the alluvial boulder layer [**104**], which consisted of a 0.9m thick (l.o.e.) loose light yellowish brown (10 YR 6/4) very gravelly sand, with frequent large rounded to sub-rounded boulders. Again, it was truncated by the modern feature [**105**] in the south-eastern part of the trench. A further 0.17m of deposit [**104**] was recorded in the auger test conducted beyond the l.o.e. and the auger test was abandoned due to rocks.

4.4.10 Apart from the modern tile fragment found in the uppermost modern fill [**101**], no archaeological materials were recorded in Test Pit 1. The results of TP1 indicated a lack of ancient cultural deposits and a sequence comprising modern fill over original topsoil and sterile alluvial deposits.

Test Pit 2

4.4.11 Test Pit 2 (TP2) was located 42m south of TP1 along the concrete footpath at the eastern edge of the Licence Area (**Plate 11**) with a surface elevation at 3.4mPD. TP2 was positioned to provide stratigraphical information for the alluvial plain in the northern part of the Licence Area near Ma Wan Chung SAI.

4.4.12 The drawn and photographic details of the excavated test pit can be found in **Figure 8 of Annex C, and Plates 12 to 16 of Annex E**.

4.4.13 The test pit measured 1.5 by 1.5m and was orientated north-south. Prior to excavation, a 0.06 to 0.20m thick layer of concrete surfacing was removed by the contractor.

4.4.14 Test Pit 2 was excavated to 1.20m below surface and then augered a further 0.16m below l.o.e.. The uppermost excavated stratum was a 0.02 to 0.16m thick modern fill layer [**201**] consisting of firm brownish yellow (10 YR 6/6) slightly silty and very slightly clayey and gravelly sand with frequent stones. Apart from the moderate amount of glass and plastic fragments (not kept), a tiny Qing-20th century (thereafter 'C20') brown glazed sherd and a possible small and worn Bronze Age sherd with a hard grey fabric with traces of black spheroidal inclusions were uncovered in this layer (**Plate 74**).

4.4.15 Several modern pit features were identified below the top fill layer [**201**]: one was situated in the north-western corner of the trench [**205**], and the other two were [**206**] and [**207**] identified on north-facing section (NFS) and east-facing section (EFS) respectively.

4.4.16 A modern pit feature [**205**] was identified in the north-western corner of the trench cutting into [**202**], [**203**] and [**204**]. The pit appeared sub-circular plan (extended

beyond the trench towards north-west) and measured 0.65 by 0.40m and had a maximum depth 0.63m. The pit fill [**205a**] consisted of firm yellowish brown (10 YR 5/4) and brown (10 YR 4/3) slightly clayey and gravelly sand with frequent boulders (rounded to sub-rounded) and concrete fragments.

4.4.17 Another modern pit feature [**206**] was identified on the NFS. The pit appeared sub-rectangular on the section and measured 0.70m in width and 0.23m in depth. It cut into the original topsoil layer [**202**]. The pit fill [**206a**] consisted of yellowish brown (10 YR 5/4) silty and very slightly gravelly sand with frequent rounded to sub-rounded boulders.

4.4.18 The third modern pit feature [**207**] was identified on the EFS. The pit appeared sub-triangular on the section and measured 0.95m in width and 0.30m in depth. It cut into the original topsoil layer [**202**] and the sterile alluvium [**203**]. The pit fill [**207a**] consisted of yellowish brown (10 YR 5/4) slightly silty sand with frequent large rounded to sub-rounded boulders and moderate amount of small pebbles.

4.4.19 Beneath the uppermost fill [**201**] was the original topsoil layer [**202**], which consisted of a 0.15 to 0.32 thick firm light olive brown (2.5 Y 5/3) slightly silty sand. It was truncated by all three modern pit features [**205, 206 and 207**]. Apart from a few occasional glass fragments, a mixture of modern and older materials was uncovered in this layer, which included one C19-20 tile fragment, one C20 white porcelain rim sherd, three possible Qing village ware body sherds, 1 Qing Wun Yiu base sherd, one undiagnostic but possibly pre-Qing base sherd, and 3 Song celadon sherds (**Plates 75 to 76**).

4.4.20 Underneath [**202**] was a sterile alluvial deposit [**203**]. It comprised a 0.09 to 0.34m thick firm yellowish brown (10 YR 5/4) very slightly silty sand. It was truncated by two modern features [**205**] and [**207**].

4.4.21 Below the sterile alluvial deposit [**203**] was a sterile alluvial boulder layer [**204**] (l.o.e.). It consisted of yellowish brown (10 YR 5/6) to light yellowish brown (10 YR 6/4) firm very gravelly and slightly clayey sand with frequent rounded to sub-rounded cobbles and large boulders. This layer became increasingly gravelly and looser with depth. A further 0.16m of this layer was recorded in the auger test conducted beyond the l.o.e. The auger test was abandoned due to rocks.

4.4.22 The results of TP2 indicated a lack of ancient cultural deposits and a sequence comprising modern fill over original topsoil and sterile/natural alluvial deposits. The possible Bronze Age sherd and Song materials were redeposited and no associated *in situ* deposits were identified.

Test Pit 3

4.4.23 Test Pit 3 (TP3) was located 46m south of TP2 along the concrete footpath at the eastern edge of the Licence Area (**Plate 18**) with a surface elevation at 4mPD. TP3

was positioned to provide stratigraphical information for the alluvial plain in the northern part of the Licence Area near Ma Wan Chung SAI.

4.4.24 The drawn and photographic details of the excavated test pit and finds drawings can be found in **Figure 9 of Annex C, Plates 19 to 24 of Annex E, and Figures 17 to 18 of Annex D.**

4.4.25 The test pit measured 1.5 by 1.5m and was orientated north-south. Prior to excavation, a 0.08 to 0.20m thick layer of concrete surfacing was removed by the contractor.

4.4.26 Test Pit 3 was excavated to 1.20m below surface and then augered a further 0.13m below l.o.e.. The uppermost excavated stratum was a 0.13 to 0.54m thick modern fill layer [**301**] consisting of firm yellowish brown (10 YR 5/4) very gravelly and silty sand with frequent stones and sub-rounded to rounded pebbles. Apart from the moderate amount of glass, plastic fragments, iron nails and building debris such as concrete and asbestos fragments (not kept), finds including two C19-20 tile fragments, three Qing village ware sherds, ten Qing provincial porcelain sherds, one possible Tang body sherd and one prehistoric stone adze fragment (**Figure 17 and Plate 78**) were uncovered from this layer (**Plate 77**).

4.4.27 Underneath the fill was a 0.30 to 0.75m thick original topsoil layer [**302**], which consisted of firm brown (10 YR 4/3) very slightly clayey and slightly sandy silt with frequent small to medium rounded to sub-rounded pebbles. Apart from the moderate amount of modern rubbish and building debris such as plastic and glass, red brick and polystyrene fragments (not kept), finds including one C20 glass marble, four C20 tile fragments, one sherd of C19-20 village ware, four Qing village ware sherds and one complete prehistoric pebble tool (**Figure 18, Plate 80**) were uncovered from this layer (**Plate 79**).

4.4.28 Below [**302**] was a thin lens of sterile alluvial sand [**303**] measuring 0.07 to 0.18m thick and comprised pale brown (10 YR 6/3) loose and very slightly gravelly sand.

4.4.29 The lowest excavated stratum, [**304**] was a 0.32m thick loose grey (10 YR 5/1) very slightly clayey sterile alluvial sand with frequent rounded to sub-rounded boulders. A further 0.13m was recorded in the auger test conducted beyond l.o.e. and the auger test was abandoned due to rocks.

4.4.30 The results of TP3 indicated a lack of ancient cultural deposits and a sequence comprising modern fill over original topsoil and sterile/natural alluvial deposits. The

prehistoric stone tools discovered in this test pit were all redeposited and no associated *in situ* deposit was identified.

Test Pit 9

4.4.31 Test Pit 9 (TP9), with a surface elevation around 2.7mPD, was located at the northern end of the Private Area. The test pit was positioned to obtain information on potential kiln structures in the area.

4.4.32 The drawn and photographic details of the excavated test pit can be found in **Figure 15 of Annex C, and Plates 63 to 67 of Annex E**.

4.4.33 The test pit measured 1.5 by 1.5m and was orientated north-south. Test Pit 9 was excavated to between 0.88 and 0.95m below surface and abandoned due to sterile deposits and water table encountered at 0.88cm. The topsoil [**co.901**] consisted of a brown (10YR 4/3) slightly clayey organic silt. The topsoil had in additional to a few pebbles, a few abraded tile fragments, a small fragment of blue and white porcelain and village ware body sherd (**Annex F-Plate 85**). Below the topsoil, [**co.902**] was a pale brown (10YR 6/3) sterile sand and [**co.903**] a layer of light grey (10YR7/1) silty, sandy clay with boulders and pebbles. The bottom of the excavation consisted of [**co.904**] pale brown (10YR 6/3) sandy and silty gravel with lots of pebbles and cobbles. Water table was reached at a depth of 0.88m and excavation was halted around 1m as the three last contexts were natural and sterile.

4.4.34 Apart from the few abraded tile fragments and pottery sherds found in the uppermost modern fill [**901**], the remainder of the stratigraphy was sterile, and no archaeological materials were recorded in Test Pit 9. The results of TP9 indicated a natural deposit and a sequence comprising agricultural topsoil over sterile alluvial deposits.

Test Pit 10

4.4.35 Test Pit 10 (TP10), with a surface elevation around 2.8mPD, was located at the southern end of the Private Area. The test pit was positioned to obtain information on potential kiln structures in the area.

4.4.36 The drawn and photographic details of the excavated test pit can be found in **Figure 16 of Annex C, and Plates 68 to 72 of Annex E**.

4.4.37 The test pit measured 1.5 by 1.5m and was orientated north-south. Test Pit 10 was excavated to around 1.05m below surface and abandoned due to sterile deposits (only top 0.11 to 0.19m had inclusions) and water table encountered at 1m. The topsoil [**co.1001**] consisted of a dark greyish brown (10YR 4/2) slightly sandy, clayey silt. The topsoil included a single village ware sherd (**Annex F-Plate 86**) in additional to some plastic fragments (not collected). Below the topsoil, [**co.1002**] was a dark grey (10YR 4/1) stiff and clumpy silty, sandy sterile clay. The bottom of the excavation consisted of [**co.1003**] a light brownish grey (10YR 6/3) sandy and silty sterile gravel with lots of pebbles and cobbles. Water table was reached at the

bottom of the excavation. The excavation was halted at 1.05m as the contexts had been natural and sterile for over 0.8m.

4.4.38 Apart from the single pottery sherd found in the uppermost modern fill [**1001**], the remainder of the stratigraphy was sterile, and no archaeological materials were recorded in Test Pit 10. The results of TP10 indicated a natural deposit and a sequence comprising agricultural topsoil, a possible sterile fill layer over sterile alluvial deposits.

Southern Area

4.4.39 The Southern Area is located to the south of Ma Wan Chung on Pleistocene terraced alluvium, which has seen no previous testing. The accessible part of the Southern Area, however, is at present limited due to private land, existing structures, cultivation or existing concrete surfacing. A total of five test pits were situated in this area and these were mainly along the eastern edge of the Licence Area (**Figure 4**).

Test Pit 4

4.4.40 Test Pit 4 (TP4) was located by a footpath at the northern end of the Southern Area along the eastern edge of the Licence Area (**Plate 25**), with a surface elevation at 3.3mPD (concrete). TP4 was positioned to provide stratigraphical information for the Pleistocene alluvial deposits, which were previously untested.

4.4.41 The drawn and photographic details of the excavated test pit can be found in **Figure 10 of Annex C, and Plates 26 to 31 of Annex E**.

4.4.42 The test pit measured 1.5 by 1.5m and was orientated northeast-southwest. Prior to excavation, a 0.10m to 0.25m thick layer of concrete surfacing and a thin layer of vegetation above it was removed by the contractor (except for the north-western corner, where the concrete layer was absent but the modern topsoil/vegetation [401]). The lower part of the concrete surfacing was attached to a 0.20 to 0.30m thick layer of rocks, which were removed by the archaeological team prior to setting out the trench (**Plate 26**).

4.4.43 Test Pit 4 was excavated to 1.20m below surface and then augered a further 0.4m below limit of excavation (l.o.e.). The uppermost excavated stratum [**401**] along the northern edge of the trench was a 0.10 to 0.29m thick modern topsoil/vegetation layer consisted of loose dark greyish brown (10 YR 4/2) very slightly gravelly, very slightly sandy and very slightly clayey silt. Modern rubbish such as plastic fragments and glass bottles were found in this layer (not kept). In the rest of the trench, beneath the modern topsoil and vegetation was a thick (maximum depth 0.63m) layer of concrete and attached rock lining [**402**].

4.4.44 Underneath concrete surfacing [**402**] was a modern fill layer [**403**], which consisted of a 0.05 to 0.42m thick firm brownish yellow (10 YR 6/6) slightly sandy, very slightly silty and slightly gravelly clay, and with a moderate amount of rock. Modern

building debris such as a plastic pipe fragment and concrete chunks (not kept) and a small Qing-C20 tile fragment (**Plate 81**) were found in this layer.

4.4.45 Below [**403**] was the original topsoil [**404**], which comprised a 0.07 to 0.34m thick firm dark greyish brown (10 YR 4/2) sandy clay with occasional rounded to sub-rounded boulders.

4.4.46 Two layers of sterile alluvial sand [**405**] and [**406**] were excavated below [**403**]. Layer [**405**] was a 0.13 to 0.35m thick loose pale brown (10 YR 6/3) slightly gravelly sand. Underneath it was [**406**] (l.o.e.), which consisted of 0.15 to 0.25m thick loose light brown grey (10 YR 6/2) gravelly sand. The water table was encountered in this layer at 1.1m below surface.

4.4.47 A further 0.4m of [**406**] was recorded in the auger hole test, followed by another 0.05m thick sterile and natural alluvial sand [**407**], which comprised loose grey (2.5 Y 6/1) gravelly sand. The auger test was abandoned when the soil would not hold in the auger bucket due to water.

4.4.48 The results of TP4 indicated a lack of ancient cultural deposits and a sequence comprising modern fill over original topsoil and sterile/natural alluvial deposits.

Test Pit 5

4.4.49 Test Pit 5 (TP5) was located between an electric lamp-post and a fenced-off private compound along the eastern edge of the Licence Area (**Plate 32**), with a surface elevation at 3.9mPD (concrete). TP5 was positioned to provide stratigraphical information for the Pleistocene alluvial deposits, which were previously untested.

4.4.50 The drawn and photographic details of the excavated test pit can be found in **Figure 11 of Annex C, and Plates 33 to 38 of Annex E**.

4.4.51 The test pit measured 1.5 by 1.5m and was orientated northeast-southwest. Prior to excavation, a 0.15m thick layer of concrete surfacing was removed by the contractor.

4.4.52 Test Pit 5 was excavated to 1.20m below surface and then a further 0.4m below l.o.e. was recorded in a small sondage. The uppermost excavated stratum [**501**] was a 0.43 to 0.60m thick modern fill layer consisted of firm yellowish brown (10 YR 5/4) very

gravelly sand with frequent stones and sub-angular rocks. Modern rubbish such as plastic fragments were found in this layer.

4.4.53 Below [**501**] was a 0.25 to 0.44m thick original topsoil layer [**502**], which comprised firm dark grey (10 YR 4/1) slightly silty clay with occasional large sub-rounded boulders. Modern debris such as plastic and cloth fragments were found in this layer.

4.4.54 Several sterile alluvial deposits were recorded below [**502**]. A 0.19m thick loose dark grey (10 YR 4/1) gravelly sand [**504**] was recorded in the southern edge of the trench overlying [**503**] and gradually thinned out towards the north.

4.4.55 Overlain by [**504**] was a 0.07 to 0.28m thick loose pinkish grey (7.5 YR 6/2) gravelly sand [**503**] with occasional stones.

4.4.56 The lowest excavated stratum was a 0.08m thick sterile alluvial boulder layer [**505**] (l.o.e.), which consisted of loose pale brown (10 YR 6/3) very slightly clayey and gravelly sand with frequent rounded to sub-rounded boulders. No auger testing was possible due to frequent boulders. Instead, a 0.30 by 0.03m and 0.40m deep small sondage was positioned in the centre of the trench and revealed a further 0.40m of the same deposit [**505**]. The water table was encountered at the bottom of the sondage at a depth of c.1.35m below surface.

4.4.57 The results of TP5 indicated a lack of ancient cultural deposits and a sequence comprising modern fill over original topsoil and sterile/natural alluvial deposits. No finds were recorded in this test pit.

Test Pit 6

4.4.58 Test Pit 6 (TP6) was located about 12m south-east of TP5 along the eastern edge of the Licence Area (**Plate 39**), with a surface elevation at 4.1mPD (concrete). TP6 was positioned to provide stratigraphical information for the Pleistocene alluvial deposits, which were previously untested.

4.4.59 The drawn and photographic details of the excavated test pit can be found in **Figure 12 of Annex C, and Plates 40 to 48 of Annex E**.

4.4.60 The test pit measured 1.5 by 1.5m and was orientated northeast-southwest. Prior to excavation, a 0.15m thick layer of concrete surfacing and a 0.05 to 0.10m thick gravel lining were removed by the contractor.

4.4.61 Test Pit 6 was excavated to 1.20m below surface (western edge) and then augered a further 0.30m below the l.o.e.. The uppermost excavated stratum [**601**] was a 0.67m thick firm dark yellowish brown (10 YR 4/6) gravelly and very silty sand with frequent stones. Frequent modern building debris such as fragments of tiled floor, metal spikes, concrete chunks and red brick fragments (not kept), as well as modern rubbish such as plastic bottles were found in this thick fill layer. A 0.40m thick concrete layer [**601a**] was found at the bottom of this modern fill covering most of the trench except the western corner. Much effort was made to remove part of the

more friable edge of the concrete in the north-western corner by hand tools in order to open a large enough slot for excavation along the western edge of the trench.

4.4.62 Below the deep overburden was a 0.24 to 0.44m thick firm dark grey (10 YR 4/1) sandy clay layer [**602**]. One Qing to 20th century cream-coloured tile fragment was uncovered from this layer (**Plate 82**).

4.4.63 Underneath [**602**] was a 0.09 to 0.19m thick loose very dark grey (10 YR 3/1) clayey sandy layer [**603**]. Occasional fragments of decayed wood were also noticed at the bottom of this layer. Two Qing to 20th century brown glazed body sherds were uncovered from this layer (**Plate 83**).

4.4.64 The lowest excavated stratum was a 0.08 to 0.16m thick loose and very dark grey (10 YR 3/1) slightly sandy clay [**604**]. A further 0.3m was recorded in the auger test conducted beyond l.o.e and the soil was getting moist and sandier before it hit rock. The auger test was abandoned due to rock.

4.4.65 No ancient cultural deposits were found in this trench but two broadly contemporary Qing-C20 layers were identified. Due to the constraints of testing in this location, it was difficult to confirm whether [**604**] was a sterile layer judging only by the soil description; however, with elevation as low as 2.3mPD it is likely that [**604**] was in fact a sterile alluvial deposit followed by a sterile alluvial boulder layer similar to that recorded in TP5 and 7, which was represented by the rock encountered in the auger test. Further discussion will be provided in Section 5.

Test Pit 7

4.4.66 Test Pit 7 (TP7) was located among cultivation fields and to the north of TP8 along the eastern edge of the Licence Area (**Plate 49**), with a surface elevation at 5.1mPD. TP7 was positioned to provide stratigraphical information for the Pleistocene alluvial deposits, which were previously untested.

4.4.67 The drawn and photographic details of the excavated test pit can be found in **Figure 13 of Annex C, and Plates 50 to 55 of Annex E**.

4.4.68 The test pit measured 1.5 by 1.5m and was orientated northwest-southeast. Test Pit 5 was excavated to 1.20m below surface and then augered a further 0.12m below the l.o.e. The uppermost excavated stratum [**701**] was a 0.12m thick modern topsoil consisting of loose brown (10 YR 4/3) slightly sandy and very slightly gravelly silt with frequent stones. Modern rubbish such as plastic fragments were found in this layer (not kept).

4.4.69 Underneath [**701**] was a 0.08 to 0.18m thick layer of fill [**702**], which consisted of firm yellowish brown (10 YR 5/4) slightly clayey silt. Apart from a moderate amount of modern rubbish and building debris such as a plastic bottle, tin can, metal fragments, bricks and plastic bag were found in this layer (not kept), several finds including one tiny Qing-20th century tile fragment, two possible Qing village ware

sherds, and one possible Tang dynasty greyish brown slipped body sherd with lug scar were uncovered from this layer (**Plate 84**).

4.4.70 Below [**702**] was the original topsoil [**703**], which comprised a 0.04 to 0.10m thick firm greyish brown (10 YR 5/2) slightly clayey and very slightly gravelly sand. A dumped modern brick fragment was recorded on east-facing section (not collected).

4.4.71 Overlain by [**703**] was a sterile alluvial deposit [**704**], which consisted of a 0.20 to 0.42m thick firm brown (10 YR 5/3) slightly clayey sand with occasional stones.

4.4.72 The lowest excavated stratum was a sterile and natural alluvial deposit [**705**] (l.o.e.), which consisted of a 0.45 to 0.70m thick very firm greyish brown (10 YR 5/2) sandy and gravelly (sub-angular to sub-rounded) clay with frequent large rounded to sub-rounded boulders. A further 0.12m of this deposit was recorded in the auger test conducted beyond l.o.e. and the auger test was abandoned due to rocks.

4.4.73 The results of TP7 indicated a lack of ancient cultural deposits and a sequence comprising modern fill over original topsoil and sterile/natural alluvial deposits.

Test Pit 8

4.4.74 Test Pit 8 (TP8) was located 31m south of TP7 in the southern end along the eastern edge of the Licence Area (**Plate 56**), with a surface elevation at 4.8mPD. TP8 was positioned to provide stratigraphical information for the Pleistocene alluvial deposits, which were previously untested.

4.4.75 The drawn and photographic details of the excavated test pit can be found in **Figure 14 of Annex C, and Plates 57 to 62 of Annex E**.

4.4.76 The test pit measured 1.5 by 1.5m and was orientated northeast-southwest. Test Pit 8 was excavated to a maximum depth of 1.14m below surface and then abandoned due to large rocks. The uppermost excavated stratum [**801**] was a 0.03 to 0.10m thick modern fill layer consisted of loose brown (10 YR 4/3) slightly clayey and very slightly gravelly silt with occasional stones.

4.4.77 Underneath the modern topsoil [**801**] was a fill layer [**802**], which comprised a 0.12 to 0.25m thick firm strong brown (7.5 YR 5/6) sandy and gravelly clay with moderate cobbles.

4.4.78 Below [**802**] was another modern fill layer [**803**], which consisted of a very firm light olive brown (2.5Y 5.4) very slightly clayey and gravelly sand with frequent large dumped rocks, stones, and occasional fragments of concrete and reinforced metal bars. A maximum depth of 0.88m was excavated. The test pit was abandoned due to large rocks located within and extending beyond the trench which could not be removed by hand.

4.4.79 Due to deep overburden, little information on the original soil sequence was obtained from TP8. Further discussion will be provided in Section 5.

5. DISCUSSION

Northern Area

5.1.1 A similar stratigraphical sequence was recorded in the five test pits (TP1-TP3 and TP9-TP10) excavated in the Northern Area, which comprised modern fill overlying original topsoil and sterile/ natural alluvial deposits. Four of the five test pits indicated that the original topsoil was modern in date. Indeed, as seen in aerial photos or maps dated to the early 1990s (e.g. GEO 1992, 1:1000 9-SE-8D, Ed 1992-08), the coastal area west of Yat Tung Estate was used for cultivation prior to housing development, which commenced in the late 1990s. Based on the known history of Ma Wan Chung, the agricultural activities in the village's environs probably occurred from at least the late Qing period, when the village was founded.

5.1.2 All five test pits revealed a basal deposit of alluvial boulder layers, which is to be expected given their location close to a river course. Among the test pits, the original topsoil in TP3 seemed rockier with frequent boulders, which also makes sense given its close proximity to the rocky nullah.

5.1.3 *Finds*

5.1.4 Although no pre-modern cultural deposits were identified, a few older materials were recorded in the modern layers, including one prehistoric stone adze fragment from [301], one prehistoric pebble tool from [302], a possible Tang body sherd from [301], a few Song celadon sherds from [202], and a possible Bronze Age high-fired sherd from [201]. Given the nature of sediment movement on an alluvial plain and the proximity to previous discoveries in nearby Ma Wan Chung SAI, it is not surprising to find early historical and prehistoric materials in the disturbed layers.

5.1.5 Despite the small size of the possible Bronze Age sherd found in [301], it shows typical elements of Bronze Age pottery produced in Meihuadun kilns in Guangdong, which is commonly found in Hong Kong. The sherd appears to be part of the undecorated neck/shoulder of a storage jar, with high-fired grey fabric and traces of black spheroidal inclusions. No *in situ* Bronze Age deposits have been found nearby, but redeposited materials were previously recorded in Sha Tsui Tau (Peacock & Nixon 1986, HKAS 1993, Drewett 1996, Golder 2015).

5.1.6 Three Song celadon body sherds (including 2 joiners) with lotus and/or impressed curvy lines were recovered from the disturbed layer [202]. There is a possible Tang dynasty slipped body sherd from [301] but it is too worn and small to be sure. The nearest identified Tang/Song layer was located within Ma Wan Chung SAI.

5.1.7 Some Qing materials were also recorded in [202], [301] and [302], including in the original topsoil layers, while no prehistoric or historic materials redeposited or otherwise were recorded in TP9 and TP10 and AH41 - AH46. The Qing activities

may be tied in with the history of Ma Wan Chung village, which has existed since at least the late Qing.

Evaluation of archaeological potential

5.1.8 Two auger holes conducted in 1992-93 (X30 and X37), the 1997-98 auger holes, the 2015 test pit, and the Test Pits 1-3 were all situated on Holocene alluvium and produced negative results and the potential of finding *in situ* Tang/Song cultural layers on the Holocene alluvium was deemed relatively low within the Licence Area, particularly on the lower-lying land.

5.1.9 An untested area west of TP1 to 3 and the area south of the rocky nullah was in general low-lying, with elevations between 2.5m to 3mPD (based on GEO 1984 1:1000 topographical maps) (**Figure 5**). The likelihood of finding ancient settlement here is thus very low and the archaeological potential is therefore limited. In addition, the current and 2015 findings (Golder 2015) are similar, in that both comprised modern topsoil/fill layers overlying original topsoil and sterile and natural alluvial deposits, with no *in situ* pre-Qing cultural deposits and just a small number of redeposited earlier materials were recovered from the upper disturbed layers.

5.1.10 Test pits 9 and 10 and AH41 - AH46 were located to the north of TP1 and bordered the western edge of Ma Wan Chung SAI. **Figure 6** shows the locations of previous testing conducted in 1992-1993. Beyond two kiln structures previously identified on Holocene alluvium, three of the other test pits on Pleistocene terraced alluvium also revealed dark-stained sediment associated with industrial activities. These 1992-93 results, together with past discoveries at other Tang industrial sites, potential for further kilns was anticipated around TP9 and TP10. In contrast to expectations at desk-based review, however, the Test Pit 9 and TP10 did not yield any evidence for kilns, material or features.

Southern Area

5.1.11 The overall soil sequence in the Southern Area comprised of a modern topsoil/fill over original topsoil and sterile/natural alluvial deposits. The findings of the original topsoil elevations match with the 1984 topographical map prior to housing development in this area (**Figure 5**), which were between 2.63 and 3.03mPD for [404], 2.93 and 3.43mPD for [502], and 4.06 to 4.2mPD for [703], and likely 2.68 and 3.295mPD for [602 and 603]. In addition, borehole data (TCW-DH17 and TCW-IDH07, see Annex J) are located near TP 6 and 8 respectively and add stratigraphical information relevant to the interpretation.

5.1.12 The interpretation of TP6 requires further consideration due to the darker tone and different texture in the lower contexts [**603**] and [**604**]. It is likely that [**602**] and [**603**] are broadly contemporary original topsoil layers dated to Qing-C20. First, one should bear in mind that the original landform was undulating and localised deposits could be easily formed in hollows from an individual flood. The thin band of darker sand [**603**] was likely created in a hollow area where water was retained and the darker tone was likely due to the presence of decayed wood fragments, which was possibly washed in with the flood. The Qing-C20 body sherds may well also have

been brought in with the flood. Secondly, the overall elevations also match with the 1984 topographical map, which showed a land surface elevation of c.3.1mPD.

5.1.13 The lowest stratum in TP6 [**604**] was situated at elevations between 2.3 and 2.8mPD. This layer is interpreted as a possible sterile alluvial deposit or could possibly be another localised flood deposit like [**603**]. Again, the darker tone suggests the presence of organic materials, possibly wood fragments as seen in AH17. The rocks encountered in the auger test at c.2.3mPD may well be the beginning of the sterile alluvial boulder layer recorded in most of the test pits in this investigation. Despite the uncertainty of the lowest few contexts, the lowest elevation reached in this test pit, which is 2.3mPD and is rather low-lying and very unlikely to contain any *in situ* pre-Qing cultural deposit. The borehole test TCW-DH17 conducted near TP6, provides the same stratigraphy (fill, topsoil and alluvial deposits) as recorded within the TP6 excavation. The borehole and excavation results indicate that the [**604**] should be interpreted as the bottom of alluvial topsoil which includes occasional rootlets on top of sterile alluvium; the latter was recorded and confirmed when rock was reached in excavation auger test at 2.6mPD.

5.1.14 The overburden encountered in TP8 was quite deep and reached at least 3.7mPD at the l.o.e. Comparing this with the 1984 topsoil level (c.4mPD), it seems that disturbance in the southern end is rather substantial. According to the excavation results, the original topsoil at TP8 is gone. The borehole data of test (TCW-IDH07) conducted near TP8 indicates the excavation of TP8 (until 4.02mPD) includes the upper fill and part of the fill below. The second fill is a rock fill which continues down to 2.76mPD which is 2.5m below the surface. The rock fill consists of dark grey mottled grey, very silty sandy gravel with cobble sized concrete and tuff fragments. It contains some steel bar and refuse fragments, suggesting modern disturbance (down to 2.76mPD). Below the fill strata is an alluvial cobble deposit. These results indicate that the disturbance runs deep around TP8 and no archaeological potential remains.

Finds

5.1.15 One possible Tang dynasty sherd with lug scar was recorded in the [702] along with other later Qing-C20 materials. No associated *in situ* cultural layers were recorded.

5.1.16 A few Qing or later materials were also recovered from the upper layers, which can either be interpreted as modern fill or original topsoil of Qing-C20 data, and these can possibly be associated with agricultural activities of later historical to modern date.

Evaluation of archaeological potential

5.1.17 This investigation was restricted to the accessible Government land, which is located along the eastern edge of the Licence Area. The untested area to the west, however, is situated next to the channelised river and subject to disturbance. In addition, the overall findings in this Southern Area indicate that there is an absence of pre-Qing cultural deposits but some limited redeposition of materials (one possible Tang dynasty sherd) had occurred. The potential for finding substantial *in situ* cultural layers is therefore low.

6. ARCHAEOLOGICAL ASSESSMENT

6.1.1 The archaeological findings of the fieldworks indicate modern topsoil/fill layers overly original topsoil and sterile and natural alluvial deposits, with no *in situ* pre-Qing cultural deposits and just a small number of redeposited earlier materials which were recovered from the upper disturbed layers. The results indicate that the likelihood of finding ancient settlement in low-lying area, with elevations below 3mPD is very low, no *in situ* or potential for significant archaeological materials, deposits were recorded and thus, no mitigation within the proposed TCW Station will be necessary.

6.1.2 The impacts from the proposed TCW Station and alignment on the Licence Area with very low archaeological potential is acceptable and no mitigation will be required. Antiquities and Monuments Office however, should be informed immediately in case of discoveries of antiquities or supposed antiquities in the course of works.

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8. ARCHAEOLOGICAL TEAM

8.1 The project was led by Kennis Yip under Licence 458 and Julie Van Den Bergh under Licence 461. They were supported by AAL's Kathy Chan, labourers and surveyor team.

9. SUPPORTING ILLUSTRATIONS

9.1 FIGURES

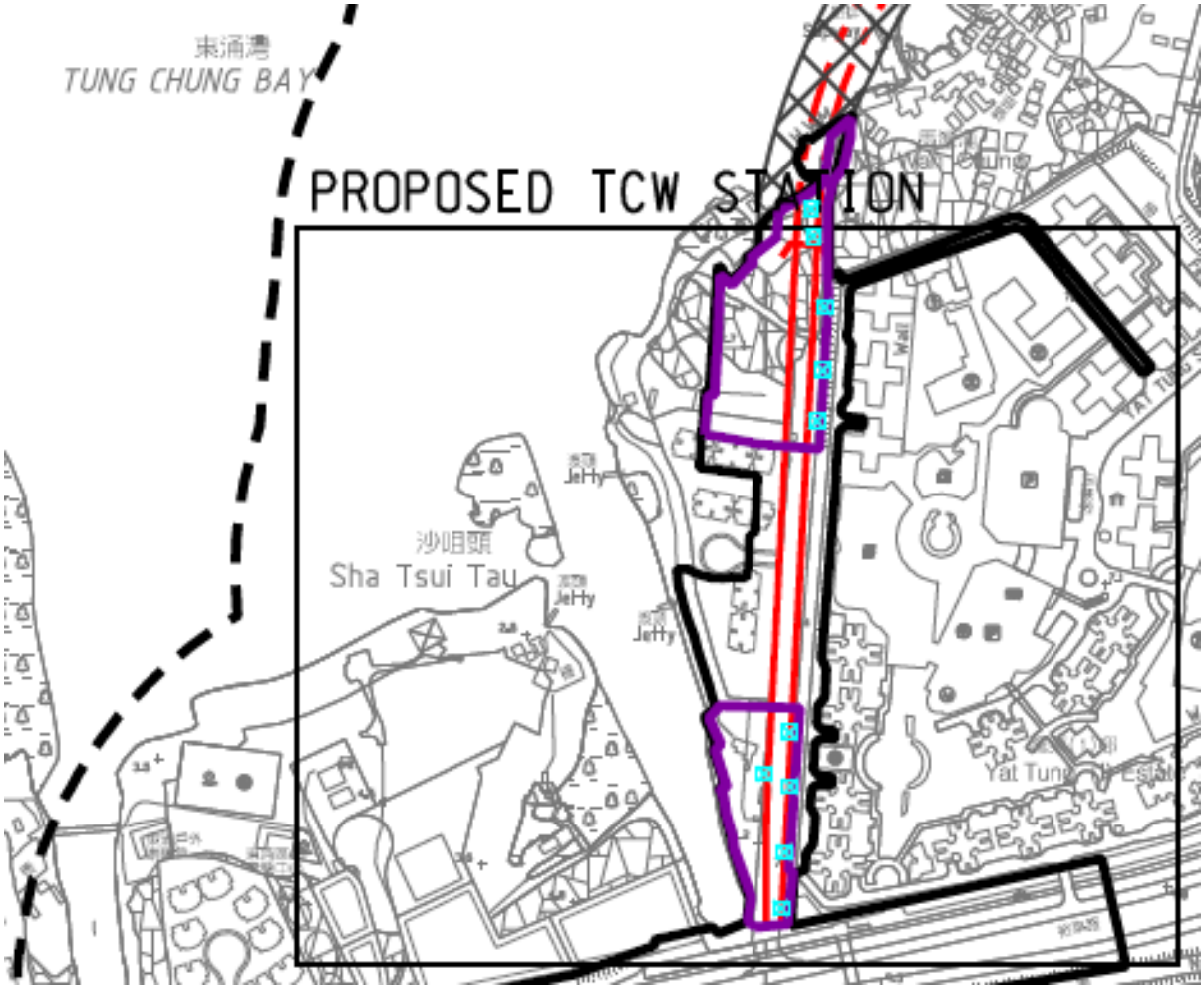


Figure 1 Map showing area of archaeological interest (purple)

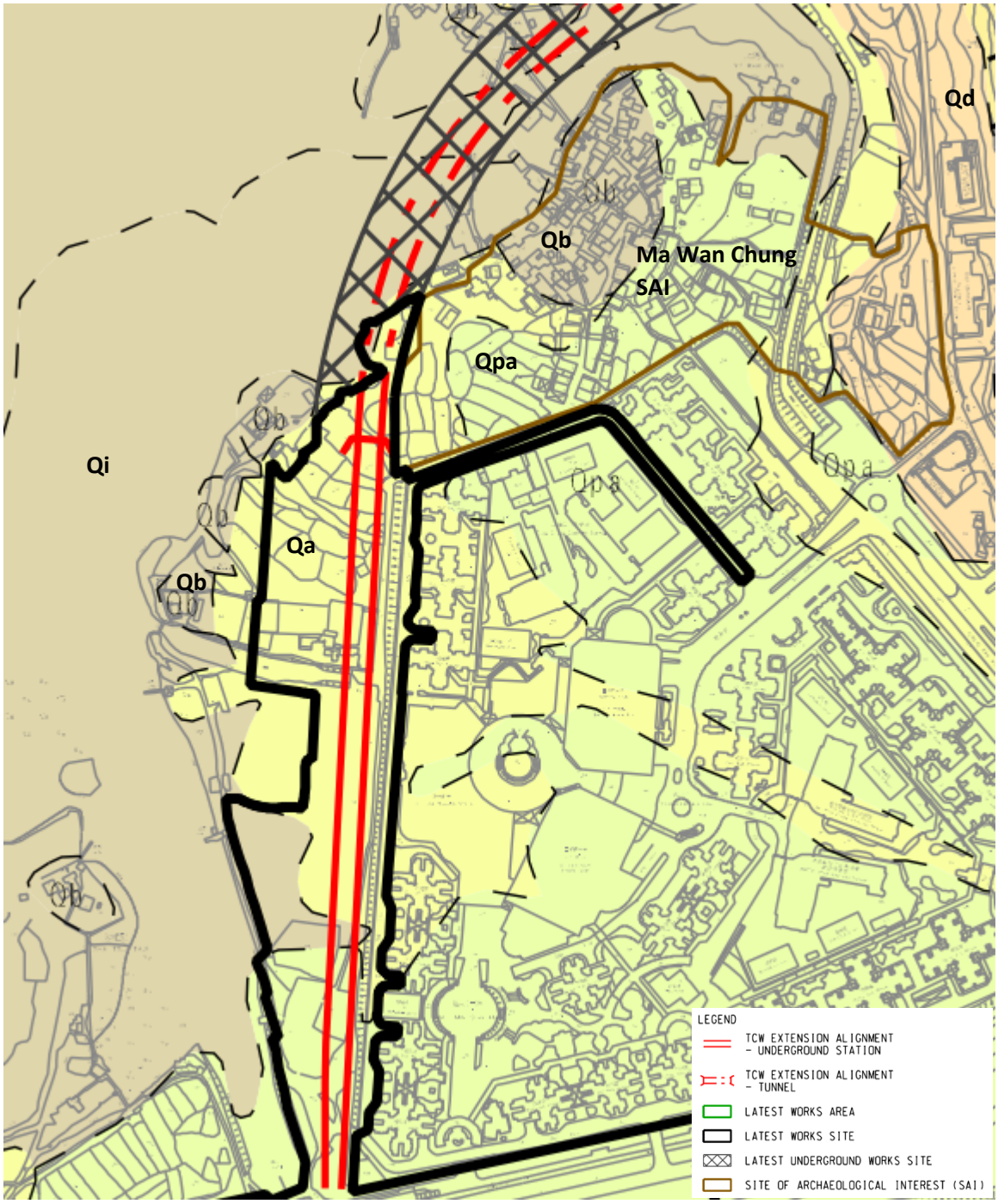


Figure 2 Geological background of the works and surrounding area (Qpa-Pleistocene Terraced Alluvium; Qa-Holocene Alluvium; Qi-Estuarine Deposits; Qb-Beach Deposits; Qd-Holocene debris flow)

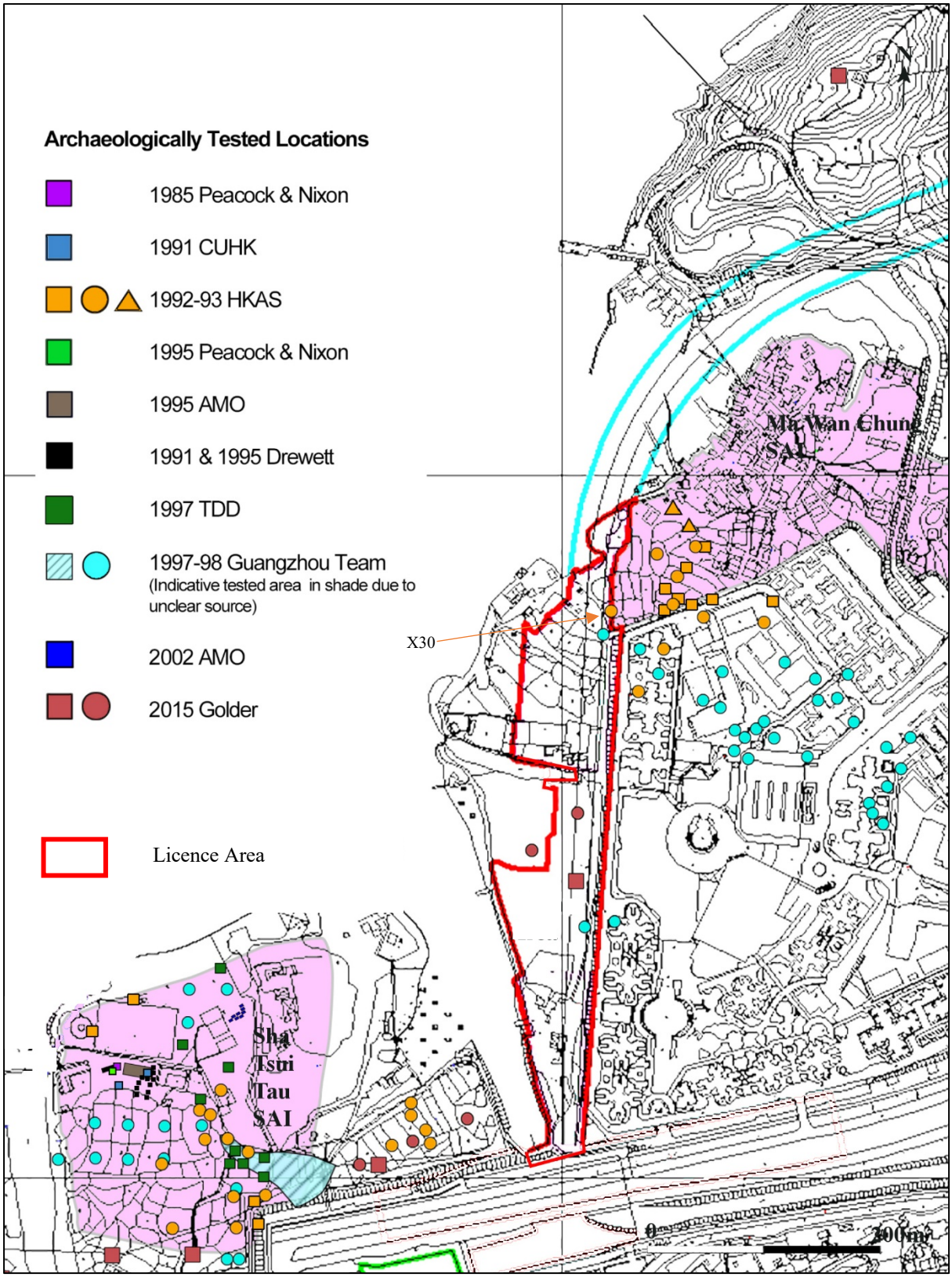


Figure 3 Map showing locations of previous testing, Ma Wan Chung SAI and Sha Tsui Tau SAI in relation to the Licence Area

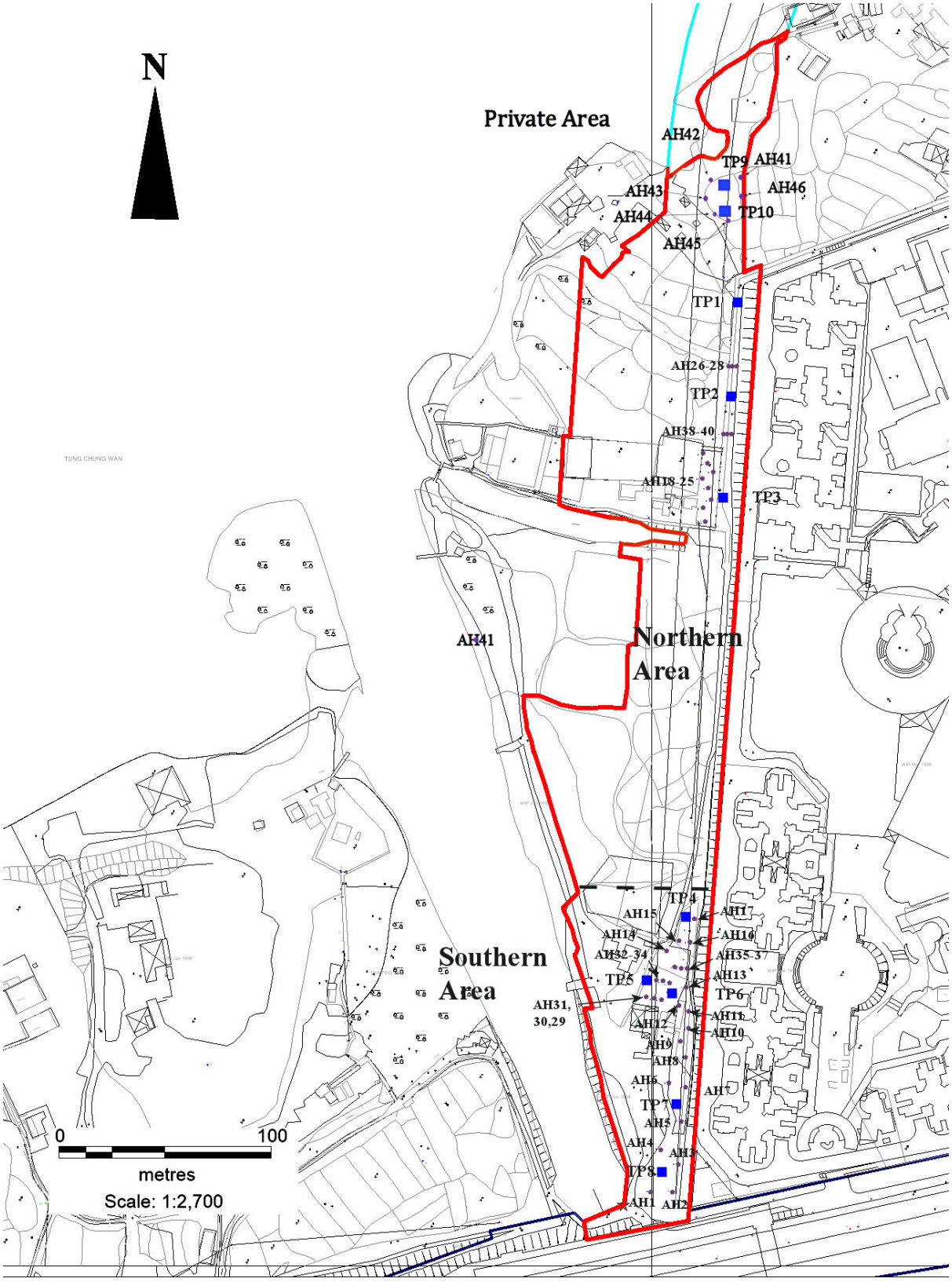


Figure 4 Plan of approximate locations of test pits (blue squares) and auger hole tests (purple dots) within the Licence Area (red). For the accurate locations of the test pits and auger holes see Figures 19 to 21 in ANNEX H.

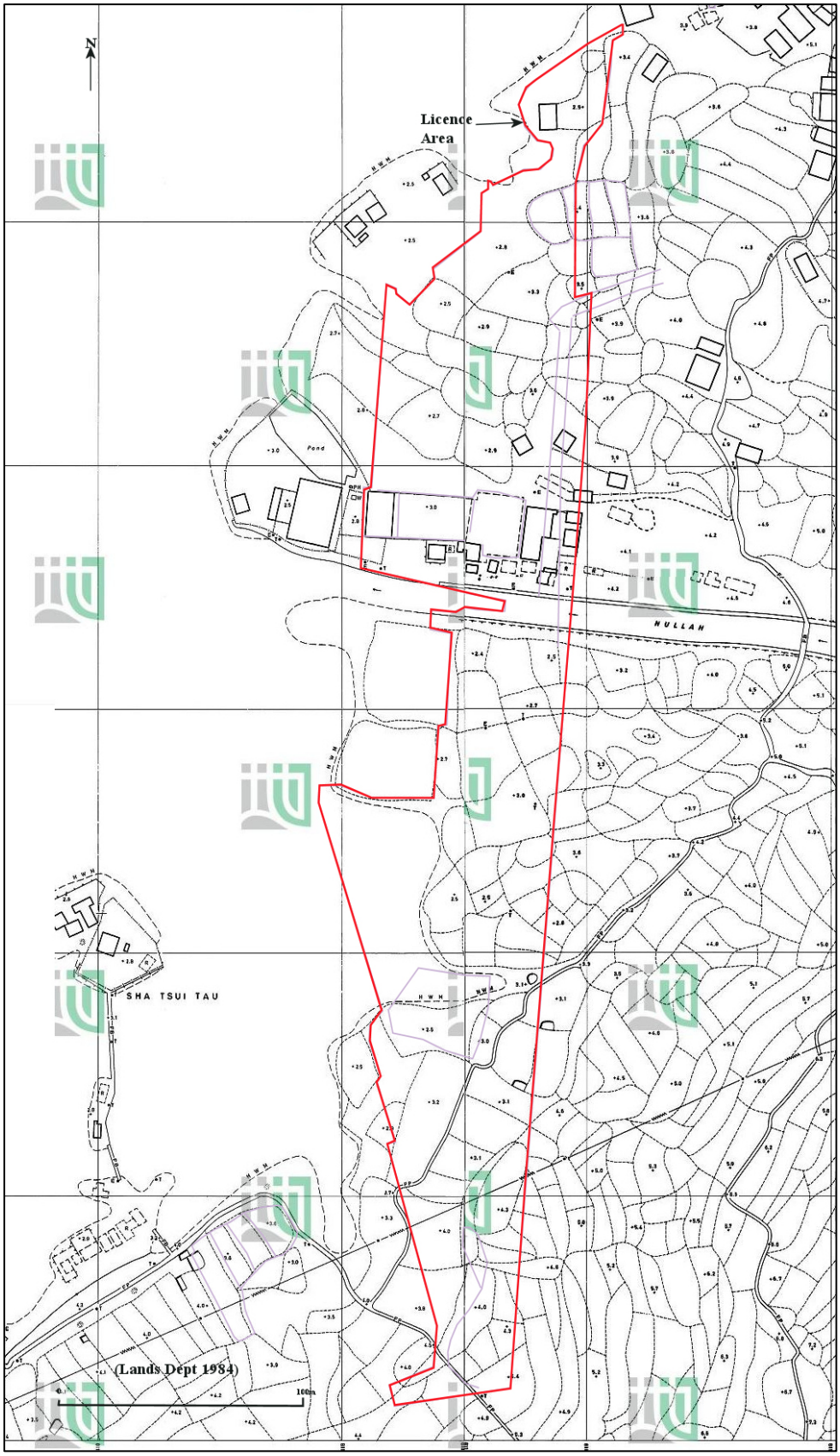


Figure 5 1984 topographical map of the Licence Area prior to development (Lands Department 1984)

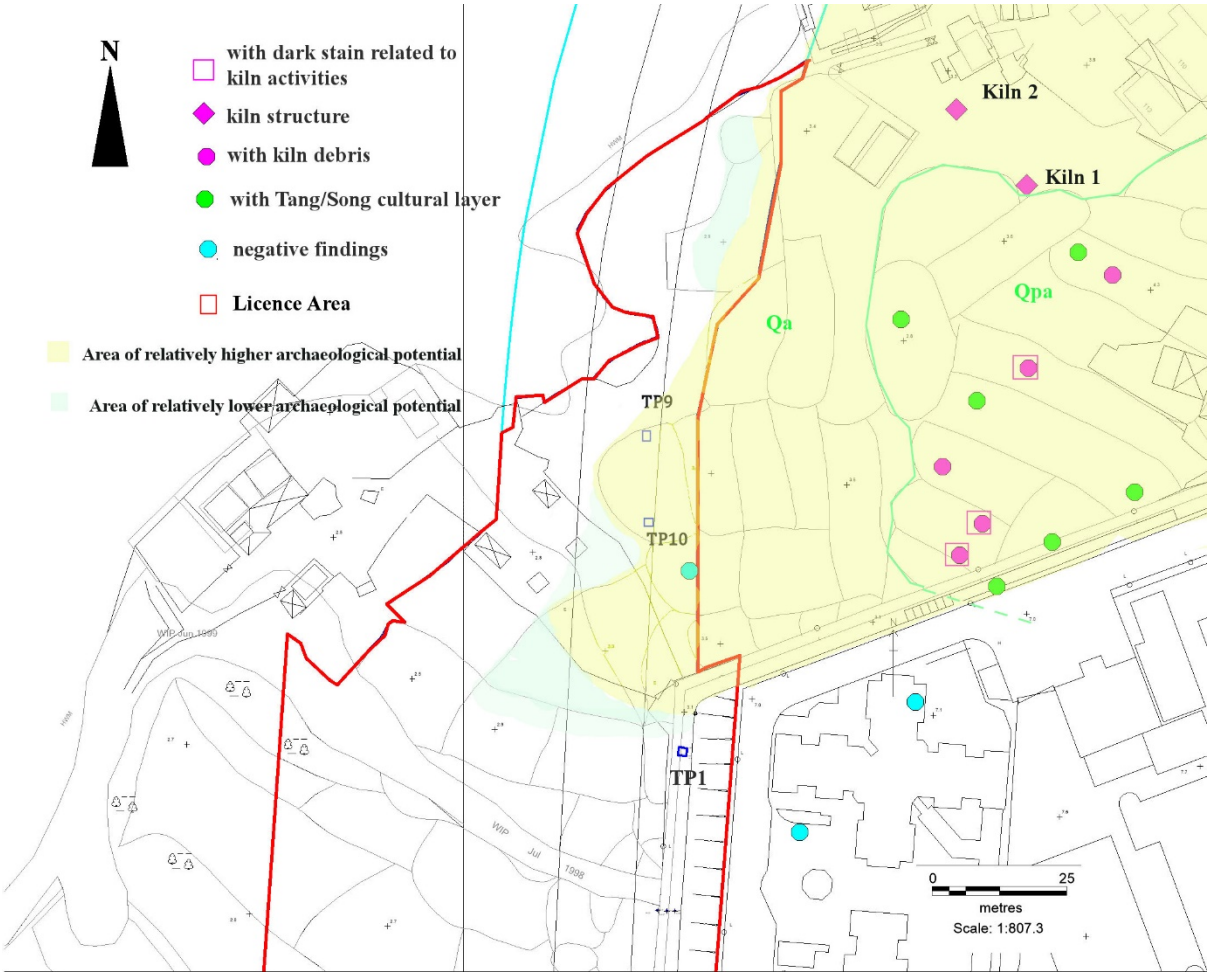


Figure 6 Map showing areas of archaeological potential in relation to 1992-1993 findings

SUPPORTING DATA

ANNEX A Auger Test Results

Southern Area

AH01 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 7	Very slightly gravelly and slightly sandy SILT	10 YR 5/2 greyish brown	--	Topsoil
7 – 19	Sandy and gravelly SILT; very rocky	10 YR 5/6 yellowish brown	--	Fill; abandoned due to rock

AH02 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 7	Very slightly clayey, slightly gravelly and very slightly sandy SILT	10 YR 3/3 Dark brown	--	Topsoil
7 – 22	Slightly silty and slightly gravelly SAND	10 YR 5/6 Yellowish brown	--	Fill; abandoned due to large rock

AH03

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 9	Sandy and gravelly SILT, angular and sub-angular	10 YR 4/3 Brown	--	Topsoil
9 – 55	Gravelly SAND, angular to sub-angular, with frequent small stones	10 YR 5/6 Yellowish brown	--	Fill; abandoned due to large rock

AH04 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 6	Slightly gravelly SILT	10 YR 4/3 Brown	--	Topsoil
6 – 28	Gravelly SAND, angular to sub-angular	10 YR 5/4 Yellowish brown	--	Fill; abandoned due to large rock

AH05

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 3	Gravelly SILT, angular to sub-angular	10 YR 4/3 Brown	--	Topsoil
3 – 30	Gravelly SAND	10 YR 5/4 Yellowish brown	--	Fill?
30 – 53	Very slightly silty and very slightly sandy CLAY	10 YR 4/3 Brown	--	Subsoil; abandoned due to large rock

AH06

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 21	Silty and very slightly gravelly SAND	10 YR 5/6 Yellowish brown	--	Topsoil
21 – 62	Very slightly clayey and very slightly gravelly SAND	10 YR 5/4 Yellowish brown	--	Subsoil (original topsoil?)
62 – 83	Slightly clayey SAND	10 YR 5/3 Brown	--	Subsoil; abandoned due to large rock

AH07 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 32	Slightly sandy and slightly gravelly SILT; with polystyrene and plastic fragments	10 YR 5/4 Yellowish brown	--	Topsoil; abandoned due to rocks

AH08 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 3	Sandy and slightly gravelly SILT	10 YR 5/3 Brown	--	Topsoil
3 – 20	Very slightly clayey and gravelly SAND	10 YR 5/4 Yellowish brown	--	Fill?
20 – 24	Sandy and slightly gravelly SILT; with plastic fragments	10 YR 4/3 Brown	--	Subsoil (original topsoil?) abandoned due to rocks

AH09 (fourth attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 8	Sandy and gravelly SILT, angular to sub-angular	10 YR 4/3 Brown	--	Topsoil
8 – 29	Sandy and gravelly SILT, angular to sub-angular	10 YR 4/4 Dark yellowish brown	--	Fill; abandoned due to rocks

AH10 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 22	Sandy and gravelly SILT, angular to sub-angular	10 YR 4/4 Dark yellowish brown	--	Topsoil; abandoned due to rocks

AH11

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 22	Very slightly clayey and slightly gravelly SILT; with frequent stones, glass and polystyrene fragments	10 YR 3/3 Dark brown	--	Topsoil
22 – 32	Very silty and gravelly SAND, angular to sub-angular	10 YR 4/3 Brown	--	Subsoil (fill or original topsoil?)
32 – 40	Gravelly SAND with stones	10 YR 5/6 Yellowish brown	--	Subsoil; abandoned due to large rock

AH12 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 15	Slightly clayey and gravelly SILT; with roots	10 YR 4/3 Brown	--	Topsoil
15 – 30	Sandy and gravelly SILT, angular to sub-angular	10 YR 4/4 Dark yellowish brown	--	Subsoil; abandoned due to large rock

AH13

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 23	Very sandy and gravelly SILT; with frequent rocks	10 YR 3/3 Dark brown	--	Topsoil
23 – 30	Very gravelly SAND, angular to sub-angular	10 YR 5/4 Yellowish brown	--	Fill? abandoned due to large rock

AH14 (fifty attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 18	Sandy and slightly gravelly SILT	10 YR 4/4 Dark yellowish brown	--	Topsoil; abandoned due to large rocks

AH15

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 10	Very slightly sandy SILT	10 YR 4/2 Dark greyish brown	--	Topsoil
10 – 33	Silty and slightly gravelly SAND	10 YR 5/3 Brown	--	Fill; abandoned due to large rocks

AH16

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 13	Slightly sandy SILT with moderate stones	10 YR 4/3 Brown	--	Topsoil
13 – 30	Gravelly SAND	10 YR 5/4 Yellowish brown	--	Fill?
30 – 40	Very sandy CLAY	10 YR 5/4 Yellowish brown	--	Subsoil (original topsoil?); abandoned due to large rock

AH17

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 30	Very slightly clayey SILT	10 YR 3/3 Dark brown	--	Topsoil
30 – 64	Very silty and slightly sandy CLAY	10 YR 4/2 Dark greyish brown	--	Original topsoil
64 – 90	Slightly clayey SAND	10 YR 5/2 Greyish brown	--	Subsoil (sterile alluvial deposit);
90 – 110	Very slightly clayey SAND; with fragments of decayed wood	10 YR 4/2 Dark greyish brown	--	Subsoil (sterile alluvial deposit); abandoned due to large rock; water table at 110cm

Northern Area

AH18 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS

0 – 40	Very gravelly SAND, angular to sub-angular	10 YR 5/3 Brown	--	Topsoil; abandoned due to rocks

AH19 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 15	Sandy and gravelly SILT	10 YR 4/3 Brown	--	Topsoil
15 – 40	Sandy and slightly gravelly SILT	10 YR 5/3 Brown	--	Fill; abandoned due to rocks

AH20 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 3	Slightly sandy SILT	10 YR 4/3 Brown	--	Topsoil (dried silt)
3 – 18	Slightly gravelly and slightly sandy SILT	10 YR 5/3 Brown	--	Lower part of the topsoil; abandoned due to rocks

AH21 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 3	Very slightly sandy SILT, with frequent stones	10 YR 4/3 Brown	--	Topsoil (dried silt)
3 – 17	Slightly sandy SILT, with frequent stones	10 YR 5/3 Brown	--	Lower part of the topsoil; abandoned due to rocks

AH22 (third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 12	Slightly sandy SILT	10 YR 5/3 Brown	--	Topsoil
12 – 28	Slightly sandy SILT	10 YR 5/4 Yellowish brown	--	Fill; abandoned due to rocks

AH23 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 22	Slightly sandy SILT	10 YR 5/3 Brown	--	Topsoil; abandoned due to rocks

AH24 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 18	Slightly gravelly and very slightly sandy SILT	10 YR 5/3 Brown	--	Topsoil; abandoned due to rocks

AH25 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 2	Silty SAND	10 YR 4/3 Brown	--	Upper topsoil (dried)
2 – 20	Slightly sandy SILT	10 YR 3/3 Dark brown	--	Main part of topsoil
20 – 28	Silty SAND	10 YR 5/3 Brown	--	Fill; abandoned due to rocks

AH26 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 19	Silty and gravelly SAND, angular to sub-angular	10 YR 5/4 Yellowish brown	--	Topsoil/fill; abandoned due to rocks

AH27 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 25	Silty and gravelly SAND, angular to sub-angular	10 YR 5/3 Brown	--	Topsoil/fill; abandoned due to rock

AH28 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 28	Silty and gravelly SAND, angular to sub-angular	10 YR 5/3 Brown	--	Topsoil/fill; abandoned due to rocks

Southern Area

AH29 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 29	Very gravelly SAND, angular to sub-angular; with building debris and plastic fragments	10 YR 5/6 Yellowish brown	--	Topsoil/fill; abandoned due to large rocks

AH30

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 20	Very gravelly SAND	10 YR 5/6 Yellowish brown	--	Topsoil/fill
20 – 30	Very gravelly and slightly clayey SAND	10 YR 5/8 Yellowish brown	--	Fill?
30 – 38	Slightly gravelly and very slightly sandy CLAY	2.5 Y 5/3 Light olive brown	--	Fill? Abandoned due to rocks

AH31

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 32	Very gravelly SAND, angular to sub-angular; very rocky	10 YR 5/6 Yellowish brown	--	Topsoil

32 – 45	Very clayey and gravelly SAND, angular to sub-angular	10 YR 5/6 Yellowish brown	--	Fill?
45 – 49	Very slightly sandy CLAY	10 YR 6/8 Brownish yellow	--	Fill?
49 – 55	Very slightly sandy CLAY	10 YR 5/2 Greyish brown	--	Fill?
55 – 90	Sandy CLAY; appeared organic	10 YR 4/1 Dark grey	--	Original topsoil?
90 – 104	Clayey SAND	2.5 Y 4/1 Dark grey	--	Subsoil (sterile alluvial deposit?)
104 – 114	Very slightly clayey SAND	10 YR 5/2 Greyish brown	--	Subsoil (sterile alluvial deposit); abandoned due to rock

AH32 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 35	Very gravelly SAND; very rocky	10 YR 5/4 Yellowish brown	--	Topsoil/fill
35 – 37	Sandy and very gravelly CLAY	2.5 Y 5/4 Light olive brown	--	Fill? abandoned due to rocks

AH33 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 37	Slightly clayey and very gravelly SAND, angular to sub-angular	10 YR 5/4 Yellowish brown	--	Topsoil
37 – 42	Sandy and gravelly CLAY, angular to sub-angular	10 YR 3/1 Very dark grey	--	Original topsoil? Abandoned due to rocks

AH34 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 31	Very slightly clayey and gravelly SAND	10 YR 5/4 Yellowish brown	--	Topsoil
31 – 36	Very slightly sandy CLAY, with roots	2.5 Y 6/4 Light yellowish brown	--	Fill
36 – 40	Sandy and very gravelly CLAY, angular to sub-angular; with bits of decomposed rocks	10 YR 5/8 Yellowish brown	--	Fill? Abandoned due to rock

AH35 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 34	Very sandy GRAVEL, angular to sub-angular	10 YR 6/4 Light yellowish brown	--	Fill
34 – 42	Sandy and very slightly gravelly CLAY	10 YR 5/4 Yellowish brown	--	Fill? abandoned due to rock

AH36 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 22	Very sandy and very gravelly CLAY	10 YR 5/6 Yellowish brown	--	Topsoil
22 – 52	Sandy and gravelly CLAY	2.5 Y 5/4 Light olive brown	--	Fill; abandoned due to rock

AH37 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 34	Very sandy and very slightly gravelly CLAY	10 YR 5/8 Yellowish brown	--	Topsoil; abandoned due to rock

Northern Area

AH38 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 28	Silty and slightly gravelly SAND	10 YR 4/4 Dark yellowish brown	--	Topsoil/fill; abandoned due to rock

AH39 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 38	Silty and slightly gravelly SAND	10 YR 5/4 Yellowish brown	--	Topsoil/fill
38 – 49	Very slightly silty and slightly gravelly SAND	10 YR 5/4 Yellowish brown	--	Fill; abandoned due to rock

AH40 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 40	Silty and gravelly SAND, angular to sub-angular	10 YR 5/4 Yellowish brown	--	Topsoil/fill; abandoned due to rocks

Private Area (north)

AH41

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 9	clayey SILT	10YR 4/3 Brown	--	Topsoil/fill
9 – 30	silty CLAY	10 YR 5/4 Yellowish brown	--	Subsoil
30 – 105	SAND	10 YR 5/4 Yellowish brown	--	Alluvium
105 - 108	SAND	10YR 6/2 Light brownish grey wet	--	Alluvium
108	Rock		--	Alluvium; abandoned due to rock

AH42

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 24	slightly clayey SILT	10YR 5/2 Greyish brown	--	Topsoil/fill
24 – 48	silty SAND	10YR 5/2 Greyish brown	--	Subsoil
48 - 52	silty SAND	10YR 6/2 Light brownish grey	--	Alluvium
52	Rock		--	Alluvium; abandoned due to rock Alluvium

AH43

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 17	silty CLAY	10YR 4/2 Dark greyish brown	--	Topsoil/fill
17 – 32	sandy CLAY	10YR 4/3 Brown	--	Subsoil
32 - 52	SAND	10YR 6/2 Light brownish grey	--	Alluvium
52	Rock		--	Alluvium; abandoned due to rock Alluvium

AH44 (second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 – 36	silty CLAY	10YR 4/2 Dark greyish brown	--	Topsoil/fill
36 – 52	slightly silty CLAY	10 YR 5/4 Yellowish brown	--	Subsoil
52 - 61	SAND	10YR 6/2 Light greyish brown	--	Alluvium
61	Rock		--	Alluvium; abandoned due to rock Alluvium

AH45 (Third attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 - 13	Rock	--	--	Topsoil/fill/ abandoned due to rock

AH46 (Second attempt)

DEPTH (cm)	SOIL DESCRIPTION	COLOUR	Finds	REMARKS
0 - 20	sandy CLAY	10YR 5/2 Greyish brown	--	Topsoil/fill
20	Rock or concrete	--	--	Subsoil abandoned due to rock

ANNEX B Test Pit Results Summary

Table 1: Test Pit 1

Context	Thickness (m)	Colour	Soil Description	Finds	Remarks
101	0.05 – 0.18	10 YR 5/4 Yellowish brown	SAND, very slightly silty and slightly gravelly	Tile fragment; modern rubbish such as plastic and iron fragments (not kept)	Modern fill
102	0.12 – 0.40	10 YR 4/1 Dark grey	SAND, clayey	None	Original topsoil; truncated by modern pit [105]
103	0.07 – 0.16	10 YR 5/6 Yellowish brown	CLAY, very sandy and slightly gravelly	None	Sterile alluvial deposit; truncated by modern pit [105]
104	Maximum 0.9m (l.o.e.) and 0.17m in auger (abandoned due to rock)	10 YR 6/4 Light yellowish brown	SAND, very gravelly, with frequent large rounded to sub-rounded boulders	None	Sterile alluvial boulder layer; truncated by modern pit 105
105	Rectangular on plan; W0.85 x L1.30 x D 0.34m			--	Cut of a modern pit; cut into 102, 103, 104
105a	0.26	10 YR 5/3 brown	SAND, clayey and gravelly	None	Top fill for 105
105b	0.03 – 0.23	10 YR 5/3 brown and 10 YR 5/6 yellowish brown	CLAY, very sandy and slightly gravelly	None	Lower fill for 105

Table 2: Test Pit 2

Context	Thickness (m)	Colour	Soil Description	Finds	Remarks
201	0.02 – 0.16	10 YR 6/6 Brownish yellow	SAND, slightly silty, very slightly clayey, with frequent stones	1 Qing-C20 brown glazed village ware, 1 possible Bronze Age sherd; modern rubbish (glass/plastic) (not kept)	Modern fill
202	0.15 – 0.32	2.5 Y 5/3 Light olive brown	SAND, slightly silty	Occasional glass fragments (not kept); 1 C19-20 tile fragment, 3 possible Qing village ware body sherds, 1 Qing Wun Yiu base, 1 C20 white porcelain rim sherd, 1	Original topsoil; cut by modern pit features 205, 206 and 207

				possible pre-Qing stone ware base, 3 Song celadon sherds	
203	0.09 – 0.34	10 YR 5/4 yellowish brown	SAND, very slightly silty	None	Sterile alluvial deposit; truncated by modern pits 205 and 207
204	0.80 (l.o.e.) and 0.16 in auger (abandoned due to rock)	10 YR 5/6 Yellowish brown to 10 YR 6/4 Light yellowish brown	SAND, very gravelly and slightly clayey, with frequent rounded to sub-rounded cobbles and large boulders; became more gravely and looser in depth	None	Sterile alluvial boulder layer; truncated by modern pit 205
205	Appeared sub-circular on plan (extended beyond the trench towards NW); 0.65 x 0.4 x D0.63m			--	Cut for modern pit feature; cut into 202, 203, 204
205a	0.63	10 YR 5/4 yellowish brown and 10 YR 4/3 brown	SAND, slightly clayey and gravelly, with frequent boulders (rounded to sub-rounded) and concrete fragments	None	Fill for pit 205
206	Sub-rectangular on NFS; W0.7 x D0.23m			--	Cut for modern pit feature on NFS; cut into 202
206a	0.23	10 YR 5/4 yellowish brown	SAND, very slightly gravelly, with frequent rounded to sub-rounded boulders	None	Fill for pit 206
207	Sub-triangular on EFS; W0.95 x D0.30m			--	Cut for modern pit feature on EFS; cut into 202 and 203
207a	0.30	10 YR 5/4 Yellowish brown	SAND, slightly silty, with frequent large rounded to sub-rounded boulders and moderate amount of small pebbles	None	Fill for pit 207

Table 3: Test Pit 3

Context	Thickness (m)	Colour	Soil Description	Finds	Remarks
301	0.13 – 0.54	10 YR 5/4 Yellowish brown	SAND, very gravelly, with frequent stones and sub-rounded to rounded pebbles	Moderate amount of rubbish and building debris (glass, plastic fragments, iron nails, concrete and asbestos) (not kept); 2 C19-20 tile fragments, 3 Qing village ware sherds, 10 Qing provincial porcelain sherds, 1 possible Tang	Modern fill

				body sherd, 1 prehistoric stone adze fragment	
302	0.30– 0.75	10 YR 4/3 Brown	SILT, very slightly clayey and slightly sandy, with frequent small to medium rounded to sub-rounded pebbles	Moderate amount of rubbish and building debris (plastic, glass, red brick and polystyrene fragments) (not kept); 4 C20 tiles, 1 C20 glass marble, 1 C19-20 village ware sherd, 4 Qing village ware sherds, 1 complete prehistoric pebble tool	Original topsoil
303	0.07 – 0.18	10 YR 6/3 Pale brown	SAND, very slightly gravelly	None	Sterile alluvial deposit
304	0.32 (l.o.e.) and 0.13 in auger (abandoned due to rock)	10 YR 5/1 grey	SAND, very slightly clayey, with frequent rounded to sub-rounded boulders	None	Sterile alluvial deposit

Table 4: Test Pit 4

Context	**Thickness (m)**	**Colour**	**Soil Description**	**Finds**	**Remarks**
401	0.10 – 0.29	10 YR 4/2 Dark greyish brown	SILT, very slightly gravelly, very slightly sandy, very slightly clayey	None	Modern topsoil
402	0.60 (maximum)	--	--	None	Concrete surfacing and attached rock layer (except NW corner)
403	0.05 – 0.42	10 YR 6/6 Brownish yellow	CLAY, slightly sandy, very slightly silty, slightly gravelly, with moderate amount of rocks	Modern building debris (plastic pipe, concrete chunks) (not kept); 1 C19-20 tile fragment	Modern fill
404	0.07 – 0.34	10 YR 4/2 Dark greyish brown	CLAY, sandy, with occasional rounded to sub-rounded boulders	None	Original topsoil
405	0.13 – 0.35	10 YR 6/3 Pale brown	SAND, slightly gravelly	None	Sterile alluvial deposit
406 (l.o.e.)	0.15 – 0.25 and 0.4 in auger	10 YR 6/2 Light brownish grey	SAND, gravelly	None	Sterile alluvial deposit; water table at 1.1m
407 (auger)	0.05 (abandoned due to soil would not hold in water)	2.5 Y 6/1 Grey	SAND, gravelly	None	Sterile alluvial deposit

Table 5: Test Pit 5

Context	Thickness (m)	Colour	Soil Description	Finds	Remarks
501	0.43 – 0.60	10 YR 5/4 Yellowish brown	SAND, very gravelly, with frequent stones and sub-angular rocks	Modern rubbish (plastic) (not kept)	Modern fill
502	0.25 – 0.44	10 YR 4/1 Dark grey	CLAY, slightly silty, with occasional large sub-rounded boulders	Modern debris (plastic, cloth) (not kept)	Original topsoil
503	0.07 – 0.28	7.5 YR 6/2 pinkish grey	SAND, gravelly, with occasional stones	None	Sterile alluvial deposit; below 504
504	0.19	10 YR 4/1 Dark grey	SAND, gravelly	None	Sterile alluvial deposit; southern edge of trench; overlying 503
505 (l.o.e.)	0.08 and 0.40 in sondage	10 YR 6/3 Pale brown	SAND, very slightly clayey and gravelly, with frequent rounded to sub-rounded boulders	None	Sterile alluvial deposit; Water table at 1.35m from surface

Table 6: Test Pit 6

Context	Thickness (m)	Colour	Soil/ Feature Description	Finds	Remarks
601	0.67	10 YR 4/6 Dark yellowish brown	SAND, gravelly, very silty, with frequent stones	Frequent modern building debris and rubbish (tiled floor, metal spikes, concrete and red brick fragments, plastic bottles) (not kept)	Modern fill
601a	0.40	--	Concrete	--	Concrete layer (except western corner)
602	0.24 – 0.44	10 YR 4/1 Dark grey	CLAY, sandy	1 small Qing-C20 tile fragment	Original topsoil
603	0.09 – 0.19	10 YR 3/1 Very dark grey	SAND, clayey, with occasional decayed wood fragments at the bottom of this layer	2 Qing-C20 village ware body sherds	Part of original topsoil
604 (l.o.e.)	0.08 – 0.16 and 0.26 in auger	10 YR 3/1 Very dark grey	CLAY, slightly sandy	None	Sterile alluvial deposit

Table 7: Test Pit 7

Context	Thickness (m)	Colour	Soil/ Feature Description	Finds	Remarks
701	0.12 (maximum)	10 YR 4/3 Brown	SILT, slightly sandy, very slightly gravelly, with frequent stones	Modern rubbish (plastic) (not kept)	Modern topsoil
702	0.08 – 0.180	10 YR 5/4 Yellowish brown	SILT, slightly clayey	Moderate amount of modern rubbish and building debris (plastic bottle, tin can, metal fragments, bricks, plastic bag) (not kept); 1 tiny Qing-C20 tile fragment and 2 possible Qing village ware, 1 possible Tang body sherd with lug scar	Fill
703	0.04 – 0.10	10 YR 5/2 Greyish brown	SAND, slightly clayey and very slightly gravelly	Dumped modern brick fragment on east facing section (not collected)	Original topsoil
704	0.20 – 0.42	10 YR 5/3 Brown	SAND, slightly clayey, with occasional stones	None	Sterile alluvial deposit
705 (l.o.e.)	0.45 – 0.70 and 0.12 in auger	10 YR 5/2 Greyish brown	CLAY, sandy and gravelly, with frequent large rounded to sub-rounded boulders	None	Sterile alluvial deposit

Table 8: Test Pit 8

Context	Thickness (m)	Colour	Soil/ Feature Description	Finds	Remarks
801	0.03 – 0.10	10 YR 4/3 Brown	SILT, slightly clayey, very slightly gravelly, with occasional stones	None	Modern topsoil
802	0.12 – 0.25	7.5 YR 5/6 Strong brown	CLAY, sandy and gravelly, with moderate amount of cobbles	None	Fill
803 (l.o.e.)	0.88 (maximum)	2.5 Y 5/4 Light olive brown	SAND, very slightly clayey, gravelly, with frequent large dumped rocks, stones and occasional fragments of concrete and reinforced metal bars	None	Fill

Table 9 : Test Pit 9

Context	Thickness (m)	Colour	Soil/ Feature Description	Finds	Remarks
901	0.23-0.265	10YR 4/3 Brown	slightly clayey organic SILT	Few pebbles, a few abraded tile fragments, a small fragment of blue and white porcelain and	Topsoil

				village ware body sherd	
902	0.275-0.345	10YR 6/3 Pale brown	SAND	Sterile	Sterile alluvial deposit
903	0.09-0.135	10YR7/1 Light grey	silty, sandy CLAY	boulders and pebbles	
904 (l.o.e.)	0.335-0.375	10YR 6/3 Pale brown	sandy and silty GRAVEL	pebbles and cobbles	

Table 10 : Test Pit 10

Context	Thickness (m)	Colour	Soil/ Feature Description	Finds	Remarks
1001	0.165-0.21	10YR 4/2 Dark greyish brown	slightly sandy, clayey SILT	a single village ware sherd, plastic fragments	Topsoil
1002	0.135-0.18	10YR 4/1 Dark grey	stiff and clumpy silty, sandy CLAY	Sterile	Fill
1003 (l.o.e.)	0.755-0.905	10YR 6/3 Light brownish grey	sandy and silty sterile GRAVEL	pebbles and cobbles	Sterile alluvial deposit

ANNEX C Section Drawings

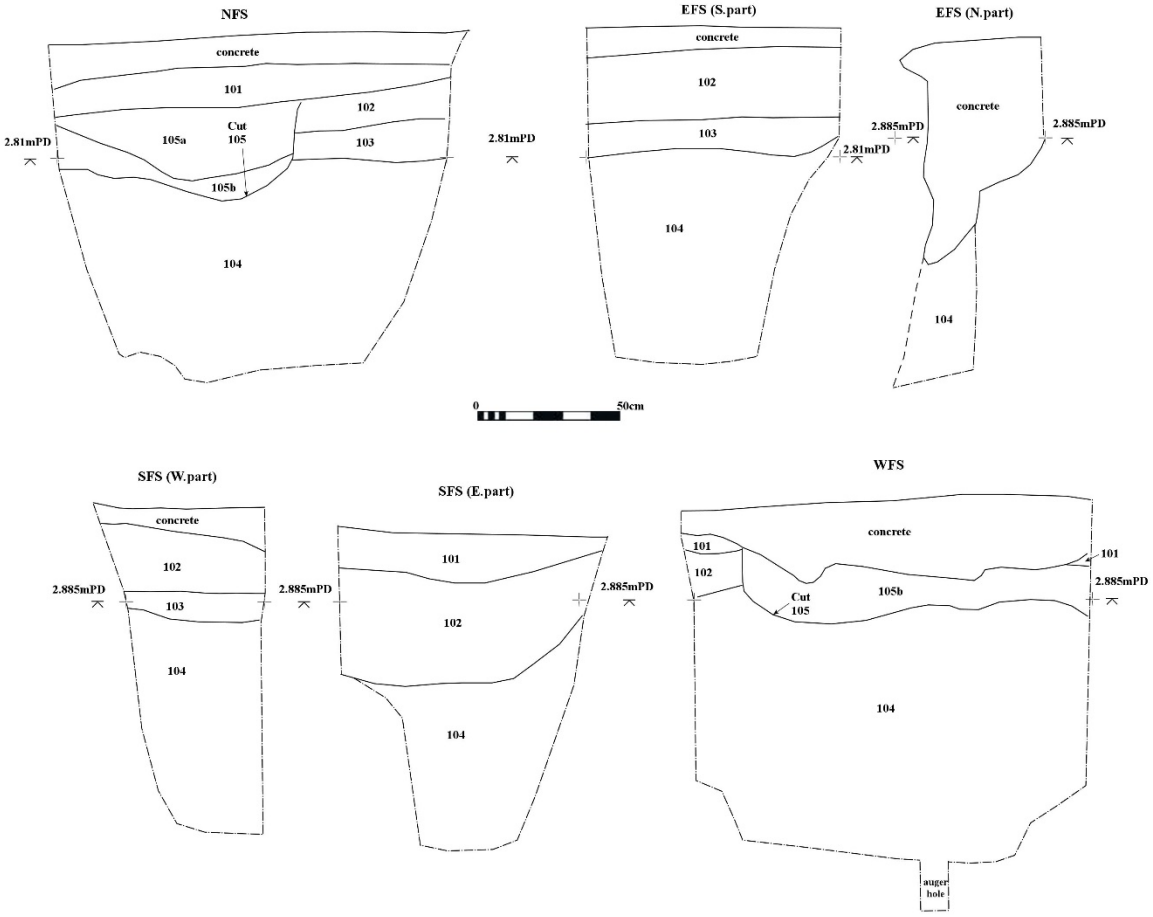


Figure 7 Section drawings of Test Pit 1

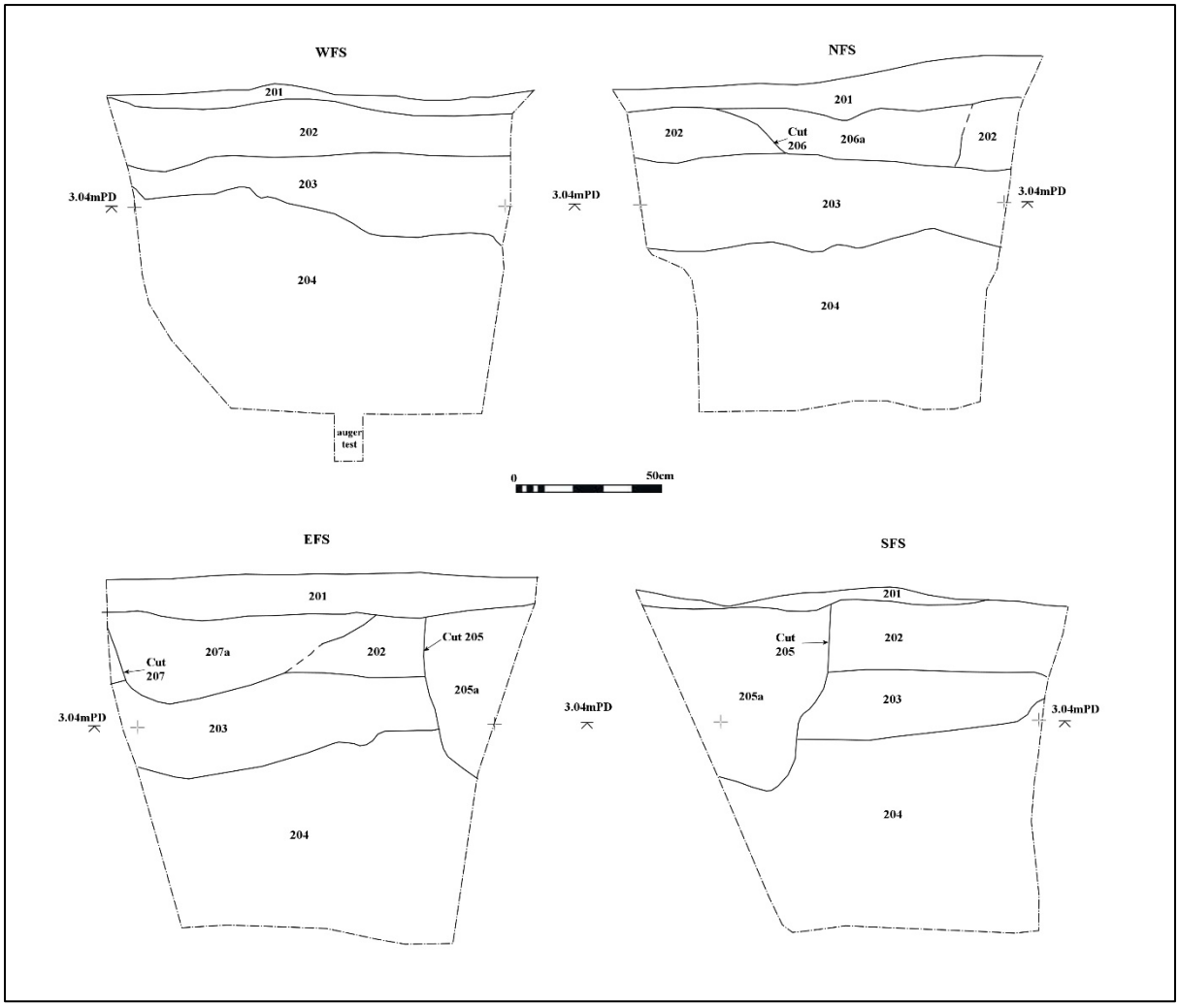


Figure 8 Section drawings of Test Pit 2

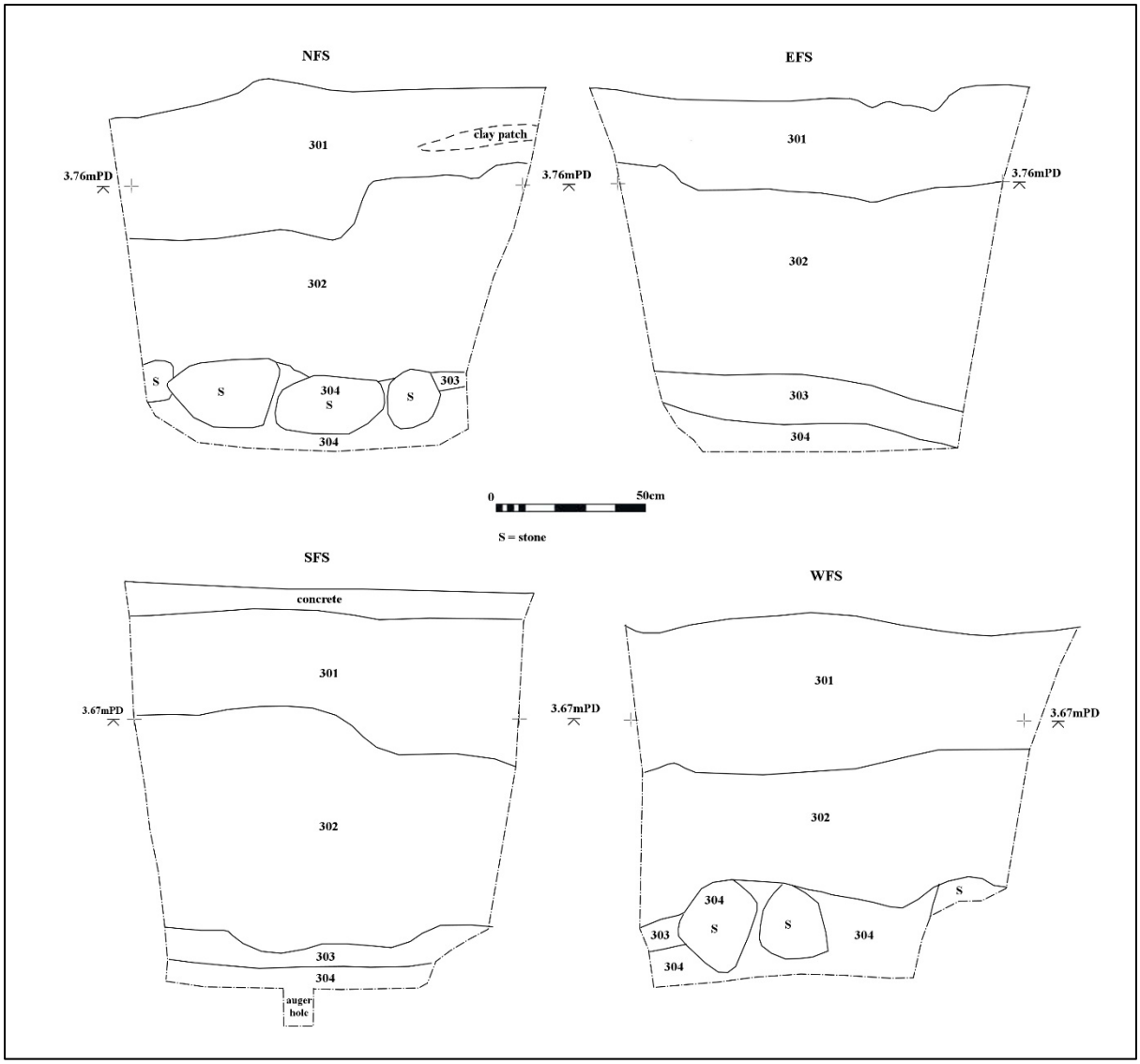


Figure 9 Section Drawings of Test Pit 3

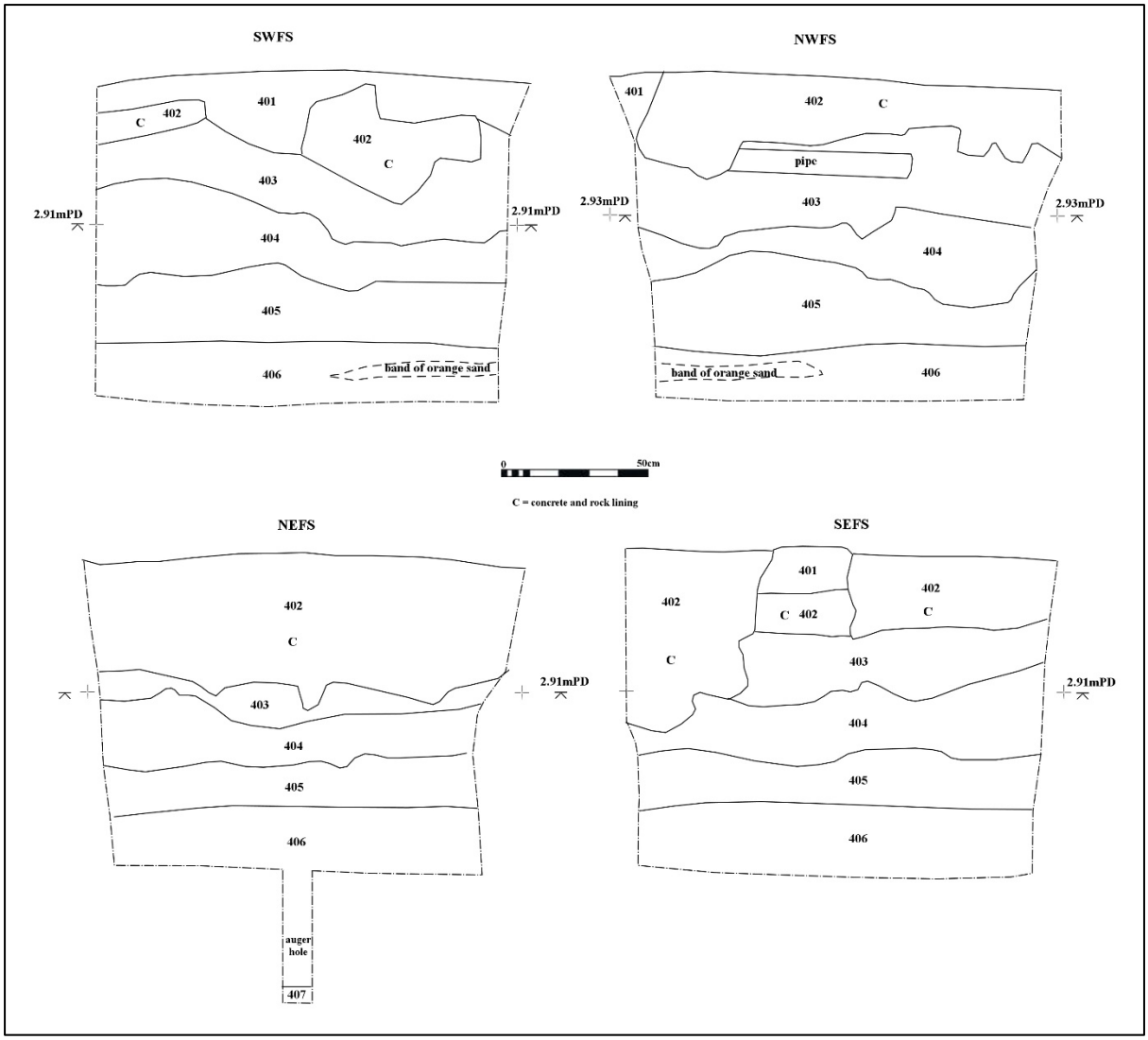


Figure 10 Section drawings of Test Pit 4

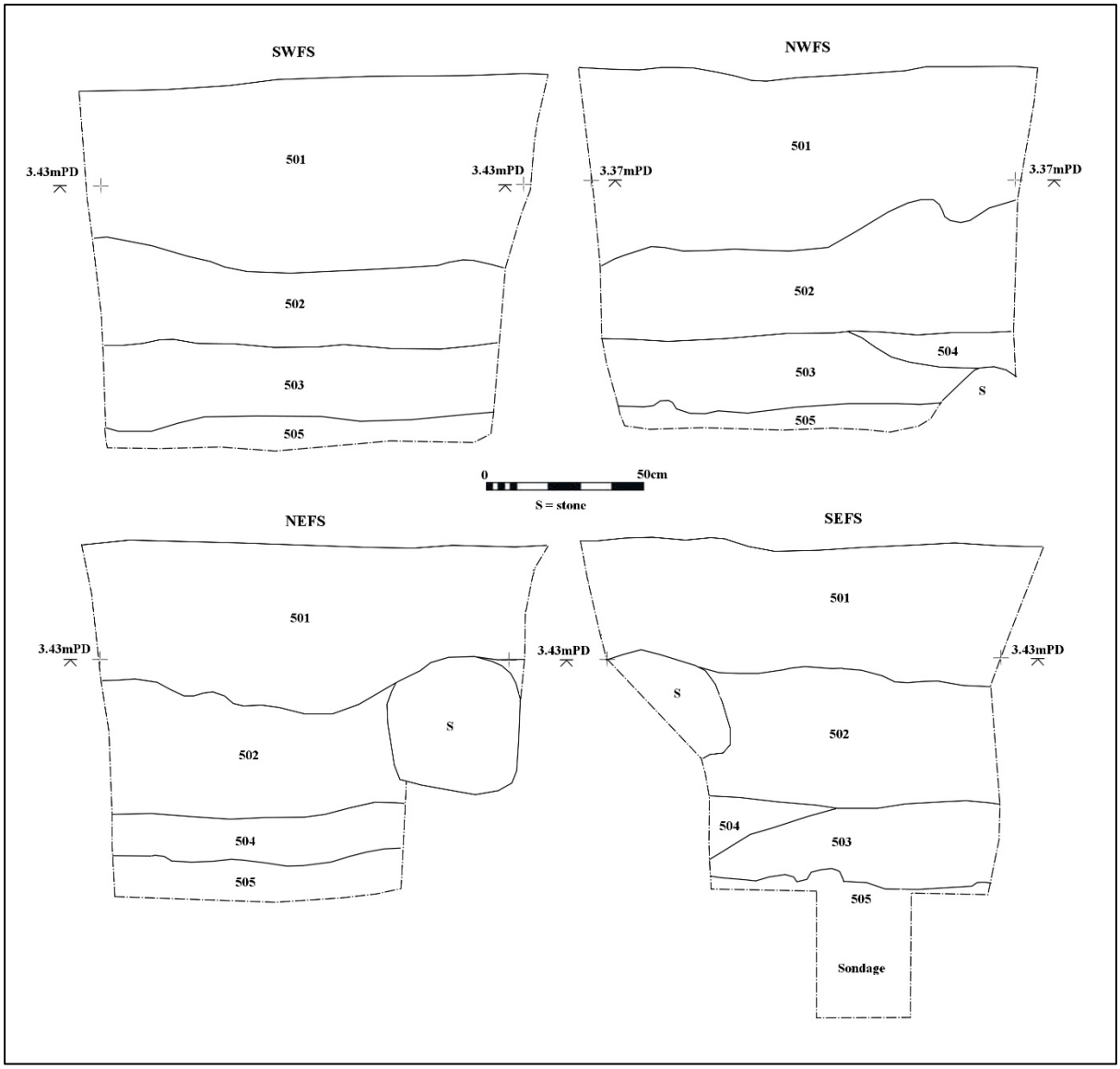


Figure 11 Section drawings of Test Pit 5

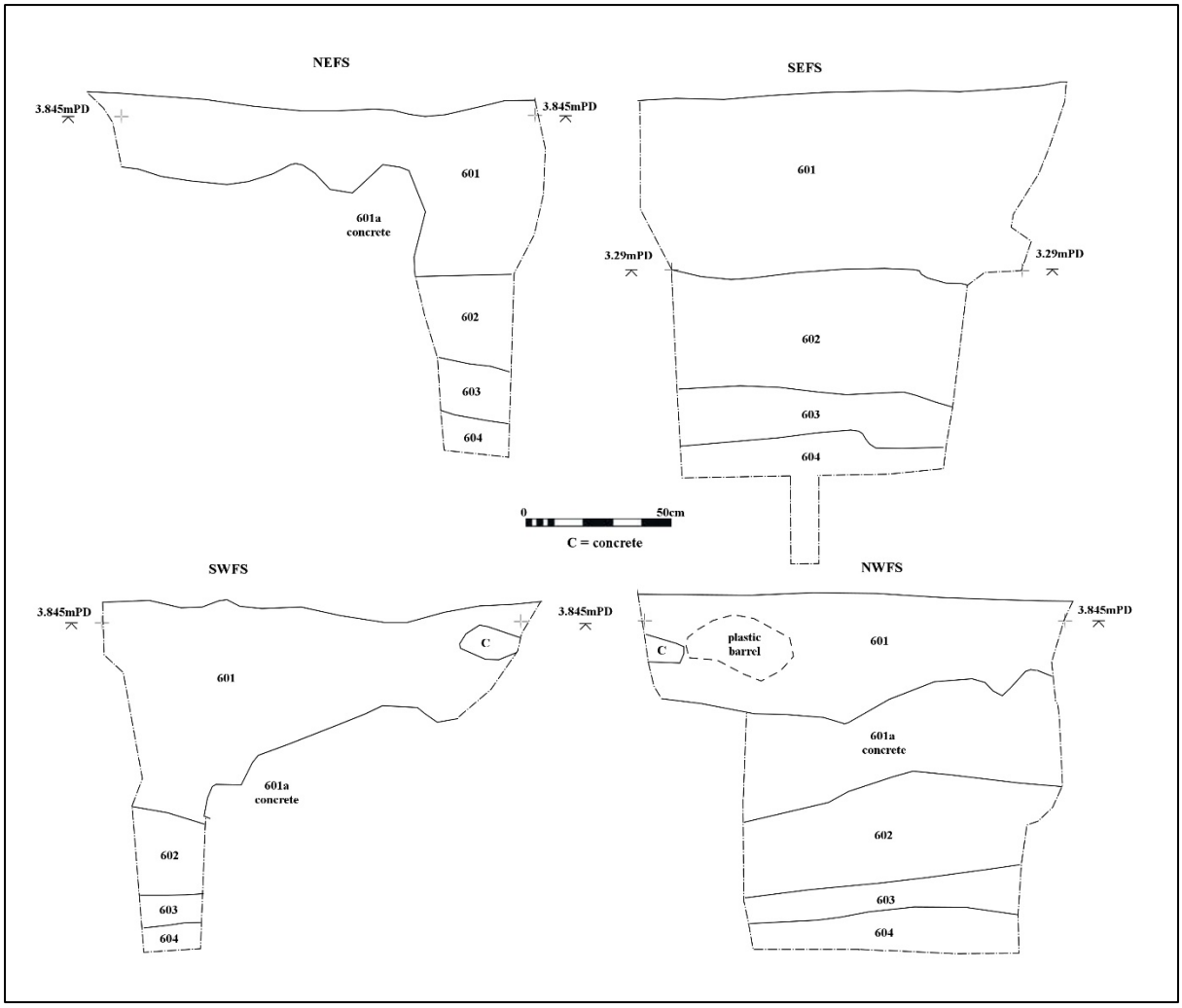


Figure 12 Section drawings of Test Pit 6

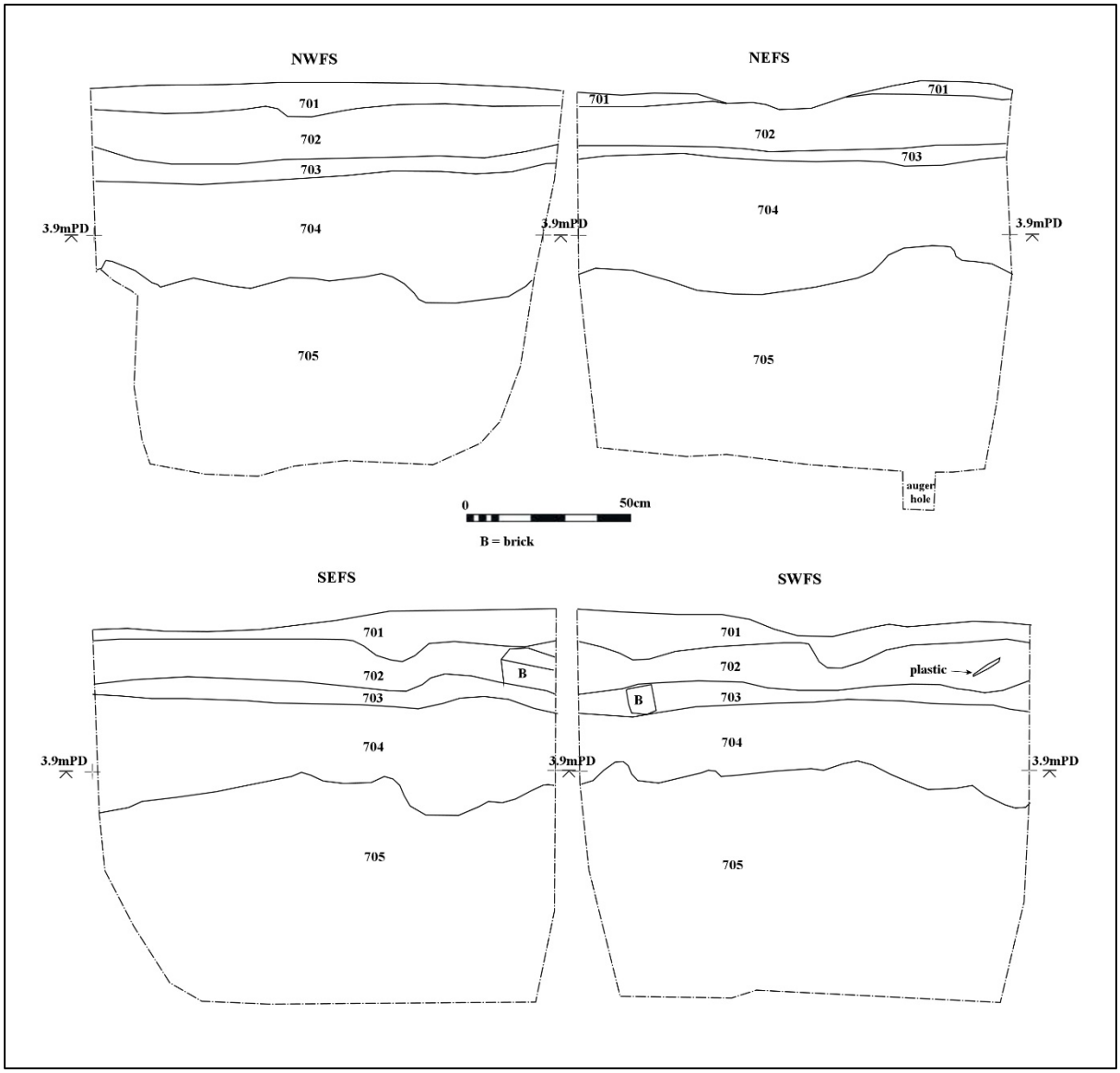


Figure 13 Section drawing of Test Pit 7

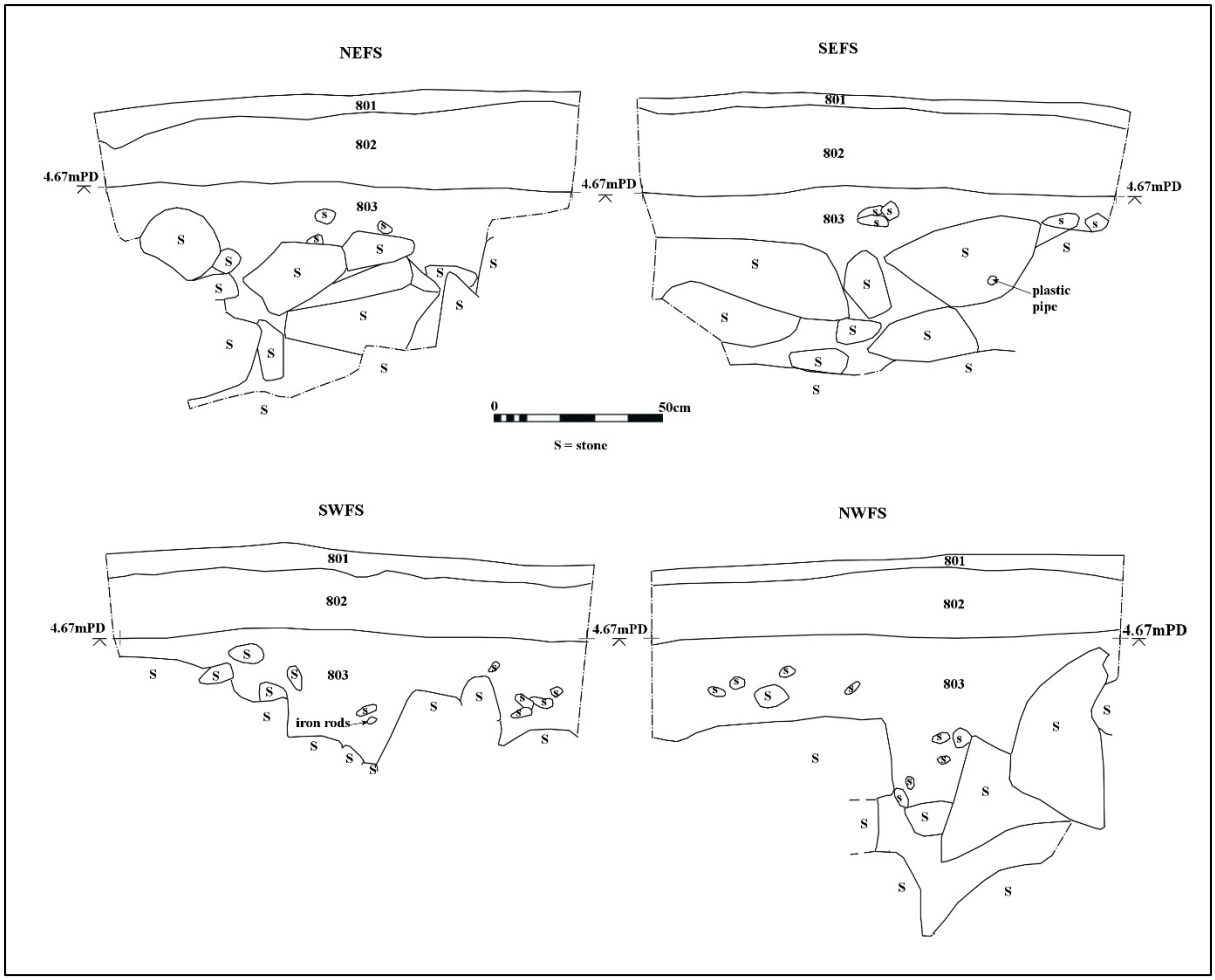


Figure 14 Section drawings of Test Pit 8

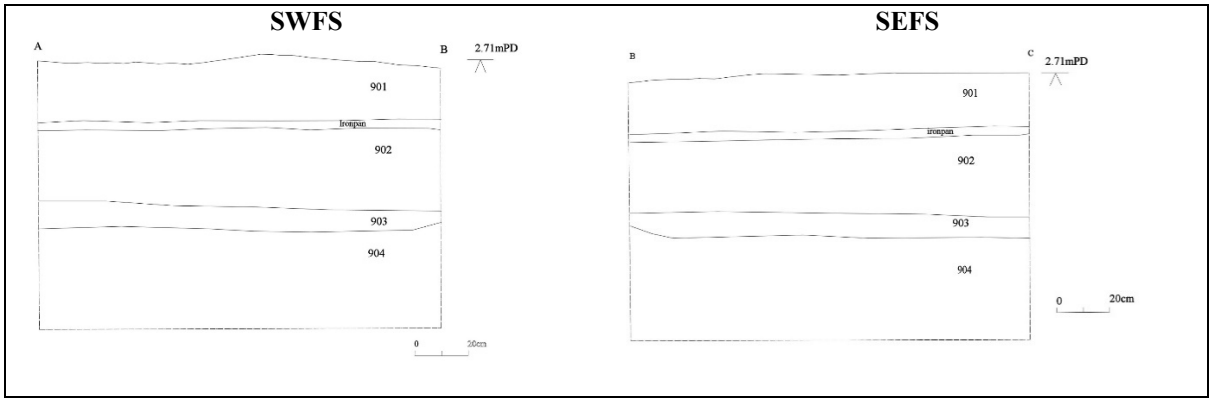


Figure 15 Section drawings of Test Pit 9

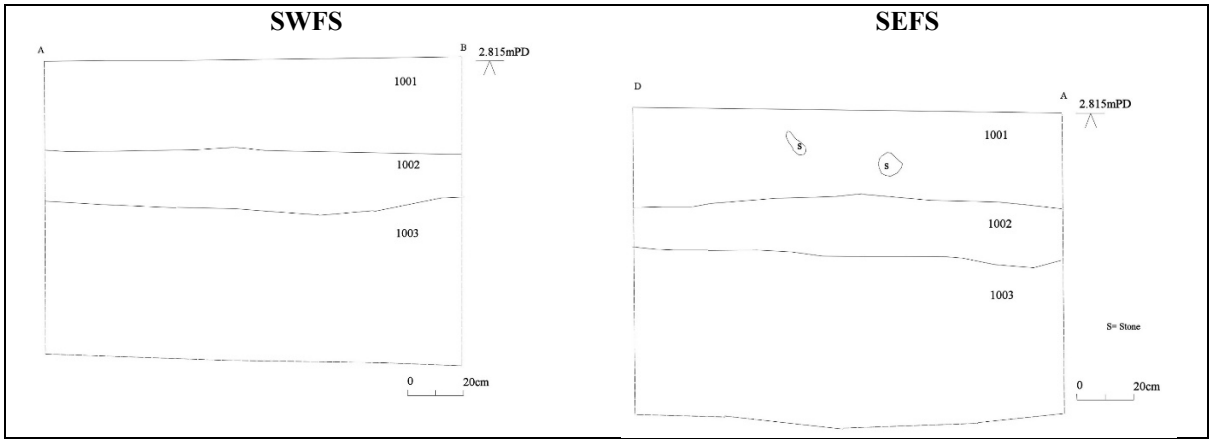


Figure 16 Section drawings of Test Pit 10

ANNEX D Finds Drawings

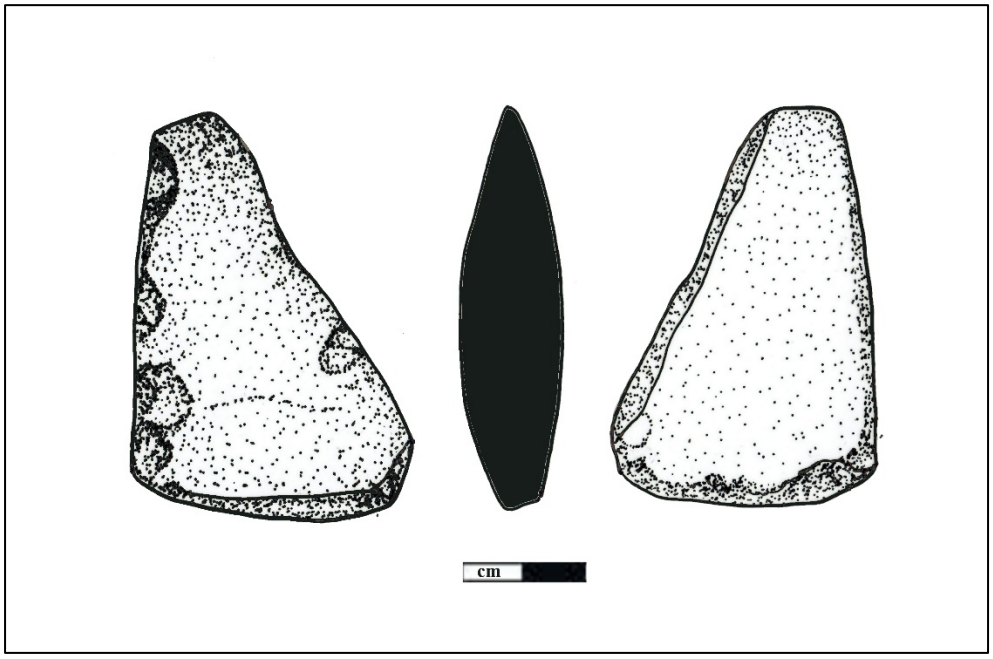


Figure 17 Drawing of prehistoric stone adze fragment from [301]

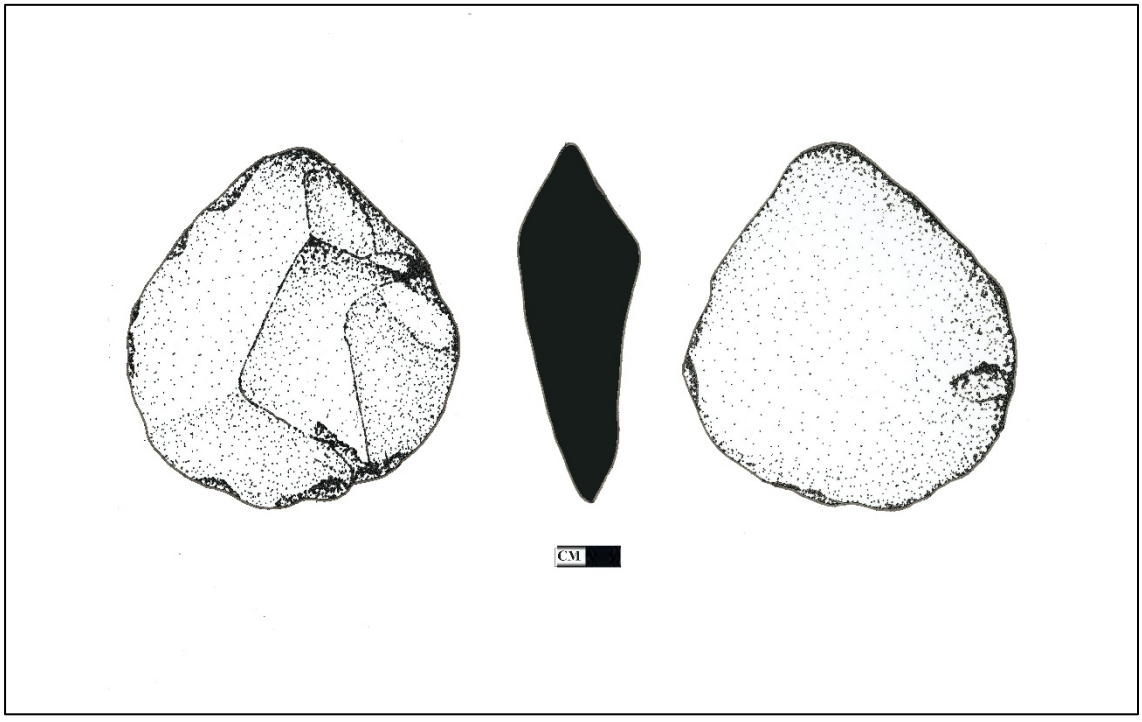


Figure 18 Drawing of prehistoric pebble tool from [302]

ANNEX E Auger Test and Test Pit Plates

Plate 1 General view of area near AH1-2 in the southern end of the Licence Area, looking south

Plate 2 Existing cultivation plots around AH14-16, looking north-east

Plate 3 General view of orchard area in the Northern Area for AH18-25, looking north

Plate 4 General view of TP1 area, looking north

Plate 5 Pre-ex photo of TP1, looking north

Plate 6 North facing section of TP1, looking south

Plate 7 West facing section of TP1, looking east

Plate 8 South facing section of TP1, looking north

Plate 9 East facing section of TP1, looking west

Plate 10 Post-ex photo of TP1, looking north

Plate 11 General view of TP2 area, looking north

Plate 12 Pre-ex photo of TP2, looking south

Plate 13 North facing section of TP2, looking south

Plate 14 West facing section of TP2, looking east

Plate 15 South facing section of TP2, looking north

Plate 16 East facing section of TP2, looking west

Plate 17 Post-ex photo of TP2, looking east

Plate 18 General view of TP3 area, looking south

Plate 19 Pre-ex photo of TP3, looking south

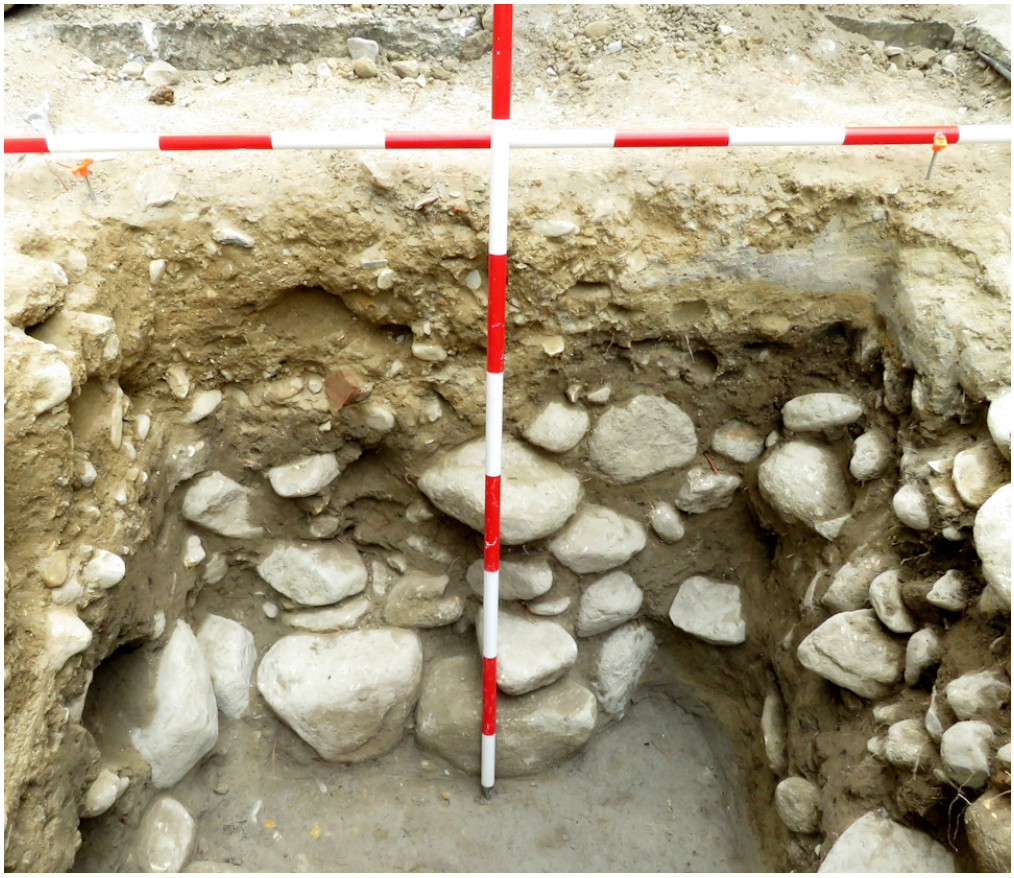


Plate 20 North facing section, looking south

Plate 21 West facing section of TP3, looking east

Plate 22 South facing section of TP3, looking north

Plate 23 East facing section of TP3, looking west

Plate 24 Post-ex of TP3, looking east

Plate 25 General view of TP4 area, looking north

Plate 26 Pre-ex photo of TP4, looking south-west

Plate 27 North-east facing section of TP4, looking south-west

Plate 28 North-west facing section of TP4, looking south-east

Plate 29 South-west facing section of TP4, looking north-east

Plate 30 South-east facing section of TP4, looking north-west

Plate 31 Post-ex photo of TP4, looking south-west

Plate 32 General view of TP5 area, looking south-west

Plate 33 Pre-ex photo of TP5, looking south-west

Plate 34 North-east facing section of TP5, looking south-west

Plate 35 North-west facing section of TP5, looking south-east

Plate 36 South-west facing section of TP5, looking north-east

Plate 37 South-east facing section of TP5, looking north-west

Plate 38 Post-ex photo of TP5, looking south-east

Plate 39 General view of TP6 area, looking north-east

Plate 40 Pre-ex photo of TP6, looking south-west

Plate 41 North-east facing section of TP6, looking south-west

Plate 42

South-eastern edge of north-east facing section of TP6, looking south-west

Plate 43 Upper part of north-west facing section of TP6, looking south-east

Plate 44 Lower part of north-west facing section of TP6, looking south-east

Plate 45 South-west facing section of TP6, looking north-east

Plate 46

South-eastern edge of south-west facing section of TP6, looking north-east

Plate 47 South-east facing section of TP6, looking north-west

Plate 48 Post-ex photo of TP6, looking north-east

Plate 49 General view of TP7 area, looking south-east

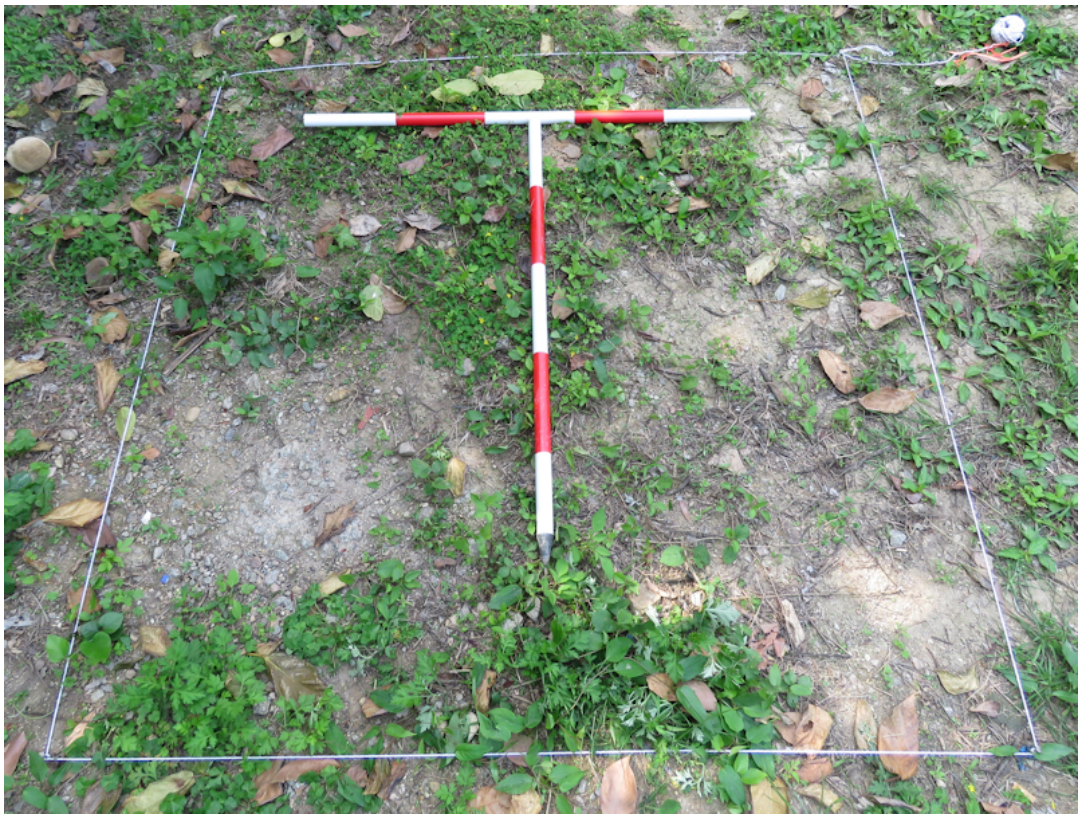


Plate 50 Pre-ex photo of TP7, looking south-east

Plate 51 North-west facing section of TP7, looking south-east

Plate 52 South-west facing section of TP7, looing north-east

Plate 53 South-east facing section of TP7, looking north-west

Plate 54 North-east facing section of TP7, looking south-west

Plate 55

Post-ex photo of TP7, looking south-east

Plate 56 General view of TP8 area, looking south-west

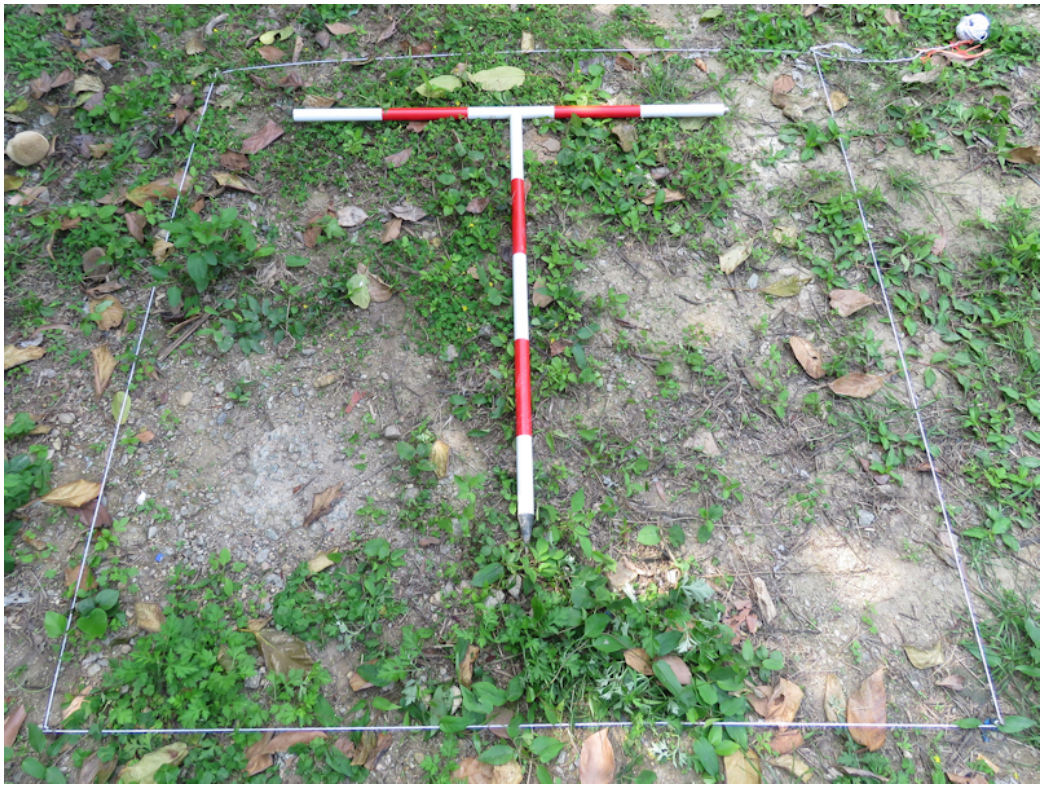


Plate 57 Pre-ex photo of TP8, looking south-west

Plate 58 North-east facing section of TP8, looking south-west

Plate 59 North-west facing section of TP8, looking south-east

Plate 60 South-west facing section of TP8, looking north-east

Plate 61 South-east facing section of TP8, looking north-west

Plate 62 Post-ex photo of TP8, looking south-east

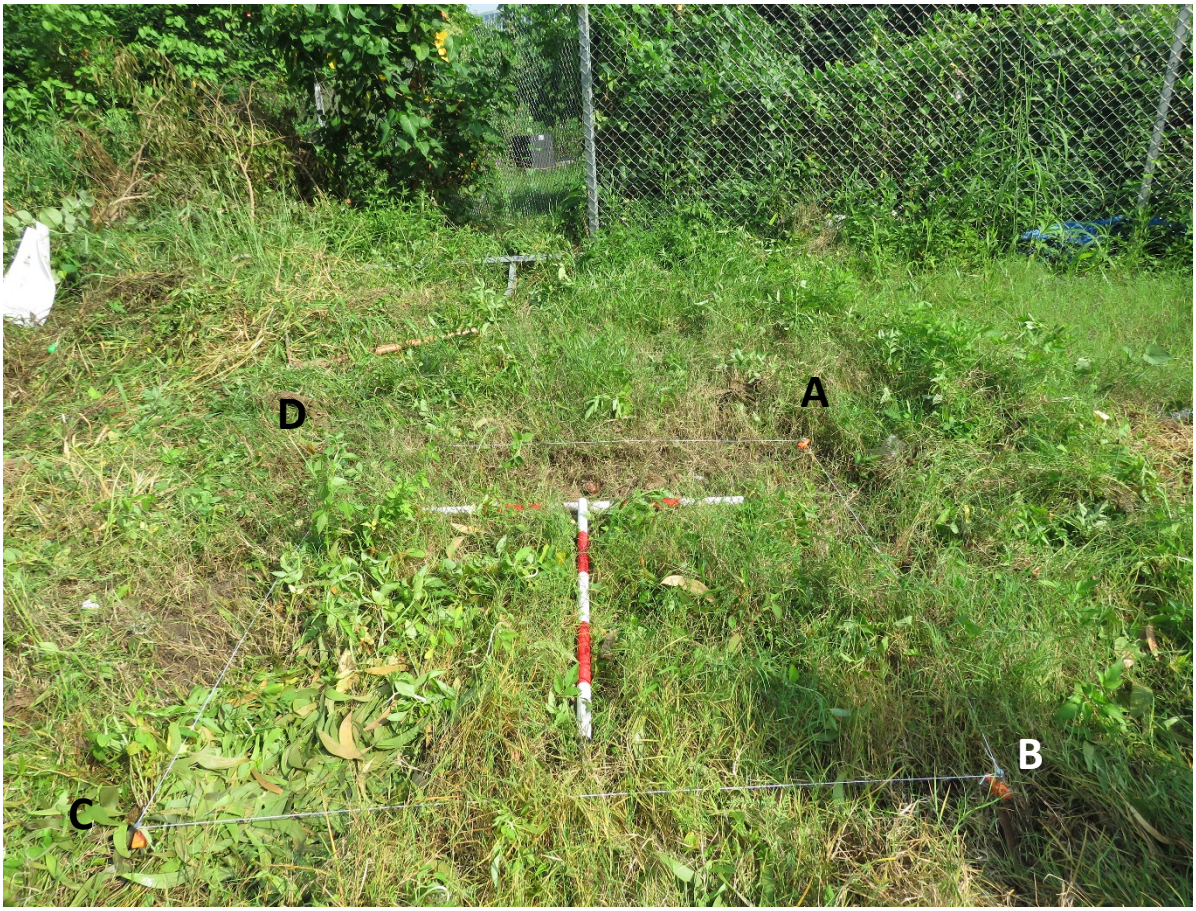


Plate 63 Pre-ex view of TP9; looking northwest

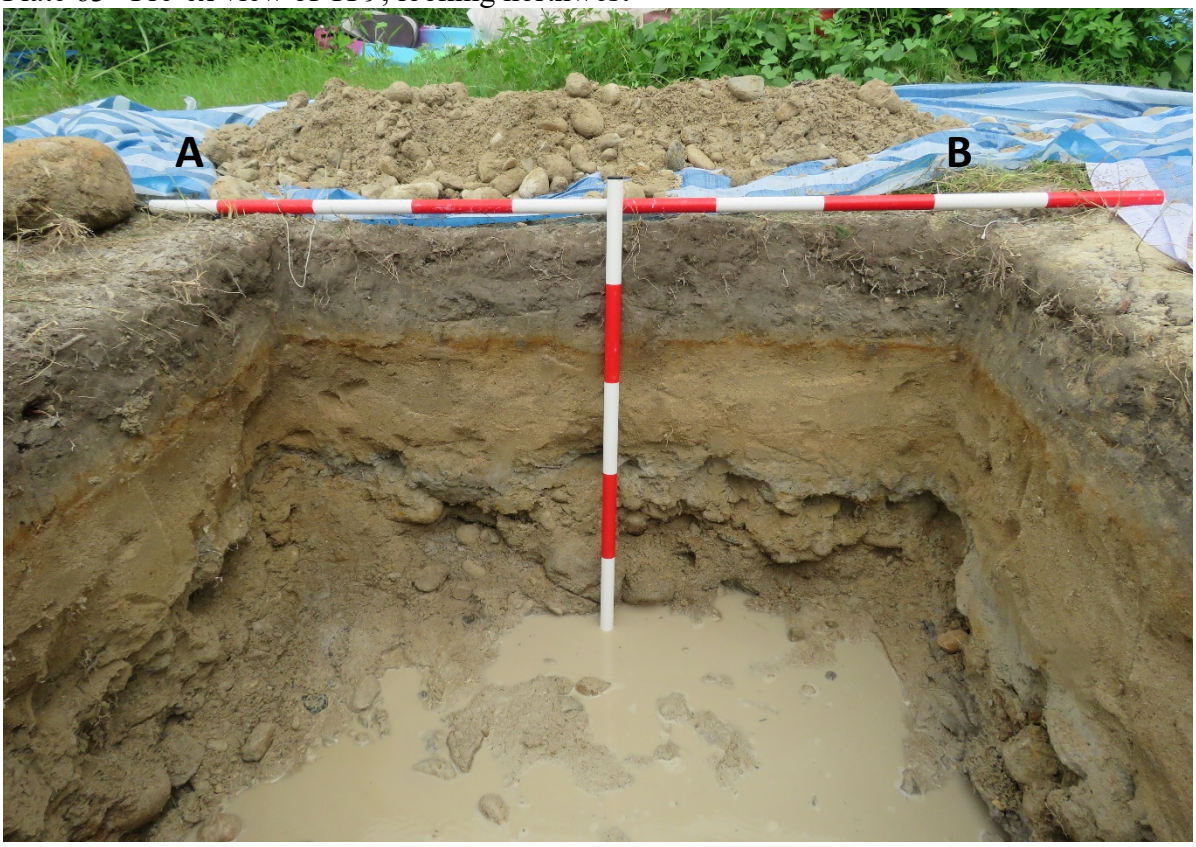


Plate 64 TP9: Southwest facing section

Plate 65 TP9: Northeast facing section

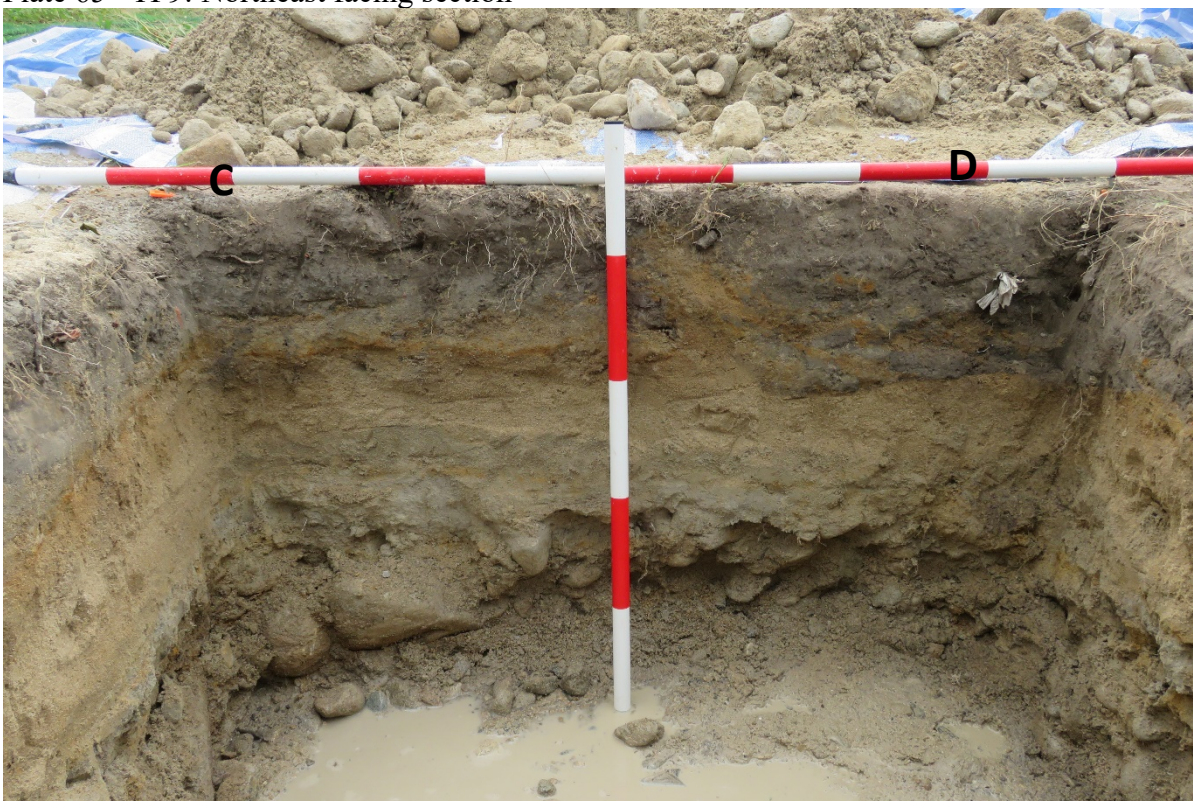


Plate 66 TP9: Northwest facing section

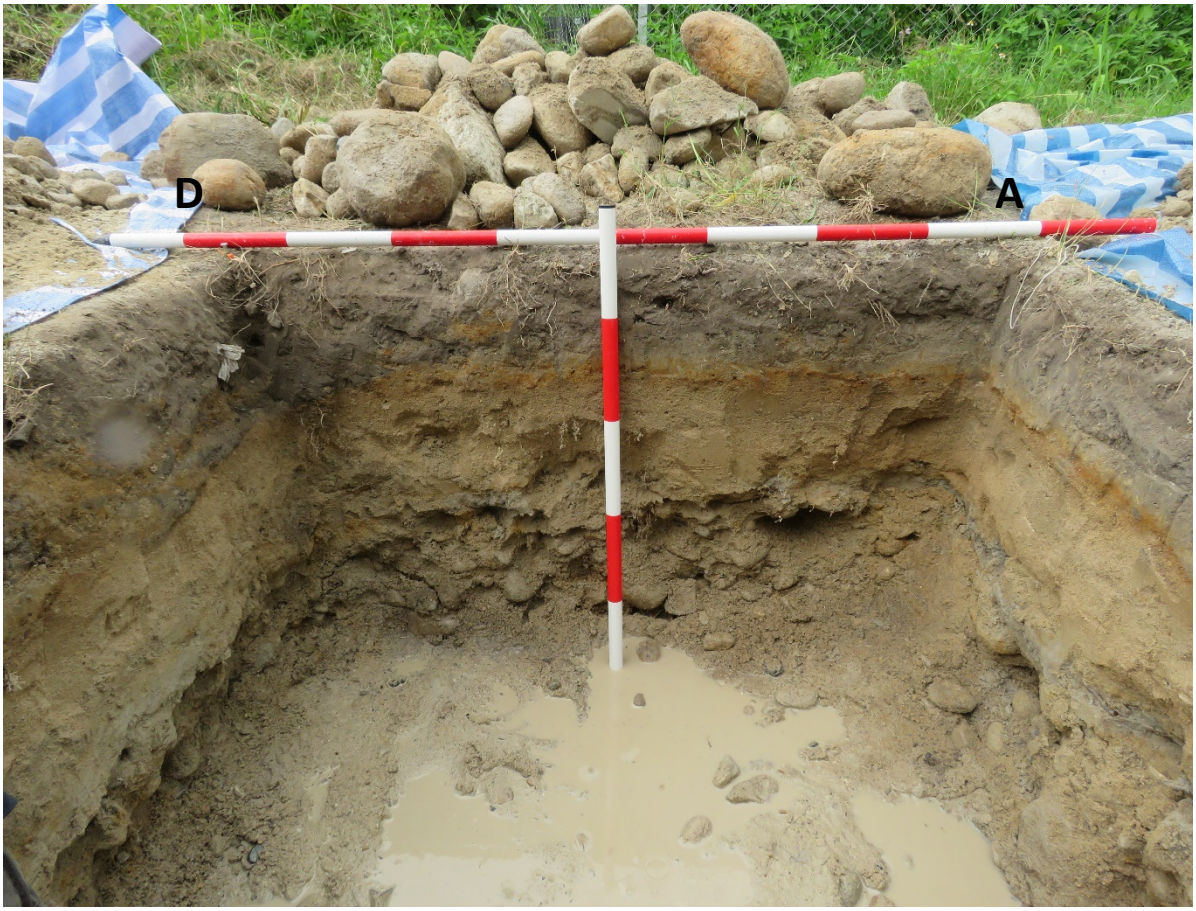


Plate 67 TP9: Southeast facing section

Plate 68 Pre-ex view of TP10; looking northwest

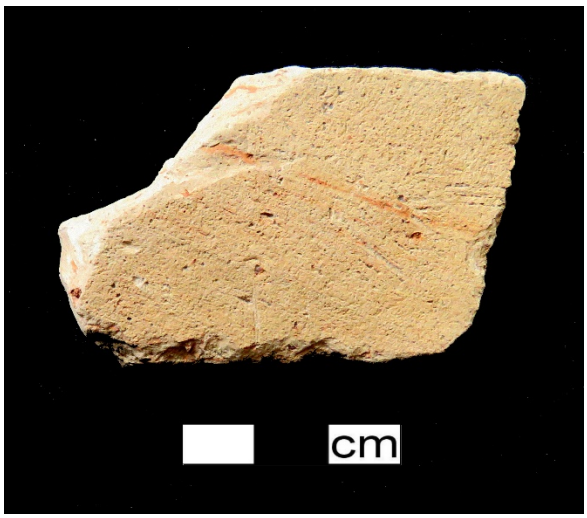
Plate 69 TP10: Southwest facing section

Plate 70 TP10: Northeast facing section

Plate 71 TP10: Northwest facing section

Plate 72 TP10: Southeast facing section

ANNEX F Finds Plates



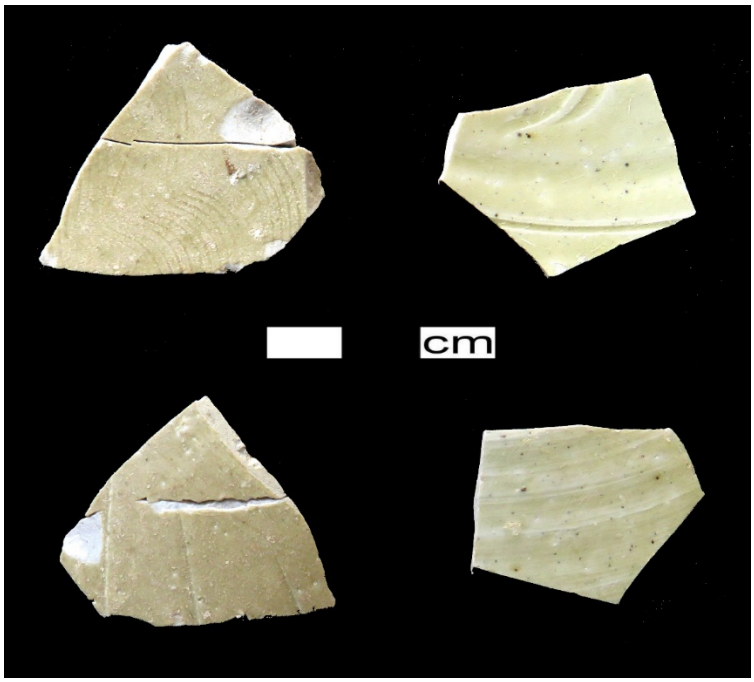
◄ Plate 73

Context 101: small tile fragment

Plate 74 Context 201: a possible Bronze Age body sherd (left) and Qing-C20 brown glazed body sherd (right)

◄ Plate 75

Context 202: possible Qing village ware (top row), Wun Yiu porcelain base (middle left), an undiagnostic but possibly pre-Qing base sherd (second row middle), a C19-20 tile fragment (middle right), Song body sherds (lower left and middle), and a C20 porcelain rim sherd (lower right)



◄ Plate 76

Context 202: Opposite sides of the Song body sherds with lotus designs and impressed lines (exterior – lower; interior – upper)

Plate 77 Context 301: Qing provincial porcelain sherds (upper row), a possible Tang slipped body sherd (middle left), two C19-20 tile fragments (middle right), Qing village ware (lower row), and a prehistoric stone adze fragment (lower right)

Plate 78 Context 301: prehistoric stone adze fragment

Plate 79 Context 302: four C20 tile fragments (upper row), Qing village ware (middle two from left, lower row), a modern glass marble (middle third from left), and a prehistoric pebble tool (far right)

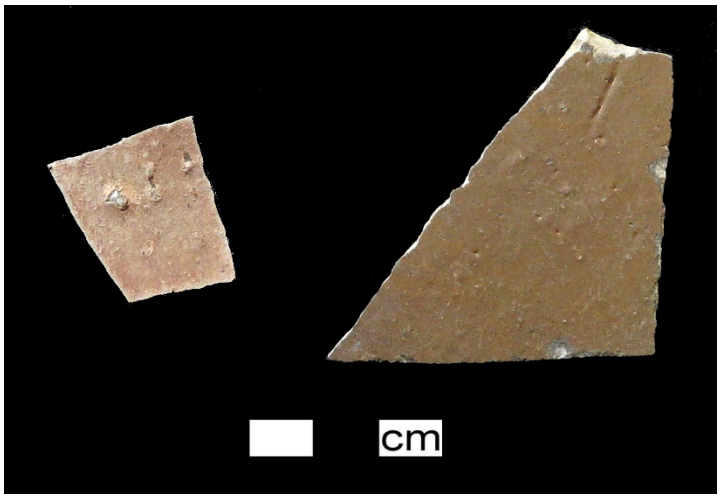
Plate 80 Context 302: opposite sides of a prehistoric pebble tool

◄ Plate 81

Context 403: a small Qing-C20 tile fragment

◄ Plate 82

Context 602: a small Qing-C20 tile fragment



◄ Plate 83

Context 603: two Qing-C20 village ware

Plate 84 Context 702: a tiny C19-20 tile fragment (upper right), two possible Qing village ware (upper left and lower right), and a possible Tang slipped body sherd with lug scar (lower left)

TP9

Plate 85 Undiagnostic finds from TP9, Context 901

TP10

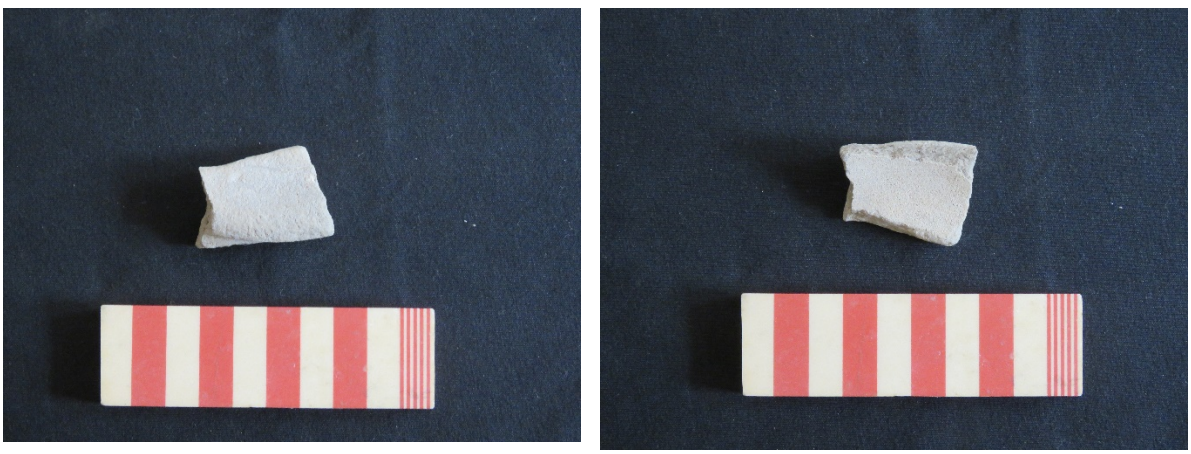


Plate 86 Undiagnostic find from TP10, Context1001

ANNEX G Finds Table

Table 1: Finds Table

Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP1	101	CBM		TL						1	34	C19-20	Orange fabric, 0.8-1cm thick; 6x3.8cm
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP2	201	POT	PFF	BO						1	4	BA?	A small shoulder/neck fragment; hard grey fabric with traces of black spheroidal inclusions; possibly of Meihuadun type dated to BA
TP2	201	POT	HSW	BO				GL		1	1	Qing-C20	A tiny fragment of brown glazed body sherd
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP2	202	CBM		TL						1	9	C19-20	Orange fabric; small fragment; 0.8cm thick; 3.4 x 2.5cm
TP2	202	POT	HSW	BO				GL		2	20	Qing?	Both are brown glazed; one is part of a worn rim/shoulder fragment
TP2	202	POT	HSW	BO						1	12	Qing?	body sherd without glaze
TP2	202	POT	HSW	BA						1	13	UD	A small worn base fragment; surviving H 1.5cm; with rough surface at base; creamy fabric wrapped inside light grey fabric; undiagnostic but possibly pre-Qing

TP2	202	POT	POP	RI		19	2.5	GL		1	2	C20	Small fragment of white porcelain rim with gold trim below interior rim
TP2	202	POT	POP	BA	BL			GL		1	83	Qing	Wun Yiu base fragment; green-fired with pale greyish glaze (except exterior base and unglazed ring on interior); surviving H 3.5cm; footring H 1cm;
TP2	202	POT	POC	BO				GL		3	13	Song	all small green glazed celadon sherds possibly dated to Southern Song; including 2 joiners (8g): impressed lotus decoration on exterior, interior with impressed wavy lines, thick 0.4-0.5cm; the other celadon sherd has impressed lines on exterior, 0.3-0.4cm thick
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP3	301	CBM		TL						2	24	C19-20	1 creamy orange fabric, very worn, thick 0.7cm; 1 small orange fabric, 0.9cm thick
TP3	301	POT	HSW	RI				GL		1	11	Qing	small bead rim fragment with shiny dark brown glaze and purplish red fabric, high-fired; too worn to measure
TP3	301	POT	HSW	BO				GL		1	26	Qing	yellowish brown glaze on exterior and partially on interior; creamy fabric; 0.7-1cm thick

TP3	301	POT	HSW	BA				GL		1	100	Qing	Base fragment of a large pot; brown glazed exterior; concaved base, near straight wall; surviving H 5cm, wall 0.8-1.1cm thick; base DIA 32cm (7.5%)
TP3	301	POT	HSF	BO				GL		1	12	Tang?	Creamy sandy fabric with degraded thick greyish slip on surface and greyish brown glaze on interior; thick 0.8cm
TP3	301	POT	POP	RI	BL	16	5.5	GL		1	4	Qing	small blue and white fragment with flora decoration on exterior; surviving H1.8cm; Wun Yiu
TP3	301	POT	POP	BO				GL		2	4	Qing	small blue and white body sherds with flora decoration; Wun Yiu
TP3	301	POT	POP	BA	BL			GL		5	84	Qing	5 joiners; blue and white with vertical stripe decorations on exterior; shiny and smooth glaze; exterior base and interior ring on interior base without glaze; low-footring (0.5cm); surviving H 2.3cm; base DIA (6.5cm)
TP3	301	POT	POP	BA	BL			GL		2	101	Qing	2 joiners; blue and white with vertical stripe designs on exterior; exterior base and interior ring on interior base without glaze; surviving H c.3cm; H of footring 0.7cm; base DIA 6.5cm;

TP3	301	STO			AD			PO		1	67	LN-BA	Prehistoric stone adze fragment; light grey; small barrel-shaped with curved edges; round flattened butt-end; continuous bevel; polished; 2 complete edges (1 long side and 1 short side); L6.5 x W4.5 x Max D 1.7cm; similar to FT65 (1990.004.00222) found in Fu Tei, Chek Lap Kok, which is dated to Late Neolithic.
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP3	302	STO			PT					1	351	LN-BA	A complete prehistoric pebble tool for chopping; sub-triangular shaped with chipped/rounded edges; flat rear surface; L11 x W10.3 X 3.8cm thick
TP3	302	CBM		TL						4	81	C20	2 red and 2 creamy fabric; 0.8-1cm thick
TP3	302	GLA		MA						1	6	C20	A glass marble; yellow
TP3	302	POT	HSW	BO				GL		1	8	C19-20	Shiny brown glazed on both side
TP3	302	POT	HSW	RI	SJ	11	36	GL		2	38	Qing	2 joiners; upright rim with lid seating; smooth brown glazed on both side; thin-walled (0.3cm); near straight wall; Shiwan ware (storage jar); surviving H c.5cm

TP3	302	POT	HSW	RI	SJ	13	27	GL		1	69	Qing	Bead rim with shiny brown glaze on both side; incised decorations on exterior below rim; surviving H c.3cm
TP3	302	POT	HSW	RI	SJ	12	15	GL		1	56	Qing	Slightly hooked and short upright rim of a storage jar; smooth dark brown glaze on both side; surviving H c.4cm
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP4	403	CBM		TL						1	12	Qing-C20	Creamy fabric; 0.8cm thick
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP6	602	CBM		TL						1	13	Qing-C20	Creamy fabric; very worn; 0.8cm thick
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP6	603	POT	HSW	BO				GL		2	25	Qing-C20	very high-fried; one with brown glaze on both side
Trench	Context	Category	Material	Type	Form	DIA	EVE	Surface Treatment	Method of Decoration	Count	Wt (g)	Date/Phase	Comments
TP7	702	CBM		TL						1	1	C19-20	Tiny fragment of worn red brick
TP7	702	POT	HSW	BO						1	13	Qing?	Unglazed body fragment, very high-fired
TP7	702	POT	HSW	BA				GL		1	12	Qing?	Rough at base; brown glazed

TP7	702	POT	HSF	BO				SL		1	9	Tang?	Sandy and creamy fabric with greyish brown slip on exterior and degraded reddish slip on interior; trace of lug on surface
TP9	901	CBM	TL								17		Abraded tile
		POT	POP	BO							3		
		POT	HSF	BO				SL			14		With slip
TP10	1001	POT	HSF	BA							18		Very small fragment

Table 2: Keys to Finds Codes Used

Keys to Finds Codes Used

CATEGORY	MATERIAL	TYPE	FORM	FINISH	DATE
CBM (Ceramic Building Material)		BR = Brick TL = Tile			C19 = 19th century; C20 = 20th century; BA = Bronze Age; LN = Late Neolithic
POT (Pottery)	POP = Provincial porcelain; POC = Porcelain (celadon) HSW = Historic Stoneware; HSF = Historic sandy fabric; PFF = prehistoric clay fabric	BA = Base BO = Body RI = Rim	BL = Bowl; SJ = Storage jar;	GL = glazed SL = slipped	
STO (Stone)			AD = adze PT = pebble tool	PO = polished	

Others: DIA (diameter)

EVE (estimated vessel equivalent)

Wt (weight)

Others:

UD = undiagnostic

Wt = weight

EVE = estimated vessel equivalent

DIA = diameter

ANNEX H Surveying Data and Plans

Coordinates and Levels For AH1-40 and TP1-8

Point No.	Easting	Northing	Elevation	Point No.	Easting	Northing	Elevation
AH1	811249.65	815634.75	5.28	TP1			
AH2	811259.86	815635.07	5.10	NW	811289.94	816053.65	3.18
AH3	811262.22	815647.56	4.80	NE	811291.42	816053.43	3.06
AH4	811254.08	815654.82	4.67	SE	811291.20	816051.95	3.07
AH5	811263.61	815667.78	4.07	SW	811289.69	811289.69	3.05
AH6	811258.06	815685.65	4.32				
AH7	811265.78	815683.70	4.32	TP2			
AH8	811266.21	815697.96	4.30	NW	811286.68	816009.96	3.44
AH9	811263.73	815705.67	4.35	NE	811288.17	816009.83	3.43
AH10	811267.45	815711.38	4.22	SE	811288.03	816008.33	3.39
AH11	811267.84	815719.73	4.01	SW	811286.54	816008.47	3.47
AH12	811262.79	815722.56	4.03				
AH13	811266.10	815731.29	3.90	TP3			
AH14	811257.20	815748.12	3.68	NW	811283.12	815962.68	4.00
AH15	811262.71	815752.56	3.58	NE	811284.61	815962.53	3.96
AH16	811267.94	815751.83	3.48	SE	811284.47	815961.04	3.97
AH17	811269.59	815763.01	3.19	SW	811282.97	815961.19	4.02
AH18	811275.38	815949.77	3.76				
AH19	811273.92	815981.92	3.38	TP4			
AH20	811273.54	815970.48	3.45	NW	811265.53	815765.38	3.25
AH21	811276.21	815977.43	4.00	NE	811266.95	815764.93	3.33
AH22	811278.98	815973.61	3.64	SE	811266.51	815763.49	3.36
AH23	811276.67	815965.77	3.74	SW	811265.08	815763.94	3.35
AH24	811277.84	815960.21	3.92				
AH25	811273.94	815956.50	3.78	TP5			
AH26	811285.96	816023.41	3.21	NW	811246.98	815735.67	3.85
AH27	811287.66	816023.29	3.39	NE	811248.30	815734.95	3.90
AH28	811289.18	816023.29	3.15	SE	811247.60	815733.68	3.90
AH29	811254.46	815725.39	3.73	SW	811246.26	815734.35	3.85
AH30	811251.47	815725.64	3.73				
AH31	811247.58	815726.64	3.63	TP6			
AH32	811251.75	815733.97	3.70	NW	811258.96	815729.13	4.12
AH33	811255.53	815733.70	3.73	NE	811260.40	815728.70	4.13
AH34	811258.37	815732.67	3.81	SE	811259.97	815727.26	4.13
AH35	811261.33	815740.56	3.77	SW	811258.53	815727.69	4.09
AH36	811263.71	815740.10	3.80				
AH37	811266.02	815739.88	3.81	TP7			
AH38	811283.50	815991.69	3.49	NW	811260.83	815676.60	4.27
AH39	811285.26	815991.55	3.46	NE	811262.31	815676.82	4.33
AH40	811286.96	815991.47	3.16	SE	811262.53	815675.33	4.29
				SW	811261.05	815675.11	4.24
				TP8			
				NW	811253.90	815645.20	4.87
				NE	811255.37	815644.87	4.79
				SE	811255.04	815643.41	4.82
				SW	811253.58	815643.73	4.90

Coordinates and Levels For AH41-46

Point No.	Easting	Northing	Elevation
AH41	811293.04	816112.37	3.61
AH42	811278.09	816111.46	2.73
AH43	811274.82	816102.19	2.71
AH44	811281.44	816094.29	2.83
AH45	811286.74	816091.84	2.80
AH46	811291.68	816102.50	2.80

Coordinates and Levels For TP9-10

Point No.	Easting	Northing	Elevation
TP09			
NW	811286.77	816095.16	2.85
SW	811285.36	816094.67	2.83
SE	811284.80	816095.98	2.85
NE	811286.15	816096.57	2.81
TP10			
NW	811283.77	816111.09	2.73
SW	811284.52	816109.80	2.72
SE	811285.80	816110.55	2.74
NE	811285.12	816111.83	2.74

Point No.	Easting	Northing	Elevation
TBM1	811298.95	816101.57	2.92

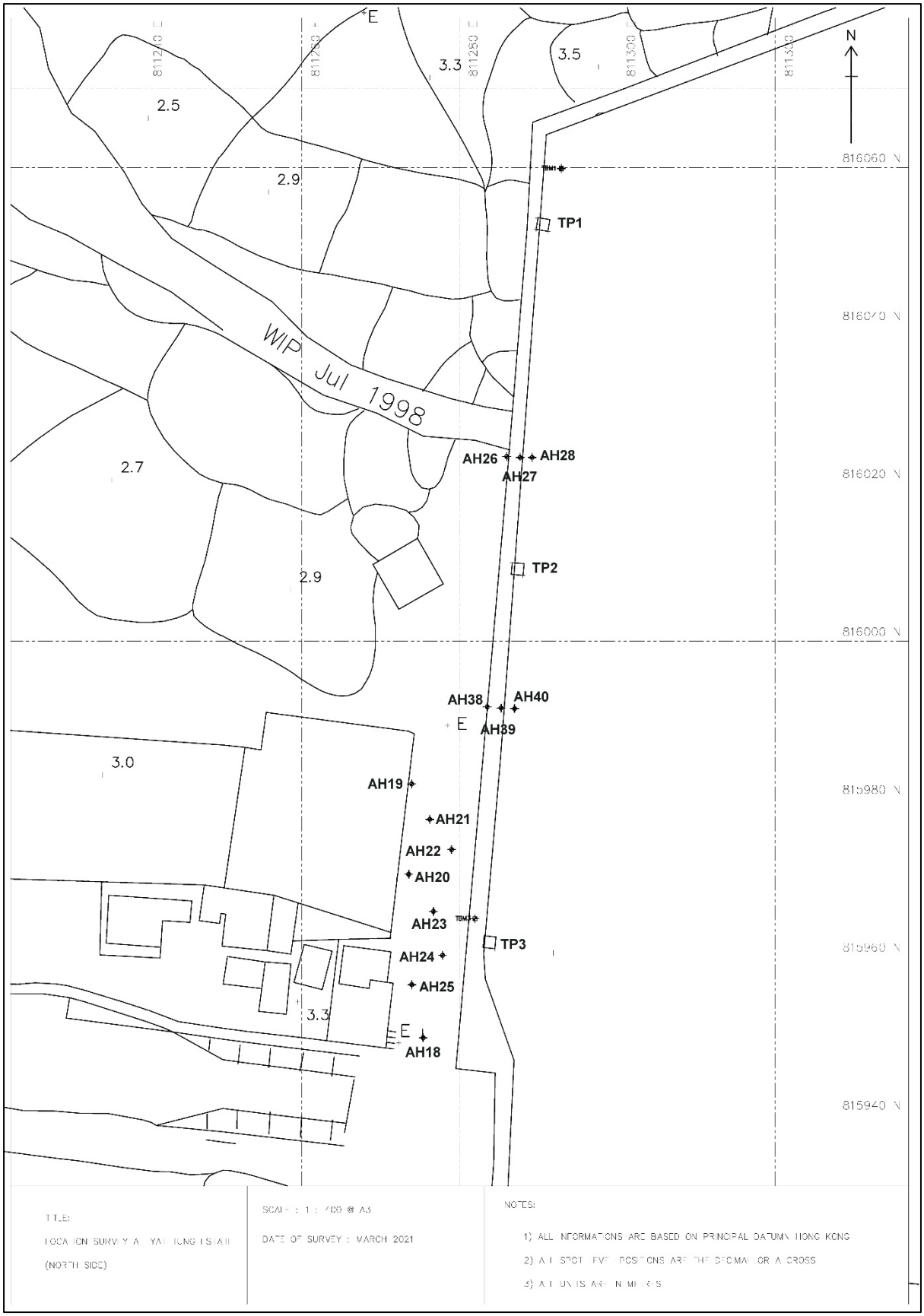


Figure 19 Surveyed plan of AH18-28, 38-40 and TP1-3 in the Northern Area.

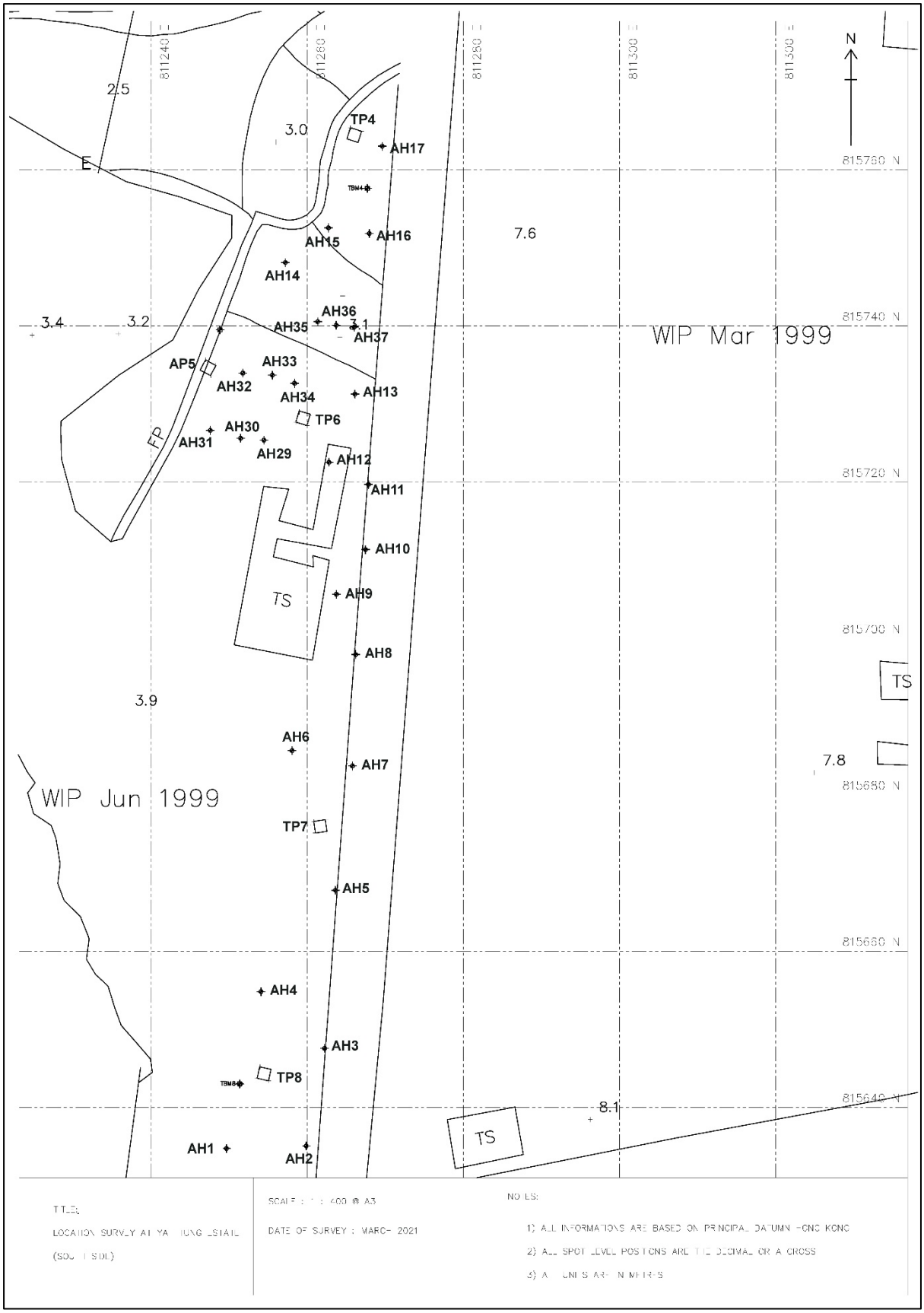


Figure 20 Surveyed plan of AH01-17, 29-37 and TP4-8

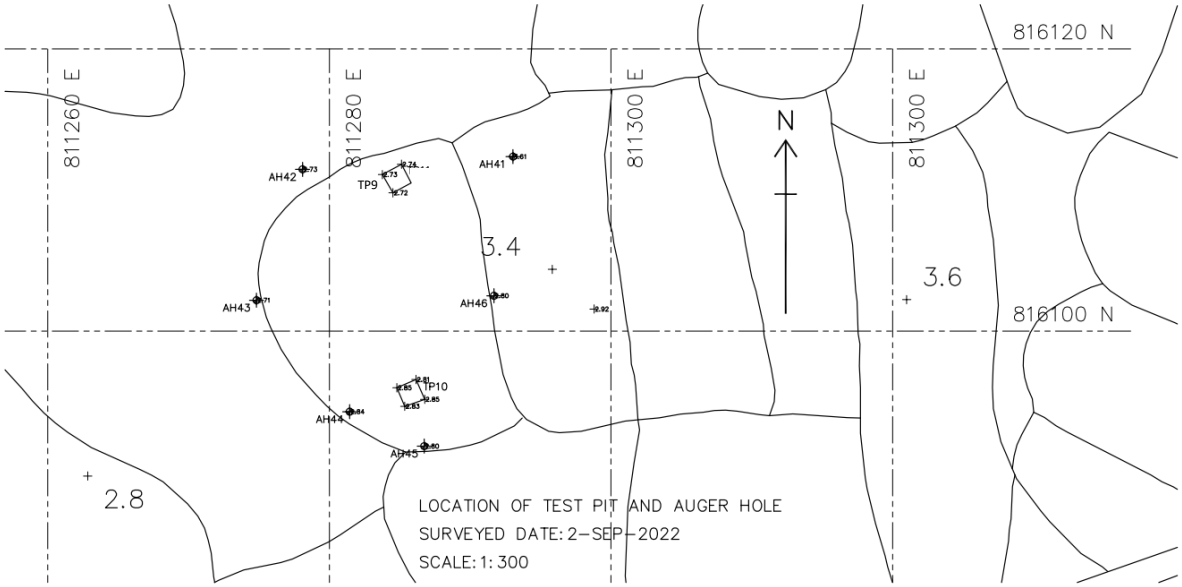
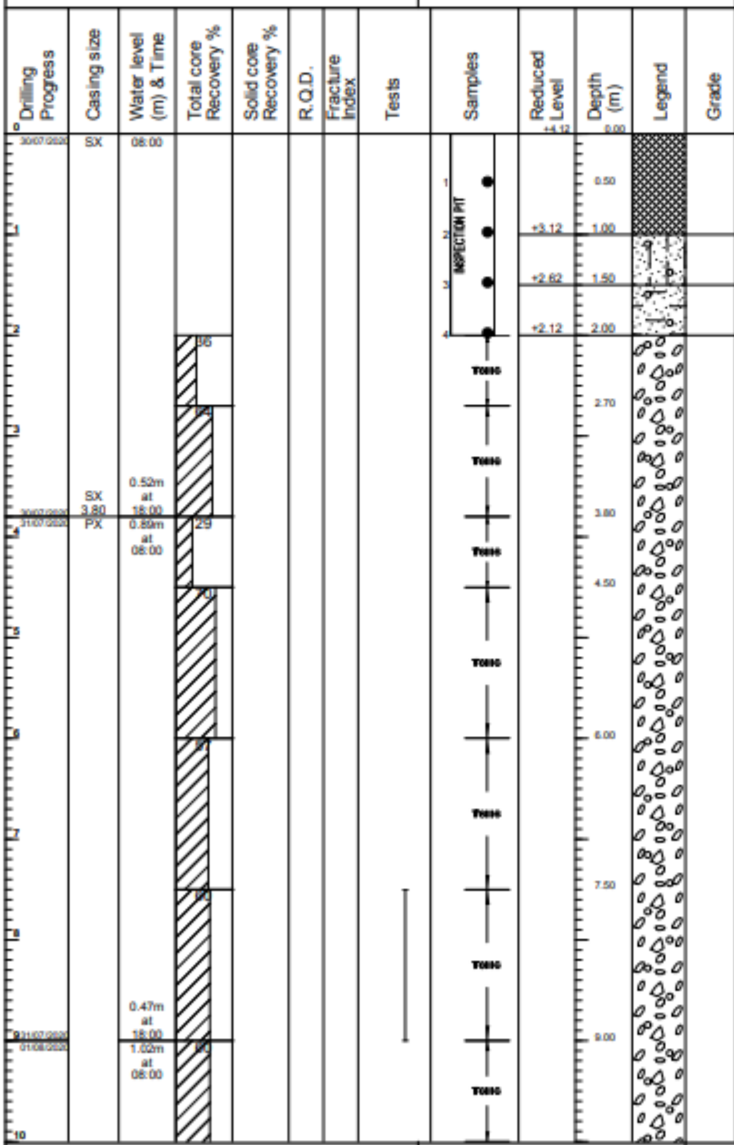


Figure 21 Surveyed plan of AH41-46 and TP9-10

ANNEX I Select borehole data



PRELIMINARY RECORD
This document is released for information only and the content of which may be revised

GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. **NEX1079-TCW-DH17**
SHEET **1** OF **5**

DRILLHOLE RECORD

CONTRACT NO. NEX/1079

PROJECT **Ground Investigation for Tung Chung Line Extension**

METHOD	**Rotary Cored**	CO-ORDINATES **E 811266.34** **N 815722.38**	WORKS ORDER NO. **GCE2001SI**
MACHINE & NO.	**DR131**		DATE FROM **30/07/2020** TO **07/08/2020**
FLUSHING MEDIUM	**Water**	ORIENTATION **Vertical**	GROUND LEVEL **+4.12** mPD

Columns: Drilling Progress | Casing size | Water level (m) & Time | Total core Recovery % | Solid core Recovery % | R.Q.D. | Fracture Index | Tests | Samples | Reduced Level | Depth (m) | Legend | Grade | Description

Reduced Level	Depth (m)	Description
+4.12	0.00	Greyish brown (2.5Y 5/2), slightly silty SAND with much angular to subangular fine to medium gravel sized quartz and highly decomposed and moderately decomposed rock fragments. Contains occasional rootlets and plastic fragments. (FILL)
+3.12	1.00	Grey (N 5), silty SAND with occasional subangular fine gravel sized quartz and occasional subrounded medium gravel sized moderately decomposed tuff fragments. Contains occasional rootlets. (TOP SOIL derived from alluvium)
+2.62	1.50	Pale yellow (5Y 8/2), very clayey SAND with much subangular fine gravel sized quartz fragments. (ALLUVIUM)
+2.12	2.00	Yellow (2.5Y 8/6) mottled grey, subangular to rounded bouldery COBBLE with much medium to coarse gravel sized moderately decomposed rhyolite and tuff fragments and a little sand. (ALLUVIUM)
		From 5.55m to 6.00m: With a boulder sized slightly decomposed tuff fragment.

Drilling progress: 30/07/2020, casing SX, water level 08:00; 30/07/2020 – 31/07/2020 at 3.80: casing SX 3.80 / PX, water level 0.52m at 18:00, 0.89m at 08:00; 31/07/2020 – 01/08/2020 at 9.00: water level 0.47m at 18:00, 1.02m at 08:00.

Samples: 1, 2, 3, 4 (INSPECTION PIT); T2101 samples below 2.00 m. Depths marked: 0.50, 1.00, 1.50, 2.00, 2.70, 3.80, 4.50, 6.00, 7.50, 9.00.

SMALL DISTURBED SAMPLE	WATER SAMPLE
LARGE DISTURBED SAMPLE	PIEZOMETER TIP
SPT LINER SAMPLE	STANDPIPE
U76 UNDISTURBED SAMPLE	STANDARD PENETRATION TEST
U100 UNDISTURBED SAMPLE	PERMEABILITY TEST
MAZIER SAMPLE	IMPRESSION PACKER TEST
PISTON SAMPLE	IN-SITU VANE SHEAR TEST
	PACKER TEST
	PRESSUREMETER TEST

LOGGED **H.F. Lau**
DATE **08/08/2020**
CHECKED **Tom Lo**
DATE **10/08/2020**

REMARKS
1. Constant head permeability tests were carried out from the depths of 7.50m to 9.00m and 16.05m to 17.55m.
2. Acoustic televiewer survey was carried out from the depths of 28.00m to 33.00m.

GEOTECHNICS & CONCRETE ENGG. (H.K.) LTD.
GROUND INVESTIGATION DEPARTMENT

HOLE NO. NEX1079-TCW-IDH07

SHEET 1 OF 8

DRILLHOLE RECORD

CONTRACT NO. NEX/1079

PROJECT Ground Investigation for Tung Chung Line Extension

METHOD	Rotary Cored	CO-ORDINATES E 811251.21 N 815643.32	WORKS ORDER NO. GCE2001SI
MACHINE & NO.	DR106		DATE FROM 15/12/2020 TO 31/12/2020
FLUSHING MEDIUM	Water	ORIENTATION 65°/141°	GROUND LEVEL +5.03 mPD

Drilling Progress	Casing size	Water level (m) & Time	Total core Recovery %	Solid core Recovery %	R.Q.D.	Fracture Index	Tests	Samples	Reduced Level	Depth (m)	Legend	Grade	Description
15/12/2020	SX	08:00						INSPECTION PIT	+5.03	0.00			
			43						+4.12	0.50 1.00			Brownish yellow (10YR 6/8) spotted grey, silty SAND with much angular to subrounded gravel sized concrete, quartz and moderately decomposed and slightly decomposed tuff fragments. Contains occasional refuse fragments and rootlets. (FILL)
			33							1.75			Dark grey (N 4) mottled grey, very silty, sandy angular to subangular GRAVEL with some cobble sized concrete and moderately decomposed and slightly decomposed tuff fragments. Contains occasional steel bar and refuse fragments. (ROCK FILL)
			89						+2.76	2.50			
			27							3.40			Grey (N 6) mottled yellow, locally red and dark grey, subangular to rounded bouldery COBBLE with much gravel sized moderately decomposed, slightly decomposed and locally highly decomposed tuff and locally rhyolite fragments. (ALLUVIUM)
		0.80m at 18:00	0							4.50			From 4.60m to 4.86m: With a boulder sized slightly decomposed tuff fragments.
16/12/2020		0.70m at 08:00	0							5.20			
			100							5.80			From 5.80m to 6.10m: With a boulder sized moderately decomposed and slightly decomposed tuff fragments.
16/12/2020	SX 6.48 PX	0.90m at 18:00								6.48			From 6.20m to 6.48m: With a boulder sized moderately decomposed tuff fragments.
17/12/2020		0.85m at 08:00	97							7.00			From 6.65m to 6.88m: With a boulder sized moderately decomposed tuff fragments.
		0.70m at 18:00	0							7.45			
18/12/2020		0.90m at 08:00	48							8.50			
			33										
10										10.00			From 9.75m to 10.30m: With some silty sand.

- SMALL DISTURBED SAMPLE
- LARGE DISTURBED SAMPLE
- SPT LINER SAMPLE
- U76 UNDISTURBED SAMPLE
- U100 UNDISTURBED SAMPLE
- MAZIER SAMPLE
- PISTON SAMPLE
- WATER SAMPLE
- PIEZOMETER TIP
- STANDPIPE
- STANDARD PENETRATION TEST
- PERMEABILITY TEST
- IMPRESSION PACKER TEST
- IN-SITU VANE SHEAR TEST
- PACKER TEST
- PRESSUREMETER TEST

LOGGED	H.F. Lau
DATE	02/01/2021
CHECKED	Tom Lo
DATE	04/01/2021

REMARKS