

GEOTECHNICAL PLANNING REVIEW REPORT (GPRR)
FOR
A COMMERCIAL DEVELOPMENT (FIVE SALES SHOPS)
AT
LOT 1796, 1797, 1798, 1800, 1801 & 1802 IN D.D. 129,
DEEP BAY VILLA, YUEN LONG

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Planning Consultant:	P & C Engineering Consultancy Co.
Registered Geotechnical Engineer:	SLN And Associates Ltd.

SEP 2025

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1.0 INTROCUCTION

1.1 Background

The application site is located at Lot 1796, 1797, 1798, 1800, 1801 & 1802 in D.D. 129, Deep Bay Villa, Yuen Long. A site plan (1:5000) is shown in *Figures 1*.

The proposed development is for commercial use. It basically comprises of 5 single-storey shops each 8m high and covers a rectangular floor area of 215m². The total floor area amounts to 1075m². In addition, there will a temporary single-storey toilet of 3.5m in height and 15m² in area, two 3.5mx7m loading/unloading zones for light-good vehicle, and five 2.5mx5m private car parks. The conceptual drawing of the proposed development is shown in *Appendix A*.

Owing to the application of Section 16, it is mandatory to submit a Geotechnical Planning Review Report (GPRR) to assess the geotechnical feasibility of the proposed development. SLN & Associates Ltd. has been appointed to be the Geotechnical Consultant responsible for this study and submission. This report details the desk study summarizing the available information on geological and ground conditions. It is envisaged that a thorough design in respect of the development will be submitted to Buildings Department for approval shortly after the GPRR is accepted by various government departments.

1.2 The Study Approach

The geotechnical planning review is generally carried out in accordance with the common practice as described by “GEO Advice Note for Planning Applications under Town planning Ordinance (Cap.31)”.

2.0 EXISTING INFORMATION

2.1 Topography

The topography of the site now found and presented in a survey plan consists of a gentle sloping ground rising from +26mPD to 34mPD across a length of 85m, which represent a gentle overall sloping angle of 5.5°, dipping to the northwest. It is also found in some spots minor difference in level retained by concrete planks for forming level platforms. However, a deviation from the topographic record kept by the Lands Department is noticed. It is believed that some filling of the ground has been done causing some of the geotechnical features to become dismissed, rendering the current profile a more safe and desirable condition.

The total site area is about 3320m² and most of it will be occupied by the proposed development. To the east of site is a natural terrain and there is a track road adjacent to the south and east sides of the site. This track road is used as an access road for the private villas that are located to the southwest of the site.

A topographic survey plan showing the most updated ground profile of the site is given in *Figure 2a* while another topographic survey plan (1:1000) presenting both current and original ground profiles is attached in *Figure 2b*.

Photographic records of the site are enclosed in *Appendix B*.

2.2 Adjacent lot and Structure

The site is adjacent to the following structure:

a) Private Villas

There are a group of private villas at about 30m away from the subject site. Because of such long distance, they are supposed not to be affected by the proposed development. As a part of the development, a carriageway which runs along the east side of the villas area and leads directly to the subject site will also be constructed.

2.3 Geology

Based on a geological map given in Geotechnical Area Studies Program (GASP) – Report 4 “North West New Territories” published by Geotechnical Control Office in 1988, the site is underlain by COLLUVIUM. Neither superficial materials nor geological faults are identified at the site. The geological map is reproduced in *Figure 3*.

2.4 Existing Slope/Retaining Wall Features

According to the slope information retrieved from GEO’s Slope Information System (SIS), there should be two registered slopes either within or in the close proximity of the site. The one that lies within the site is named Feature 2SW-C/C84, which is a man-made slope of 4.5m in height, 70m in length and has a slope angle of 40°. It lies approximately in the middle of the site and rises from a toe level of +26mPD to a peak level of +31mPD. The slope generally dips to the west. The other registered slope is named Feature 2SW-C/C85, which is also a man-made slope but falls outside of our site, so it is not a major concern of the proposed development. However, these two Features have now been flattened into a gentle sloping ground after some filling work has been done. The brief description of which is given in Section 2.1 above.

A location plan showing both Features together with the corresponding maintenance responsibilities are enclosed in *Appendix C*.

2.5 Natural Terrain Landslide Inventory

According to the Natural Terrain Landslide Inventory (NTLI) provided in GEO’s online SIS, no landslides were observed within 200m offset from the site. A graphical NTLI-Landslide Record is given in *Figure 4*.

2.6 Historical Landslide Catchment Inventory

Based on the information given in GEO’s online SIS, no historical landslide catchment inventories were found within 100-150m offset from the site.

2.7 Boulder Inventory

According to GEO's QRA of Boulder Fall Hazards No.S2_H, no boulder fall records are found in the study area. An extract of QRA of Boulder Fall Hazards No.S2_H is reproduced in *Figure 5*.

2.8 GASP Report

As a part of the desk study, reference has been made to Geotechnical Land Use Map (GLUM) enclosed in GASP – Report 4. The map suggests that the site is categorized as GLUM Class III. Development within this class may possibly require intensive geotechnical investigation, and hence the costs associated with site investigation, site formation, foundation and drainage work are likely to be high. Another map called Physical Constraints Map indicates that our site is susceptible to overland flow and periodic inundation. Therefore, a proper drainage system should be put in place to save the area from inundation.

Extracts of the above two maps are shown in *Figures 6 and 7* respectively.

Attention should be drawn to that the information presented in this report are generally based on high altitude aerial photograph interpretation (API), GASP report up to year 1988, and current GEO's SIS. Therefore, the information contained herein, and to which our engineering interpretation and assessment have referred, may not be up-to-date and even insufficient for the proposed development. More detailed appraisal should be prepared by further study.

3.0 GEOTECHNICAL CONSIDERATION

3.1 General

For the proposed development, the following geotechnical related construction works are envisaged:

- Ground Investigation works
- Site formation works
- Existing slopes
- Foundation works
- Retaining structures
- Excavation works.

3.2 Ground Investigation works

In order to investigate and confirm the ground condition and soil/rock properties, a ground investigation program is recommended to be carried out at the proposed site by a GIFW contractor at a later stage.

3.3 Site formation works

Based on the development layout plan, the proposed building will be built mainly on a flat land. Minor site formation works would therefore be required.

3.4 Existing Slopes

As mentioned earlier, there are two registered slopes lying within or beside our site. Even though both of them appears to be in stable condition after the backfilling work, further study should be carried out to review the implications that may have arisen from that work.

3.5 Foundation works

The foundation of the proposed development will be designed to sustain the following loads:

1. Gravity load and live load from the proposed building;
2. Lateral wind load and soil load acting on the proposed building.

Since only one-storey buildings will be constructed on the site, the building loads should be relatively small as compared to tall building. If dense stratum or bedrock is found within 2m to 3m from the ground surface, then it would be feasible to use a shallow foundation such as spread footing or raft footing. The actual allowable bearing capacity of the founding soil at the site and the type of foundation to be adopted for the proposed development shall be subject to site-specific GI information and field testing such as plate load test. Reference should be made to “Code of Practice for Foundation 2017” while preparing the detailed foundation design.

It should be ensured that the foundation works used will not cause any adverse effects to the surrounding geotechnical features during the construction period or in the long run.

3.6 Excavation works

An excavation depth of about 2m is supposed to be made at the site to facilitate the construction work for foundation. In view of this, temporary Excavation and Lateral Support Works (ELS works) should be adopted to sustain the soil load imposed during excavation. Specifically, a shoring system employing sheet piles wall is considered feasible for supporting the excavation pit of this kind.

Any possible adverse effects incurred during each stage of excavation work shall be fully addressed in the design of ELS works. As a result, the damages to the adjacent structures, features, underground utilities, and public road could be avoided.

Before excavation work begins, a comprehensive condition survey should be carried out on and near the existing land. Any defects found should be fully documented with color photographs.

A monitoring system should also be set up on adjoining land and structure, which may include settlement checkpoints, tilting checkpoints, piezometers and inclinometers. During the excavation and construction of foundation, checkpoint readings should be taken and recorded daily.

4.0 CONCLUSION

This report has discussed all the issues concerning the geotechnical planning review under Town Planning Ordinance Section 16 for the captioned project. In conclusion, the proposed development is considered geotechnically feasible.

5.0 REFERENCES

GCO, (1988). Geotechnical Area Studies Programme. North West New Territories. GASP Report IV. Geotechnical Control Office, Civil Engineering Services Department.

GEO, (2019). Natural Terrain Landslide Inventory. Slope Information System. Geotechnical Engineering Office, Civil Engineering and Development Department.

GEO. QRA of Boulder Fall Hazards. Slope Information System. Geotechnical Engineering Office, Civil Engineering and Development Department.

FIGURES

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SITE LOCATION PLAN - EXTRACT 1 : 5000 SURVEY SHEET OF SITE

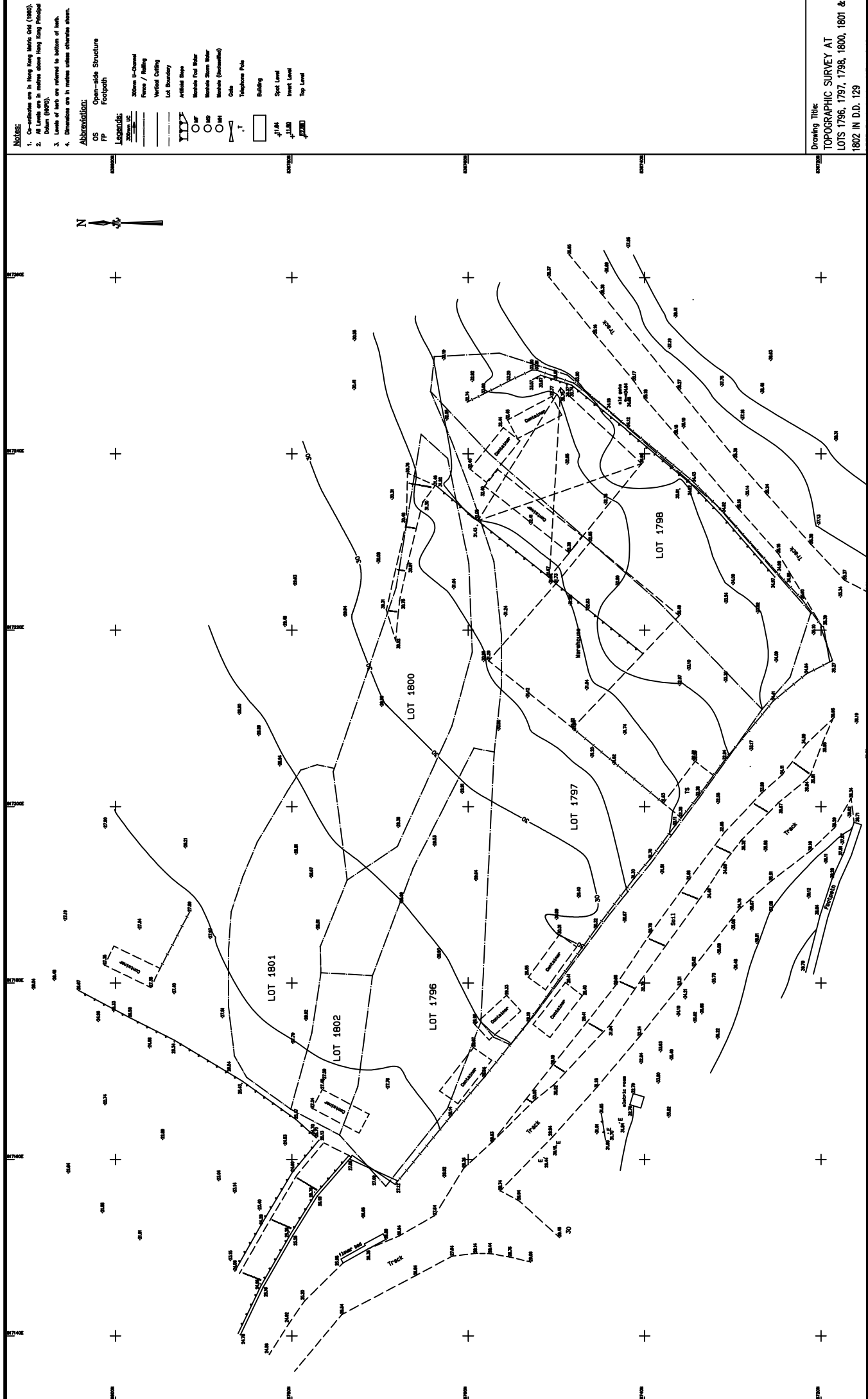


Figure No.:

TOPOGRAPHIC SURVEY PLAN OF SITE

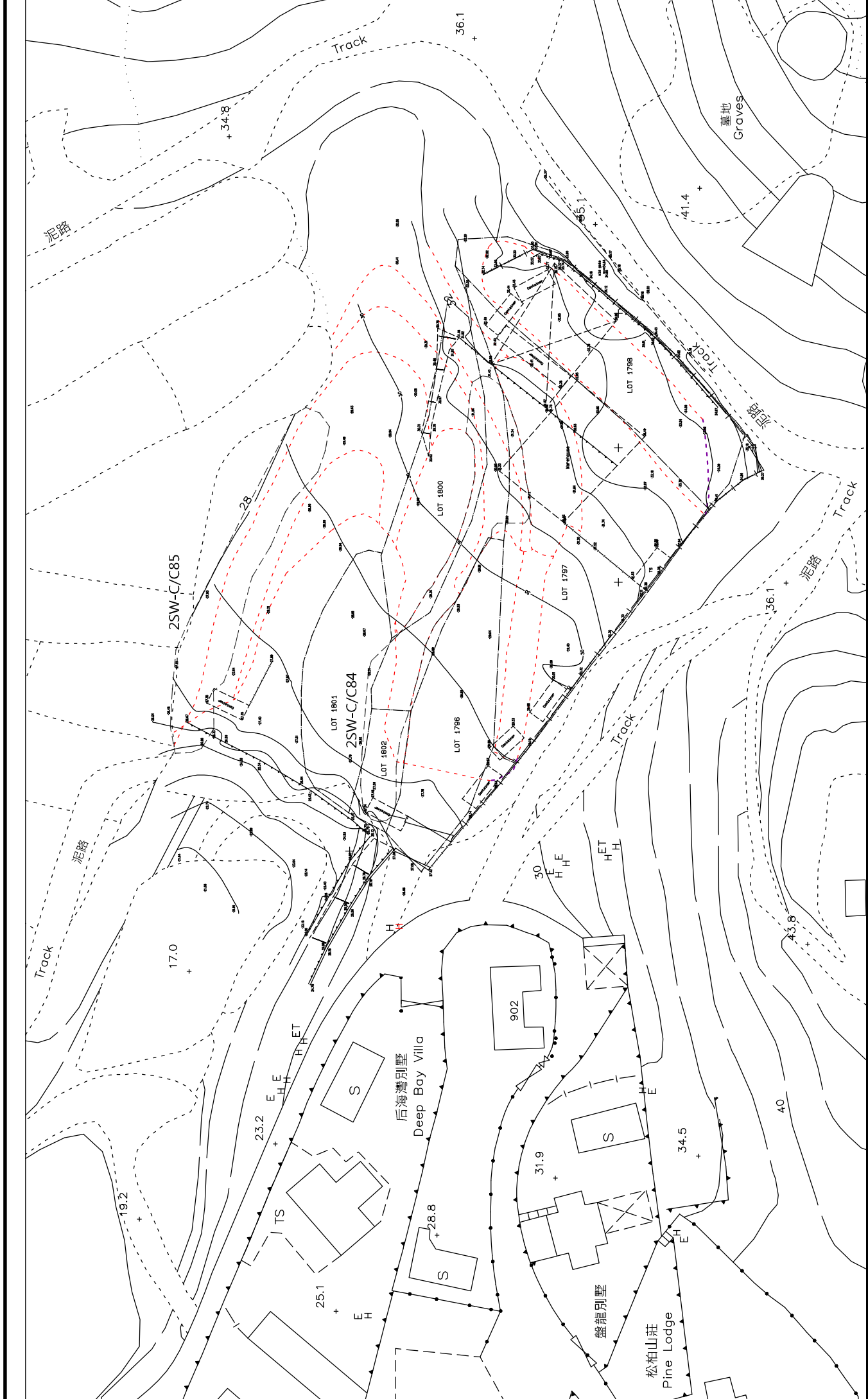


Figure No.:

OVERLAP OF 1 :1000 SURVEY SHEET AND TOPOGRAPHIC SURVEY PLAN

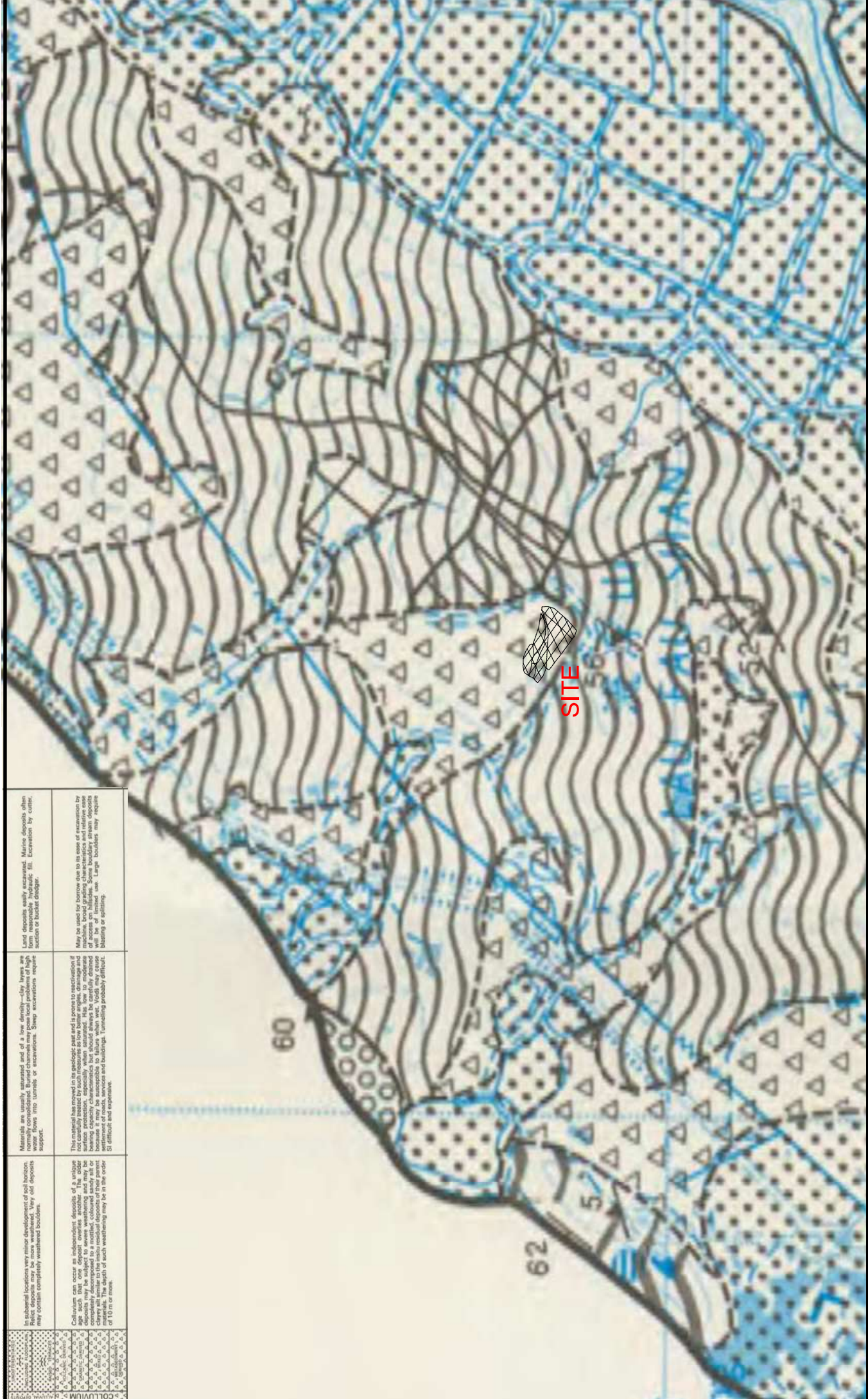


Figure No.:

EXTRACT OF GASP REPORT MAP - ENGINEERING GEOLOGY MAP

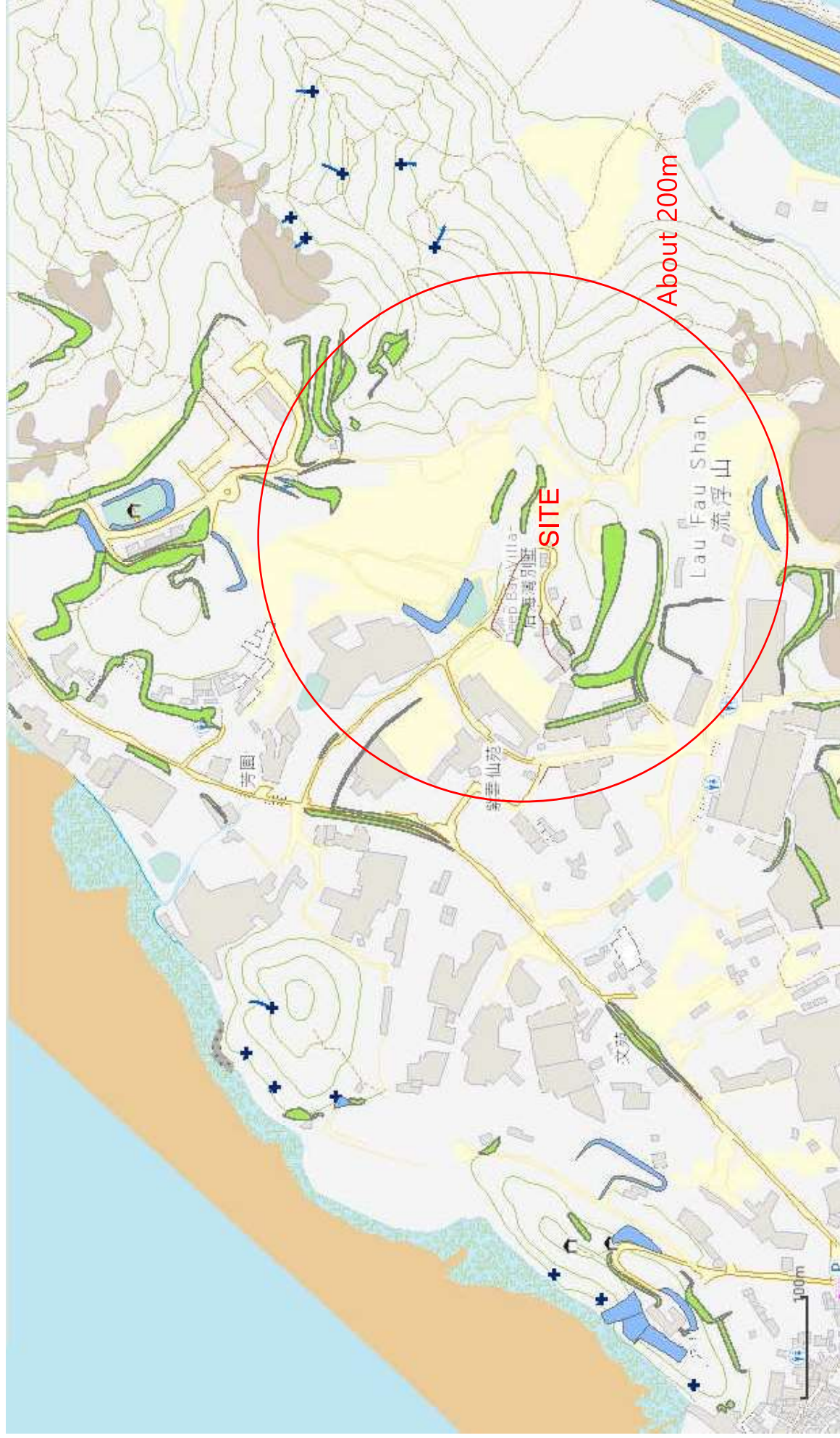


Figure No.:

NTLI - LANDSLIDE RECORD

4

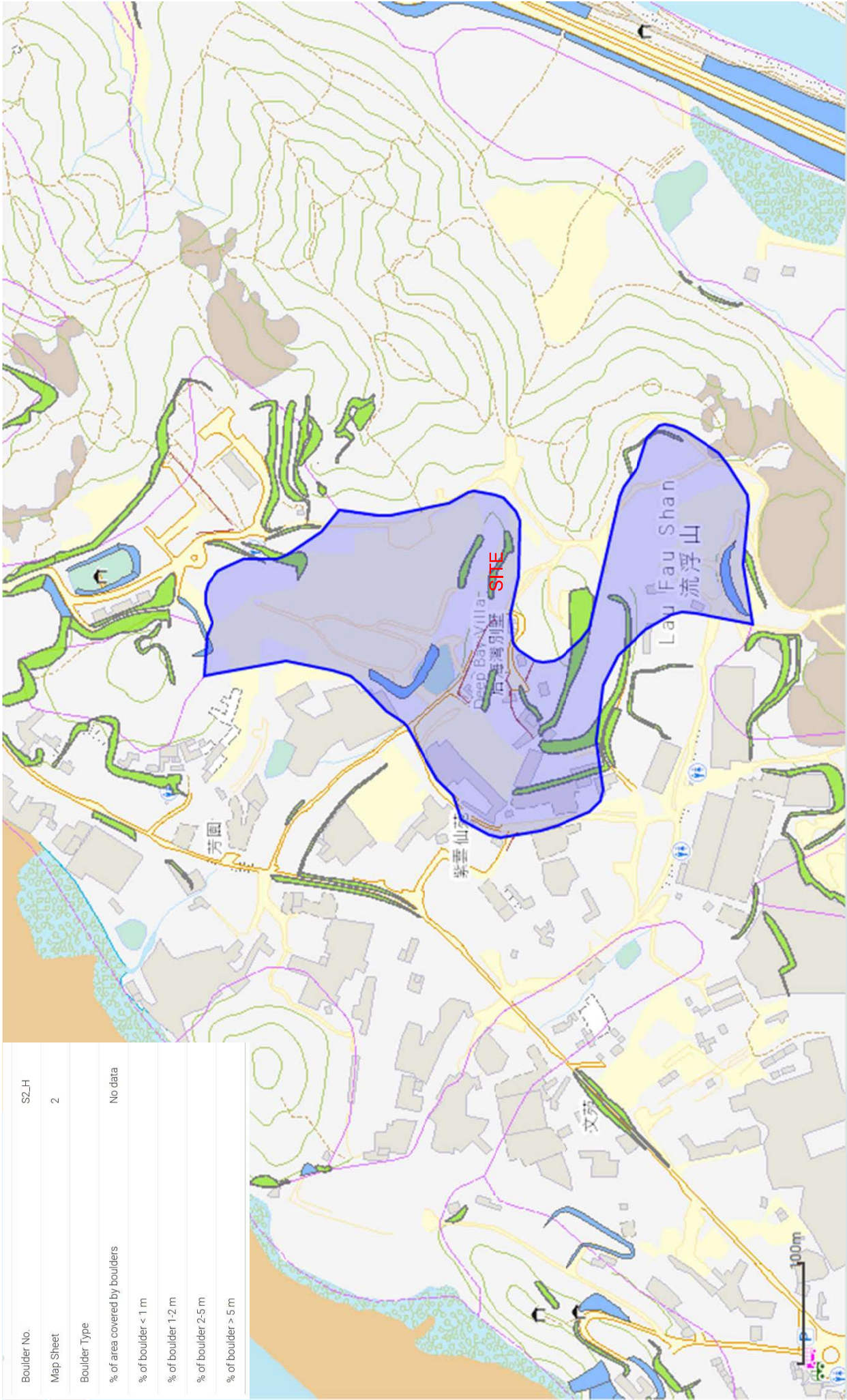


Figure No.:

LEGEND

CLASS	CODE	GEOTECHNICAL LIMITATIONS	SUITABILITY FOR DEVELOPMENT	ENGINEERING COST FOR DEVELOPMENT	INTENSITY OF SITE INVESTIGATION REQUIRED
I		Low	High	Low	Normal
II		Moderate	Moderate	Normal	Normal
IIIS		Moderate	Moderate - Low	Normal - High	Normal
III		High	Low	High	Intensive
IV		Extreme	Probably Unsuitable	Very High	Very Intensive

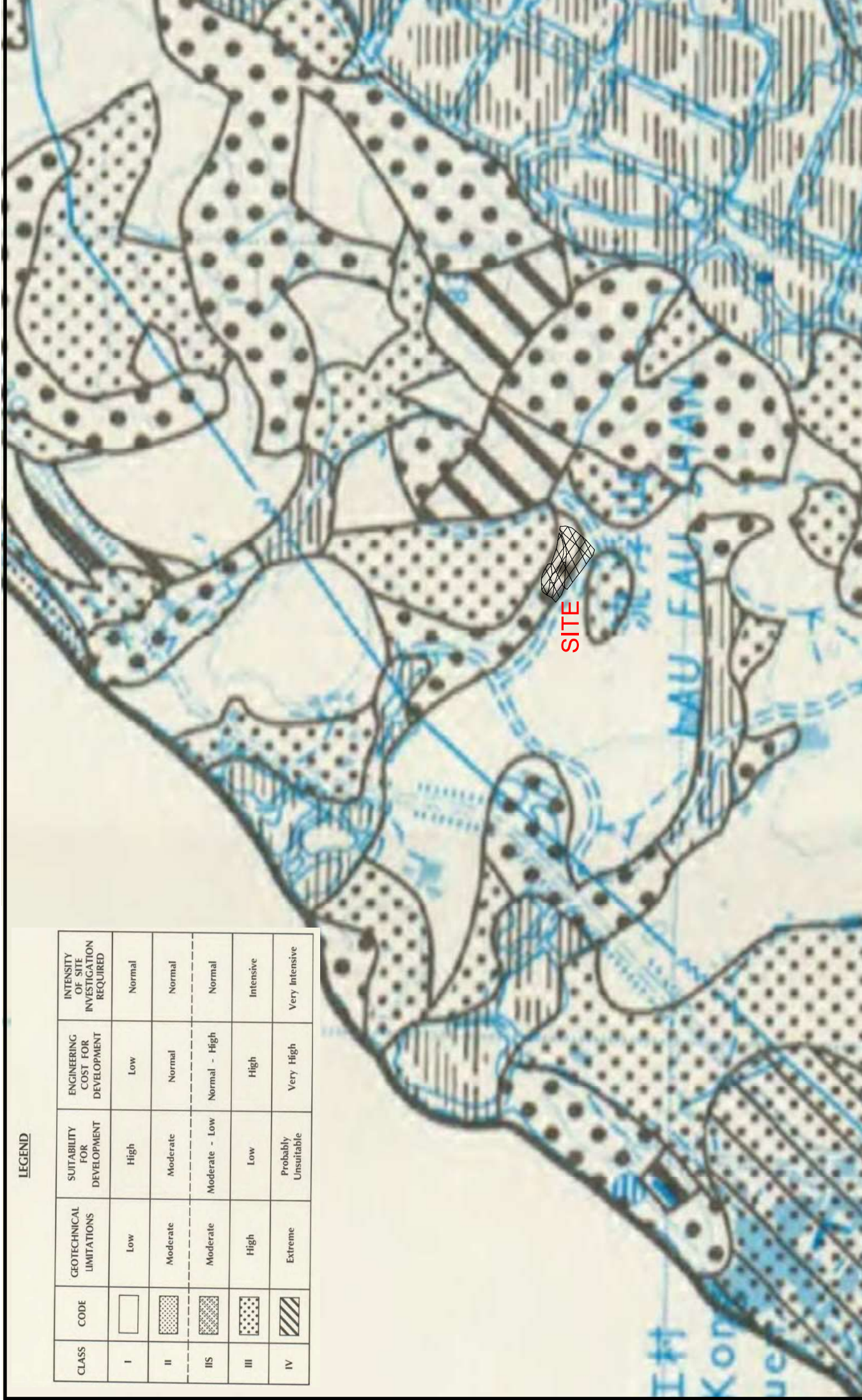
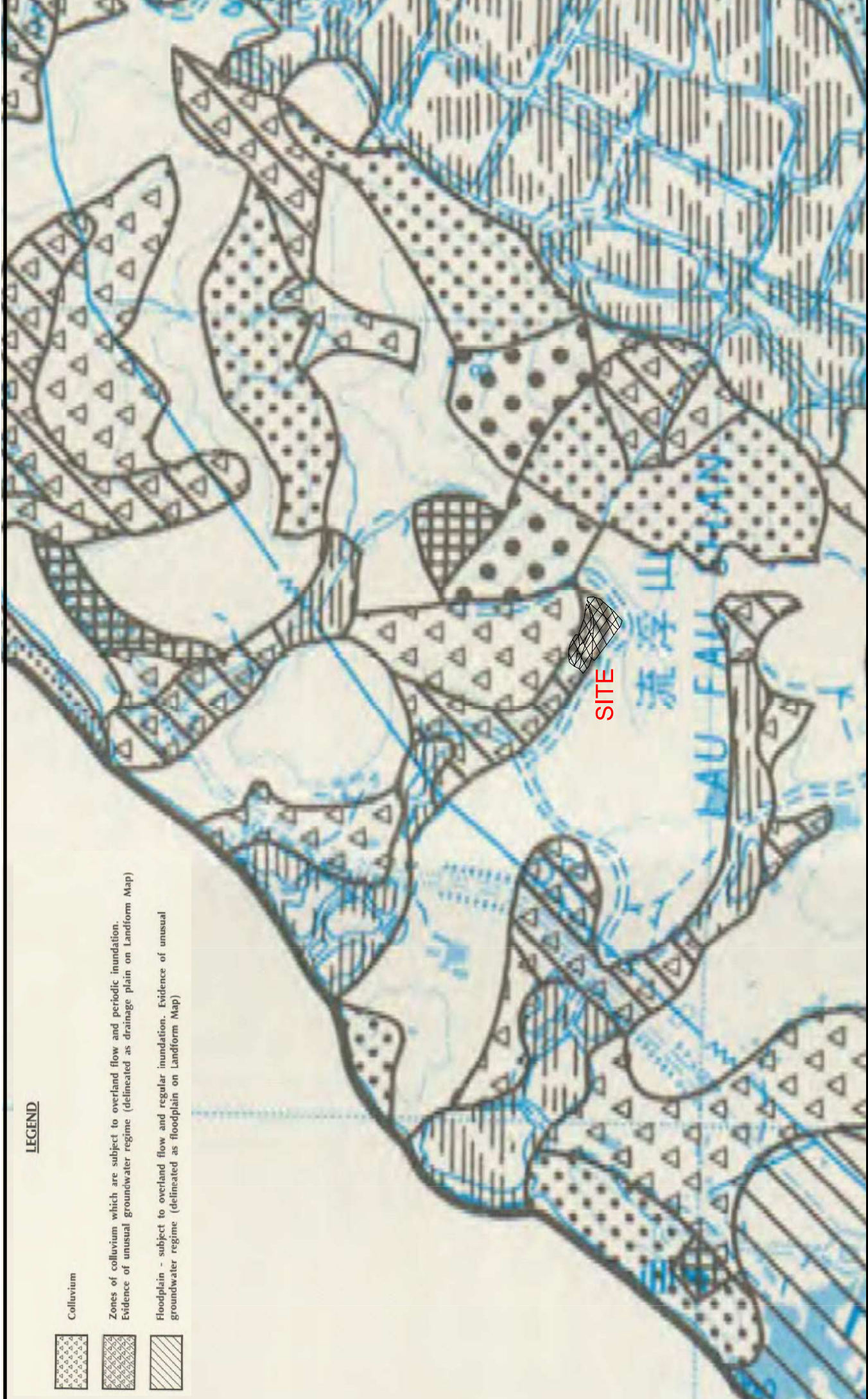


Figure No.:

EXTRACT OF GASP REPORT MAP - GEOTECHNICAL LAND USE MAP



LEGEND

-  Colluvium
-  Zones of colluvium which are subject to overland flow and periodic inundation. Evidence of unusual groundwater regime (delineated as drainage plain on Landform Map)
-  Floodplain - subject to overland flow and regular inundation. Evidence of unusual groundwater regime (delineated as floodplain on Landform Map)

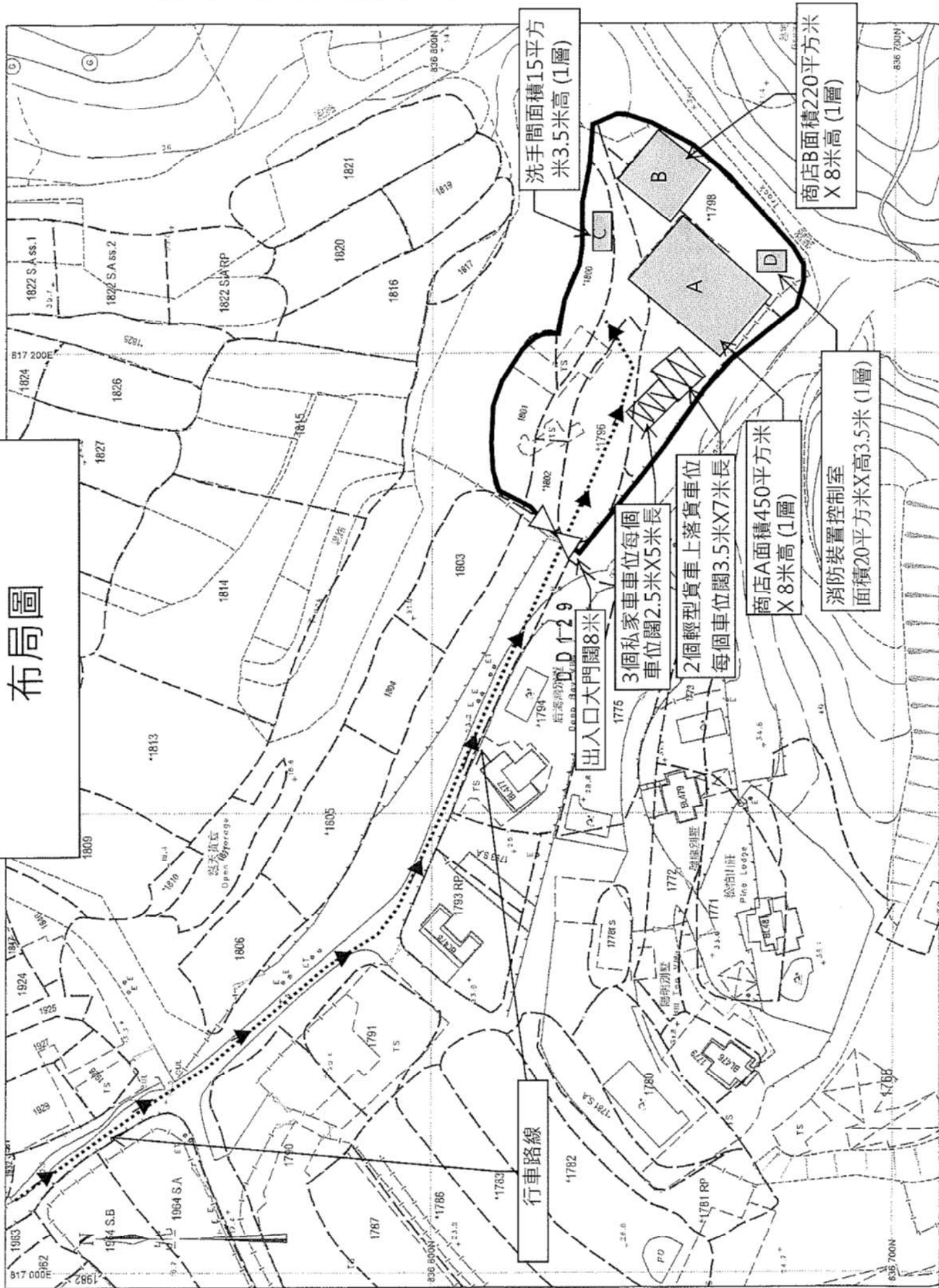
Figure No.:

EXTRACT OF GASP REPORT MAP - PHYSICAL CONSTRAINTS MAP

Appendix A

Conceptual Drawings of The Proposed Development

布局圖



Appendix B

Site Photographic Records



Plate 1



Plate 2



Plate 3

Appendix C

Location Plan and Slope Maintenance Responsibility

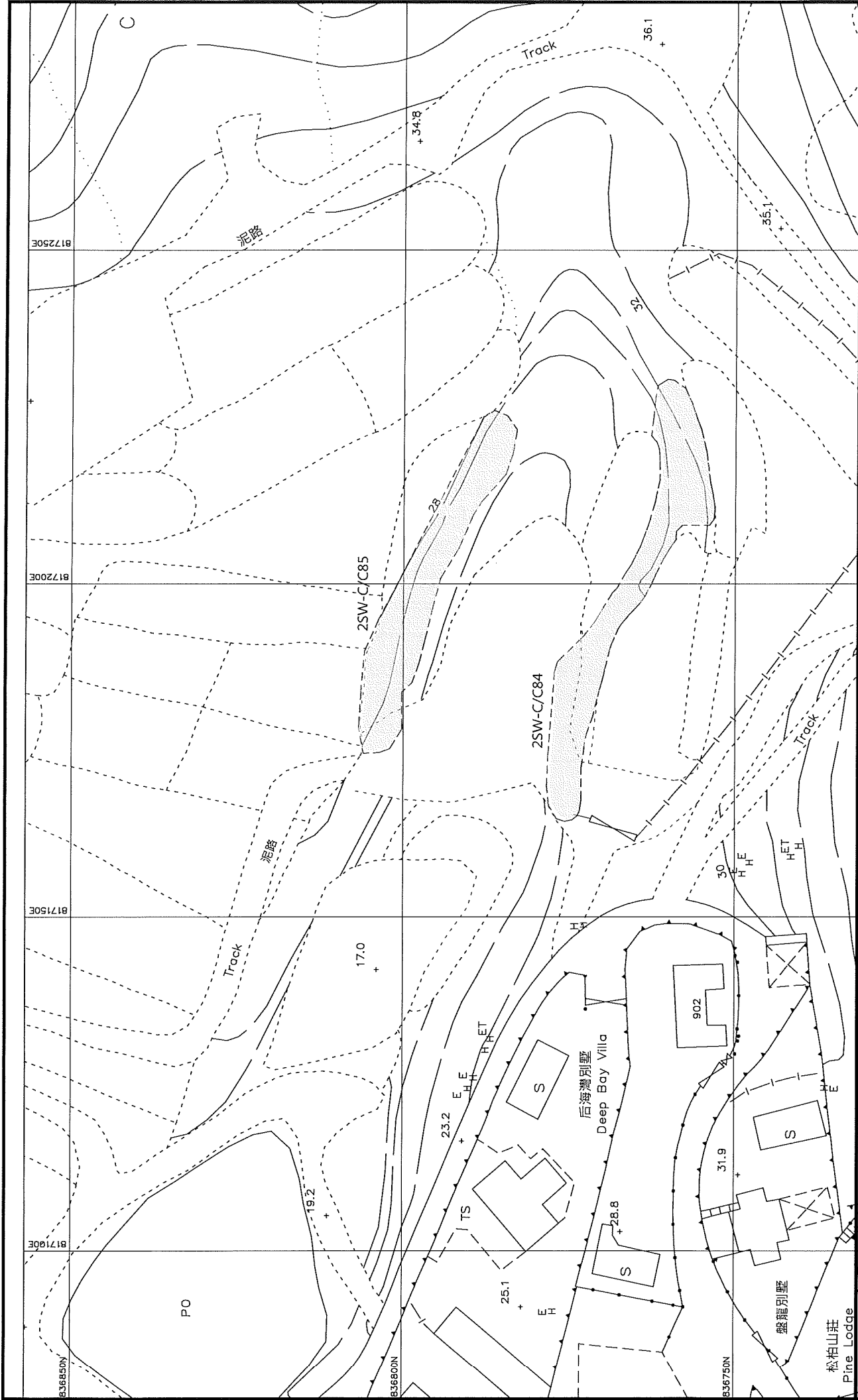
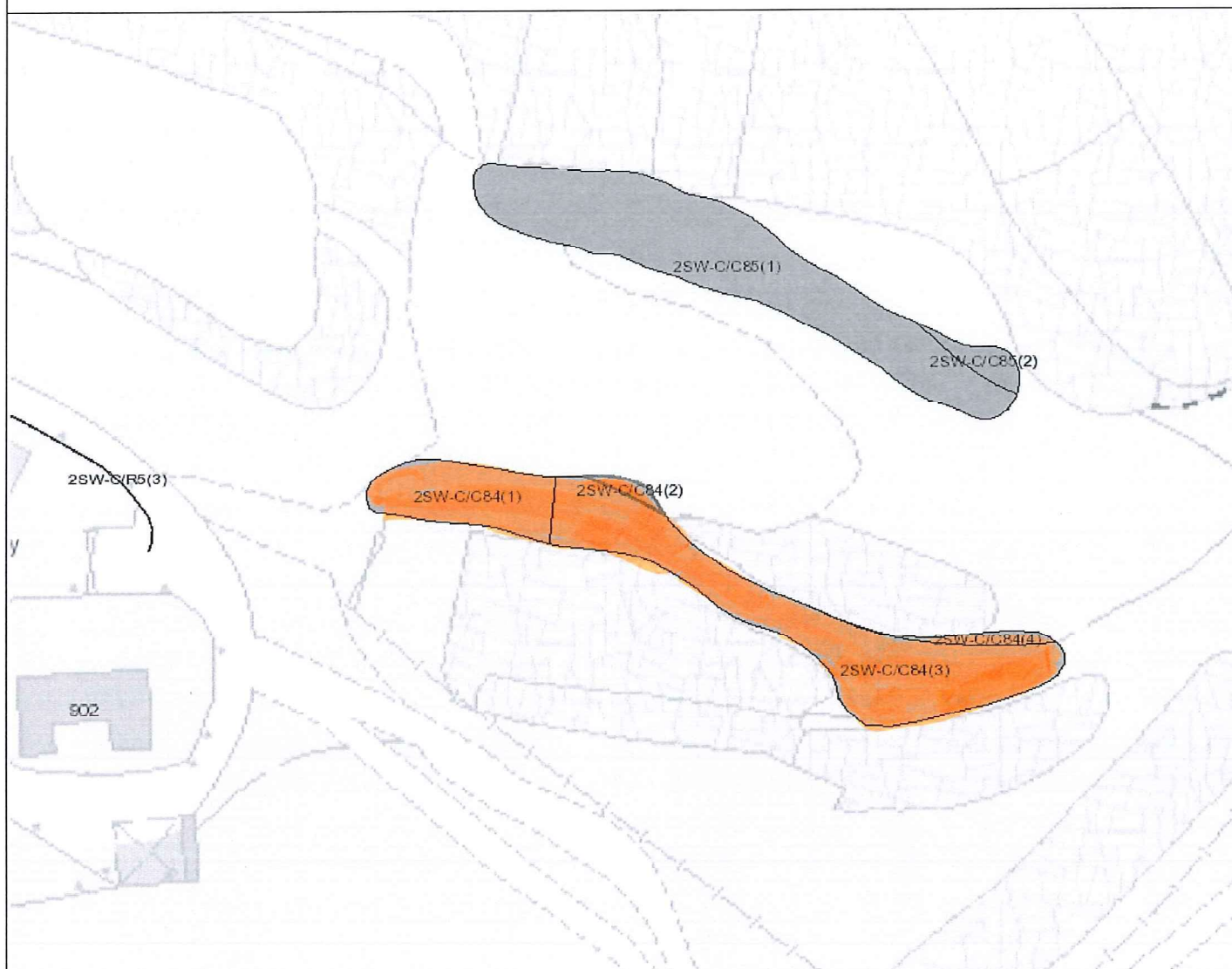


Figure No.:

8

EXTRACT OF 1 : 1000 SURVEY SHEET OF SITE

Location Plan



Legend

-  Slope Area(s)
-  Search Location
-  Slope(s) Maintained by Government
-  Slope(s) Maintained by Private Party/Parties
-  Slope(s) Maintained by Government and Private Party/Parties



ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT

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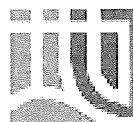
Printed on: 29-09-2025

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Search Criteria: 2SW-C/C84

Slope Maintenance Responsibility Report

(2SW-C/C84)

**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT****List of Slope Maintenance Responsibility Area(s)**

1	2SW-C/C84		Sub-Division	1
	Location	WITHIN DD129 LOTS1802, 1801, 1800 & ADJOINING GL		
	Responsible Lot/Party	DD129 Lot1802	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

Notes:

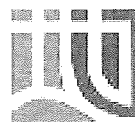
- (i) The location plan in Annex is for identification purposes of slope(s) only.
- (ii) The slope(s) as listed in the Slope Maintenance Responsibility Report may not be shown on the location plan in Annex.

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Search Criteria: 2SW-C/C84

Slope Maintenance Responsibility Report

(2SW-C/C84)

**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT****List of Slope Maintenance Responsibility Area(s)**

1	2SW-C/C84		Sub-Division	2
	Location	WITHIN DD129 LOTS1802, 1801, 1800 & ADJOINING GL		
	Responsible Lot/Party	DD129 Lot1801	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

Notes:

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Search Criteria: 2SW-C/C84

Slope Maintenance Responsibility Report

(2SW-C/C84)

**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT****List of Slope Maintenance Responsibility Area(s)**

1	2SW-C/C84		Sub-Division	3
	Location	WITHIN DD129 LOTS1802, 1801, 1800 & ADJOINING GL		
	Responsible Lot/Party	Lands Department	Maintenance Agent	Lands Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- End of Report -

Notes:

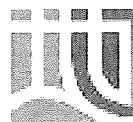
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Search Criteria: 2SW-C/C84

Slope Maintenance Responsibility Report

(2SW-C/C84)

**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT****List of Slope Maintenance Responsibility Area(s)**

1	2SW-C/C84		Sub-Division	4
	Location	WITHIN DD129 LOTS1802, 1801, 1800 & ADJOINING GL		
	Responsible Lot/Party	DD129 Lot1800	Maintenance Agent	Not Applicable
	Remarks	Not Applicable		

- End of Report -

Notes:

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Search Criteria: 2SW-C/C84

Location Plan



Legend

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Search Criteria: 2SW-C/C85

Slope Maintenance Responsibility Report

(2SW-C/C85)

**ESTATE MANAGEMENT SECTION
LANDS DEPARTMENT****List of Slope Maintenance Responsibility Area(s)**

1	2SW-C/C85		Sub-Division	1
	Location	WITHIN DD129 LOT1817 & ADJOINING GL		
	Responsible Lot/Party	Lands Department	Maintenance Agent	Lands Department
	Remarks	For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- End of Report -

Notes:

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Search Criteria: 2SW-C/C85