



Contract No. 21/WSD/21

Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Proposal of Updating Air Quality and Noise Monitoring Stations for Baseline and Impact Monitoring

Prepared for:

Water Supplies Department

Prepared by:

Acuity Sustainability Consulting Limited

Date: 2 May 2023

Project No.: ASCL-230168321

Reference No.: PAM-3.0

Certified by:

F. C. Tsang

Environmental Team Leader





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1. INTRODUCTION

1.1 Project Information

- 1.1.1 The relocated Diamond Hill Fresh Water and Salt Water Service Reservoirs (DHSRs) will be constructed in a series of caverns linked by access tunnels and adits. The relocated Diamond Hill Fresh Water Service Reservoirs (DHFWSR) and Diamond Hill Salt Water Service Reservoirs (DHSWSR) will be compartmented while the existing Diamond Hill Pumping Station (DHPS) will be split into two (2) pump houses for fresh and salt water supply when relocated.
- 1.1.2 Ancillary facilities to be constructed near the tunnel portal may include transformer room, switch room, emergency generator room, control room, ventilation building, and pumping station control room, which will be constructed in an above-ground building outside the tunnel.
- 1.1.3 The scope of the Project comprises the following:
 - a) Construction of the relocated DHSRs and associated pumping stations and water main laying works;
 - b) Construction of tunnels, adits, ventilation system and caverns for accommodating the relocated DHSRs and the associated facilities;
 - c) Terminating the operation of the existing DHSRs and the associated facilities; and
 - d) All other associated works that are incidental to and necessary for the completion of the Project.

1.2 Purpose of the Proposal

- 1.2.1 Following the submission of the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023) under Condition 3.3 of Environmental Permit (EP) No. EP-602/2021, comments were issued by the EPD regarding the suitability of noise monitoring at NM-1a, setting up air quality and noise monitoring station at Tsui Chuk Garden, and any additional noise monitoring stations for watermains construction works along Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road.
- 1.2.2 This Proposal is prepared by the Environmental Team (ET) to respond to the EPD comments. It provides a review of the suitability of noise monitoring at NM-1a and any alternative monitoring location nearby. The resumption of air quality and noise monitoring at Tsui Chuk Garden, and provision of two additional noise monitoring stations at Shatin Pass Estate and Sheung Fung Street are also elaborated in this Proposal.





2. NOISE MONITORING

2.1 Road Pavement at Lung Cheung Road next to Meridian Hill (NM-1a)

- 2.1.1 Noise monitoring station (NM-1a) at the road pavement of Lung Cheung Road next to Meridian Hill (**Figure 2.1**) was proposed in the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023) as an alternative noise monitoring station of NM-1 at Tower 1, Meridian Hill. The monitoring station was facing the site of the proposed ancillary building and tunnel portal next to Lion Rock Park Transit Nursery.
- 2.1.2 NM-1a was proposed as an alternative noise monitoring location as the Management Office (MO) of Meridian Hill had rejected the ET's request to set up and carry out noise monitoring within the premises (**Annex A**). An alternative noise monitoring station at the other noise sensitive receiver that has direct line of sight on the construction site similar to NM-1 was proposed at Block B, Peninsula Heights (NSR 1 in the approved EIA Report) (**Annex B**), which is about 70 m to the west of NM-1. However, the ET's proposal was also rejected by the MO of the Peninsula Heights (**Annex A**). As the other noise sensitive receivers (NSRs) near the site along Broadcast Drive was blocked or screened by the buildings at Peninsula Heights or Meridian Hill, they are not considered suitable for noise monitoring. Thus, the ET has reviewed and exhausted the possibility of setting up a noise monitoring station at all the potential NSRs near the construction site of the proposed ancillary building and tunnel portal before the ET proposed to relocate the station to NM-1a.
- 2.1.3 As reported in the Baseline Monitoring Report (Ref. No. BMR-3.1, dated 17 March 2023), high background noise levels were recorded at NM-1a during the baseline monitoring ($L_{eq(30\text{-min})}$ ranges from 80.0 to 81.9 dB(A)) and exceeded the relevant Limit Level (75 dB(A)) for construction noise. Due to the dominance of road traffic noise at NM-1a, it is not considered appropriate to carry out noise monitoring at this station during the construction phase. As mentioned in **Section 2.1.2**, no other noise sensitive receivers near the site of proposed ancillary building are considered suitable for alternative noise monitoring. Thus, the monitoring station at NM-1a should be cancelled and no alternative is proposed.

2.2 Tsui Chuk Garden (NM-4)

2.2.1 Tower 6, Tsui Chuk Garden (NM-4) is one of the four proposed noise monitoring stations at the NSRs under the approved EM&A Manual (Annex C). It was not included in the baseline noise monitoring carried out in February and March 2023 as no response to the ET's request of noise monitoring was received from the MO or Incorporated Owners (IO) of Tsui Chuk Garden before the deadline. As the IO of Tsui Chuk Garden has eventually expressed no objection to environmental monitoring works at Tsui Chuk Garden (Annex A), it is now proposed to resume baseline and impact noise monitoring at Tower 6, Tsui Chuk Garden. The station will be located at the roof of Tower 6, Tsui Chuk Garden facing Chuk Yuen Road (Annex E).

2.3 Additional Noise Monitoring Locations

2.3.1 Since open trench method would be adopted in some of the watermains construction works areas along Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road, the





EPD advised the ET to consider setting up one or two additional noise monitoring points along the aforementioned works area when there are construction works at the vicinity. With reference to the approved EIA Report, site visits were carried out on 29 March 2023 and 3 April 2023 at Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road to identify suitable locations of noise monitoring where open trench construction works would be carried out near the identified NSRs (**Figure 2.2**). Having considered the road traffic conditions at Chuk Yuen Road, Sheung Fung Street and Shatin Pass Road, and the space available for the noise monitoring, two NSRs were selected for noise monitoring, namely:

- NSR 25, Wo Tin House, Shatin Pass Estate; and
- NSR P1, Sheung Fung Street Customs Staff Quarter.
- 2.3.2 The noise monitoring locations will be located at the road pavements just outside the premises of the two NSRs. These additional monitoring stations will meet the following criteria of alternative monitoring location as stated in Section 5.4.3 of the EM&A Manual.
 - i. Monitoring at sensitive receivers close to the major site activities that are likely to have noise impacts;
 - ii. Monitoring should close to or at the NSRs as defined in the EIAO-TM; and
 - iii. Assurance of minimal disturbance to the occupants during monitoring.
- 2.3.3 In addition, NSR 25 and NSR P1 would be relatively less affected by the road traffic noise than the other NSRs where open trench construction works would be carried out.
- 2.3.4 The locations of updated baseline and impact noise monitoring are listed in **Table 2.1** and **Figure 2.3.**

Table 2.1 Updated Baseline and Impact Noise Monitoring Stations

ID	NSR ID	Description	Type of Noise Measurement
NM-2	NSR 3	Chun Sing House, Tin Ma Court	Façade
NM-3	NSR 5	Grace Methodist Church Kindergarten	Façade
NM-4	NSR 7	Block 6, Tsui Chuk Garden	Façade
NM-4a	NSR 6	Wang King House, Tin Wang Court	Free-field
NM-5	NSR 25	Wo Tin House, Shatin Pass Estate Façade	
NM-6	NSR P1	Sheung Fung Street Customs Staff Quarter	Free-field

2.3.5 **Annex E** shows the site photos of the proposed noise monitoring locations at NM-4, NM-5, and NM-6.





2.3.6 Once the proposed locations at NM-4, NM-5 and NM-6 are approved, baseline noise monitoring will be carried out at these locations according to the procedure agreed in the Baseline Monitoring Methodology (Ref. No. BMM-2.0, dated 13 February 2023).





3. AIR QUALITY MONITORING

3.1 Tsui Chuk Garden (DM-4)

- 3.1.1 Tower 6, Tsui Chuk Garden (DM-4) is one of the four proposed air quality monitoring stations at the identified air sensitive receivers under the approved EM&A Manual (Annex D). It was not included in the baseline air quality monitoring carried out in February and March 2023 as no response to the ET's request of air quality monitoring was received from the MO or IO of Tsui Chuk Garden before the deadline. As the IO of Tsui Chuk Garden has eventually expressed no objection to environmental monitoring works at Tsui Chuk Garden, it is now proposed to resume baseline and impact air quality monitoring at Tower 6, Tsui Chuk Garden. The station will be located at the roof of Tower 6, Tsui Chuk Garden facing Chuk Yuen Road (Annex E).
- 3.1.2 The locations of updated baseline and impact air quality monitoring stations are listed in **Table 3.1** and **Figure 3.1**.

Table 3.1 Updated Baseline and Impact Air Quality Monitoring Stations

ID	ASR ID	Description
DM-1	ASR 2	Tennis Court near Tin Ma Court
DM-2	ASR 5	Chun Sing House, Tin Ma Court
DM-3	ASR 7	Grace Methodist Church Kindergarten
DM-4	ASR 9	Block 6, Tsui Chuk Garden
DM-4a	ASR 8	Wang King House, Tin Wang Court

3.1.3 Once the proposed resumption of air quality monitoring at DM-4 is approved, baseline air quality monitoring will be carried out at DM-4 according to the procedure agreed in the Baseline Monitoring Methodology (Ref. No. BMM-2.0, dated 13 February 2023).





Figures

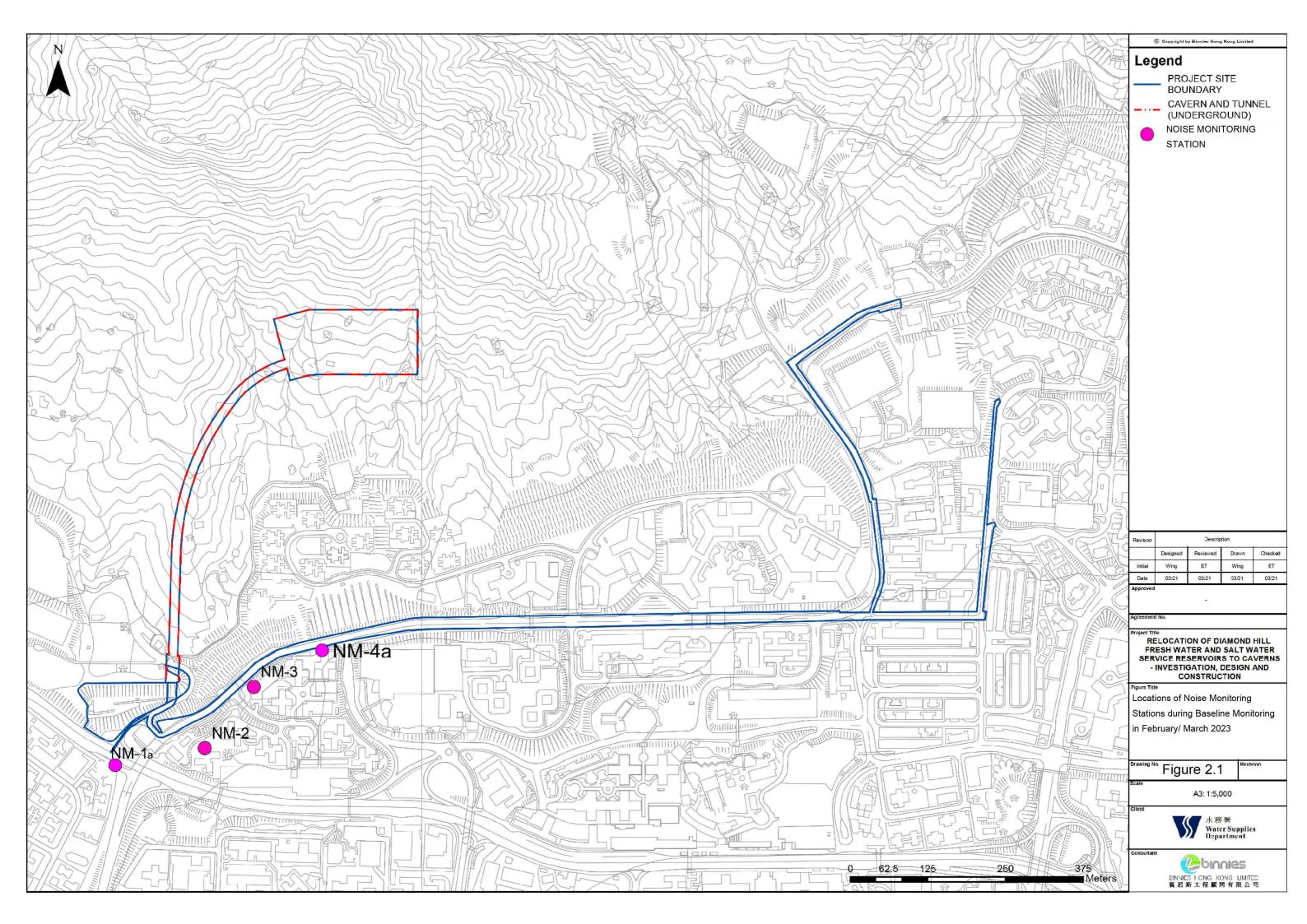
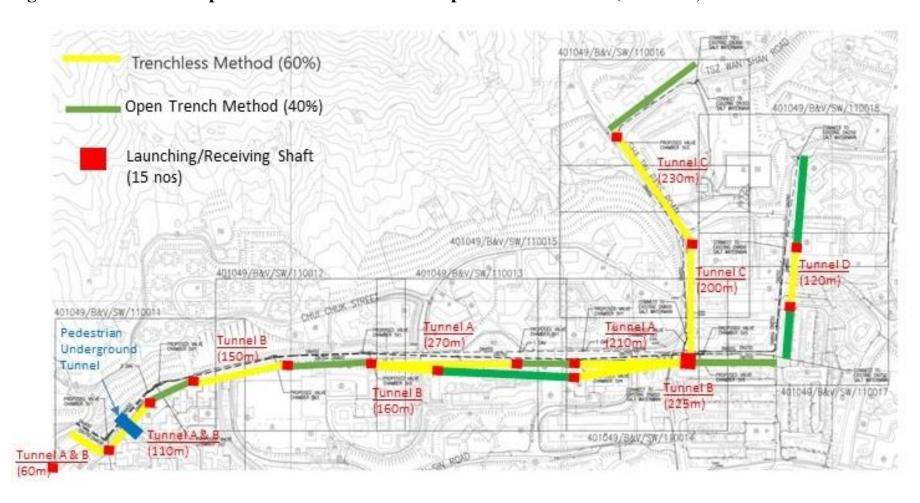
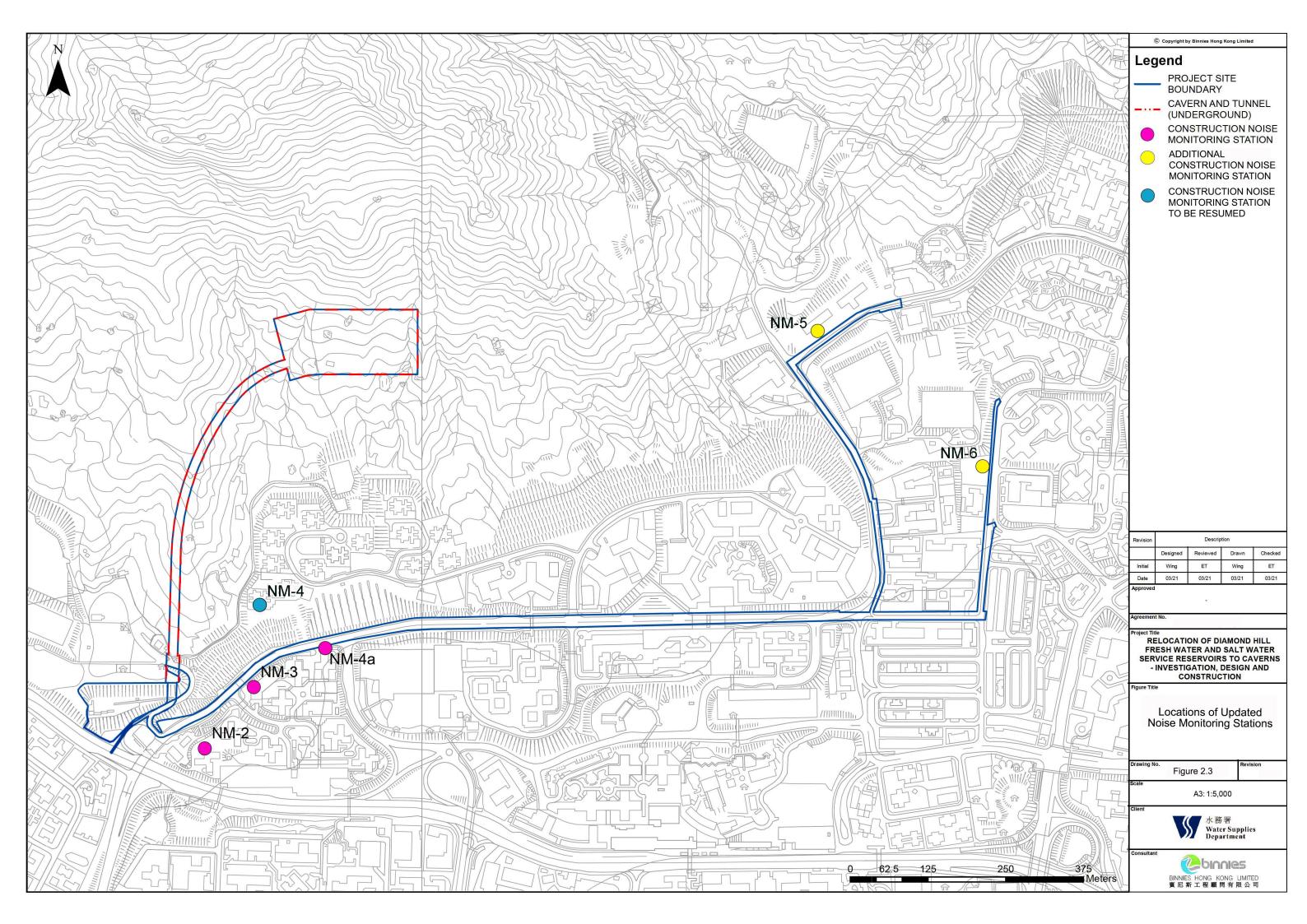


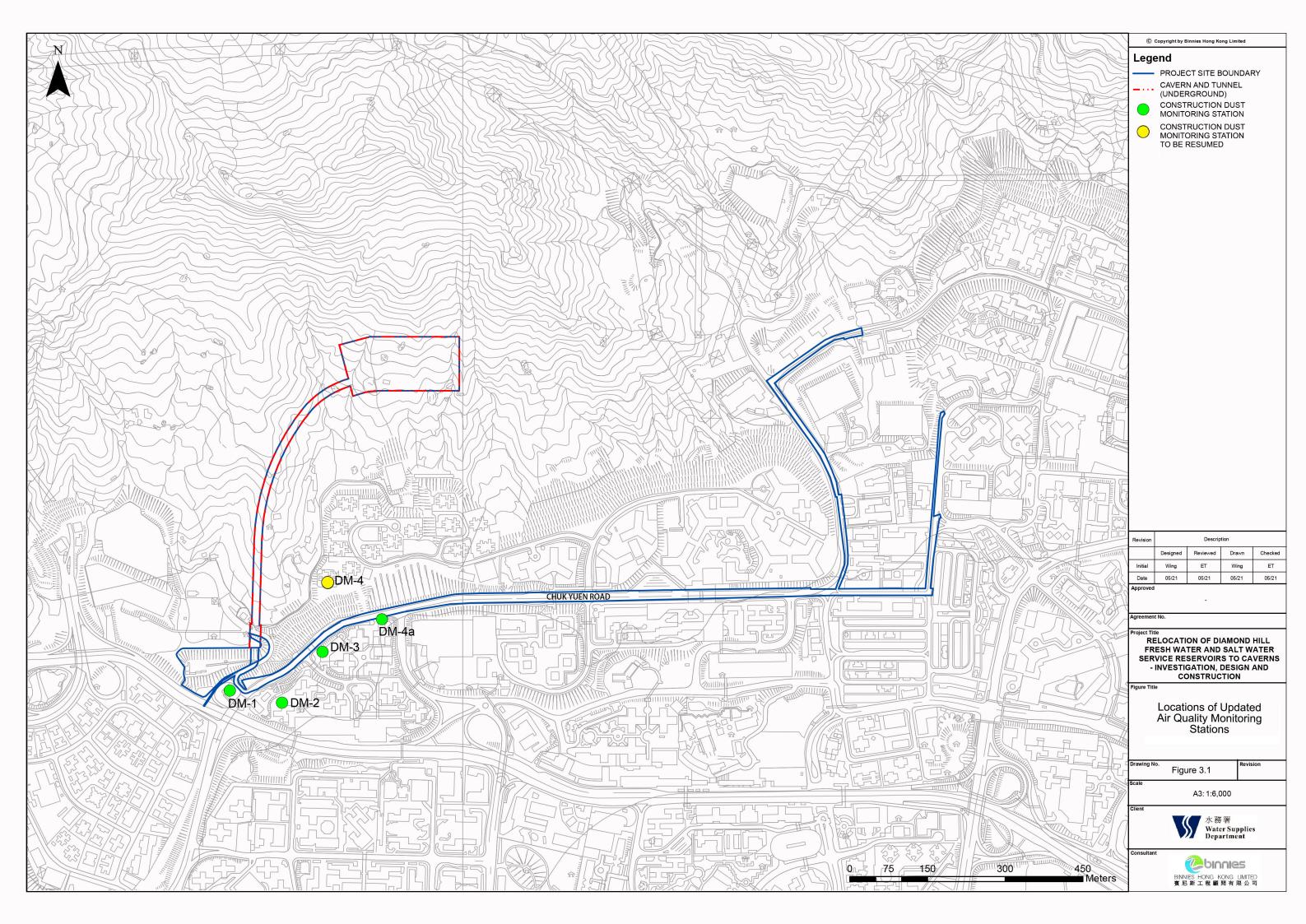




Figure 2.2 Location Map of Trenchless Method and Open Trench Method (Tentative)











Annex A

Responses of Property Management Offices/ Incorporated Owners to the ET's Request of Air Quality/ Noise Monitoring within the Premises





致尚御物業管理處:

合約編號:21/WSD/21-搬遷鑽石山食水及海水配水庫往岩洞

基線噪音監測-地方之提供



為監察工程對周邊噪音的影響,俊和-中國水電聯營委聘凱淇環境顧問有限公司進行基 線噪音監察(見附件一)。根據本工程已批核之環境影響評估報告及環境監察及審核 手冊, 貴屋苑被選擇為合適的監察站,故欲於 貴屋苑指定位置進行噪音監察。有關 詳情如下:

- 環境監測儀器:聲級計一部(見附件二),所有儀器會於每次監測完成後取回
- 場地:尚御1座
- 安裝:儀器會被放置在三腳架上
- 電源: 毌需提供
- 環境監測日期:預計 2023 年 2 月(其中十四天)
- 時間:09:00-18:00(其中三十分鐘)

是次監測工作對整項工程及鑽石山一帶之社區環境有重大幫助,誠希 貴屋苑能提供安 置場地。為使工程得以順利進行,煩請 貴苑於 2023 年 2 月 6 日之前作出回應。敬希 回覆!

如有任何查詢,歡迎隨時與我司曾先生(電話:26986833)聯絡。

台安

Tour Fauldery

凱淇環境顧問有限公司 環境小組代表 曾繁昌謹上

二零二三年一月三十一日

附件

一:俊和-中國水電聯營環境小組聘任書

二:聲級計介紹(共1頁)

Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong | http www.acuityhk.com | www.aurecongroup.com

回條

水務署合約編號-21/WSD/21 搬遷鑽石山食水及海水配水庫往岩洞 基線噪音監測 - 地方之提供

致:曾先生

傳真(2698 9383)

場地。

本方收到有關上述工程通知,並同意 / 不同意 * 為工程的環境監察工作於上址提供監測



負責人(簽名及蓋印)

姓名: Gary Chung

電話: 2189 2888

日期: -1 FEB 2023

•請刪除不適用者

附件一:俊和-中國水電聯營環境小組聘任書



Your reference:

Our reference: CWSJV/1076/0070-2023

31 January 2023

Acuity Sustainability Consulting Limited Flat/RM E, 12/F, Ford Glory Plaza, Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong

Dear Sir / Madam,

Contract No. 21/WSD/21
Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Appointment of Environmental Team for Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns

Acuity Sustainability Consulting Limited (Acuity) is appointed as the environmental team for Contract No. 21/WSD/21 Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns. This is to authorize Acuity, on behalf of Chun Wo – Sinohydro JV to conduct relevant Air and Noise Monitoring for the captioned project. We also authorize Acuity to obtain the required information or approval from various government departments / public utilities companies / private premises.

Should you have any further queries, please feel free to contact Miss Gemini Lam of Chun Wo - Sinohydro JV at 6334 6505.

Yours faithfully, For and on behalf of

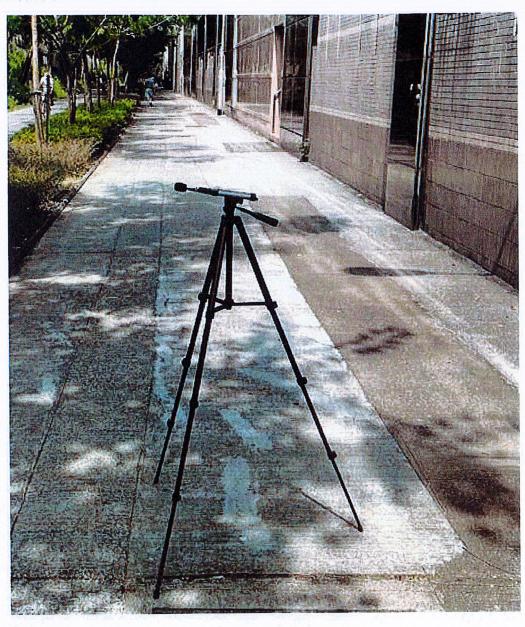
CHUN WO - SINOHYDRO JV

Kenny Poon Site Agent PY/KP/gl

> 音港九龍長沙灣大南西街 601 至 603 號香港鈔散工集大與一期五集 C 座 5C, Hong Kong Spinners Industrial Building Phase 1, 601-603 Tai Nan West Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 3758 8711 Fax: (852) 2744 6937

Our ref.: CWSJV/1076/0070-2023

附件二: 聲級計照片 Photos of instrument:







致星輝豪庭物業管理處:

合約編號: 21/WSD/21 - 搬遷鑽石山食水及海水配水庫往岩洞

基線噪音監測-地方之提供

為監察工程對周邊噪音的影響,俊和-中國水電聯營委聘凱淇環境顧問有限公司進行基線噪音監察(見附件一)。根據本工程已批核之環境影響評估報告及環境監察及審核手冊, 貴屋苑被選擇為合適的監察站,故欲於 貴屋苑指定位置進行噪音監察。有關詳情如下:

● 環境監測儀器:聲級計一部(見附件二),所有儀器會於每次監測完成後取回

• 場地:星輝豪庭 B 座天台

• 安裝:儀器會被放置在三腳架上

• 電源: 毋需提供

• 環境監測日期:預計2023年2月(其中十四天)

• 時間: 09:00 - 18:00 (其中三十分鐘)

是次監測工作對整項工程及鑽石山一帶之社區環境有重大幫助,誠希 貴屋苑能提供安置場地。為使工程得以順利進行,煩請 貴苑於 2023 年 2 月 6 日之前作出回應。敬希回覆!

如有任何查詢,歡迎隨時與我司曾先生(電話:26986833)聯絡。

台安

凱淇環境顧問有限公司 環境小組代表 曾繁昌謹上

Tour Faibleng

二零二三年二月二日

附件

一:俊和-中國水電聯營環境小組聘任書

二:聲級計介紹(共1頁)

2023/02/02 16:24 PENI

From: Aculty Sustainability

(FAX)21873898

P.001/001

RX Date/Time

2023/02/02

15:54

P.002

02/02/2023 15:48

#298 P.002/004

回條

水務署合約編號 - 21/WSD/21 搬遷鑽石山食水及海水配水庫往岩洞 基線噪音監測 - 地方之提供

致: 曾先生

傅真(2698 9383)

本方收到有關上述工程通知,並同意 / 不同意*為工程的環境監察工作於上址提供監測場地。



負責人(簽名及蓋印)

姓名: H.T. Williams APO/PENI

電話: 2187 3808

日期: 02 FE8 2023

·請刪除不適用者

附件一:俊和-中國水電聯營環境小組聘任書



Your reference:

Our reference: CWSJV/1076/0070-2023

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Should you have any further queries, please feel free to contact Miss Gemini Lam of Chun Wo - Sinohydro JV at 6334 6505.

Yours faithfully. For and on behalf of

CHUN WO - SINOHYDRO JV

Kenny Poon Site Agent PY/KP/gl V

香港九龍長沙灣大潮西街 601 至 603 號香港鈔駁工業大廈一期五樓 C 座

5C, Hong Kong Spinners Industrial Building Phase 1, 601-603 Tai Nan West Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 3758 8711 Fax: (852) 2744 6937

Our ref.: CWSJV/1076/0070-2023



附件二: 聲級計照片 Photos of instrument:







致翠竹花園物業管理處:

合約編號:21/WSD/21-搬遷鑽石山食水及海水配水庫往岩洞

基線之粉塵及噪音監測-地方之提供

為監察工程對周邊空氣質素及噪音的影響,俊和-中國水電聯營委聘凱淇環境顧問有限 公司進行基線粉塵及噪音監察(見附件一)。根據本工程已批核之環境影響評估報告 及環境監察及審核手冊, 貴屋苑被選擇為合適的監察站,故欲於 貴屋苑指定位置進 行粉塵及噪音監察。有關詳情如下:

● 環境監測儀器:空氣懸浮粒子監測儀一部及聲級計一部(見附件二),所有儀器會 於每次監測完成後取回

• 場地: 翠竹花園第六座

• 安裝:儀器會被放置在三腳架上

• 電源: 毌需提供

環境監測日期:預計 2023 年 2 月(其中十四天)

• 時間:09:00-18:00 (其中三小時)

是次監測工作對整項工程及翠竹花園一帶之社區環境有重大幫助,誠希 貴屋苑能提供 安置場地。為使工程得以順利進行,煩請 貴苑於 2023 年 2 月 6 日之前作出回應。敬 希回覆!

如有任何查詢,歡迎隨時與我司曾先生(電話:26986833)聯絡。

台安

Tour Faithery

凱淇環境顧問有限公司 環境小組代表 曾繁昌謹上

二零二三年二月二日

附件

一:俊和-中國水電聯營環境小組聘任書

二:空氣懸浮粒子監測儀一部及聲級計介紹(共1頁)

Nos. 37-39 Wing Hong Street, Kowloon, Hong Kong | http www.acuityhk.com | www.aurecongroup.com

回條

水務署合約編號 - 21/WSD/21

搬遷饋石山食水及海水配水摩往岩洞

基線之粉塵及噪音監測 - 地方之提供

致:先生/女士

傳真(2698 9383)

本方收到有關上述工程通知,並同意 / 不同意*為工程的環境監察工作於上址提供監測

場地。

· J &

負責人(簽名及蓋印)

姓名: Chan Even Man (Chairlady of ID of Tsui Christ Grands)

電話: >35030

日期: YY Fala X073

·請酬除不適用者

附件一:俊和-中國水電聯營環境小組聘任書



Your reference:

Our reference: CWSJV/1076/0070-2023

31 January 2023

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Yours faithfully, For and on behalf of

CHUN WO - SINOHYDRO JV

Kenny Poon Site Agent PY/KP/gl

> 香港九龍長沙灣大席西街 601 至 603 號香港鈔駁工業大廈一期五樓 C 座 50, Hong Kong Spinners Industrial Building Phase 1,

601-603 Tai Nan West Street, Cheung Sha Wan, Kowloon, Hong Kong Tel: (852) 3758 8711 Fax: (852) 2744 6937

Our ref.: CWSJV/1076/0070-2023

附件二:

儀器照片 Photos of instrument:

空氣懸浮粒 子監測儀



聲級計



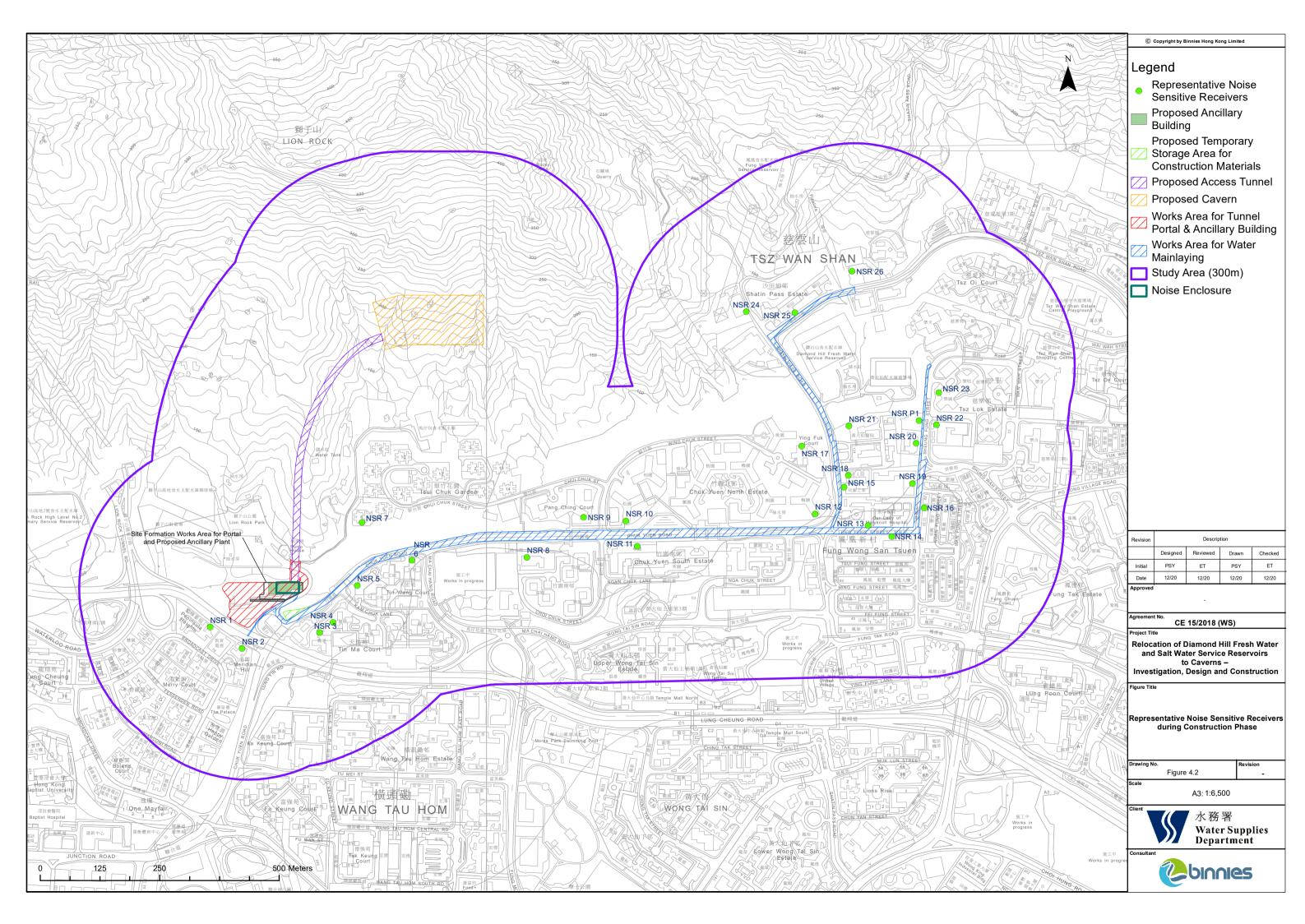


Annex B

Representative Noise Sensitive Receivers during Construction Phase

(Source: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns,

Environmental Impact Assessment Report (EIAO Register No. AEIAR-232/2021).)



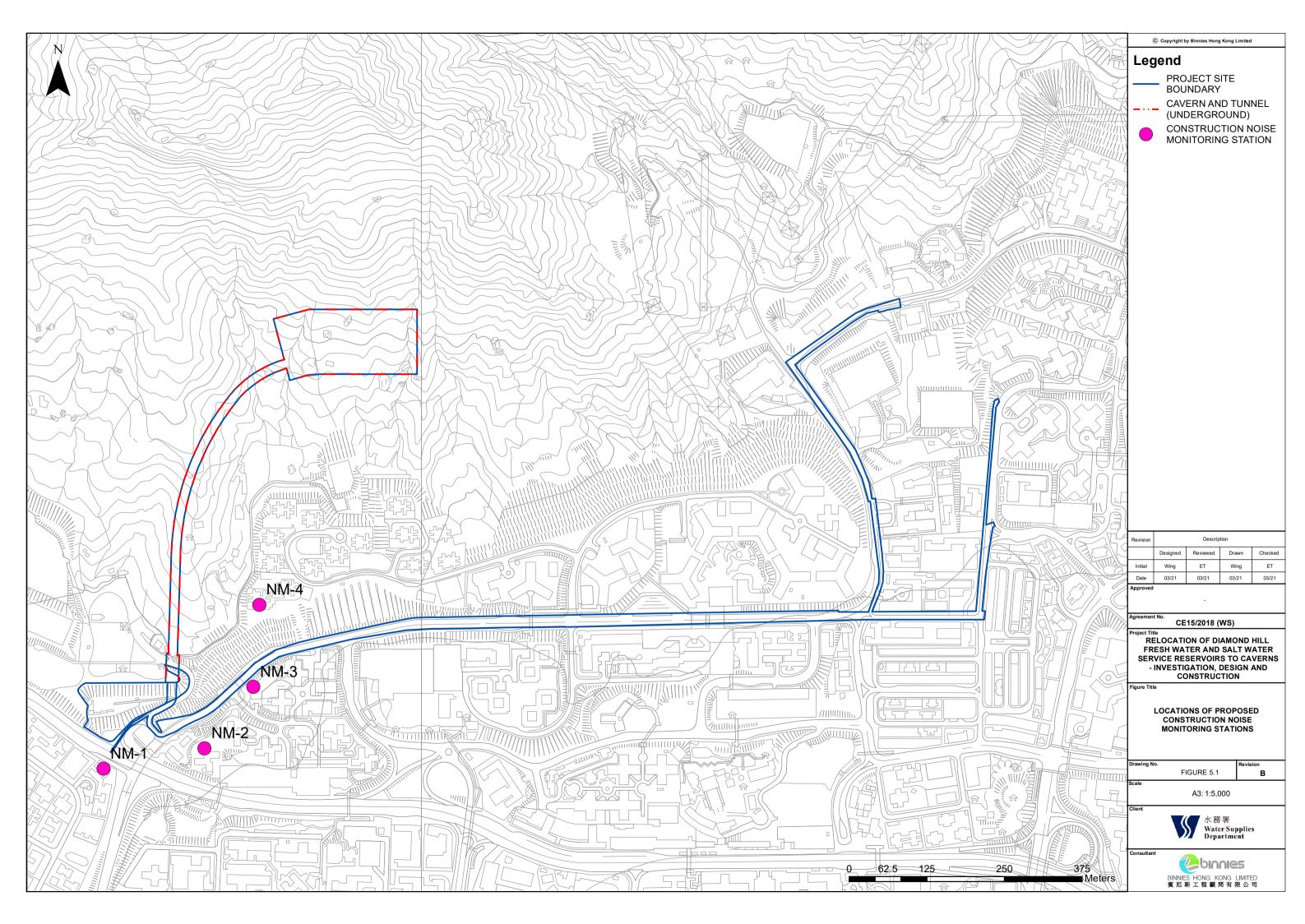


Annex C

Locations of Construction Noise Monitoring Stations Proposed in the EM&A Manual

(Source: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns,

Environmental Monitoring and Audit Report (EIAO Register No. AEIAR-232/2021).)





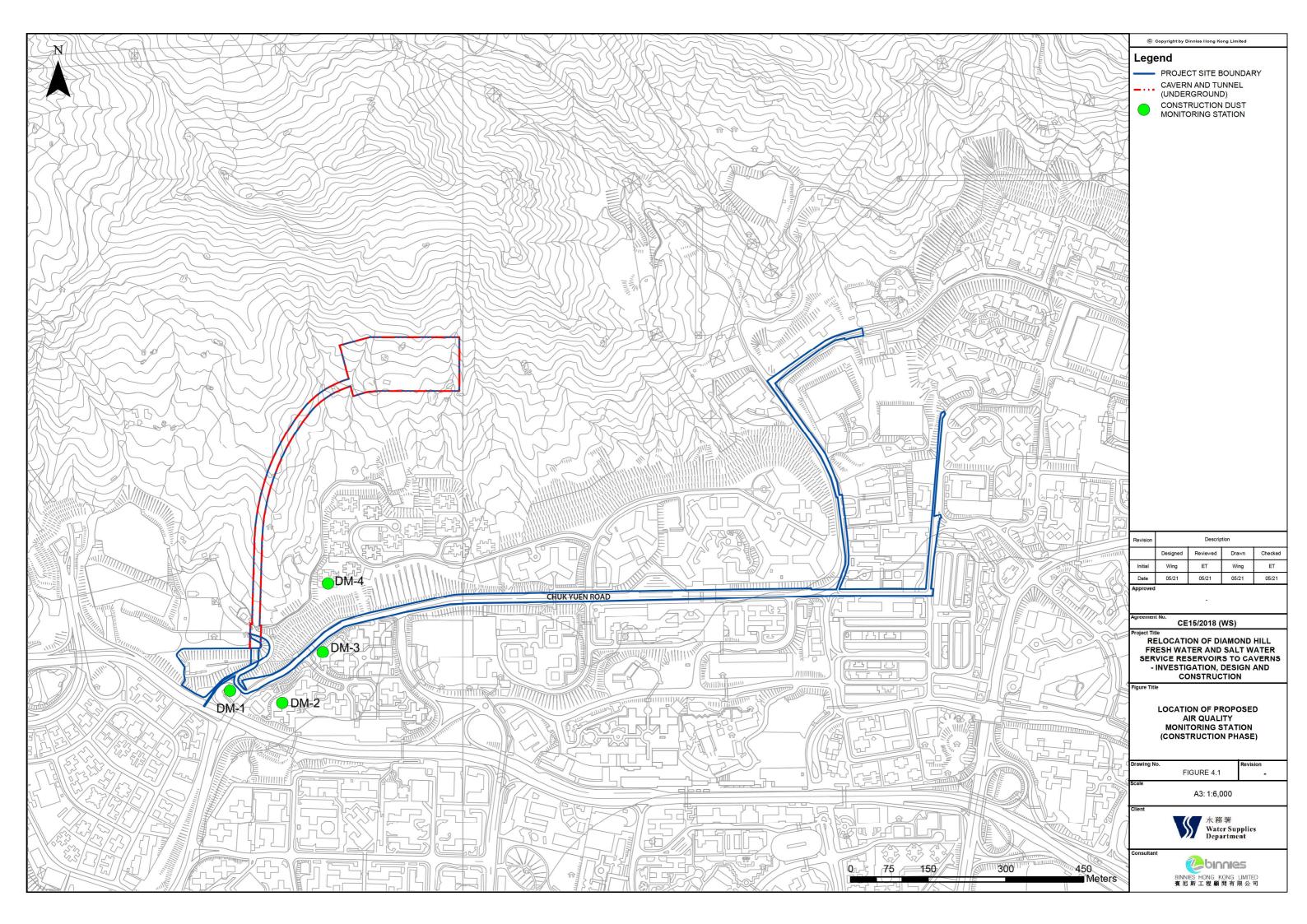


Annex D

Locations of Air Quality Monitoring Stations Proposed in the EM&A Manual

(Source: Relocation of Diamond Hill Fresh Water and Salt Water Service Reservoirs to Caverns,

Environmental Monitoring and Audit Report (EIAO Register No. AEIAR-232/2021).)







Annex E

Site Photos of Proposed Air Quality Monitoring Station at DM-4 and Proposed Noise Monitoring Stations at NM-4, NM-5, and NM-6





Proposed Air Quality Monitoring Station at DM-4



Remark: The direction facing the project site is indicated by red arrow on each photo.





Proposed Noise Monitoring Stations at NM-4, NM-5, and NM-6.



NM-4 Block 6, Tsui Chuk Garden (roof)



NM-5 Wo Tin House, Shatin Pass Estate (road pavement outside the building)



NM-6 Sheung Fung Street Customs Staff Quarters (road pavement outside the premises)

Remark: The direction facing the project site is indicated by red arrow on each photo.