

Appendix G

Landscape Assessment

1.1 Introduction

- 1.1.1 This Appendix identifies and assesses the potential landscape impacts arising from the Project. Preliminary landscape mitigation measures are proposed to alleviate any potential impacts.

1.2 Environmental Legislation, Standards and Guidelines

- 1.2.1 Legislation and standards that are relevant to the consideration of preliminary landscape impacts under this assessment include the following:
- Application for Permission Under Section 16 of the Town Planning Ordinance (Cap. 131) Guidance Notes;
 - Chapters 4, 10 and 11 of Hong Kong Planning Standards and Guidelines;
 - DEVB TC(W) No. 4/2020 – Tree Preservation;
 - DEVB TC(W) No. 5/2020 – Registration and Preservation of Old and Valuable Trees;
 - ETWB TC(W) No. 5/2005 – Protection of Natural Streams/Rivers from Adverse Impacts Arising from Construction Works;
 - GEO Publication No. 1/2011 – Technical Guidelines on Landscape Treatment for Slopes;
 - Tree Management Practice Note No. 1 – Tree Preservation during Construction; and
 - Study on Landscape Value Mapping of Hong Kong.

1.3 Assessment Methodology and Area

- 1.3.1 Identification of the baseline landscape resources (LRs) and landscape character areas (LCAs) within the assessment area was carried out by a desktop study of topographical maps, information databases, and aerial photographs, as well as undertaking site visits.
- 1.3.2 The assessment area for the preliminary landscape assessment is proposed as 500m from the Project Boundary. The assessment area is shown in **60733229/LIA/Figure 1**.
- 1.3.3 The methodology for the preliminary landscape assessment during the construction and operation phases includes:
- Broad identification of the baseline LR and LCAs that would be potentially affected by the Project;
 - Broad assessment of the degree of sensitivity of the LR and LCAs identified;
 - Broad identification of selected sources of landscape impacts;
 - Broad identification of the magnitude of landscape impacts;
 - Broad recommendation of selected landscape mitigation measures; and
 - Broad prediction of the significance of residual landscape impacts with mitigation measures.
- 1.3.4 The sensitivity of each LR and LCA is classified as follows:
- High: Important landscape or landscape resource of particularly distinctive character or high importance, sensitive to relatively small changes;

- Medium: Landscape or landscape resource of moderately valued landscape characteristics reasonably tolerant to change; and
- Low: Landscape or landscape resource, the nature of which is largely tolerant to change.

1.3.5 The magnitude of change on LR and LCA is classified as follows:

- Substantial: The landscape or landscape resource would have a major change;
- Moderate: The landscape or landscape resources would have a moderate change.
- Slight: The landscape or landscape resources would have slight or barely perceptible changes; and
- Negligible: The landscape or landscape resource would have no discernible change.

1.3.6 The significant thresholds of landscape impacts are categorized as follows:

- Substantial: Adverse/ beneficial impact where the proposal would cause significant deterioration or improvement in existing landscape quality;
- Moderate: Adverse/ beneficial impact where the proposal would cause a noticeable deterioration or improvement in existing landscape quality;
- Slight: Adverse/ beneficial impact where the proposal would cause a barely perceptible deterioration or improvement in existing landscape quality; and
- Negligible: No discernible change in the existing landscape quality.

1.3.7 The following **Table 1** shows the rationale in assessing the potential significance of landscape impacts.

Table 1 – Relationship between Landscape Sensitivity and Impact Magnitude in Defining Impact Significance

		Sensitivity of LRs / LCAs		
		Low	Medium	High
Magnitude of Change	Substantial	Moderate	Moderate / Substantial	Substantial
	Moderate	Slight / Moderate	Moderate	Moderate / Substantial
	Slight	Slight	Slight / Moderate	Moderate
	Negligible	Negligible	Negligible	Negligible

1.4 Review of Planning Control Framework

- 1.4.1 A review of the existing and planned development framework for the proposed works and for the surroundings was considered. It aims to gain an insight into the outlook of the area affected, identify potential resources and sensitive receivers, and evaluate the compatibility between the Project and the existing and planned land use setting.
- 1.4.2 The Project Site is covered by the Approved Tsing Yi OZP No. S/TY/32 (**60733229/LIA/Figure 2** refers). The land use zones to be potentially affected by the Project and the future outlook of the area are discussed in **Table 2**.

Table 2 – Summary of the Review of Planning and Development Control Framework

OZP Plan Title and No.	Land Use Zoning	Approx. Area within 500m Assessment Area (ha)	Approx. Area Affected (ha) (Approximate % of Zoning Affected)
Approved Tsing Yi OZP No. S/TY/32	Green Belt (“GB”)	104.7	30.7 (29%)
	Area shown as “Road”	26.6	1.4 (5%)
	Other Specified Uses (“OU”) annotated “Recreation and Tourism Related Uses” (“OU(RTRU)”)	10.9	6.9 (63%)
	Other Specified Uses (“OU”) annotated “Boatyard and Marine-oriented Industrial Uses” (“OU(BMIU)”)	10.2	0.2 (2%)
	Industrial (“I”)	7.5	0 (0%)
	Residential (Group A)	3.3	0 (0%)
	Other Specified Uses (“OU”) annotated Viewing Platform	1.9	0 (0%)
	Government, Institution or Community (“G/IC”)	1.5	0 (0%)
	Other Specified Uses (“OU”) annotated Cement Plant	0.9	0 (0%)
	Green Belt (“GB”)	0.2	0 (0%)

- 1.4.3 The proposed portal structures and potential site formation area will fall within “Green Belt”, “Other Specified Uses” (“OU”) annotated “Recreation and Tourism Related Uses” (“OU(RTRU)”) and “OU” annotated “Boatyard and Marine-oriented Industrial Uses” (“OU(BMIU)”) on the approved Tsing Yi Outline Zoning Plan.
- 1.4.4 In general, the majority of the affected areas within the Approved Tsing Yi OZP No. S/TY/32 includes the area within the OU Zone and GB Zone. A small portion of the area within the OU Zone will be taken up for the construction of the portals, while a small portion of the area within the GB Zone will potentially be changed due to the site formation works for the portal and conveyor belt system. Since the proposed underground quarry is administered and managed by CEDD and such development is considered as Government Use, trees will be compensated, where feasible.

1.5 Baseline Findings

Existing Trees

- 1.5.1 Approx. 16,700 m² of existing hillside vegetation, including green belt, will be inevitably affected by the portal construction and associated development. There are approximately 1,230 nos. of existing trees surveyed and approximately 765 nos. of trees proposed to be

removed within the proposed works area as shown in **60733229/LIA/Figure 3**. None of these are Registered Old and Valuable Trees on the records of Greening, Landscape and Tree Management Section of DEVB. No mature tree was found on the site, i.e. trees with individual trunk(s) over 750mm diameter at breast height. Tree species to be removed included *Acacia confusa*, *Acacia mangium*, *Adina pilulifera*, *Celtis sinensis*, *Cinnamomum burmannii*, *Corymbia citriodora*, *Cratoxylum cochinchinense*, *Eucalyptus exserta*, *Ilex rotunda*, *Liquidambar formosana*, and *Schefflera heptaphylla*, etc.

1.5.2 Transplanting should be considered as far as possible unless the trees affected are of low conservation and amenity value, or have a low chance of surviving or recovering to their normal form after transplanting. Among the trees to be affected by the proposed works, trees are selected for transplanting as far as practicable to reduce the impact on existing trees. However, since most of the affected individual trees are located either on natural terrain or engineered slopes, their survival rate after transplanting is low and not feasible for transplanting. Therefore, tree felling is proposed with compensatory planting. The tree treatment proposal should be submitted under a separate Tree Preservation and Removal Proposal in accordance with DEVB TC(W) No. 4/2020.

1.5.3 The compensatory planting strategy of the proposal is as follows:

- Compensatory planting for trees to be removed due to non-slope works will be of a ratio not less than 1:1 in terms of number, as far as practicable. The size of the proposed compensatory tree is appropriate to the location and function;
- For slope works, the ratio of 1:1 by number requirement may not apply due to site constraints; and the planting of shrubs, climber mix and woodland shrub mix could potentially be more appropriate;
- Apart from the above compensatory planting requirements, quality greenery will be considered, such as themed planting, enhancing the landscape amenity value and maximizing greening opportunity, etc.

Landscape Resources (LRs)

1.5.4 The preliminary findings of baseline LR, which will be potentially affected by the Project, together with their sensitivity, are discussed in **Table 3**. The locations of these baseline LR are mapped in **60733229/LIA/Figure 1**.

Table 3 – Baseline LR and their Sensitivity

LRs	Description	Sensitivity
LR1	<u>Hillside vegetation along Tsing Yi North Coastal Road</u> Hillside vegetation along the Tsing Yi North Coastal Road is the key LR and is a common LR. The quality of this LR is high and the ability to accommodate change is low. Therefore, the sensitivity of this LR is considered as high.	High
LR2	<u>Rambler Channel Sea Waterbody</u> The sea waterbody comprises Rambler Channel and Ma Wan Channel, which is a valuable LR contributing to the unique waterfront setting of the Ting Kau area. In view of the physical characteristics of the channels, the sensitivity of this LR is high.	High
LR3	<u>Coastal Landscape along Wok Tai Wan and Cheung Shue Tau</u> Natural rocky shore, trees and scattered shrubland along the coastal area of Wok Tai Wan and Cheung Shue Tau are the dominant LR and is a common LR. The quality of this LR is medium. The ability to accommodate changes and the sensitivity of this LR are considered as medium.	Medium

Landscape Character Areas (LCAs)

- 1.5.5 The preliminary findings of baseline LCAs, which will be potentially affected by the Project, together with their sensitivity, are discussed in **Table 4**. The locations of these baseline LCAs are mapped in **60733229/LIA/Figure 1**.

Table 4 – Baseline LCAs and their Sensitivity

LCAs	Description	Sensitivity
LCA1	<u>Strait Landscape</u> This LCA is an inshore coastal water enclosed by significant landforms of north Tsing Yi and Ting Kau, creating a distinct sense of enclosure on the two sides. It is characterized by the surrounding landforms and the muted hues and horizontality of their coastal waters comprised of passing vessels, shipping traffic, and waterborne recreational activity. The quality of this LCA is high, with low ability to accommodate change and the sensitivity of this LCA is considered as medium.	Medium
LCA2	<u>Transportation Corridor Landscape</u> This LCA comprises the major highway corridor in the North West Tsing Yi Interchange, the Ting Kau Bridge and the Lantau Link Visitors Centre. Major features include bridges, flyovers, signage gantries, interchange, and associated roadside buffer planting areas. This type of LCA is common in Hong Kong. It has high ability to accommodate change. The sensitivity is therefore considered as low.	Low
LCA3	<u>Industrial Urban Landscape</u> This is found on the low-lying areas of the reclaimed land along the coast of north Tsing Yi. It mainly comprises the cement plants and shipyards within the assessment area and the adjoining vacant lands on the peripheries. The quality of this LCA is low, with high ability to accommodate change, and the sensitivity of this LCA is considered as low.	Low
LCA4	<u>Upland and Hillside Landscape</u> Woodland is a significant landscape element of this LCA and is of good quality with low ability to accommodate change. The sensitivity of this LCA is high.	High

1.6 Preliminary Landscape Impact Assessment

Sources of Landscape Impact

- 1.6.1 The sources of landscape impact due to the Project would create various levels of landscape impact during the construction and operation phases of the Project. Potential impacts would result from the temporary and permanent works during the construction phase and non-permanent aboveground structure elements during the operation phase.
- 1.6.2 The sources of landscape impact in the construction phase for Ngau Kok Wan Portal, Tam Kon Shan Portal and Wok Tai Wan Works Area would include:
- Site formation works;
 - Slope cutting and stabilisation works;
 - Installation and establishment for ancillary operations and conveyor belt system;
 - Road modification works; and

- Loss of existing trees and other vegetation due to construction works.

1.6.3 The sources of landscape impact in the operation phase for Ngau Kok Wan Portal, Tam Kon Shan Portal and Wok Tai Wan Works Area would include:

- Operation of the quarry and the ancillary activities; and
- Decommissioning of ancillary activities and conveyor belt system.

Existing Trees

1.6.4 Among the approx. 765 trees to be removed, including approx. 40 undesirable species, tree felling within the Ngau Kok Wan Portals and Tam Kon Shan Portal, accounting for 330 nos. of trees, is unavoidable as they are located at the portal locations. Subject to the detailed design by the Contractor, the rest of the trees within the Ngau Kok Wan Surface Land and Wok Tai Wan Works Area could be omitted if the Contractor eventually considers that expansions are not required to facilitate its ancillary operation. A detailed breakdown of the total number of trees is presented in **Table 5**.

Table 5 – Summary of Trees proposed to be removed by the proposed works area

Works Area	Approx. No. of trees to be removed	Remarks
Ngau Kok Wan Portals	399	-
Tam Kon Shan Portal	165	-
Ngau Kok Wan Surface Land	145	It is optional for the Contractor. It may be omitted if the Contractor decides not to expand the surface land at Ngau Kok Wan
Wok Tai Wan Works Area	56	It is optional for the Contractor. It may be omitted if the Contractor decides not to construct the Conveyor Belt System
Total	765	

Landscape Resources (LRs)

1.6.5 The magnitude of unmitigated impacts on LR's associated with the construction phase and operation phase of the Project was assessed and described in **Table 6**:

Table 6 – Magnitude of Changes on Landscape Resources during Construction and Operation

LR	Landscape Resources	Potential Source and Description of Change	Magnitude of Change (Substantial/ Moderate/ Slight/ Negligible)	
			Construction	Operation
LR1	Hillside vegetation along Tsing Yi North Coastal Road	Approx. 2,200 sqm. of existing hillside vegetation, including green belt with around 165 nos. of existing non-mature trees, will be inevitably affected by the portal construction and associated development.	Slight	Slight
LR2	Rambler Channel Sea Waterbody	No construction or development will be carried out in this LR.	Negligible	Negligible
LR3	Coastal Landscape along Wok Tai Wan and Cheung Shue Tau	Approx. 14,500 sqm. of existing natural rocky landscape including green belt with around 600 nos. of non-mature existing trees will be affected by the portal construction and associated structures.	Moderate	Moderate

Landscape Character Areas (LCAs)

- 1.6.6 The magnitude of unmitigated impacts on LCAs associated with the construction phase and operation phase of the Project was assessed and described in **Table 7**:

Table 7 – Magnitude of Changes on Landscape Character Areas during Construction and Operation

LCA	Landscape Character Area	Potential Source and Description of Changes	Magnitude of Change (Substantial/ Moderate/ Slight/ Negligible)	
			Construction	Operation
LCA1	Strait Landscape	No construction or development will be carried out in this LCA.	Negligible	Negligible

LCA	Landscape Character Area	Potential Source and Description of Changes	Magnitude of Change (Substantial/ Moderate/ Slight/ Negligible)	
			Construction	Operation
LCA2	Transportation Corridor Landscape	Approx. 14,500 sqm. of existing natural rocky landscape with around 600 nos. of existing trees and approx. 2,200 sqm. of hillside vegetation with around 165 nos. of existing trees will be affected by the portal development and associated structures. However, the changes on this LCA due to the Project are relatively small in scale and localized. Therefore, the magnitude of change during both construction and operation phases is considered as slight.	Slight	Slight
LCA3	Industrial Urban Landscape	No construction or development is carried out in this LCA.	Negligible	Negligible
LCA4	Upland and Hillside Landscape	No aboveground construction or development will be carried out in this LCA.	Negligible	Negligible

1.7 Preliminary Landscape Mitigation Measures

Compensatory Planting

- 1.7.1 Compensatory planting will be provided as far as practicable to mitigate the loss of existing trees arising from the development.
- 1.7.2 The availability of land for compensatory planting within the Project Site is highly constrained. The Site is predominantly surrounded by steep natural terrain and man-made slopes with very limited flat ground. The few areas of surface land are located at Ngau Kok Wan Surface Land, Tam Kon Shan Portal, and Wok Tai Wan Surface Land.
- 1.7.3 The Ngau Kok Wan Surface Land and Wok Tai Wan Works Area will be primarily used to support ancillary operations during the quarrying works. As the underground spaces to be formed by this project are intended to serve as a future Government land bank for potential after-use facilities (yet to be determined), the surface land outside the portal is expected to be required to support such future uses. Given the current uncertainty over future land allocation or occupation by other stakeholders, compensatory planting at Ngau Kok Wan Surface Land and Wok Tai Wan Works Area is not recommended, with consideration of the potential abortive work and proper use of public funds.
- 1.7.4 The surface land at the Tam Kon Shan Portal is very limited. A haul road will traverse the natural slope during construction for portal formation works. During the operation phase, the portal will function as a major access point from Tsing Yi North Coastal Road to the underground quarry, accommodating intensive vehicular movement and essential utilities supporting quarry operations. The small surface land at the Tam Kon Shan Portal will remain as the major access point to the cavern space for after-use facilities. Due to the restricted area and operational demands, compensatory planting on this surface land is not

recommended.

- 1.7.5 Planting trees on these limited flat surface areas at this stage may necessitate their removal in the future to accommodate planned developments. This would result in redundant works and unnecessary expenditure, as resources would need to be repeatedly allocated for planting, maintenance, and eventual clearance. Such inefficiencies would diminish the intended environmental benefits and impose avoidable indirect costs on the Government. Instead, off-site tree compensation is recommended. It is agreed that off-site tree compensation of not less than 75 nos. of trees will be carried out at Ma Wan, in the area designated by Tsing Ma Control Area (TMCA) of HyD.
- 1.7.6 Currently, on-site compensatory planting will also be implemented on the Ngau Kok Wan Portals and Tam Kon Shan Portal for compensation, reinstatement, and ecological enhancement. As the portal slopes exceed 30 degrees in gradient, tree planting is not recommended in accordance with GEO Publication No. 1/2011. A woodland compensatory planting mix suitable for sloping terrain will be adopted, with consideration of feasibility and biodiversity.
- 1.7.7 Following the principles of “right tree for the right place”, a schematic, realistic, practicable and sustainable on-site compensatory planting with a holistic consideration to balance the quantity and quality of planting is proposed and presented in **60733229/LIA/Figure 4** and **60733229/LIA/Figure 5**.
- 1.7.8 Summary of on-site compensatory planting schedule is shown in **Table 8**. Species selection follows the guidance in GEO Publication No. 1/2011. Each species will be planted in groups of 15–30, randomly distributed across designated woodland planting areas in a staggered pattern. This proposed schematic planting schedule is subject to the detailed design based on actual site conditions and the approval of works departments.

Table 8 – Schematic Compensatory Planting Schedule at Ngau Kok Wan and Tam Kon Shan Portals

Code	Botanical Name	Chinese Name	Size(mm): Height(H) x Spread (S)	Spacing (mm)	No./m ²	% mix	Approx. Quantity
Shrubs and Climber Mix							
A	<i>Lonicera japonica</i>	忍冬	300(H) x 300(S)	2000	0.29	20	113
B	<i>Rhaphiolepis indica</i>	車輪梅	400 (H) x 400 (S)	2000	0.29	20	113
C	<i>Melastoma candidum</i>	野牡丹	450(H) x 450(S)	2000	0.29	20	113
D	<i>Malastoma sanguineum</i>	毛荳	300(H) x 450(S)	2000	0.29	20	114
E	<i>Rhodomyrtus tomentosa</i>	桃金娘	300(H) x 400(S)	2000	0.29	20	114
Woodland Mix							
F	<i>Bridelia tomentosa</i>	土蜜樹	700 (H) x 500 (S)	1000	1.67	25	60
G	<i>Polyspora axillaris</i>	大頭茶	700 (H) x 500 (S)	1000	1.67	25	60
H	<i>Melicope pteleifolia</i>	蜜茱萸	700 (H) x 500 (S)	1000	1.67	25	60
I	<i>Phyllanthus emblica</i>	餘甘子	700 (H) x 500 (S)	1000	1.67	25	60

- 1.7.9 Summary of off-site compensatory tree planting schedule is shown in **Table 9**. The tree species selection follows the recommendations from HyD (TMCA) with operational considerations, (i.e. trees with a mature height and spread of less than 8m). This proposed schematic planting schedule is subject to the detailed design based on actual site conditions and the approval of works departments.

Table 9 – Schematic Compensatory Planting Schedule at Ma Wan within TMCA

Code	Species Name	Chinese Name	DBH (mm)	Height (m)	Crown Spread (m)	Approx. Spacing (m)	Approx. Quantity
GAR.SUB.	<i>Garcinia subelliptica</i>	菲島福木	45	3	1.5	4-5	37
POL.AXL.	<i>Polyspora axillaris</i>	大頭茶	45	3	1.5	4-5	38

- 1.7.10 Based on the schematic landscape design, Ngau Kok Wan Portals include approximately 45-degree cut slopes where grass hydroseeding with pit planting of shrubs in woodland mix planting will be applied. At the Tam Kon Shan Portal, with cut slopes of approximately 65 degrees, woodland mix planting will be implemented in toewall and berm planters beneath the shotcreted slopes. In such conditions, shrub and climber mixes offer better adaptability, contribute to slope greening, and enhance biodiversity. All planting will be selected to minimize maintenance requirements. Watering will be required during establishment and regular horticultural operations such as weeding, fertilizing and pruning.
- 1.7.11 Planting will be of several different types but generally native species will be selected in order to blend with the surrounding existing vegetation and enhance the surrounding landscape and ecological value in the long term. Exotic species will be selected for specific tasks where native species are unsuitable. The selection of plant species shall be in accordance with the Greening Master Plan (GMP) promulgated by CEDD, the Street Tree Selection Guide (STSG) and the Guiding Principles on Use of Native Plant Species in Public Works Projects issued by DEVB.

Hard Landscape Design

- 1.7.12 The hard landscape design process shall adopt a balanced approach considering the factors, including sustainability, aesthetic effect, compatibility with the environment, cost-effectiveness, maintenance consideration, etc.
- 1.7.13 Proposed Hard Landscape Works shall be selected using the following guidelines:
- Durable – utilizing long-lasting or permanent materials and finishes;
 - Low maintenance – easy to clean and repair;
 - Reasonable cost – reasonable cost range providing the greatest value for expense;
 - Visual compatibility with existing developments and blend with existing development; and
 - Recyclable and environmentally friendly materials – utilizing recyclable and environmentally friendly materials where possible.
- 1.7.14 A clean and contemporary hard landscape strategy shall apply to make sure the design matches the landscape theme and, at the same time, blends in with the architecture. Solid materials such as recycled aggregate pavers will be the main paving materials. Materiality is based on stone and rockworks such as stone cladding and landscape features made of stone.
- 1.7.15 The following hard landscape materials are proposed:
- Sensitive and aesthetically pleasing design of aboveground structures with regard to the form, material and finishes shall be incorporated to the proposed portals and entrance area in order to blend the structures with the adjacent landscape context. The colour code of any painting used shall be “Antique” to BS 5252F:1976 Colour Code 10B25.
 - Screen hoarding should be erected around the construction site during the construction to reduce the visual impact caused by the construction work. Greening measures, such

as colour variations or graphic patterns of the hoarding, should be adopted to improve the visual appearance.

Soft Landscape Design

- 1.7.16 The soft landscape design process shall adopt a balanced approach considering the factors, including sustainability, aesthetic effect, compatibility with the environment, cost-effectiveness, maintenance consideration, etc.
- 1.7.17 Proposed Soft Landscape Works shall be selected using the following guidelines:
- Adaptive – able to relatively quickly provide the desired landscape design;
 - Intent as appropriate to the area;
 - Wind tolerance – able to withstand windy conditions at exposed areas;
 - Seasonal interest – providing a seasonal variety of flowers, fruit, or foliage colour;
 - Native species – use of native species to achieve ecological functions;
 - Low maintenance and self-sustainability – easy to grow without special treatments or maintenance operations; and
 - Non-toxic – relatively safe and non-poisonous materials and/or biodegradable; Poisonous plants should not be planted in areas accessible to the public.
- 1.7.18 Selection of species for the site shall echo the species at the adjacent area/ district. Planting materials shall be hardy, vigorous, and require low maintenance. Planter beds should preferably be continuous with an optimum internal width for the intended plantings.
- 1.7.19 The overall planting design will embrace native species and enhance ecological value and biodiversity, to enhance streetscape visual interest, and to provide a harmonious transition with the adjacent existing landscape.

Summary

- 1.7.20 Based on the potential landscape impacts identified, a series of mitigation measures during construction and operation phases is recommended to mitigate any adverse impacts and is summarized in the **Table 10** and **Table 11** below and illustrated in **60733229/LIA/Figure 6**.

Table 10 – Preliminary Landscape and Visual Mitigation Measures for Construction Phase

ID No.	Preliminary Landscape and Visual Mitigation Measures	Implementation Agency
CM1	<u>Tree Preservation</u> All existing trees to be retained should be carefully protected during the works. Tree protection works should be in accordance with DEVB TC(W) No. 4/2020 – <i>Tree Preservation and Tree Management Practice Note No. 1 – Tree Preservation during Construction</i>.	CEDD (Quarry Operator)

ID No.	Preliminary Landscape and Visual Mitigation Measures	Implementation Agency
CM2	<u>Erection of Decorative Screen Hoarding</u> Screen hoarding should be erected around the construction site during the construction / operation to reduce the visual impact caused by the works. Greening measures, such as colour variations or graphic patterns of the hoarding, should be adopted to improve the visual appearance.	CEDD (Quarry Operator)
CM3	<u>Management of Construction Activities and Facilities</u> Construction activities and temporary site facilities shall be properly managed to minimize landscape and visual impacts. All works areas, plant, machinery, storage areas and temporary structures shall be confined within designated site boundaries and arranged in an orderly manner. Temporary facilities shall adopt subdued, non-reflective colours to reduce visual intrusion. Good site housekeeping practices shall be implemented, including regular removal of waste materials, proper covering of stockpiles, and avoidance of unnecessary disturbance to retained vegetation.	CEDD (Quarry Operator)
CM4	<u>Reinstatement of the affected landscaped area</u> Upon completion of the construction works, all temporarily affected landscape areas shall be reinstated to conditions comparable to or better than the original state. Affected vegetations shall be replanted with similar or suitable native species where practicable. An establishment period shall be provided to ensure proper plant establishment and replacement of any failed planting.	CEDD (Quarry Operator)

Table 11 – Preliminary Landscape and Visual Mitigation Measures for Operation Phase

ID No.	Preliminary Landscape and Visual Mitigation Measures	Implementation Agency
OM1	<u>Sensitive and Aesthetically Pleasing Design</u> Sensitive and aesthetically pleasing design should be incorporated in the proposed development to help blend the structures with the adjacent landscape and visual context.	CEDD (Quarry Operator)

ID No.	Preliminary Landscape and Visual Mitigation Measures	Implementation Agency
OM2	<u>Compensatory Planting</u> Preservation for compensation of vegetation. Whip trees, woodland shrubs and/or climber mix at a spacing from around 500mm to 2,500mm will be compensated. The compensatory planting will follow the guidelines of DEVB TC(W) No. 4/2020 on tree preservation. The proposed planting species should be with reference to the <i>Guiding Principles on Use of Native Plant Species in Public Works Projects</i> issued by DEVB, where possible.	CEDD (Quarry Operator)
OM3	<u>Buffer Screen Planting</u> Buffer screen planting shall be provided along the boundaries and in areas facing sensitive receivers to reduce visual impacts arising from the proposed development. The buffer planting shall be of sufficient density and height at maturity to provide long-term screening and visual integration with the adjacent environment.	CEDD (Quarry Operator)
OM4	<u>Landscape Treatments on Slope or Retaining Structure</u> Landscape treatment shall be applied to exposed slopes and retaining structures to minimise visual impact and integrate them with the surrounding landscape. Measures may include hydroseeding, shrub planting, and climber planting.	CEDD (Quarry Operator)
CM1	<u>Tree Preservation</u> All existing trees to be retained should be carefully protected during construction. Tree protection works should be in accordance with DEVB TC(W) No. 4/2020 – <i>Tree Preservation</i> and <i>Tree Management Practice Note No. 1 – Tree Preservation during Construction</i>.	CEDD (Quarry Operator)
CM2	<u>Erection of Decorative Screen Hoarding</u> Screen hoarding should be erected around the construction site during the construction / operation to reduce the visual impact caused by the works. Greening measures, such as colour variations or graphic patterns of the hoarding, should be adopted to improve the visual appearance.	CEDD (Quarry Operator)

1.7.21 The mitigation measures for the construction phase listed above should be implemented as early as possible in order to minimize the landscape impacts in the construction phase. The mitigation measures for the operation phase listed above should be adopted during the detailed design and be built as part of the construction works at the last phase of the construction period so that they are in place at the date of commissioning of the quarry operation. Certain construction-phase mitigation measures (e.g. CM1 and CM2) remain applicable during the operation phase and are therefore also included in **Table 10** for completeness.

1.8 Preliminary Evaluation of Residual Impacts

Landscape Impact

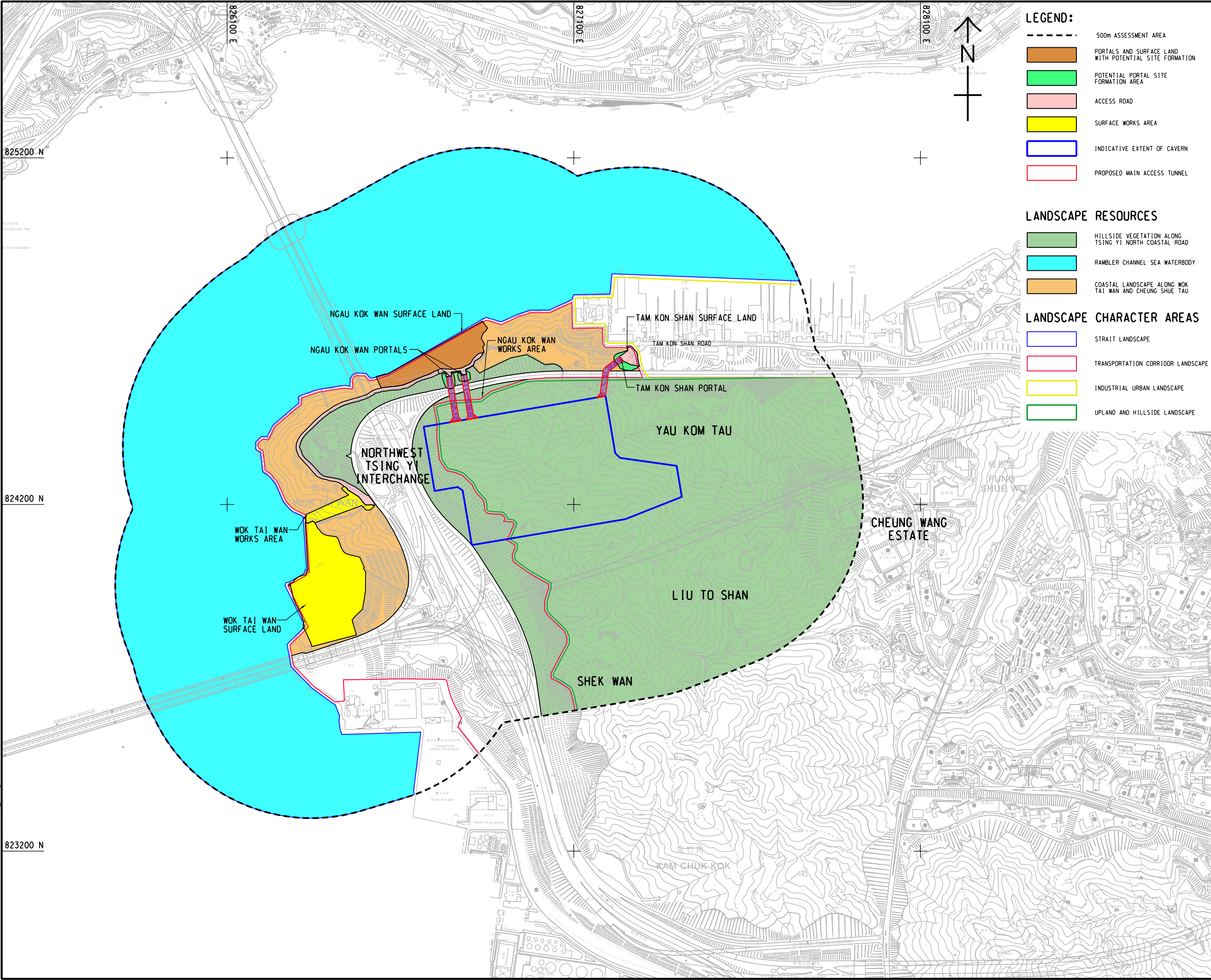
- 1.8.1 The potential significance of the impacts on LRs and LCAs during the construction and operation phases, before and after mitigation, is provided in **Table 12**. The assessment followed the proposed methodology and assumed that the appropriate mitigation measures identified in **Table 10** and **Table 11** would be implemented, and the full effect of the soft landscape mitigation measures would be realized after ten years.
- 1.8.2 Under the proposed construction for ancillary operations and associated site formation work, the Project will have a predicted impact on the hillside vegetation (LR1) and scattered shrubland along the coastal area of LR3. Approximately 2,200 sqm. of hillside vegetation with around 165 nos. of existing trees along Tsing Yi North Coastal Road (LR1) and approximately 14,500 sqm. of coastal landscape with around 600 nos. of existing trees along Wok Tai Wan and Cheung Shue Tau (LR3) will be affected by the proposed works. The change is considered localized and the magnitude of change for LR1 and LR3 is considered as slight and moderate, respectively. The sensitivity of LR1 is high, and the resultant unmitigated landscape impact is moderate, while the sensitivity of LR3 is medium and the resultant unmitigated landscape impact is moderate. With the implementation of proposed mitigation measures, including tree compensation by woodland planting mix, the residual impact for both LR1 and LR3 will be reduced from moderate to slight for the proposed scenario and will further be reduced to negligible when the compensatory planting on the soil cut slopes and berm planter becomes mature in year 10 of operation.
- 1.8.3 There would be localized impact on the transportation corridor landscape (LCA2). There is approximately 14,500 sqm. of existing natural rocky landscape with around 600 nos. of existing trees and approximately 2,200 sqm. of hillside vegetation with around 165 nos. of existing trees will be affected by the portal development and associated site formation works in LCA2. The magnitude of change is considered as slight. The sensitivity of LCA2 is low. The resultant unmitigated landscape impact is considered as slight. With the implementation of proposed mitigation measures, it is anticipated that there would be slight residual impact for the proposed scenario and will be further reduced to negligible when the proposed planting becomes mature in year 10 of operation.
- 1.8.4 Considering there would be no construction works and associated developments / aboveground works in the waterbody of Rambler Channel Sea Waterbody (LR2), Strait Landscape (LCA1), Industrial Urban Landscape (LCA3) and Upland and Hillside Landscape (LCA4), it is predicted that there would be no impact to these LR and LCAs. The sensitivity of these LR and LCAs is low to high. The resultant magnitude of change is considered as negligible.

Table 12 – Significance of Landscape Impacts during Construction and Operation Phases

ID No.	Landscape Resource / Character Areas	Sensitivity (Low/ Medium/ High)		Magnitude of Change (Negligible/ Slight/ Moderate/ Substantial)		Impact Significance BEFORE Mitigation (Negligible/ Slight/ Moderate/ Substantial)		Recommended Mitigation Measures	Significance of Residual Impact AFTER Mitigation (Negligible/ Slight/ Moderate/ Substantial)	
		Construction	Operation	Construction	Operation	Construction	Operation		Construction	Operation
Landscape Resources										
LR1	Natural Hillside vegetation	High	High	Slight	Slight	Moderate	Moderate	CM1 & CM3 & CM4 & OM2 & OM3 & OM4	Moderate	Negligible
LR2	Rambler Channel Sea Waterbody	High	High	Negligible	Negligible	Negligible	Negligible	-	Negligible	Negligible
LR3	Coastal Landscape along Wok Tai Wan and Cheung Shue Tau	Medium	Medium	Moderate	Moderate	Moderate	Moderate	CM1 & CM2 & CM3 & CM4 & OM1 & OM2 & OM3 & OM4	Moderate	Negligible
Landscape Character Areas										
LCA1	Strait Landscape	Medium	Medium	Negligible	Negligible	Negligible	Negligible	-	Negligible	Negligible
LCA2	Transportation Corridor Landscape	Low	Low	Slight	Slight	Slight	Slight	CM1 & CM2 & CM3 & CM4 & OM1 & OM2 & OM3 & OM4	Slight	Negligible
LCA3	Industrial Urban Landscape	Low	Low	Negligible	Negligible	Negligible	Negligible	-	Negligible	Negligible
LCA4	Upland and Hillside Landscape	High	High	Negligible	Negligible	Negligible	Negligible	-	Negligible	Negligible

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比例

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尺寸單位

KEY PLAN
索引圖

PROJECT NO.
項目編號

AGREEMENT NO.
協議編號

60733229CE 79/2023 (GE)

SHEET TITLE
圖紙名稱

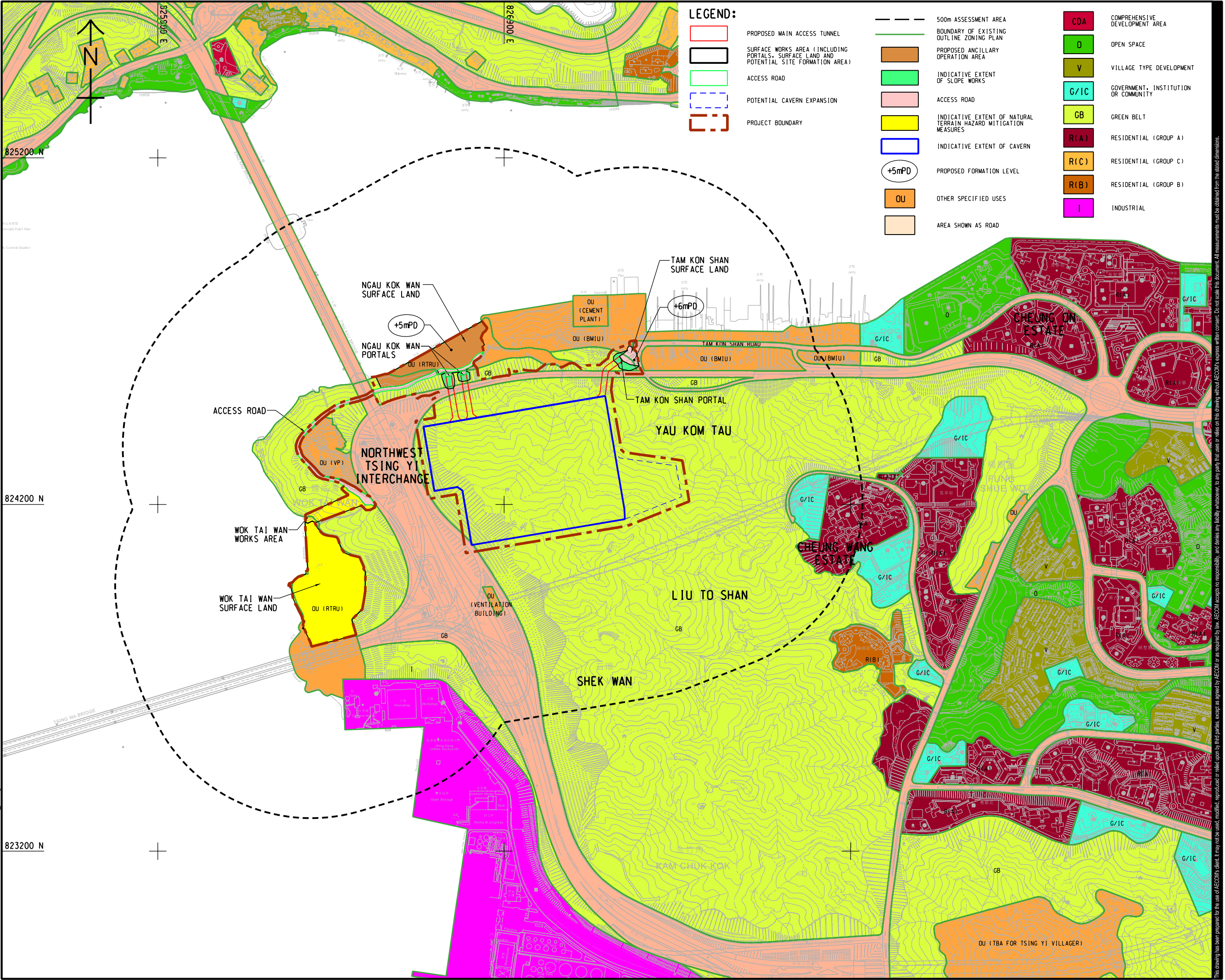
LANDSCAPE RESOURCES & LANDSCAPE CHARACTER AREAS

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60733229/LIA/FIGURE 1

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LEGEND:

- PROPOSED MAIN ACCESS TUNNEL
- SURFACE WORKS AREA (INCLUDING PORTALS, SURFACE LAND AND POTENTIAL SITE FORMATION AREA)
- ACCESS ROAD
- POTENTIAL CAVERN EXPANSION
- PROJECT BOUNDARY
- 500m ASSESSMENT AREA
- BOUNDARY OF EXISTING OUTLINE ZONING PLAN
- PROPOSED ANCILLARY OPERATION AREA
- INDICATIVE EXTENT OF SLOPE WORKS
- ACCESS ROAD
- INDICATIVE EXTENT OF NATURAL TERRAIN HAZARD MITIGATION MEASURES
- INDICATIVE EXTENT OF CAVERN
- PROPOSED FORMATION LEVEL
- OTHER SPECIFIED USES
- AREA SHOWN AS ROAD

- CDA COMPREHENSIVE DEVELOPMENT AREA
- O OPEN SPACE
- V VILLAGE TYPE DEVELOPMENT
- G/IC GOVERNMENT, INSTITUTION OR COMMUNITY
- GB GREEN BELT
- R(A) RESIDENTIAL (GROUP A)
- R(C) RESIDENTIAL (GROUP C)
- R(B) RESIDENTIAL (GROUP B)
- I INDUSTRIAL



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KEY PLAN

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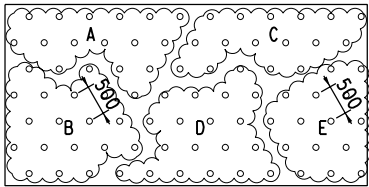
EXISTING OUTLINE ZONING PLAN

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60733229/LIA/FIGURE 2

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INDICATIVE LAYOUT OF PLANTING MATRIX FOR SHRUB AND CLIMBER MIX PLANTING N.T.S.

NOTES:

1. PLANT EACH SPECIES IN GROUPS OF 15 TO 30 IN RANDOM. PLANT ALL SPECIES IN STAGGER PATTERN.
2. SEE PLANTING SCHEDULE.

LEGEND:

- SHRUB AND CLIMBER

PLANTING SCHEDULE:

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm) HEIGHT(H) x SPREAD(S)	SPACING (mm)	NO./m ²	% MIX.
SHRUBS AND CLIMBER MIX						
A	<i>LONICERA JAPONICA</i>	忍冬	300(H) x 300(S)	2000	0.29	20
B	<i>RHAPHIDOLEPIS INDICA</i>	車輪梅	400(H) x 400(S)	2000	0.29	20
C	<i>MELASTOMA CANDIDUM</i>	野牡丹	450(H) x 450(S)	2000	0.29	20
D	<i>MELASTOMA SANGUINEUM</i>	毛茛	300(H) x 450(S)	2000	0.29	20
E	<i>RHODOMYRTUS TOMENTOSA</i>	桃金娘	300(H) x 400(S)	2000	0.29	20

REMARKS:

1. SPECIES SELECTION WITH REFERENCE TO GEO PUBLICATION NO.1/2011.
2. PLANT EACH SPECIES IN GROUPS OF 15 TO 30 AT RANDOM THROUGH OUT DESIGNATED FOR SHRUBS AND CLIMBER MIX PLANTING.
3. PLANT ALL SPECIES IN A STAGGERED PATTERN.

NOTES:

1. THE PROPOSED SITE FORMATION, INCLUDING CUT SLOPE DESIGN, IS INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN BY THE CONTRACTOR BASED ON THE ACTUAL GROUND CONDITIONS.
2. THE ASSOCIATED LANDSCAPE DESIGN AT SLOPES IS SUBJECT TO REFINEMENT BASED ON THE FINAL SITE FORMATION DESIGN.
3. THE PROPOSED PLANTING SCHEDULE IS SUBJECT TO THE DETAILED DESIGN AND THE APPROVAL OF WORKS DEPARTMENTS.

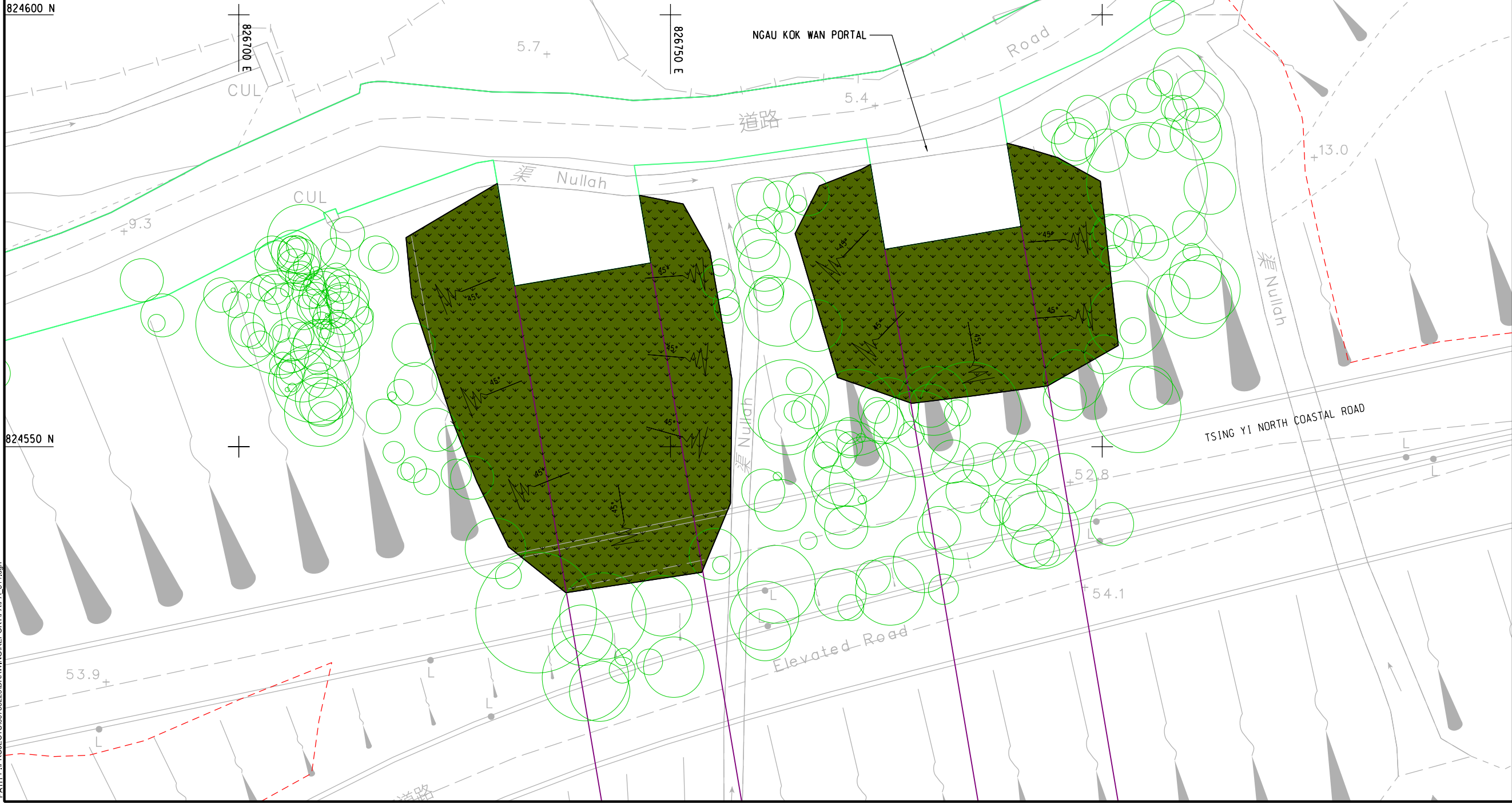
LEGEND:

- INDICATIVE SITE FORMATION AREA FOR PORTALS
- MAIN ACCESS TUNNEL (UNDERGROUND)
- SOIL CUT SLOPE WITH SOIL NAILS
- TREE TO BE RETAINED
- GRASS HYDROSEEDING AND PIT PLANTING WITH NON-BIODEGRADABLE EROSION CONTROL MAT AND WIRE MESH
- PROJECT BOUNDARY
- PROPOSED FORMATION LEVEL

PARTICULAR NOTES FOR LANDSCAPE WORKS

1. SCHEDULE OF HYDROSEEDING SEED MIX.:

GRASS (APRIL TO AUGUST)	-
<i>BERMUDA (CYNODON DACTYLON)</i> / 狗牙根	13-15g/m ²
<i>BAHIA (PASPALUM NOTATUM)</i> / 百喜草	8-10g/m ²
<i>RHODES (CHLORIS GAYANA)</i> / 非洲虎尾草	1-4g/m ²
	25g/m ² (MIN.)
GRASS (SEPTEMBER TO MARCH)	-
<i>BERMUDA (CYNODON DACTYLON)</i> / 狗牙根	15g/m ²
<i>BAHIA (PASPALUM NOTATUM)</i> / 百喜草	10g/m ²
<i>RYE (LOLIUM PERENNE)</i> / 黑麦草	5g/m ²
	30g/m ² (MIN.)



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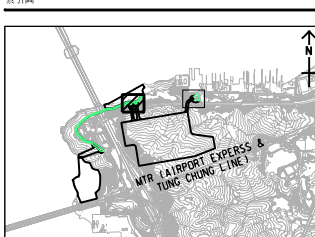
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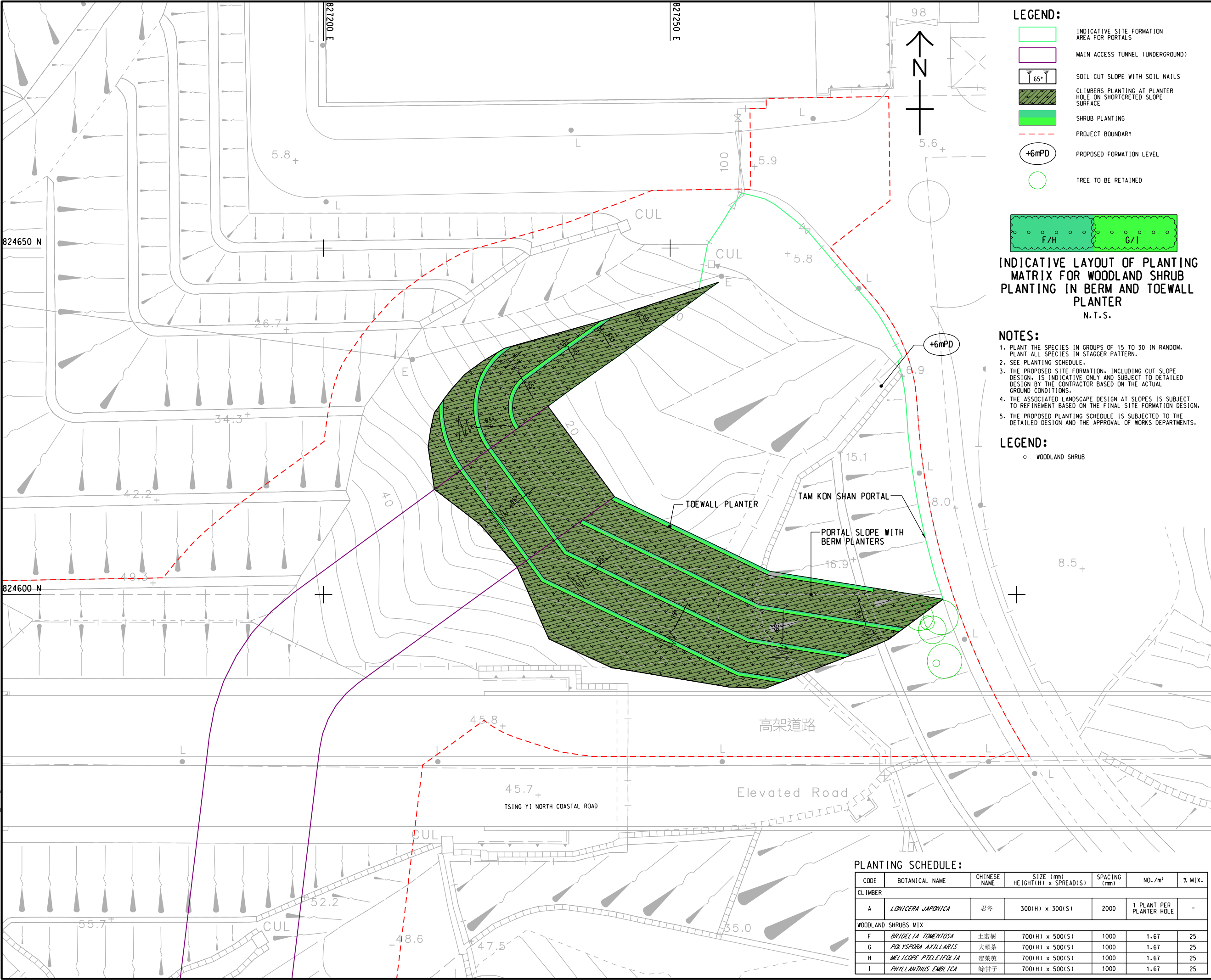
SCHEMATIC LANDSCAPE PLAN

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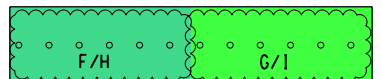
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(SHEET 1 OF 2)

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- LEGEND:**
- INDICATIVE SITE FORMATION AREA FOR PORTALS
 - MAIN ACCESS TUNNEL (UNDERGROUND)
 - SOIL CUT SLOPE WITH SOIL NAILS
 - CLIMBERS PLANTING AT PLANTER HOLE ON SHORTCRETED SLOPE SURFACE
 - SHRUB PLANTING
 - PROJECT BOUNDARY
 - PROPOSED FORMATION LEVEL
 - TREE TO BE RETAINED



INDICATIVE LAYOUT OF PLANTING MATRIX FOR WOODLAND SHRUB PLANTING IN BERM AND TOEWALL PLANTER
N.T.S.

- NOTES:**
- PLANT THE SPECIES IN GROUPS OF 15 TO 30 IN RANDOM. PLANT ALL SPECIES IN STAGGER PATTERN.
 - SEE PLANTING SCHEDULE.
 - THE PROPOSED SITE FORMATION, INCLUDING CUT SLOPE DESIGN, IS INDICATIVE ONLY AND SUBJECT TO DETAILED DESIGN BY THE CONTRACTOR BASED ON THE ACTUAL GROUND CONDITIONS.
 - THE ASSOCIATED LANDSCAPE DESIGN AT SLOPES IS SUBJECT TO REFINEMENT BASED ON THE FINAL SITE FORMATION DESIGN.
 - THE PROPOSED PLANTING SCHEDULE IS SUBJECT TO THE DETAILED DESIGN AND THE APPROVAL OF WORKS DEPARTMENTS.

- LEGEND:**
- WOODLAND SHRUB

PLANTING SCHEDULE:

CODE	BOTANICAL NAME	CHINESE NAME	SIZE (mm) HEIGHT(H) x SPREAD(S)	SPACING (mm)	NO./m²	% MIX.
CLIMBER						
A	LONICERA JAPONICA	忍冬	300(H) x 300(S)	2000	1 PLANT PER PLANTER HOLE	-
WOODLAND SHRUBS MIX						
F	BRIDELIA TOMENTOSA	土蜜樹	700(H) x 500(S)	1000	1.67	25
G	POLYSPORA AXILLARIS	大頭茶	700(H) x 500(S)	1000	1.67	25
H	MELICHOPE PTELEIFOLIA	蜜葉莢	700(H) x 500(S)	1000	1.67	25
I	PHYLLANTHUS EMBLICA	餘甘子	700(H) x 500(S)	1000	1.67	25

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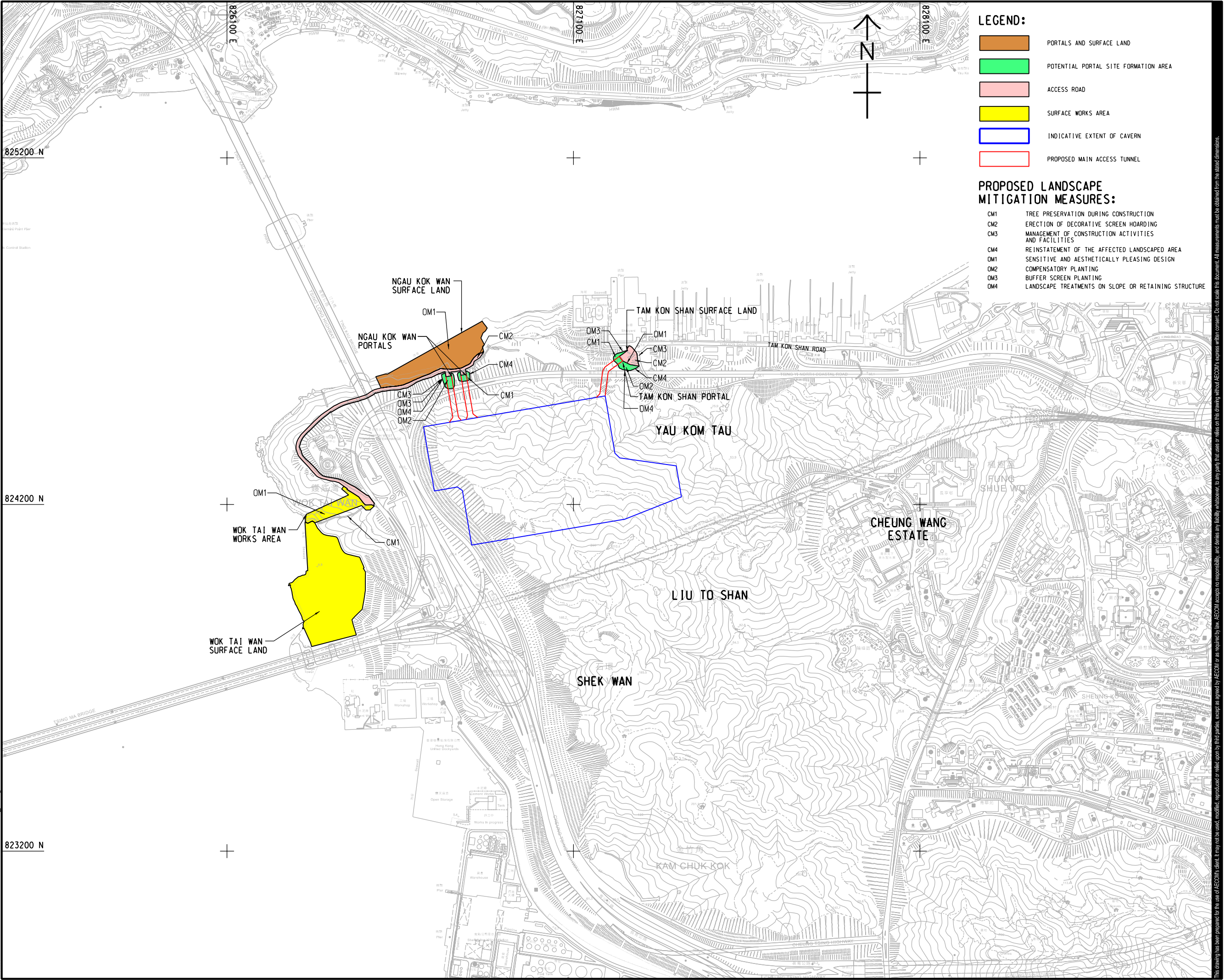
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60733229/LIA/FIGURE 5

(SHEET 2 OF 2)

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- LEGEND:
- PORTALS AND SURFACE LAND
 - POTENTIAL PORTAL SITE FORMATION AREA
 - ACCESS ROAD
 - SURFACE WORKS AREA
 - INDICATIVE EXTENT OF CAVERN
 - PROPOSED MAIN ACCESS TUNNEL

- PROPOSED LANDSCAPE MITIGATION MEASURES:
- CM1 TREE PRESERVATION DURING CONSTRUCTION
 - CM2 ERECTION OF DECORATIVE SCREEN HOARDING
 - CM3 MANAGEMENT OF CONSTRUCTION ACTIVITIES AND FACILITIES
 - CM4 REINSTATEMENT OF THE AFFECTED LANDSCAPED AREA
 - DM1 SENSITIVE AND AESTHETICALLY PLEASING DESIGN
 - DM2 COMPENSATORY PLANTING
 - DM3 BUFFER SCREEN PLANTING
 - DM4 LANDSCAPE TREATMENTS ON SLOPE OR RETAINING STRUCTURE

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PROPOSED LANDSCAPE MITIGATION MEASURES

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60733229/LIA/FIGURE 6