



Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area

- Project Profile

March 2024

Table of Content

	Page
1 BASIC INFORMATION.....	1
1.1 Project Title	1
1.2 Purpose and Nature of Project.....	1
1.3 Name of Project Proponent.....	1
1.4 Description, Scale and History of Project	2
1.5 Number and Types of Designated Projects Covered by the Project Profile	3
1.6 Name and Telephone Number of Contact Person.....	4
2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME.....	5
2.1 Outline of Planning.....	5
2.2 Project Implementation Programme	5
2.3 Project Interface	5
3 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT	6
3.1 Air Quality.....	6
3.2 Noise	7
3.3 Water Quality	8
3.4 Cultural Heritage	8
3.5 Ecology	9
3.6 Landscape and Visual.....	13
4 POSSIBLE IMPACT ON THE ENVIRONMENT.....	15
4.1 Potential Impacts from the Project.....	15
4.2 Potential Environmental Impacts	15
5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED AND FURTHER ENVIRONMENTAL IMPLICATIONS.....	23
5.1 Environmental Protection Measures	23
5.2 Severity, Distribution and Duration of Environmental Effects	25
5.3 Further Environmental Implications	25
6 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES	26
7 USE OF PREVIOUSLY APPROVED EIA REPORTS.....	30

List of Tables

Table 1.1	Size of Temporary Working Area / Platform of Drillholes
Table 3.1	Representative Air Sensitive Receivers (ASRs)
Table 3.2	The Air Quality Monitoring Data Recorded at EPD's Yuen Long in Year 2018 – 2022
Table 3.3	Representative Noise Sensitive Receivers (NSRs)
Table 3.4	Representative Water Sensitive Receivers (WSRs)
Table 3.5	Other Identified Item
Table 3.6	Habitat Evaluation within Surveyed Area
Table 4.1	Predicted Construction Noise Levels Generated from Proposed GI Works
Table 4.2	Areas of Habitats Affected by Works Elements within LTCP
Table 4.3	Summary of Floral Species of Conservation Importance Recorded and Plant Protection Zone
Table 4.4	Evaluation of Potential Ecological Impacts to Habitats within Surveyed Area
Table 6.1	Summary of Potential Environmental Impacts and Mitigation Measures

List of Figures

C1603/C/NOL/ACM/1632/201	Location of the Project
C1603/C/NOL/ACM/1632/300	Locations of Representative Air Sensitive Receivers
C1603/C/NOL/ACM/1632/301	Locations of Representative Noise Sensitive Receivers
C1603/C/NOL/ACM/1632/302	to
C1603/C/NOL/ACM/1632/304	Locations of Representative Water Sensitive Receivers
C1603/C/NOL/ACM/1632/305	Location of Other Identified Item
C1603/C/NOL/ACM/1632/306	to
C1603/C/NOL/ACM/1632/308	Habitat Map of the Surveyed Area at Kai Kung Leng
C1603/C/NOL/ACM/1632/309	(Not used)
C1603/C/NOL/ACM/1632/310	Location of the Project in Aerial Photo
C1603/C/NOL/ACM/1632/311	Landscape Resources
C1603/C/NOL/ACM/1632/312	(Not used)
C1603/C/NOL/ACM/1632/313	Landscape Character Areas

List of Appendices

Appendix 3.1	Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area
Appendix 3.2	Flora Species Recorded within the Surveyed Area
Appendix 3.3	Representative Photographs of the Species of Conservation Importance Recorded within the Surveyed Area
Appendix 3.4	Fauna Species Recorded within the Surveyed Area
Appendix 3.5	References of Ecological Baseline Conditions
Appendix 3.6	Key Ecological Field Surveyors
Appendix 4.1	Detailed Calculation of Construction Noise Impact (Base Case)
Appendix 4.2	Detailed Calculation of Construction Noise Impact (Mitigated Scenario)

1 BASIC INFORMATION

1.1 Project Title

- 1.1.1 Ground Investigation Works for Northern Link within Lam Tsuen Country Park (LTCP) and Conservation Area (CA) (hereinafter referred to “the Project”).

1.2 Purpose and Nature of Project

- 1.2.1 The Northern Link (NOL) is one of the seven railway schemes recommended to be taken under the Railway Development Strategy 2014 (“RDS-2014”). The NOL will be a heavy underground railway line with a route length of about 10.7km between Kam Sheung Road (KSR) Station on the Tuen Ma Line (TML) and Kwu Tung (KTU) Station on the East Rail Line (EAL).
- 1.2.2 The NOL connects the EAL and the TML, forming a railway loop in the Northern New Territories. Passengers will be able to interchange at KSR Station on TML and KTU Station on EAL. The NOL will also serve the transportation needs of the potential New Development Areas (NDAs) in the Northern New Territories and enhance cross-boundary movement.
- 1.2.3 The NOL runs entirely underground in tunnel between KSR(NOL) and KTU(NOL) Stations with three proposed intermediate stations at Au Tau (AUT), Ngau Tam Mei (NTM) and San Tin (SAT) to support the unleashing of the development potential along its alignment. An at-grade depot is proposed at NTM area, and also there would be other aboveground structures including station entrances and ancillary buildings, i.e. ventilation shafts/buildings, Emergency Access Points (EAPs) and Emergency Egress Points (EEPs), as well as enabling works to the south of KSR(NOL) Station, for potential southern extension, to the north of SAT Station for bifurcation to Lok Ma Chau Loop and Huanggang Port, and to the east of KTU(NOL) Station for potential eastern extension to Ping Che areas.
- 1.2.4 Ground Investigation (GI) works along the alignment are required to investigate the geological conditions for identification of existing slope and ground conditions, any potential natural terrain hazard occurrence along the tunnel alignment during the construction of the NOL, constructability of the drill and blast tunnels, and the need for hazard mitigation works in order to reduce the landslide risk, safeguard public safety and also construction safety. The findings of GI works will also facilitate the engineering design of the underground tunnel.
- 1.2.5 In view of the preferred tunnel alignment and insufficient GI records within Conservation Area (CA) and Lam Tsuen Country Park (LTCP), GI works are unavoidably to be conducted within CA and LTCP to obtain sufficient ground condition information at the exact location of underground structure which is crucial for a safe and adequate design of both temporary and permanent stages of the structures. Nevertheless, the location and extent of GI works including working platforms/areas and access ladders (ALs) have been carefully planned and arranged not only to avoid direct impact on any species of conservation of important within CA and LTCP but also minimise impacts to CA and LTCP.
- 1.2.6 This Project Profile (PP) is prepared to establish the environmental acceptability of the Project and to seek permission from the Director of Environmental Protection (DEP) to apply directly for an Environmental Permit (EP) for the Project under Section 5(11) of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499).
- 1.2.7 Consent from the Country and Marine Parks Authority and approval from Lands Department for conducting the GI works within Lam Tsuen Country Park (LTCP) would also be obtained separately.

1.3 Name of Project Proponent

- 1.3.1 The Project Proponent is the MTR Corporation Limited (MTRCL).

1.4 Description, Scale and History of Project

- 1.4.1 The Project would include temporary site preparation works, set up of ALs, digging of inspection pits (IPs), lifting of drill rig by either helicopter or manual handling, drilling works at drillholes (DHs), and site reinstatement works.
- 1.4.2 The Project will comprise of 47 DHs, 44 IPs and ALs within CA or LTCP as shown in **Figure No. C1603/C/NOL/ACM/1632/201**. The IPs will be located at the exact location of the DHs and excavated before the drilling works. Site visits were conducted to identify any species of conservation importance at the locations of proposed IPs, DHs, ALs and to propose adjustment of the locations where necessary to avoid direct impact on any species of conservation importance.
- 1.4.3 The size of each IP is approximately 1.5 m (L) x 1.5 m (W) x 2.5 m (D) (i.e. each about 5.63 m³), and working areas/platform of around 5 to 10 m (W) x 12 to 15 m (L) will be reserved for each of the 47 DHs (Refer to **Table 1.1** for summary). Minor vegetation clearance will therefore be required but tree felling will be avoided. Ranges of the sizes of DHs are 76 mm to 168 mm in outer diameter, with a depth of -21 mPD to -35 mPD approximately. Standpipes and/or piezometer will also be installed and a small concrete surface box (0.5 m x 0.5 m) will be formed for prolonged groundwater monitoring.
- 1.4.4 The total area of working areas/working platforms for all the DHs and material storage is approximately 3,360 m² and the total excavation volume will be approximately 248 m³ (i.e. 44 nos. of IP x 5.63 m³). It is anticipated that a maximum of 10 working areas/platforms would be operated concurrently. After the completion for GI works, the DHs will be filled by a cement-bentonite grout to prevent any long-term groundwater inflow. Reinstatement of the working areas/ platforms and temporary access ladder, except the small concrete surface box (0.5m x 0.5m) for standpipe/piezometer, will be provided. The soil excavated from IPs will be backfilled at their original locations, and the DH locations will be reinstated to their original or agreed condition.
- 1.4.5 Although there will be no hoarding erected around the working areas, the working areas will be properly fenced off by safety barrier with tarpaulin, warning signs or notices instead. No haul road will be needed for access to the DHs and IPs. Temporary elevated single row steel AL or double row steel AL will be used for the manual mobilization of the drill rig and the associated equipment. The width of temporary single rowed steel AL and double rowed steel AL is approximately 0.8 m and 1.8 m, respectively, with an approximate length of 1,980 m in total. The total area of temporary AL is about 3,453 m².

Table 1.1 Size of Temporary Working Area / Platform of Drillholes

Drillhole no.	Approx. Size of Temporary Working Area/ Platform	Helicopter ⁽³⁾ Required for Transporting Materials? (Yes/No)
<i>Within Conservation Area</i>		
1632-NTS-DH04	5 m x 15 m	No
1632-NTS-DH05	5 m x 15 m	No
1632-NTS-DH06	5 m x 15 m	No
1632-NTS-DH07(P)	5 m x 15 m	No
1632-NTS-DH08	5 m x 15 m	No
1632-NTS-DH11	5 m x 15 m	No
1632-NTS-DH15	5 m x 15 m	Yes
1632-NTS-DH16	5 m x 15 m	Yes
1632-NTS-DH17	5 m x 15 m	No
1632-NTS-DH18(P)	5 m x 15 m	No
1632-NTS-DH19	5 m x 15 m	No
1632-NTS-DH20	5 m x 15 m	No
1632-NTS-DH21(P)	5 m x 15 m	No

Drillhole no.	Approx. Size of Temporary Working Area/ Platform	Helicopter ⁽³⁾ Required for Transporting Materials? (Yes/No)
1632-NTS-DH22	5 m x 12 m	No
1632-NTS-DH23	5 m x 15 m	No
1632-NTS-DH24	5 m x 15 m	No
1632-NTS-DH25	5 m x 15 m	No
1632-NTS-DH26	5 m x 15 m	No
1632-NTS-DH27	5 m x 15 m	No
1632-NTS-DH28(P)	5 m x 15 m	No
1632-NTS-DH29	5 m x 15 m	No
1632-NTS-DH30	5 m x 15 m	No
1632-NTS-DH31	5 m x 15 m	No
1632-NTS-DH32	5 m x 15 m	No
1632-NTS-DH33(P)	5 m x 15 m	No
1632-NTS-DH34	5 m x 15 m	No
1632-NTS-DH35	5 m x 15 m	No
1632-NTS-DH36	5 m x 15 m	No
1632-NTS-DH37	5 m x 15 m	No
1632-NTS-DH38	5 m x 15 m	No
1632-NTS-DH39	5 m x 15 m	No
1632-NTS-DH40(P)	5 m x 15 m	No
1632-NTS-DH42 ⁽²⁾	5 m x 15 m	Yes
1632-NTS-DH42A ⁽²⁾	5 m x 15 m	Yes
1632-NTS-DH43	5 m x 15 m	Yes
1632-NTS-IDH46	10 m x 15 m ⁽¹⁾	Yes
1632-NTS-IDH47		Yes
1632-NTS-IDH48	8 m x 15 m ⁽¹⁾	Yes
1632-NTS-IDH49		Yes
1632-NTS-IDH50	8 m x 15 m	Yes
1632-NTS-IDH51	8 m x 15 m ⁽¹⁾	Yes
1632-NTS-DH52		Yes
Within Lam Tsuen Country Park		
1632-NTS-DH09	5 m x 15 m	No
1632-NTS-DH54	5 m x 15 m	Yes
1632-NTS-DH55	5 m x 15 m	Yes
1632-NTS-DH56	5 m x 15 m	Yes
1632-NTS-DH57	5 m x 15 m	Yes
1632-NTS-DH58	5 m x 15 m	Yes

Notes:

- (1) Two drillholes would share one temporary working area/platform.
- (2) Either 1632-NTS-DH42 or 1632-NTS-DH42A would be adopted for the GI works, subject to the transport arrangement by helicopter, but both locations would be utilized as either temporary working platform or storage area.
- (3) The frequency of helicopter flights will be approximate one trip per week, with each trip lasting approximately two hours.

1.5 Number and Types of Designated Projects Covered by the Project Profile

- 1.5.1 The Project will carry out earthworks within LTCP and CA. The Project is therefore designated project by virtue of Item Q.1 "All projects including earthworks partly or wholly in an existing country park and conservation area", Part 1, Schedule 2 of the Environmental Impact Assessment Ordinance (EIAO) (Cap. 499).

1.6 Name and Telephone Number of Contact Person

1.6.1 All queries regarding the Project can be addressed to:

Name of Project Proponent:	MTR Corporation Limited
Name of Contact Person:	Mr. Rodney Ip
Telephone Number of the Contact Person:	2688 1163

2 OUTLINE OF PLANNING AND IMPLEMENTATION PROGRAMME**2.1 Outline of Planning**

2.1.1 The Project will be carried out by qualified contractors to be appointed by the Project Proponent.

2.2 Project Implementation Programme

2.2.1 The anticipated works duration, including setting up and drilling period, for each DH will be about six weeks. The Project is tentatively scheduled to commence in Q2 2024 and will last for about 9 months.

2.3 Project Interface

2.3.1 Based on the tentative implementation programme of the Project, no concurrent project would be carried out in the vicinity.

3 MAJOR ELEMENTS OF THE SURROUNDING ENVIRONMENT

3.1 Air Quality

Representative Air Sensitive Receivers

- 3.1.1 Representative air sensitive receivers (ASRs) within 500m Assessment Area from the Project have been identified and are listed in **Table 3.1**, with their locations presented in **Figure No. C1603/C/NOL/ACM/1632/300**.

Table 3.1 Representative Air Sensitive Receivers (ASRs)

ASR ID	Description	Land Use	Approx. Distance from the Project, m
MF_A01	House 168, Mo Fan Heung	I	36
MF_A02	House 171, Mo Fan Heung	I	20
MF_A03	Temporary Structure in Mo Fan Heung	R	25
MF_A04	House 176, Mo Fan Heung	R	30
MF_A05	House 209, Mo Fan Heung	R	82
MF_A06	House 160, Mo Fan Heung	I	102
MF_A07	Camping site in Mo Fan Heung	REC	33
PW_A01	House 166, Pok Wai	R	93
PW_A02	House 169, Pok Wai	R	49
PW_A03	House 170, Pok Wai	R	40
PW_A04	House 172, Pok Wai	R	60
PW_A05	House 182, Pok Wai	R	137
PW_A06	House 230, Pok Wai	R	201
PW_A07	Temporary Structure in Pok Wai	I	73
PW_A08	Temporary Structure in Pok Wai	I	252
PW_A09	Temporary Structure in Pok Wai	I	290
LH_A01	Temporary Structure in Long Ha	R	167
LH_A02	Temporary Structure in Long Ha	OS	59
LH_A03	Temporary Structure in Long Ha	OS	114
LH_A04	Temporary Structure in Long Ha	I	240
LH_A05	Temporary Structure in Long Ha	OS	117
NTM_A01	House 339, Wang Ping Shan South Road	R	77
NTM_A02	Wing Ming Farm	I	176
NTM_A03	Temporary Structure along Ching Yau Road	I	193

Note:

- (1) I – Industrial; OS – Open Storage; R – Residential; REC– Recreational Use.

Existing Ambient Air Quality Condition

- 3.1.2 The dominant existing air pollutants sources within the 500m assessment area of the Project are the vehicular emissions from open roads including San Tin Highway and San Tam Road.
- 3.1.3 The closest EPD's air quality monitoring station to the assessment area is the North Air Quality Monitoring Station (AQMS) situated at the Po Wing Road Sports Centre which is operating since July 2020 and is under the land use type "New Town". Owing to insufficient data for time before Year 2020 and in Year 2020, the background observation refers to the next closest station with the same land use type instead, i.e. Yuen Long AQMS at Yuen Long District Office Building as published in *Air Quality in Hong Kong*. The major air pollutants would be the particulates emissions during the GI works. Therefore, the Fine Suspended Particulates (FSP) and Respirable Suspended Particulates (RSP) monitoring data recorded between Year 2018 to 2022 are examined and summarized in **Table 3.2**. It is observed that daily and annual averages of RSP and FSP concentration complied with prevailing AQOs during Year 2018 to 2022.

Table 3.2 The Air Quality Monitoring Data Recorded at EPD's Yuen Long in Year 2018 – 2022

Pollutant	Averaging Time	AQO ^[1]	Data Summary	Year ^[2]				
				2018	2019	2020	2021	2022
Fine Suspended Particulates (FSP) ^[3]	24-hr	50 (35)	Max.	80	81	44	75	64
			36 th Max.	34	34	28	31	30
			No. of Exceedance(s)	5	5	0	3	5
	Annual	25	-	20	20	16	17	16
Respirable Suspended Particulates (RSP) ^[3]	24-hr	100 (9)	Max.	121	125	97	109	81
			10 th Max.	75	83	77	73	56
			No. of Exceedance(s)	4	2	0	1	0
	Annual	50	-	37	37	30	30	25

Notes:

[1] Values in () mean the number of exceedances allowed per year.

[2] Bolded values mean exceedance of the AQO limit values.

 [3] All concentration units are in microgram per cubic metre ($\mu\text{g}/\text{m}^3$).

3.2 Noise

Representative Noise Sensitive Receivers

- 3.2.1 Representative noise sensitive receivers (NSRs) identified within 300m Assessment Area from the Project are listed in **Table 3.3** and presented in **Figure No. C1603/C/NOL/ACM/1632/301**.
- 3.2.2 The Project is located in the northern part of the New Territories where majority of the area is predominantly in rural nature. The existing noise climate in the vicinity of the Project area is dominated by the road traffic noise from San Tin Highway and San Tam Road. In addition, isolated industrial operations scattered in the vicinity of the representative NSRs also contribute to the overall ambient noise levels.

Table 3.3 Representative Noise Sensitive Receivers (NSRs)

NSR ID	Description	Land use ⁽¹⁾	No. of Storey	Approx. Distance from the Project ⁽²⁾ , m
MF_N03	Temporary Structure in Mo Fan Heung	R	2	25
MF_N04	House 176, Mo Fan Heung	R	2	30
MF_N05	House 209, Mo Fan Heung	R	2	82
PW_N01	House 166, Pok Wai	R	2	93
PW_N02	House 169, Pok Wai	R	2	49
PW_N03	House 170, Pok Wai	R	3	40
PW_N04	House 172, Pok Wai	R	1	60
PW_N05	House 182, Pok Wai	R	3	137
PW_N06	House 230, Pok Wai	R	3	201
LH_N01	Temporary Structure in Long Ha	R	1	167
NTM_N01	House 339, Wang Ping Shan South Road	R	3	77

Notes:

(1) R – Residential.

(2) Approx. distance between NSR and the nearest access ladder.

3.3 Water Quality

- 3.3.1 Representative water sensitive receivers (WSRs) identified within 500m Assessment Area from the Project are listed in **Table 3.4** and presented in **Figure Nos. C1603/C/NOL/ACM/1632/302 to 304**.

Table 3.4 Representative Water Sensitive Receivers (WSRs)

WSR ID	Description	Approx. Distance from the Project, m
<i>Watercourse</i>		
W1	Mo Fan Heung Stream	346
W2	Drainage along San Tam Road	98
W3	Downstream rivers of Kai Kung Leng	192
W4	Downstream rivers of Kai Kung Leng	13
W6 ⁽¹⁾	Downstream rivers of Kai Kung Leng	6
W7 ⁽¹⁾	Downstream rivers of Kai Kung Leng	within the Project site
W8	Upstream semi-modified watercourse of Ngau Tam Mei Drainage Channel	214
W9 ⁽¹⁾	Downstream rivers of Kai Kung Leng	within the Project site
W10	Downstream rivers of Kai Kung Leng	155
W11	Downstream rivers of Kai Kung Leng	416
W12	Drainage along Castle Peak Road – Tam Mi	345
W13	Upstream semi-modified watercourse of Ngau Tam Mei Drainage Channel	298
W14	Drainage along San Tin Highway	432
W15	Semi-modified watercourse near Wah On Villa	111
<i>Pond</i>		
P1	Ponds	363
P2	Ponds	388
P3	Ponds	426
P4	Ponds	83
P5	Ponds	310
P6	Ponds	385
P7	Ponds	268
P8	Ponds	319
P9	Ponds	447
P10	Ponds	105
PS1	Pok Wai Floodwater Pond	53

Note:

- (1) According to the observation of ecological survey, no surface flow was observed at Watercourses W6, W7 & W9 below the ALs and near working areas/platforms.

3.4 Cultural Heritage

- 3.4.1 There is no Sites of Archaeological Interest (SAI) within the 100m Assessment Area from the Project. The closest declared monument is Tang Kwong U Ancestral Hall which is located at around 1.8km from the Project.
- 3.4.2 According to the *List of the 1,444 Historic Buildings with Assessment Results and List of New Items for Grading Assessment with Assessment Results* (as of 14 December 2023) prepared by Antiques and Monuments Office (AMO), neither declared monument nor built heritage is located within 100m Assessment Area, and only 1 other identified item (with no grading or no

grade accorded¹) is located within the 100m Assessment Area of the Project. The location of the other identified item is presented in **Table 3.5** and is shown in **Figure No. C1603/C/NOL/ACM/1632/305**.

Table 3.5 Other Identified Item

Reference No.	Description	Status	Approx. Distance from the Project, m
POW17	Pok Wai Public School	No Grade Accorded	3

3.5 Ecology

3.5.1 The Assessment Area is 100 m from the Project (i.e. DHs, working areas/platforms and ALs) (**Figure Nos. C1603/C/NOL/ACM/1632/306 to 308** refer), which was covered by the 500 m Assessment Area of the ecological impact assessment under the NOL Environmental Impact Assessment (EIA) Study. Considering that the Project only involves temporary, small and limited areas of access, working area/platform and DH location, a more focal ecological baseline was established within 10 m from the Project (i.e. Surveyed Area) based on literature review (**Section 7.1.1** refers) and site surveys to focus specifically on the area that may be impacted by the Project. In view of the Project's nature and the homogeneous vegetation composition within and outside the Surveyed Area, conducting one-off day and night ecological surveys within this area would be adequate to collect representative and detailed ecological baseline information and identify species of conservation importance for the subsequent ecological impact assessment. Day and night ecological site surveys on habitat and vegetation, avifauna, herpetofauna, butterfly and odonate, mammal, firefly and freshwater fauna were conducted between June and November 2023.

Recognised Sites of Conservation Importance

- 3.5.2 Six DHs would fall within Lam Tsuen Country Park (LTCP), including 1632-NTS-DH09, 1632-NTS-DH54, 1632-NTS-DH55, 1632-NTS-DH56, 1632-NTS-DH57 and 1632-NTS-DH58. Designated in 1979, the LTCP commands a total area of 1,520 ha that spans over Tai Po, Fanling and Yuen Long (AFCD, 2023).
- 3.5.3 Majority of the Surveyed Areas in Kai Kung Leng (**Table 1.1** refers) fall within a "Conservation Area" ("CA") gazetted under the approved Kam Tin North Outline Zoning Plan (OZP) No. S/YL-KTN/10. It is zoned to protect and retain the existing natural landscape, ecological or topographical features of the area for conservation, educational and research purposes and to separate sensitive natural environment such as country park from the adverse effects of development.

Overall Ecological Condition

3.5.4 A total of five habitats, namely woodland, plantation, shrubland, grassland and developed area/wasteland were identified within the Surveyed Area (**Figure Nos. C1603/C/NOL/ACM/1632/306 to 308** refer). All of the DHs and IPs and majority of the ALs would fall within the natural habitats i.e. woodland, plantation, shrubland and grassland. Representative photographs showing the habitat types near the proposed DH locations are presented in **Appendix 3.1**. Flora species recorded is given in **Appendix 3.2**, and the photos of flora and fauna species of conservation importance is given in **Appendix 3.3**.

Woodland

3.5.5 The woodland on the lower hillside of Kai Kung Leng largely consisted of relatively young hillside woodland regenerated through succession, which had a semi-open canopy formed by

¹ Items with No Grade Accorded refer to buildings/structures/sites that are out of the list of the 1,444 historic buildings and has not previously been included under grading assessment by the Antiquities Authority, yet still have possible significance in cultural heritage.

young native pioneer trees e.g. *Acronychia* (*Acronychia pedunculata*), *Aporosa* (*Aporosa dioica*) and Yellow Cow Wood (*Cratoxylum cochinchinense*) of about 5 m to 7 m tall, with a few emergent exotic afforestation trees of *Eucalyptus* spp. Common native small trees and shrubs e.g. Thin Evodia (*Melicope pteleifolia*), Wild Coffee (*Psychotria asiatica*) and climbers e.g. *Desmos* (*Desmos chinensis*), *Uvaria* (*Uvaria macrophylla*) formed a relatively limited understory. The woodland on the lower hillside of Kai Kung Leng near Wah Shing Tsuen was consisted of fruit tree species such as Wampi (*Clausena lansium*) and Lychee (*Litchi chinensis*). Graves were scattered in the woodland and connected with occasional footpaths.

- 3.5.6 Five mature Incense Tree (*Aquilaria sinensis*), a floral species of conservation importance, of around 5 to 8 m tall, and six seedlings of height ranged from 0.2 m to 1.2 m were recorded next to the ALs and working platforms (**Figure Nos. C1603/C/NOL/ACM/1632/306 to 308** refer). Incense Tree is a common native species in Hong Kong. It is protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586) and listed as Category II in the Wild Plants under State Protection. This species is classified as “Vulnerable” under the China Plant Red Data Book, the Threatened Species List of China's Higher Plants, and the IUCN Red List (IUCN, 2023). It is also considered as “Near Threatened” status in China by the Rare and Precious Plants of Hong Kong and National Key Protected Plants in Guangdong.
- 3.5.7 One mature and one seedling of Emarginate-leaved *Ormosia* (*Ormosia emarginata*), a floral species of conservation importance, were found near the AL between 1632-NTS-DH08 and 1632-NTS-DH07(P) (**Figure No. C1603/C/NOL/ACM/1632/306** refers). Emarginate-leaved *Ormosia* is a common native species in Hong Kong. It is classified as Category II in Wild Plants under State Protection.
- 3.5.8 Four clumps of Lamb of Tartary (*Cibotium barometz*) were recorded near the proposed AL leading to 1632-NTS-DH09, and in between 1632-NTS-DH20 and 1632-NTS-DH30 (**Figure No. C1603/C/NOL/ACM/1632/307** refers). The species is given a ‘Vulnerable’ status in China by the Rare and Precious Plant of Hong Kong, listed under Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586), considered as ‘Category II’ in List of Wild Plants under State Protection.

Plantation

- 3.5.9 The canopy of the plantation habitat was dominated by exotic plantation trees such as Brisbane Box (*Lophostemon confertus*) and *Eucalyptus* spp. It was discontinuous and around 8 to 10 m tall. The understory was limited and dominated by native pioneer herbs such as Dichotomy Forked Fern (*Dicranopteris pedata*) and Oriental Blechnum (*Blechnum orientalis*), when moving up to hillside plantation.
- 3.5.10 One individual of Incense Tree seedling with 30cm tall was recorded near the AL leading to 1632-NTS-DH08 (**Figure No. C1603/C/NOL/ACM/1632/306** refers).

Shrubland

- 3.5.11 Shrubland was vegetated with native small trees and short shrubs e.g. *Aporosa*, Oblong-leaved Litsea (*Litsea rotundifolia* var. *oblongifolia*) and Rose Myrtle (*Rhodomyrtus tomentosa*).
- 3.5.12 Seven mature Incense Trees were recorded in proximity to the ALs leading to 1632-NTS-DH26, 1632-NTS-DH34, 1632-NTS-IDH50, 1632-NTS-IDH51, 1632-NTS-IDH52, 1632-NTS-IDH48 and 1632-NTS-IDH49. (**Figure No. C1603/C/NOL/ACM/1632/307** refers). Nine seedlings of Incense Tree were recorded near the ALs connecting 1632-NTS-DH26, 1632-NTS-DH35, 1632-NTS-DH58 (**Figure No. C1603/C/NOL/ACM/1632/307** refers).
- 3.5.13 Five clumps of Cycad-fern (*Brainea insignis*) were recorded near 1632-NTS-IDH50, 1632-NTS-IDH48, 1632-NTS-IDH49 and the AL to 1632-NTS-DH09 (**Figure No. C1603/C/NOL/ACM/1632/307** refers). Cycad-fern is listed under Category 2 of Rare and Precious Plants of Hong Kong and List of Wild Plants under State Protection. The species is classified as “Vulnerable” under Threatened Species List of China's Higher Plants.

Grassland

- 3.5.14 Grassland habitat was found at the upper hillside of Kai Kung Leng. It was dominated by pioneer native herb species such as Dichotomy Forked Fern and Oriental Blechnum. Three clumps of Cycad-fern were recorded near 1632-NTS-DH52, 1632-NTS-IDH51 and 1632-NTS-DH56 (**Figure No. C1603/C/NOL/ACM/1632/307** refers).

Developed Area/Wasteland

- 3.5.15 Developed area/wasteland habitat comprised of a camping site and derelict land, which was under constant disturbance due to human activities. Vegetation recorded in this habitat largely consisted of ruderal species e.g. Ciliate Microstegium, *Bidens alba* and weed White Popinac (*Leucaena leucocephala*). No floral species of conservation importance were found in this habitat.

Fauna

- 3.5.16 Avifauna, butterfly, odonate, mammal and amphibian were recorded within the Surveyed Area, of which three avifauna, three mammal species are of conservation importance. A full list of faunal species recorded is given in **Appendix 3.4**.
- 3.5.17 A total of 20 avifauna species were recorded in the Surveyed Area. Most of the species were found in woodland habitat. Most of these species are either abundant or common resident and widely distributed in Hong Kong. Six species of conservation importance, namely Black Kite (*Milvus migrans*), Black-throated Laughingthrush (*Pterorhynchus chiensis*), Chinese Hwamei (*Garrulax canorus*), Crested Serpent Eagle (*Spilornis cheela*), Greater Coucal (*Centropus sinensis*) and Rufous-capped Babbler (*Cyanoderma ruficeps*) were recorded. They are in the List of Wild Animals Under State Protection Class II except Rufous-capped Babbler. Black Kite, Chinese Hwamei and Crested Serpent Eagle are protected by the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586). Greater Coucal are regarded as 'Vulnerable' (Zheng and Wang, 1998). Black-throated Laughingthrush, Chinese Hwamei and Crested Serpent Eagle are considered as 'Near Threatened' (Jiang et al, 2016).
- 3.5.18 A total of 21 butterfly species were recorded in the Surveyed Area. Most of them were observed in woodland, while a few of them were found in shrubland, grassland and developed area/wasteland. They are either common or very common and widely distributed throughout Hong Kong.
- 3.5.19 Four odonate species were recorded woodland and grassland. One of them is distributed in wetland habitats (e.g. marshes and streams), while the rest are widespread in Hong Kong.
- 3.5.20 Three amphibian species were recorded in developed area and plantation the Surveyed Area. They are common and widely distributed throughout Hong Kong.
- 3.5.21 Four mammal species were recorded. Three of them are species of conservation importance. Red Muntjac (*Muntiacus muntjak*) is of conservation importance and recorded in shrubland (**Figure No. C1603/C/NOL/ACM/1632/307** refers). It is considered of potential regional concern (Fellowes et al., 2002) and as 'Near Threatened' (Jiang et al, 2016).
- 3.5.22 Intermediate Horseshoe Bat (*Rhinolophus affinis*) is considered as local concern in the basis of restrictedness of breeding and roosting site (Fellowes et al., 2002).
- 3.5.23 Small Indian Civet (*Viverricula indica*) is listed as Class I on the List of Wild Animals Under State Protection. It is considered as vulnerable in the Red List of China's Vertebrate (Jiang et al, 2016).
- 3.5.24 The ecological importance of the recorded habitats was evaluated in accordance with the EIAO-TM Annex 8 criteria and presented in **Table 3.6**.

Table 3.6 Habitat Evaluation within Surveyed Area

Criteria	Woodland	Plantation	Shrubland	Grassland	Developed Area/ Wasteland
Naturalness	Moderate	Low	Moderate to high	Moderate to high	Low
Size (Ha)	Small (Approx. 2.87 ha)	Very small (Approx. 0.68 ha)	Small (Approx. 1.58 ha)	Very small (Approx. 0.42 ha)	Very small (Approx. 0.16 ha)
Diversity	Moderate floral and low faunal diversity	Low floral and faunal diversity	Low floral and faunal diversity	Low floral and moderate faunal diversity	Very low floral (consisting of native ruderal and exotic species) and faunal diversity
Rarity	Three flora species of conservation importance: Incense Tree, Lamb of Tartary, Emarginate-leaved Ormosia Four fauna species of conservation importance: Red Muntjac, Small Indian Civet, Greater Coucal, Black-throated Laughingthrush	One flora species of conservation importance: Incense Tree	Two flora species of conservation importance: Incense Tree, Cycad-fern Three fauna species of conservation importance: Intermediate Horseshoe Bat, Chinese Hwamei, Rufous-capped Babbler	One flora species of conservation importance: Cycad-fern	No species of conservation was recorded
Re-creatability	Low to moderate. Re-creatable if time is given for natural succession	High	Moderate	Moderate	Low
Fragmentation	Low	Low to moderate	Low to moderate	Low to moderate	Low to moderate
Ecological linkage	Within "CA", structurally connected to adjacent plantation, shrubland and grassland areas in LTCP	Within "CA" and LTCP, structurally connected to adjacent woodland, shrubland and grassland	Within "CA" and LTCP, structurally connected to adjacent woodland, plantation and grassland	Within "CA" and LTCP, structurally connected to adjacent shrubland, plantation and woodland	No notable ecological linkage
Potential value	Moderate	Low to moderate	Low to moderate	Low to moderate	Low
Nursery / Breeding Ground	No notable nursery/ breeding behaviour observed				
Age	N.A				
Abundance / Richness of Wildlife	Moderate	Low	Low to moderate	Low to moderate	Very low
Ecological Value	Moderate	Low	Low to moderate	Low to moderate	Low

3.6 Landscape and Visual

- 3.6.1 Based on desktop study on maps, aerial photograph (**Figure No. C1603/C/NOL/ACM/1632/310** refers) and ecological surveys within the Surveyed Area mentioned in **Section 3.5**, the major landscape elements are the existing trees within the landscape resources (LR) (including LR-1 woodland, LR-2 mixed woodland, LR-3 grassland, LR-4 shrubland, LR-5 plantation and LR-6 developed area/ villages) and landscape character area (LCA) (including LCA1 hillside and upland landscape, LCA2 rural inland plain landscape and LCA3 miscellaneous rural fringe landscape) within the 100m assessment area. The proposed works fall within most of the LRs, except LR-2 mixed woodland. Locations of LR and LCA are shown in **Figure Nos. C1603/C/NOL/ACM/1632/311** and **C1603/C/NOL/ACM/1632/313** respectively.
- 3.6.2 No Old and Valuable Trees (OVTs) were recorded within the 100m Assessment Area. Rare and protected tree species such as *Aquilaria sinensis* and *Ormosia emarginata* were identified within or in vicinity of the ALs, DHs and IPs. No tree will be removed under the Project.
- 3.6.3 The Project is located within a hilly terrain where it is generally screened by the surrounding terrain and vegetation. The key public viewers such as travellers along San Tin Highway are distant from the Project Site, and are enjoying the major visual resource of greenery hillside backdrop of Kai Kung Leng. The Project is temporary in nature without any permanent structure involved, therefore, it is not pronouncedly visible from key public viewers in the surroundings. There will be also no visual obstruction or loss of visual openness due to the Project. As the Project would not involve tree felling works, the visual resource of greenery will be maintained and therefore no pronounced visual change from key public viewers is anticipated. As such, visual impact assessment is not required with reference to the Appendix B in Annex 18 of the EIAO-TM.

Landscape Resources

LR-1 Woodland

- 3.6.4 For woodland (LR-1), it refers to the woodland patches at the southwestern side of the Kai Kung Leng's foothill which is adjoining the plantation and grassland. It is also located at the hillside of Kai Kung Leng near Ngau Tam Mei and Pok Wai. The hillside woodland feature with young to relatively mature trees, including native tree species such as *Acronychia pedunculata*, *Aporosa dioica*, *Celtis sinensis*, *Schefflera heptaphylla*, *Cratogeomys cochinchinense* (about 5 m to 7 m tall), with a few emergent exotic afforestation trees of *Eucalyptus* spp. Within the Surveyed Area, rare and protected tree species such as *Aquilaria sinensis* and *Ormosia emarginata* were identified near the AL. Five mature *Aquilaria sinensis* of around 5 to 8 m tall were recorded next to the AL and working platforms. One mature *Ormosia emarginata* was found near the AL between 1632-NTS-DH08 and 1632-NTS-DH07(P). In view of its maturity in vegetation and landscape quality, the sensitivity to change is considered as high. A total of 25 nos. of working areas/platforms and associated ALs are proposed within this landscape resource.

LR-2 Mixed woodland

- 3.6.5 For mixed woodland (LR-2), it refers to the mixed woodland patches at the foothill of Kai Kung Leng. The mixed woodland patch predominately comprises of fruit trees such as *Dimocarpus longan* and *Clausena lansium* and mixed of young to mature native and exotic trees and shrub. No rare and protected tree species were identified in this LR. Though there were certain levels of human disturbance such as farming and burial ground, the landscape quality is considered as high due to diversity in vegetation. The sensitivity to change is considered as high. No working areas/platforms or AL is proposed within this LR.

LR-3 Grassland

- 3.6.6 For grassland (LR-3), it refers to both hillside grassland at Kai Kung Leng and was scattered in the east and west of Long Ha Tsuen. Hillside grasslands are susceptible to periodic hill fires, which arrest ecological succession. While low-lying grasslands largely succeeded from fallow

field and dried up ponds, where ruderal herbs and weedy were commonly found. No rare and protected tree species were identified in this LR. The sensitivity to change is considered as low. A total of 4 nos. of working platforms and associated ALs are proposed within this landscape resource.

LR-4 Shrubland

- 3.6.7 For Shrubland (LR-4), it refers to those shrubland at the hillside of Kai Kung Leng and Ngau Tam Mei/ Pok Wai area. The hillside shrubland was vegetated with native small trees such as *Litsea rotundifolia* var. *oblongifolia* and short shrubs. While those in the lowland area appeared to be succeeded from abandoned agricultural land and largely comprised with small trees such as *Melia azedarach* and *Litchi chinensis*, and self-seeding species (i.e. *Leucaena leucocephala*). Within the Surveyed Area, rare and protected tree species such as *Aquilaria sinensis* were identified in this LR. Seven mature *Aquilaria sinensis* were recorded in proximity to the ALs. The landscape quality is considered as fair and relatively tolerant to change. Hence, the sensitivity to change is considered as medium. A total of 12 nos. of working platforms and associated access ladder are proposed within this landscape resource.

LR-5 Plantation

- 3.6.8 For Plantation (LR-5), it refers to the small patch of plantation at the southwestern side of the Kai Kung Leng adjoining the woodland, shrubland and grassland. These vegetated areas are man-made in nature as greenery to be an extension of the abutting woodland and is fair in landscape quality. No rare and protected tree species were identified in this LR. The tolerance of change is relatively medium. The sensitivity to change is considered as medium. A total of 4 nos. of working platforms and associated AL are proposed within this landscape resource.

LR-6 Developed area / Villages

- 3.6.9 For Developed area / Villages (LR-6), it refers the vegetation found between the villages such as Mo Fan Heung Tsuen. The identified greenery was relatively fragmented and only small cluster of vegetation formed between the village houses. It is mainly composed of exotic species (e.g. *Bauhinia* spp., *Bougainvillea spectabilis* and *Calliandra haematocephala*) and ruderal species such as *Leucaena leucocephala* and *Mikania micrantha*. No rare and protected tree species were identified in this LR. In general, its landscape quality is considered as fair to poor with high tolerance to change due to the constant human disturbance. Hence, the sensitivity to change is considered as low. Only ALs are proposed within this LR.

Landscape Character Area

- 3.6.10 45 out of 47 nos. of DHs are within the LCA1 hillside and upland landscape, while the remaining 2 DHs (1632-NTS-DH04 and 1632-NTS-DH05) are within LCA3 miscellaneous rural fringe landscape. LCA1 refers to area within and adjoining Kai Kung Leng, it is mainly covered in scrub or woodland. This LCA is generally large in scale and considered as high landscape quality with high sensitivity. The LCA3 is referring to the periphery of the major urban areas. This LCA characterized by low-density structure, such as scattered residential development and open storages, and mixture of undeveloped area. The sensitivity is considered as low. A small portion of AL falls within the remaining LCA2 rural inland plain landscape. This LCA is a flat and expansive lowland landscape with scattered groups of vegetation and cluster of squatter huts. The sensitivity is generally medium.

4 POSSIBLE IMPACT ON THE ENVIRONMENT

4.1 Potential Impacts from the Project

4.1.1 As discussed in **Section 1.4**, the temporary works activities would include the following:

- Site preparation works;
- Set up of access ladders (ALs);
- Digging of inspection pits (IPs);
- Lifting of drill rig by either helicopter or manual handling;
- Drilling works at drillholes (DHs); and
- Site reinstatement works.

4.1.2 The potential environmental impacts associated with the GI works have been assessed and are discussed below in accordance with Annex 1 of the *Technical Memorandum on Environmental Impact Assessment Process* (EIAO-TM).

4.2 Potential Environmental Impacts

Air Quality

4.2.1 The proposed GI works will be completed within a span of about 9 months, and the construction works as presented in **Section 4.1** are considered to be minor and localized. Potential dust impact may arise from drilling activities and wind erosion of drilled boreholes. However, it is anticipated that the proposed GI works would not result in significant fugitive dust emissions in view of the small borehole size (i.e. sizes of DHs ranges from 76 mm to 168 mm in outer diameter) with limited excavated materials (i.e. approx. 248 m³), setback distances between 20 m and 290 m from ASRs, together with the implementation of good site practices and dust suppression measures as discussed in **Section 5.1.1**, the potential fugitive dust impact to the ASRs is expected to be minimal. Air emission may occur during the use of helicopters and diesel-powered construction equipment. However, only a drill rig, a water pump (petrol), a water pump (electric) and a generator (portable) would be used at each GI working area/platform, and a maximum of 10 working areas/platforms would be operated concurrently, therefore, the exhaust emission is anticipated to be limited. The Air Pollution Control (Non-road Mobile Machinery) (Emission) Regulation came into effect in June 2015 to control emissions from diesel-powered engines. Only approved or exempted NRMMS with a proper label are allowed to be used in construction sites. Fuel with sulphur content not exceeding 0.005% by weight should be used to minimize SO₂ emission in accordance with the Air Pollution Control (Fuel Restriction) Regulation. Given that only a small number of PME will be utilized concurrently for the GI works, and the use of helicopter (**Table 1.1** refers) for material delivery would be of short duration and infrequent (i.e. approximate one trip per week, with each trip lasting approximately two hours), the associated air emissions are expected to be minimal. There would be also no anticipated concurrent projects within 500 m of the Project site according to the tentative GI program.

Noise

4.2.2 Setting up of ALs and working areas/platforms as well as site reinstatement works would involve hand-held tools only. The major source of construction noise impact will be the operation of powered mechanical equipment (PMEs) for carrying out GI works including lifting of drill rig by either helicopter or manual handling, and drilling works at DHs. The activities will be conducted daily from 7 am to 7 pm excluding Sundays and public holidays. A drill rig, a water pump (petrol), a water pump (electric) and a generator (portable) would be used at each working area/platform for GI works, and a maximum of 10 working areas/platforms would be operated concurrently. The practicability of the proposed plant inventory was confirmed by the Project Engineer for the construction noise impact assessment. According to the “*Technical Memorandum on Noise from Construction Work Other Than Percussive Piling*” and “*Sound power levels of other commonly used PME*” published by EPD, the Sound Power Level (SWL) of a drill rig, rotary type (diesel), a water pump (petrol), a water pump (electric) and a generator (portable) is 110

dB(A), 103 dB(A), 88 dB(A) and 100 dB(A), respectively. The total SWL of items of PME to be used at each working area/platform is estimated to be 111 dB(A). With a 3 dB(A) façade correction and a maximum of 10 concurrent work sites, it is anticipated that the NSRs located at not less than 110m from working area/platform will be subject to construction noise level complying with the criterion set out in the EIAO-TM (i.e. 75 dB(A)) for daytime period. Most of NSRs are located at more than 110 m from the working areas/platforms, except MF_N03, MF_N04, MF_N05 and NTM_N01.

- 4.2.3 The base case construction noise levels are summarized in **Table 4.1**, with detailed calculations presented in **Appendix 4.1**. The predicted noise levels at the representative NSRs would be in the range of 73 – 81 dB(A), which exceed with the noise criterion set out in EIAO-TM (i.e. 75 dB(A)). The use of temporary noise barriers was considered for mitigating the noise from operating PME at 1632-NTS-DH04 & 1632-NTS-DH05 to nearby NSRs. Based on the detailed noise calculation shown in **Appendix 4.2**, the predicted construction noise levels at the concerned NSRs (i.e. MF_N03, MF_N04, MF_N05 and NTM_N01) would comply with the construction noise criterion of 75 dB(A) after implementation of temporary noise barriers. Noise barriers are more effective when placed immediately adjacent to the PME and can reduce the noise level by up to 10 dB(A) for stationary plants. The provision of temporary noise barriers should be specified in the construction contracts to ensure that they will be duly implemented by the Contractor. Since the NSRs MF_N03 and MF_N04 are only 2 storeys high and located at a lower level than the working areas 1632-NTS-DH04 and 1632-NTS-DH05, temporary noise barriers with a height higher than the noise emission parts (e.g. diesel engine and rotary driving system) of the drilling rig should be sufficient to block the direct line of sight between the PME and NSRs. The Contractor should also be responsible for taking measures to reduce the noise level to the acceptable level with due consideration given to the use of noise barrier, selection of PME, as well as the requirement of intercepting the line of sight between the NSRs and PME where feasible.

Table 4.1 Predicted Construction Noise Levels Generated from Proposed GI Works

NAP ID	EIAO-TM Noise Criteria, Leq 30mins, dB(A)	Base Case		Mitigated Scenario	
		Predicted Construction Noise Levels, Leq 30mins, dB(A)	Exceedance, dB(A)	Predicted Construction Noise Levels, Leq 30mins, dB(A)	Exceedance, dB(A)
MF_N03	75	81	6	74	-
MF_N04	75	79	4	73	-
MF_N05	75	73	-	73	-
NTM_N01	75	73	-	73	-

- 4.2.4 Helicopter (proposed model no.: MD 902 Explorer or similar model) would be used for the transportation of materials and equipment to some remote working areas/platforms (**Table 1.1** refers). Helicopter will fly from the take-off point to the working areas/platforms but will not land anywhere within the Project site. Three modes of operation, including approaching, hovering and flyover, will be conducted for the materials and equipment delivery. The frequency of helicopter flights for the GI works will be approximately one trip per week, with each trip lasting approximately two hours. For conservative assessment approach, it was assumed that the helicopter would hover above the working areas/platforms for about 30 minutes during the loading/unloading of materials. The helicopter will only operate during daytime (0700 – 1900 hours) and maintain a minimum altitude of 152m (i.e. 500 ft) above NSRs as required by the Civil Aviation Department. Based on the construction noise assessment presented in Appendix B3 of the Project Profile of Removal of 132kV Overhead Line and Pylons for P-Line (Register No.: PP-636/2021), the maximum noise level generated from the operation of a helicopter at 152m from the NSRs is 51 dB(A) under flyover mode. Given that noise data for the MD 902 Explorer in hovering mode is not available (Appendix B1 of PP-636/2021 refers), reference was made to another model of helicopter (i.e. Airbus Helicopter H175), of which the noise emission in hovering mode is 5.5 dB(A) higher than that in flyover mode. Therefore, it is anticipated that the maximum noise level from a helicopter operation at 152m from the NSRs would be

approximately 56.5 dB(A) (i.e. 51 dB(A) + 5.5 dB(A)) in hovering mode. Given the noise from operating helicopter is more than 19 dB(A) below the noise criterion, it is expected that the helicopter noise would not have adverse impacts on NSRs.

- 4.2.5 Given that only small size rotary type drill rigs with the borehole size (outer diameter) ranging from 76 mm to 168 mm will be used, in addition to large setback distances of more than 25m between the drilling locations and the nearby NSRs, it is anticipated that the proposed GI works would not result in adverse ground-borne noise impact.
- 4.2.6 Good site practices listed in **Section 5.1.3** should be implemented as far as practicable to minimize impacts during the GI works. The “Recommended Pollution Control Clauses for Construction Contracts” published by the EPD should be adopted in the Contract Specification for the Contractor to follow and implement relevant measures and good site practices in minimising noise impact.

Water Quality

- 4.2.7 Potential major sources of water quality impacts may arise from the discharge of construction run-off and sewage effluent due to workforce. No working area/platform would encroach into any watercourse while only ALs at some locations would be installed above the Watercourses W7 and W9, nevertheless, no surface water flow was observed at Watercourses W7 and W9 below the ALs and near working areas/platforms according to the observation of ecological survey. With the implementation of good site practices as recommended in EPD’s Practice Note for Professional Persons ProPECC PN 2/23 “*Construction Site Drainage*”, adverse water quality impact due to the setting up of ALs and working areas/platforms as well as the proposed GI works is not anticipated.
- 4.2.8 Site run-off would wash away the soil particles on unpaved lands and areas with the topsoil exposed during rainstorms. The run-off is generally characterized by high concentration of SS. Release of uncontrolled site run-off would increase the SS levels and turbidity in the nearby water environment. It is therefore important that good site practices as recommended in ProPECC PN 2/23 “*Construction Site Drainage*” should be followed to prevent run-off with high level of SS from entering the surrounding waters. Best Management Practices (BMPs) in controlling construction site discharges are also recommended for this Project. The backfilling following the guidelines as suggested in GEO/CEDD Geoguide 2 (2017 version), adverse impacts on aquifer due to poorly compacted backfill is not expected. With the implementation of the good site practices as mentioned in **Sections 5.1.6 to 5.1.8** to control run-off and drainage from the proposed GI works, disturbance of water bodies would be avoided and deterioration in water quality would be limited.
- 4.2.9 Sewage would be generated from the workforce during the GI works. Provided that sewage will not be discharged directly into watercourses, and temporary sanitary facilities (e.g. dry flush portable toilets and chemical toilets) will be used and the sewage collected will be properly handled and disposed of, it is unlikely that sewage generated from the site would have a significant water quality impact. A licensed waste collector should be employed to clean and maintain the chemical toilets on a regular basis. The sewage generated from the construction workforce will be contained and tanked away.

Waste Management

- 4.2.10 As the soil excavated from IPs will be backfilled at their original locations, and the materials of working areas/platforms would also be reused, it is anticipated that inert and non-inert C&D materials would not be generated from the GI works. The generation of chemical waste is also not anticipated.
- 4.2.11 General refuse comprising food scraps, waste paper, empty containers, etc. would be generated from workers; however, the quantities (less than 20 kg per day) would be insignificant due to the limited number of workers required for such small scale of works and limited space at each works area. With the implementation of the mitigation measures in **Section 5.1.9**,

adverse environmental impacts arising from the storage, handling, and transportation of general refuse would not be anticipated.

Cultural Heritage

- 4.2.12 Neither graded built heritage resources nor SAI are identified within the Project site. There is only one other identified item (i.e. Pok Wai Public School) within 100m from the Project site. Given that there will be only AL to be set up in proximity of Pok Wai Public School, the potential impact on this other identified item is not anticipated. No direct or indirect cultural heritage impacts is anticipated from the Project.

Ecology

Direct and Indirect Impacts to Recognized Sites of Conservation Importance

- 4.2.13 The proposed GI works (i.e. DHs, IPs and their associated working areas/platforms, ALs and storage area) are located on the western hillside of Kai Kung Leng within the “CA”, near Pok Wai Public School and Long Ha and some are located within LTCP further uphill to the “CA”. The proposed GI works are temporary in nature and small in scale, with small excavation volume (approximately 248 m³). Backfilling of original materials would be undertaken upon the completion of the GI works. Neither permanent habitat loss nor tree felling would be resulted. Vegetation clearance would also be kept to a minimum. Minimum extent of working platforms and working areas, storage area and ALs have been proposed to minimise direct temporary habitat loss. To minimise the need of vegetation clearance, the use of existing footpaths and single rowed access have been considered as far as practicable for formulating the proposed routing of the ALs. The affected habitats in LTCP i.e. shrubland and grassland have low to moderate ecological values and the affected areas are very small (**Table 4.2** refers). In view of the small scale and transient nature of works in both “CA” and LTCP, in addition to the adoption of the protection measures mentioned in **Section 4.2.16**, direct impacts to these two recognized sites of conservation importance caused by the proposed GI works are anticipated to be minor.

Table 4.2 Areas of Habitats Affected by Works Elements within LTCP

Habitat	Proposed Double and Single Rowed Steel Access Ladders (ha)	Proposed Temporary Working Platforms (ha)
Shrubland	<0.01	0.02
Grassland	0	0.02

- 4.2.14 Helicopter would be used for the transportation of drill rigs to 13 nos. working platforms (**Table 1.1** refers) in short duration and infrequently during daytime only (on average, 1 trip per week and approximately 2 hours per trip). The disturbance impact due to the operation of helicopter would be limited. Given the small scale and transient nature of the proposed GI works, indirect impacts to the surrounding “CA” and LTCP due to the disturbance arising from the operation of helicopter would be minor.
- 4.2.15 In the event that the proposed DH, working areas/platforms and ALs listed in **Table 1.1** are required to be adjusted due to site constraints and/or actual site conditions, the adjusted DH, working areas/platforms and ALs should not affect any species of conservation importance according to further ecological survey findings to be taken by the qualified ecologist(s) as mentioned in **Section 4.2.16**. Tree felling will be avoided as far as practicable by making adjustments of the proposed works, depending on the actual site condition. The adjusted DH, working areas/platforms and ALs should also be agreed by the qualified ecologist(s) and Independent Environmental Checker under this Project. Comments from relevant authorities would be sought for adjustments of the DH, working areas/platforms and ALs within LTCP. Additional ecological surveys would be conducted to verify the ecological conditions of the adjusted sites (if any) and to ascertain whether the adjustment of works would generate additional ecological impacts on LTCP, upon request of relevant authorities.

Impacts to Floral Species of Conservation Importance and Existing Mature Trees and Recommended Protection Measures

- 4.2.16 All the floral species of conservation importance recorded were carefully avoided according to the recommendation made on the joint-site visits with the Contractor. A minimum of 1 to 1.5 m buffer distance between the concerned plants and the temporary working areas of the proposed IPs, DHs and ALs, and storage area will be maintained (See **Table 4.3** for summary). To avoid any unnecessary damage to those recorded floral species of conservation importance and other existing mature trees, qualified ecologist(s) with relevant experience should be deployed to identify, tag and demarcate these floral species of conservation importance located near the working area prior to the commencement of the proposed works. Plant Protection Zones (PPZs), with robust fencing of at least 1 m setback from ferns and stems of tree seedlings, and at least 1.5 m from mature trees, would be set up before commencement of any GI works.
- 4.2.17 No access and construction activities should be allowed within the PPZs. All site staff should be trained to recognize the location of the tagged species of conservation importance and their protection zones. Proposed works should be shifted away from the PPZs to avoid damage to the plant root system/trunk. No material storage and pedestrian access should be allowed within the PPZs to prevent compaction of soil around the plants.
- 4.2.18 Protection measures for mature trees, such as protective tree wrapping using non-moisture holding materials and installation of any specified supports or protective structures (CEDD, 2011), and those recommended in ‘*Tree Management Practice Note No.1: Tree Preservation during Construction*’ (DEVB, 2019b) and ‘*Technical Circular (Works) No. 4/2020 – Tree Preservation*’ (DEVB, 2020) such as no stockpiling around a tree and girdling a tree with wire. The installation of pile of the ALs must avoid damage to the root of tree, especially the Incense Trees and Emarginate-leaved *Ormosia*. Minimal crown pruning would be performed on the mature trees surrounding the working areas/platforms of DHs to allow room for lifting and unloading of drill rigs by helicopter and manpower transport. Proper pruning would be conducted, such as avoidance of large pruning cut and stub remaining, following ‘*Tree Management Practice Note No.3: Tree Pruning*’ (DEVB, 2019a), ‘*Guidelines on Tree Pruning*’ (DEVB, 2023) and ‘*Do’s and Don’ts in Pruning*’ (DEVB, 2010) as far as practicable. Considering the crown pruning would be one-off only and extent would be kept minimal, impacts to the existing mature trees would be minor and acceptable. No trimming would be performed on the mature floral species of conservation importance (e.g. Incense Tree and Emarginate-leaved *Ormosia*) for the helicopter operation.

Table 4.3 Summary of Floral Species of Conservation Importance Recorded and Plant Protection Zone

Floral Species of Conservation Importance	Approximate Height Recorded	Number of Specimens Recorded	Plant Protection Zone
Cycad-fern (<i>Brainea insignis</i>)	Various	8 clusters	1 m setback from the whole cluster
Emarginate-leaved <i>Ormosia</i> (<i>Ormosia emarginata</i>)	2 to 4 m tall	1	1.5 m setback from the stem
	0.5 to 1 m tall	1	1 m setback from the stem
Incense Tree (<i>Aquilaria sinensis</i>)	5 to 8 m tall	12	1.5 m setback from the stem
	0.5 to 2 m tall	15	1 m setback from the stem
Lamb of Tartary (<i>Cibotium barometz</i>)	Various	4 cluster	1 m setback from the whole cluster

Impacts to Fauna Species of Conservation Importance

- 4.2.19 Three avifauna (i.e. Black Kite, Chinese Hwamei and Greater Coucal) and three mammal (i.e. Intermediate Horseshoe Bat, Red Muntjac and Small Indian Civet) species of conservation importance were recorded outside the proposed works area. Potential indirect impact to these species would be the temporary disturbance from excavation works and establishment of the ALs. Since all these faunal species of conservation importance are highly mobile, they would move away from the proposed GI works area to adjacent suitable habitats which are readily available. With small scale and localized temporary nature of the GI works, potential indirect impact to these species is anticipated to be minor.
- 4.2.20 The day roost of Himalayan Leaf-nosed Bats (*Hipposideros armiger*) is located in one of the classrooms of the deserted Pok Wai Public School just outside the “CA” and the Surveyed Area, near a short section of the AL (**Figure No. C1603/C/NOL/ACM/1632/307** refers). The installation of AL would involve hand-held tools only and the short section of AL near the classroom would be completed within a few days. The Himalayan Leaf-nosed Bats are widely distributed in countryside areas throughout Hong Kong (AFCD, 2022). While the species roosts in a variety of cave-like structures such as water tunnels and abandoned mine caves, it has also been found roosting in human dwellings or abandoned buildings (AFCD, 2005; Shek, 2006; LCSD, 2010; KFBG, n.d.; 2023), indicating the species has tolerance and adaptability to human activities and associated disturbance to a certain extent. Considering the short duration and low magnitude of disturbance arising from the installation of AL, the indirect impact on the roosting Himalayan Leaf-nosed Bats would be minor.

Potential Water Quality Impact and Recommended Mitigation Measures

- 4.2.21 As discussed in **Sections 4.2.7 - 4.2.9**, the good site practices as recommended in the ProPECC PN 2/23“*Construction Site Drainage*” (EPD, 2023) and BMPs should be followed to avoid and minimise the potential water quality impact arising from the setting up of ALs and working areas/platforms and the proposed GI works. With the mitigation measures in place, adverse water quality impact is not anticipated.
- 4.2.22 Potential ecological impacts on the identified habitats within the Surveyed Area associated with the Project were evaluated in accordance with the Annex 8 of the EIAO-TM, as presented in **Table 4.4**.

Table 4.4 Evaluation of Potential Ecological Impacts to Habitats within Surveyed Area

Criteria	Woodland	Plantation	Shrubland	Grassland	Developed Area/ Wasteland
Habitat Quality	Moderate	Low	Low to moderate	Low to moderate	Low
Species	Moderate floral and low faunal diversity	Low floral and faunal diversity	Low floral and faunal diversity	Low floral and moderate faunal diversity	Very low floral (consisting of native ruderal and exotic species) and faunal diversity
Size/Abundance	0.38 ha would be temporarily affected	0.07 ha would be temporarily affected	0.19 ha would be temporarily affected, of which 0.02 ha falls within LTCP	0.04 ha would be temporarily affected, of which 0.02 ha falls within LTCP	0.01 ha would be temporarily affected
Duration	<p><u>Direct Impact</u> Direct impact would be temporary</p> <p><u>Indirect Impact</u> Indirect impact (noise and vibration, air/dust) would be temporary</p>				
Reversibility	<u>Direct Impact</u>				

Criteria	Woodland	Plantation	Shrubland	Grassland	Developed Area/ Wasteland
	Direct impact from works site/area would be reversible <i>Indirect Impact</i> Indirect impacts (air/dust, noise, glare) would be reversible				
Magnitude	Very low	Very low	Very low	Very low	Very low
Regional Significance	Low. Although the habitats are structurally connected, the affected areas are small in scale and the impacts are reversible. The affected habitats are also common in the territory and the region.				Insignificant. The affected areas are small in scale and the impacts are reversible.
Overall Impact Significance	Low	Low	Low	Low	Minor

Landscape

- 4.2.23 The proposed GI works (i.e. DHs, IPs and their associated working areas/platforms, ALs and storage area) are temporary in nature and small in scale. The duration of GI works will be short, with each DH expected to be completed within approximately 6 weeks. For the temporary works, no permanent loss of landscape resources (i.e. existing trees) will occur. The size of each IP is approximately 1.5 m (L) x 1.5 m (W) x 2.5 m (D) and working area/platform of around 5 to 10 m (W) x 12 to 15 m (L) will be reserved for each of the 47 DHs (Refer to **Table 1.1** for summary). Minor and temporary vegetation clearance will therefore be required but tree felling will be avoided.
- 4.2.24 Helicopter will be used to deliver the equipment and materials, while ALs between the closest access and the temporary scaffold platform will also be erected for manual mobilization. Only minor vegetation clearance of understory shrubs and herbaceous plants are anticipated. The locations and the footprint of the ALs and working areas/platforms as well as DH locations have been carefully selected without affecting the trees due to the proposed works. The installation of the ALs will also avoid damaging to the root of tree, especially those rare and protected tree species (if any).
- 4.2.25 Among the identified LRs and LCAs, it is considered the magnitude of change for mixed woodland (LR-2), developed area/villages (LR-6) and rural inland plain landscape (LCA2) is negligible and the landscape impact is insubstantial as no works in LR-2 and LCA2, and only AL will be proposed in LR-6. For the remaining LRs and LCAs, there are 25 nos. of working areas/platforms proposed in woodland (LR-1), 4 nos. of working areas/platforms proposed in grassland (LR-3), 12 nos. of working areas/platforms proposed in shrubland (LR-4) and 4 nos. of working areas/platforms proposed in plantation (LR-5), while there are 2 nos. of working areas proposed in miscellaneous rural fringe landscape (LCA3) and 43 nos. of working areas/platforms proposed in hillside and upland landscape (LCA1). Only small excavation works will be involved for the GI works, and the GI works is temporary in nature. The soil excavated from IPs will be backfilled at their original locations, and the DH locations will be reinstated to their original or agreed condition. Tree felling will be avoided, particularly that the identified rare and protected tree species (i.e. *Aquilaria sinensis* and *Ormosia emarginata*) will not be affected. The minimum extent of working areas/platforms, storage area and ALs have been proposed to minimise impact on the existing trees and vegetation.
- 4.2.26 As mentioned in **Sections 4.2.16 to 4.2.18**, protective measures for existing trees and Plant Protection Zones (PPZs) would be adopted for protecting the floral species of conservation importance including the rare and protected tree species. The protective measures include protective tree wrapping using non-moisture holding materials and installation of any specified supports or protective structures, and those recommended in *DEVB GLTMS TMPN No. 1 - Tree Preservation during Construction* and *DEVB TC(W) No. 4/2020 – Tree Preservation*. Minimal crown pruning will be performed on the mature trees surrounding the working areas/platforms

to allow room for lifting and unloading of drill rigs by helicopter and manpower transport. Proper pruning will be conducted in accordance with *DEVB GLTMS TMPN No.3 - Tree Pruning* as far as practicable, such as avoidance of large pruning cut and stub remaining. Particularly for the rare and protected tree species *Aquilaria sinensis* and *Ormosia emarginata*, no tree trimming will be performed for the helicopter operation and sufficient PPZs (i.e. 1.5m setback from the stem as mentioned in **Table 4.3**) will be adopted to provide adequate protection to the rare and protected tree species.

- 4.2.27 Therefore, the magnitude of change due to the proposed GI works is considered negligible to small as no existing trees will be felled. The landscape impact for the related LRs and LCAs is considered as insubstantial with the implementation of protective measures mentioned above. In addition, no direct impacts on landscape with distinctive character/resources are anticipated due to the Project.

5 ENVIRONMENTAL PROTECTION MEASURES TO BE INCORPORATED AND FURTHER ENVIRONMENTAL IMPLICATIONS

5.1 Environmental Protection Measures

Air Quality

5.1.1 Although the potential air quality impact to the surrounding sensitive receivers is considered to be minimal, the following good site practices should be employed and measures stipulated in the Air Pollution Control (Construction Dust) Regulation, Air Pollution Control (Non-road Mobile Machinery (NRMM)) (Emission), and Regulation and Air Pollution Control (Fuel Restriction) Regulation should also be adopted where applicable to minimise air quality impact:

- Use impervious sheets to cover the drilled boreholes and any dusty material storage piles, if applicable, to reduce emissions;
- Open stockpiles should be avoided or covered with tarpaulin sheets. Where possible, prevent placing dusty material storage piles near ASRs;
- Ensure the work area is regularly sprayed to minimise dust generation;
- Optimize flight paths to enhance fuel efficiency during the planning of flight paths and avoid unnecessary idling during the operation of helicopter;
- Use electric powered machinery and avoid use of exempted NRMM as far as practicable;
- Backfill the drilled boreholes upon the completion of GI works as soon as possible; and
- Use of liquid fuel, if required, with a sulphur content of less than 0.005% by weight.

Noise

5.1.2 Temporary noise barriers would be adopted at 1632-NTS-DH04 & 1632-NTS-DH05 to screen the noise arising from GI works to nearby NSRs MF_N03 and MF_N04.

5.1.3 To further minimize the noise impact to the surrounding environment, the following good site practices should be adopted, where applicable, during construction phase:

- Only well-maintained plant should be operated on-site and plant should be serviced regularly during construction;
- Machines that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum; and
- GI works should not be carried out during 7pm to 7am, and on Sundays and public holidays.

5.1.4 In addition, the “Recommended Pollution Control Clauses for Construction Contracts” published by the EPD should be adopted in the Contract Specification for the Contractor to follow and implement the relevant measures and good site practices in minimising noise impact.

5.1.5 The Contractor is also responsible to ensure compliance with the construction noise criterion of 75 dB(A) at NSRs as stated in EIAO-TM.

Water Quality

5.1.6 The Contractor should adhere to the borehole refilling guidelines outlined in the GEO/CEDD Geoguide 2 (2017 Version) to mitigate the risk of aquifer contamination due to substandard backfilling. The best approach involves backfilling with a cement-based grout, ideally a cement-bentonite grout, which should be introduced at the borehole’s lowest point using a tremie pipe. To ensure a more effective seal, the addition of an expanding agent may be necessary.

- 5.1.7 The Best Management Practices (BMPs) outlined in EPD's ProPECC PN 2/23 "*Construction Site Drainage*", and the relevant guideline promulgated by WSD should be followed as far as practicable to minimize surface runoff. The recommended key mitigation measures for minimizing potential water quality impact listed below should be followed throughout the GI works:

Surface run-off

- Exposed soil surface should be covered with tarpaulin or similar fabric as necessary during rainstorms.
- Excavated and filled surfaces that are susceptible to erosion should be consistently protected to prevent any erosion; and
- Good site practices should be adopted to remove rubbish and litter from construction site so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis.

Sewage from Workforce

- Temporary sanitary facilities, such as dry flush portable toilets and chemical toilets, should be employed on-site to handle sewage from the workers. Those facilities should be well-maintained to avoid watercourse pollution. A licensed waste collector should be employed to clean and maintain the chemical toilets on a regular basis. The sewage generated from the construction workforce will be contained and tanked away. All sludge, wastewater, and cleanup water from the toilets should not be disposed of the surrounding environment; and
- Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment.

- 5.1.8 The practices outlined in ETWB TC (Works) No. 5/2005 "*Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works*" should also be adopted where applicable, including but not limited to the below measures to minimise the water quality impacts upon any natural streams or surface water systems:

- Stockpiling of construction materials and spoil, if any, should be properly covered and located away from any natural stream/river; and
- Construction debris and spoil should be covered up and/or disposed of as soon as possible to avoid being washed into the nearby water receivers.

Waste Management

- 5.1.9 General refuse should be stored in on-site enclosed bins. This waste should be disposed of daily at the nearest refuse collection points by designated personnel to minimize odour, pest and litter impacts. General refuse, such as waste paper and empty containers, should be recycled as much as possible before disposal.

Cultural Heritage

- 5.1.10 Impact to cultural heritage resources is not anticipated, hence mitigation measures are considered not necessary.

Ecology

- 5.1.11 Although the proposed GI works in LTCP is unavoidable, the project footprint has been minimised to the maximum practicable extent. With the implementation of the precautionary measures mentioned in **Sections 4.2.16 – 4.2.18**, ecological impact is anticipated to be minor, further mitigation measures are considered not necessary.

Landscape and Visual

5.1.12 Impacts on landscape and visual is minimal and temporary in nature, the following mitigation measures and good site practices should be adopted when applicable and practical to further minimise the landscape impact and avoid any visual impact:

- Provide protective measures for existing trees and Plant Protection Zones (PPZs) for the floral species of conservation importance including the rare and protected tree species Set up of tree protection zone for the existing trees near the working areas/platforms according to *DEVB GLTMS TMPN No.1 -Tree Preservation during Construction and DEVB TC(W) No. 4/2020 – Tree Preservation*.
- Perform minimal crown pruning on the mature trees surrounding the working areas/platforms in accordance with *DEVB GLTMS TMPN No.3 - Tree Pruning* as far as practicable, such as avoidance of large pruning cut and stub remaining. Particularly for the rare and protected tree species *Aquilaria sinensis* and *Ormosia emarginata*, no tree trimming will be performed for the helicopter operation and sufficient PPZs will be adopted.
- Reinstate the working areas/ platforms and temporary access to their original or agreed condition;
- Maintain site cleanliness and tidiness; and
- Manage construction materials and waste generated on site properly.

5.2 Severity, Distribution and Duration of Environmental Effects

5.2.1 No adverse residual environmental impacts are anticipated with the implementation of the recommended mitigation measures.

5.3 Further Environmental Implications

5.3.1 With the implementation of the recommended mitigation measures, no adverse environmental implications are anticipated from the Project.

6 SUMMARY OF POTENTIAL ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

6.1.1 The potential environmental impacts and proposed mitigation measures to be incorporated into the Project are summarized in **Table 6.1**.

Table 6.1 Summary of Potential Environmental Impacts and Mitigation Measures

Potential Environmental Impact	Mitigation Measure	Implementation Agent	Text Ref.
Construction Dust and Air Emissions	<ul style="list-style-type: none"> • Use impervious sheets to cover the drilled boreholes and any dusty material storage piles, if applicable, to reduce emissions; • Open stockpiles should be avoided or covered with tarpaulin sheets. Where possible, prevent placing dusty material storage piles near ASRs; • Ensure the work area is regularly sprayed to minimise dust generation; • Optimize flight paths to enhance fuel efficiency during the planning of flight paths and avoid unnecessary idling during the operation of helicopter; • Use electric powered machinery and avoid use of exempted NRMM as far as practicable; • Backfill the drilled boreholes upon the completion of GI works as soon as possible; and • Use of liquid fuel, if required, with a sulphur content of less than 0.005% by weight. 	Contractor	5.1.1
Construction Noise	<ul style="list-style-type: none"> • Adopt temporary noise barriers at two working areas of 1632-NTS-DH04 & 1632-NTS-DH05 facing NSRs MF_N03 and MF_N04; • Only well-maintained plant should be operated on-site and plant should be serviced regularly during construction; • Machines that may be in intermittent use should be shut down between works periods or should be throttled down to a minimum; • GI works should not be carried out during 7pm to 7am, and on Sundays and public holidays; • “Recommended Pollution Control Clauses for Construction Contracts” published by the EPD should be adopted in the Contract Specification for the Contractor to follow and implement the relevant measures and good site practices in minimising noise impact; and • Ensure compliance with the construction noise criterion of 75 dB(A) at NSRs as stated in EIAO-TM. 	Contractor	5.1.2 - 5.1.4

Potential Environmental Impact	Mitigation Measure	Implementation Agent	Text Ref.
Water Quality	<ul style="list-style-type: none"> • Adhere to borehole refilling guidelines outlined in the GEO/CEDD Geoguide 2 (2017 Version); • Follow the BMPs outlined in EPD's ProPECC PN 2/23, ETWB TC(W) 5/2005, and the relevant guideline promulgated by WSD as far as practicable; • Cover exposed soil surface with tarpaulin or similar fabric as necessary during rainstorms; • Excavated and filled surfaces that are susceptible to erosion should be consistently protected to prevent any erosion; • Good site practices should be adopted to remove rubbish and litter from construction site so as to prevent the rubbish and litter from spreading from the site area. It is recommended to clean the construction sites on a regular basis; • Temporary sanitary facilities, such as dry flush portable toilets and chemical toilets, should be employed on-site to handle sewage from the workers. Those facilities should be well-maintained to avoid watercourse pollution. A licensed waste collector should be employed to clean and maintain the chemical toilets on a regular basis. The sewage generated from the construction workforce will be contained and tanked away. All sludge, wastewater, and cleanup water from the toilets should not be disposed of the surrounding environment; • Notices should be posted at conspicuous locations to remind the workers not to discharge any sewage or wastewater into the nearby environment; and • Practices outlined in ETWB TC (Works) No. 5/2005 should also be adopted where applicable to minimise the water quality impacts upon any natural streams or surface water systems. 	Contractor	5.1.6 - 5.1.8
Waste Management	<ul style="list-style-type: none"> • General refuse should be stored in on-site enclosed bins. This waste should be disposed of daily at the nearest refuse collection points by designated personnel to minimize odour, pest and litter impacts; and • General refuse, such as waste paper and empty containers, should be 	Contractor	5.1.9

Potential Environmental Impact	Mitigation Measure	Implementation Agent	Text Ref.
	recycled as much as possible before disposal.		
Ecology	<ul style="list-style-type: none"> • Deploy qualified ecologist(s) with relevant experience to identify, tag and demarcate the floral species of conservation importance located near the working area prior to the commencement of the proposed works; • Adopt plant protection zones (PPZs) with robust fencing of at least 1m setback from ferns and stems of tree seedlings of floral species of conservation importance, and at least 1.5 m from mature trees of floral species of conservation importance; • No access and construction activities should be allowed within the PPZs; • All site staff should be trained to recognize the location of the tagged species of conservation importance and their protection zones; • Proposed works should be shifted away from the PPZs to avoid damage to the plant root system/trunk; • No material storage and pedestrian access should be allowed within the PPZs to prevent compaction of soil around the plants; and • Adopt protective measures for mature trees according to <i>Tree Management Practice Note No. 1: Tree Preservation during Construction</i> (DEVB, 2019b) and <i>Technical Circular (Works) No. 4/2020 – Tree Preservation</i> (DEVB, 2020). 	Contractor	4.2.16 – 4.2.18
Landscape and Visual	<ul style="list-style-type: none"> • Provide protective measures for existing trees and Plant Protection Zones (PPZs) according to <i>DEVB GLTMS TMPN No.1 -Tree Preservation during Construction</i> and <i>DEVB TC(W) No. 4/2020 – Tree Preservation</i>; • Perform minimal crown pruning on the mature trees in accordance with <i>DEVB GLTMS TMPN No.3 - Tree Pruning</i> as far as practicable. • Particularly for the rare and protected tree species <i>Aquilaria sinensis</i> and <i>Ormosia emarginata</i>, no tree trimming will be performed for the helicopter operation and sufficient PPZs will be adopted; • Reinstate the working areas/ platforms and temporary access to their original or agreed condition; • Maintain site cleanliness and tidiness; and 	Contractor	5.1.12

Potential Environmental Impact	Mitigation Measure	Implementation Agent	Text Ref.
	<ul style="list-style-type: none">• Manage construction materials and waste generated on site properly.		

- 6.1.2 With the implementation of recommended mitigation measures, no adverse environmental impacts are anticipated, environmental monitoring and auditing are therefore not required.

7 USE OF PREVIOUSLY APPROVED EIA REPORTS

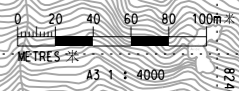
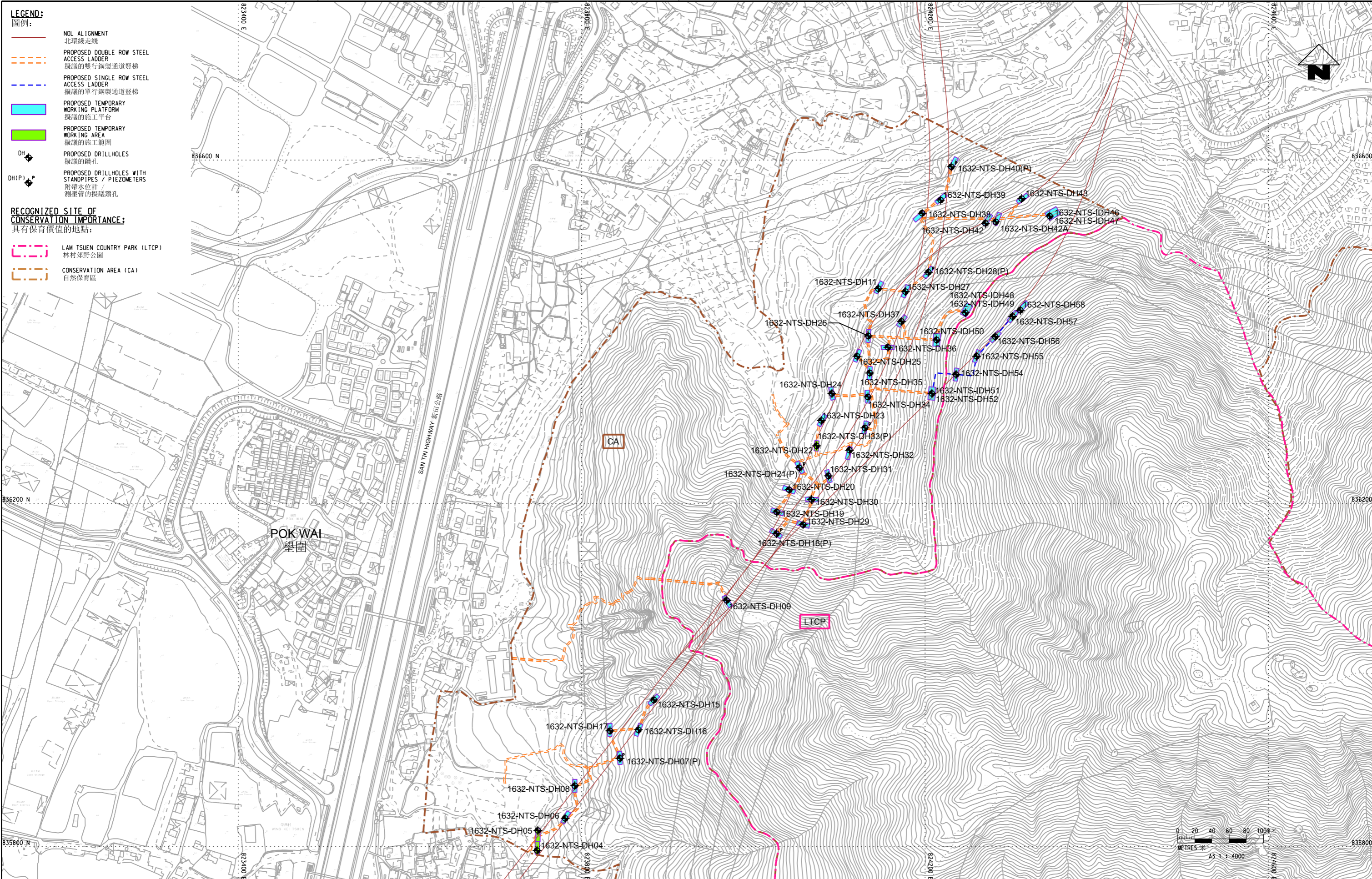
- 7.1.1 Environmental Impact Assessment (EIA) Report for Northern Link, as approved on 9 Feb 2024, (Register No.: AEIAR-259/2024) has been used for the Project. The environmental aspects addressed in this approved EIA report includes air quality, airborne noise, ground-borne noise, water quality, waste management, sewerage and sewage treatment, land contamination, ecology, fisheries, landscape and visual, cultural heritage and hazard to life. Given that the Project is located within ecological and landscape impact assessment areas of NOL, reference was made to this approved EIA report for the existing baseline conditions only.

FIGURES

- LEGEND:**
圖例:
- NOL ALIGNMENT
北環綫走綫
 - PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道登梯
 - PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道登梯
 - PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工作業平台
 - PROPOSED TEMPORARY WORKING AREA
擬議的施工作業範圍
 - PROPOSED DRILLHOLES
擬議的鑽孔
 - PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計測壓管的擬議鑽孔

RECOGNIZED SITE OF CONSERVATION IMPORTANCE:
具有保育價值的地點:

- LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
- CONSERVATION AREA (CA)
自然保育區



PLOT DRW: P:\PROJECTS\6067406\01_CAD_ADMIN\02_UTILITY\01_DRIVER\A3.DWG_COL_SYSTEM.PLT
 DATE: 20/10/2023 12:08:31 PM
 MODELNAME: P:\PROJECTS\6067406\04_DRAWING\REPORT\1632-C1603-C-NOL_ACM_1632-201.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	20/OCT/2023

MTR

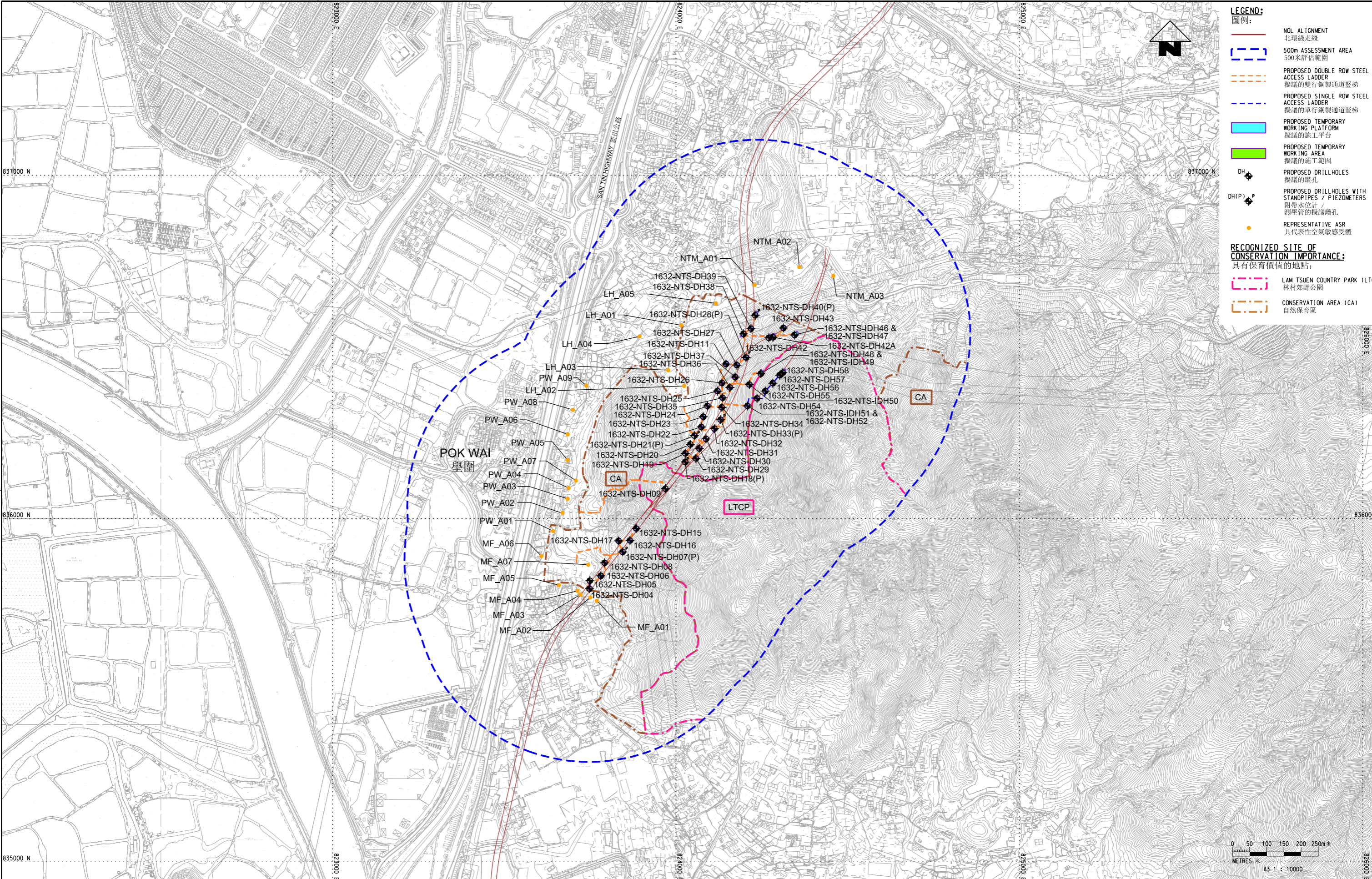
NORTHERN LINK 北環綫

AECOM

ORIGINATOR

CADD REF. C1603_C_NOL_ACM_1632_201.dgn

TITLE	
C1603 GI WORKS FOR NOL WITHIN LTCP AND CA 北環綫 - 林村郊野公園及自然保育區內土地勘測工程 LOCATION OF THE PROJECT 工程項目位置	
SCALE	DRAWING NO.
1 : 4000 (A3)	C1603/C/NOL/ACM/1632/201
REV.	-



LEGEND:
圖例:

- NOL ALIGNMENT
北環線走線
- 500m ASSESSMENT AREA
500米評估範圍
- PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道登梯
- PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道登梯
- PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工平台
- PROPOSED TEMPORARY WORKING AREA
擬議的施工範圍
- DH
擬議的鑽孔
- DH(P)
附帶水位計 / 測壓管的擬議鑽孔
- REPRESENTATIVE ASR
具代表性空氣敏感受體

RECOGNIZED SITE OF CONSERVATION IMPORTANCE:
具有保育價值的地點:

- LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
- CONSERVATION AREA (CA)
自然保育區

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	08/NOV/2023

MTR

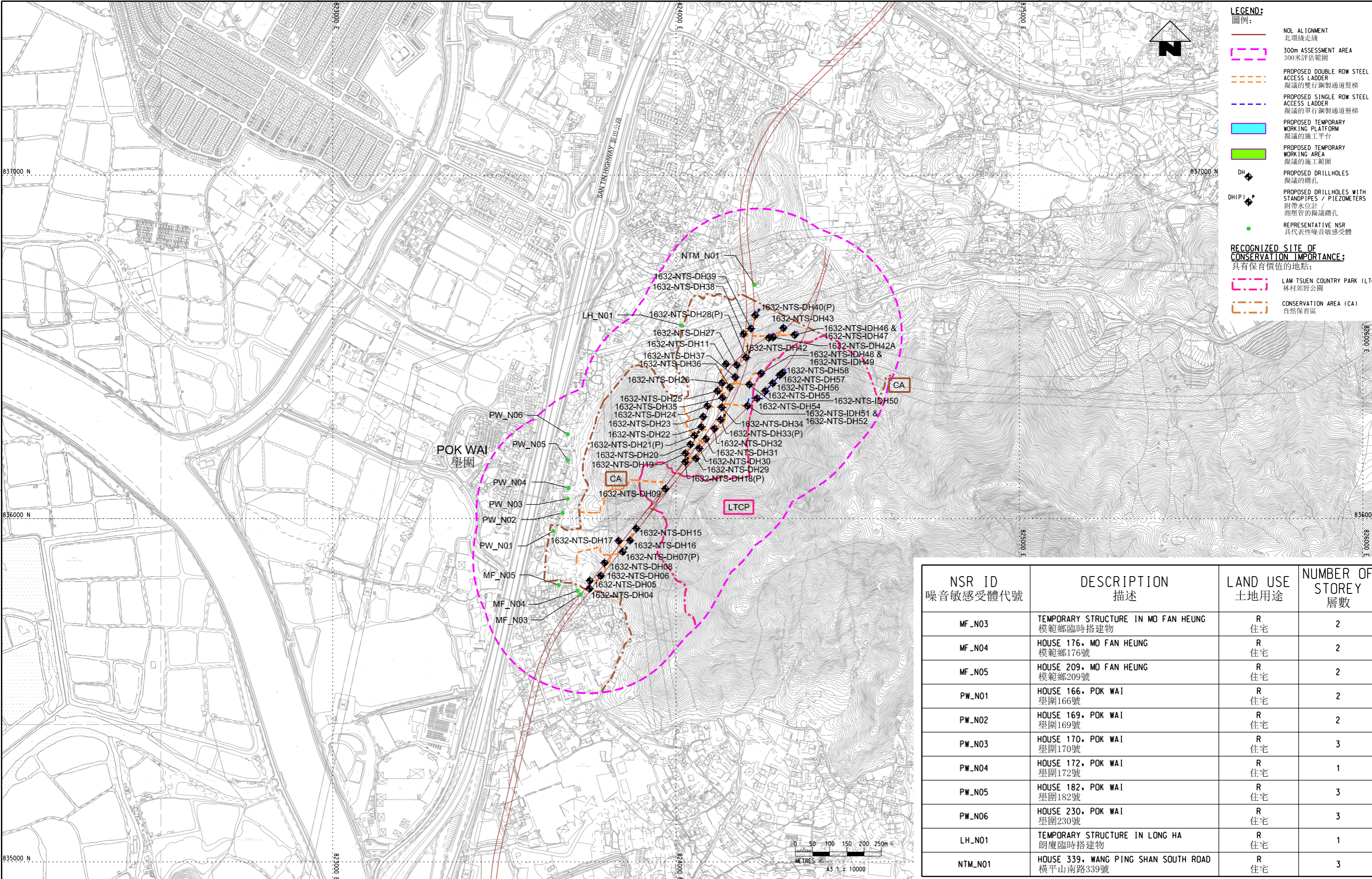
NORTHERN LINK 北環線

AECOM

ORIGINATOR

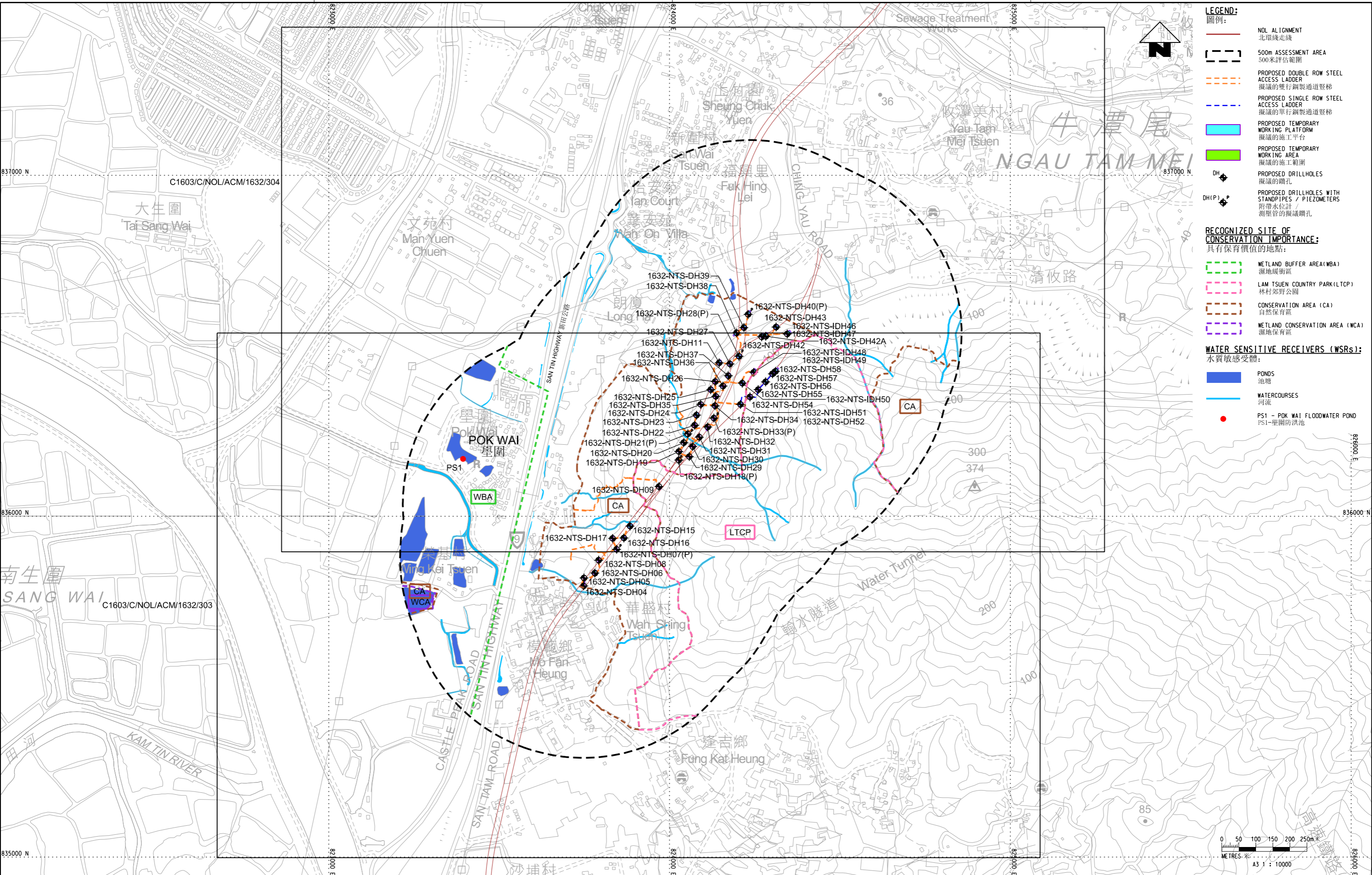
CADD REF. C1603_C.NOL_ACM_1632_300.dgn

TITLE	C1603	
	G1 WORKS FOR NOL WITHIN LTCP AND CA 北環線 - 林村郊野公園及自然保育區內土地勘测工程 LOCATIONS OF REPRESENTATIVE AIR SENSITIVE RECEIVERS 具代表性空氣敏感受體位置	
SCALE	1 : 10000 (A3)	DRAWING NO. C1603/C/NOL/ACM/1632/300
REV.	-	

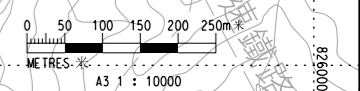


NSR ID 噪音敏感受體代號	DESCRIPTION 描述	LAND USE 土地用途	NUMBER OF STOREY 層數
MF_N03	TEMPORARY STRUCTURE IN MO FAN HEUNG 模範鄉臨時搭建物	R 住宅	2
MF_N04	HOUSE 176, MO FAN HEUNG 模範鄉176號	R 住宅	2
MF_N05	HOUSE 209, MO FAN HEUNG 模範鄉209號	R 住宅	2
PW_N01	HOUSE 166, POK WAI 學園166號	R 住宅	2
PW_N02	HOUSE 169, POK WAI 學園169號	R 住宅	2
PW_N03	HOUSE 170, POK WAI 學園170號	R 住宅	3
PW_N04	HOUSE 172, POK WAI 學園172號	R 住宅	1
PW_N05	HOUSE 182, POK WAI 學園182號	R 住宅	3
PW_N06	HOUSE 230, POK WAI 學園230號	R 住宅	3
LH_N01	TEMPORARY STRUCTURE IN LONG HA 朗廈臨時搭建物	R 住宅	1
NTM_N01	HOUSE 339, WANG PING SHAN SOUTH ROAD 橫平山南路339號	R 住宅	3

DRAWN: YFB DESIGNED: --- CHECKED: --- APPROVED: --- DATE: 09/JAN/2024 <small>DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE VERIFIED ON SITE. © MTR CORPORATION LIMITED 2008. COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.</small>		NORTHERN LINK 北環綫 	TITLE: C1603 GI WORKS FOR NOL WITHIN LTCP AND CA 北環綫 - 林村郊野公園及自然保育區內土地勘测工程 LOCATIONS OF REPRESENTATIVE NOISE SENSITIVE RECEIVERS 具代表性噪音敏感受體位置
SCALE: 1 : 10000 (A3) DRAWING NO.: C1603/C/NOL/ACM/1632/301 REV: -	CADD REF.: C1603_C_NOL_ACM_1632_301.dgn		



- LEGEND:**
 圖例:
- NOL ALIGNMENT
北環線走線
 - 500m ASSESSMENT AREA
500米評估範圍
 - PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道樓梯
 - PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道樓梯
 - PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工作業平台
 - PROPOSED TEMPORARY WORKING AREA
擬議的施工作業範圍
 - PROPOSED DRILLHOLES
擬議的鑽孔
 - PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計測整管的擬議鑽孔
- RECOGNIZED SITE OF CONSERVATION IMPORTANCE:**
 具有保育價值的地點:
- WETLAND BUFFER AREA (WBA)
濕地緩衝區
 - LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
 - CONSERVATION AREA (CA)
自然保育區
 - WETLAND CONSERVATION AREA (WCA)
濕地保育區
- WATER SENSITIVE RECEIVERS (WSRs):**
 水質敏感受體:
- PONDS
池塘
 - WATERCOURSES
河流
 - PS1 - POK WAI FLOODWATER POND
PS1-樂園防澇池



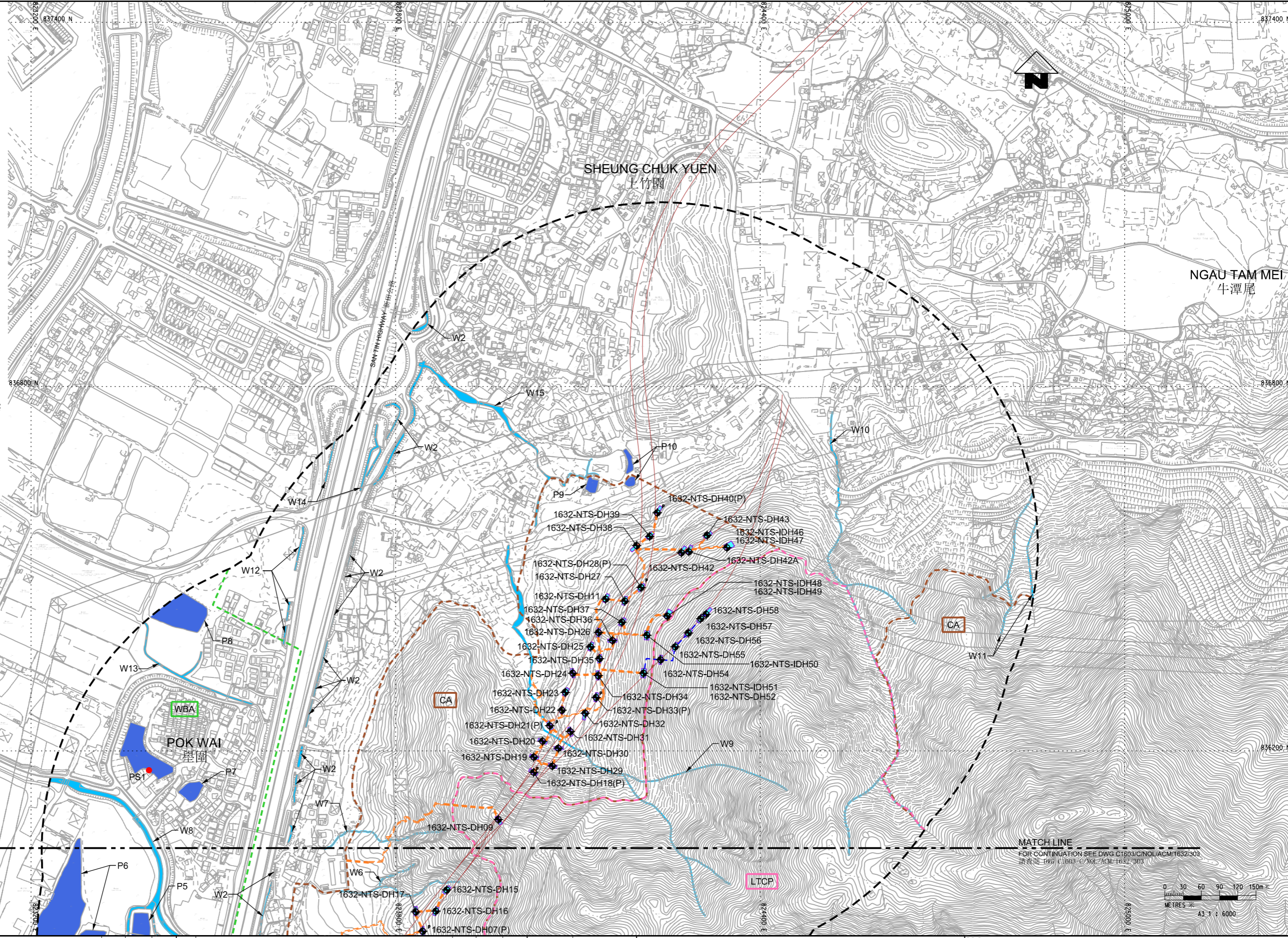
DRAWN: YFB DESIGNED: --- CHECKED: --- APPROVED: --- DATE: 08/NOV/2023 <small>DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE HEYIFIED ON SITE. © MTR CORPORATION LIMITED 2008. COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.</small>				ORIGINATOR: MTR CADD REF.: C1603_C.NOL.ACM.1632_302.dgn				TITLE: C1603 GI WORKS FOR NOL WITHIN LTCP AND CA 北環線 - 林村郊野公園及自然保育區內土地勘测工程 LOCATIONS OF REPRESENTATIVE WATER SENSITIVE RECEIVERS 具代表性水質敏感受體位置 (KEYPLAN) (概覽圖)				
REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED	SCALE: 1 : 10000 (A3)	DRAWING NO.: C1603/C/NOL/ACM/1632/302	REV: -

NOTE:
 注釋:
 1. C1603/C/NOL/ACM/1632/303 TO 304 BE READ IN CONJUNCTION.
 1. C1603/C/NOL/ACM/1632/303至304需要一併閱讀。

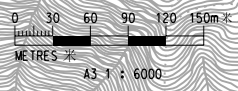
- LEGEND:**
 圖例:
- NOL ALIGNMENT
北環線走線
 - 500m ASSESSMENT AREA
500米評估範圍
 - PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道樓梯
 - PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道樓梯
 - PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工平台
 - PROPOSED TEMPORARY WORKING AREA
擬議的施工範圍
 - PROPOSED DRILLHOLES
擬議的鑽孔
 - PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計 / 測壓管的擬議鑽孔

- RECOGNIZED SITE OF CONSERVATION IMPORTANCE:**
 具有保育價值的地點:
- WETLAND BUFFER AREA (WBA)
濕地緩衝區
 - LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
 - CONSERVATION AREA (CA)
自然保育區

- WATER SENSITIVE RECEIVERS (WSRs):**
 水質敏感受體:
- PONDS
池塘
 - WATERCOURSES
河流
 - PS1 - POK WAI FLOODWATER POND
PS1-墨圍防洪池



MATCH LINE
 FOR CONTINUATION SEE DWG C1603/C/NOL/ACM/1632/303
 請查閱 DWG C1603/C/NOL/ACM/1632/303



P:\PROJECTS\6067406\01_CAD_ADMIN\02_UTILITY\01_DRIVER\A3.DWG COL SYSTEM PLT
 DELETED BY: 1609B 23/11/2024 2:05:56 PM
 P:\PROJECTS\6067406\04_DRAWING\REPORT\632-C1603-C-NOL-ACM-1632-304.dgn
 PLOT DRW: MODELNAME: FILENAME:

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

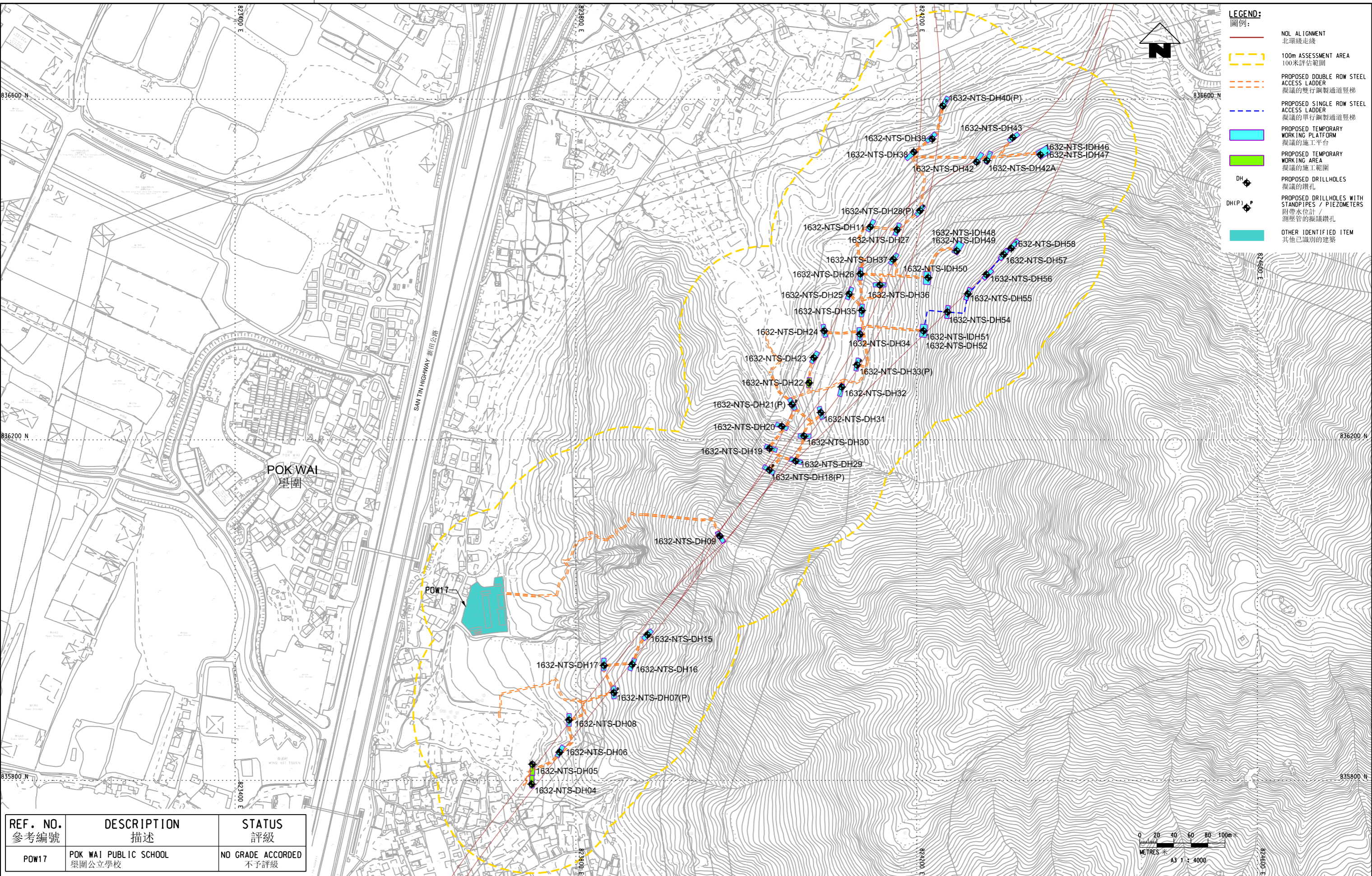
DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	08/NOV/2023

MTR
 ORIGINATOR
 CADD REF. C1603_C_NOL_ACM_1632_304.dgn

NORTHERN LINK 北環線
AECOM

TITLE
C1603
 G1 WORKS FOR NOL WITHIN LTCP AND CA
 北環線 - 林村郊野公園及自然保育區內土地勘測工程
 LOCATIONS OF REPRESENTATIVE WATER SENSITIVE RECEIVERS
 具代表性水質敏感受體位置
 (SHEET 2 OF 2)
 (第2頁, 共2頁)

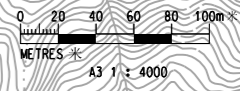
SCALE 1 : 6000 (A3) DRAWING NO. C1603/C/NOL/ACM/1632/304 REV. -



LEGEND:
圖例:

- NOL ALIGNMENT
北環綫走綫
- 100m ASSESSMENT AREA
100米評估範圍
- PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道豎梯
- PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道豎梯
- PROPOSED TEMPORARY WORKING PLATFORM
擬議的臨時工作平台
- PROPOSED TEMPORARY WORKING AREA
擬議的臨時工作範圍
- ◆ PROPOSED DRILLHOLES
擬議的鑽孔
- ◆ PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計 / 測壓管的擬議鑽孔
- OTHER IDENTIFIED ITEM
其他已識別的建築

REF. NO. 參考編號	DESCRIPTION 描述	STATUS 評級
POW17	POK WAI PUBLIC SCHOOL 學園公立學校	NO GRADE ACCORDED 不予評級



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	08/NOV/2023

MTR

NORTHERN LINK 北環綫

AECOM

ORIGINATOR

CADD REF. C1603_C_NOL_ACM_1632_305.dgn

TITLE C1603 GI WORKS FOR NOL WITHIN LTCP AND CA 北環綫 - 林村郊野公園及自然保育區內土地勘测工程 LOCATION OF OTHER IDENTIFIED ITEM 其他已識別的建築位置	
SCALE 1:4000 (A3)	DRAWING NO. C1603/C/NOL/ACM/1632/305
REV.	---

NOTE:
 注釋:
 1. C1603/C/NOL/ACM/1632/306 TO 308 BE READ IN CONJUNCTION.
 1. C1603/C/NOL/ACM/1632/306至308需要一併閱讀。

LEGEND:
 圖例:

- NOL ALIGNMENT
北環綫走綫
- 100m ASSESSMENT AREA
100米評估範圍
- PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道豎梯
- SURVEYED AREA
考察範圍
- PROPOSED TEMPORARY WORKING PLATFORM
擬議的土工平台
- PROPOSED TEMPORARY WORKING AREA
擬議的土工範圍
- PLANT PROTECTION ZONE
植物保護區
- PROPOSED DRILLHOLES
擬議的鑽孔
- PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計 / 測壓管的擬議鑽孔
- DAY ROOST OF HIMALAYAN LEAF-NOSED BATS
大蹄蝠的日間棲息地
- WOODLAND
林地
- GRASSLAND
草地
- SHRUBLAND
灌木叢
- PLANTATION
植林
- WATERCOURSE
河流
- DEVELOPED AREA / WASTELAND
已發展地區 / 荒地

SPECIES OF CONSERVATION IMPORTANCE:
FLORA:
 具有保育價值物種
 植物:

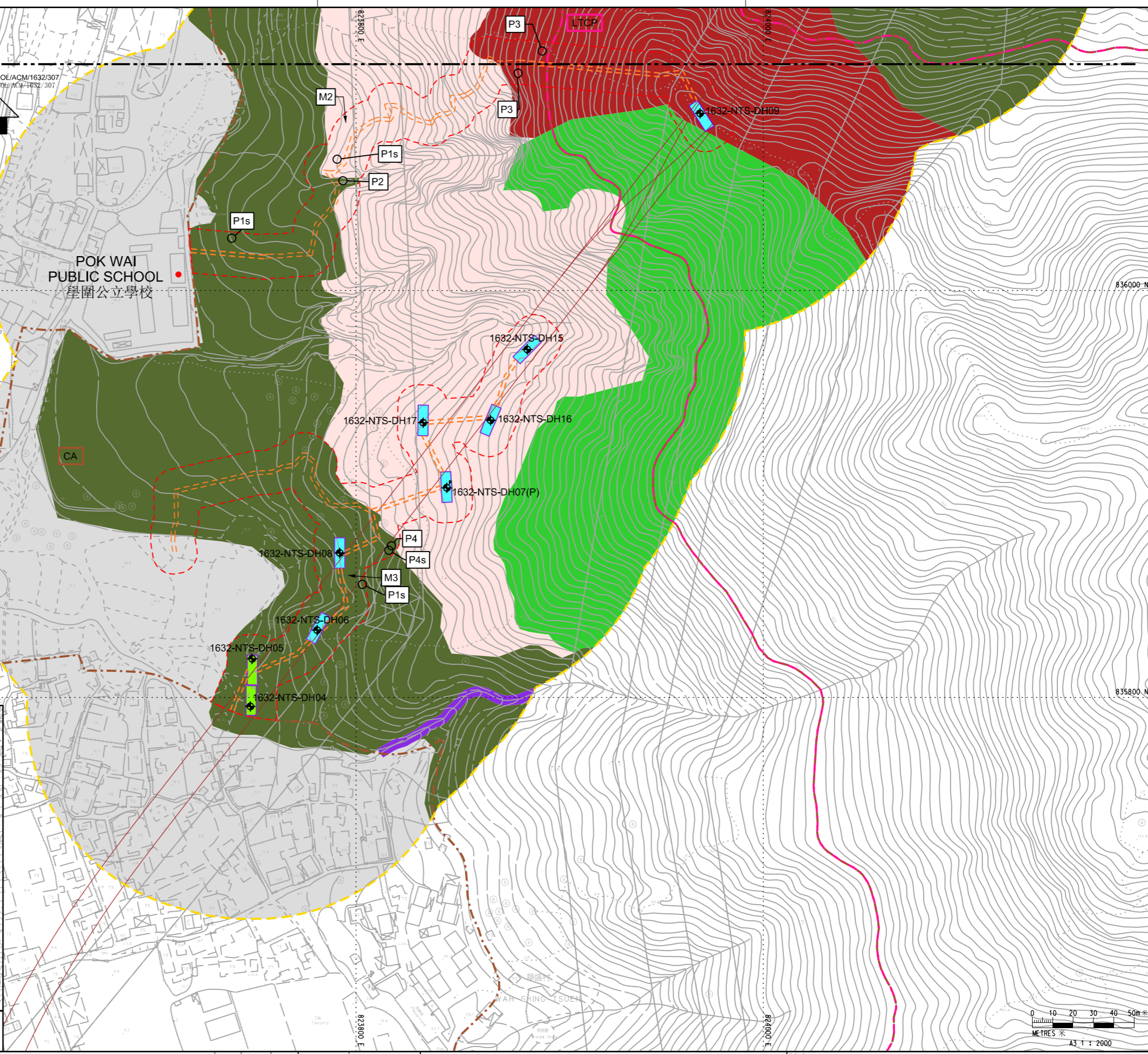
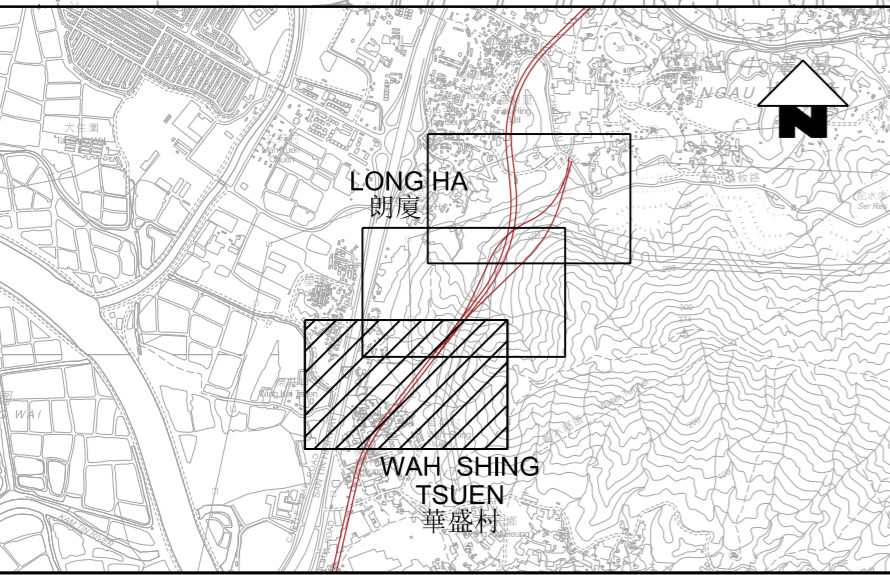
- INCENSE TREE (SEEDLING)
土沉香 (幼苗)
- LAMB OF TARTARY
金毛狗
- CYCAD-FERN
蘇鐵蕨
- EMARGINATE-LEAVED ORMOSIA
凹葉紅豆
- EMARGINATE-LEAVED ORMOSIA (SEEDLING)
凹葉紅豆 (幼苗)

FAUNA:
 動物:
 INTERMEDIATE HORSESHOE BAT
中菊頭蝠
 SMALL INDIAN CIVET
小靈貓

RECOGNIZED SITE OF CONSERVATION IMPORTANCE:
 具有保育價值的地點:
 LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
 CONSERVATION AREA (CA)
自然保育區

MATCH LINE
 FOR CONTINUATION
 SEE DWG C1603/C/NOL/ACM/1632/307
 請查閱 DWG C1603/C/NOL/ACM/1632/307

POK WAI PUBLIC SCHOOL
 學圃公立學校



PLOT DRW: P:\PROJECTS\6067406\01_CAD_ADMIN\02_UTILITY\01_PLOT_DRAWING\A3.DWG COLSYS\TEMP\PLT
 DATE: 27/7/2024 3:05:33 PM
 FILENAME: P:\PROJECTS\6067406\04_DRAWING\REPORT\632-C1603-C-NOL-ACM-1632-306.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	11/MAY/2023

MTR

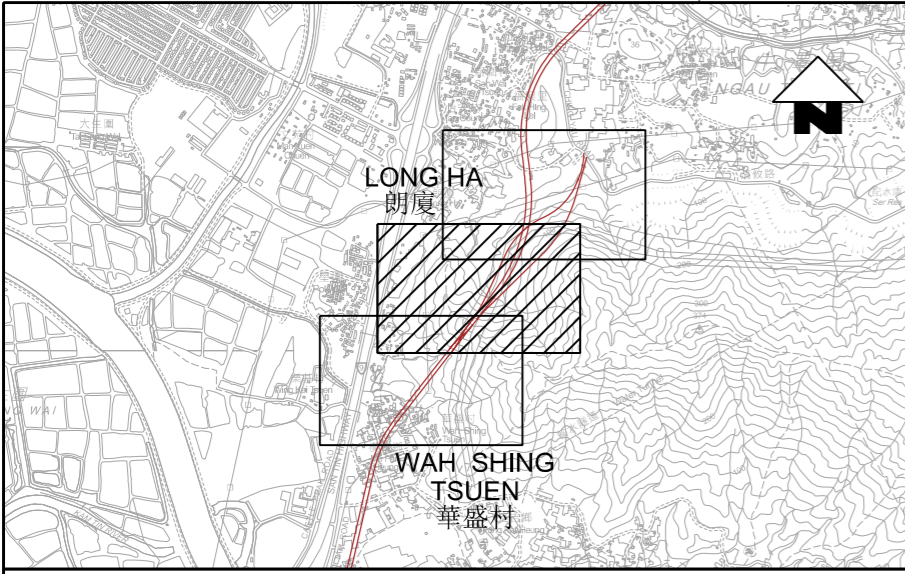
NORTHERN LINK 北環綫

ORIGINATOR

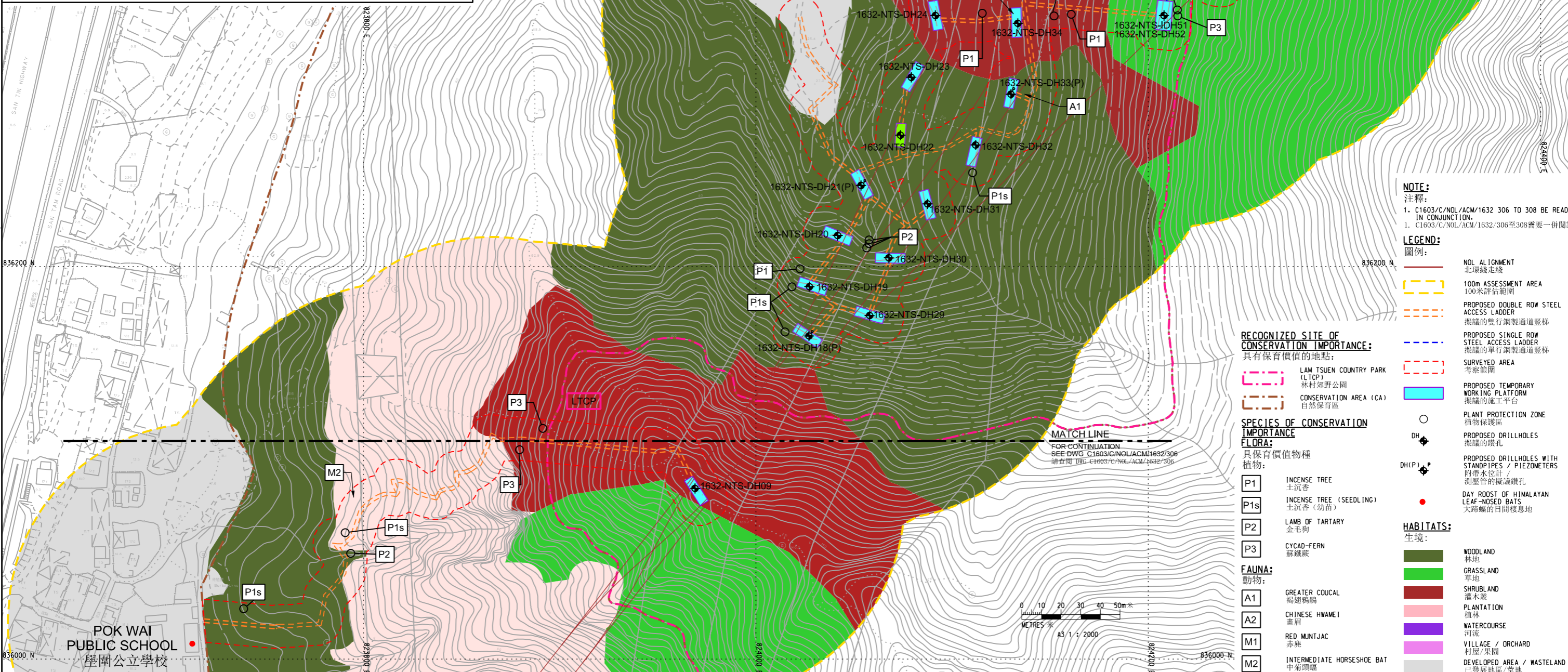
AECOM

CADD REF. C1603_C_NOL_ACM_1632_306.dgn

TITLE	C1603 GI WORKS FOR NOL WITHIN LTCP AND CA 北環綫 - 林村郊野公園及自然保育區內土地勘测工程 HABITAT MAP OF THE SURVEYED AREA AT KAI KUNG LENG 雞公嶺調查範圍內的生境地圖 (SHEET 1 OF 3) (第1頁, 共3頁)		
SCALE	1 : 2000 (A3)	DRAWING NO.	C1603/C/NOL/ACM/1632/306
REV.	-		



KEY PLAN 概覽圖
A3 1 :30000



NOTE:
注釋:
1. C1603/C/NOL/ACM/1632 306 TO 308 BE READ IN CONJUNCTION.
1. C1603/C/NOL/ACM/1632/306至308需要一併閱讀。

LEGEND:
圖例:

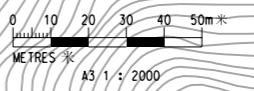
- NOL ALIGNMENT
北環線走線
- 100m ASSESSMENT AREA
100米評估範圍
- PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道豎梯
- PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道豎梯
- SURVEYED AREA
考察範圍
- PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工平台
- PLANT PROTECTION ZONE
植物保護區
- PROPOSED DRILLHOLES
擬議的鑽孔
- PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計 / 測壓管的擬議鑽孔
- DAY ROOST OF HIMALAYAN LEAF-NOSED BATS
大蹄蝠的日間棲息地
- HABITATS:**
生境:
- WOODLAND
林地
- GRASSLAND
草地
- SHRUBLAND
灌木叢
- PLANTATION
植林
- WATERCOURSE
河流
- VILLAGE / ORCHARD
村屋/果園
- DEVELOPED AREA / WASTELAND
已發展地區 / 荒地

RECOGNIZED SITE OF CONSERVATION IMPORTANCE:
具有保育價值的地點:

- LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
- CONSERVATION AREA (CA)
自然保育區

SPECIES OF CONSERVATION IMPORTANCE:
具有保育價值物種

- FLORA:**
植物:
- P1 INCENSE TREE
土沉香
 - P1s INCENSE TREE (SEEDLING)
土沉香 (幼苗)
 - P2 LAMB OF TARTARY
金毛狗
 - P3 CYCAD-FERN
蘇鐵蕨
- FAUNA:**
動物:
- A1 GREATER COUCAL
褐翅鴉
 - A2 CHINESE HWAMEI
畫眉
 - M1 RED MUNTJAC
赤麂
 - M2 INTERMEDIATE HORSESHOE BAT
中菊頭蝠



P:\PROJECTS\6061406\01_CAD_ADMIN\02_UTILITY\01_DRAWING\A3.DWG COL SYSTEM.PLT
DRAWN BY: VICKYXIAO
DATE: 27/7/2024 3:29:44 PM
P:\PROJECTS\6061406\04_DRAWING\REPORT\632-C1603-C-NOL-ACM-1632-307.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	11/MAY/2023

MTR

NORTHERN LINK 北環綫

AECOM

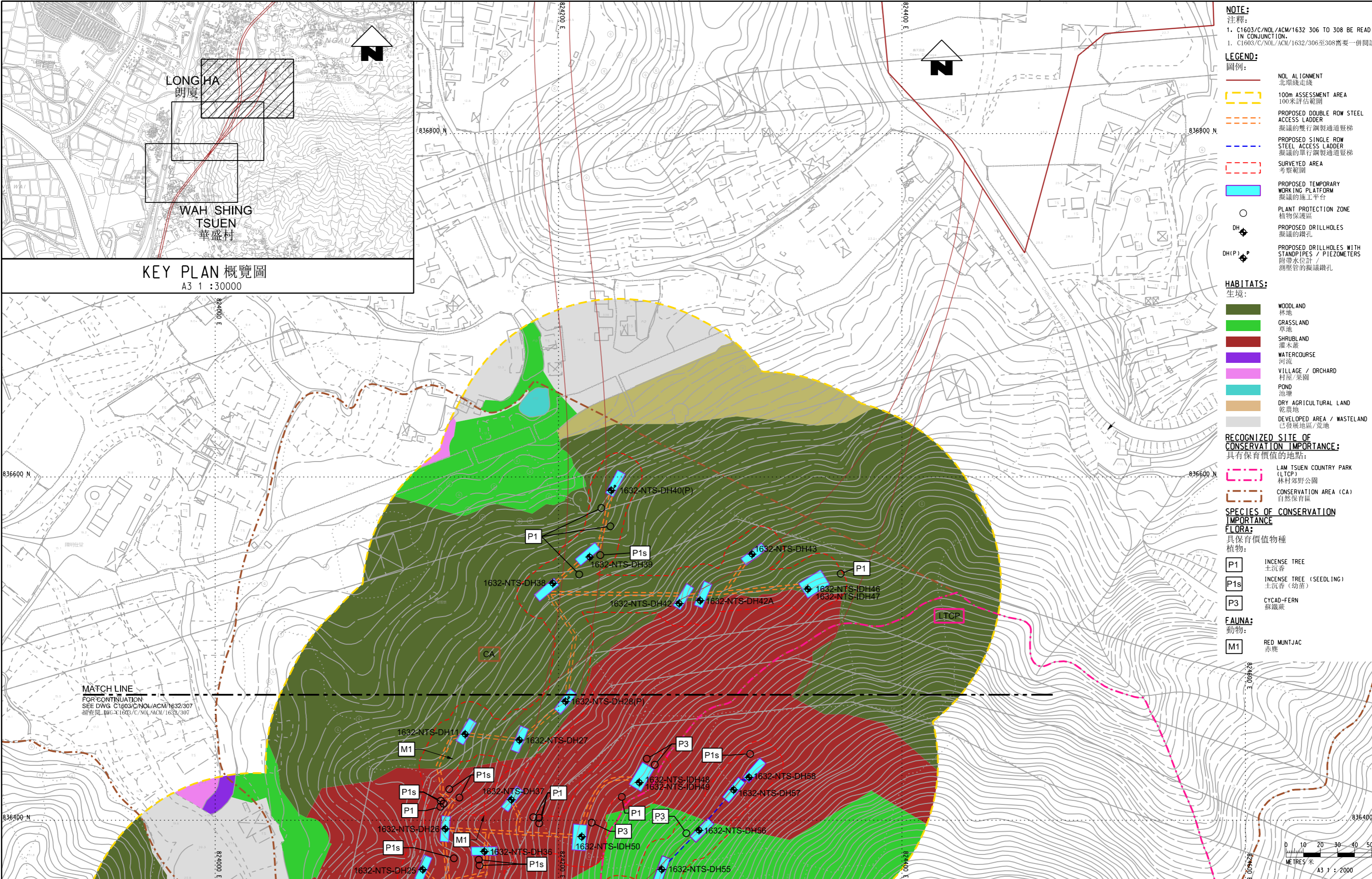
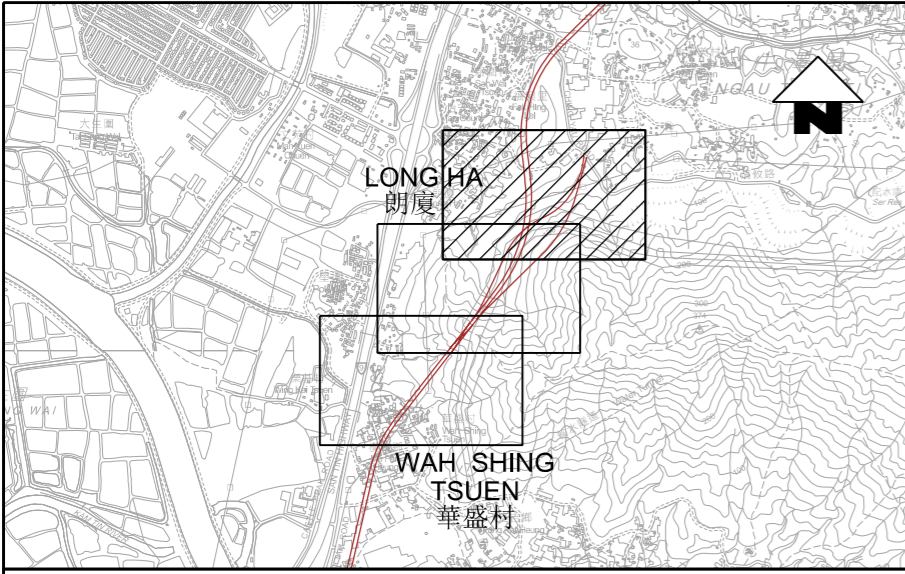
ORIGINATOR

CADD REF. C1603_C_NOL_ACM_1632_307.dgn

TITLE	C1603 G1 WORKS FOR NOL WITHIN LTCP AND CA 北環綫 - 林村郊野公園及自然保育區內土地勘测工程		
HABITAT MAP OF THE SURVEYED AREA AT KAI LUNG LENG	雞公嶺調查範圍內的生境地圖		
(SHEET 2 OF 3)	(第2頁, 共3頁)		
SCALE	1 : 2000 (A3)	DRAWING NO.	C1603/C/NOL/ACM/1632/307
REV.	---	REV.	---

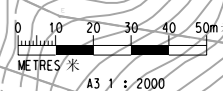
KEY PLAN 概覽圖

A3 1 : 30000



- NOTE:**
 注釋:
 1. C1603/C/NOL/ACM/1632/306 TO 308 BE READ IN CONJUNCTION.
 1. C1603/C/NOL/ACM/1632/306至308需一併閱讀。
- LEGEND:**
 圖例:
- NOL ALIGNMENT 北環線走線
 - 100m ASSESSMENT AREA 100米評估範圍
 - PROPOSED DOUBLE ROW STEEL ACCESS LADDER 擬議的雙行鋼製通道豎梯
 - PROPOSED SINGLE ROW STEEL ACCESS LADDER 擬議的單行鋼製通道豎梯
 - SURVEYED AREA 考察範圍
 - PROPOSED TEMPORARY WORKING PLATFORM 擬議的施工作業平台
 - PLANT PROTECTION ZONE 植物保護區
 - PROPOSED DRILLHOLES 擬議的鑽孔
 - PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS 擬帶水位計 / 測壓管的擬議鑽孔
- HABITATS:**
 生境:
- WOODLAND 林地
 - GRASSLAND 草地
 - SHRUBLAND 灌木叢
 - WATERCOURSE 河流
 - VILLAGE / ORCHARD 村屋 / 果園
 - POND 池塘
 - DRY AGRICULTURAL LAND 乾農地
 - DEVELOPED AREA / WASTELAND 已發展地區 / 荒地
- RECOGNIZED SITE OF CONSERVATION IMPORTANCE:**
 具有保育價值的地點:
- LAM TSUEN COUNTRY PARK (LTCP) 林村郊野公園
 - CONSERVATION AREA (CA) 自然保育區
- SPECIES OF CONSERVATION IMPORTANCE FLORA:**
 具保育價值植物種
 植物:
- P1 INCENSE TREE 土沉香
 - P1s INCENSE TREE (SEEDLING) 土沉香 (幼苗)
 - P3 CYCAD-FERN 蘇鐵蕨
- FAUNA:**
 動物:
- M1 RED MUNTJAC 赤麂

MATCH LINE
FOR CONTINUATION
SEE DWG. C1603/C/NOL/ACM/1632/307
請參閱 DWG. C1603/C/NOL/ACM/1632/307



P:\PROJECTS\6067406\01_CAD_ADMIN\02_UTILITY\02_PLOT_DRIVERS\A3.DWG_C01_SYSTEM.PLT
 印圖機: PLOTDRIVER: VICKYXIAO
 印圖日期: 27/7/2024 3:22:33 PM
 印圖用戶: VICKYXIAO
 印圖機名: P1603_C_NOL_ACM_1632_308.dgn

REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	11/MAY/2023
DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE HEAVY-LINED ON SITE. <small>© MTR CORPORATION LIMITED 2008. COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.</small>	

MTR

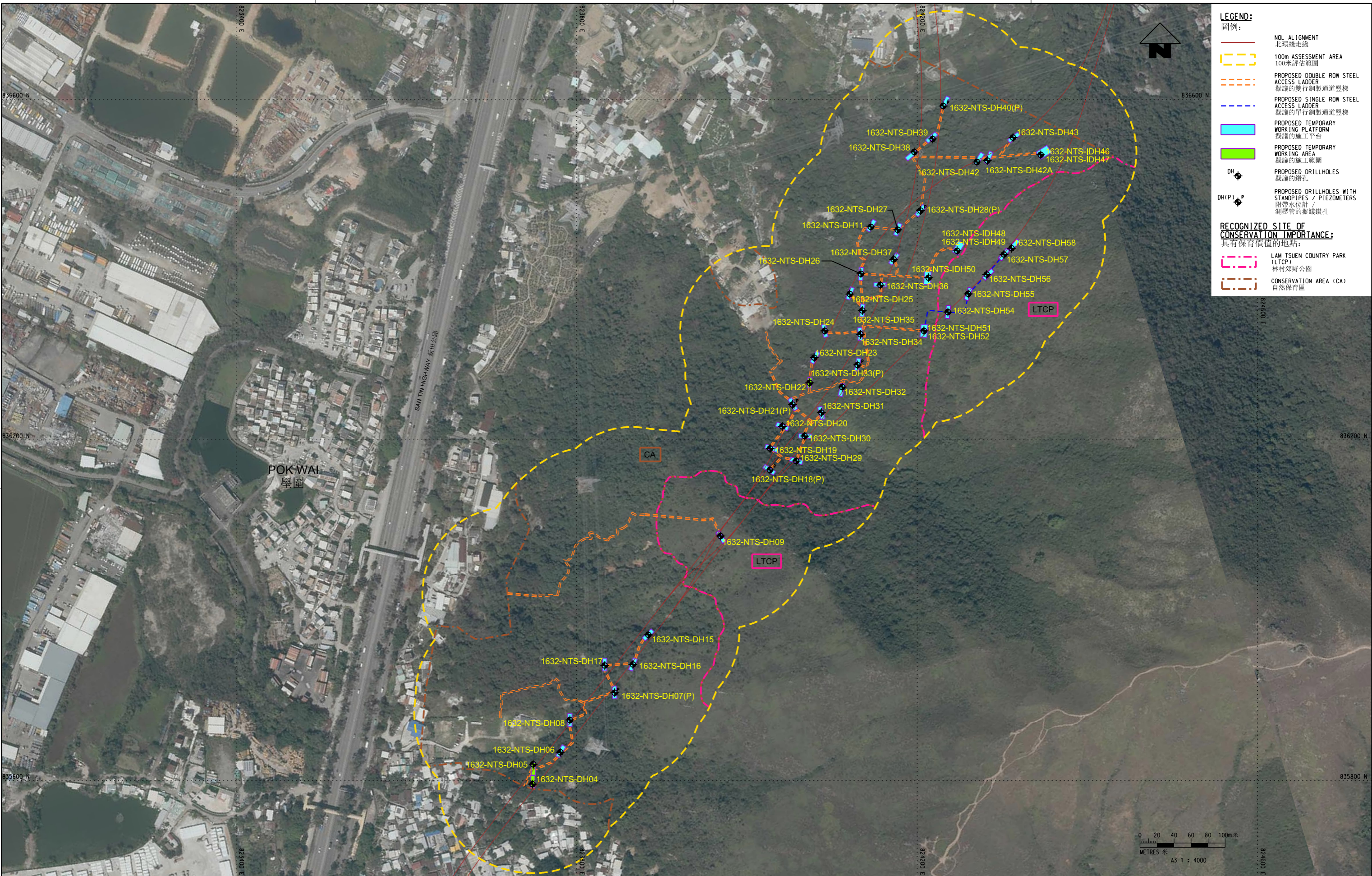
NORTHERN LINK 北環綫

AECOM

ORIGINATOR

CADD REF. C1603_C_NOL_ACM_1632_308.dgn

TITLE	C1603 GI WORKS FOR NOL WITHIN LTCP AND CA 北環綫 - 林村郊野公園及自然保育區內土地勘测工程 HABITAT MAP OF THE SURVEYED AREA AT KAI LUNG LENG 雞公嶺調查範圍內的生境地圖 (SHEET 3 OF 3) (第3頁, 共3頁)
SCALE	1 : 2000 (A3)
DRAWING NO.	C1603/C/NOL/ACM/1632/308
REV.	-

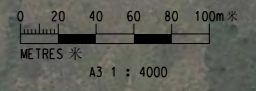


LEGEND:
圖例:

- NOL ALIGNMENT
北環綫走綫
- 100m ASSESSMENT AREA
100米評估範圍
- PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道豎梯
- PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道豎梯
- PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工作業平台
- PROPOSED TEMPORARY WORKING AREA
擬議的施工作業範圍
- DH
擬議的鑽孔
- DH(P)
擬議的鑽孔帶水位計 / 測壓管的鑽孔

RECOGNIZED SITE OF CONSERVATION IMPORTANCE:
具有保育價值的地點:

- LAM TSUEN COUNTRY PARK (LTCP)
林村郊野公園
- CONSERVATION AREA (CA)
自然保育區



REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED

DRAWN	YFB
DESIGNED	---
CHECKED	---
APPROVED	---
DATE	08/NOV/2023

MTR

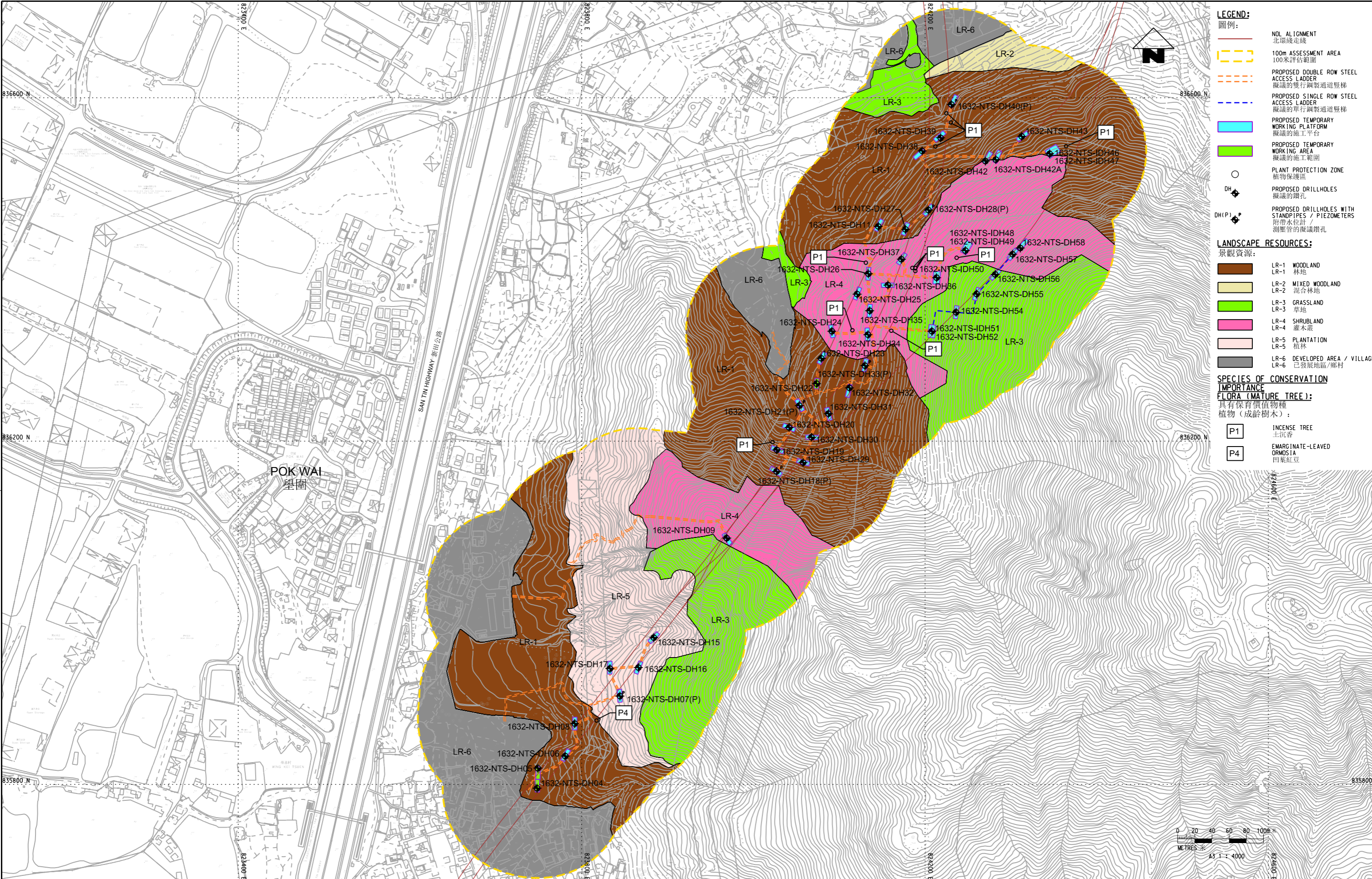
NORTHERN LINK 北環綫

AECOM

ORIGINATOR

CADD REF. C1603_C_NOL_ACM_1632_310.dgn

TITLE		C1603	
G1 WORKS FOR NOL WITHIN LTCP AND CA		北環綫 - 林村郊野公園及自然保育區內土地勘測工程	
LOCATION OF THE PROJECT IN AERIAL PHOTO		航空照片中的工程項目位置	
SCALE	DRAWING NO.	REV.	---
1 : 4000 (A3)	C1603/C/NOL/ACM/1632/310	---	---



LEGEND:
圖例:

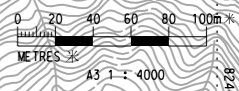
- NOL ALIGNMENT 北環綫走綫
- 100m ASSESSMENT AREA 100米評估範圍
- PROPOSED DOUBLE ROW STEEL ACCESS LADDER 擬議的雙行鋼製通道豎梯
- PROPOSED SINGLE ROW STEEL ACCESS LADDER 擬議的單行鋼製通道豎梯
- PROPOSED TEMPORARY WORKING PLATFORM 擬議的施工作業平台
- PROPOSED TEMPORARY WORKING AREA 擬議的施工作業範圍
- PLANT PROTECTION ZONE 植物保護區
- PROPOSED DRILLHOLES 擬議的鑽孔
- PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS 附帶水位計 / 測壓管的擬議鑽孔

LANDSCAPE RESOURCES:
景觀資源:

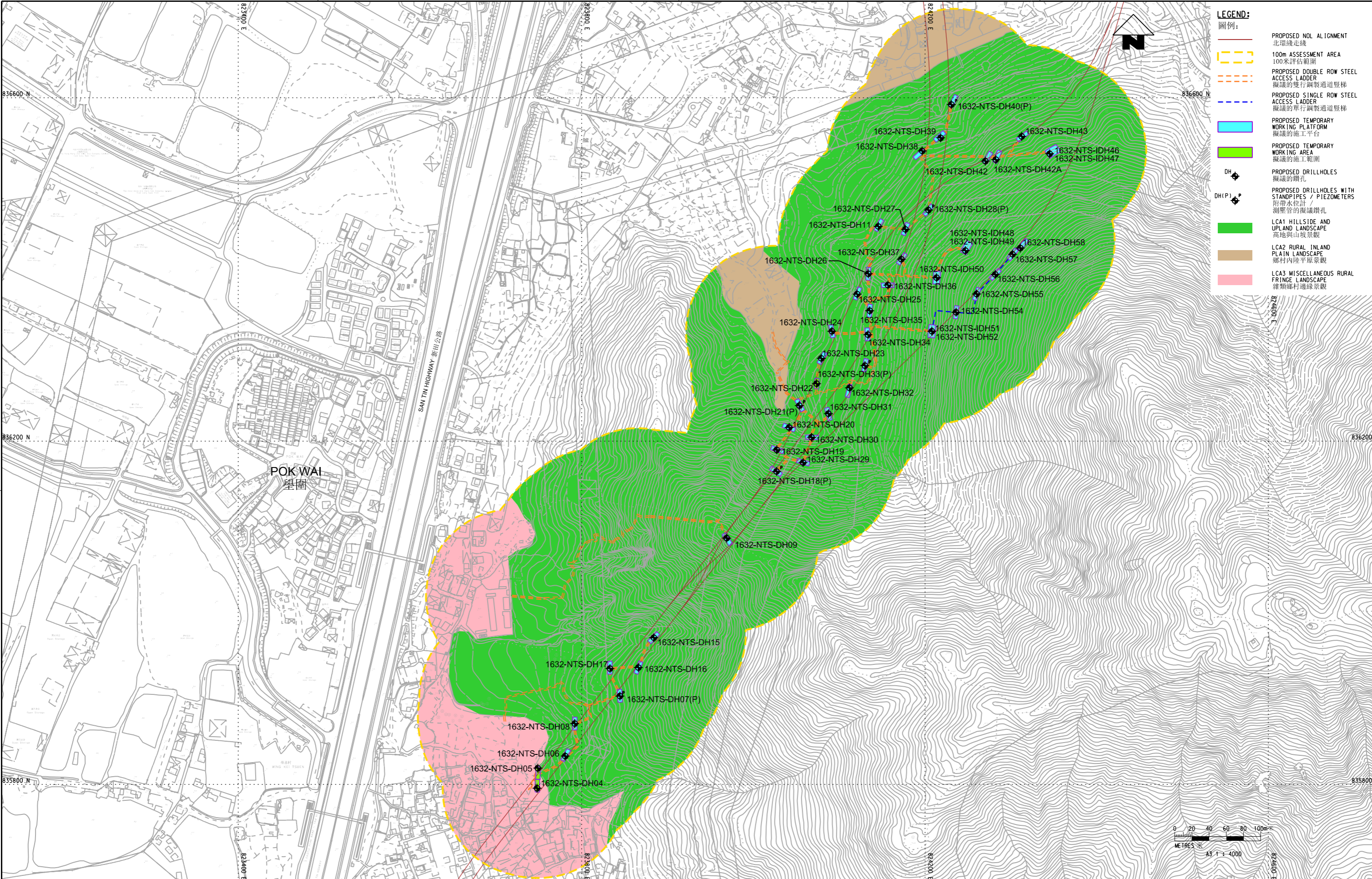
- LR-1 WOODLAND 林地
- LR-2 MIXED WOODLAND 混合林地
- LR-3 GRASSLAND 草地
- LR-4 SHRUBLAND 灌木叢
- LR-5 PLANTATION 植林
- LR-6 DEVELOPED AREA / VILLAGES 已發展地區 / 鄉村

SPECIES OF CONSERVATION IMPORTANCE FLORA (MATURE TREE):
具有保育價值物種植物 (成熟樹木):

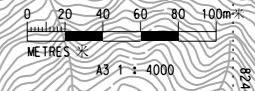
- P1 INCENSE TREE 土沉香
- P4 EMARGINATE-LEAVED ORMOSIA 凹葉紅豆



DRAWN		YFB		MTR		TITLE	
DESIGNED		---		NORTHERN LINK 北環綫		C1603	
CHECKED		---		ORIGINATOR		GI WORKS FOR NOL WITHIN LTCP AND CA	
APPROVED		---		AECOM		北環綫 - 林村郊野公園及自然保育區內土地勘测工程	
DATE		08/NOV/2023		CADD REF.		LANDSCAPE RESOURCES	
DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE		C1603_C_NOL_ACM_1632_311.dgn		SCALE		DRAWING NO.	
VERIFYED ON SITE.		1:4000 (A3)		C1603/C/NOL/ACM/1632/311		REV.	
IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE		1		-		-	
MTR CORPORATION LIMITED OF HONG KONG. NO							
REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART							
BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR							
WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.							



- LEGEND:**
 圖例:
- PROPOSED NOL ALIGNMENT
北環綫走綫
 - 100m ASSESSMENT AREA
100米評估範圍
 - PROPOSED DOUBLE ROW STEEL ACCESS LADDER
擬議的雙行鋼製通道樓梯
 - PROPOSED SINGLE ROW STEEL ACCESS LADDER
擬議的單行鋼製通道樓梯
 - PROPOSED TEMPORARY WORKING PLATFORM
擬議的施工平台
 - PROPOSED TEMPORARY WORKING AREA
擬議的施工範圍
 - PROPOSED DRILLHOLES
擬議的鑽孔
 - PROPOSED DRILLHOLES WITH STANDPIPES / PIEZOMETERS
附帶水位計 / 測壓管的擬議鑽孔
 - LCA1 HILLSIDE AND UPLAND LANDSCAPE
高地與山坡景觀
 - LCA2 RURAL INLAND PLAIN LANDSCAPE
鄉村內陸平原景觀
 - LCA3 MISCELLANEOUS RURAL FRINGE LANDSCAPE
雜類鄉村邊緣景觀



DRAWN		YFB		MTR		TITLE							
DESIGNED		---		NORTHERN LINK 北環綫		C1603							
CHECKED		---		ORIGINATOR		GI WORKS FOR NOL WITHIN LTCP AND CA							
APPROVED		---		AECOM		北環綫 - 林村郊野公園及自然保育區內土地勘测工程							
DATE		08/NOV/2023		CADD REF.		LANDSCAPE CHARACTER AREAS							
DO NOT SCALE DRAWINGS. ALL DIMENSIONS SHALL BE IDENTIFIED ON SITE. © MTR CORPORATION LIMITED 2008. COPYRIGHT IN RESPECT OF THIS DRAWING / DOCUMENT IS OWNED BY THE MTR CORPORATION LIMITED OF HONG KONG. NO REPRODUCTION OF THE DRAWING / DOCUMENT OR ANY PART BY WHATEVER MEANS IS PERMITTED WITHOUT THE PRIOR WRITTEN CONSENT OF THE MTR CORPORATION LIMITED.		C1603_C_NOL_ACM_1632_313.dgn		SCALE		1 : 4000 (A3)							
REV	DESCRIPTION	BY	DATE	APPROVED	REV	DESCRIPTION	BY	DATE	APPROVED	DRAWING NO.	C1603/C/NOL/ACM/1632/313	REV.	-

APPENDICES

Appendix 3.1

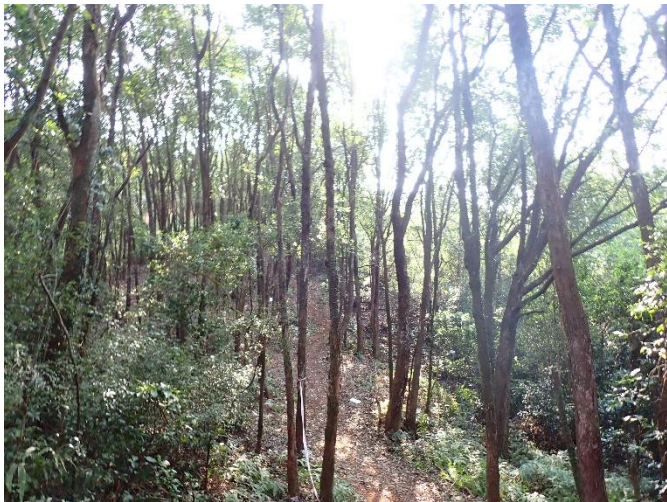
Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area

Habitats



Woodland

Shrubland



Plantation

Developed Area/Wasteland



Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile

SCALE

N.T.S.

DATE

OCT-23

CHECK

LAMCCG

DRAWN

LEUNGWKK

Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area

JOB NO.

60671406

Appendix No.

3.1

Rev

-

Habitats



N.A.

Grassland

N.A.

N.A.

N.A.

N.A.

N.A.



Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area
Project Profile

SCALE

N.T.S.

DATE

OCT-2023

CHECK

LAMCCG

DRAWN

LEUNGWKK

Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area

JOB NO.

60671406

Appendix No.

3.1

Rev

-

Drillholes



1632-NTS-DH04



1632-NTS-DH05



1632-NTS-DH06



1632-NTS-DH08



1632-NTS-DH07(P)



1632-NTS-DH17

	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile				SCALE	N.T.S.	DATE	OCT-2023
					CHECK	LAMCCG	DRAWN	LEUNGWKK
	Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area				JOB NO.	60671406	Appendix No.	Rev
						3.1	-	



1632-NTS-DH16



1632-NTS-DH15



1632-NTS-DH09



1632-NTS-DH18(P)



1632-NTS-DH19



1632-NTS-DH29



Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area
Project Profile

Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area

SCALE

N.T.S.

DATE

OCT-2023

CHECK

LAMCCG

DRAWN

LEUNGWKK

JOB NO.

60671406

Appendix No.

3.1

Rev

-



1632-NTS-DH20



1632-NTS-DH30



1632-NTS-DH21(P)




1632-NTS-DH31



1632-NTS-DH22



1632-NTS-DH32

	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile		SCALE	N.T.S.	DATE	OCT-2023
	Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area		CHECK	LAMCCG	DRAWN	LEUNGWKK
			JOB NO.	60671406	Appendix No.	3.1



1632-NTS-DH23



1632-NTS-DH33(P)



1632-NTS-DH24




1632-NTS-DH34



1632-NTS-DH35



1632-NTS-DH25

	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile		SCALE	N.T.S.	DATE	OCT-2023
			CHECK	LAMCCG	DRAWN	LEUNGWKK
	Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area		JOB NO.	60671406	Appendix No.	3.1



1632-NTS-DH36



1632-NTS-DH26



1632-NTS-DH37



1632-NTS-IDH50



1632-NTS-IDH48; 1632-NTS-IDH49



1632-NTS-IDH51; 1632-NTS-DH52

AECOM	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile	SCALE	N.T.S.	DATE	OCT-2023
	Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area	CHECK	LAMCCG	DRAWN	LEUNGWKK
		JOB NO.	60671406	Appendix No.	3.1
					-



1632-NTS-DH54



1632-NTS-DH55



1632-NTS-DH56




1632-NTS-DH57



1632-NTS-DH58



1632-NTS-DH11

	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile		SCALE	N.T.S.	DATE	OCT-2023
	Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area		CHECK	LAMCCG	DRAWN	LEUNGWKK
			JOB NO.	60671406	Appendix No.	Rev
				3.1	-	



1632-NTS-DH27



1632-NTS-DH28(P)



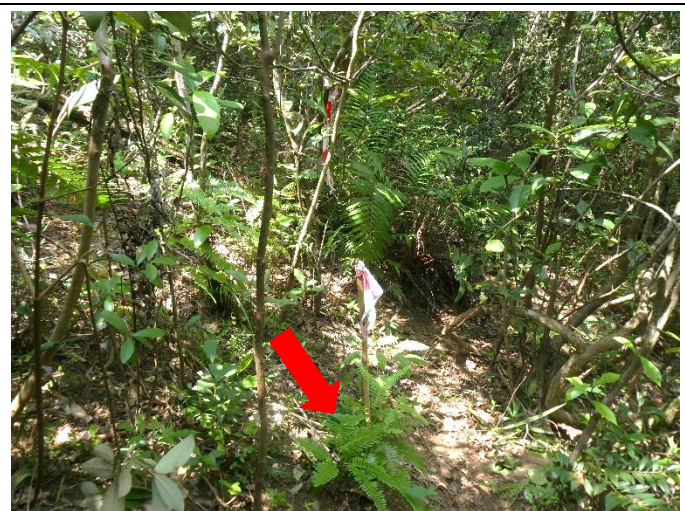
1632-NTS-DH38



1632-NTS-DH39



1632-NTS-DH40(P)



1632-NTS-DH42



Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area
Project Profile

Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area

SCALE

N.T.S.

DATE

OCT-2023

CHECK

LAMCCG

DRAWN

LEUNGWKK

JOB NO.

60671406

Appendix No.

3.1

Rev

-



1632-NTS-DH42A



1632-NTS-DH43



1632-NTS-IDH46; 1632-NTS-IDH47

N.A.

N.A.

N.A.

N.A.

N.A.

N.A.



Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area
Project Profile

SCALE

N.T.S.

DATE

OCT-2023

CHECK

LAMCCG

DRAWN

LEUNGWKK

Representative Photographs of Habitat Types and Drillhole Locations Recorded within the Surveyed Area

JOB NO.

60671406

Appendix No.

3.1

Rev

-

Appendix 3.2

Flora Species Recorded within the Surveyed Area

Appendix 3.2: Flora Species Recorded within the Surveyed Area

Scientific Name	Common Name	Growth Form	Native / Exotic to Hong Kong	Distribution in Hong Kong ⁽¹⁾	Protection / Conservation Status ⁽³⁾	WL	PL	SL	GL	DA
<i>Acacia confusa</i>	Taiwan Acacia	tree	exotic	Widely cultivated in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	+			
<i>Achyranthes aspera</i>	Common Achyranthes	perennial herb	native	Common in Hong Kong	-	+				
<i>Acronychia pedunculata</i>	Acronychia	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++		+		
<i>Adenosma glutinosum</i>	Adenosma	herb	native	Common in Hong Kong	-	+		+	+	
<i>Adiantum capillus-veneris</i>	Maidenhair	herb	native	-	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Adiantum flabellulatum</i>	Fan-leaved Maidenhair	herb	native	-	-	+				
<i>Adinandra millettii</i>	Millett's Adinandra	shrub or small tree	native	Hong Kong Island, Sai Kung, Tai Mong Tsai, Ma On Shan, Fanling, Tai Lam Chung, Lantau Island	-			+		
<i>Ageratum conyzoides</i>	Billygoat-weed	herb	exotic	Naturalized and widely distributed in Hong Kong	-			+		
<i>Alpinia zerumbet</i>	Shell Ginger	perennial herb	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Data Deficient	+				
<i>Alyxia sinensis</i>	Bead Vine	woody vine	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Ampelopsis cantoniensis</i>	Canton Ampelopsis	woody vine	native	Common in Hong Kong	-	+				
<i>Antirhea chinensis</i>	Chinese Antirhea	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Aporosa dioica</i>	Aporosa	tree	native	Common in Hong Kong	-	++	+	+	++	
<i>Aquilaria sinensis</i>	Incense Tree	tree	native	Common in Hong Kong	Protected under Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586); Rare and Precious Plants of Hong Kong (Status of China): Category 2 & 3 (Near Threatened); Listed in Wild Plants under State Protection: Category II; China Plant Red Data Book: Vulnerable; Rare and Endangered Plants and National Key Protected Plants in Guangdong: Near Threatened; Recorded in Illustration of Rare and Endangered Plants in Guangdong Province; Threatened Species List of China's Higher Plants: Vulnerable; IUCN Red List (ver. 2022.2): Vulnerable	++		+		
<i>Archidendron clypearia</i>	Monkey-pod	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Archidendron lucidum</i>	Chinese Apea Ear-ring	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Archontophoenix alexandra</i>	Alexandra Palm	tree palm	exotic	Commonly cultivated	IUCN Red List (ver. 2022.2): Least Concern					+
<i>Ardisia crenata</i>	Hilo Holly	shrub	native	Common in Hong Kong	-	+	+	+		
<i>Ardisia lindleyana</i>	Spotted Ardisia	shrub	native	Widely distributed in Hong Kong	-	+		+		
<i>Ardisia quinquegona</i>	Asiatic Ardisia	small tree	native	Widely distributed in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	+			
<i>Aster baccharoides</i>	-	perennial herb	native	Common in Hong Kong	-			+		
<i>Asystasia micrantha</i>	-	perennial ascending herbs	exotic	Cultivated or naturalized	-	+	+			
<i>Atalantia buxifolia</i>	Box-leaved Atalantia	shrub	native	Hong Kong Island, Kowloon, Sai Kung, Lantau Island	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Baeckea frutescens</i>	Dwarf Mountain Pine	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern		++	+	+	
<i>Bauhinia</i> spp.	-	-	-	-	-					+
<i>Berchemia floribunda</i>	Japanese Supple-jack	climbing shrub: vine	native	Hong Kong Island, Tai Mo Shan, Ma On Shan, Sai Kung, Tai Long Sai Wan, Chek Keng, Kiu Tsui, Lantau Island	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Bidens alba</i>	-	herb	exotic	Naturalized and widely distributed in Hong Kong	-	+			+++	++
<i>Blechnum orientale</i>	Oriental Blechnum	herb	native	-	-	++	+	++	+	
<i>Boehmeria nivea</i> var. <i>tenax</i>	Virid-leaved Boehmeria	subshrub or shrub	exotic	Tseng Lan Shue	-	+				

Scientific Name	Common Name	Growth Form	Native / Exotic to Hong Kong	Distribution in Hong Kong ⁽¹⁾	Protection / Conservation Status ⁽³⁾	WL	PL	SL	GL	DA
<i>Brainea insignis</i>	Cycad-fern	herb	native	-	Rare and Precious Plants of Hong Kong (Status in China): Category 2 (Vulnerable); List of Wild Plants under State Protection: Category II; Threatened Species List of China's Higher Plants: Vulnerable	+		++	+	
<i>Breynia fruticosa</i>	Waxy Leaf	shrub	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	+		+	
<i>Bridelia tomentosa</i>	Pop-gun Seed	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++	+		+	
<i>Broussonetia papyrifera</i>	Paper Mulberry	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern				+	+
<i>Brucea javanica</i>	False Sumac	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Byttneria grandifolia</i>	Spiny-fruited Vine	woody vine	native	Common in Hong Kong	-	+				
<i>Caesalpinia crista</i>	Wood Gossip Caesalp	climber: vine	native	Common in Hong Kong	-	+				
<i>Camonea pilosa</i>	Umbellate Merremia	climber: twining vine	native	Common in Hong Kong	-	+			+	
<i>Carallia brachiata</i>	India Carallia	tree	native	Common in Hong Kong	-			+		
<i>Carica papaya</i>	Papaya	tree	exotic	Cultivated	IUCN Red List (ver. 2022.2): Data Deficient					+
<i>Cassytha filiformis</i>	Cassytha	parasitic climber: twining herb	native	Common in Hong Kong	-		++	+	+	
<i>Castanopsis fissa</i>	Castanopsis	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Celastrus monospermus</i>	Bentham's Bitter-sweet	woody climber: vine	native	Common in Hong Kong	-	+				
<i>Celtis sinensis</i>	Chinese Hackberry	tree	native	Common in Hong Kong and widely planted	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Centotheca lappacea</i>	Common Centotheca	perennial herb	native	common	-	+	+	+	++	
<i>Cibotium barometz</i>	Lamb of Tartary	large herb	native	-	Protected under Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586); Rare and Precious Plants in Hong Kong (Status in China): Category 2 (Vulnerable); Listed in Wild Plants under State Protection: Category II	+				
<i>Cinnamomum camphora</i>	Camphor Tree	large tree	native	Common in Hong Kong. Also widely cultivated	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Clausena lansium</i>	Wampi	small tree	exotic	Cultivated	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Clerodendrum cyrtophyllum</i>	Mayflower Glorybower	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Coccinia grandis</i>	Ivy-gourd	herbaceous vines	native	Wong Chuk Hang, Tsuen Wan, Shan Liu, Ping Shan	-				+	
<i>Cocculus orbiculatus</i>	Snail Seed	climber: vine	native	Common in Hong Kong	-	++	+			
<i>Conyza canadensis</i>	-	herb	exotic	Naturalized and widely distributed in Hong Kong	-					+
<i>Crateva unilocularis</i>	Spider Tree	tree	exotic	Cultivated	-					+
<i>Cratogeomys cochinchinense</i>	Yellow Cow Wood	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++	+	+		
<i>Cuscuta campestris</i>	-	herb	native	Common in Hong Kong	-	+				
<i>Cyclosorus parasiticus</i>	Wood-fern	herb	native	-	-	+		+	+	
<i>Cyperus odoratus</i>	-	herb	exotic	-	IUCN Red List (ver. 2022.2): Least Concern					+
<i>Dalbergia benthamii</i>	Bentham's Rosewood	climber: vine	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Daphniphyllum calycinum</i>	-	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Dendrotrophe varians</i>	-	woody vine	native	Aberdeen, Findlay Rd., Mount Collinson Rd., Pok Fu Lam Reservoir, Stanley, Tai Mo Shan, Sha Tau Kok, Lantau Island	-	+				
<i>Desmos chinensis</i>	Desmos	woody vine	native	Common in Hong Kong	-	++			+	
<i>Dianella ensifolia</i>	Dianella	herb	native	Common in Hong Kong	-	+	+	+	+	
<i>Dicranopteris pedata</i>	Dichotomy Forked Fern	herb	native	very common	-	+	++	+++	+++	
<i>Dimocarpus longan</i>	Longan	tree	exotic	Cultivated	Threatened Species List of China's Higher Plants: Vulnerable, Rare and Endangered Plants and National Key Protected Plants in Guangdong; Near Threatened; IUCN Red List (ver. 2022.2): Near Threatened	+				

Scientific Name	Common Name	Growth Form	Native / Exotic to Hong Kong	Distribution in Hong Kong ⁽¹⁾	Protection / Conservation Status ⁽³⁾	WL	PL	SL	GL	DA
<i>Dioscorea bulbifera</i>	Air Potato	climber: vine	native	Hong Kong Island, Tai Po Kau, Lam Tsuen, Sham Tseng, Ta Kwu Ling	-	+				
<i>Diplospora dubia</i>	Common Tricalysia	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Duhaldia cappa</i>	Elecampane	subshrub	native	Common in Hong Kong	-			+		
<i>Elephantopus tomentosus</i>	-	perennial herb	native	Common in Hong Kong	-	+				
<i>Embelia laeta</i>	Twig-hanging Embelia	climber: vine	native	Widely distributed in Hong Kong	-	+		+	+	
<i>Embelia ribes</i>	White-flowered Embelia	climber: vine	native	Widely distributed in Hong Kong	-		+	+	+	
<i>Epipremnum aureum</i>	Ivy-arum	tall climbing plant	exotic	-	-					+
<i>Epipremnum pinnatum</i>	Taro Vine, Centipede	Climber	exotic	New Territories	-	+				
<i>Eucalyptus</i> spp.	-	tree	exotic	cultivated; common	-		+			
<i>Eurya nitida</i>	Shining Eurya	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	+	+	+	
<i>Ficus hirta</i>	Hairy Fig	shrub or small tree	native	Common in Hong Kong	-	+	+	+	+	
<i>Ficus hispida</i>	Opposite-leaved Fig	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++	+	+	+	
<i>Ficus variegata</i>	Common Red-stem Fig	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+			+	
<i>Ficus variolosa</i>	Varied-leaf Fig	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Gardenia jasminoides</i>	Cape Jasmine	shrub	native	Common in Hong Kong	-	+		+		
<i>Glochidion eriocarpum</i>	Hairy-fruited Abacus Plant	shrub	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++		+		
<i>Glochidion wrightii</i>	Wright's Abacus Plant	tree	native	Common in Hong Kong	-	+		+		
<i>Gnetum luofuense</i>	Luofushan Joint-fir	woody vine	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Near Threatened	++	+	+		
<i>Gymnema sylvestre</i>	Australian Cow-plant	woody vine	native	Common in Hong Kong	-				+	
<i>Hedychium coronarium</i>	Ginger Lily	perennial herb	exotic	Cultivated	-	+				
<i>Hedyotis hedyotidea</i>	White Ox Creeper	climbing subshrub	native	Common in Hong Kong	-	+				
<i>Helicteres angustifolia</i>	Narrow-leaved Screwtree	subshrub	native	Common in Hong Kong	-	+	+	+	+	+
<i>Heterosmilax japonica</i>	Heterosmilax	climbing shrub	native	Pok Fu Lam	-	++	+	+		
<i>Homalium cochinchinense</i>	Cochin-china Homalium	shrub or tree	native	Common in Hong Kong	-	+				
<i>Hymenocallis littoralis</i>	American Hymenocallis	herb	exotic	Cultivated	-					+
<i>Hypserpa nitida</i>	Shining Hypserpa	woody vine	native	Common in Hong Kong	-	+		+		
<i>Ilex asprella</i>	Rough-leaved Holly	shrub	native	very common	-	++	+	+	+	
<i>Ilex pubescens</i>	Downy Holly	shrub	native	Common in Hong Kong	-	++	+			
<i>Indocalamus sinicus</i>	Chinese Cane	running shrubby bamboo	native	Common in Hong Kong	-	+++				
<i>Indocalamus</i> spp.	-	-	-	-	-	+				
<i>Ipomoea cairica</i>	Gairo Morning Glory	climber: twining herb	exotic	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+			++	
<i>Ipomoea triloba</i>	-	herbaceous climber	exotic	Naturalized in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Kalanchoe pinnata</i>	Air-plant	herb	exotic	Cultivated and naturalized	-					++
<i>Kyllinga polyphylla</i>	Aromatic Kyllinga	herb	exotic	Victoria Park, Tsiu Hang, Tai Po Kau	-					+
<i>Lantana camara</i>	Lantana	shrub	exotic	Naturalized in Hong Kong	-	+			+	++
<i>Leucaena leucocephala</i>	White Popinac	small tree	exotic	Cultivated and naturalized	-	+			+	++
<i>Ligustrum sinense</i>	Chinese Privet	shrub or small tree	exotic	Common in Hong Kong and widely cultivated	-	+	+	+	+	
<i>Lindsaea ensifolia</i>	Sword-leaved Lindsaea	herb	native	-	-	+	+			
<i>Lindsaea orbiculata</i>	Orbicular Lindsaea	herb	native	-	-	+				
<i>Liriope spicata</i>	Lily Turf	perennial herb	native	Common in Hong Kong	-	++	+	+		
<i>Litchi chinensis</i>	Lychee	tree	exotic	Cultivated	List of Wild Plants under State Protection: Category II; Threatened Species List of China's Higher Plants: Endangered; Rare and Endangered Plants and National Key Protected Plants in Guangdong: Near Threatened	+				+
<i>Litsea cubeba</i>	Fragrant Litsea	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Litsea rotundifolia</i> var. <i>oblongifolia</i>	Oblong-leaved Litsea	shrub	native	Common in Hong Kong	-	++	+	+	+	
<i>Lonicera macrantha</i>	Large-flowered Honeysuckle	climber: vine	native	Common in Hong Kong	-	+				
<i>Lophatherum gracile</i>	Common Lophantherum	perennial herb	native	Common in Hong Kong	-	++	+	+		
<i>Lophostemon confertus</i>	Brisbane Box	tree	exotic	Cultivated	IUCN Red List (ver. 2022.2): Least Concern		++	+		
<i>Ludwigia erecta</i>	-	herb	exotic	-	-				+	
<i>Lygodium flexuosum</i>	Flexuose Climbing Fern	climbing herb	native	-	-	+	+			
<i>Lygodium japonicum</i>	Climbing Fern	climbing herb	native	-	-	++	+		+	
<i>Lygodium scandens</i>	Scansorial Climbing Fern	climbing herb	native	-	-	+	+	+		
<i>Macaranga tanarius</i> var. <i>to</i>	Elephant's Ear	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	+	+		+
<i>Macrothelypteris toresiana</i>	Mariana Maiden Fern	herb	native	-	-	+				

Scientific Name	Common Name	Growth Form	Native / Exotic to Hong Kong	Distribution in Hong Kong ⁽¹⁾	Protection / Conservation Status ⁽³⁾	WL	PL	SL	GL	DA
<i>Mallotus paniculatus</i>	Turn-in-the-wind	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++			+	
<i>Malvastrum coromandelianum</i>	False Mallow	herb	native	Common in Hong Kong	-				+	
<i>Melastoma malabathricum</i>	Common Melastoma	shrub	native	Common in Hong Kong	-	+				
<i>Melastoma sanguineum</i>	Blood-red Melastoma	shrub	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	++	++	+	
<i>Melia azedarach</i>	China-berry	tree	exotic	Cultivated or naturalized	IUCN Red List (ver. 2022.2): Least Concern				+	
<i>Melicope pteleifolia</i>	Thin Evodia	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++	+	+		+
<i>Melinis repens</i>	Redtop	perennial herb	exotic	Common in Hong Kong (naturalized)	-	+				
<i>Microcos nervosa</i>	Microcos	shrub or small tree	native	Common in Hong Kong	-	+			+	
<i>Microstegium ciliatum</i>	Ciliate Microstegium	perennial procumbent herb	native	Common in Hong Kong	-	++			+++	++
<i>Mikania micrantha</i>	Mile-a-minute Weed	climbing herb	exotic	Naturalized and widely distributed in Hong Kong	-	+	+	+	++	+
<i>Milletia speciosa</i>	Showy Milletia	climber: vine	native	Common in Hong Kong	-	+				
<i>Miscanthus floridulus</i>	Many-flowered Silvergrass	perennial herb	native	Common in Hong Kong	-	+	+	+	++	++
<i>Miscanthus sinensis</i>	Chinese Silvergrass	perennial herb	native	Common in Hong Kong	-			+		
<i>Morinda parvifolia</i>	Little-leaved Indian-mulberry	climbing shrub	native	Common in Hong Kong	-			+		
<i>Murraya paniculata</i>	Orange-jessamine	small tree	exotic	Cultivated or naturalized	-				+	
<i>Mussaenda erosa</i>	Erose Mussaenda	climbing shrub	native	Hong Kong Island, Ma On Shan, Tai Po, Ng Tung Chai, Ping Shan Chai, Fanling, Pat Sin Leng, Lantau Island	-			+		
<i>Mussaenda pubescens</i>	Splash-of-white	climbing shrub	native	Common in Hong Kong	-	+		+		
<i>Opismenus compositus</i>	Composite Oplismenus	herb	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Ormosia emarginata</i>	Emarginate-leaved Ormosia	small tree	native	Common in Hong Kong	List of Wild Plants under State Protection: Category II	+		+		
<i>Oxalis corniculata</i>	Sorrel	perennial herb	native	Common in Hong Kong	-					++
<i>Oxalis debilis</i> subsp. <i>corymbosa</i>	Lavender Sorrel	perennial herb	exotic	A common weed in Hong Kong	-					++
<i>Paederia scandens</i>	Chinese Fevervine	climber: vine	native	Common in Hong Kong	-	+			+	+
<i>Paederia scandens</i> var. <i>torreyana</i>	Tomentose Fevervine	climber: vine	native	Mount Davis, Tai Po Kau, Tai Mo Shan, Lantau Island	-					+
<i>Palhinhaea cernua</i>	Nodding Clubmoss	creeping herb	native	-	-			+		
<i>Panicum brevifolium</i>	Panic Grass	herb	native	Common in Hong Kong	-	+				
<i>Panicum maximum</i>	Guinea Grass	perennial herb	exotic	Cultivated for forage	-	+		+		++
<i>Pericampylus glaucus</i>	Pericampylus	woody vine	native	So Kon Po, Tai Hang, Mount Cameron, Tai Po	-	+				
<i>Phyllanthus cochinchinensis</i>	Vietnam Leaf-flower	shrub	native	Common in Hong Kong	-	+			+	
<i>Phyllanthus emblica</i>	Myrobalan	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++				
<i>Phyllanthus urinaria</i>	Night-closing Leaf	herb	native	Happy Valley, Harlech Rd., Pok Fu Lam Reservoir Rd., Stubbs Rd., Ling Nam San Tsuen, Kowloon Reservoir, Fanling, Sha Tin, Lantau Island	-	+				
<i>Pinus elliotii</i>	Slash Pine	tree	exotic	Widely planted in countryside	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Pinus massoniana</i>	Chinese Red Pine	tree	native	Common in Hong Kong, also widely planted in countryside	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Plectranthus amboinicus</i>	Fragrant Coleus	herb	-	-	-					+
<i>Praxelis clematidea</i>	-	perennial herb	exotic	Naturalized and widely distributed in Hong Kong	-	+				
<i>Psychotria asiatica</i>	Wild Coffee	shrub or tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+++	+	+	++	
<i>Psychotria serpens</i>	Creeping Psychotria	semi-woody climber: vine	native	Common in Hong Kong	-	+				
<i>Pteris ensiformis</i>	Sword Brake	herb	native	-	-	+				
<i>Pteris semipinnata</i>	Semi-pinnated Brake	herb	native	-	-	++				
<i>Pueraria lobata</i> var. <i>montana</i>	Montane Kudzu	climber: vine	native	Common in Hong Kong	-	+				
<i>Rhamnus crenata</i>	Buckthorn	shrub	native	Mount Davis, Tai Mo Shan, Wu Kau Tang, Lai Chi Wo, Luk Keng, Lantau Island	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Rhaphiolepis indica</i>	Hong Kong Hawthorn	shrub or small tree	native	Common in Hong Kong	-	+		+	+	

Scientific Name	Common Name	Growth Form	Native / Exotic to Hong Kong	Distribution in Hong Kong ⁽¹⁾	Protection / Conservation Status ⁽²⁾	WL	PL	SL	GL	DA
<i>Rhodomyrtus tomentosa</i>	Rose Myrtle	shrub	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	++	++	+	
<i>Rhus chinensis</i>	Sumac	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern			+		
<i>Rhus hypoleuca</i>	Sumac	shrub or small tree	native	Common in Hong Kong	-	+		++	+	
<i>Rhus succedanea</i>	Wax Tree	shrub or small tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+	++	++	+	
<i>Rourea microphylla</i>	Little-leaved Rourea	climbing shrub	native	Common in Hong Kong	-	+		++	+	
<i>Rubus reflexus</i>	Rusty-haired Raspberry	climbing shrub	native	Common in Hong Kong	-			+		
<i>Sapium discolor</i>	Mountain Tallow Tree	small tree	native	Common in Hong Kong. Also planted	-	+	+	+		
<i>Sapium sebiferum</i>	Chinese Tallow Tree	tree	native	Common in Hong Kong. Also planted	-	+		+		
<i>Sarcandra glabra</i>	Sarcandra	subshrub	native	Common in Hong Kong	-	+				
<i>Schefflera heptaphylla</i>	Ivy Tree	tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++	+	+		
<i>Scleria ciliaris</i>	Ciliate Razorsedge	herb	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+		+		
<i>Sida rhombifolia</i>	Sida Hemp	erect subshrub	native	Common in Hong Kong	-				+	
<i>Smilax china</i>	Greenbrier	climbing shrub	native	Common in Hong Kong	-	+	+	+		
<i>Smilax glabra</i>	Glabrous Greenbrier	climbing shrub	native	Common in Hong Kong	-	+	+	+		
<i>Solanum americanum</i>	Shining-fruit Nightshade	herb	exotic	Naturalized in Hong Kong	-		+			
<i>Sphenomeris chinensis</i>	Fairy Fern	herb	native	-	-	+				
<i>Sporobolus fertilis</i>	Australian Smut-grass	perennial herb	native	Common in Hong Kong	-	+				+
<i>Stachytarpheta jamaicensis</i>	Jamaica Vervain	herb	exotic	Naturalized in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Stephania longa</i>	Long Stephania	climber: vine	native	Aberdeen, Tai Po Kau, Ma On Shan, Sheung Shui, Tai Mong Tsai	-	+				
<i>Sterculia lanceolata</i>	Lance-leaved Sterculia	semi-deciduous tree	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	++	+			
<i>Strophanthus divaricatus</i>	Goat Horns	woody vine	native	Common in Hong Kong	-	+	+	+		
<i>Syzygium jambos</i>	Rose Apple	tree	exotic	Cultivated & naturalized	IUCN Red List (ver. 2022.2): Least Concern	+				
<i>Tectaria subtriphylia</i>	-	herb	native	-	-	+				
<i>Tetracera asiatica</i>	Sandpaper Vine	woody vine	native	Common in Hong Kong	-	++		+	+	
<i>Tetradium glabrifolium</i>	Melia-leaved Evodia	tree	native	Hong Kong Island, Sai Kung, Tai Po, Bride's Pool, Lantau Island	-	+				
<i>Tridax procumbens</i>	Tridax	perennial herb	exotic	Naturalized and widely distributed in Hong Kong	-					+
<i>Tylophora ovata</i>	Ovate Tylophora	slender woody vine	native	Common in Hong Kong	-	+				
<i>Uvaria macrophylla</i>	Uvaria	woody climbing shrub	native	Common in Hong Kong	-	++				
<i>Vernonia solanifolia</i>	Large-leaved Iron-wee	Densely woolly shrubby lianas	native	Common in Hong Kong	-	++				
<i>Wedelia trilobata</i>	-	perennial herb	exotic	Naturalized and widely cultivated	-					++
<i>Wikstroemia indica</i>	Indian Wikstroemia	shrub	native	Common in Hong Kong	-			+	+	
<i>Youngia japonica</i>	Hawk's Beard	herb	native	Common in Hong Kong	-					+
<i>Zanthoxylum avicennae</i>	Prickly Ash	tree	native	Common in Hong Kong	-	++		+	++	+
<i>Zanthoxylum nitidum</i>	Shiny-leaved Prickly A	climbing shrub	native	Common in Hong Kong	IUCN Red List (ver. 2022.2): Least Concern	+		+		

Notes:

(1) Distribution in Hong Kong follows:

- Flora of Hong Kong Volume 1-4. (2007-2011).
Wu, S.-H. & Lee, T.-C.W. (2000). Pteridophytes of Hong Kong. Memoirs of the Hong Kong Natural History Society 23:5-20.
Xing, F.-W., Ng, S.C. & Chau, L.K.-C. (2000). Gymnosperms and Angiosperms of Hong Kong. Memoirs of the Hong Kong Natural History Society 23:21-136.
Siu, L.-P.G. (2000). Orchidaceae of Hong Kong. Memoirs of the Hong Kong Natural History Society 23:137-148.

(2) Protection statuses follow:

- Protected under the Forests and Countryside Ordinance (Cap. 96)
Protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586)
Hu, Q.M., Wu, T.L., Xia, N.H., Xing F.W., Lai, C.C.P. & Yip, K.W. (2003). Rare and Precious Plants of Hong Kong. Agriculture, Fisheries and Conservation Department, HKSAR, Hong Kong. 234pp.
List of Wild Plants Under State Protection (promulgated by the National Forestry and Grassland Administration in 2021)
Fu, K.L. (1992). China Plant Red Data Book. Vol. 1 - Rare and Endangered Plants. Science Press, Beijing. 736pp. (In Chinese only)
Qin, et al. (2017). Threatened Species List of China's Higher Plants. Biodiversity Science 25(7):696-747
International Union for the Conservation of Nature (IUCN) (2023). The IUCN Red List of Threatened Species. Version 2022.2.
Feng, Z.-J., Li, Z.-K., Li, B.-T., Xue, C.-G., Liu, J.-B. & He, Y.-Q. (2002). Study on Rare and Endangered Plants and National Key Protected Plants in Guangdong. Journal of South China Agricultural University 3:24-27.
Wu, D.L. & Hu, C.X. (1988). Illustrations of Rare and Endangered Plants in Guangdong Province. China Environmental Science Press, Beijing. 46pp. (In Chinese only).

(3) The species is artificially introduced to the habitat, thus it is not considered as species of conservation importance.

Abbreviation for Habitats: WL = Woodland; PL = Plantation; SL = Shrubland; GL = Grassland; and DA = Developed Area
Code for Abundance: +++++ = Dominant; ++++ = Abundant; +++ = Frequent; ++ = Occasional; + = Scarce
Species of conservation importance is in **bold** type face

Appendix 3.3
Representative Photographs of the Species of
Conservation Importance Recorded within the Surveyed
Area

Floral and Faunal Species of Conservation Importance



Lamb of Tartary
(*Cibotium barometz*)

Mature Incense Tree
(*Aquilaria sinensis*)



Incense Tree Seedling
(*Aquilaria sinensis*)

Cycad-fern
(*Brainea insignis*)

AECOM	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile	SCALE	N.T.S.	DATE	OCT-2023
	Representative Photographs of the Species of Conservation Importance Recorded within the Surveyed Area	CHECK	LAMCCG	DRAWN	LEUNGWKK
		JOB NO.	60671406	Appendix No.	Rev
			3.3	-	

Floral and Faunal Species of Conservation Importance




Emarginate-leaved Ormosia
(*Ormosia emarginata*)

Emarginate-leaved Ormosia Seedling
(*Ormosia emarginata*)



Red Muntjac
(*Muntiacus muntjac*)

Small Indian Civet
(*Viverricula indica*)

	Ground Investigation Works for Northern Link within Lam Tsuen Country Park and Conservation Area Project Profile	SCALE	N.T.S.	DATE	OCT-2023
	Representative Photographs of the Species of Conservation Importance Recorded within the Surveyed Area	CHECK	LAMCCG	DRAWN	LEUNGWKK
		JOB NO.	60671406	Appendix No.	Rev
			3.3	-	

Appendix 3.4

Fauna Species Recorded within the Surveyed Area

Appendix 3.4: Fauna Species Recorded within the Surveyed Area
Avifauna

Common Name ⁽¹⁾	Scientific Name	Distribution in Hong Kong ⁽³⁾	Principal Status ⁽⁴⁾	Level of Concern ⁽⁵⁾	Protection Status in China ⁽⁶⁾	China Red Data Book ⁽⁷⁾	Red List of China's Vertebrates ⁽⁸⁾	IUCN Red List ⁽⁹⁾	WL	SL	GL	IF
Asian Koel	<i>Eudynamis scolopacea</i>	Common resident. Widely distributed in Hong Kong.	Su,R	-	-	-	Least Concern	Least Concern	+			
Black Kite ⁽²⁾⁽¹⁰⁾	<i>Milvus migrans</i>	Common resident and winter visitor. Widely distributed in Hong Kong.	W,R	(RC)	Class II	-	Least Concern	Least Concern				+
Black-throated Laughingthrush	<i>Pterorhinus chinensis</i>	Common resident. Widely distributed in woodland and shrubland throughout Hong Kong.	R	-	Class II	-	Near Threatened	Least Concern	+			
Chinese Bulbul	<i>Pycnonotus sinensis</i>	Abundant resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern	++			
Chinese Hwamei ⁽²⁾	<i>Garrulax canorus</i>	Common resident. Widely distributed in hillside shrubland throughout Hong Kong.	R	-	Class II	-	Near Threatened	Least Concern		+		
Cinereous Tit	<i>Parus cinereus</i>	Common resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern	+			
Common Tailorbird	<i>Orthotomus sutorius</i>	Common resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern	+	+	+	
Crested Myna	<i>Acridotheres cristatellus</i>	Abundant resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern		+		
Crested Serpent Eagle ⁽²⁾	<i>Spilornis cheela</i>	Common resident. Widely distributed in shrublands on hillsides throughout Hong Kong.	R,M	(LC)	Class II	Vulnerable	Near Threatened	Least Concern				+
Greater Coucal	<i>Centropus sinensis</i>	Common resident. Widely distributed in Hong Kong.	R	-	Class II	Vulnerable	Least Concern	Least Concern	+			
Hair-crested Drongo	<i>Dicrurus hottentottus</i>	Common migrant and winter visitor, and locally common resident. Widely distributed in wooded area throughout Hong Kong.	M,Su,W	-	-	-	Least Concern	Least Concern	+			
Large-billed Crow	<i>Corvus macrorhynchos</i>	Common resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern		+		
Masked Laughingthrush	<i>Pterorhinus perspicillatus</i>	Abundant resident. Widely distributed in shrubland throughout Hong Kong.	R	-	-	-	Least Concern	Least Concern	++	+		
Oriental Magpie Robin	<i>Copsychus saularis</i>	Abundant resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern	+			
Red-billed Blue Magpie	<i>Urocissa erythroryncha</i>	Common resident. Widely distributed in woodland edges throughout Hong Kong.	R	-	-	-	Least Concern	Least Concern	+	+		
Red-whiskered Bulbul	<i>Pycnonotus jocosus</i>	Abundant resident. Widely distributed in Hong Kong.	R	-	-	-	Least Concern	Least Concern	++	+		
Rufous-capped Babbler	<i>Cyanoderma ruficeps</i>	Common resident. Found in Shing Mun, Tai Po Kau, Tai Mek Tuk, Ng Tung Chau, Fo Tan, Tai Mo Shan, The Peak, Kadoorie Agricultural Research Centre.	R	LC	-	-	Least Concern	Least Concern		+		
Scarlet-backed Flowerpecker	<i>Dicaeum cruentatum</i>	Common resident. Widely distributed in wooded area throughout Hong Kong.	R	-	-	-	Least Concern	Least Concern	+			
Swinhoe's White-eye	<i>Zosterops simplex</i>	Abundant resident. Widely distributed in Hong Kong.	R,?W	-	-	-	Least Concern	Least Concern	+			
Yellow-browed Warbler	<i>Phylloscopus inornatus</i>	Abundant winter visitor and migrant. Widely distributed in woodland throughout Hong Kong.	W	-	-	-	Least Concern	Least Concern		+		

Note:
(1) All wild birds are Protected under Wild Animals Protection Ordinance (Cap. 170).
(2) Protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap. 586).
(3) AFCD (2023). Hong Kong Biodiversity Information Hub.
(4) Carey *et al.* (2001): R=resident; W=winter visitor; Su=summer visitor; M = migrant; A = autumn; P = present all year, exact composition unknown; ?W = extent of migration in winter is unclear
(5) Fellowes, J.R., Lau, M.W.N., Dudgeon, D. *et al.* (2002). Wild Animals to Watch: Terrestrial and Freshwater Fauna of Conservation Concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25:123-159; LC=Local Concern; RC=Regional Concern.
Letters in parentheses indicate that the assessment is on the basis of restrictedness in nesting and/or roosting sites rather than in general occurrence.

(6) List of Wild Animals Under State Protection (promulgated by the National Forestry and Grassland Administration in 2021).

(7) Zheng, G. M. and Wang, Q. S. (1998). China Red Data Book.Aves.

(8) Jiang *et al.* (2016). Red List of China's Vertebrates.

(9) IUCN (2023). The IUCN Red List of Threatened Species. Version 2022.02.

(10) Wetland-dependent species (including wetland-dependent species and waterbirds).

Abbreviation for Habitats: WL = Woodland; SL = Shrubland; GL = Grassland and IF = In Flight
Code for Abundance: +++++ = Dominant; ++++ = Abundant; +++ = Frequent; ++ = Occasional; + = Scarce
Species of conservation importance is in **bold type face**

Butterfly

Common Name	Scientific Name	Distribution in Hong Kong ⁽¹⁾	Level of Concern ⁽²⁾	Protection Status in China ⁽³⁾	IUCN Red List ⁽⁴⁾	WL	SL	GL	DA
Angled Castor	<i>Ariadne ariadne</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Chinese Peacock	<i>Papilio bianor</i>	Widely distributed throughout Hong Kong	-	-	-		+		
Common Five-ring	<i>Ypthima baldus</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Common Grass Yellow	<i>Eurema hecabe</i>	Widely distributed throughout Hong Kong	-	-	-	+			+
-	<i>Eurema spp.</i>	-	-	-	-	+			
Common Jay	<i>Graphium doson</i>	Widely distributed throughout Hong Kong	-	-	-				+
Common Jester	<i>Symbrenthia lilaea</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Common Mormon	<i>Papilio polytes</i>	Widely distributed throughout Hong Kong	-	-	-	+	+		+
Common Sailer	<i>Neptis hylas</i>	Widely distributed throughout Hong Kong	-	-	-			+	
Dark-brand Bush Brown	<i>Mycalesis mineus</i>	Widely distributed throughout Hong Kong	-	-	-	+	+		
Great Eggfly	<i>Hypolimnas bolina</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Great Mormon	<i>Papilio memnon</i>	Widely distributed throughout Hong Kong	-	-	-	+			+
Great Orange Tip	<i>Hebomoia glaucippe</i>	Widely distributed throughout Hong Kong	-	-	-			+	
Lemon Emigrant	<i>Catopsilia pomona</i>	Widely distributed throughout Hong Kong	-	-	-	+			+
Lime Butterfly	<i>Papilio demoleus</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Paris Peacock	<i>Papilio paris</i>	Widely distributed throughout Hong Kong	-	-	-	+	+	+	+
Plum Judy	<i>Abisara echerius</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Punchinello	<i>Zemeros flegyas</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Red-base Jezebel	<i>Delias pasithoe</i>	Widely distributed throughout Hong Kong	-	-	-	+			
Tawny Rajah	<i>Charaxes bernardus</i>	Widely distributed throughout Hong Kong	-	-	-				+
White-edged Blue Baron	<i>Euthalia phemius</i>	Widely distributed throughout Hong Kong	-	-	-		+		

Notes:

(1) AFCD (2023). Hong Kong Biodiversity Information Hub.

(2) Fellowes et al. (2002). Wild Animals to Watch: Terrestrial and Freshwater Fauna of Conservation Concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159

(3) List of Wild Animals Under State Protection (promulgated by the National Forestry and Grassland Administration in 2021).

(4) IUCN (2023). The IUCN Red List of Threatened Species. Version 2022.02.

Abbreviation for Habitats: WL = Woodland; SL = Shrubland; GL = Grassland and DA = Developed Area
Code for Abundance: +++++ = Dominant; ++++ = Abundant; +++ = Frequent; ++ = Occasional; + = Scarce
Species of conservation importance is in **bold** type face

Odonate

Common Name	Scientific Name	Distribution in Hong Kong ⁽¹⁾	Level of Concern ⁽²⁾	Protection Status in China ⁽³⁾	IUCN Red List ⁽⁴⁾	WL	GL
Green Skimmer	<i>Orthetrum serapia</i>	Widely distributed in all wetland habitats throughout Hong Kong; Widespread	-	-	Least Concern		+
Red-faced Skimmer	<i>Orthetrum chrysis</i>	Widely distributed in pools and marshy areas adjacent to flowing streams throughout Hong Kong; Very Widespread	-	-	Least Concern	+	
Russet Percher	<i>Neurothemis fulvia</i>	Found in marshes, cultivated areas, streams, tanks and irrigation feeders, sometimes even found in nearly dried out marshy areas. Widely distributed throughout Hong Kong; Widespread	-	-	Least Concern	+	
Wandering Glider	<i>Pantala flavescens</i>	Widely distributed all over Hong Kong; Widespread	-	-	Least Concern	+	+

Notes:

(1) AFCD (2023). Hong Kong Biodiversity Information Hub.

(2) Fellowes et al. (2002). Wild Animals to Watch: Terrestrial and Freshwater Fauna of Conservation Concern in Hong Kong. Memoirs of the Hong Kong Natural History Society 25:123-159

(3) List of Wild Animals Under State Protection (promulgated by the National Forestry and Grassland Administration in 2021).

(4) IUCN (2023). The IUCN Red List of Threatened Species. Version 2022.02.

Abbreviation for Habitats: WL = Woodland; GL = Grassland
Code for Abundance: +++++ = Dominant; ++++ = Abundant; +++ = Frequent; ++ = Occasional; + = Scarce
Species of conservation importance is in **bold** type face

Amphibian

Common Name	Scientific Name	Distribution in Hong Kong ⁽¹⁾	Level of Concern ⁽²⁾	Protection Status in China ⁽³⁾	China Red Data Book ⁽⁴⁾	Red List of China's Vertebrates ⁽⁵⁾	IUCN Red List ⁽⁶⁾	PL	DA
Asian Common Toad	<i>Duttaphrynus melanostictus</i>	Widely distributed in Hong Kong	-	-	Least Concern	-	Least Concern	+	
Brown Tree Frog	<i>Polypedates megacephalus</i>	Widely distributed throughout Hong Kong	-	-	Least Concern	-	Least Concern		+
Greenhouse Frog	<i>Eleutherodactylus planirostris</i>	Widely distributed throughout Hong Kong	-	-	Least Concern	-	-		+

Notes:

(1) AFCD (2023). Hong Kong Biodiversity Information Hub.

(2) Fellowes, J.R., et al. (2002). Wild Animals to Watch: Terrestrial and Freshwater Fauna of Conservation Concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* 25:123-159.

(3) List of Wild Animals Under State Protection (promulgated by the National Forestry and Grassland Administration in 2021).

(4) Zhao and Wang (1998). China Red Data Book of Endangered Animals. Amphibia and Reptilia.

(5) Jiang et al. (2016). Red List of China's Vertebrates

(6) IUCN (2023). The IUCN Red List of Threatened Species. Version 2022.02.

Abbreviation for Habitats: PL = Plantation; and DA = Developed Area

Code for Abundance: +++++ = Dominant; ++++ = Abundant; +++ = Frequent; ++ = Occasional; + = Scarce

Species of conservation importance is in **bold** type face

Mammal

Common Name	Scientific Name	Distribution in Hong Kong ⁽²⁾	Level of Concern ⁽³⁾	Protection Status in China ⁽⁴⁾	China Red Data Book ⁽⁵⁾	Red List of China's Vertebrates ⁽⁶⁾	IUCN Red List ⁽⁷⁾	WL	PL	SL
Eurasian Wild Pig	<i>Sus scrofa</i>	Very widely distributed in countryside areas throughout Hong Kong	-	-	-	Least Concern	Least Concern	+		+
Intermediate Horseshoe Bat⁽¹⁾	<i>Rhinolophus affinis</i>	Widely distributed in countryside areas throughout Hong Kong	(LC)	-	-	Least Concern	Least Concern		+	
Red Muntjac	<i>Muntiacus muntjak</i>	Very widely distributed in countryside areas throughout Hong Kong	PRC	-	-	Near Threatened	Least Concern	+		+
Small Indian Civet	<i>Viverricula indica</i>	Very widely distributed in countryside areas throughout Hong Kong, except for Lantau Island	-	Class I	-	Vulnerable	Least Concern	+		

Notes:

(1) Protected under Wild Animals Protection Ordinance (Cap. 170).

(2) AFCD (2023). Hong Kong Biodiversity Information Hub.

(3) Fellowes, J.R., Lau, M.W.N., Dudgeon, D., Reels, G.T., Ades, G.W.J., Carey, G.J., Chan, B.P.L., Kendrick, R.C., Lee, K.S.,

LC=Local Concern; PRC=Potential Regional Concern. Letters in parentheses indicate that the assessment is on the basis of restrictedness in nesting and/or roosting sites rather than in general occurrence.

(4) List of Wild Animals Under State Protection (promulgated by the National Forestry and Grassland Administration in 2021).

(5) Wang, S. (1998). China Red Data Book of Endangered Animals. Mammalia. First Edition. Beijing: Science Press.

(6) Jiang, Z.G., et al. (2016). Red List of China's Vertebrates. *Biodiversity Science* 24(5): 500-551.

(7) IUCN (2023). The IUCN Red List of Threatened Species. Version 2022.02.

Abbreviation for Habitats: WL = Woodland; PL = Plantation; SL = Shrubland

Code for Abundance: +++++ = Dominant; ++++ = Abundant; +++ = Frequent; ++ = Occasional; + = Scarce

Species of conservation importance is in **bold** type face

Appendix 3.5

References of Ecological Baseline Conditions

Appendix 3.5 References of Ecological Baseline Conditions

- Agriculture, Fisheries and Conservation Department (AFCD) (2022). Hong Kong Biodiversity Database. Available at <https://www.afcd.gov.hk/english/conservation/hkbiodiversity/database/search.php>. Accessed in September 2023.
- Agriculture, Fisheries and Conservation Department (AFCD). (2023). Lam Tsuen Country Park. Available at https://www.afcd.gov.hk/english/country/cou_vis/cou_vis_cou/cou_vis_cou_lt/cou_vis_cou_lt.html. (Accessed in September 2023).
- Carey, G.J., Chalmers, M.L., Diskin, D.A., Kennerley, P.R., Leader, P.J., Leven, M.R., Lewthwaite, R.W., Melville, D.S., Turnbull, M. and Young, L. (2001). The Avifauna of Hong Kong. Hong Kong Bird Watching Society. Hong Kong.
- Civil Engineering and Development Department (CEDD) (2011). GEO Publication No. 1/2011, Technical Guidelines on Landscape Treatment for Slopes. Hong Kong.
- Civil Engineering and Development Department (CEDD) (2021). Project Administration Handbook for Civil Engineering Works, 2020 Edition. Civil Engineering and Development Department, Hong Kong Special Administrative Region.
- Chan, A., Cheung, J., Sze, P., Wong, A., Wong, E. and Yau, E. (2011). A Review of the Local Restrictedness of Hong Kong Butterflies. *Hong Kong Biodiversity Newsletter* **21**: 1-6. Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Region.
- Chan, S.K.F., Cheung, K.S., Ho, C.Y., Lam, F.N., Tang, W.S., Lau, M.W.N. and Bogadek, A. (2005). A Field Guide to the Amphibians of Hong Kong. Agriculture, Fisheries and Conservation Department, Friends of the Country Parks and Cosmos Books Ltd.
- Chan, S.K.F., Cheung, K.S., Ho, C.Y., Lam, F.N., Tang, W.S. and Tse, M.L. (2006). A Field Guide to the Venomous Land Snakes of Hong Kong. Agriculture, Fisheries and Conservation Department, Friends of the Country Parks and Cosmos Books Ltd.
- Chan, S.K.F., Chan, A.S.W., Cheung, K.S., Ho, C.Y., Ng, C.K.Y. and Tang, W.S. (2009). The Skinks of Hong Kong. *Hong Kong Biodiversity Newsletter* **17**.
- Corlett, R., Xing, W.F., Ng, C.S., Chau, K.C.L., and Wong, M.Y.L. (2000). Hong Kong Vascular Plants: Distribution and Status. *Memoirs of the Hong Kong Natural History Society* **23**: 1-157.
- Development Bureau (DEVB) (2010). Do's and Don'ts in Pruning.
- Development Bureau (DEVB) (2019a). Tree Management Practice Note No.3: Tree Pruning.
- Development Bureau (DEVB) (2019b). Tree Management Practice Note No.1: Tree Preservation during Construction.
- Development Bureau (DEVB) (2023). Guidelines on Tree Pruning
- Development Bureau (DEVB) (2020). Technical Circular (Works) No. 4/2020 – Tree Preservation.
- Dudgeon, D. (2003). Hong Kong Field Guides 2: Hillstreams. Hong Kong: The Department of Ecology & Biodiversity, The University of Hong Kong and Wan Li Book Co Ltd.
- Environmental Protection Department (EPD) (2023). Practice Note for Professional Persons on Construction Site Drainage (ProPECC PN 2/23).
- Fellowes, J.R., Lau, M.W., Dudgeon, D., Reels, G.T., Ades, G.W. and Carey, G.J. (2002). Wild Animals to Watch: Terrestrial and Freshwater Fauna of Conservation Concern in Hong Kong. *Memoirs of the Hong Kong Natural History Society* **25**: 123-159.

- Hong Kong Herbarium. (2012). Check List of Hong Kong Plants. Agriculture, Fisheries and Conservation Department, the Government of the Hong Kong Special Administrative Region.
- Hong Kong Herbarium and South China Botanical Garden (2007). Flora of Hong Kong. Volume 1. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.
- Hong Kong Herbarium and South China Botanical Garden (2008). Flora of Hong Kong. Volume 2. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.
- Hong Kong Herbarium and South China Botanical Garden (2009). Flora of Hong Kong. Volume 3. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.
- Hong Kong Herbarium and South China Botanical Garden (2011). Flora of Hong Kong. Volume 4. Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region.
- Hu, Q.M., Wu, T.L., Xia, N.H., Xing F.W., Lai, C.C.P. and Yip, K.W. (2003). Rare and Precious Plants of Hong Kong. Agriculture, Fisheries and Conservation Department, Hong Kong Special Administrative Government.
- International Union for Conservation of Nature (IUCN) (2023). IUCN Red List of Threatened Species. Version 2022.2 Available at <https://www.iucnredlist.org>. Accessed in July 2023.*
- Jiang, Z.G., et al. (2016). Red List of China's Vertebrates. *Biodiversity Science* 24(5): 500-551.
- Karsen, S.J., Lau, M.W.N. and Bogadek, A. (1998). Hong Kong Amphibians and Reptiles. Urban Council, Hong Kong.
- Lee, L.F., Lam, K.S., Ng, K.Y., Chan, K.T. and Young, L.C. (2004). Field Guide to the Freshwater Fish of Hong Kong. Hong Kong: Cosmos Books Ltd.
- Lo, Y.F. and Hui, W.L. (2010). Hong Kong Butterflies (Third Edition). Hong Kong: Cosmos Books Ltd.
- Reels, G.T. (2019). An Annotated Check List of Hong Kong Dragonflies and Assessment of Their Local Conservation Significance. Faunistic Studies in South-east Asian and Pacific Island Odonata. *Journal of the International Dragonfly Fund* 30:1-49.
- Shek, C.T. (2006). A Field Guide to the Terrestrial Mammals of Hong Kong. Agriculture, Fisheries and Conservation Department, Hong Kong.
- Tam, T.W., Leung, K.K., Kwan, B.S.P., Wu, K.K.Y., Tang, S.S.H., So, I.W.Y., Cheng, J.C.Y., Yuen, E.F.M., Tsang, Y.M., and Hui, W.L. (2011). The Dragonflies of Hong Kong. Agriculture, Fisheries and Conservation Department, Friends of Country Park and Cosmos Books Ltd. Hong Kong.
- Viney, C., Phillipps, K. and Lam, C.Y. (2006). The Birds of Hong Kong and South China. 8th edition. Information Services Department, Hong Kong.
- Wang, S. (1998). China Red Data Book of Endangered Animals. Mammalia. First Edition. Beijing: Science Press.
- Xing, F.-W., Ng, S.C. & Chau, L.K.-C. (2000). Gymnosperms and Angiosperms of Hong Kong. *Memoirs of the Hong Kong Natural History Society* 23:21-136.
- Yiu, V. (2020). Hong Kong Fireflies. Available at <http://fireflies.hk/>. (Accessed in September 2023).
- Young, J.J., Yiu, V., and Yau, S.M. (2007). A Photographic Monograph on Hong Kong Butterflies Volume 2. Hong Kong Lepidopterists' Society Limited, Hong Kong.
- Zheng, G.-M. & Wang, Q.-S. (1998). China Red Data Book of Endangered Animals: Aves. First Edition. Beijing: Science Press.



Appendix 3.6
Key Ecological Field Surveyors

Appendix 3.6

Key Ecological Field Surveyors

Faunal/floral group under study	Key Ecological Field Surveyor		
	Full Name	Brief description of relevant experience	No. of years of relevant experience
Flora and Fauna	Gigi Lam	Ecological Team Leader	>20 years
Flora	Shirley Mak	Flora identification in different ecological surveys, EIA, EcoIA and DIR	10
Flora	Kenny Leung	Flora identification in different ecological surveys, EIA, EcoIA and DIR	2
All Fauna Group	Alex Ng	Fauna identification in different ecological surveys, EIA, EcoIA and DIR	4

Survey data presented in Appendices 3.1 to 3.4 are:

	Name	Signature	Date
Prepared & Checked by:	Shirley Mak		18 Jan 2024
Reviewed by:	Gigi Lam		18 Jan 2024

Appendix 4.1
Detailed Calculation of Construction Noise Impact
(Base Case)

Appendix 4.1 Detailed Calculation of Construction Noise Impact (Base Case)

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
MF_N03	1632-NTS-DH04	111	25	-36.0	0	3	78.0
	1632-NTS-DH05	111	35	-38.9	0	3	75.1
	1632-NTS-DH06	111	71	-45.0	0	3	69.0
	1632-NTS-DH07(P)	111	165	-52.3	0	3	61.7
	1632-NTS-DH08	111	106	-48.5	0	3	65.5
	1632-NTS-DH09	111	386	-59.7	0	3	54.3
	1632-NTS-DH15	111	241	-55.6	0	3	58.4
	1632-NTS-DH16	111	203	-54.1	0	3	59.9
	1632-NTS-DH17	111	182	-53.2	0	3	60.8
	1632-NTS-DH18(P)	111	486	-61.7	0	3	52.3
Total Predicted Construction Noise Level, Leq (30mins), dB(A)							81
Daytime Noise Criteria, dB(A)							75
Compliance							No

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
MF_N04	1632-NTS-DH04	111	34	-38.6	0	3	75.4
	1632-NTS-DH05	111	37	-39.4	0	3	74.6
	1632-NTS-DH06	111	74	-45.4	0	3	68.6
	1632-NTS-DH07(P)	111	166	-52.4	0	3	61.6
	1632-NTS-DH08	111	105	-48.4	0	3	65.6
	1632-NTS-DH09	111	386	-59.7	0	3	54.3
	1632-NTS-DH15	111	240	-55.6	0	3	58.4
	1632-NTS-DH16	111	203	-54.1	0	3	59.9
	1632-NTS-DH17	111	180	-53.1	0	3	60.9
	1632-NTS-DH18(P)	111	484	-61.7	0	3	52.3
Total Predicted Construction Noise Level, Leq (30mins), dB(A)							79
Daytime Noise Criteria, dB(A)							75
Compliance							No

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
MF_N05	1632-NTS-DH04	111	86	-46.7	0	3	67.3
	1632-NTS-DH05	111	87	-46.8	0	3	67.2
	1632-NTS-DH06	111	118	-49.4	0	3	64.6
	1632-NTS-DH07(P)	111	203	-54.1	0	3	59.9
	1632-NTS-DH08	111	142	-51.0	0	3	63.0
	1632-NTS-DH09	111	413	-60.3	0	3	53.7
	1632-NTS-DH15	111	270	-56.6	0	3	57.4
	1632-NTS-DH16	111	236	-55.5	0	3	58.5
	1632-NTS-DH17	111	210	-54.4	0	3	59.6
	1632-NTS-DH18(P)	111	508	-62.1	0	3	51.9
Total Predicted Construction Noise Level, Leq (30mins), dB(A)							73
Daytime Noise Criteria, dB(A)							75
Compliance							Yes

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
NTM_N01	1632-NTS-DH11	111	234	-55.4	0	3	58.6
	1632-NTS-DH27	111	230	-55.2	0	3	58.8
	1632-NTS-DH28(P)	111	204	-54.2	0	3	59.8
	1632-NTS-DH38	111	142	-51.0	0	3	63.0
	1632-NTS-DH39	111	118	-49.4	0	3	64.6
	1632-NTS-DH40(P)	111	76	-45.6	0	3	68.4
	1632-NTS-DH42	111	149	-51.5	0	3	62.5
	1632-NTS-DH43	111	147	-51.3	0	3	62.7
	1632-NTS-IDH46 and 1632-NTS-IDH47	111	179	-53.1	0	3	60.9
	1632-NTS-IDH48 and 1632-NTS-IDH49	111	246	-55.8	0	3	58.2
Total Predicted Construction Noise Level, Leq (30mins), dB(A)							73
Daytime Noise Criteria, dB(A)							75
Compliance							Yes

Note:

(1) The major source of construction noise impact will be the operation of powered mechanical equipment (PMEs) for carrying out GI works including lifting of drill rig by either helicopter or manual handling, and drilling works at DHs. A drill rig, a water pump (petrol), a water pump (electric) and a generator (portable) would be used at each working area/platform for GI works. According to the "Technical Memorandum on Noise from Construction Work Other Than Percussive Piling" and "Sound power levels of other commonly used PME" published by EPD, the Sound Power Level (SWL) of a drill rig, rotary type (diesel), a water pump (petrol), a water pump (electric) and a generator (portable) is 110 dB(A), 103 dB(A), 88 dB(A) and 100 dB(A), respectively. The total SWL of items of PME to be used at each working area/platform is estimated to be 111 dB(A).

Appendix 4.2
Detailed Calculation of Construction Noise Impact
(Mitigated Scenario)

Appendix 4.2 Detailed Calculation of Construction Noise Impact (Mitigated Scenario)

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Noise Mitigation Measure	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
MF_N03	1632-NTS-DH04	111	25	-36.0	Noise Barrier	-10	3	68.0
	1632-NTS-DH05	111	35	-38.9	Noise Barrier	-10	3	65.1
	1632-NTS-DH06	111	71	-45.0	-	0	3	69.0
	1632-NTS-DH07(P)	111	165	-52.3	-	0	3	61.7
	1632-NTS-DH08	111	106	-48.5	-	0	3	65.5
	1632-NTS-DH09	111	386	-59.7	-	0	3	54.3
	1632-NTS-DH15	111	241	-55.6	-	0	3	58.4
	1632-NTS-DH16	111	203	-54.1	-	0	3	59.9
	1632-NTS-DH17	111	182	-53.2	-	0	3	60.8
	1632-NTS-DH18(P)	111	486	-61.7	-	0	3	52.3
Total Predicted Construction Noise Level, Leq (30mins), dB(A)								74
Daytime Noise Criteria, dB(A)								75
Compliance								Yes

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Noise Mitigation Measure	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
MF_N04	1632-NTS-DH04	111	34	-38.6	Noise Barrier	-10	3	65.4
	1632-NTS-DH05	111	37	-39.4	Noise Barrier	-10	3	64.6
	1632-NTS-DH06	111	74	-45.4	-	0	3	68.6
	1632-NTS-DH07(P)	111	166	-52.4	-	0	3	61.6
	1632-NTS-DH08	111	105	-48.4	-	0	3	65.6
	1632-NTS-DH09	111	386	-59.7	-	0	3	54.3
	1632-NTS-DH15	111	240	-55.6	-	0	3	58.4
	1632-NTS-DH16	111	203	-54.1	-	0	3	59.9
	1632-NTS-DH17	111	180	-53.1	-	0	3	60.9
	1632-NTS-DH18(P)	111	484	-61.7	-	0	3	52.3
Total Predicted Construction Noise Level, Leq (30mins), dB(A)								73
Daytime Noise Criteria, dB(A)								75
Compliance								Yes

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Noise Mitigation Measure	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
MF_N05	1632-NTS-DH04	111	86	-46.7	-	0	3	67.3
	1632-NTS-DH05	111	87	-46.8	-	0	3	67.2
	1632-NTS-DH06	111	118	-49.4	-	0	3	64.6
	1632-NTS-DH07(P)	111	203	-54.1	-	0	3	59.9
	1632-NTS-DH08	111	142	-51.0	-	0	3	63.0
	1632-NTS-DH09	111	413	-60.3	-	0	3	53.7
	1632-NTS-DH15	111	270	-56.6	-	0	3	57.4
	1632-NTS-DH16	111	236	-55.5	-	0	3	58.5
	1632-NTS-DH17	111	210	-54.4	-	0	3	59.6
	1632-NTS-DH18(P)	111	508	-62.1	-	0	3	51.9
Total Predicted Construction Noise Level, Leq (30mins), dB(A)								73
Daytime Noise Criteria, dB(A)								75
Compliance								Yes

NSR ID	Drillhole No.	Sound Power Level(1), dB(A)	Horizontal Distance, m	Distance Correction, dB(A)	Noise Mitigation Measure	Barrier Correction, dB(A)	Façade Correction, dB(A)	Predicted Construction Noise Level, Leq (30mins), dB(A)
NTM_N01	1632-NTS-DH11	111	234	-55.4	-	0	3	58.6
	1632-NTS-DH27	111	230	-55.2	-	0	3	58.8
	1632-NTS-DH28(P)	111	204	-54.2	-	0	3	59.8
	1632-NTS-DH38	111	142	-51.0	-	0	3	63.0
	1632-NTS-DH39	111	118	-49.4	-	0	3	64.6
	1632-NTS-DH40(P)	111	76	-45.6	-	0	3	68.4
	1632-NTS-DH42	111	149	-51.5	-	0	3	62.5
	1632-NTS-DH43	111	147	-51.3	-	0	3	62.7
	1632-NTS-IDH46 and 1632-NTS-IDH47	111	179	-53.1	-	0	3	60.9
	1632-NTS-IDH48 and 1632-NTS-IDH49	111	246	-55.8	-	0	3	58.2
Total Predicted Construction Noise Level, Leq (30mins), dB(A)								73
Daytime Noise Criteria, dB(A)								75
Compliance								Yes

Note:

(1) The major source of construction noise impact will be the operation of powered mechanical equipment (PMEs) for carrying out GI works including lifting of drill rig by either helicopter or manual handling, and drilling works at DHs. A drill rig, a water pump (petrol), a water pump (electric) and a generator (portable) would be used at each working area/platform for GI works. According to the "Technical Memorandum on Noise from Construction Work Other Than Percussive Piling" and "Sound power levels of other commonly used PME" published by EPD, the Sound Power Level (SWL) of a drill rig, rotary type (diesel), a water pump (petrol), a water pump (electric) and a generator (portable) is 110 dB(A), 103 dB(A), 88 dB(A) and 100 dB(A), respectively. The total SWL of items of PME to be used at each working area/platform is estimated to be 111 dB(A).