

Your Ref :

Our Ref : (CV/2013/03)/M45/100/B00495 **M45/600/B00495****By Hand**

16 October 2013

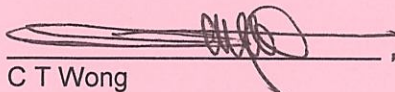
Environmental Impact Assessment Ordinance Register Office  
Environmental Protection Department  
27/F, Southorn Centre,  
130 Hennessy Road,  
Wanchai, Hong Kong**Attn.: Mr. Charles Pang**

Dear Sir,

**Agreement No. CE38/2010(CE)  
Liantang / Heung Yuen Wai Boundary Control Point and Associated Works  
(Site Formation and Infrastructures) – Design and Construction****Submission of Topsoil Management Plan (Rev.01) (EP No. EP- 404/2011)**

With reference to Condition 2.12 of the Environmental Permit (EP) No. EP- 404/2011. On behalf of the Permit Holder, Civil Engineering and Development Department (CEDD), I would like to submit 3 hard copies of the Topsoil Management Plan (Rev.01) for the Project titled "Liantang / Heung Yuen Wai Boundary Control Point and Associated Works", which had been certified by the ET Leader and verified by the IEC, for your approval.

Should you have any queries, please contact the undersigned at 2674 2273.

Yours faithfully,  
For and on behalf of  
AECOM Asia Co. Ltd.  
C T Wong  
Chief Resident Engineer

Encl.

|               |                           |                                 |
|---------------|---------------------------|---------------------------------|
| c.c. CEDD/BCP | - Attn: - Mr. Eric Chan   | (Fax No. 2714 0103) } w/e       |
| SMEC(IEC)     | - Attn: - Mr. Antony Wong | (Fax No. 3995 8101) } w/o encl. |
| AUES(ET)      | - Attn: - Mr. T. W. Tam   | (Fax No. 2959 6079) } w/o encl. |
| AECOM         | - Attn: - Mr. Pat Lam     | } w/o encl.                     |

CT/PX/tc  
**FAXED**  
DATE 17 OCT 2013

Our Ref: TCS00670/13/300/L0075

**AECOM**  
**8/f Grand Central Plaza, Tower 2**  
**138 Shatin Rural Committee Road**  
**Shatin, Hong Kong**

**Attn: Mr. Kelvin Lee**  
**Engineer's Representative**

**9 October 2013**  
**By E-mail and By Post**  
**Fax: 3922 9797**

Dear Mr. Kelvin Lee,

**Re: Contract CV/2013/03 Liantang/ Heung Yuen Wai Boundary Control Point Site  
Formation and Infrastructure Works – Contract 5  
Certification of Topsoil Management Plan (Rev.01) under EP-404/2011 Condition  
2.12**

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We herewith certify the captioned *Topsoil Management Plan (Rev.01)* submission in accordance with the requirements stipulated in *Condition 2.12* of the *Environmental Permit No. EP-404/2011*.

Should you have any question or require further information, please feel free to contact the undersigned at Tel: 2959-6059 or Fax: 2959-6079 or E-mail: [twtam@fordbusiness.com](mailto:twtam@fordbusiness.com).

Yours sincerely,  
For and on Behalf of  
**Action-United Environmental Services & Consulting**



T. W. Tam  
Environmental Team Leader

10 October 2013

Our ref: 7076192/L14567/R/AB/AW/wb/rw  
Your ref:

AECOM  
8/F, Grand Central Plaza, Tower 2  
138 Shatin Rural Committee Road  
Shatin  
N.T.

**By Email & By Post**

Attention: Mr Kelvin LEE

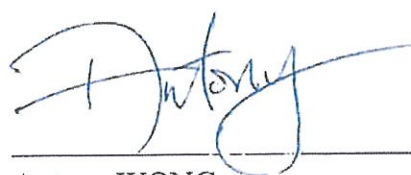
Dear Sirs

**Agreement No. CE 42/2012 (EP)**  
**Liantang/Heung Yuen Wai Boundary Control Point and Associated Works**  
**Independent Environmental Checker – Investigation**  
**Topsoil Management Plan (Rev.01)**

With reference to the Topsoil Management Plan and the ET Leader's certification (ET's ref.: TCS00670/13/300/L0075) received on 9 October 2013, please be noted that we have no adverse comments on the captioned submission. We herewith verify the Topsoil Management Plan in accordance with Condition 2.12 of Environmental Permit No. EP-404/2011.

Thank you for your attention and please do not hesitate to contact the undersigned on tel. 3995 8120 or by email to antony.wong@smec.com; or our Ms Winnie MA on tel. 3995 8138 or by email to winnie.ma@smec.com.

Yours faithfully  
For and on behalf of  
SMEC Asia Limited



Antony WONG  
Independent Environmental Checker

|    |          |                               |                   |
|----|----------|-------------------------------|-------------------|
| cc | CEDD/BCP | - Mr Pui Sang LI/Mr Eric CHAN | by fax: 2714 0103 |
|    | AECOM    | - Mr Pat LAM                  | by email          |
|    | SRJV     | - Mr Edwin AU                 | by email          |
|    | AUES     | - Mr TW TAM                   | by email          |

**Submission of Topsoil Management Plan (EP No.EP-404/2011)**

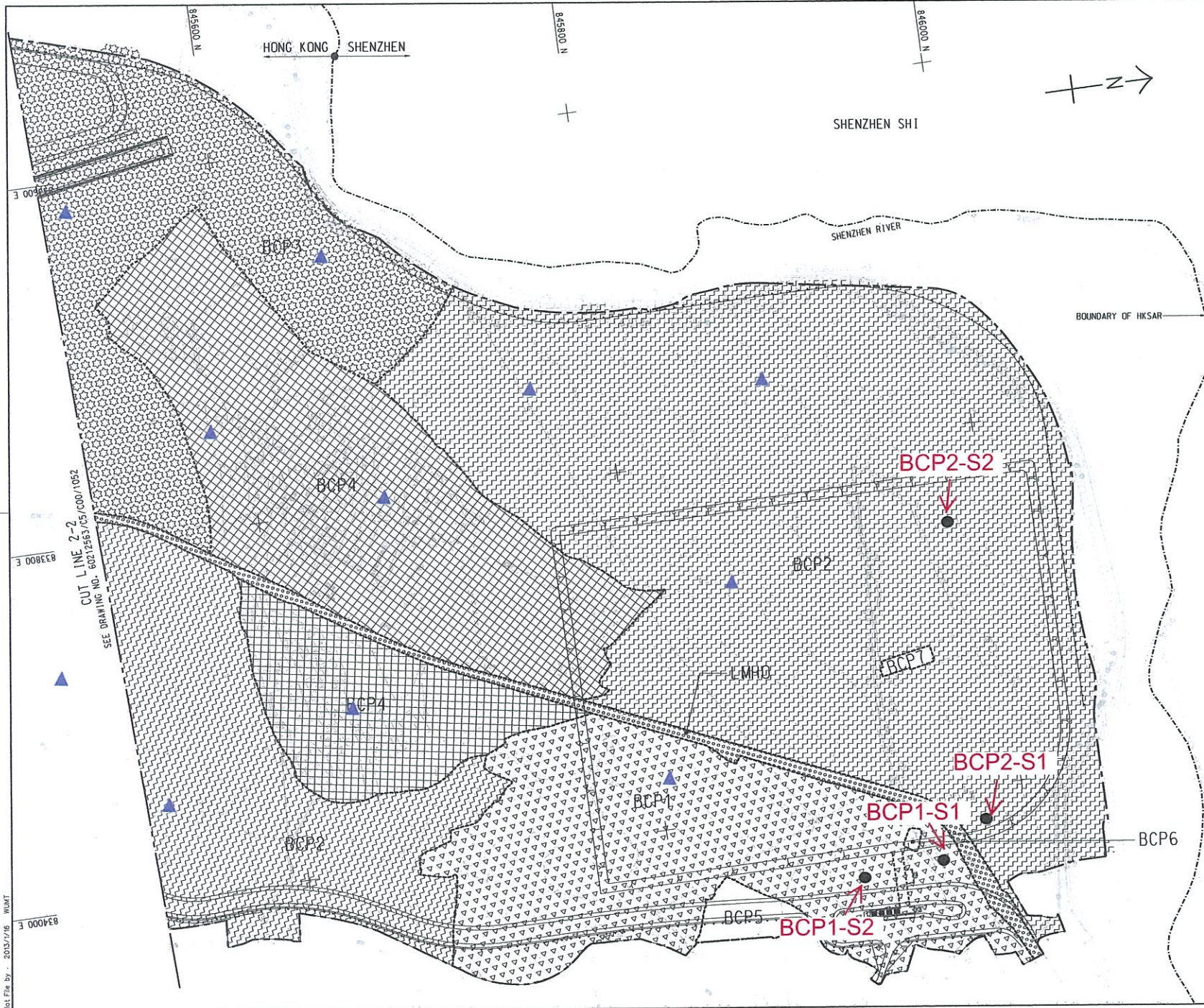
**Responses to EPD's Comments (Received on 20/6/2013)**

Ref.: (10) in EP2/N7/A/52 Ax(1) Pr.9

| Item | Ref.       | Comments  | Responses  |
|------|------------|---|--|
| (a)  | Para 2.2.1 | Please ensure that no weed seed and toxic material would be contained in the topsoil for reuse.   | Noted and the Topsoil Management Plan is revised accordingly.  |
| (b)  | Para 2.2.2 | Further to the topsoil survey addressed in the paragraph, the approximate quantity (eg. volume) and locations of topsoil identified for the reuse should be provided. Please also provide the detailed methodology for identifying topsoil from different habitat to be reused. | <p>Initial soil samples have been collected and tested. The test results of organic matter content showed that the soil samples can be classified as "Not Topsoil" according to the definition in the Topsoil Management Plan (section 2.2.1). The test records are attached herewith for information. Please refer to the Topsoil Sampling Location Plan.</p> <p>Further soil sampling and testing will be carried out at different habitat locations, as shown in the Topsoil Sampling Location Plan. The test records would be submitted when ready.</p> <p>In case topsoil is identified on site confirmed by testing, the estimated volume of topsoil would be submitted accordingly.</p> |
| (c)  | Para 2.2.5 | The detailed method statement for re-spreading works to the designated planting areas should be provided.   | Noted, the detailed method statement would be submitted after topsoil identification and based on the estimated volume.  |
| (d)  | -          | The landscape plans indicating the approximate landscape areas to accommodate the topsoil to be reused should be provided.  | Noted, the landscape plans would be updated to indicate the approximate landscape areas to accommodate the topsoil to be reused. Please refer to the Landscape Plan submitted separately.  |
| (e)  | -          | The balance sheet and the implementation programme for maximizing the reuse of the excavated topsoil arising from the Project should be provided.   | The balance sheet and the implementation programme will be submitted after the volume of topsoil is estimated.   |

### Summary of Lab Test Results of Soil Samples (Organic Matter & pH)

| Parameters             | Unit | Topsoil Criteria | LMH2-S1 | LMH-S2 | BCP1-S1 | BCP1-S2 | BCP2-S1 | BCP2-S2 |
|------------------------|------|------------------|---------|--------|---------|---------|---------|---------|
| Organic Matter Content | %    | > 7.5%           | 3.5     | 1.7    | 0.6     | 1.2     | 0.6     | 0.5     |
| pH                     | -    | 5.5~7.0          | 6.4     | 7.4    | 5.9     | 6.4     | 5.9     | 4.6     |



**NOTE:**  
 1. FOR NOTES AND LEGEND REFER TO DRAWING NO. 60212563/C5/C00/1051.

- Collected and tested sample
- ▲ To be collected and tested sample

|     |                 |                 |
|-----|-----------------|-----------------|
| A   | WORKING DRAWING | DATE: 13 APR-13 |
| -   | TENDER DRAWING  | DATE: 13 JAN-13 |
| REV | REVISION        | DATE            |

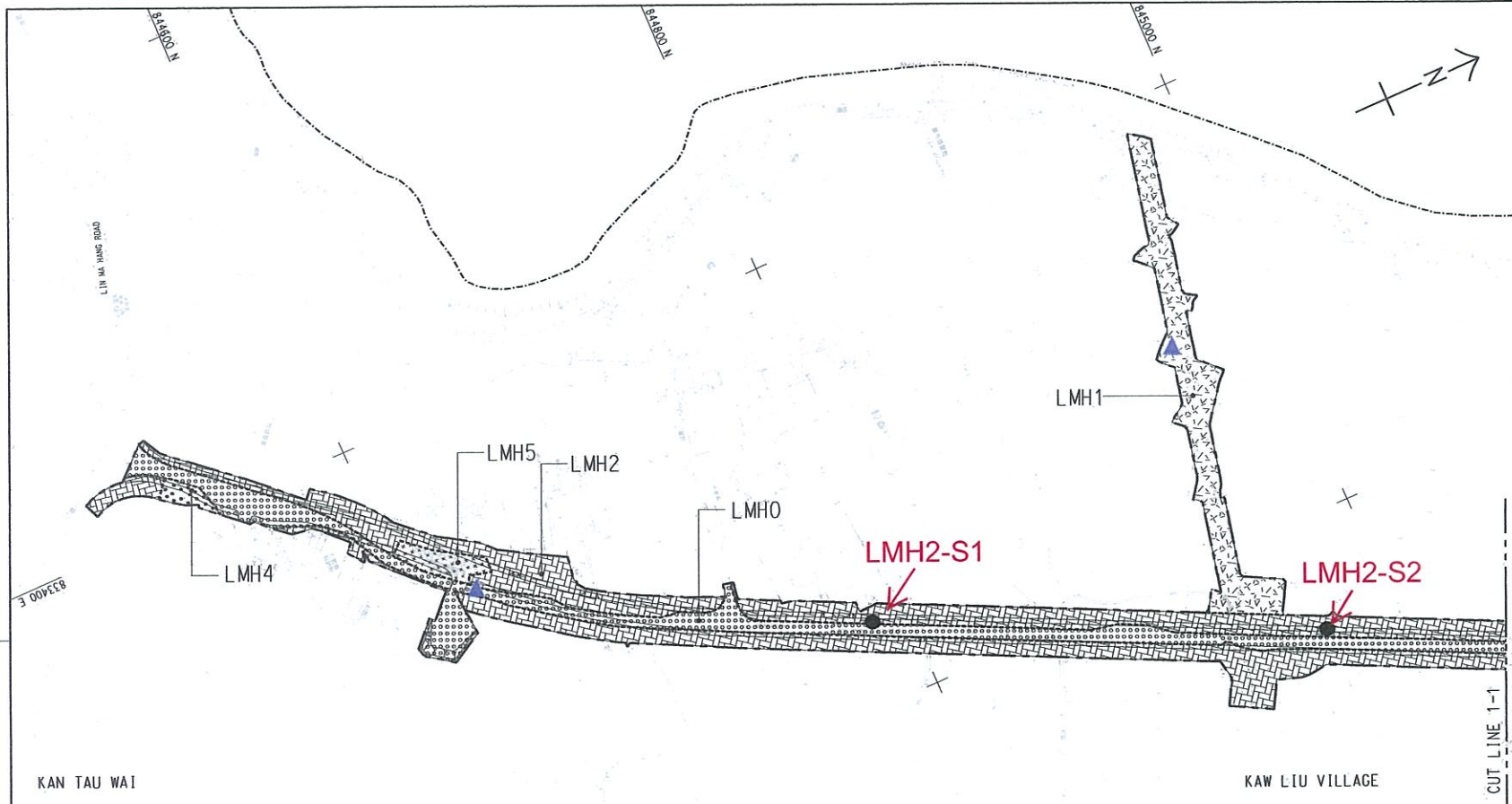
**CEDD** 土木工程拓展署  
 Civil Engineering and Development Department

LIANTANG/REIUNG TIEN WAI BOUNDARY CONTROL POINT SITE FORMATION AND INFRASTRUCTURE WORKS - CONTRACT 5

Topsoil Sampling Location Plan

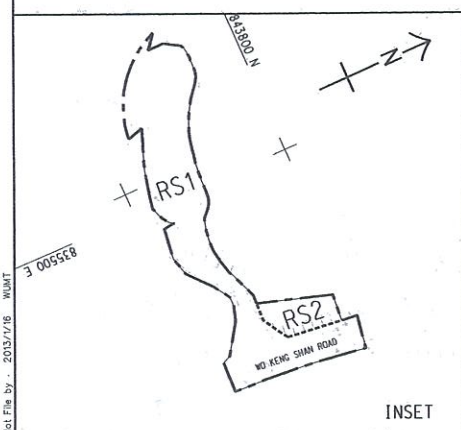
SHEET 3 OF 3

|                                   |                          |                   |                    |
|-----------------------------------|--------------------------|-------------------|--------------------|
| <b>AECOM</b>                      |                          |                   |                    |
| DRAWING NO. 60212563/C5/C00/1053A |                          |                   |                    |
| DESIGNED BY<br>MLC                | CHECKED BY<br>CV/2013/03 | DATE<br>13 APR-13 | SCALE<br>A1 : 1000 |
| WORKING DRAWING                   |                          |                   |                    |
| COPYRIGHT RESERVED<br>版權所有        |                          |                   |                    |



**LEGEND:**

|  |                                   |
|--|-----------------------------------|
|  | SITE BOUNDARY                     |
|  | PORTION CR2                       |
|  | PORTION LMH0                      |
|  | PORTION LMH1                      |
|  | PORTION LMH2                      |
|  | PORTION LMH4                      |
|  | PORTION LMH5                      |
|  | PORTION BCP2                      |
|  | PORTION BCP3                      |
|  | PORTION BCP4                      |
|  | Collected and tested sample       |
|  | To be collected and tested sample |



CUT LINE 1-1  
SEE DRAWING NO. 60212563/C5/C00/1052

|   |                 |        |
|---|-----------------|--------|
| A | WORKING DRAWING | APR-13 |
| - | TENDER DRAWING  | JAN-13 |

**土木工 程 拓 展 署**  
**Civil Engineering and Development Department**  
 LIANTANG/HEUNG TIEN WAI BOUNDARY CONTROL POINT  
 SITE FORMATION AND INFRASTRUCTURE WORKS -  
 CONTRACT 5  
**Topsoil Sampling Location Plan**  
 SHEET 1 OF 3

**AECOM**

|                               |                       |
|-------------------------------|-----------------------|
| DRG NO. 60212563/C5/C00/1051A |                       |
| OWNER BY: MLC                 | DESIGN NO. EV/2013/03 |
| DESIGN BY: ZJ                 | DATE: JUL             |
| SCALE: A1 1 : 1000            | WORKING DRAWING       |
| UNIT: METRES                  | © COPYRIGHT RESERVED  |

Plot File By: 2013/7/18 WUMT

**CASTCO**佳力高試驗中心有限公司  
CASTCO TESTING CENTRE LTD.

A 00522



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 香港粉嶺安全街29A號 29A, On Chuen Street, Fanling, Hong Kong. Fax: 2677 0351  
 E-mail: castco@netvigator.com Website: www.castco.com.hk

HOKLAS 032  
TESTTEST CERTIFICATE  
Chemical Analysis of SoilC5-LST-004 to  
009Date of issue: 27-08-2013  
Page 1 of 1 pages

Castco LRN: MO0130805-12

Sample Details as Supplied by Customer

PWL TRN: 1322046

Customer: CEDD/BCP

Customer's Ref. No.: C5-LST-004

Address: - 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Sha Tin, Hong Kong

Job Title: Liatang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5

Contract No.: CV/2013/03

Sampling Date: --

Sample Location: LMH2

Sample I.D.No.: LMH2-S1

Sample Origin: Unknown

Sample Type: Disturbed

Laboratory Test Results

Sample Received Date: 05-08-2013

Test Period: 12-08-2013 to 17-08-2013

Description of Soil: Moist brown slightly gravelly sandy SILT

Condition of Sample when Received: Natural

| Chemical Analysis  |  | Results         |
|--|--|-----------------|
| Percentage by dry mass finer than 2 mm in original sample  | (%)  | 83              |
| Organic Matter Content<br>(Geospec 3:2001, Cl.9.1)         | Check the presence of sulphides                            | Absent          |
|  | Check the presence of chlorides                            | Absent          |
|  | Organic matter content                                     | (%) 3.5         |
| Mass Loss on Ignition<br>(Geospec 3:2001, Cl.9.2)          | (%)  | --              |
| Total Sulphate Content<br>(Geospec 3:2001, Cl.9.3)         | SO <sub>3</sub>  | (%) <0.01       |
|  | Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3) | SO <sub>3</sub> |
| Water-Soluble Chloride Content<br>(Geospec 3:2001, Cl.9.4) | Water : soil ratio   | (g/L) <0.01     |
|  | Cl   | (%) --          |
| pH value<br>(Geospec 3:2001, Cl.9.5)                       | at 20°C  | 6.4             |

Remarks : 1. Test result present in the soil fraction finer than 2 mm.  
 2. Test result relates to the specimen tested only.

Checked by:

Approved Signatory:

LAM SIU PING

LI WAI CHING  
Technical Manager

Form No.: CHM GEO3\_PWCL\_T 44 25/01/2009 Manager

Code:PWCL/00147

End of Report



**CASTCO**

佳力高試驗中心有限公司  
CASTCO TESTING CENTRE LTD.

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29A, On Chuen Street, Fanling, Hong Kong.  
Website: www.castco.com.hk

Tel: 2677 2138  
Fax: 2677 0351

HOKLAS 032  
TEST

TEST CERTIFICATE  
Chemical Analysis of Soil

Date of issue: 27-08-2013  
Page 1 of 1 pages

Castco LRN: MO0130805-13

Sample Details as Supplied by Customer

PWL TRN: 1322047

Customer : CEDD/BCP

Customer's Ref. No.: C5-LST-005

Address:- 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Sha Tin, Hong Kong

Job Title: Liatang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5

Contract No.: CV/2013/03

Sampling Date: --

Sample Location: LMH2

Sample I.D.No.: LMH2-S2

Sample Origin: Unknown

Sample Type: Disturbed

Laboratory Test Results

Sample Received Date: 05-08-2013

Test Period : 12-08-2013 to 17-08-2013

Description of Soil: Moist brown slightly gravelly sandy SILT

Condition of Sample when Received: Natural

| Chemical Analysis   | Results  |                    |
|---|--|--------------------|
| Percentage by dry mass finer than 2 mm in original sample (%) | 86   |                    |
| Organic Matter Content<br>(Geospec 3:2001, Cl.9.1)            | Check the presence of sulphides                            | Present            |
|   | Check the presence of chlorides                            | Absent             |
|   | Organic matter content (%)                                 | 1.7                |
| Mass Loss on Ignition<br>(Geospec 3:2001, Cl.9.2)             | (%)  | --                 |
| Total Sulphate Content<br>(Geospec 3:2001, Cl.9.3)            | SO <sub>3</sub> (%)  | 0.01               |
|   | Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3) | (%)                |
| Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3)    | SO <sub>3</sub> (g/L)                                      | 0.01               |
|   | Water-Soluble Chloride Content<br>(Geospec 3:2001, Cl.9.4) | Water : soil ratio |
| Cl (%)  |  | --                 |
| pH value<br>(Geospec 3:2001, Cl.9.5)                          | at 20°C  | 7.4                |

Remarks : 1. Test result present in the soil fraction finer than 2 mm.  
2. Test result relates to the specimen tested only.

Checked by:

LAM SIU PING

Assistant Technical Manager

Form No.: CHM GEO3\_PWCL\_1 (Rev. 2/10/2009)

Code:PWCL/00147

Approved Signatory:

LI WAI CHING

Technical Manager

End of Report



佳力高試驗中心有限公司  
CASTCO TESTING CENTRE LTD.

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Website: www.castco.com.hk

Tel: 2677 2138  
Fax: 2677 0351

TEST CERTIFICATE  
Chemical Analysis of Soil

Date of issue: 27-08-2013  
Page 1 of 1 pages

Castco LRN: MO0130805-14

Sample Details as Supplied by Customer

Customer : CBDD/BCP

Address:- 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Sha Tin, Hong Kong

Job Title: Liatang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5

Contract No.: CV/2013/03

Sample Location: BCP1

Sample Origin: Unknown

PWL TRN: 1322048

Customer's Ref. No.: C5-LST-006

Sampling Date: --

Sample I.D.No.: BCP1-S1

Sample Type: Disturbed

Laboratory Test Results

Sample Received Date: 05-08-2013

Test Period : 12-08-2013 to 21-08-2013

Description of Soil: Moist brown slightly gravelly sandy SILT

Condition of Sample when Received: Natural

| Chemical Analysis   | Results  |                    |
|---|--|--------------------|
| Percentage by dry mass finer than 2 mm in original sample (%) | 96   |                    |
| Organic Matter Content<br>(Geospec 3:2001, Cl.9.1)            | Check the presence of sulphides                            | Absent             |
|   | Check the presence of chlorides                            | Absent             |
|   | Organic matter content (%)                                 | 0.6                |
| Mass Loss on Ignition<br>(Geospec 3:2001, Cl.9.2)             | (%)  | --                 |
| Total Sulphate Content<br>(Geospec 3:2001, Cl.9.3)            | SO <sub>3</sub> (%)  | <0.01              |
|   | Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3) | (%)                |
| Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3)    | SO <sub>3</sub> (g/L)                                      | <0.01              |
|   | Water-Soluble Chloride Content<br>(Geospec 3:2001, Cl.9.4) | Water : soil ratio |
| pH value<br>(Geospec 3:2001, Cl.9.5)                          | Cl (%)   | --                 |
|   | at 20°C  | 5.9                |

Remarks : 1. Test result present in the soil fraction finer than 2 mm.  
2. Test result relates to the specimen tested only.

Checked by: \_\_\_\_\_

LAM SIU PING

Form No.: CHM GEO3\_PWCL Assistant Technical Manager Code:PWCL/00147

Approved Signatory: \_\_\_\_\_

LI WAI CHING  
Technical Manager

End of Report

**CASTCO**

佳力高試驗中心有限公司  
CASTCO TESTING CENTRE LTD.

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Tel: 2677 2138  
Fax: 2677 0351

HOKLAS 032  
TEST

**TEST CERTIFICATE**  
Chemical Analysis of Soil

Date of issue: 27-08-2013  
Page 1 of 1 pages

Castco LRN: MO0130805-15

**Sample Details as Supplied by Customer**

Customer : CEDD/BCP

Address:- 8/F Grand Central Plaza, Tower 2, 138 Sha Tin Rural Committee Road, Sha Tin, Hong Kong

Job Title: Liatang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5

Contract No.: CV/2013/03

Sample Location: BCP1

Sample Origin: Unknown

PWL TRN: 1322049

Customer's Ref. No.: C5-LST-007

Sampling Date: -

Sample I.D.No.: BCP1-S2

Sample Type: Disturbed

**Laboratory Test Results**

Sample Received Date: 05-08-2013

Test Period : 12-08-2013 to 21-08-2013

Description of Soil: Moist brown slightly gravelly sandy SILT

Condition of Sample when Received: Natural

| Chemical Analysis   | Results  |        |
|---|--|--------|
| Percentage by dry mass finer than 2 mm in original sample (%) | 86   |        |
| Organic Matter Content<br>(Geospec 3:2001, Cl.9.1)            | Check the presence of sulphides                            | Absent |
|   | Check the presence of chlorides                            | Absent |
|   | Organic matter content (%)                                 | 1.2    |
| Mass Loss on Ignition<br>(Geospec 3:2001, Cl.9.2)             | (%)  | --     |
| Total Sulphate Content<br>(Geospec 3:2001, Cl.9.3)            | SO <sub>3</sub> (%)  | 0.01   |
|   | Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3) | (%)    |
| Water-Soluble Chloride Content<br>(Geospec 3:2001, Cl.9.4)    | SO <sub>3</sub> (g/L)                                      | <0.01  |
|   | Water : soil ratio   | --     |
| pH value<br>(Geospec 3:2001, Cl.9.5)                          | Cl (%)   | --     |
|   | at 20°C  | 6.4    |

Remarks : 1. Test result present in the soil fraction finer than 2 mm.  
2. Test result relates to the specimen tested only.

Checked by:

LAM SIU PING

Form No.: CHM GEO3\_PWC (2013) Technical Manager

Code:PWCL/00147

End of Report

Approved Signatory:

LI WAI CHING  
Technical Manager

**CASTCO**佳力高試驗中心有限公司  
CASTCO TESTING CENTRE LTD.

A 00526

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Website: www.castco.com.hkTel: 2677 2138  
Fax: 2677 0351HOKLAS 032  
TESTTEST CERTIFICATE  
Chemical Analysis of SoilDate of issue: 27-08-2013  
Page 1 of 1 pages

Castco LRN: MO0130805-16

Sample Details as Supplied by Customer

PWL TRN: 1322050

Customer: CEDD/BCP

Customer's Ref. No.: C5-LST-008

Address:- 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Sha Tin, Hong Kong

Job Title: Liatang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5

Contract No.: CV/2013/03

Sampling Date: --

Sample Location: BCP2 (Chuk Yuen)

Sample I.D.No.: BCP2-S1

Sample Origin: Unknown

Sample Type: Disturbed

Laboratory Test Results

Sample Received Date: 05-08-2013

Test Period: 12-08-2013 to 21-08-2013

Description of Soil: Moist brown slightly gravelly sandy SILT

Condition of Sample when Received: Natural

| Chemical Analysis  |  | Results         |
|--|--|-----------------|
| Percentage by dry mass finer than 2 mm in original sample  | (%)  | 98              |
| Organic Matter Content<br>(Geospec 3:2001, Cl.9.1)         | Check the presence of sulphides                            | Absent          |
|  | Check the presence of chlorides                            | Absent          |
|  | Organic matter content                                     | (%)<br>0.6      |
| Mass Loss on Ignition<br>(Geospec 3:2001, Cl.9.2)          | (%)  | --              |
| Total Sulphate Content<br>(Geospec 3:2001, Cl.9.3)         | SO <sub>3</sub>  | (%)<br>0.01     |
|  | Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3) | SO <sub>3</sub> |
| Water-Soluble Chloride Content<br>(Geospec 3:2001, Cl.9.4) | Water : soil ratio   | (g/L)<br><0.01  |
|  | Cl   | (%)<br>--       |
| pH value<br>(Geospec 3:2001, Cl.9.5)                       | at 20°C  | --<br>5.9       |

Remarks : 1. Test result present in the soil fraction finer than 2 mm.  
2. Test result relates to the specimen tested only.

Checked by:

LAM SIU PING

Form No.: CHM GEO3\_PWCL

Code:PWCL/00147

End of Report

Approved Signatory:

LI WAI CHING  
Technical Manager

**CASTCO**佳力高試驗中心有限公司  
CASTCO TESTING CENTRE LTD.

A 00527

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Fax: 2677 0351HOKLAS 032  
TEST**TEST CERTIFICATE**  
Chemical Analysis of SoilDate of issue: 27-08-2013  
Page 1 of 1 pages

Castco LRN: MO0130805-17

**Sample Details as Supplied by Customer**

Customer : CEDD/BCP

Address:- 8/F Grand Central Plaza, Tower 2, 138 Shatin Rural Committee Road, Sha Tin, Hong Kong

Job Title: Liatang/Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5

Contract No.: CV/2013/03

Sample Location: BCP2 (Chuk Yuen)

Sample Origin: Unknown

PWL TRN: 1322051

Customer's Ref. No.: C5-LST-009

Sampling Date: --

Sample I.D.No.: BCP2-S2

Sample Type: Disturbed

**Laboratory Test Results**

Sample Received Date: 05-08-2013

Test Period : 12-08-2013 to 21-08-2013

Description of Soil: Moist brown slightly gravelly sandy SILT

Condition of Sample when Received: Natural

| Chemical Analysis  |  | Results         |
|--|--|-----------------|
| Percentage by dry mass finer than 2 mm in original sample  | (%)  | 96              |
| Organic Matter Content<br>(Geospec 3:2001, Cl.9.1)         | Check the presence of sulphides                            | Absent          |
|  | Check the presence of chlorides                            | Absent          |
|  | Organic matter content                                     | (%) 0.5         |
| Mass Loss on Ignition<br>(Geospec 3:2001, Cl.9.2)          | (%)  | --              |
| Total Sulphate Content<br>(Geospec 3:2001, Cl.9.3)         | SO <sub>3</sub>  | (%) <0.01       |
|  | Water-soluble Sulphate Content<br>(Geospec 3:2001, Cl.9.3) | SO <sub>3</sub> |
| Water-Soluble Chloride Content<br>(Geospec 3:2001, Cl.9.4) | Water : soil ratio   | --              |
|  | Cl   | (%) --          |
| pH value<br>(Geospec 3:2001, Cl.9.5)                       | at 20°C  | 4.6             |

Remarks : 1. Test result present in the soil fraction finer than 2 mm.  
2. Test result relates to the specimen tested only.

Checked by:

LAM SIU PING

Form No.: CHM GB03\_PWCL 03/08/2013 Technical Manager Code:PWCL/00147

Approved Signatory:

LI WAI CHING  
Technical Manager

End of Report

**Liantang / Heung Yuen Wai Boundary Control Point and Associated Works**

**Environmental Permit (EP No.: EP-404/2011)**

**Topsoil Management Plan (Rev.01)**

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# **1 Introduction**

## **1.1 Purpose of the Plan**

The Topsoil Management Plan (the Plan) provides detailed guidance and direction for the management and use of topsoil recovered from the construction of Liantang/ Heung Yuen Wai Boundary Control Point and Associated Works (the Project). This Plan addresses the stripping, transport and re-use of recovered topsoil from construction works. This Plan identifies the different sources of topsoil that may be recovered during construction, and identifies the locations where this soil can be stockpiled. It also identifies the monitoring program to be undertaken to measure ongoing topsoil viability.

## **1.2 Project Background**

Currently, there are four Boundary Control Points (BCP) in the HKSAR providing vehicular crossing at the Hong Kong – Shenzhen boundary. They are namely Shenzhen Bay, Lok Ma Chau, Man Kam To and Sha Tau Kok. On the eastern part of the boundary, the existing vehicular crossing points at Man Kam To and Sha Tau Kok have already reached their limits in the crossing capacity, while scope for the expansion works to enhance their capacities is limited by site constraints and capacity of connecting roads on both Hong Kong and Shenzhen sides. It is anticipated that the volume of cross-boundary traffic will continue to increase with the closer ties of Hong Kong- Shenzhen and the completion of the Eastern Corridor (東部過境通道) in Shenzhen. The establishment of a new BCP in the eastern part of Hong Kong-Shenzhen boundary is thus required to meet the future traffic demand and re-distribute cross-boundary traffic amongst the crossings in the east.

In December 2006, the Hong Kong and Shenzhen governments jointly commissioned a study, namely “Preliminary Planning Study on Developing Liantang/Heung Yuen Wai Control Point” (the Joint Study) (“深港興建蓮塘/ 香園圍口岸前期規劃研究”) to examine the need, benefit and function of a new BCP at Liantang/Heung Yuen Wai (LT/HYW). The Joint Study confirmed the need for a new BCP at LT/HYW.

In January 2007, the Planning Department (PlanD) commissioned a consultancy study “Planning Study on Liantang/Heung Yuen Wai Cross-boundary Control Point and its Associated Connecting Roads in Hong Kong – Feasibility Study” (the Feasibility Study) to examine the land, planning, traffic and engineering implications and its associated connecting road within Hong Kong territory for the LT/HYW BCP. The Feasibility Study put forward the preferred option for the LT/HYW BCP layout and alignment for its connecting road.

Both Hong Kong and Shenzhen Governments at the second meeting of the Hong Kong-Shenzhen Joint Task Force on Boundary District Development on 18 September 2008 endorsed the major findings of the Joint Study and they jointly announced after the meeting to implement the LT/HYW BCP.

CEDD commissioned the investigation and preliminary design (I&PD) and relevant impact assessments for the Project in April 2009 under Agreement No. CE 45/2008 (CE) "Liantang/Heung Yuen Wai Boundary Control Point and Associated Works". The I&PD determined the general layout of the BCP and the alignment of the connecting road. The I&PD also concluded that the Project with the recommended mitigation measures is environmentally acceptable.

### 1.3 Project Scope

The scope of the Project under this Assignment covers the site formation and infrastructures for the LT/HYW BCP, and comprises:

- (a) site formation of about 23 hectares of land for the development of the BCP;
- (b) provision of a perimeter road at the BCP together with the associated vehicular and pedestrian gates, fencing, etc;
- (c) an approximately 11-kilometre (km) long dual two-lane trunk road (Connecting Road) (with about 1.0 km of at grade road, 4.3 km of viaduct and 5.7 km of tunnels) connecting the BCP with Fanling Highway and the associated traffic control and surveillance system;
- (d) associated diversion/modification works at Lin Ma Hang Road;
- (e) widening of access road to the resite area of Chuk Yuen Village and further modification works to the facilities in the resite area;
- (f) provision of sewage collection, treatment and disposal facilities for the BCP and the resite of Chuk Yuen Village; and
- (g) associated environmental mitigation measures, landscaping works, drainage/sewerage, waterworks, utilities and traffic engineering works.

### 1.4 Construction Contract Packaging

To facilitate project management and implementation, the Project will be implemented in the following contract packages:

- Contract 2 (CV/2012/08)
- Contract 3 (CV/2012/09)
- Contract 4 (TCSS)
- Contract 5 (CV/2013/03)
- Contract 6

The details of each contracts is summarized below and the delineation of each contract is shown in **Figure 1.0**.

| <b>Contract 2</b>     |  |
|-----------------------|--|
| Contract No.:         | CV/2012/08   |
| Contract Name:        | Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 2   |
| Contract Period:      | Tentative commencement date: July 2013   |
| Major Scope of Works: | <ul style="list-style-type: none"> <li>• construction of an approximately 5.2km long dual two-lane connecting road (with about 0.4km of at-grade road and 4.8km of tunnel) connecting the Fanling Interchange with the proposed Sha Tau Kok Interchange;</li> <li>• construction of a ventilation adit tunnel and the mid-ventilation building;</li> <li>• construction of the north and south portal buildings of the Lung Shan Tunnel and their associated slope works;</li> <li>• provision and installation of ventilation system, E&amp;M works and building services works for Lung Shan tunnel and Cheung Shan tunnel and their portal buildings;</li> <li>• construction of Tunnel Administration Building adjacent to Wo Keng Shan Road and the associated E&amp;M and building services works; and</li> <li>• construction of associated footpath, slopes, retaining structures, drainage, sewerage, waterworks, landscaping works and other ancillary works.</li> </ul> |

| <b>Contract 3</b>     |  |
|-----------------------|--|
| Contract No.:         | CV/2012/09   |
| Contract Name:        | Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 3   |
| Contract Period:      | Tentative commencement date: July 2013   |
| Major Scope of Works: | <ul style="list-style-type: none"> <li>• construction of four link roads connecting the existing Fanling Highway and the south portal of the Lung Shan Tunnel;</li> <li>• realignment of the existing Tai Wo Service Road West and Tai Wo Service Road East;</li> <li>• widening of the existing Fanling Highway (HyD's entrustment works);</li> <li>• demolishing existing Kiu Tau vehicular bridge and Kiu Tau footbridge and reconstruction of the existing Kiu Tau Footbridge (HyD's entrustment works); and</li> <li>• construction of associated footpath, slopes, retaining structures, drainage, sewerage, waterworks, landscaping works and other ancillary works.</li> </ul> |

| <b>Contract 4</b> |
|-------------------|
|-------------------|

|                       |   |
|-----------------------|---|
| Contract No.:         | To be assigned  |
| Contract Name:        | Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works – TCSS Contract   |
| Contract Period:      | Tentative commencement date: October 2014   |
| Major Scope of Works: | <ul style="list-style-type: none"> <li>The works include provision and installation of Traffic Control and Surveillance System and the associated electrical and mechanical works for the Project.</li> </ul> |

|                       |  |
|-----------------------|--|
| <b>Contract 5</b>     |  |
| Contract No.:         | CV/2013/03   |
| Contract Name:        | Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 5   |
| Contract Period:      | Commencement date: 11 April 2013   |
| Major Scope of Works: | <ul style="list-style-type: none"> <li>site formation of about 23 hectares of land for the development of the BCP;</li> <li>construction of an approximately 1.6 km long perimeter road at the BCP including a 175m long depressed road;</li> <li>associated diversion/modification works at existing local roads and junctions including Lin Ma Hang Road;</li> <li>construction of pedestrian subway linking the BCP to Lin Ma Hang Road;</li> <li>provision of resite area with supporting infrastructure for re-provisioning of the affected village houses;</li> <li>construction of associated footpath, slopes, retaining structures, drainage, sewerage, waterworks, landscaping works and other ancillary works.</li> </ul> |

|                       |  |
|-----------------------|--|
| <b>Contract 6</b>     |  |
| Contract No.:         | To be assigned   |
| Contract Name:        | Liantang/ Heung Yuen Wai Boundary Control Point Site Formation and Infrastructure Works - Contract 6   |
| Contract Period:      | Tentative commencement date: End 2013  |
| Major Scope of Works: | <ul style="list-style-type: none"> <li>construction of an approximately 4.6km long dual two-lane connecting road (with about 0.6km of at-grade road, 3.3km of viaduct and 0.7km of tunnel) connecting the BCP with the proposed Sha Tau Kok Road Interchange and the associated ventilation buildings;</li> <li>associated diversion/modification works at access roads to the resite of Chuk Yuen Village;</li> <li>provision of sewage collection, treatment and disposal</li> </ul> |

|  |   |
|--|---|
|  | <p>facilities for the BCP and the resite of Chuk Yuen Village;</p> <ul style="list-style-type: none"><li>• construction of a pedestrian subway linking the BCP to Lin Ma Hang Road;</li><li>• reprovisioning of the affected facilities including Wo Keng Shan Road garden; and</li><li>• construction of associated footpath, slopes, retaining structures, drainage, sewerage, waterworks, landscaping works and other ancillary works.</li></ul> |
|--|---|

## **2 Topsoil Management Strategy**

### **2.1 General**

Topsoil management strategy is developed to conserve and reuse the topsoil excavated as much as possible by the Project and other projects in accordance with the Approved EIA Report. The objectives of the Topsoil Management Plan are to: -

- Optimize the recovery of topsoil for reuse as much as possible;
- Identify topsoil resources;
- Develop topsoil stripping and stockpiling guidelines; and
- Develop guidelines for re-spreading of topsoil for use.

### **2.2 Topsoil Recovery**

#### **2.2.1 Definition of Topsoil**

Topsoil is the uppermost layer of soil capable of growing and supporting vegetation. Topsoil contains the essential nutrients, organic matter, physical characteristics necessary to grow and sustain permanent vegetation.

- Topsoil shall be evenly textured, fertile, dark brown or black, free draining, sandy loam with the following properties:
- The top 50-300 mm fertile layer immediately below undisturbed vegetation; the thickness of topsoil to be reused would be subject to the habitat of the vegetated areas.
- Containing not less than 7.5% organic matter;
- Having a pH value between 5.5 and 7.0;
- Free from all kinds of pests, toxic material, pernicious and/or perennial weed seed, weeds and roots, grass, clay lumps, non-soil material, brick, cement, concrete and other building materials, foreign matter and contamination;
- Maximum stone content % (m/m) as tested under BS 1377-2; and
- Exchangeable sodium percentage (ESP) %: <15.

#### **2.2.2 Identification of Topsoil for Reuse**

Existing vegetated areas within the project boundary shall be surveyed by the Contractor to determine the availability of soil materials for reuse and to formulate topsoil and stockpiling strategies. According to the Habitat Map (Drawing No. 60212563/ER1/901 – 908) within the project boundary, the following areas shall be surveyed to identify topsoil for the reuse:

- Woodland;
- Shrubland;
- Plantation;
- Active Agricultural Land;
- Abandoned Agricultural Land; and
- Hillside Grassland.

The depth of topsoil to be reused for different vegetated areas would be depending on the habitat type. In general, there would be thicker available potential topsoil to be reused in Plantation, Active Agricultural Land and Abandoned Agricultural Land. Relatively, there

would be thinner available potential topsoil to be reused in Hillside Woodland, Shrubland and Grassland.

Initial soil samples have been collected and tested. The test results of organic matter content showed that the soil samples can be classified as “Not Topsoil” according to the definition in the Section 2.2.1. Further soil sampling and testing would be carried out at different habitat locations. In case topsoil is identified on site confirmed by testing, the estimated volume would be submitted accordingly.

### **2.2.3 Stripping**

Prior to the commencement of stripping, areas will be cleared of vegetation. At locations where topsoil is to be recovered, soil stripping will be undertaken by conventional earth-moving equipment such as bulldozers, scrapers, graders and off-road trucks where practical, giving consideration to operational safety and accessibility, to maximize the preservation of the quality of the topsoil. In areas where the topsoil is relatively thin, the Contractor shall remove the topsoil using smaller equipment. The Contractor shall provide detailed method statement for the stripping operation according to site condition to the Engineer for approval prior to the commencement of any works.

### **2.2.4 Stockpiling**

Where possible, topsoil stripped off shall be re-spread directly from stripped areas onto recipient sites. However, based on the anticipated construction sequence and programme, it is likely that topsoil stripped off shall be stored in stockpiles for use at a later stage. General requirements for topsoil handling and stockpiling are listed below: -

- The surface of the completed stockpiles shall be left in a “rough” condition to help promoting water infiltration and minimize erosion prior to vegetation establishment;
- The height of topsoil stockpiles shall not be higher than 3m in order to limit the potential for anaerobic conditions to develop within the topsoil pile;
- The embankment of the topsoil stockpiles shall not be steeper than 3H:1V (to limit the potential for erosion of the outer pile face);
- If the stockpile is to be retained for a period of more than 6 months, the stockpile will be deep ripped and hydroseeded in order to keep the soil viable and to maintain biological activity.
- The establishment of weeds on the stockpiles shall be monitored and weed controlled measures shall be implemented as required.

The Contractor shall provide detailed method statement for the topsoil stockpiling including the proposed locations stockpiling, temporary soil stabilization and erosion treatment to the Engineer for approval prior to the commencement of any works.

### **2.2.5 Respreading**

Prior to the use of any topsoil from each approved stockpiling site for landscaping works, for every 300m<sup>3</sup> delivered to Site, the Contractor shall produce certificates of analysis of Topsoil from an approved laboratory within 14 calendar days of taking the samples. An approved laboratory shall mean one of the Employer’s laboratories or a laboratory accredited by the Hong Kong Laboratory Accreditation Scheme (HOKLAS) for the relevant tests in which case the laboratory shall have no affiliation as a legal entity to the Contractor or its sub-contractors. Particulars of the laboratory proposed by the Contractor shall be submitted to the Engineer



for approval. Tests shall be carried out according to BS 3882 and BS 1377. Each certificate shall state the results of test for the properties stipulated for compliance in the topsoil properties listed in Section 2.2.1.

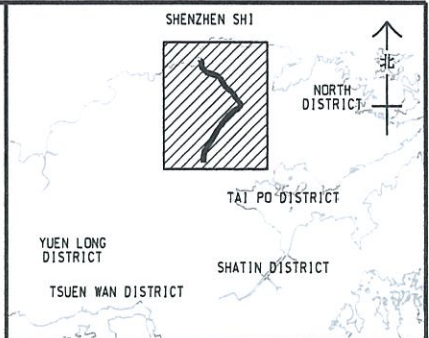
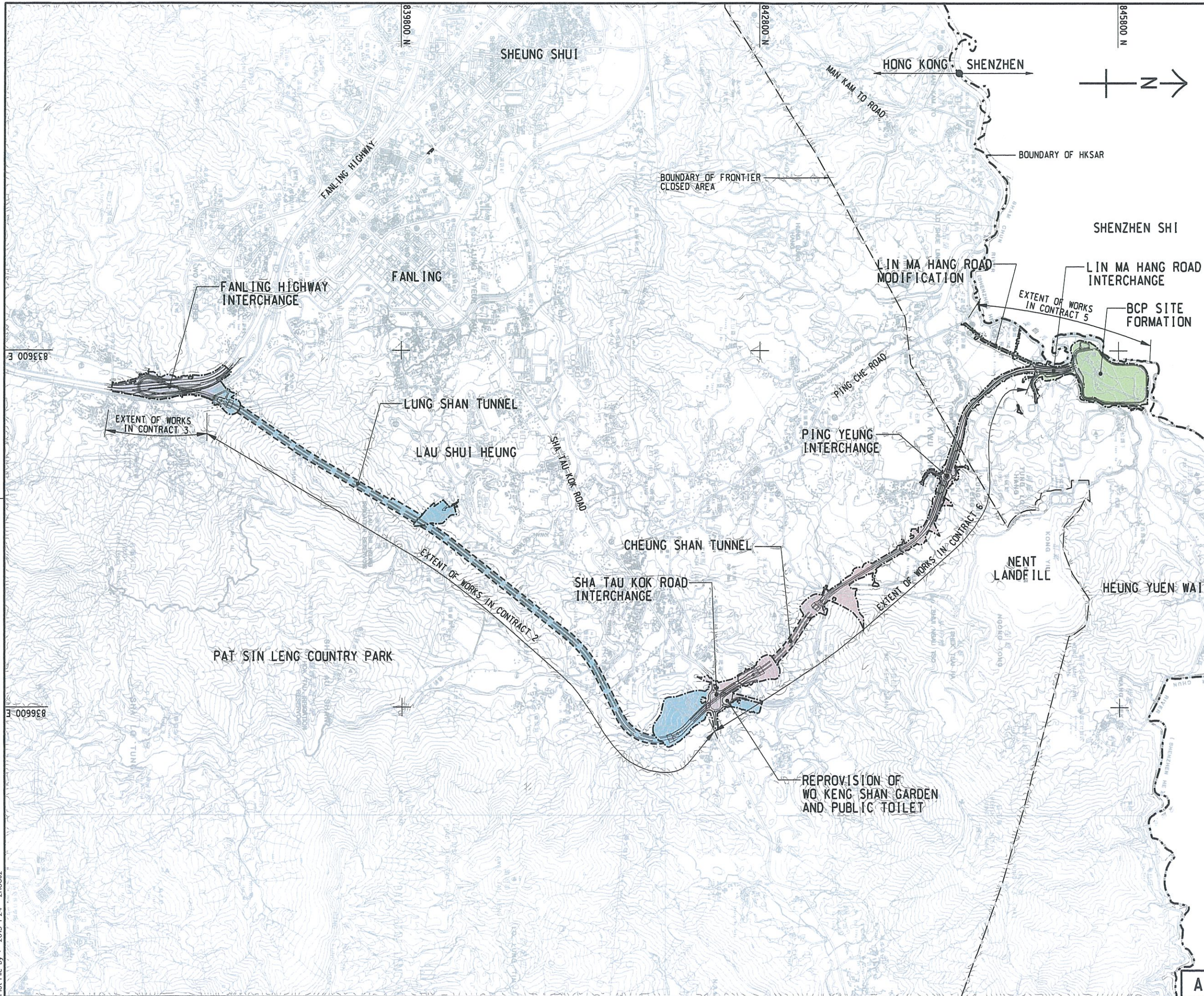
During the removal of the topsoil from the stockpiles, care will be taken to minimise structural degradation of the topsoil. If required, soil conditioner shall be applied to the topsoil before re-spreading to mitigate any deficiencies in the topsoil to meet the requirement for landscaping works.

The detailed method statement for re-spreading works to the designated planting areas would be provided after topsoil identification and based on the estimated volume.

### **3 Plan Update**

The landscape plan submitted separately under EP Condition 2.11 will indicate the approximate landscape areas to accommodate the topsoil.

An implementation programme for maximizing the reuse of the excavated topsoil would be submitted after the volume of topsoil to be generated is estimated.



**LOCATION PLAN**  
SCALE 1 : 30000

- LEGEND:**
- SITE BOUNDARY
  - UNDERGROUND WORKS SITE BOUNDARY

REV. 訂定 內容變更 日期 日期

**CEDD** 土木工程拓展署  
Civil Engineering and  
Development Department

Liantang/Heung Yuen Wai Boundary Control Point and Associated Works (Site Formation and Infrastructures) - Design and Construction

**PROJECT LAYOUT PLAN**

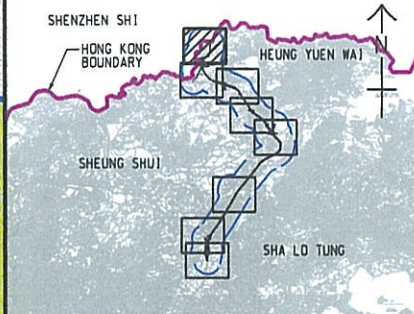


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| DRG.NO. 圖紙編號                     |                   | Figure 1.0                 |  |
| DESIGNED BY 設計                   | CONTRACT NO. 合約編號 | P. BY- APPROVED 批准人        |  |
| DESIGN BY 設計                     | STATUS 階段         |                            |  |
| SCALE 比例                         | A1 1 : 15000      |                            |  |
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Plot File by : 2013-1-24\_ZHOUJ2

**SPECIES OF CONSERVATION INTEREST:**

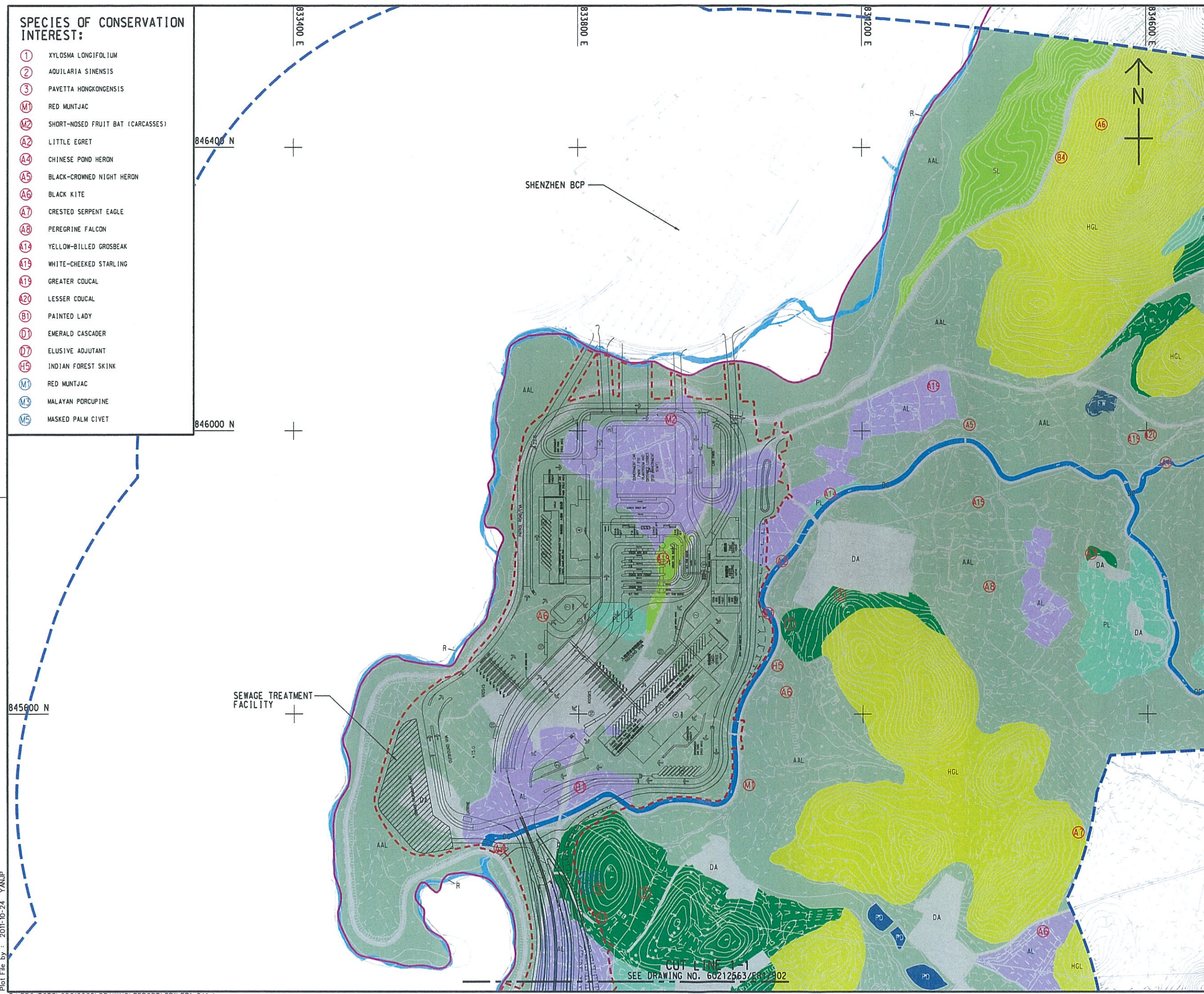
- ① XYLOSMA LONGIFOLIUM
- ② ADULARIA SINENSIS
- ③ PAVETTA HONGKONGENSIS
- (M1) RED MUNTJAC
- (M2) SHORT-NOSED FRUIT BAT (CARCASSES)
- (A2) LITTLE EGRET
- (A4) CHINESE POND HERON
- (A5) BLACK-CROWNED NIGHT HERON
- (A6) BLACK KITE
- (A7) CRESTED SERPENT EAGLE
- (A8) PEREGRINE FALCON
- (A14) YELLOW-BILLED GROSBEAK
- (A15) WHITE-CHEEKED STARLING
- (A19) GREATER COUCAL
- (A20) LESSER COUCAL
- (B1) PAINTED LADY
- (D1) EMERALD CASCADER
- (D7) ELUSIVE ADJUTANT
- (H5) INDIAN FOREST SKINK
- (M1) RED MUNTJAC
- (M3) MALAYAN PORCUPINE
- (M5) MASKED PALM CIVET



**KEY PLAN**  
SCALE 1 : 150000

**LEGEND:**

- BOUNDARY OF HKSAR
- 500m ASSESSMENT AREA
- TENTATIVE WORKS AREA
- WL WOODLAND
- SL SHRUBLAND
- PL PLANTATION
- FW FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)]
- AL ACTIVE AGRICULTURAL LAND
- AAL ABANDONED AGRICULTURAL LAND
- HGL HILLSIDE GRASSLAND
- PD POND
- DC DRAINAGE CHANNEL
- R WATERCOURSE
- OF OPEN FIELD
- DA DEVELOPED AREA



| REV. | DESCRIPTION | DATE |
|------|-------------|------|
|      |             |      |

**CEDD** 土木工程拓展署  
Civil Engineering and Development Department

LANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION

**HABITAT MAP**  
SHEET 1 OF 8



DRG.NO. 60212563/ER1/901  
圖紙編號

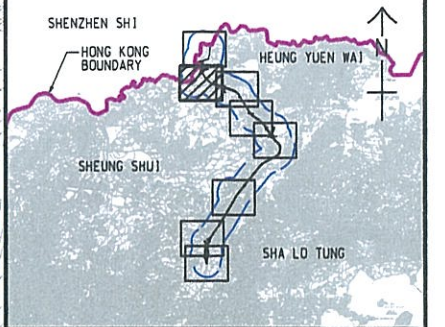
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| SCALE<br>A1 : 2500       |                              |                        |
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**SPECIES OF CONSERVATION INTEREST:**

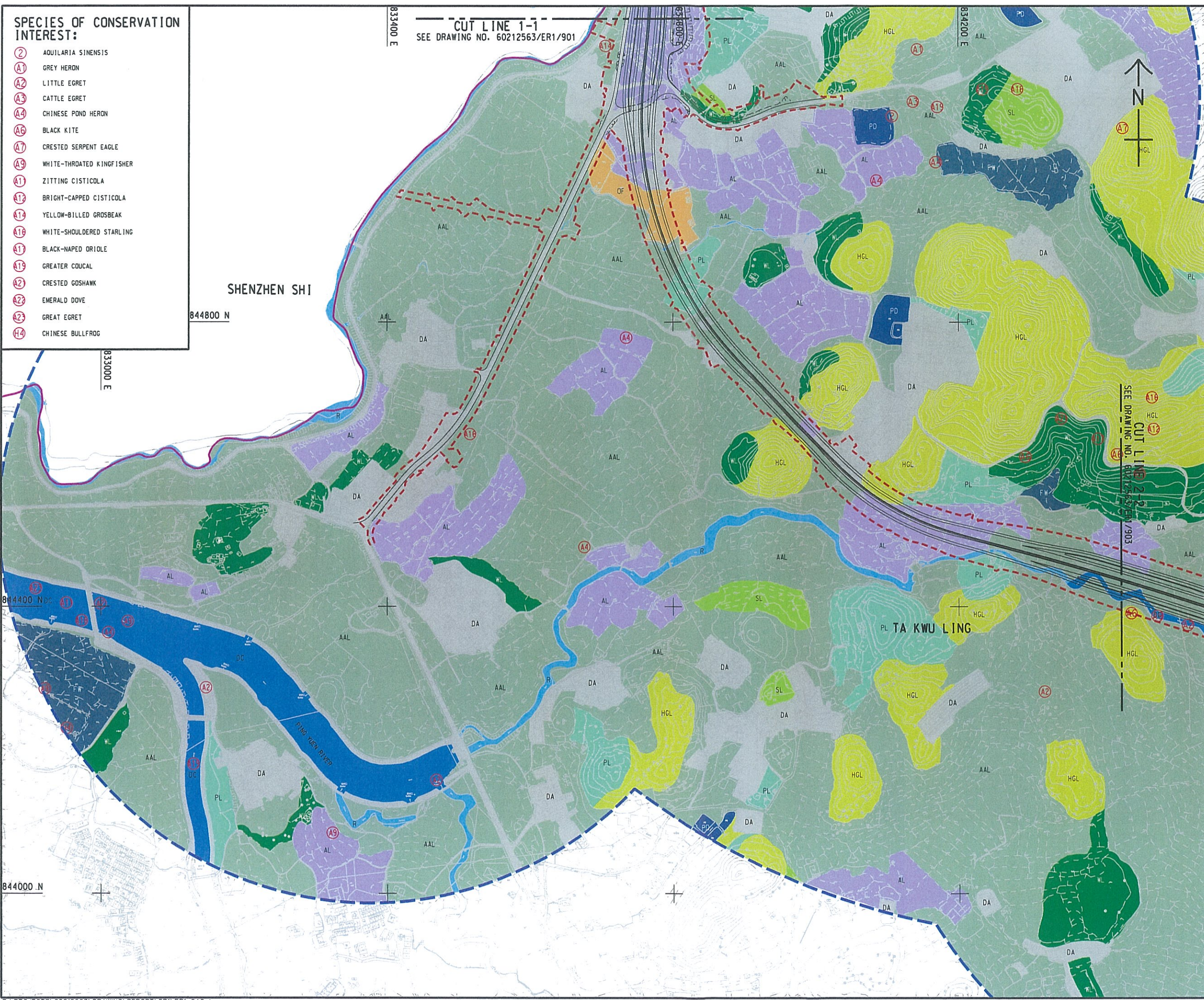
- (A2) AQUILARIA SINENSIS
- (A1) GREY HERON
- (A2) LITTLE EGRET
- (A3) CATTLE EGRET
- (A4) CHINESE POND HERON
- (A6) BLACK KITE
- (A7) CRESTED SERPENT EAGLE
- (A9) WHITE-THROATED KINGFISHER
- (A1) ZITTING CISTICOLA
- (A12) BRIGHT-CAPPED CISTICOLA
- (A14) YELLOW-BILLED GROSBEAK
- (A16) WHITE-SHOULDERED STARLING
- (A17) BLACK-NAPED ORIOLE
- (A18) GREATER COUCAL
- (A2) CRESTED GOSHAWK
- (A2) EMERALD DOVE
- (A2) GREAT EGRET
- (A4) CHINESE BULLFROG

CUT LINE 1-1  
SEE DRAWING NO. 60212563/ER1/901



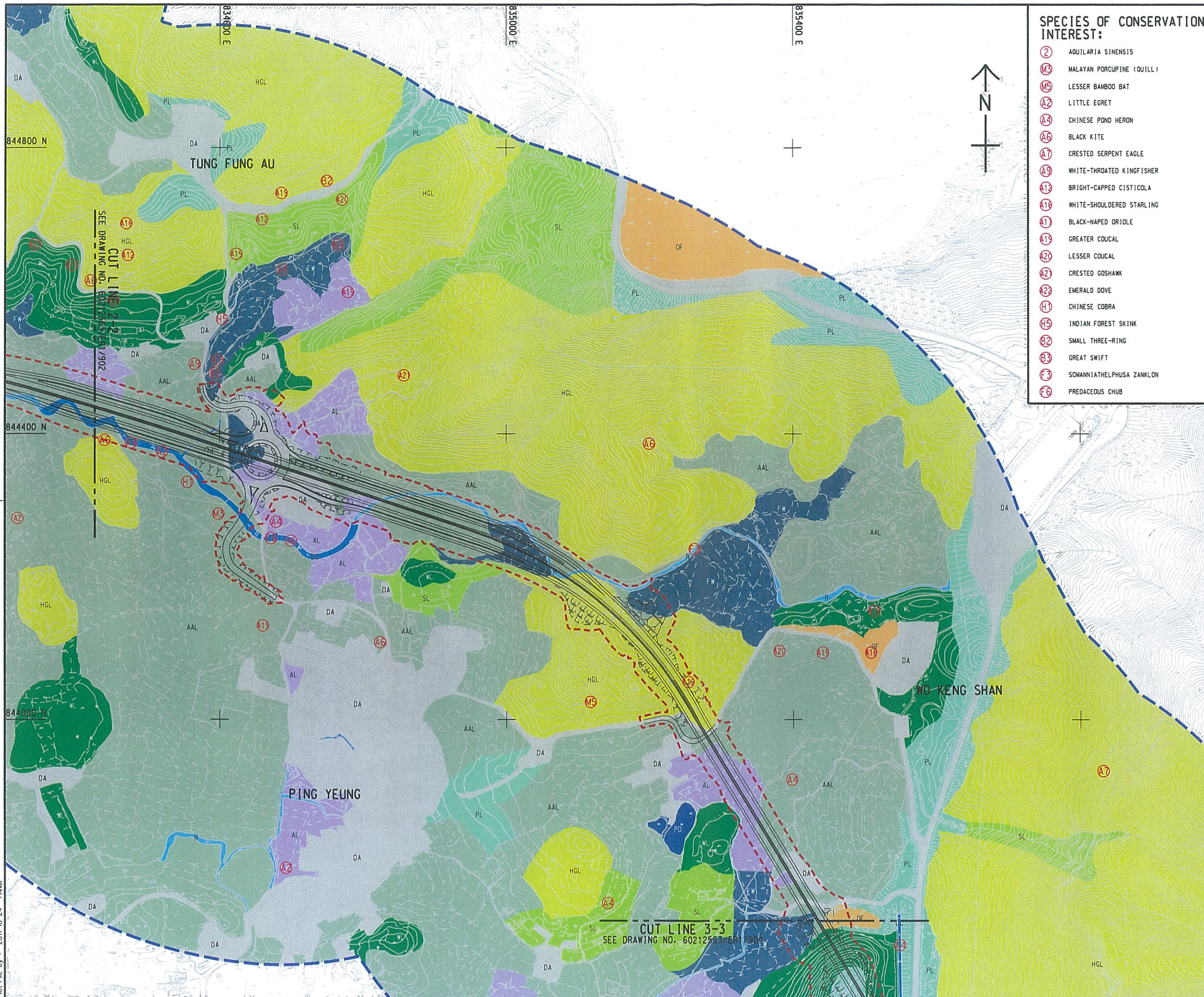
**KEY PLAN**  
SCALE 1 : 150000

- LEGEND:**
- BOUNDARY OF HKSAR
  - 500m ASSESSMENT AREA
  - TENTATIVE WORKS AREA
  - WOODLAND
  - SHRUBLAND
  - PLANTATION
  - FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)]
  - ACTIVE AGRICULTURAL LAND
  - ABANDONED AGRICULTURAL LAND
  - HILLSIDE GRASSLAND
  - POND
  - DRAINAGE CHANNEL
  - WATERCOURSE
  - OPEN FIELD
  - DEVELOPED AREA

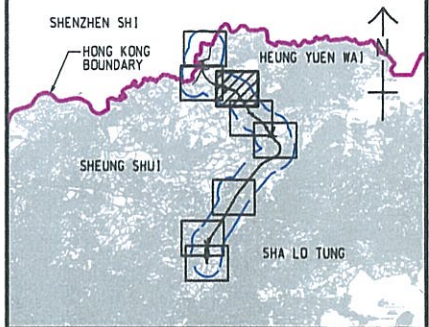


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| <p><b>土木工程拓展署</b><br/>Civil Engineering and Development Department</p>   |                        |
| <p>LIANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION</p> <p><b>HABITAT MAP</b></p> <p style="text-align: right;">SHEET 2 OF 8</p> |                        |
|  |                        |
| <p>DRG. NO. 60212563/ER1/902<br/>圖紙編號</p>  |                        |
| DESIGNED BY<br>HC  | CONTRACT NO.<br>-      |
| DRAWN BY<br>YJP  | STATUS<br>-            |
| SCALE<br>A1 : 2500   | P. BY / APPROVED<br>HT |
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- SPECIES OF CONSERVATION INTEREST:**
- (A2) AQUILARIA SINENSIS
  - (M3) MALAYAN PORCUPINE (OULL)
  - (M5) LESSER BAMBOO BAT
  - (A2) LITTLE EGRET
  - (A4) CHINESE POND HERON
  - (A6) BLACK KITE
  - (A7) CRESTED SERPENT EAGLE
  - (A9) WHITE-THROATED KINGFISHER
  - (A12) BRIGHT-CAPPED CISTICOLA
  - (A16) WHITE-SHOULDERED STARLING
  - (A17) BLACK-NAPED ORIOLE
  - (A19) GREATER COUCAL
  - (A20) LESSER COUCAL
  - (A2) CRESTED GOSHAWK
  - (A2) EMERALD DOVE
  - (H1) CHINESE COBRA
  - (H5) INDIAN FOREST SKINK
  - (B2) SMALL THREE-RING
  - (B3) GREAT SWIFT
  - (F3) SOMANNIATHELPHUSA ZANKLON
  - (F6) PREDACEOUS CHUB



**KEY PLAN**  
SCALE 1 : 150000

- LEGEND:**
- 500m ASSESSMENT AREA
  - TENTATIVE WORKS AREA
  - WL WOODLAND
  - SL SHRUBLAND
  - PL PLANTATION
  - FW FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)]
  - AL ACTIVE AGRICULTURAL LAND
  - AAL ABANDONED AGRICULTURAL LAND
  - HGL HILLSIDE GRASSLAND
  - PD POND
  - DC DRAINAGE CHANNEL
  - R WATERCOURSE
  - OF OPEN FIELD
  - DA DEVELOPED AREA

土木工程拓展署  
**CEDD**  
Civil Engineering and  
Development Department

Liantang/Heung Yuen Wai Boundary  
Control Point and Associated Works  
(Site Formation and Infrastructures)  
- DESIGN AND CONSTRUCTION

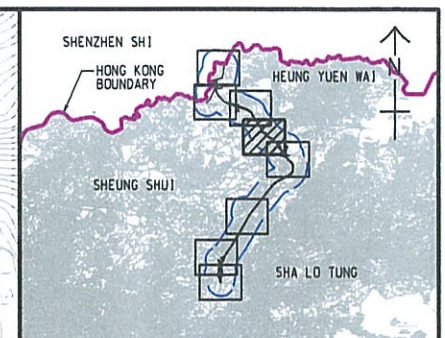
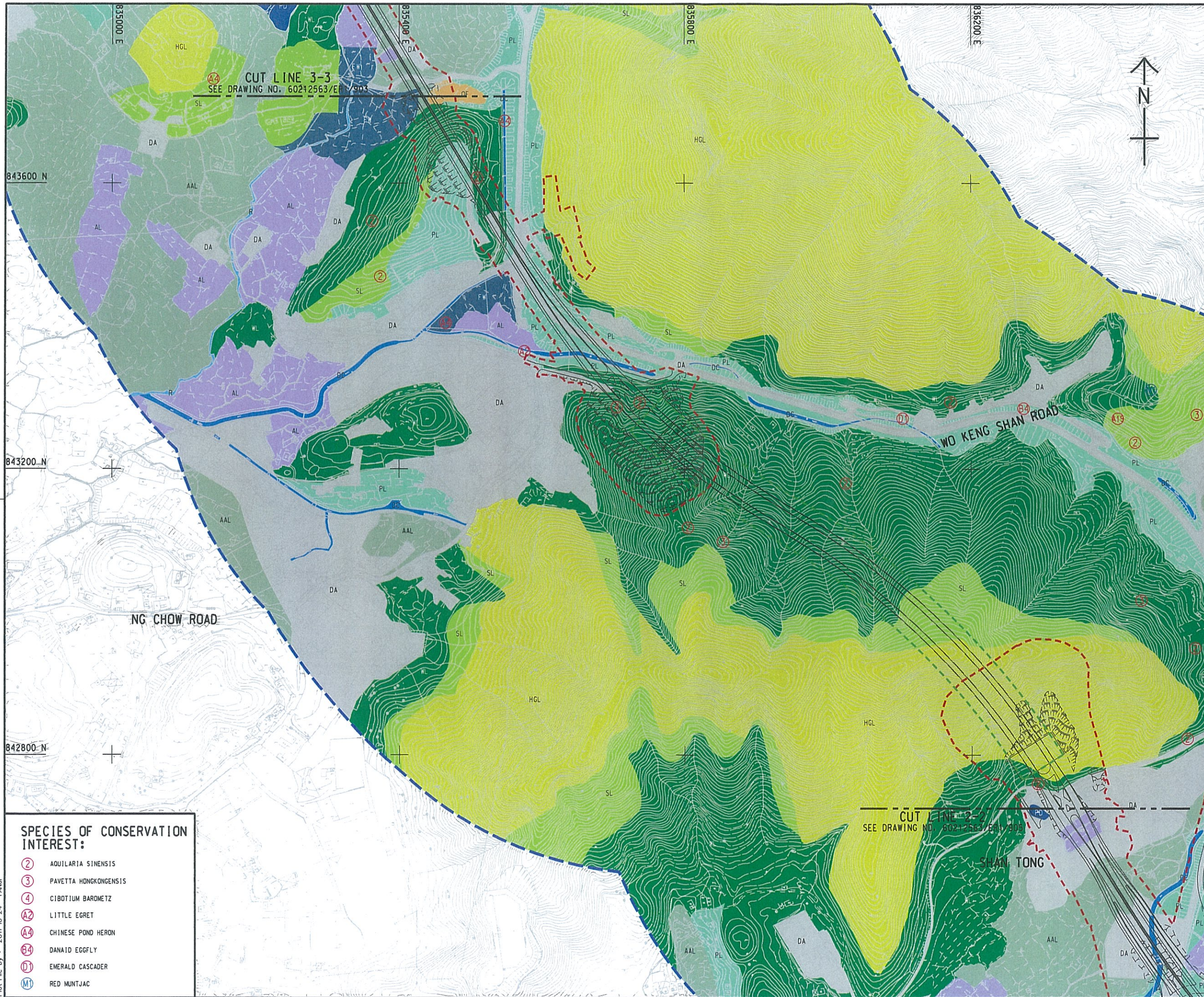
**HABITAT MAP**  
SHEET 3 OF 8

**AECOM**

DRG.NO. 60212563/ER1/903  
圖紙編號

|                             |                              |                        |
|-----------------------------|------------------------------|------------------------|
| DESIGNED BY<br>HC           | CONTRACT NO.<br>-            | P. BY - APPROVED<br>HT |
| DRAWN BY<br>YJP             | STATUS<br>-                  |                        |
| SCALE<br>1:2500             |                              |                        |
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Plot File by : 2011-10-24 YANJIP



**KEY PLAN**  
SCALE 1 : 150000

**LEGEND:**

|  |   |
|--|---|
|  | 500m ASSESSMENT AREA  |
|  | TENTATIVE WORKS AREA  |
|  | TUNNEL SECTION  |
|  | WOODLAND  |
|  | SHRUBLAND   |
|  | PLANTATION  |
|  | FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)] |
|  | ACTIVE AGRICULTURAL LAND                                      |
|  | ABANDONED AGRICULTURAL LAND                                   |
|  | HILLSIDE GRASSLAND  |
|  | POND  |
|  | DRAINAGE CHANNEL  |
|  | WATERCOURSE   |
|  | OPEN FIELD  |
|  | DEVELOPED AREA  |

**SPECIES OF CONSERVATION INTEREST:**

|  |                       |
|--|-----------------------|
|  | AQUILARIA SINENSIS    |
|  | PAVETTA HONGKONGENSIS |
|  | CIBOTIUM BARDNETZ     |
|  | LITTLE EGRET          |
|  | CHINESE POND HERON    |
|  | DANAID EGGFLY         |
|  | EMERALD CASCADER      |
|  | RED MUNTJAC           |

| REV. | DESCRIPTION | DATE |
|------|-------------|------|
|      |             |      |

**CEDD** 土木工程拓展署  
Civil Engineering and Development Department

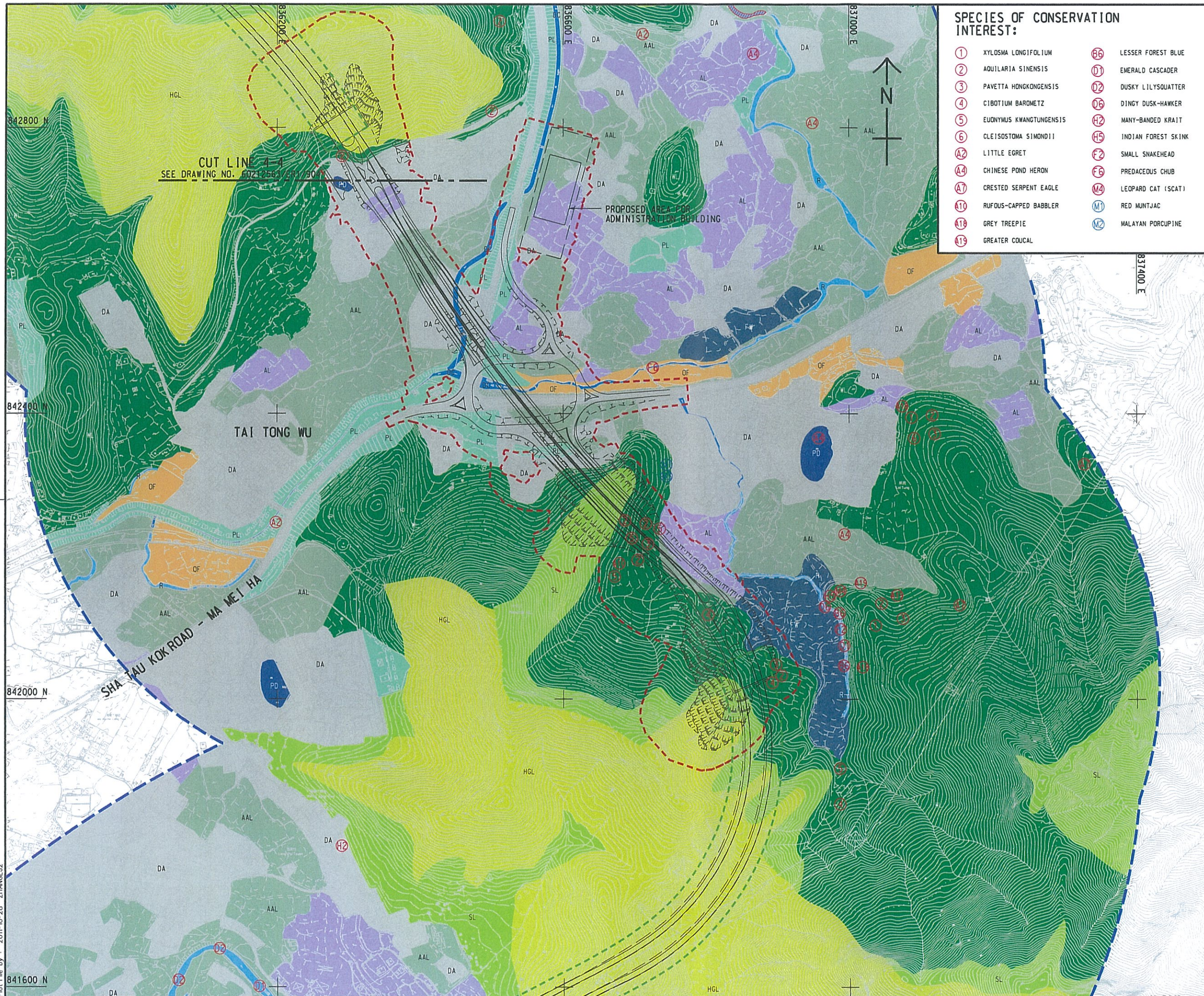
L IANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION

**HABITAT MAP**  
SHEET 4 OF 8

**AECOM**

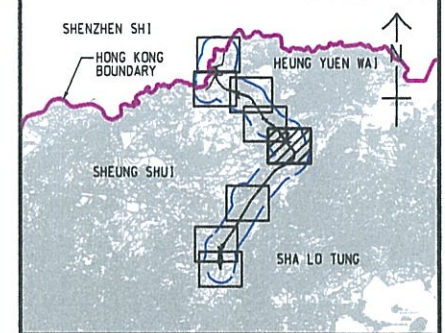
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|--------------------------|------------------------|
| DRGNO. 60212563/ER1/904  |                        |
| DESIGNED BY<br>HC        | CONTRACT NO.<br>       |
| DRAWN BY<br>YJP          | P. Dir. APPROVED<br>HT |
| SCALE<br>A1 1 : 2500     | STATUS<br>             |
| DIMENSIONS ARE IN METRES | © COPYRIGHT RESERVED   |

Plot File by : 2011-10-24 YANJP



**SPECIES OF CONSERVATION INTEREST:**

- |                           |                        |
|---------------------------|------------------------|
| ① XYLOSMA LONGIFOLIUM     | Ⓜ6 LESSER FOREST BLUE  |
| ② AQUILARIA SINENSIS      | Ⓜ1 EMERALD CASCADER    |
| ③ PAVETTA HONGKONGENSIS   | Ⓜ2 DUSKY LILYSQUATTER  |
| ④ CIBOTIUM BAROMETZ       | Ⓜ6 DINGY DUSK-HAWKER   |
| ⑤ EUONYMUS KWANGTUNGENSIS | Ⓜ2 MANY-BANDED KRAIT   |
| ⑥ CLEISOSTOMA SIMONDI     | Ⓜ5 INDIAN FOREST SKINK |
| Ⓜ2 LITTLE EGRET           | Ⓜ2 SMALL SNAKEHEAD     |
| Ⓜ4 CHINESE POND HERON     | Ⓜ6 PREDACEOUS CHUB     |
| Ⓜ1 CRESTED SERPENT EAGLE  | Ⓜ4 LEOPARD CAT (SCAT)  |
| Ⓜ10 RUFOUS-CAPPED BABBLER | Ⓜ1 RED MUNTJAC         |
| Ⓜ18 GREY TREEPIE          | Ⓜ2 MALAYAN PORCUPINE   |
| Ⓜ19 GREATER COUCAL        |                        |



**KEY PLAN**  
SCALE 1 : 150000

**LEGEND:**

- 500m ASSESSMENT AREA
- TENTATIVE WORKS AREA
- TUNNEL SECTION
- WOODLAND
- SHRUBLAND
- PLANTATION
- FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)]
- ACTIVE AGRICULTURAL LAND
- ABANDONED AGRICULTURAL LAND
- HILLSIDE GRASSLAND
- POND
- DRAINAGE CHANNEL
- WATERCOURSE
- OPEN FIELD
- DEVELOPED AREA
- ECOLOGICALLY IMPORTANT STREAM

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Civil Engineering and Development Department

L IANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION

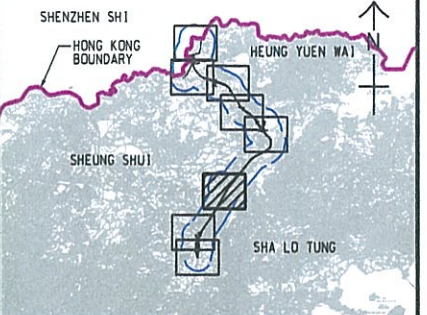
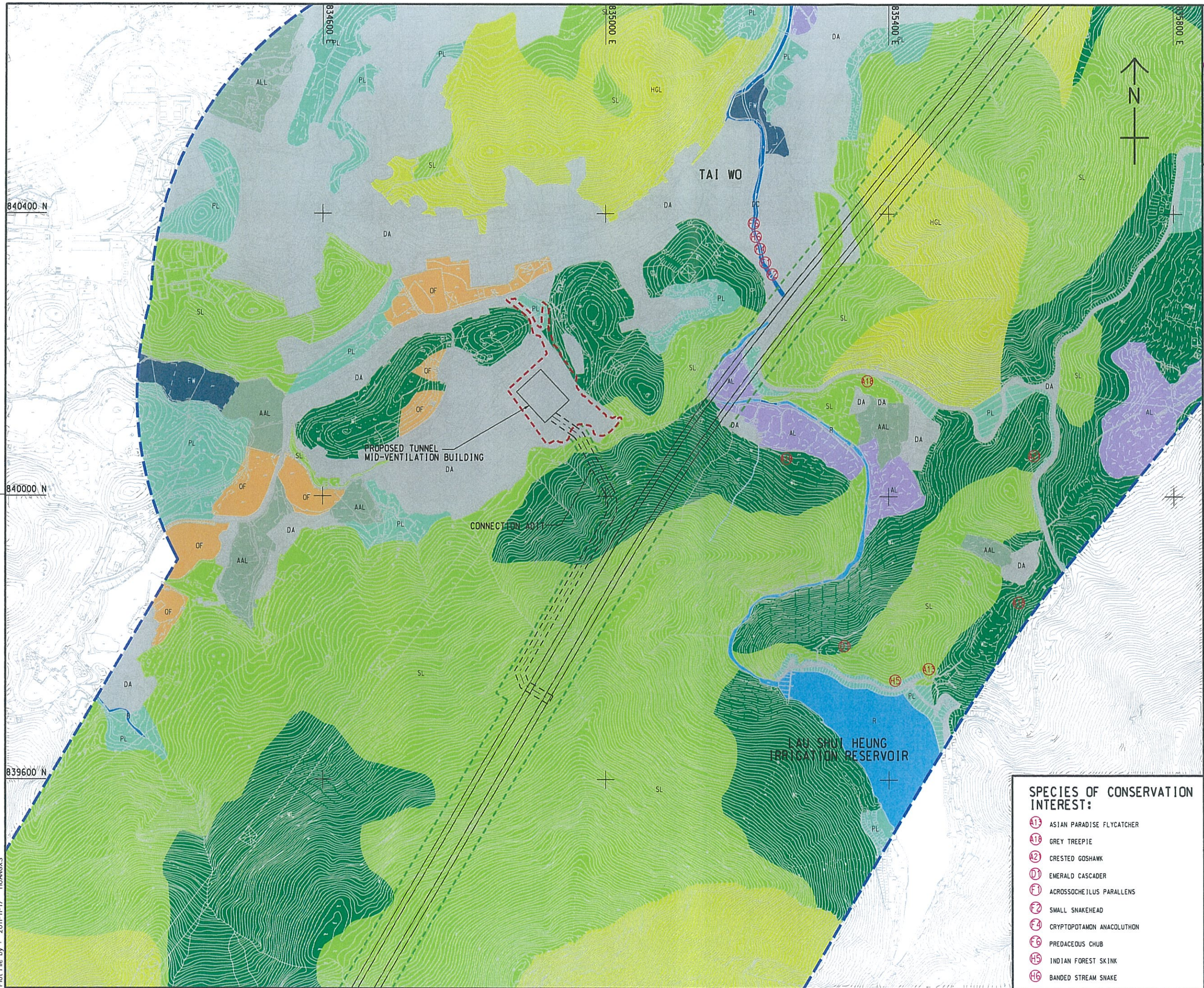
**HABITAT MAP**

SHEET 5 OF 8



|                                |                           |
|--------------------------------|---------------------------|
| DRG. NO. 圖紙編號 60212563/ER1/905 |                           |
| DESIGNED BY 設計 HC              | CONTRACT NO. 合約編號         |
| DRAWN BY 繪圖 YJP                | STATUS 狀況                 |
| SCALE 比例 A1 1 : 2500           | P. DIR. APPROVED 負責人 HT   |
| DIMENSIONS ARE IN METRES 尺寸單位  | © COPYRIGHT RESERVED 版權所有 |

Plot File by : 2011-10-28 ZHANGJLJ



KEY PLAN  
SCALE 1 : 15000

**LEGEND:**

|  |   |
|--|---|
|  | 500m ASSESSMENT AREA  |
|  | TENTATIVE WORKS AREA  |
|  | TUNNEL SECTION  |
|  | WOODLAND  |
|  | SHRUBLAND   |
|  | PLANTATION  |
|  | FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)] |
|  | ACTIVE AGRICULTURAL LAND                                      |
|  | ABANDONED AGRICULTURAL LAND                                   |
|  | HILLSIDE GRASSLAND  |
|  | POND  |
|  | DRAINAGE CHANNEL  |
|  | WATERCOURSE   |
|  | OPEN FIELD  |
|  | DEVELOPED AREA  |

| REV. | DESCRIPTION | DATE |
|------|-------------|------|
|      |             |      |

**CEDD** 土木工程拓展署  
Civil Engineering and Development Department

L'ANTANG/HEUNG YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION

**HABITAT MAP**  
SHEET 6 OF 8

**AECOM**

|   |                            |
|---|----------------------------|
| DRG.NO. 圖紙編號<br><b>60212563/ER1/906</b> |                            |
| DESIGNED BY 設計<br>HC                    | CONTRACT NO. 合約編號<br>-     |
| DRAWN BY 繪圖<br>YJP                      | P. BY - APPROVED 校核人<br>HT |
| SCALE 比例<br>A1 : 2500                   | STATUS 圖況<br>              |
| DIMENSIONS ARE IN METRES 尺寸單位 公尺        |                            |

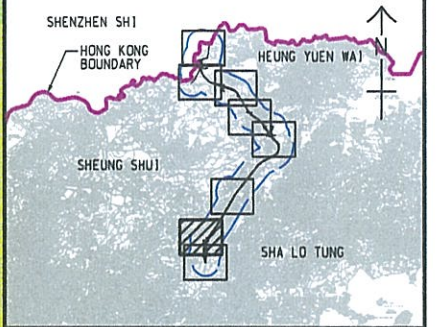
**SPECIES OF CONSERVATION INTEREST:**

- ASIAN PARADISE FLYCATCHER
- GREY TREEPIE
- CRESTED GOSHAWK
- EMERALD CASCADER
- ACROSSOCHEILUS PARALLENS
- SMALL SNAKEHEAD
- CRYPTOPOTAMON ANACLOTHON
- PREDACEOUS CHUB
- INDIAN FOREST SKINK
- BANDED STREAM SNAKE



**SPECIES OF CONSERVATION INTEREST:**

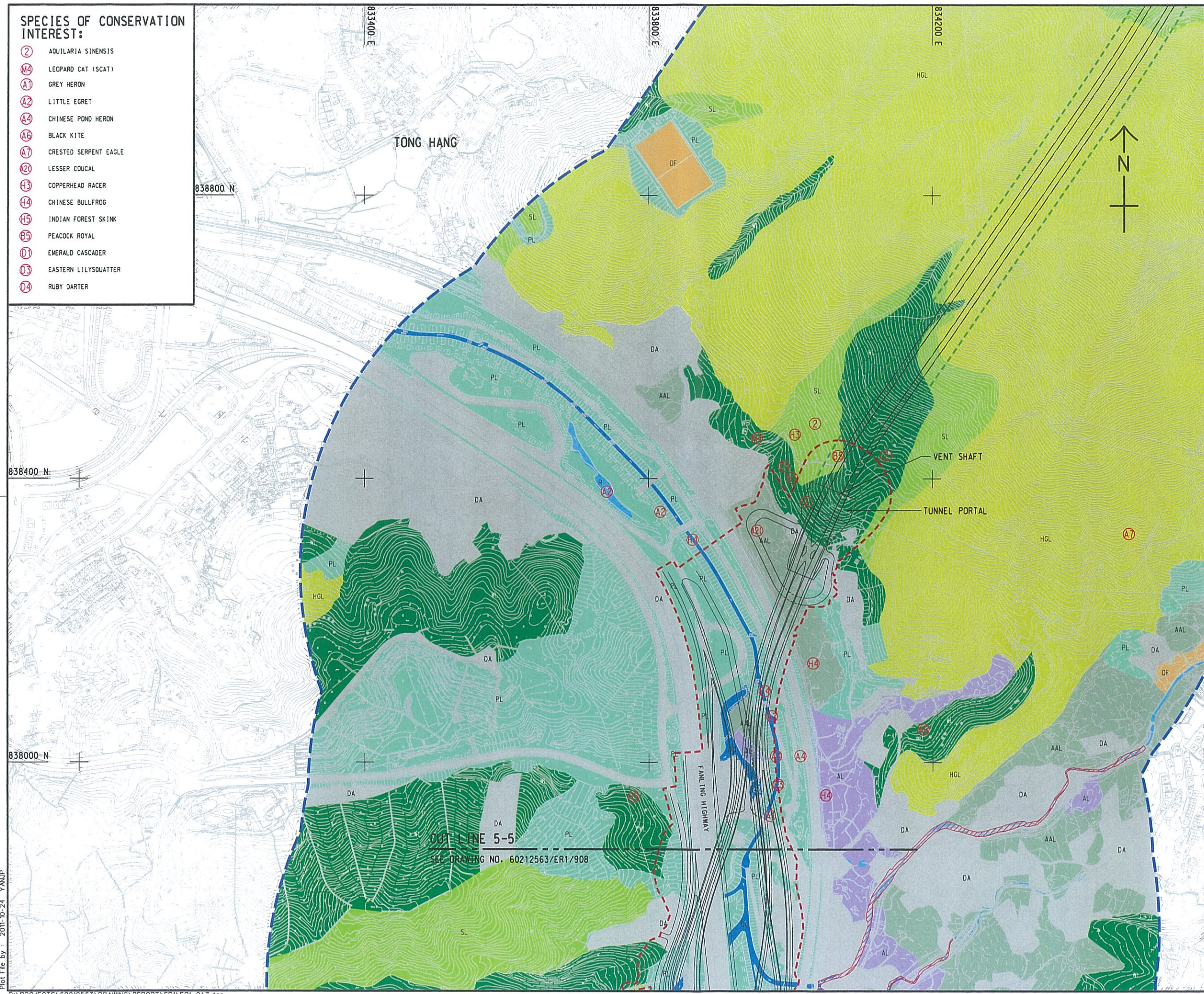
- ② ADULIARIA SINENSIS
- ④ LEOPARD CAT (SCAT)
- ① GREY HERON
- ② LITTLE EGRET
- ④ CHINESE POND HERON
- ⑥ BLACK KITE
- ⑦ CRESTED SERPENT EAGLE
- ⑩ LESSER COUCAL
- ③ COPPERHEAD RACER
- ④ CHINESE BULLFROG
- ⑤ INDIAN FOREST SKINK
- ⑤ PEACOCK ROYAL
- ① EMERALD CASCADER
- ③ EASTERN LILYSQUATTER
- ④ RUBY DARTER



**KEY PLAN**  
SCALE 1 : 150000

**LEGEND:**

- 500m ASSESSMENT AREA
- TENTATIVE WORKS AREA
- TUNNEL SECTION
- WL WOODLAND
- SL SHRUBLAND
- PL PLANTATION
- FW FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)]
- AL ACTIVE AGRICULTURAL LAND
- AAL ABANDONED AGRICULTURAL LAND
- HGL HILLSIDE GRASSLAND
- PD POND
- DC DRAINAGE CHANNEL
- R WATERCOURSE
- OF OPEN FIELD
- DA DEVELOPED AREA
- ECOLOGICALLY IMPORTANT STREAM



OUTLINE 5-5  
SEE DRAWING NO. 60212563/ER1/908

| REV. | DESCRIPTION | BY | CHK | DATE |
|------|-------------|----|-----|------|
|      |             |    |     |      |

**CEDD** 土木工程拓展署  
Civil Engineering and Development Department

Liantang/Heung Yuen Wai Boundary Control Point and Associated Works (Site Formation and Infrastructures) - Design and Construction

**HABITAT MAP**

SHEET 7 OF 8

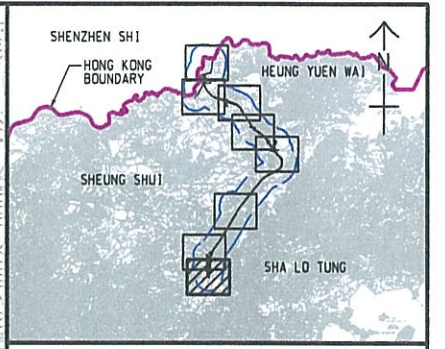


DRG. NO. 60212563/ER1/907  
圖紙編號

|                   |                   |                        |
|-------------------|-------------------|------------------------|
| DESIGNED BY<br>HC | CONTRACT NO.<br>- | P. DIR. APPROVED<br>HT |
| DRAWN BY<br>YJP   | STATUS<br>-       |                        |

SCALE 1:1 : 2500  
DIMENSIONS ARE IN METRES

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KEY PLAN  
SCALE 1 : 150000

**LEGEND:**

|  |   |
|--|---|
|  | 500m ASSESSMENT AREA  |
|  | TENTATIVE WORKS AREA  |
|  | TUNNEL SECTION  |
|  | WOODLAND  |
|  | SHRUBLAND   |
|  | PLANTATION  |
|  | FRESHWATER WETLAND [WET AGRICULTURAL LAND (ACTIVE/ABANDONED)] |
|  | ACTIVE AGRICULTURAL LAND                                      |
|  | ABANDONED AGRICULTURAL LAND                                   |
|  | HILLSIDE GRASSLAND  |
|  | POND  |
|  | DRAINAGE CHANNEL  |
|  | WATERCOURSE   |
|  | OPEN FIELD  |
|  | DEVELOPED AREA  |
|  | ECOLOGICALLY IMPORTANT STREAM                                 |

| REV. 修訂 | DESCRIPTION 內容摘要 | A.E.C. CHECKED 覆核 | P.L.C. CHECKED 覆核 | DATE 日期 |
|---------|------------------|-------------------|-------------------|---------|
| -       | -                | -                 | -                 | -       |

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Civil Engineering and Development Department

LANTANG/YUEN WAI BOUNDARY CONTROL POINT AND ASSOCIATED WORKS (SITE FORMATION AND INFRASTRUCTURES) - DESIGN AND CONSTRUCTION

**HABITAT MAP**  
SHEET 8 OF 8

**AECOM**

DRG. NO. 圖紙編號 **60212563/ER1/908**

|                |     |                   |   |                    |    |
|----------------|-----|-------------------|---|--------------------|----|
| DESIGNED BY 設計 | HC  | CONTRACT NO. 合約編號 | - | P. BY: APPROVED 核准 | HT |
| DRAWN BY 繪圖    | YJP | STATUS 階段         | - |                    |    |

SCALE 比例 A1 1 : 2500  
DIMENSIONS ARE IN 尺寸單位 METRES  
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**SPECIES OF CONSERVATION INTEREST:**

- GREY HERON
- LITTLE EGRET
- CHINESE POND HERON
- BLACK KITE
- EASTERN LILYSQUATTER
- CHINESE BULLFROG
- INDIAN FOREST SKINK