Appendix 3

Geotechnical Planning Review Report

Geotechnical Planning Review Report
for
Proposed Short Term Tenancy ("STT")
for
Storm Water and Foul Water Terminal Connections
for
Proposed Residential Redevelopment at Maryknoll House, 44 Stanley Village Road, Hong Kong

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Oct 2025

This report is for our client and is not intended for the use of any third party.

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EXECUTIVE SUMMARY

CSI Properties Limited proposed the construction of short term tenancy (STT) for storm water and foul water terminal connections for proposed residential redevelopment at Maryknoll House, 44 Stanley Village Road, Hong Kong. For this project, the following parties are involved: -

Architect:	LWK + PARTNERS
Structural and Geotechnical Engineer:	C M Wong & Associates Ltd

This geotechnical planning review report is in support of a proposed STT application under the Town Planning Ordinance for the subject site, The proposed development is located at Maryknoll house 44 Stanley Village Road, Stanley, Hong Kong Island., Hong Kong. The application is submitted on behalf of the applicant, who currently own and occupies the site.

This report provides a review of how geotechnical features in the vicinity, such as retaining walls and/or slopes may affect, or be affected by, the proposed STT and presents an assessment of the geotechnical feasibility of the proposed development as shown on the proposed STT application.

The proposed development contains of rainwater manhole, sewage manhole, rainwater catch pit drainage services and ancillary service.

With reference to the discussions, it is considered that the proposed development is **geotechnically feasible**.

1. INTRODUCTION

CSI Properties Limited proposed the construction of short term tenancy (STT) for storm water and foul water terminal connections for proposed residential redevelopment at Maryknoll House, 44 Stanley Village Road, Hong Kong. For this project, the following parties are involved:-

Architect: LWK + PARTNERS
Structural and Geotechnical Engineer: C M Wong & Associates Ltd

This is the 1st submission of the "Geotechnical Planning Review Report for Proposed Short Term Tenancy (STT) for Storm Water and Foul Water Terminal Connections at Maryknoll house, 44 Stanley Village Road, Stanley, Hong Kong Island" to support the geotechnical feasibility of the proposed STT application under the Town Planning Ordinance submitted.

This report covers the followings essential contents:

(i) A map marked up to show the site boundary, the location of the features and the details of the proposed STT.
(ii) A review of the proposed STT that will affect or be affected by man-made slopes, retaining walls shown on the plan, and in relation to this, an assessment of the geotechnical feasibility of the proposed STT including an outline of further studies that may be required.
(iii) A list of data sources used in compiling the report.

2. DESCRIPTION OF SITE

2.1 Site Topography

The proposed STT is located at Maryknoll house 44 Stanley Village Road, Stanley, Hong Kong Island. The working area generally located on a slope next to R.B.L. 333RP. The existing ground level approximately ranged from +28 mPD to +47 mPD. The site is surrounded by the feature No.15NE-A/FR 189 from the west to south, residential building and the feature No. 15 NE-A/C 747 at the north-east side. The proposed STT location is shown in **Figure 1**.

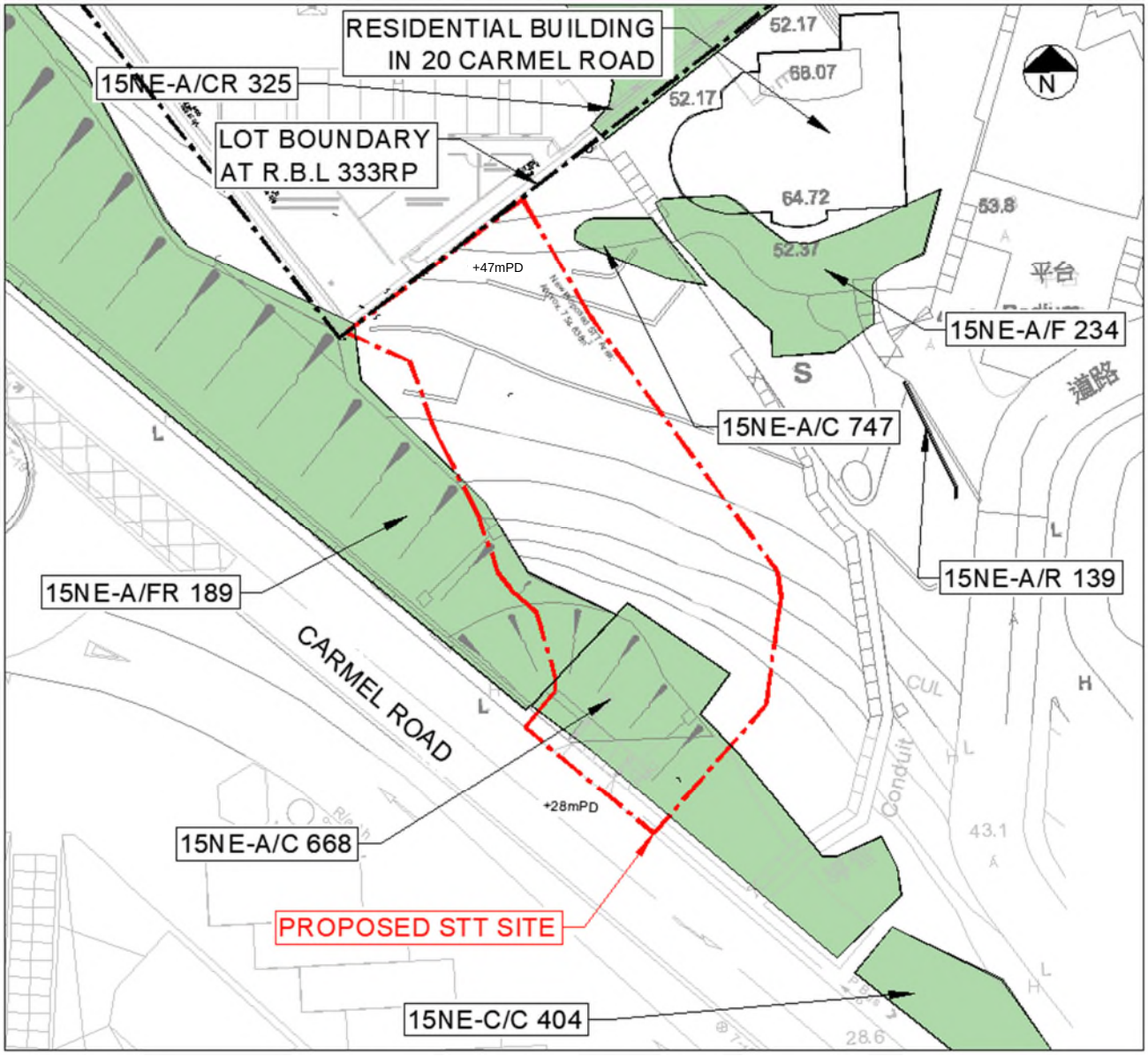


Figure 1 Location Plan of Proposed STT

2.2 Existing Registered Features

There are 7 registered features in the vicinity of the proposed STT, as shown in Figure 1, the information of the features based on Slope Information System (SIS) record are presented as follows:-

1) Feature No. 15NE-A/FR 189 (Partially within Proposed STT)

It is a slope feature located near the south-west of proposed STT. This slope feature consists of slope part and wall part. Slope part is 9.5m high in maximum and 155m long with a gradient of 30 degrees while wall part has a total length of 155m, maximum height of 7m and the face angle is 90 degrees. The slope is fully covered by vegetation. Drainage channel are found along the slope, at the crest and toe of slope and wall. 80mm weepholes are provided in a spacing of 1.4m to the wall structure. There was no stage study carried out regarding the feature.

2) Feature No. 15NE-A/C 668 (Partially within Proposed STT)

Partially slope feature located at the southern within proposed STT. The Slope is 3.5m high in maximum and 30m long with a gradient of 30 degrees. The slope is fully covered by vegetation. Drainage channel are found along the slope, at the crest and toe of slope. There was no stage study carried out regarding the feature.

3) Feature No. 15NE-A/C 747 (Outside Proposed STT)

This slope feature has a total length of 10.4m, maximum height of 3.3m and an average angle of 45 degrees. The feature is located approximately 2m away from the north of STT. Drainage channel is provided along the slope. The whole slope is covered by vegetation and no weepholes are provided to the slope. There was no stage study carried out regarding the feature.

4) Feature No. 15NE-A/CR 325 (Outside Proposed STT)

This slope feature consists of slope part and wall part. Slope part has a total length of demarcated 45m, maximum height of 4.5m and an average angle of 55 degrees while wall part has a total length of 19m, maximum height of 5.5m and the face angle is 90 degrees. It is located to the south-east of proposed STT. The slope is bare in half and covered by chunam in half. 75mm weepholes are provided to the wall in 1.5m spacing to the wall structure. The drainage channels at the crest, toe and downpipe are provided to the wall. Stage 1 study was carried out on December 1996. Stage 2 Study was carried out for the slope in January 2001 and DH order was

issued. The DH order were splitted into 2 part. Soil nail upgrading work had carried out to this slope under the issued one of the DH orders. The soil nails are present according to record plan of adjacent structure RBL 567, 20 Carmel Road, Drawing SF-03, SF-05. The record plan of soil nail from DH order was not found at neither Ginfo system nor CEDD labrary since the DH order belongs to private job. It could not be found on BRAVO system also. The record plan could not be retrieved at this stage. The second DH order were superseded by site formation work in 2004.

5) Feature No. 15NE-A/F 234 (Outside Proposed STT)

The feature is located near the north-east side of proposed STT. This slope feature has a total length of 23m, maximum height of 5.8m and an average angle of 35 degrees. Drainage channel are found along the slope, at the toe of slope. There was no stage study carried out regarding the feature.

6) Feature No. 15NE-A/R 139 (Outside Proposed STT)

It is a wall feature located at the east of proposed STT. The wall is 4.9m high in maximum and 10.3m long with a face angle of 90 degrees. 75mm weepholes are provided in a spacing of 1.5m to the wall structure. Its drainage channel can be found on the downpipe, the crest and the toe. Stage 1 study was carried out on December 1996. Stage 2 Study was carried out for the wall in April 2010, advisory letter was issued and no further action was conducted.

7) Feature No. 15NE-C/C 404 (Outside Proposed STT)

It is a slope feature located near the southern side of proposed STT. The Slope is 2.5m high in maximum and 30m long with a gradient of 30 degrees. The slope is partly covered by vegetation. Drainage channel are found along the slope, at the crest and toe of slope. There was no stage study carried out regarding the feature.

Maintenance responsibility of feature in the vicinity of the proposed development:

Feature No.	Maintenance Responsibility	Within Site Boundary
15NE-A/C 747	RBL 567	No
15NE-A/CR 325(1)	RBL 333 RP	No
15NE-A/CR 325(2)	RBL 567	No
15NE-A/CR 325(3)	RBL 1095	No
15NE-A/F 234	RBL 567	No
15NE-A/FR 189	Highways Department	Yes
15NE-A/R 139 (1)	RBL 701	No
15NE-A/R 139 (2)	RBL 1095	No
15NE-A/C 668	Highways Department	Yes
15NE-C/C 404	Highways Department	No

The records of the features are retrieved from the Slope Information System and Slope Maintenance Responsibility Information System and enclosed in **Appendix A**.

2.3 Surrounding Buildings

Maryknoll House, and a residential building in 20 Carmel Road are located in the vicinity of STT.

Maryknoll House

Maryknoll House is a 3 stores Grade I historic building. It is located at the north of proposed STT. No existing record plan can be retrieved from the Buildings Department, GI (trial pits) were carried out to verify the location and depth of the foundation. The result shows that the building is likely founded on CDG with footings. The levels of the footings are generally at +60.3 mPD based on the result of trial pits nos. TP11-17, 23, 25. The levels of the footings of the podium structure at south western portion of the building are at +57.3 mPD based on the result of trial pits nos. TP9 and TP33. Please refer to figure 3.

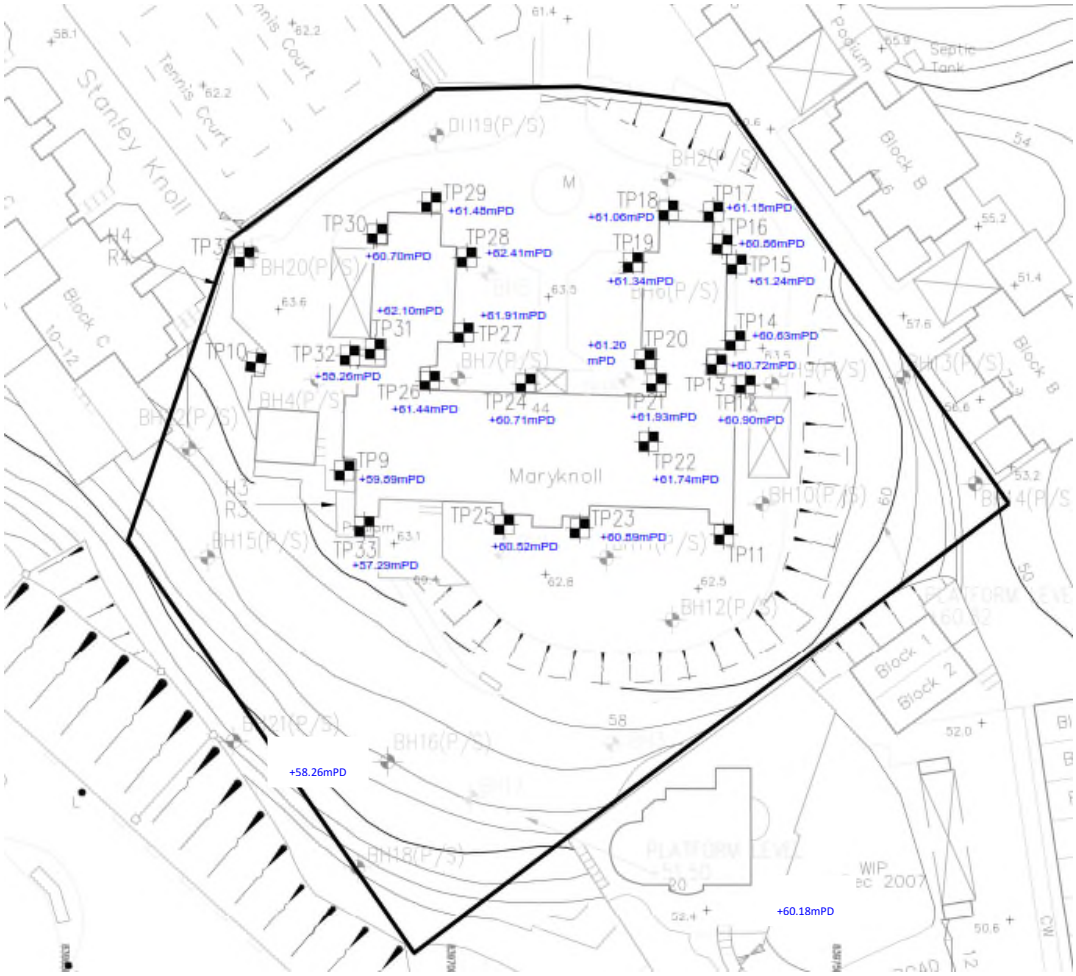


Figure 2 Layout Plan for Footing Founding Level of Maryknoll House

Residential building in 20 Carmel Road

Residential building in 20 Carmel Road, which is in R.B.L. 567, is a 4 stores residential building located at the south of the site. The building is about 10m away from the north-east of proposed STT. According to the record plans retrieved from the Buildings Department, the buildings are supported by footing founded on the Grade III/IV rock stratum at +45.42mPD.

The foundation record plans of these adjacent existing buildings are enclosed in **Appendix B**.

2.4 Surrounding Utilities

Relevant government departments and private utility companies have been contacted for information regarding their installation in the vicinity of proposed STT. The relevant utility records are included in **Appendix C**. The information regarding the nearby utilities is given below:

Storm Water Drain Pipe

Sewerage water drain pipe is located at the south-west of proposed STT along Carmel Road.

3. SITE GEOLOGY

With reference to the 1:20,000 geological map published by the Geotechnical Control Office, Hong Kong Geological Survey Map 15, the site is underlain by granite. The information obtained from the existing ground investigation results is consistent with this finding (Geological Map is enclosed in **Figure 4**).

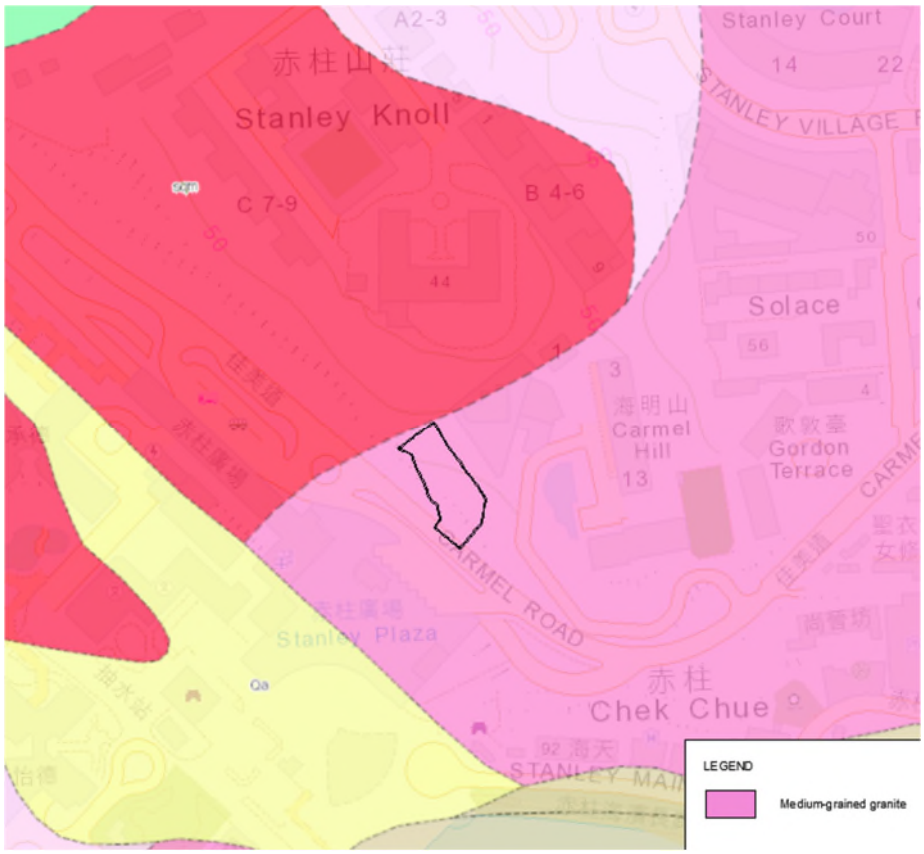


Figure 3 Part Print of 1:20000 Hong Kong Geological Survey Map 15

3.1 Ground Investigation Works

There are existing ground investigation works in surrounding area of proposed STT. The GI plan is shown in **Figure 5** and **Appendix D**. Copies of the borehole logs are attached in **Appendix D**.

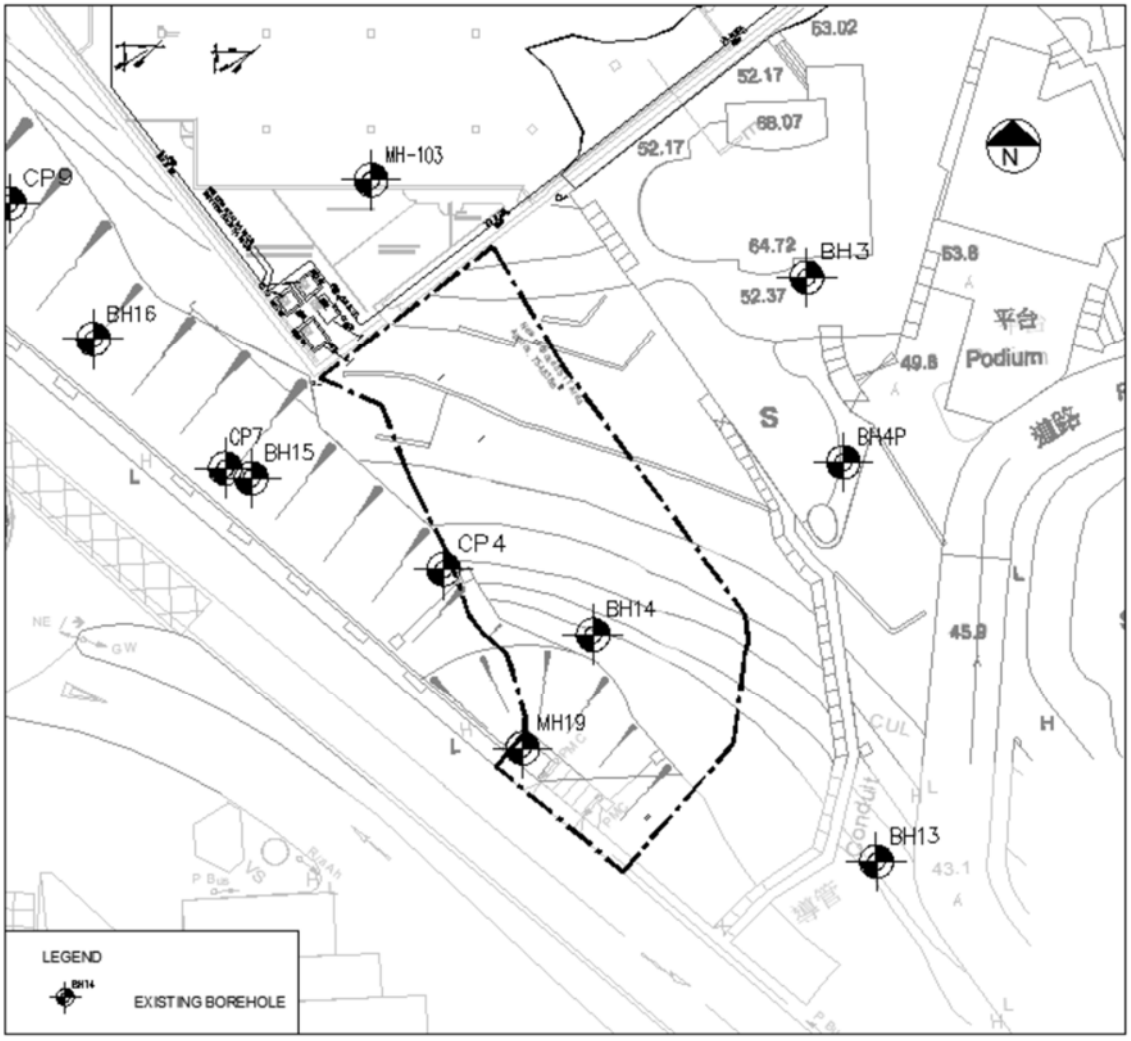


Figure 4 GI Layout Plan

A summary of findings of the existing borehole is as follows:-

GI No.	Reduced Ground Level (mPD)	Thickness of Material (m)	
		FILL	CDG
CP4	+33.82	0.2	13.3
CP7	+35.41	0.2	6.4
CP9	+37.85	0.1	7.9
MH-19	+29.87	1	1.9
MH-103	+49.7	-	17.7
BH3	+46.93	1.5	7.3
BH4P	+43.42	2.5	9
BH13	+30.34	3	3.8
BH14	+32.92	0.8	9.1
BH15	+35.25	-	6.4
BH16	+37.22	-	8.5

The result of the ground investigation works revealed that the site is generally comprised of fill and completely decomposed granite. The thickness of CDG varies from 1.9 m up to 17.7 m from the bottom level of marine deposit.

3.2 Soil and Rock

After summarizing all GI information as discussed in the previous section, it is discovered that the site is generally blanketed by a layer of FILL and COMPLETELY DECOMPOSED GRANITE (CDG), which is then underlain by GRANITE rock.

Based on the currently available results of ground investigation, general description of each stratum is outlined as below:-

- FILL– Medium dense, brownish grey, clayed silty SAND with some fine gravel sized rock fragment. Top level of FILL varies from +28.9 mPD to +49.7 mPD, and the thickness of fill layer varies from 0.2m to 2.5m.

- COMPLETELY DECOMPOSED GRANITE– Extremely weak, pinkish and brownish grey, spotted with black & white, completely decomposed medium grained GRANITE. Top level of CDG varies from +62.92 mPD to +41.64 mPD, and the thickness of CDG layer varies from 4.5 m to 14.5 m.

3.3 Groundwater

5 nos. piezometer (P) were installed in various locations across the site. The water levels in piezometers were monitored in different periods. The groundwater monitoring records are summarized in the following table:-

GI No.	Existing Ground Level (mPD)	Piezometer	
		H.G.W.L. (mPD)	L.G.W.L. (mPD)
CP4	+33.82	22.22	22.19
CP7	+35.41	Dry	Dry
CP9	+37.85	30.73	30.64
MH-103	+49.7	37.9	37.21
BH4P	+43.42	32.58	32.15

For design purposes, the design groundwater level is assumed to be retaining Height / 3, rockhead level + 2m or highest measured groundwater level, whichever is higher, for each design section for both serviceability limit state and ultimate limit stage. The design groundwater level for each design section shall be discussed in the detail design.

4. PROPOSED WORKS

Short Term Tenancy (STT) for Storm Water and Foul Water Terminal Connection are proposed. The proposed STT is described in the Schematic Architectural Drawings for Proposed STT, which is enclosed in **Appendix E**.

The proposed works involves construction of rainwater manhole, sewage manhole, rainwater catch pit, drainage services, ancillary service and excavation & lateral support. Some construction works would be carried out on the existing feature 15NE-A/C 668 and 15NE-A/FR 189 .

In view of the presence of sensitive receivers, Maryknoll House (Grade I historic building) and residential buildings in vicinity of the subject site, the proposed works, especially the ELS works, should be designed to minimize the effect to the nearby sensitive receivers.

The details of proposed works and the effects on the surrounding buildings/structure and existing features are discussed in Section 5.

5. GEOTECHNICAL CONSIDERATIONS

5.1 Founding Material

In accordance with the Code of Practice for Foundation (BD,2017), the presumed allowable bearing pressure of 100kPa (if dry) may be used for design of footing of minor structures on flat ground and founded on granular material. Stability Checking on slope will be carried out in detailed design stage.

5.2 Proposed Excavation Works

The maximum retaining height is about 2.5m along the natural slope. It is proposed to install sheet pile wall to retain the level different between the existing ground and proposed excavation level at the site. The typical section for proposed STT is attached in **appendix E**.

The approval plan for the ELS works at R.B.L. 333RP is attached in **appendix F.**

In the design of ELS works, surcharge from the existing adjoining buildings and traffic load would be taken into account. ELS design shall be in accordance with GEO Publication No. 1/2023. The ELS works should be designed in a manner that the effect of the proposed works should be minimal and does not cause adverse effects on adjacent grounds, features and structures.

5.3 Proposed Works Carried on Feature

Construction for the proposed storm water and foul water terminal connections would be carried partly on feature 15NE-A/C 668 and 15NE-A/FR 189. The stability of slope will be carried out in detailed design stage. It is anticipated that no new slope or retaining structure would be formed. There is no significant level difference between the existing ground profile and the final formation levels for the proposed STT. The proposed works will be designed such that the effect to the existing features will be insignificant.

The approval plan for the Site Formation works at R.B.L. 333RP is attached in **appendix G.**

5.4 Effects on Existing Features

The effect to the features in the vicinity of the proposed STT are presented as follows:-

Feature No. 15NE-A/FR 189 (Partially within Proposed STT)

It is a slope feature located near the south-west of proposed STT. This slope feature consists of slope part and wall part. Slope part is 9.5m high in maximum and 155m long with a gradient of 30 degrees while wall part has a total length of 155m, maximum height of 7m and the face angle is 90 degrees. Sheet pile wall would be installed along the site boundary near the feature. The feature would be modified to facilitate the building construction. Stability checking would be included in the detailed design of ELS works. The effect of the proposed works to feature will be reviewed in the detailed design stage.

Feature No. 15NE-A/C 668 (Partially within Proposed STT)

It is a wall feature located at the south of the proposed STT. The Slope is 3.5m high in maximum and 30m long with a gradient of 30 degrees. The feature would be modified to facilitate the building construction. Stability checking would be included in the detailed design of ELS works.

Feature No. 15NE-A/C 747 (Outside Proposed STT)

This slope feature has a total length of 10.4m, maximum height of 3.3m and an average angle of 45 degrees. The feature is located approximately 2m away from the south of the proposed STT. Sheet pile wall would be installed along the site boundary near the feature. The effect of the proposed works to feature will be reviewed in the detailed design stage. The proposed works will be designed such that the effect to this feature will be insignificant.

Feature No. 15NE-A/CR 325 (Outside Proposed STT)

This slope feature consists of slope part and wall part. Slope part has a total length of demarcated 45m, maximum height of 4.5m and an average angle of 55 degrees while wall part has a total length of 19m, maximum height of 5.5m and the face angle is 90 degrees. It is located to the north outside the proposed STT. The feature is located 8m away from the proposed working area. The proposed works will be designed such that the effect to this feature will be insignificant.

Feature No. 15NE-A/R 139 (Outside Proposed STT)

It is a wall feature located at the east of the proposed STT. The wall is 4.9m high in maximum

and 10.3m long with a face angle of 90 degrees. 75mm weepholes are provided in a spacing of 1.5m to the wall structure. Since the feature located at 15m away from the proposed working area, It is anticipated that the proposed work imposes negligible effect to this feature.

Feature No. 15NE-C/C 404 (Outside Proposed STT)

It is a wall feature located at the south of the proposed STT. The Slope is 2.5m high in maximum and 30m long with a gradient of 30 degrees. Since the feature located at 18m away from the proposed working area, It is anticipated that the proposed work imposes negligible effect to this feature.

Feature No. 15NE-A/F 234 (Outside Proposed STT)

The feature is located near the north-east side of the proposed STT. This slope feature has a total length of 23m, maximum height of 5.8m and an average angle of 35 degrees. Since the feature located at 10m away from the proposed working area, It is anticipated that the proposed work imposes negligible effect to this feature.

5.5 Effects on Surrounding Buildings/ Structures

Refer to the site location plan, Maryknoll House, and a residential building in R.B.L. 567 are located in the vicinity of the site.

Maryknoll House

Maryknoll House is a 3 stores Grade I historic building. The low-profile structures are likely founded on shallow foundation. 70kPa was adopted as vertical surcharge for the Marryknoll House. The distance between the site and the buildings is about 40m, which is outside the influence zone of the ELS work. It is anticipated that the proposed work imposes negligible effect to this building.

Residential building in 20 Carmel Road

Residential building in 20 Carmel Road, which is in R.B.L. 567, is a 4 stores residential building located at the south of the proposed STT. The minimum distance between the site and the buildings is about 10m. According to the record plans retrieved from the Buildings Department, the buildings are supported by footing founded on the Grade III/IV rock stratum at +45.42mPD. There were soil nail located within the vincinity of the site installed during the ELS construction of the proposed development at R.B.L. 333RP. The effect on building during installation of sheet pile and excavation will be reviewed in the detailed design stage.

5.6 Effects on Adjacent Services and Utilities

Storm Water Drain Pipe

Sewerage water drain pipe is located at the south-west of proposed STT along Carmel Road. The proposed works will be designed such that the effect to this feature will be insignificant.

6. PRECAUTIONARY MEASURE TO MINIMIZE THE IMPACT ON ADJACENT STRUCTURE

Precautionary Grout and Grout Curtain

According to the groundwater record in the GI stage, the groundwater table from standpipe is lower than the final excavation level. Soil below Maryknoll House according to GI is very strong, consist by decomposed granite mostly, the first SPT-N value of those soil mostly excess 100 or even 200.. Pre-grouting work have been carried out in main site construction for the proposed development at R.B.L. 333RP, which have minimized the effect on adjacent buildings.

Monitoring Check Point at the wall structure and utilities

Tilting Check Points are added to the wall structures nearby to monitor the impact during the construction stage to monitor the movement of adjacent structure, which prevent excessive movement during the construction work.

7. MONITORING PROGRAMME

In order to monitor the effects of the proposed works to the adjacent ground, vibration checkpoints, utility settlement check points, ground settlement checkpoints, tilting checkpoints and standpipes are proposed to be installed around the site. The locations of these monitoring checkpoints are shown in the monitoring plan of the relevant submission. The conditions of the adjacent utilities will be closely monitored. All monitoring points should be monitored daily. The results of the monitoring shall be frequently reviewed by the Contractor and the Engineer. The initial readings of all the above monitoring points will be taken prior to the commencement of the construction works on site.

Monitoring will be carried out throughout the whole construction work period. Ground settlement, tilting, groundwater level and vibration will be closely monitored to ensure stability of existing ground, structures.

Alert, Alarm and Action Level for Monitoring

According to PNAP-137, different structures will have different tolerance in accommodating movements, acceptance of estimated ground settlements should be considered on a case-by-case basis. The AAA level would be detail discussed in the design stage of the relevant submission.

When the alert level is reached, the Engineer shall be informed. The Engineer shall review the situation and increase the monitoring frequency if found necessary.

When the alarm level is reached, the Engineer shall review the design and check whether any additional works would be required.

When the action level is reached, all works shall be ceased immediately and the Engineer shall be informed. The works shall not recommence until remedial proposal to the satisfaction of the Engineer has been implemented.

8. CONCLUSION

The report has discussed all the relevant issues regarding the geotechnical impact of the proposed STT at Maryknoll house 44 Stanley Village Road, Stanley, Hong Kong Island, Hong Kong as shown on the proposed STT application under the Town Planning Ordinance.

The proposed STT is carried on the feature 15NE-A/FR 189 and 15NE-A/C 668, the effect on that feature will be reviewed in the detailed design stage. If necessary, upgrading works will be proposed in detailed design stage. It is anticipated that the proposed STT imposes negligible effect to the adjacent buildings and features.

With reference to the preceding discussions, it is considered that the proposed STT is **geotechnically feasible**.

9. List of REFERENCE

- Geoguide 1 Guide to Retaining Wall Design (2017);
- GEO Publication No. 1/2023;
- Geospec 1 Model Specification.for Prestressed.Ground Anchors
- Code of Practice for Foundation, 2017
- CIRIA R113 Control of Groundwater for Temporary Works
- GEO's slope Information System
- 1:20000-scale geological maps

Appendix A

SIS Report and SIMAR Records

15NE-A/C 747

BASIC INFORMATION

Location:	R.B.L. 567, 20 Carmel Road, Stanley, Hong Kong
Registration Date:	26-07-2007
Ranking Score (NPRS):	0 (Notional)
Date of Formation:	post-1977
Date of Construction/ Modification:	01-08-2006
Data Source:	AP
Approximate Coordinates:	Easting : 839719 Northing : 809038

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Residential building
Distance of Facility from Crest (m):	0
Facility at Toe:	Undeveloped green belt
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	1
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 3.3 Length (m): 10.4 Average Angle (deg): 45

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Private Feature Party: RBL 567 Agent: N/A Land Cat.: 1,5a Reason Code: 1,47 MR Endorsement Date: 14-01-2008

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	14-02-2007
Data Source:	AP
Slope Part Drainage:	(1) Position: Crest Size(mm): 225 (2) Position: Toe Size(mm): 225
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

N/A

SERVICES

N/A

CHECKING STATUS INFORMATION

Tagmark: SCS_3904 Part: 0 Checking Status: Formed to current standard Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	N/A
Map Sheet Reference (1:1000):	N/A
Aerial Photos:	N/A
Nearest Rainguage Station (Station Number):	()
Data Collected On:	14-02-2007
Date of Construction, Subsequent Modification and Demolition:	N/A
Related Reports/Files or Documents:	N/A
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	N/A
Section No:	1-1
Height(m):	
Type of Toe Facility:	Undeveloped green belt
Distance from Toe(m):	0
Type of Crest Facility:	Residential building
Distance from Crest(m):	0
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	
Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

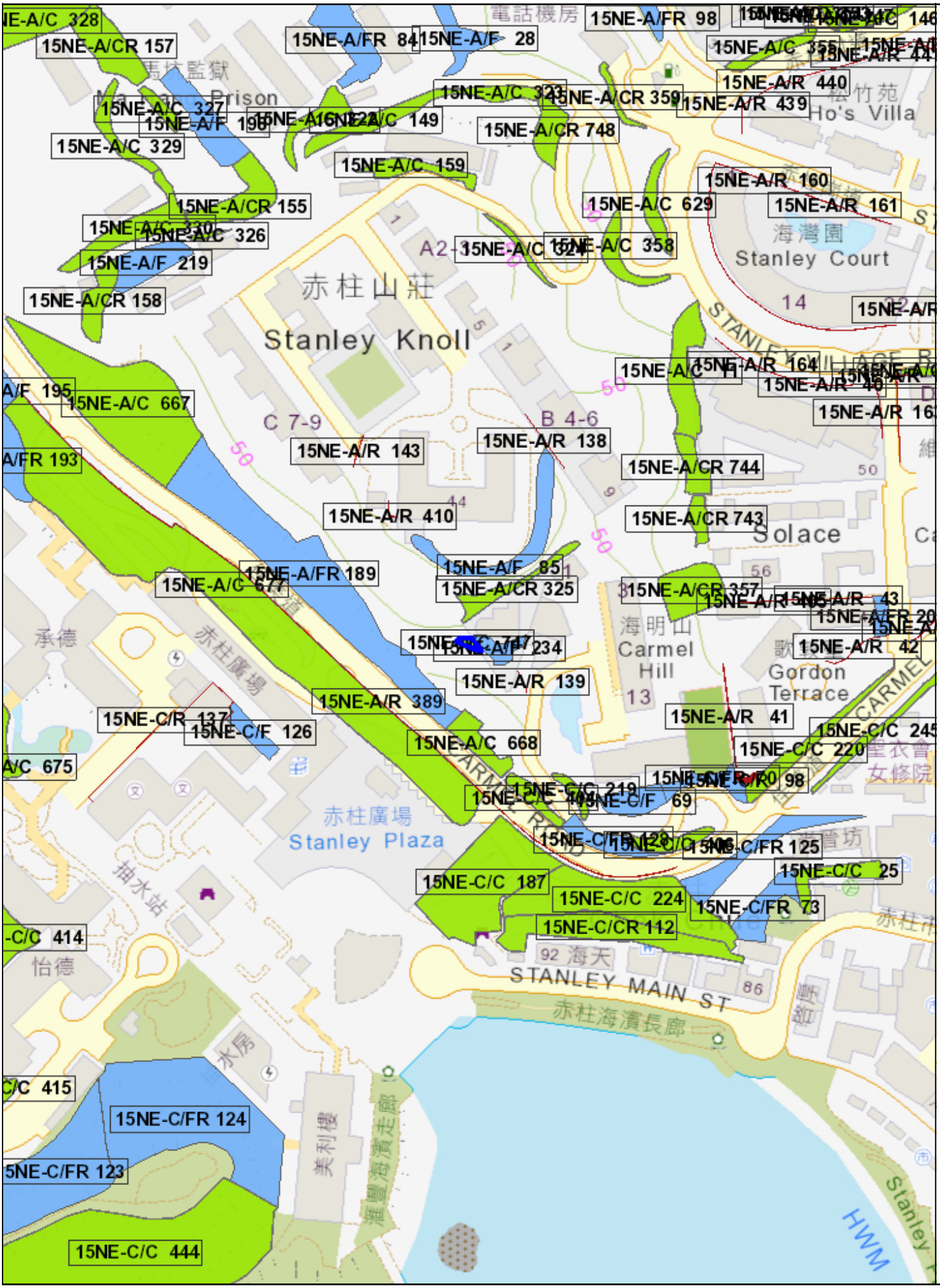
Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	
Action By:	N/A

OTHER EXTERNAL ACTION

Check / repair Services:	
Action By:	N/A
Non-routine Maintenance:	

Action By: N/A

PHOTO


15NE-A/C 328
15NE-A/CR 157
15NE-A/FR 84
15NE-A/F 28
15NE-A/FR 98
15NE-A/C 327
15NE-A/F 198
15NE-A/C 329
15NE-A/C 323
15NE-A/CR 359
15NE-A/R 439
15NE-A/R 440
15NE-A/C 149
15NE-A/CR 748
15NE-A/C 159
15NE-A/R 160
15NE-A/CR 155
15NE-A/C 629
15NE-A/R 161
15NE-A/C 326
15NE-A/F 219
15NE-A/C 324
15NE-A/C 358
15NE-A/CR 158
15NE-A/C 667
15NE-A/R 164
15NE-A/R 143
15NE-A/R 138
15NE-A/CR 744
15NE-A/R 410
15NE-A/CR 743
15NE-A/F 85
15NE-A/FR 189
15NE-A/C 677
15NE-A/CR 325
15NE-A/CR 357
15NE-A/R 43
15NE-A/R 234
15NE-A/R 139
15NE-A/R 42
15NE-A/R 389
15NE-C/R 137
15NE-C/F 126
15NE-A/C 668
15NE-A/R 41
15NE-C/C 220
15NE-C/C 219
15NE-C/F 69
15NE-C/FR 125
15NE-C/C 187
15NE-C/C 224
15NE-C/FR 73
15NE-C/CR 112
15NE-C/FR 124
15NE-C/FR 123
15NE-C/C 444
Stanley Knoll
赤柱山莊
Stanley Court
海灣園
Solace
Carmel Hill
Gordon Terrace
Stanley Plaza
赤柱廣場
STANLEY MAIN ST
赤柱海濱長廊
Ho's Villa
Prison
A2
B 4-6
C 7-9
HWM

Slope Maintenance Responsibility Report (15NE-A/C747)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**15NE-A/C747**		**Sub-Division**	Not Applicable
	Location	WITHIN RBL567 AND GOVERNMENT LAND ADJOINING, CARMEL ROAD, STANLEY, HONG KONG		
	Responsible Lot/Party	RBL 567	**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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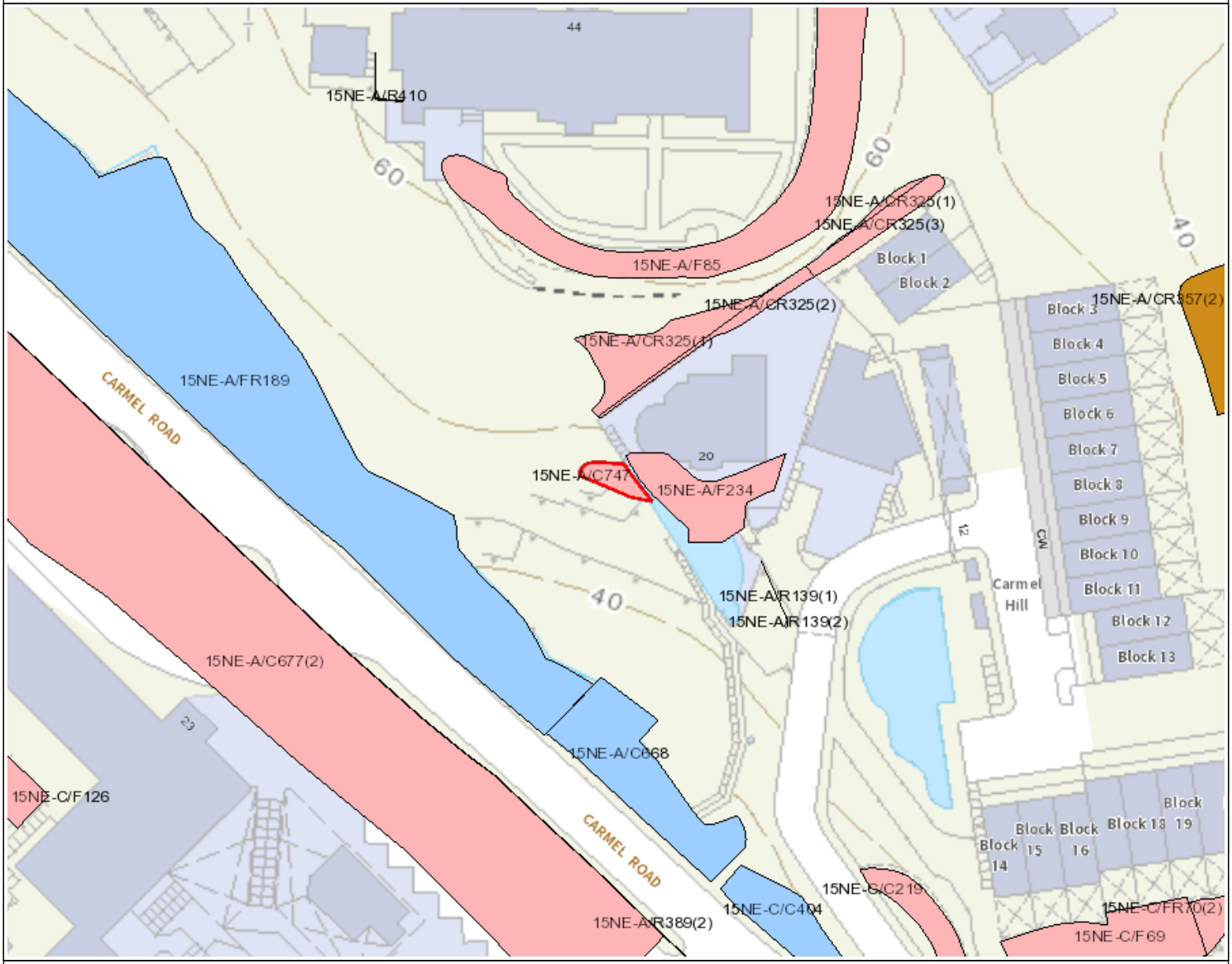
Location Plan



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

This Plan is **NOT TO SCALE** and intended for **IDENTIFICATION** only. All information shown on this plan **MUST** be verified by field survey.

Printed on: 27/10/2025

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15NE-A/CR 325

BASIC INFORMATION

Location:	R.B.L. 567, 20 Carmel Road, Stanley, Hong Kong
Registration Date:	17-02-1998
Ranking Score (NPRS):	0 (Notional)
Date of Formation:	pre-1977
Date of Construction/ Modification:	01-08-2006
Data Source:	AP
Approximate Coordinates:	Easting : 839734 Northing : 809060

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Undeveloped green belt
Distance of Facility from Crest (m):	0
Facility at Toe:	Residential building
Distance of Facility from Toe (m):	2
Consequence-to-life Category:	1
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 4.5 Length (m): 45 Average Angle (deg): 55

WALL PART

(1) Max. Height (m): 5.5 Length (m): 19 Face Angle (deg): 90

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 1 Private Feature Party: RBL333RP Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 07-12-2007
(2) Sub Div.: 2 Private Feature Party: RBL567 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 07-12-2007
(3) Sub Div.: 3 Private Feature Party: RBL1095 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 07-12-2007

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection: 14-02-2007
Data Source: AP
Slope Part Drainage: N/A

Wall Part Drainage:
(1) Position: Crest Size(mm): 225
(2) Position: Downpipe Size(mm): 225
(3) Position: Toe Size(mm): 225

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 60 Vegetated: 0 Chunam: 40 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

Wall Part (1)
Type of Wall: Wall Material: Concrete Wall Location: Wall at toe
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): 75 Spacing (m): 1.5

SERVICES

N/A

CHECKING STATUS INFORMATION

Tagmark: SCS_3901 Part: 1 Checking Status: Feature modified/upgraded to current standard Checking Certificate No.: N/A
Tagmark: SCS_3903 Part: 0 Checking Status: Formed to current standard Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.: 15NE12A9
Map Sheet Reference (1:1000): 15NE-12A
Aerial Photos: 7545-6 (1963),

Nearest Rainguage Station (Station Number): St. Stephen's College, Tung Tau Wan Road(H15)

Data Collected On: 14-02-2007
Date of Construction, Subsequent Modification and Demolition: Modification: Constructed Before: 1963 After: N/A

Related Reports/Files or Documents:
File/Report: DB or DH Ref. No.: GCI 3/4/D28/78/HK
File/Report: DB or DH Ref. No.: GCI 3/4/D28/78/HK
File/Report: DLC/BC Ref. No.: BC RBL 567
File/Report: DLC/BC Ref. No.: BC RBL 567
File/Report: Development Ref. No.: GCI 3/4/3006/89, GCI 2/B13/5, GCI 3/4/2344/61
File/Report: Development Ref. No.: GCI 3/4/3006/89, GCI 2/B13/5, GCI 3/4/2344/61
File/Report: LWC Ref. No.: 1706- GC 4/1/2-5 (3) f18, GC 4/1/2-3 pt IV f5
File/Report: LWC Ref. No.: 1706- GC 4/1/2-5 (3) f18, GC 4/1/2-3 pt IV f5

Remarks: FILE GCI 3/4/D28/78/HK QUOTED ON THE DISTRICT OVERLAY RELATES ONLY TO ANOTHER FEATURE AT THE SAME PREMISES

Follow Up Actions: N/A

DH-Order (To Be Confirmed with Buildings Department):
Date of Recommendation to BD: 15/05/2001 File Reference: DH/0027/01/HK
Date Served by BD: 17/09/2001 Notice No.: DH129/HK/01/C
Date of Recommendation to BD: 15/05/2001 File Reference: DH/0028/78/HK
Date Served by BD: 03/03/2004 Notice No.: DH0014/HK/04/C
Date of Recommendation to BD: 15/05/2001 File Reference: DH/0028/78/HK
Date Served by BD: 17/09/2001 Notice No.: DH128/HK/01/C

Advisory Letter (To Be Confirmed with Buildings Department): None

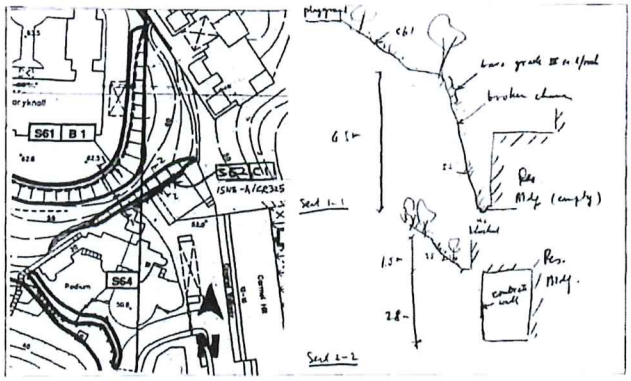
LPMIS: Agreement No.: CE78/97 Report No.: S2R389/2000

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 10/08/2021)

STAGE 1 STUDY REPORT

Inspected On: 05-12-1996
Weather: Mainly Fine
District: I



Section No: 1-1
Height(m): H1 : 5 , H2 : 0
Type of Toe Facility: Residential building

Distance from Toe(m): 2
Type of Crest Facility: Undeveloped green belt

Distance from Crest(m): 0
Consequence Category: 1
Engineering Judgement: P

Section No: 2-2
Type of Toe Facility: N/A

Distance from Toe(m): 0
Type of Crest Facility: N/A

Distance from Crest(m): 0
Consequence Category: 1
Engineering Judgement: P

Sign of Seepage:	Slope : No signs of seepage Wall : Signs of seepage
Criterion A satisfied:	N
Sign of Distress:	Slope : N/A Wall : N/A
Criterion D satisfied:	N
Non-routine maintenance required:	N
Note:	N/A
Masonry wall/Masonry facing:	N
Note:	N/A
Consequence category (for critical section):	1
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

OTHER EXTERNAL ACTION

Check / repair Services:	N
Action By:	N/A
Non-routine Maintenance:	N
Action By:	N/A

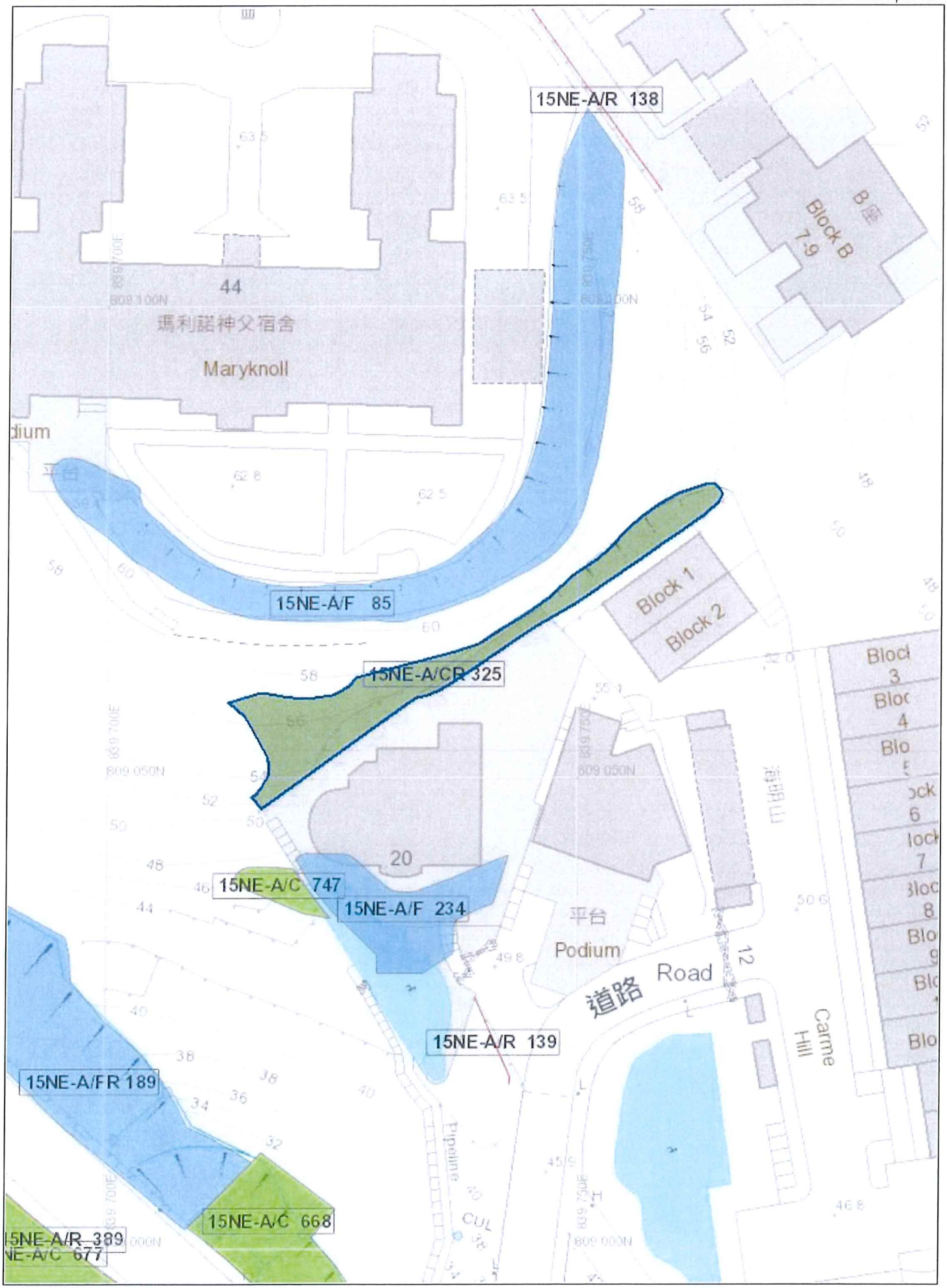
eLPMIS

LPM/LPMit Details Report
- LPM Study Feature No.: 15NE-A/CR 325
- Location: NW OF NO.1 CARMEL HILL, CARMEL ROAD, STANLEY
- District Council: Southern
- Maintenance Responsibility (At the Time of Selection): Private
- Responsible Party for Maintenance of Government Portion: N/A
- Private Lot No.: RBL567,333,1095

LPM/LPMit Study
- Agreement No.: CE78/97
- Study Type: Stage 2 Study
- Consultant: Maunsell Geotechnical Services Ltd.
- GEO Managing Section / Engineer: SS / SS3
- Study Status: Study completed
- Design Approach: GI (w/o boreholes) + analysis
- Option Assessment Accepted: N/A
- Study Report No.: S2R389/2000
- Programme / Actual Commencement: 01-06-1999
- Programme / Actual Completion: 31-01-2001
- Report Recommendation (For Stage 2 Study): DH Order,No action required
- District Check Status: Checked
- Checking Certificate No.: N/A
- GEO Engineer's Remarks: N/A

LPM/LPMit Works
- Works Contract No.: N/A
- GEO Managing Section / Engineer: N/A / N/A
- Contractor: N/A
- Progress Status: N/A
- Reason of Study Termination / Works Deletion (If Necessary): N/A
- Forecast Commencement Date: N/A
- Forecast Completion Date: N/A
- Completion Cert. Issued: N/A
- Site Handed Over to Maintenance Department on: N/A
- Estimated Cost for Upgrading (HKSM): N/A
- Maintenance Manual No.: N/A
- Actual Works: N/A
- No. of Tree Felled: N/A
- No. of Tree Planted (Incl. Transplant): N/A
- % Bare of Slope Surfacing: N/A
- % Vegetated of Slope Surfacing: N/A
- % Shotcrete of Slope Surfacing: N/A
- Other Hard Surface of Slope Surfacing: N/A

PHOTO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44
瑪利諾神父宿舍
Maryknoll
B座
Block B
15NE-A/F 85
15NE-A/CR 325
Block 1
Block 2
20
15NE-A/C 747
15NE-A/F 234
平台
Podium
道路 Road
15NE-A/R 139
15NE-A/FR 189
15NE-A/C 668
Carme Hill

Slope Maintenance Responsibility Report (15NE-A/CR325)	ESTATE MANAGEMENT SECTION LANDS DEPARTMENT

List of Slope Maintenance Responsibility Area(s)

1	**15NE-A/CR325**		**Sub-Division**	1
	Location	WITHIN RBL333RP, RBL567 & RBL1095		
	Responsible Lot/Party	RBL333RP	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		
2	**15NE-A/CR325**		**Sub-Division**	2
	Location	WITHIN RBL333RP, RBL567 & RBL1095		
	Responsible Lot/Party	RBL567	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		
3	**15NE-A/CR325**		**Sub-Division**	3
	Location	WITHIN RBL333RP, RBL567 & RBL1095		
	Responsible Lot/Party	RBL1095	**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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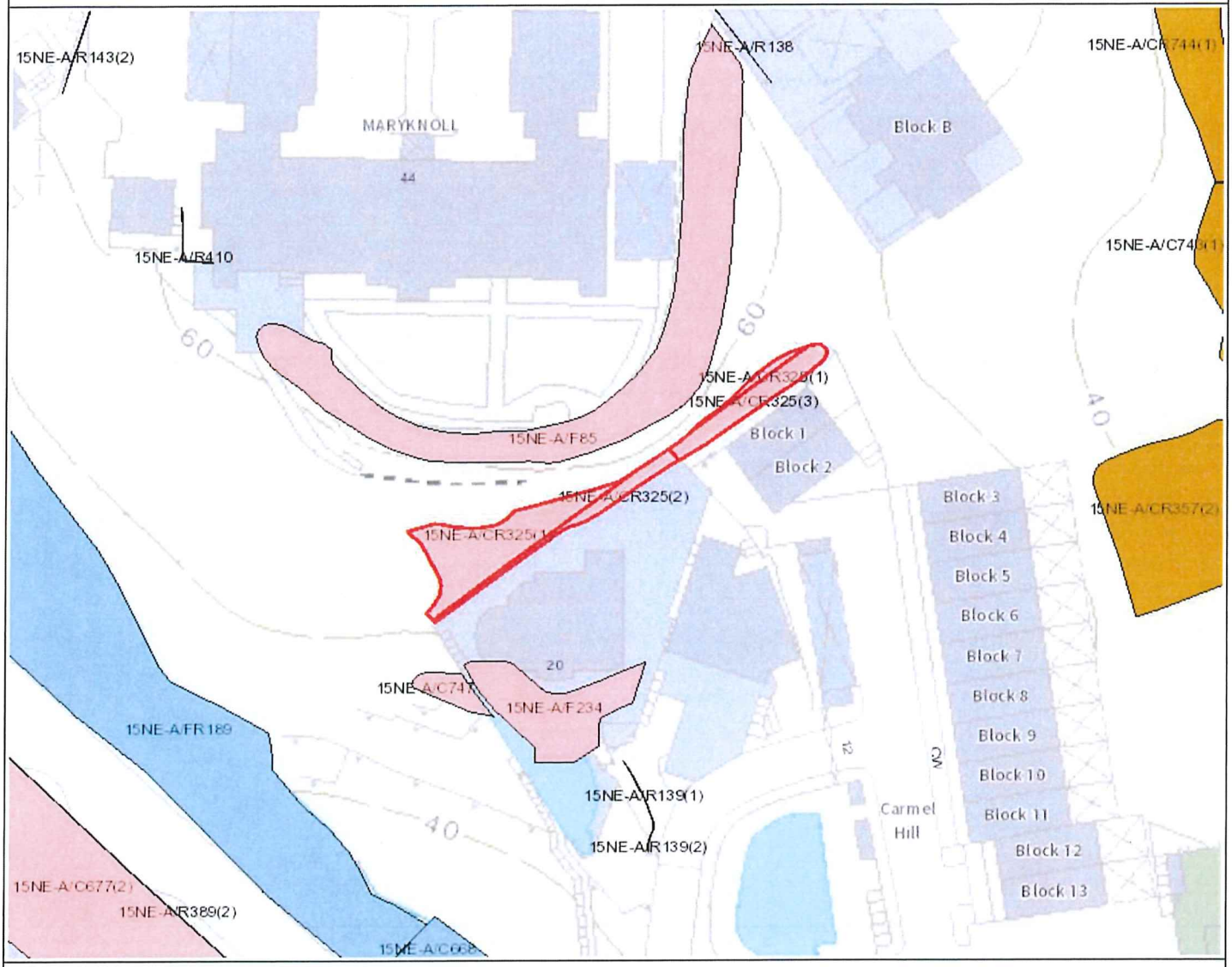
Annex

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: 11/01/2022

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15NE-A/FR 189

BASIC INFORMATION

Location:	CARMEL ROAD, SE
Registration Date:	22-06-1999
Ranking Score (NPRS):	0 (EI)
Date of Formation:	post-1977
Date of Construction/ Modification:	
Data Source:	EI(HyD)
Approximate Coordinates:	Easting : 839655 Northing : 809064

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Other non-crowded built-up facilities
Distance of Facility from Crest (m):	5
Facility at Toe:	Road/footpath with moderate traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	2
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 9.5 Length (m): 155 Average Angle (deg): 30

WALL PART

(1) Max. Height (m): 7 Length (m): 155 Face Angle (deg): 90

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Government Feature Party: HyD Agent: HyD Land Cat.: 5b(iii) Reason Code: 56 MR Endorsement Date: 08-05-2001

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	23-12-2011
Data Source:	EI(HyD)
Slope Part Drainage:	(1) Position: Crest Size(mm): 225 (2) Position: Crest Size(mm): 300 (3) Position: Crest Size(mm): 375 (4) Position: On slope Size(mm): 325 (5) Position: On slope Size(mm): 450 (6) Position: Toe Size(mm): 750
Wall Part Drainage:	(1) Position: Crest Size(mm): 750 (2) Position: Toe Size(mm): 325

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: 1 Min. Berm Width (m): 1.2
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

Wall Part (1)
Type of Wall: Wall Material: Concrete Wall Location: Wall at toe
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): 80 Spacing (m): 1.4

SERVICES

(1) Utilities Type: Cable Size(mm): 0 Location: Toe Remark: Size cannot be determined
(2) Utilities Type: Electricity Size(mm): 0 Location: Toe Remark: Size cannot be determined
(3) Utilities Type: Gas Size(mm): 0 Location: Toe Remark: Size cannot be determined
(4) Utilities Type: Gas Size(mm): 0 Location: On crest Remark: Size cannot be determined
(5) Utilities Type: Gas Size(mm): 0 Location: On slope Remark: Size cannot be determined
(6) Utilities Type: Sewer/Drain Size(mm): 1050 Location: Toe Remark: N/A
(7) Utilities Type: Telecom Size(mm): 0 Location: Toe Remark: Size cannot be determined
(8) Utilities Type: Telecom Size(mm): 0 Location: Toe Remark: Size cannot be determined
(9) Utilities Type: Water Main Size(mm): 300 Location: Toe Remark: N/A

CHECKING STATUS INFORMATION

Tagmark: 10980_0_1 Part: 0 Checking Status: No outstanding comments Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	15NE12A9
Map Sheet Reference (1:1000):	15NE-12A
Aerial Photos:	18168 (1977), CN23889 (1999)
Nearest Rainguage Station (Station Number):	St. Stephen's College, Tung Tau Wan Road(H15)
Data Collected On:	23-12-2011
Date of Construction, Subsequent Modification and Demolition:	N/A

Related Reports/Files or Documents:	File/Report: BP Reports Ref. No.: STANLEY AREA File/Report: BP Reports Ref. No.: STANLEY AREA File/Report: Development Ref. No.: GCI 3/2/168 File/Report: Development Ref. No.: GCI 3/2/168
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	I
Section No:	1-1
Height(m):	
Type of Toe Facility:	Road/footpath with moderate traffic density
Distance from Toe(m):	0
Type of Crest Facility:	Other non-crowded built-up facilities
Distance from Crest(m):	5
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	

Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

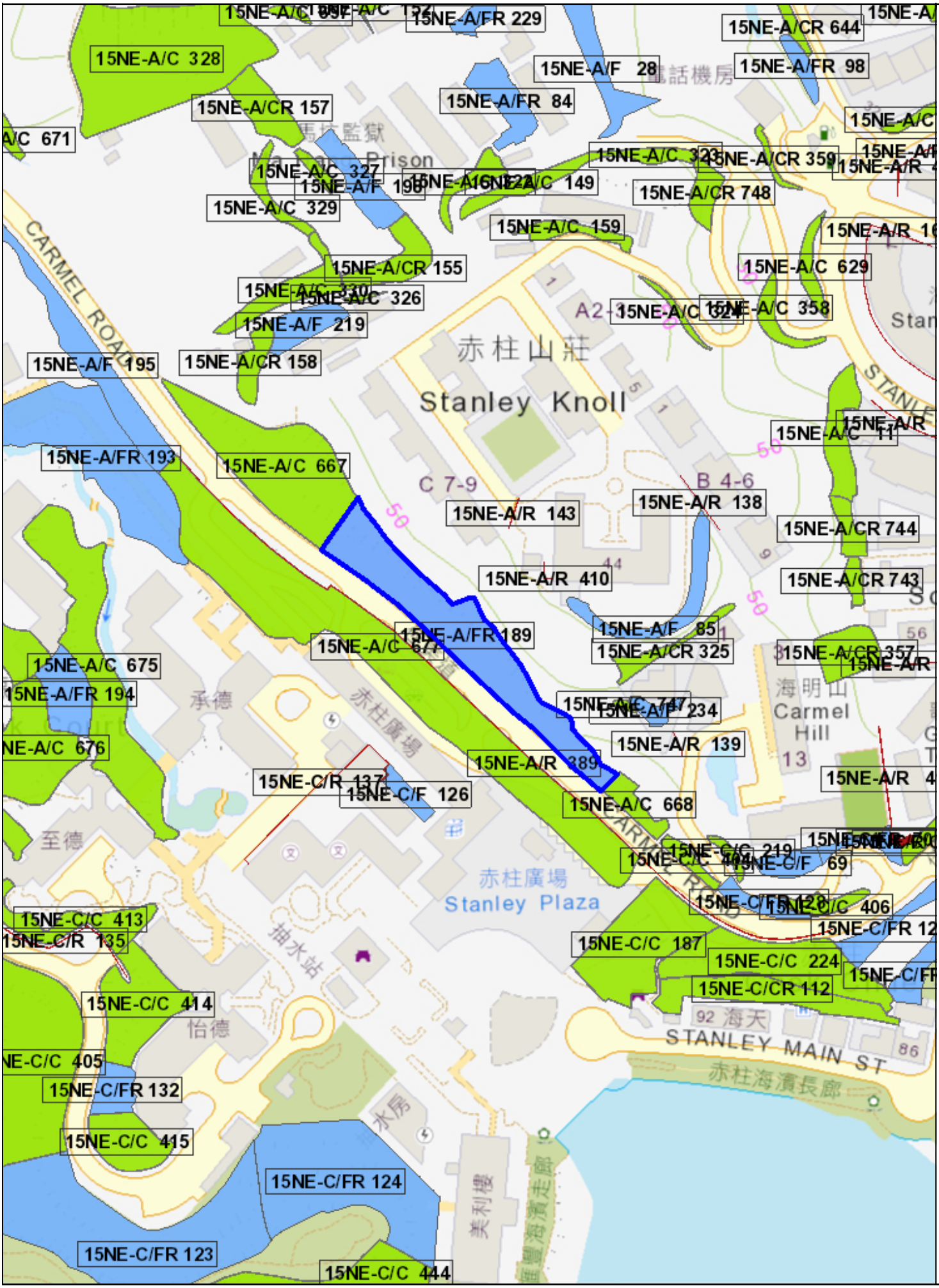
ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	
Action By:	N/A

OTHER EXTERNAL ACTION

Check / repair Services:	
Action By:	N/A
Non-routine Maintenance:	
Action By:	N/A

PHOTO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15NE-A/CR 157
15NE-A/FR 84
15NE-A/C 671
15NE-A/C 323
15NE-A/CR 359
15NE-A/C 327
15NE-A/F 196
15NE-A/C 149
15NE-A/CR 748
15NE-A/C 329
15NE-A/C 159
15NE-A/C 629
15NE-A/CR 155
15NE-A/C 326
15NE-A/C 324
15NE-A/C 358
15NE-A/F 219
15NE-A/F 195
15NE-A/CR 158
15NE-A/FR 193
15NE-A/C 667
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15NE-A/C 675
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15NE-A/F 234
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15NE-C/C 187
15NE-C/C 224
15NE-C/CR 112
15NE-C/C 414
15NE-C/C 405
15NE-C/FR 132
15NE-C/C 415
15NE-C/FR 124
15NE-C/FR 123
15NE-C/C 444
赤柱山莊
Stanley Knoll
Stanley Plaza
赤柱廣場
CARMEL ROAD
STANLEY MAIN ST
Prison
Carmel Hill

Slope Maintenance Responsibility Report (15NE-A/FR189)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**15NE-A/FR189**		**Sub-Division**	Not Applicable
	Location	ADJOINING MA HANG VILLAGE		
	Responsible Lot/Party	Highways Department	**Maintenance Agent**	Highways 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:

(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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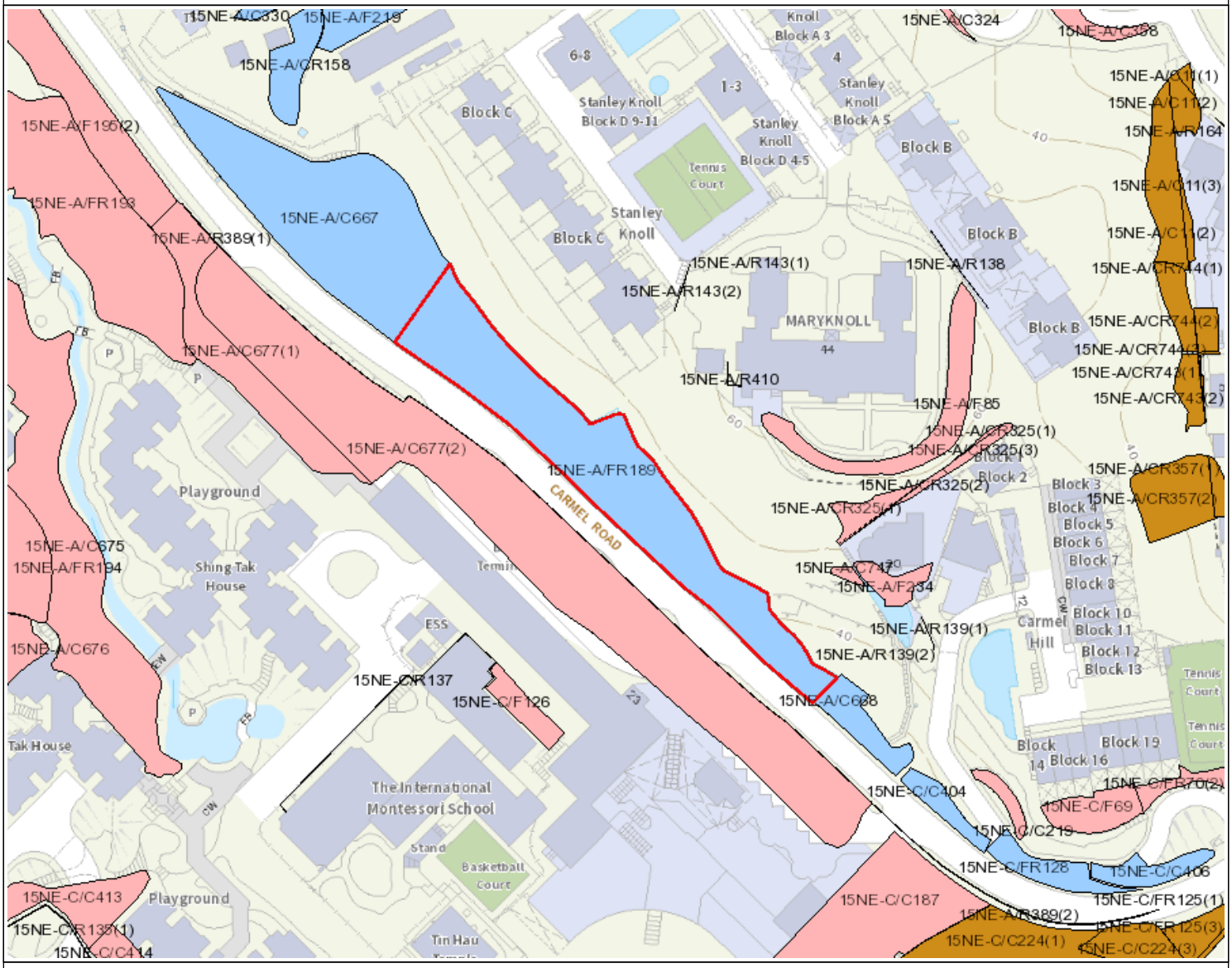
Location Plan



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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15NE-A/C 668

BASIC INFORMATION

Location:	CARMEL ROAD, SE
Registration Date:	22-06-1999
Ranking Score (NPRS):	0 (EI)
Date of Formation:	post-1977
Date of Construction/ Modification:	
Data Source:	EI(HyD)
Approximate Coordinates:	Easting : 839716 Northing : 809003

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	District open space
Distance of Facility from Crest (m):	0
Facility at Toe:	Road/footpath with moderate traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	2
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 3.5 Length (m): 30 Average Angle (deg): 30

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Government Feature Party: HyD Agent: HyD Land Cat.: 5b(iii) Reason Code: 56 MR Endorsement Date: 08-05-2001

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	23-12-2011
Data Source:	EI(HyD)
Slope Part Drainage:	(1) Position: Crest Size(mm): 225 (2) Position: On slope Size(mm): 450 (3) Position: Toe Size(mm): 300 (4) Position: Toe Size(mm): 650
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 100 Chunam: 0 Shotcrete: 0 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

N/A

SERVICES

(1) Utilities Type: Cable Size(mm): 0 Location: Toe Remark: Size cannot be determined
(2) Utilities Type: Electricity Size(mm): 0 Location: Toe Remark: Size cannot be determined
(3) Utilities Type: Gas Size(mm): 0 Location: On crest Remark: Size cannot be determined
(4) Utilities Type: Gas Size(mm): 0 Location: Toe Remark: Size cannot be determined
(5) Utilities Type: Sewer/Drain Size(mm): 150 Location: On crest Remark: N/A
(6) Utilities Type: Sewer/Drain Size(mm): 1050 Location: Toe Remark: N/A
(7) Utilities Type: Telecom Size(mm): 0 Location: Toe Remark: Size cannot be determined
(8) Utilities Type: Telecom Size(mm): 0 Location: Toe Remark: Size cannot be determined
(9) Utilities Type: Water Main Size(mm): 300 Location: Toe Remark: N/A

CHECKING STATUS INFORMATION

Tagmark: 10805_0_1 Part: 0 Checking Status: No outstanding comments Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	15NE12A7
Map Sheet Reference (1:1000):	15NE-12A
Aerial Photos:	18168 (1977), CN23889 (1999)
Nearest Rainguage Station (Station Number):	St. Stephen's College, Tung Tau Wan Road(H15)
Data Collected On:	23-12-2011
Date of Construction, Subsequent Modification and Demolition:	N/A
Related Reports/Files or Documents:	File/Report: BP Reports Ref. No.: STANLEY AREA File/Report: BP Reports Ref. No.: STANLEY AREA File/Report: Development Ref. No.: GCI 3/2/168 File/Report: Development Ref. No.: GCI 3/2/168
Remarks:	N/A
Follow Up Actions:	N/A

DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	I
Section No:	1-1
Height(m):	
Type of Toe Facility:	Road/footpath with moderate traffic density
Distance from Toe(m):	0
Type of Crest Facility:	District open space
Distance from Crest(m):	0
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	
Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

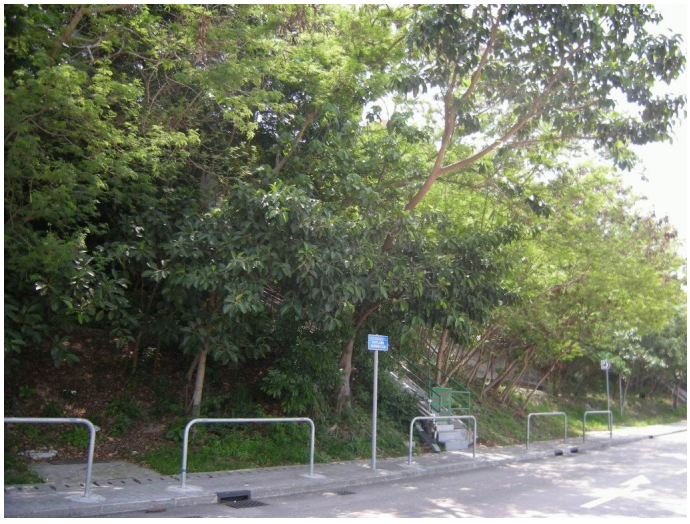
ACTION TO INITIATE PREVENTIVE WORKS

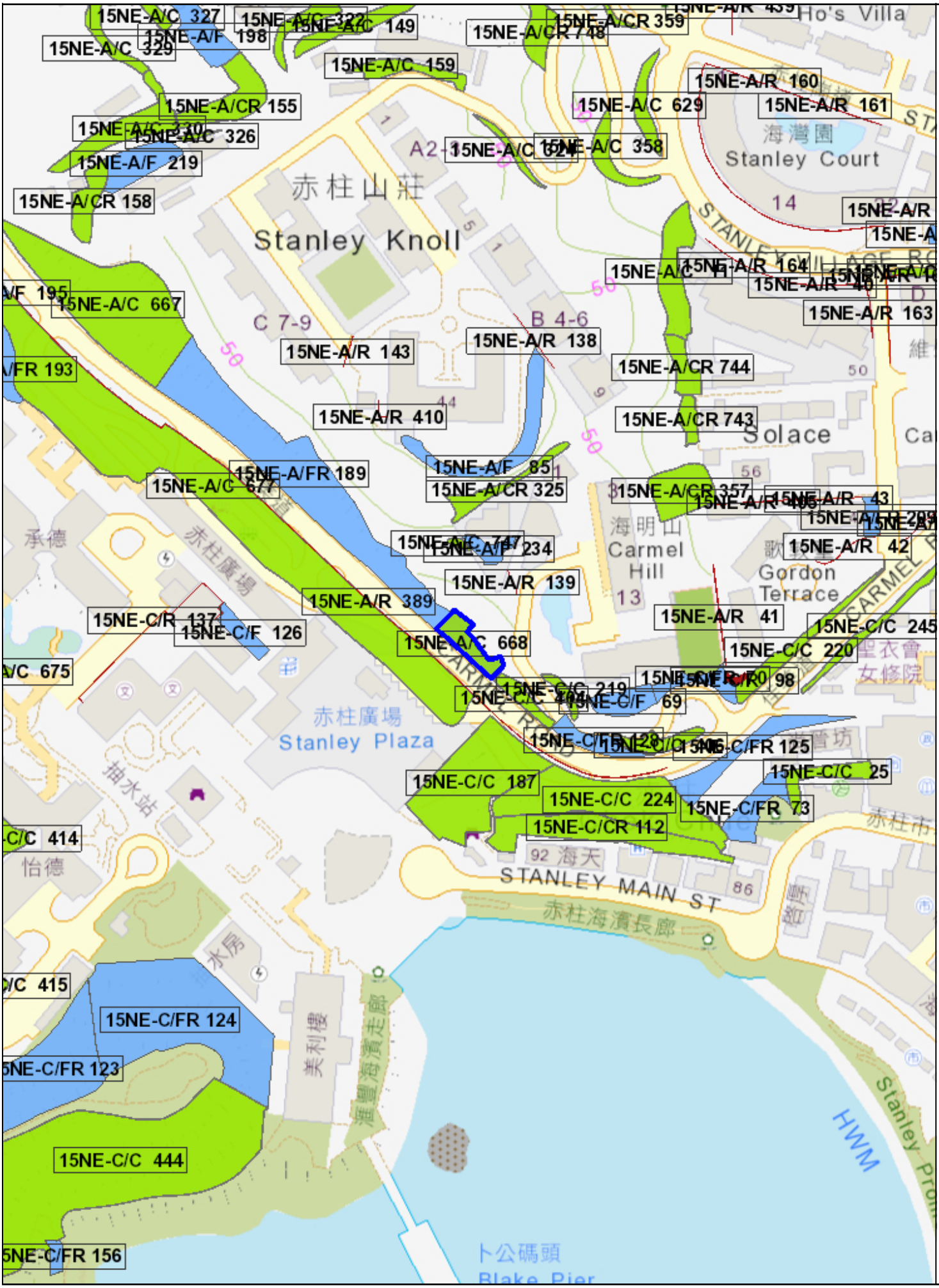
Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	
Action By:	N/A

OTHER EXTERNAL ACTION

Check / repair Services:	
Action By:	N/A
Non-routine Maintenance:	
Action By:	N/A

PHOTO




15NE-A/C 327
15NE-A/F 198
15NE-A/C 329
15NE-A/C 149
15NE-A/CR 359
15NE-A/CR 748
15NE-A/C 159
15NE-A/R 160
15NE-A/CR 155
15NE-A/C 629
15NE-A/R 161
15NE-A/C 326
15NE-A/C 624
15NE-A/C 358
15NE-A/F 219
15NE-A/CR 158
Stanley Knoll
赤柱山莊
Stanley Court
海灣園
15NE-A/C 667
15NE-A/R 164
15NE-A/R 163
15NE-A/R 143
15NE-A/R 138
15NE-A/CR 744
15NE-A/R 410
15NE-A/CR 743
Solace
15NE-A/FR 189
15NE-A/F 85
15NE-A/CR 325
15NE-A/CR 357
15NE-A/R 43
15NE-A/R 42
15NE-A/F 234
Carmel Hill
海明山
Gordon Terrace
15NE-A/R 139
15NE-A/R 389
15NE-A/R 41
15NE-C/R 137
15NE-C/F 126
15NE-A/C 668
15NE-C/C 245
15NE-C/C 220
15NE-C/C 219
15NE-C/F 69
15NE-C/R 98
赤柱廣場
Stanley Plaza
15NE-C/FR 125
15NE-C/C 25
15NE-C/C 187
15NE-C/C 224
15NE-C/FR 73
15NE-C/CR 112
STANLEY MAIN ST
15NE-C/FR 124
15NE-C/FR 123
15NE-C/C 444
15NE-C/FR 156
卜公碼頭
Blake Pier
HWM

Slope Maintenance Responsibility Report (15NE-A/C668)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**15NE-A/C668**		**Sub-Division**	Not Applicable
	Location	TO THE S OF RBL333		
	Responsible Lot/Party	Highways Department	**Maintenance Agent**	Highways Department
	Remarks	1. Slope information being reviewed. 2. For enquiries about the maintenance of this slope / sub-division of the slope, please contact the Maintenance Agent directly.		

- 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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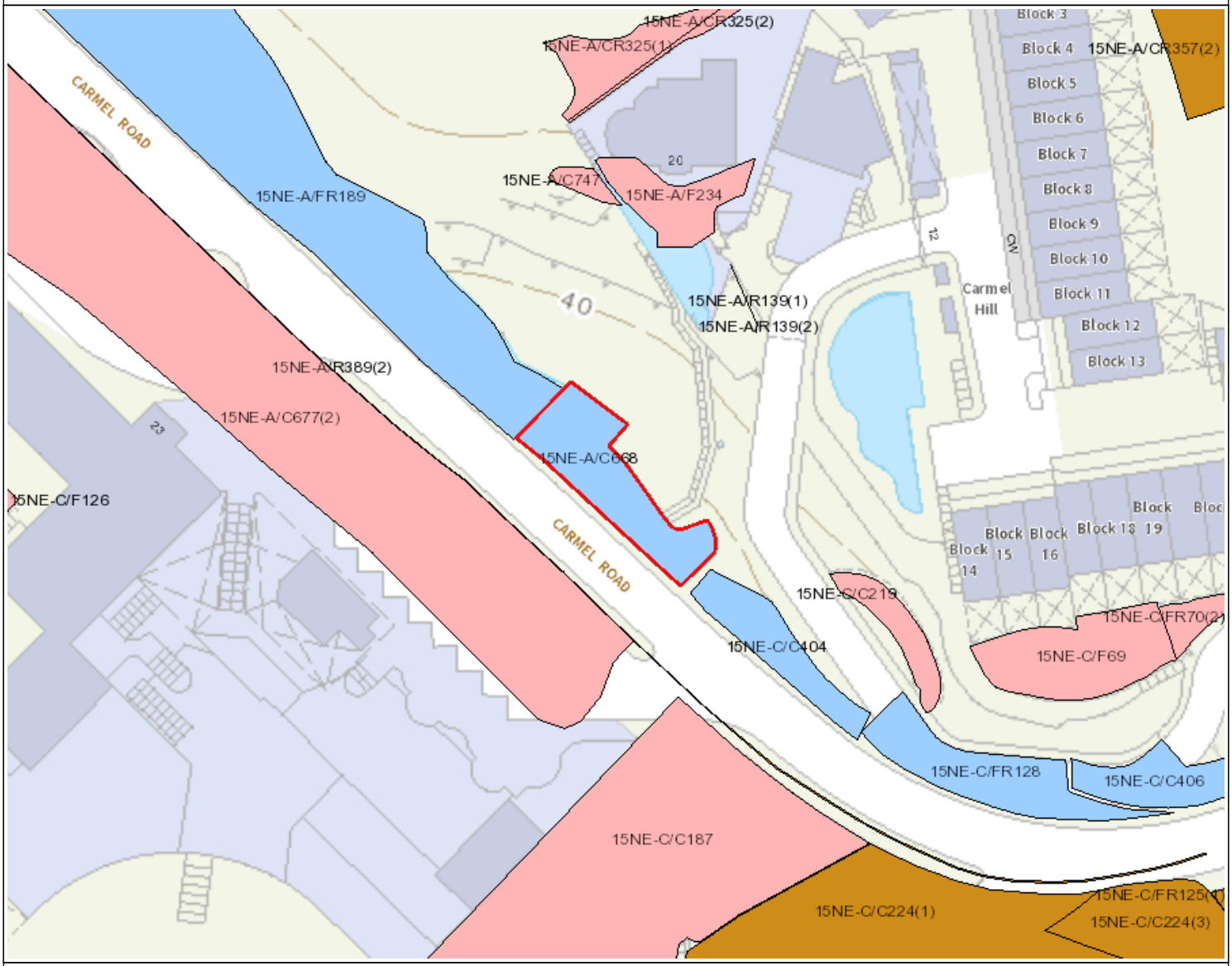
Location Plan



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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15NE-A/F 234

BASIC INFORMATION

Location:	R.B.L. 567, 20 Carmel Road, Stanley, Hong Kong
Registration Date:	26-07-2007
Ranking Score (NPRS):	0 (N/A)
Date of Formation:	post-1977
Date of Construction/ Modification:	01-08-2006
Data Source:	AP
Approximate Coordinates:	Easting : 839733 Northing : 809034

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Residential building
Distance of Facility from Crest (m):	0
Facility at Toe:	Road/footpath with moderate traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	1
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 5.8 Length (m): 23 Average Angle (deg): 35

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Private Feature Party: RBL567 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 07-12-2007

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	14-02-2007
Data Source:	AP
Slope Part Drainage:	(1) Position: On slope Size(mm): 225 (2) Position: Toe Size(mm): 225
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 0 Chunam: 0 Shotcrete: 100 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): 75 Spacing (m): 1.5

WALL PART

N/A

SERVICES

N/A

CHECKING STATUS INFORMATION

Tagmark: SCS_4014 Part: 0 Checking Status: Formed to current standard Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	N/A
Map Sheet Reference (1:1000):	N/A
Aerial Photos:	N/A
Nearest Rainguage Station (Station Number):	()
Data Collected On:	14-02-2007
Date of Construction, Subsequent Modification and Demolition:	N/A
Related Reports/Files or Documents:	N/A
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	N/A
Section No:	1-1
Height(m):	
Type of Toe Facility:	Road/footpath with moderate traffic density
Distance from Toe(m):	0
Type of Crest Facility:	Residential building
Distance from Crest(m):	0
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	
Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

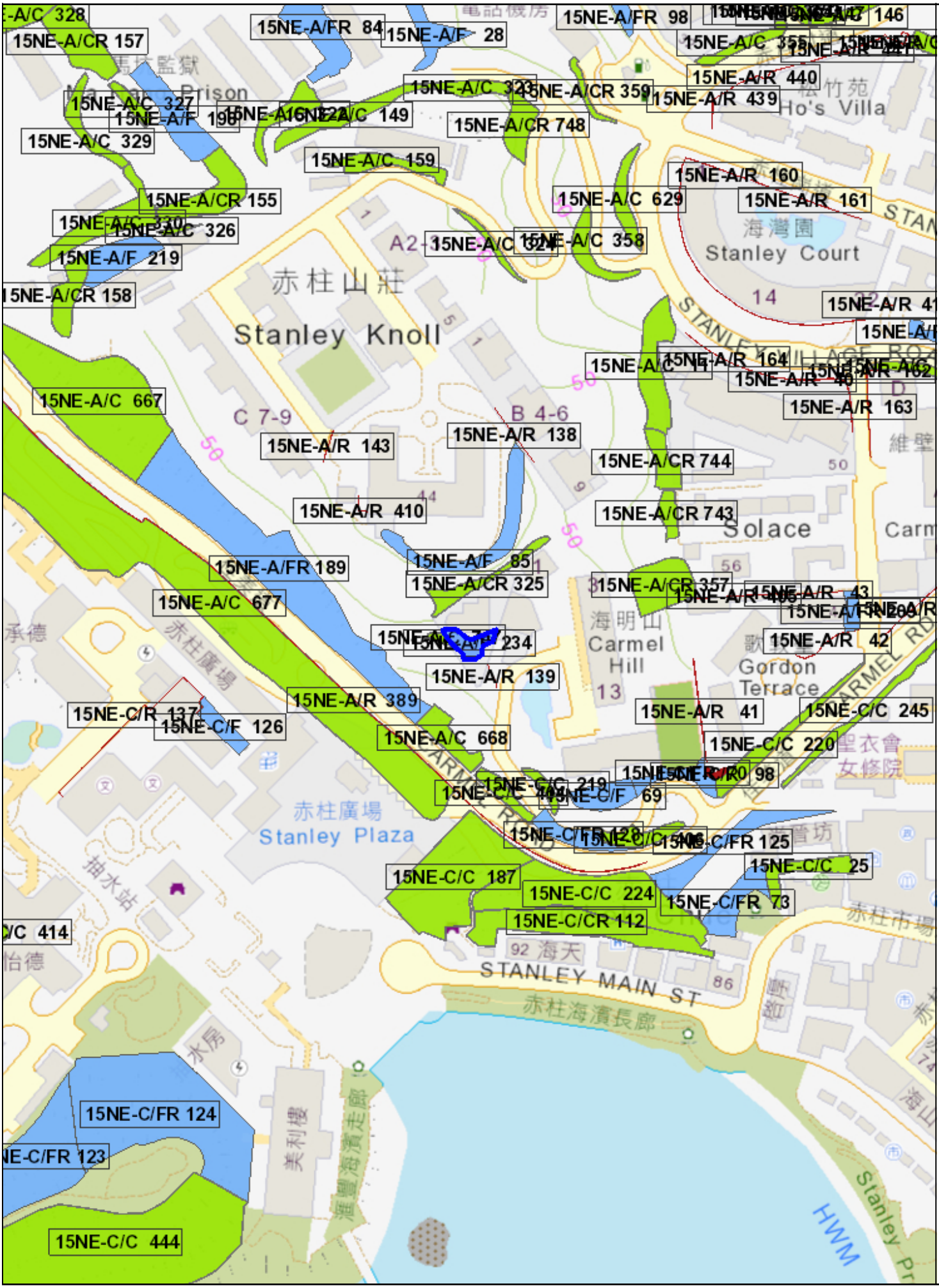
Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	
Action By:	N/A

OTHER EXTERNAL ACTION

Check / repair Services:	
Action By:	N/A
Non-routine Maintenance:	

Action By: N/A

PHOTO


15NE-A/C 328
15NE-A/CR 157
15NE-A/FR 84
15NE-A/F 28
15NE-A/FR 98
15NE-A/C 327
15NE-A/F 198
15NE-A/C 329
15NE-A/C 323
15NE-A/CR 359
15NE-A/R 439
15NE-A/R 440
15NE-A/C 149
15NE-A/CR 748
15NE-A/C 159
15NE-A/R 160
15NE-A/CR 155
15NE-A/C 629
15NE-A/R 161
15NE-A/C 330
15NE-A/C 326
15NE-A/F 219
15NE-A/C 324
15NE-A/C 358
15NE-A/CR 158
15NE-A/C 667
15NE-A/R 143
15NE-A/R 138
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15NE-A/R 410
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15NE-C/C 224
15NE-C/FR 73
15NE-C/CR 112
15NE-C/FR 124
15NE-C/FR 123
15NE-C/C 444
Stanley Knoll
赤柱山莊
Stanley Court
海灣園
Solace
Carmel Hill
海明山
Gordon Terrace
Stanley Plaza
赤柱廣場
STANLEY MAIN ST
赤柱海濱長廊
Ho's Villa
Prison
HWM

Slope Maintenance Responsibility Report (15NE-A/F234)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**15NE-A/F234**		**Sub-Division**	Not Applicable
	Location	WITHIN RBL567		
	Responsible Lot/Party	RBL567	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		

- End of Report -

Notes:

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(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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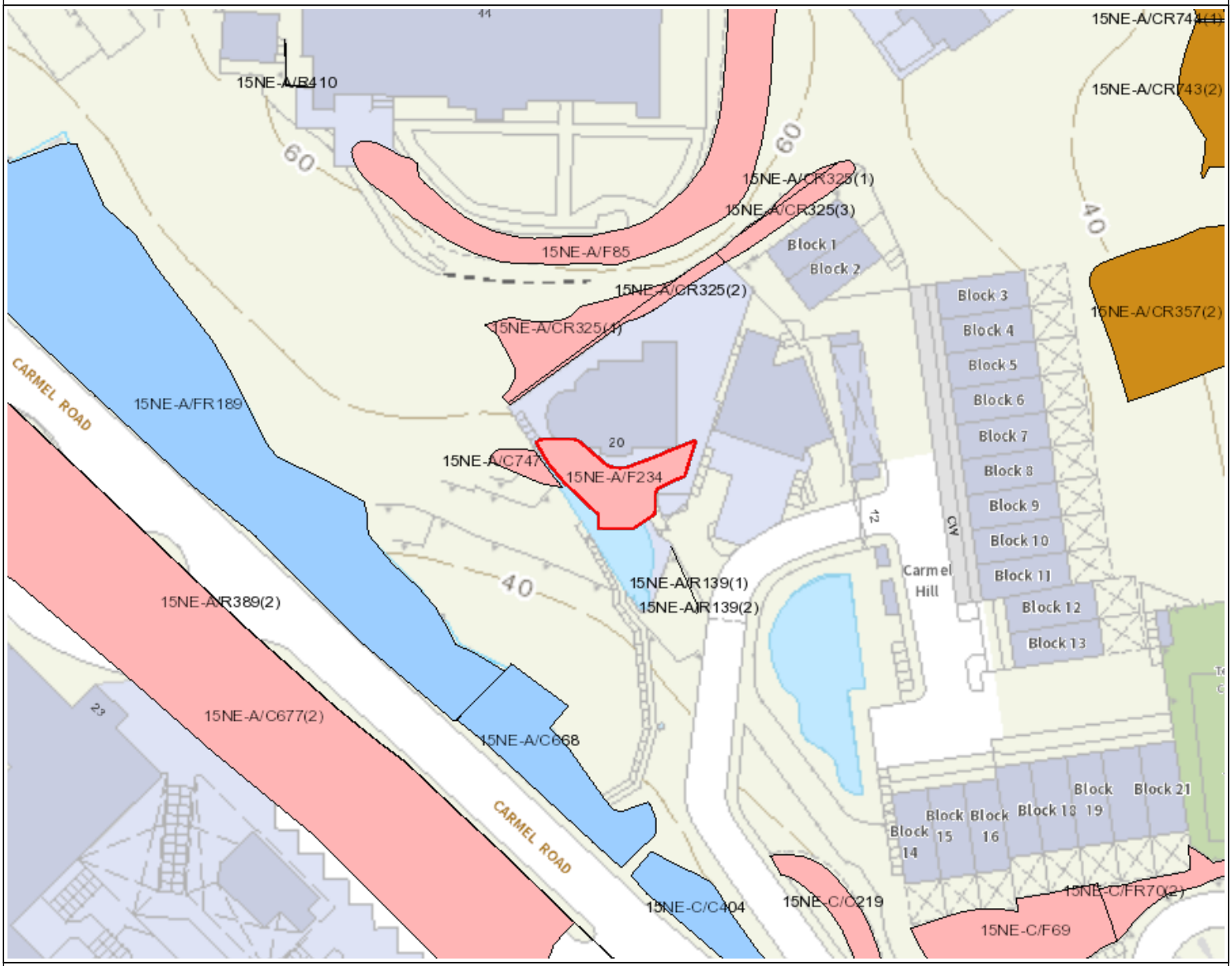

Legend

- 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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15NE-C/C 404

BASIC INFORMATION

Location:	CARMEL ROAD, SE
Registration Date:	22-06-1999
Ranking Score (NPRS):	0 (EI)
Date of Formation:	post-1977
Date of Construction/ Modification:	
Data Source:	EI(HyD)
Approximate Coordinates:	Easting : 839744 Northing : 808974

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Flyover
Distance of Facility from Crest (m):	2
Facility at Toe:	Road/footpath with moderate traffic density
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	2
Remarks:	N/A

SLOPE PART

(1) Max. Height (m): 2.5 Length (m): 30 Average Angle (deg): 30

WALL PART

N/A

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 0 Government Feature Party: HyD Agent: HyD Land Cat.: 5b(iii) Reason Code: 56 MR Endorsement Date: 08-05-2001

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	22-02-2012
Data Source:	EI(HyD)
Slope Part Drainage:	(1) Position: Crest Size(mm): 300 (2) Position: On slope Size(mm): 225 (3) Position: Toe Size(mm): 300
Wall Part Drainage:	N/A

SLOPE PART

Slope Part (1)
Surface Protection (%): Bare: 0 Vegetated: 40 Chunam: 0 Shotcrete: 60 Other Cover: 0
Material Description: Material type: Soil Geology: N/A
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): N/A Spacing (m): N/A

WALL PART

N/A

SERVICES

N/A

CHECKING STATUS INFORMATION

Tagmark: 11510_0_1 Part: 0 Checking Status: No outstanding comments Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	N/A
Map Sheet Reference (1:1000):	15NE-12C
Aerial Photos:	N/A
Nearest Rainguage Station (Station Number):	()
Data Collected On:	22-02-2012
Date of Construction, Subsequent Modification and Demolition:	N/A
Related Reports/Files or Documents:	N/A
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None
Advisory Letter (To Be Confirmed with Buildings Department):	None
LPMIS:	None

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	
Weather:	
District:	N/A
Section No:	1-1
Height(m):	
Type of Toe Facility:	Road/footpath with moderate traffic density
Distance from Toe(m):	0
Type of Crest Facility:	Flyover
Distance from Crest(m):	2
Consequence Category:	
Engineering Judgement:	
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	
Engineering Judgement:	
Sign of Seepage:	
Criterion A satisfied:	
Sign of Distress:	
Criterion D satisfied:	
Non-routine maintenance required:	
Note:	
Masonry wall/Masonry facing:	
Note:	
Consequence category (for critical section):	
Observations:	N/A
Emergency Action Required:	
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	
Action By:	N/A

OTHER EXTERNAL ACTION

Check / repair Services:
Action By: N/A
Non-routine Maintenance:
Action By: N/A

PHOTO

15NE-A/CR 155
15NE-A/C 326
15NE-A/F 219
15NE-A/C 667
15NE-A/R 143
15NE-A/R 410
15NE-A/FR 189
15NE-A/C 677
15NE-C/R 137
15NE-C/F 126
15NE-A/R 389
15NE-A/C 668
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15NE-A/F 234
15NE-A/R 139
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15NE-C/C 245
15NE-A/R 41
15NE-C/C 220
15NE-C/F 69
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15NE-C/CR 112
15NE-A/FR 209
Stanley Knoll
Stanley Court
Solace
Carmel Hill
Gordon Terrace
Stanley Plaza
STANLEY MAIN ST
Blake Pier
HWM
Stanley Promenade

Slope Maintenance Responsibility Report (15NE-C/C404)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**15NE-C/C404**		**Sub-Division**	Not Applicable
	Location	TO THE W OF RBL1095		
	Responsible Lot/Party	Highways Department	**Maintenance Agent**	Highways 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:

(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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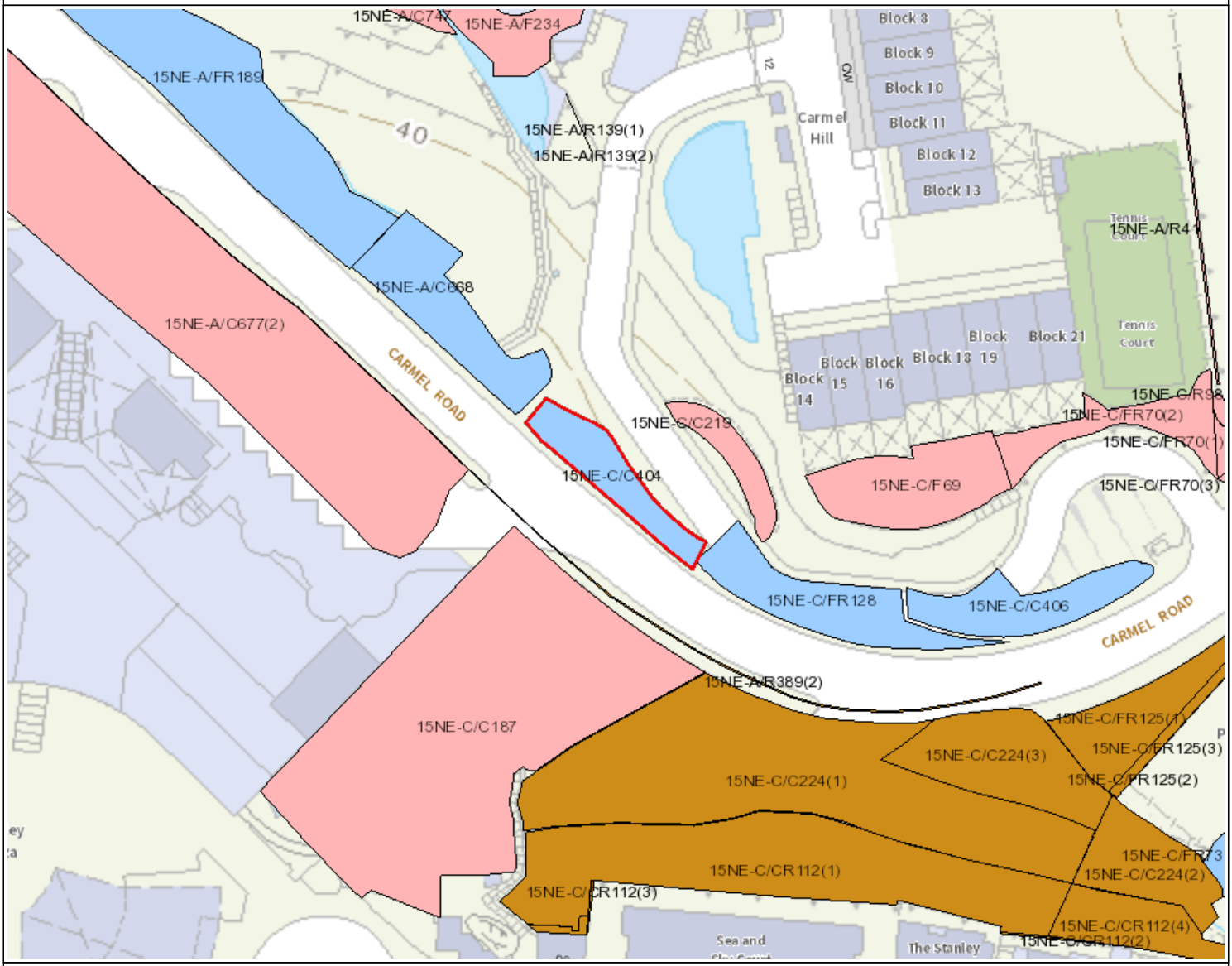
Location Plan



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

This Plan is **NOT TO SCALE** and intended for **IDENTIFICATION** only. All information shown on this plan **MUST** be verified by field survey.

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15NE-A/R 139

BASIC INFORMATION

Location:	No. 18 Carmel Road, Stanley, Hong Kong
Registration Date:	17-02-1998
Ranking Score (NPRS):	0 (Notional)
Date of Formation:	pre-1977
Date of Construction/ Modification:	30-08-2019
Data Source:	AP
Approximate Coordinates:	Easting : 839741 Northing : 809022

CONSEQUENCE-TO-LIFE CATEGORY

Facility at Crest:	Road/footpath with very low traffic density
Distance of Facility from Crest (m):	0
Facility at Toe:	Lightly-used open area/facilities
Distance of Facility from Toe (m):	0
Consequence-to-life Category:	3
Remarks:	N/A

SLOPE PART

N/A

WALL PART

(1) Max. Height (m): 4.9 Length (m): 10.3 Face Angle (deg): 90

MAINTENANCE RESPONSIBILITY

(1) Sub Div.: 1 Private Feature Party: RBL 701 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 27-07-2023
(2) Sub Div.: 2 Private Feature Party: RBL 1095 Agent: N/A Land Cat.: 1 Reason Code: 1 MR Endorsement Date: 27-07-2023

DETAILS OF SLOPE / RETAINING WALL

Date of Inspection:	17-09-2019
Data Source:	AP
Slope Part Drainage:	N/A
Wall Part Drainage:	(1) Position: Crest Size(mm): 225 (2) Position: Downpipe Size(mm): 150 (3) Position: Toe Size(mm): 225

SLOPE PART

N/A

WALL PART

Wall Part (1)
Type of Wall: Wall Material: Concrete Wall Location: Retaining wall with level platform
Berm: No. of Berms: N/A Min. Berm Width (m): N/A
Weepholes: Size (mm): 75 Spacing (m): 1.5

SERVICES

N/A

CHECKING STATUS INFORMATION

Tagmark: SCS_18494 Part: 1 Checking Status: Feature modified/upgraded to current standard Checking Certificate No.: N/A
Tagmark: SCS_3902 Part: 1 Checking Status: Others (See remarks) Checking Certificate No.: N/A

BACKGROUND INFORMATION

GIU Cell Ref.:	15NE12A9
Map Sheet Reference (1:1000):	15NE-12A
Aerial Photos:	A35116-7 (1993),
Nearest Rainguage Station (Station Number):	St. Stephen's College, Tung Tau Wan Road(H15)
Data Collected On:	17-09-2019
Date of Construction, Subsequent Modification and Demolition:	Modification: Constructed Before: 1967 After: 1963
Related Reports/Files or Documents:	File/Report: DB or DH Ref. No.: BC RBL567 File/Report: DB or DH Ref. No.: BC RBL567 File/Report: DB or DH Ref. No.: GCI3/4/D28/78/HK File/Report: DB or DH Ref. No.: GCI3/4/D28/78/HK File/Report: Development Ref. No.: GCI3/4/3006/89, GCI3/4/2344/61 File/Report: Development Ref. No.: GCI3/4/3006/89, GCI3/4/2344/61 File/Report: LWC Ref. No.: 1706 - GC4/1/2-5 (3) f(18), GC4/1/2-3 PtIV f(5) File/Report: LWC Ref. No.: 1706 - GC4/1/2-5 (3) f(18), GC4/1/2-3 PtIV f(5)
Remarks:	N/A
Follow Up Actions:	N/A
DH-Order (To Be Confirmed with Buildings Department):	None

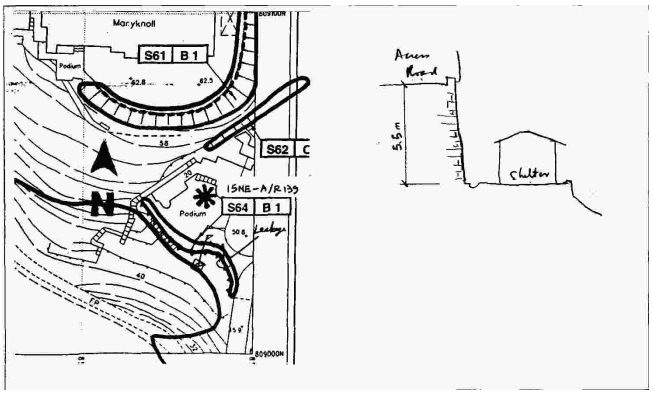
Advisory Letter (To Be Confirmed with Buildings Department):	Date of Recommendation to BD: N/A File Reference: N/A Date Served by BD: 29/07/2003 Date of Recommendation to BD: N/A File Reference: N/A Date Served by BD: 29/07/2003 Date of Recommendation to BD: N/A File Reference: N/A Date Served by BD: 29/07/2003
LPMIS:	Agreement No.: CE61/2001 Report No.: S2R12/2003 Agreement No.: CE78/97 Report No.: S2R12/2003

ENHANCED MAINTENANCE INFORMATION

From Maintenance Department: (Last Updated Date: 25/09/2025)

STAGE 1 STUDY REPORT

Inspected On:	05-12-1996
Weather:	Mainly Fine
District:	I



Section No:	1-1
Height(m):	H1 : 6 , H2 : 6
Type of Toe Facility:	Lightly-used open area/facilities
Distance from Toe(m):	0
Type of Crest Facility:	Road/footpath with very low traffic density
Distance from Crest(m):	0
Consequence Category:	1
Engineering Judgement:	P
Section No:	2-2
Type of Toe Facility:	
Distance from Toe(m):	
Type of Crest Facility:	
Distance from Crest(m):	
Consequence Category:	1
Engineering Judgement:	P
Sign of Seepage:	Slope : N/A Wall : Slight to moderate seepage below mid-height

Criterion A satisfied:	N
Sign of Distress:	Slope : N/A Wall : Minimal(mid-portion, at toe)
Criterion D satisfied:	N
Non-routine maintenance required:	N
Note:	N/A
Masonry wall/Masonry facing:	Y
Note:	N/A
Consequence category (for critical section):	1
Observations:	N/A
Emergency Action Required:	N
Action By:	N/A

ACTION TO INITIATE PREVENTIVE WORKS

Criterion A/Criterion D:	N/A
Action By:	N/A
Further Study:	Y
Action By:	Mixed

OTHER EXTERNAL ACTION

Check / repair Services:	Y
Action By:	DSD
Non-routine Maintenance:	N
Action By:	N/A

eLPMIS

LPM/LPMit Details Report

LPM Study Feature No.:	15NE-A/R 139
Location:	SOUTHEAST OF NO. 20 CARMEL ROAD, STANLEY
District Council:	Southern
Maintenance Responsibility (At the Time of Selection):	Private
Responsible Party for Maintenance of Government Portion:	N/A
Private Lot No.:	RBL567, RBL701, RBL1095

LPM/LPMit Study

Agreement No.:	CE61/2001
Study Type:	Stage 2 Study
Consultant:	Maunsell Geotechnical Services Ltd.
GEO Managing Section / Engineer:	SS / SS2

Study Status:	Study completed
Design Approach:	N/A
Option Assessment Accepted:	N/A
Study Report No.:	S2R12/2003
Programme / Actual Commencement:	01-10-2002
Programme / Actual Completion:	06-02-2004
Report Recommendation (For Stage 2 Study):	Advisory Letter
District Check Status:	Checked
Checking Certificate No.:	N/A
GEO Engineer's Remarks:	N/A

LPM/LPMit Works

Works Contract No.:	N/A
GEO Managing Section / Engineer:	N/A / N/A
Contractor:	N/A
Progress Status:	N/A
Reason of Study Termination / Works Deletion (If Necessary):	N/A
Forecast Commencement Date:	N/A
Forecast Completion Date:	N/A
Completion Cert. Issued:	N/A
Site Handed Over to Maintenance Department on:	N/A
Estimated Cost for Upgrading (HK$M):	N/A
Maintenance Manual No.:	N/A
Actual Works:	N/A
No. of Tree Felled:	N/A
No. of Tree Planted (Incl. Transplant):	N/A
% Bare of Slope Surfacing:	N/A
% Vegetated of Slope Surfacing:	N/A
% Shotcrete of Slope Surfacing:	N/A
Other Hard Surface of Slope Surfacing:	N/A

LPM/LPMit Details Report

LPM Study Feature No.:	15NE-A/R 139
Location:	SOUTHEAST OF NO. 20 CARMEL ROAD, STANLEY
District Council:	Southern
Maintenance Responsibility (At the Time of Selection):	Private
Responsible Party for Maintenance of Government Portion:	N/A
Private Lot No.:	NA

LPM/LPMit Study

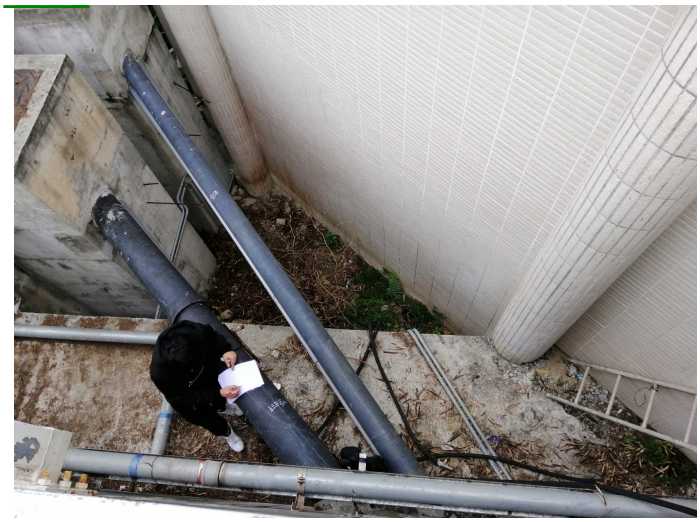
Agreement No.:	CE78/97
Study Type:	Stage 2 Study
Consultant:	Maunsell Geotechnical Services Ltd.
GEO Managing Section / Engineer:	SS / SS3

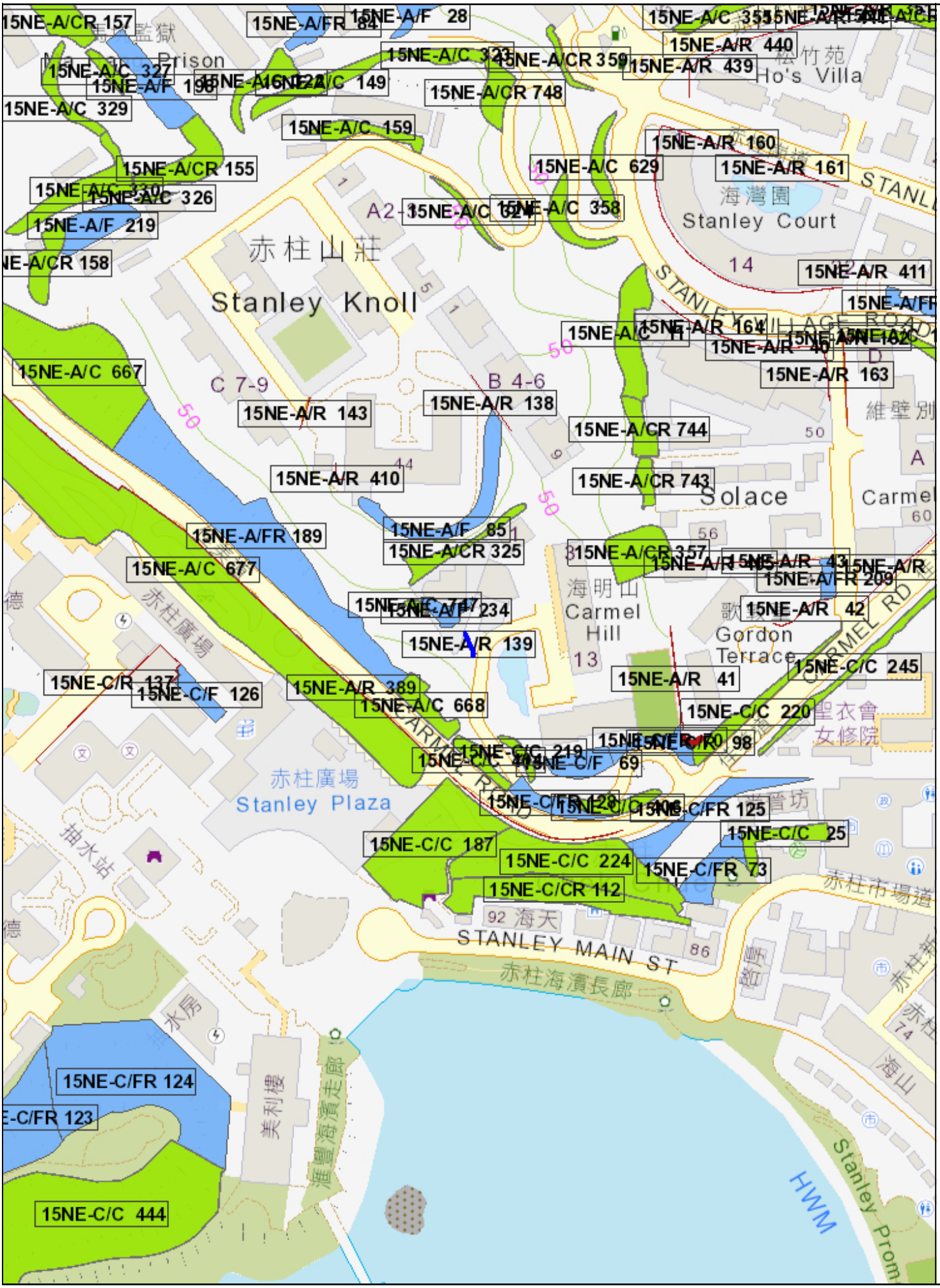
Study Status:	Study deferred - Potential redevelopment and requires review by GEO in the future
Design Approach:	N/A
Option Assessment Accepted:	N/A
Study Report No.:	S2R12/2003
Programme / Actual Commencement:	N/A
Programme / Actual Completion:	N/A
Report Recommendation (For Stage 2 Study):	Advisory Letter
District Check Status:	N/A
Checking Certificate No.:	N/A
GEO Engineer's Remarks:	DELETED AS UNAUTHORISED EXCAVATION IS BEING CARRIED OUT BEHIND THE WALL.

LPM/LPMit Works

Works Contract No.:	N/A
GEO Managing Section / Engineer:	N/A / N/A
Contractor:	N/A
Progress Status:	N/A
Reason of Study Termination / Works Deletion (If Necessary):	N/A
Forecast Commencement Date:	N/A
Forecast Completion Date:	N/A
Completion Cert. Issued:	N/A
Site Handed Over to Maintenance Department on:	N/A
Estimated Cost for Upgrading (HK$M):	N/A
Maintenance Manual No.:	N/A
Actual Works:	N/A
No. of Tree Felled:	N/A
No. of Tree Planted (Incl. Transplant):	N/A
% Bare of Slope Surfacing:	N/A
% Vegetated of Slope Surfacing:	N/A
% Shotcrete of Slope Surfacing:	N/A
Other Hard Surface of Slope Surfacing:	N/A

PHOTO

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15NE-A/FR 84
15NE-A/F 28
15NE-A/C 355
15NE-A/R 440
15NE-A/C 327
15NE-A/C 323
15NE-A/CR 359
15NE-A/R 439
15NE-A/F 196
15NE-A/C 149
15NE-A/C 329
15NE-A/CR 748
15NE-A/C 159
15NE-A/R 160
15NE-A/CR 155
15NE-A/C 629
15NE-A/R 161
15NE-A/C 326
15NE-A/C 624
15NE-A/C 358
15NE-A/F 219
15NE-A/CR 158
15NE-A/R 411
15NE-A/R 164
15NE-A/C 667
15NE-A/R 163
15NE-A/R 143
15NE-A/R 138
15NE-A/CR 744
15NE-A/R 410
15NE-A/CR 743
15NE-A/FR 189
15NE-A/F 85
15NE-A/CR 325
15NE-A/C 677
15NE-A/CR 357
15NE-A/R 43
15NE-A/FR 209
15NE-A/F 234
15NE-A/R 42
15NE-A/R 139
15NE-C/R 137
15NE-C/F 126
15NE-A/R 389
15NE-A/C 668
15NE-A/R 41
15NE-C/C 245
15NE-C/C 220
15NE-C/C 219
15NE-C/F 69
15NE-C/FR 125
15NE-C/C 25
15NE-C/C 187
15NE-C/C 224
15NE-C/FR 73
15NE-C/CR 112
15NE-C/FR 124
15NE-C/FR 123
15NE-C/C 444
Prison
Ho's Villa
Stanley Court
赤柱山莊
Stanley Knoll
Solace
Carmel Hill
Gordon Terrace
赤柱廣場
Stanley Plaza
STANLEY MAIN ST
STANLEY VILLAGE ROAD
CARMEL RD
赤柱海濱長廊
HWM
Stanley Prom
C 7-9
B 4-6
A2

Slope Maintenance Responsibility Report (15NE-A/R139)	**ESTATE MANAGEMENT SECTION** **LANDS DEPARTMENT**

List of Slope Maintenance Responsibility Area(s)

1	**15NE-A/R139**		**Sub-Division**	1
	Location	Within RBL 701 and RBL 1095		
	Responsible Lot/Party	RBL 701	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		

2	**15NE-A/R139**		**Sub-Division**	2
	Location	Within RBL 701 and RBL 1095		
	Responsible Lot/Party	RBL 1095	**Maintenance Agent**	Not Applicable
	Remarks	Not Applicable		

- End of Report -

Notes:

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(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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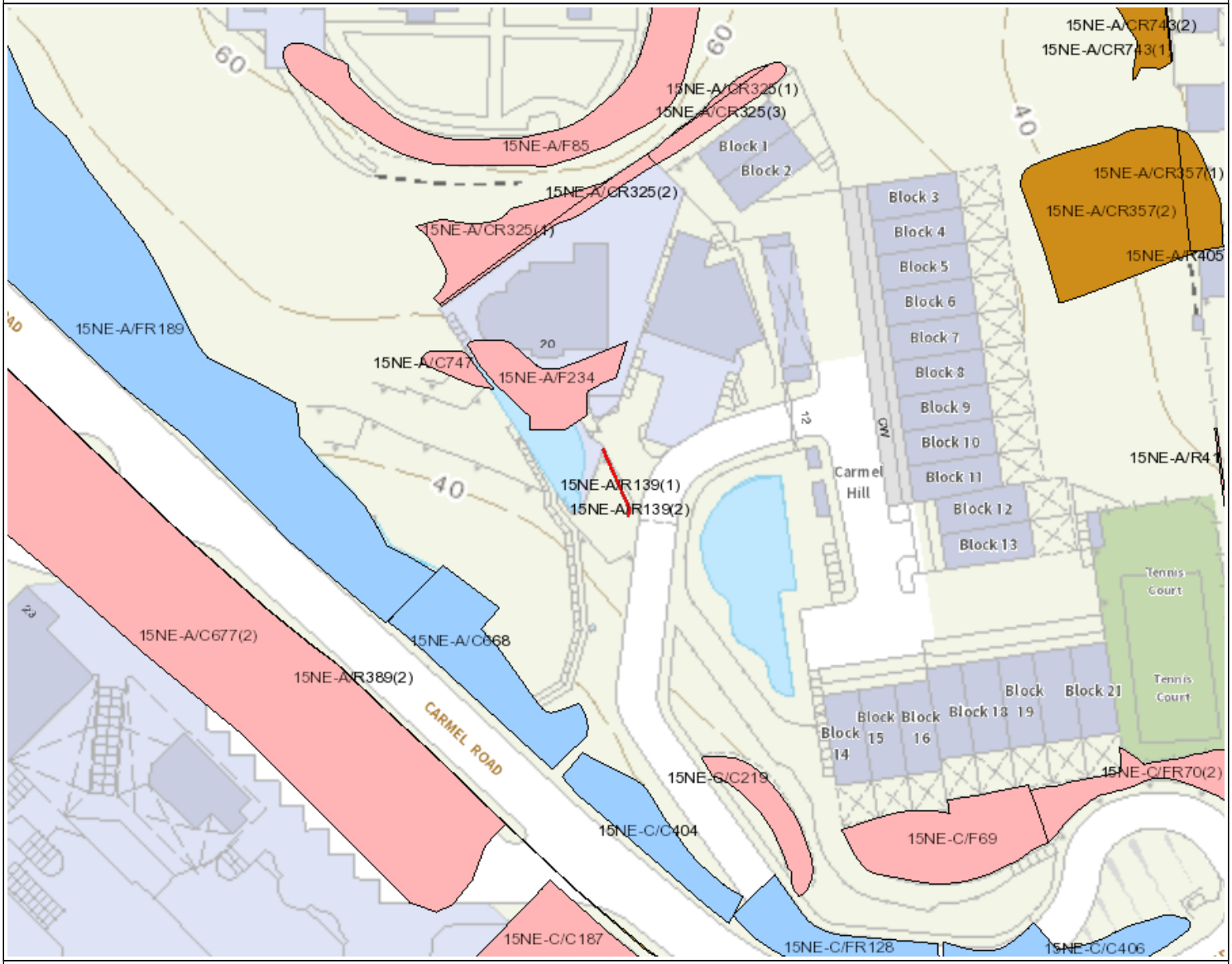
Location Plan



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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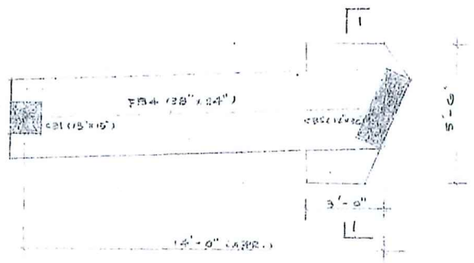
Appendix B

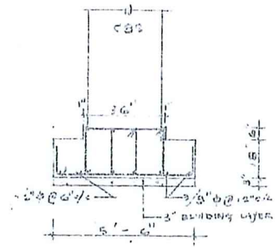
Record Plans of Adjacent Structure

BD Record Plan
R.B.L. 333 S.A 42
STANLEY VILLAGE ROAD

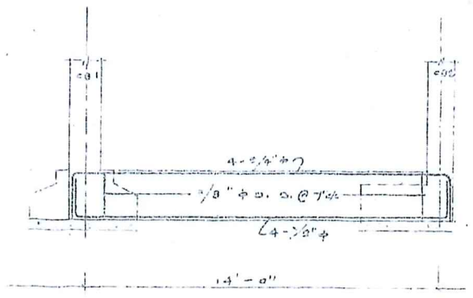
B.O.O. REF. NO.



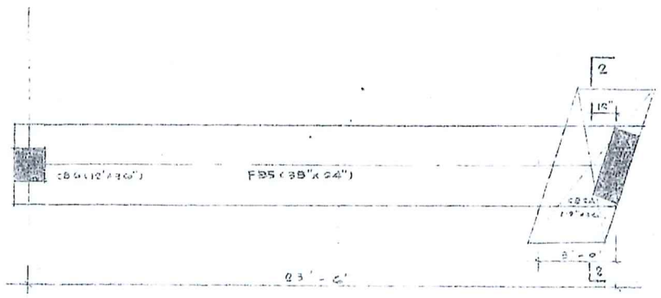
FOOTING FOR C81 & C82



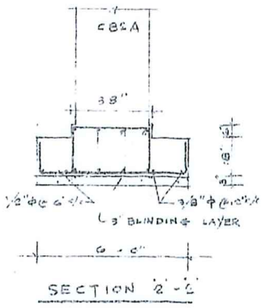
SECTION 1'-1'



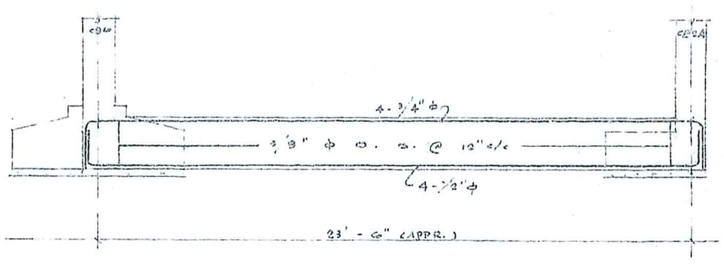
FB4 (38"x 24")



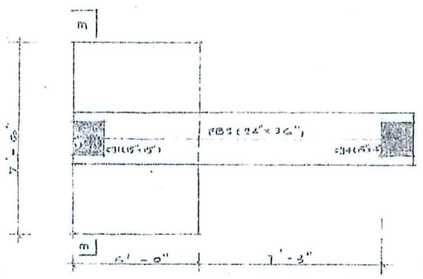
FOOTING FOR C84A



SECTION 2'-2'



FB5 (38"x 24")



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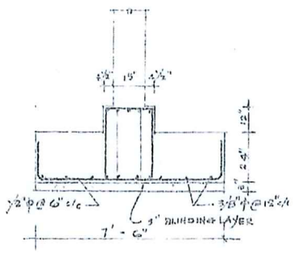
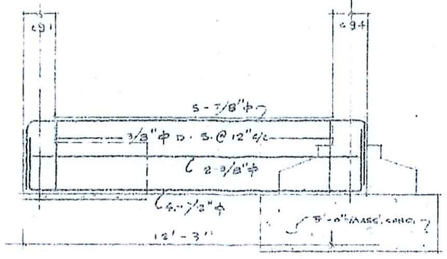


SECTION 3'-3'



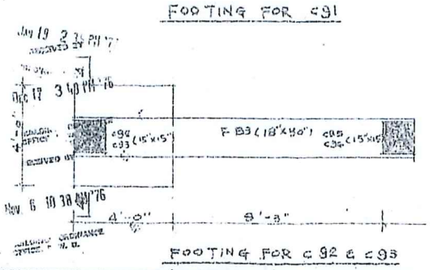
FB2 (24"x 36")

NOTE: MILD STEEL

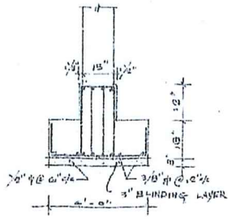
Approved
for
BUILDING AUTHORITY
18 MAR 1977

NOTE: As these plans have been examined only as outlined in Circular Letter No. 91 your particular attention is drawn to Section 4 (2) (b) of the Building Ordinance requiring your duty as Authorised Person to ensure that all works are in accordance with any provision of the Building Ordinance.

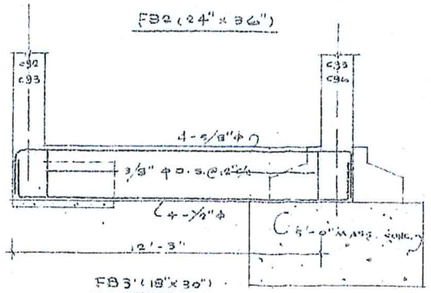
5 NOV 1976



FOOTING FOR C92 & C93



SECTION 4'-4'



FB3 (18"x 30")

TYPE - B
TYPE 'B'

5 NOV 17 DEC 1976

PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H. K.

DRAWN BY	SCALE 3/8"=1'-0"
CHECKED BY	DATE
JOB NO. 731006	DWG. NO. F 3/5

design 3
planners · architects · engineers
3, tin hau temple road, hong kong. 5-768821-4

BL = 178 = 54.2mPD

BL = 170 = 51.8mPD

FOOTING PLAN

SECTION 1'-1'

BL = 184 = 56.1mPD

BL = 181 = 55.2mPD

SEC. 'B-B' OF R.W.12.

BL = 178 = 54.2mPD

RECORD PLAN

5 DEC 1979

T.P.B.

B.O.D. REF. NO. 3/2122

F.S.D. REF. NO.

D.O. REF. NO.

NOTES:

1. This drawing & design are copyright and no portion may be reproduced without the written permission of the Architects.
2. Use written dimensions or grid lines. Measurements to existing work to be checked on site.
3. This drawing is to be read in conjunction with the Architects specification & condition of contract.
4. Drawing not showing the last revision below are to be cancelled.

GENERAL NOTES:

REVISIONS	DATE	REMARKS
1	14/9/79	AS. EE RATING

PROJECT

PROPOSED RESIDENTIAL COMPLEX AT R. B. L. 333 S. A. STANLEY H.K.

DRAWING TITLE

FOOTING PLAN AND SECTION

DRAWN BY	SCALE 1/100
CHECKED BY	DATE 25-10-79
JOB NO. 721006	DWG. NO. F 15

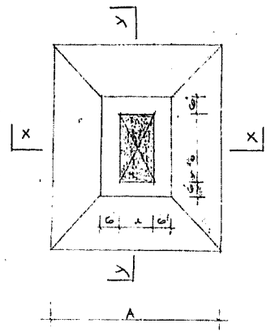
design 3

planners · architects · engineers

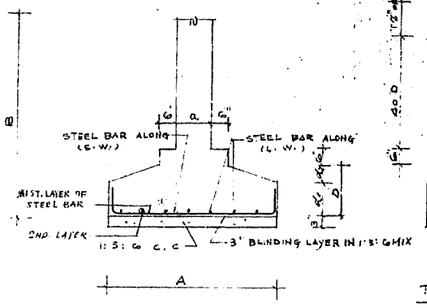
SPWH HKIA S.ARCH. (HK&CHC)
MICHAEL WONG DIP.ARCH. R.I.B.A.
PHILIP P. WH S.ARCH. (CALIFORNIA)

3, Mei Sun Terrace, Repulse Bay, Hong Kong. Tel. 5-812274-5

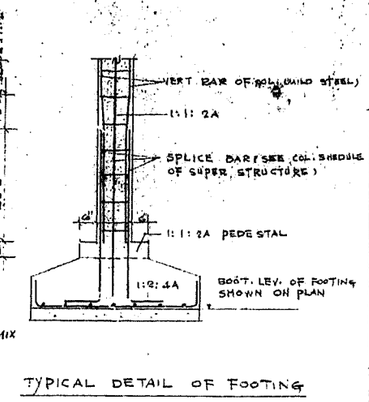
B.O.D. REF. NO. 3/3144/75



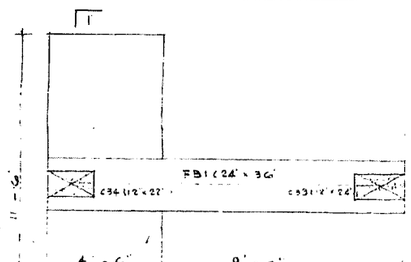
TYPICAL DETAIL OF FOOTING



SECTION OF FOOTING

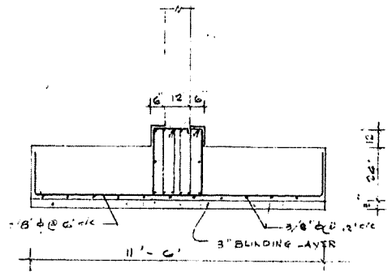


TYPICAL DETAIL OF FOOTING



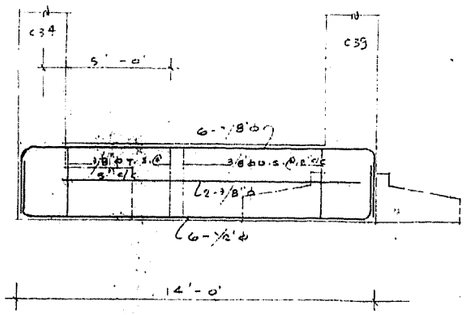
FOOTING OF C33

SCALE "8" = 1'-0"



SECTION 1-1

SCALE "8" = 1'-0"



FB1 (24" x 36")

SCALE 3/8" = 1'-0"

NOTE:

(1) SPLICE BAR EQUAL IN AREA TO AREA OF BARS IN COLUMN.
(2) CONCRETE MIX, TO BE 1:2:4A
(3) STEEL BAR TO BE MILD STEEL
(4) SOIL BEARING CAPACITY = 0.5 TON/sq. FT.
(5) COVER TO STEEL: FOOTING = 3" STRAP BEAM = 2"
(6) BLINDING LAYER & MASS CONCRETE FILL TO BE 1:5:C MIX.

NOTE: MILD STEEL

* 1ST. LAYER OF STEEL BAR

COL. MARKS	a	b	A	B	D	α_1	α_2	STEEL BAR ALONG x - x	STEEL BAR ALONG y - y	MASS CONCRETE FILL (IF NECESSARY)
C1, C56	12"	22"	3'-6"	8'-10"	24"	18"	6"	½"ϕ@9" c/c	5/8"ϕ@5½" c/c	
C4, 3, 6, 58	12"	22"	6'-6"	7'-4"	24"	18"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	C3, C4 - 2'-0" MASS. CONC. UNDER. C6 3'-0" MASS. CONC. UNDER
C5, 60	12"	22"	7'-6"	5'-2"	24"	18"	6"	½"ϕ@4" c/c	½"ϕ@9" c/c	
C9, 8, 10, 64, 65, 66	12"	20"	8'-0"	9'-0"	24"	18"	6"	5/8"ϕ@5½" c/c	5/8"ϕ@5½" c/c	C65, C9, C10 3'-0" MASS. CONC. UNDER
C11, 18, 19, 37, 38	12"	24"	7'-6"	8'-6"	18"	12"	6"	½"ϕ@4½" c/c	½"ϕ@4½" c/c	
C39, 40, 63	18"	24"	7'-6"	8'-6"	18"	12"	6"	½"ϕ@4½" c/c	½"ϕ@4½" c/c	
C12, 15, 17, 44, 45	12"	29"	6'-0"	7'-5"	18"	12"	6"	½"ϕ@4½" c/c	½"ϕ@4½" c/c	C12, 2'-0" MASS. CONC. UNDER OF C.B. SEE PLAN
C46, 62, 70, 72	12"	23"	6'-0"	7'-5"	18"	12"	6"	½"ϕ@4½" c/c	½"ϕ@4½" c/c	C72 2'-0" MASS. CONC. UNDER OF C.B. SEE PLAN
C16, 71	12"	23"	8'-0"	9'-5"	24"	18"	6"	½"ϕ@4" c/c	½"ϕ@4" c/c	
C14, 20, 22, 47, 73, 77	12"	28"	8'-0"	9'-4"	24"	18"	6"	½"ϕ@3½" c/c	½"ϕ@3½" c/c	C14 2'-0" MASS CONC. UNDER
C21, 18 76	12"	28"	9'-8"	11'-0"	24"	18"	6"	¾"ϕ@5" c/c	¾"ϕ@5" c/c	
C20A 22B 77A	12"	24"	4'-6"	5'-6"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C22C 23A	12"	24"	5'-0"	6'-0"	18"	12"	6"	½"ϕ@7" c/c	½"ϕ@7" c/c	
C23, 25A, 26A, 52A, 54A	12"	20"	4'-8"	5'-4"	18"	12"	6"	½"ϕ@7" c/c	½"ϕ@7" c/c	
C27A 27	12"	20"	5'-6"	6'-2"	18"	12"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	
C26	12"	20"	3'-0"	7'-8"	8"	12"	6"	½"ϕ@5" c/c	½"ϕ@5" c/c	
C28	12"	20"	4'-0"	4'-8"	30"	24"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C29	12"	20"	3'-6"	10'-2"	30"	24"	6"	½"ϕ@9" c/c	⅝"ϕ@5" c/c	
C30	12"	22"	4'-6"	7'-6"	24"	18"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	
C31	12"	22"	6'-0"	7'-0"	48"	42"	6"	¾"ϕ@6" c/c	¾"ϕ@6" c/c	
C52 28A, 37 58	12"	20"	3'-6"	4'-0"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C55A 55	12"	20"	3'-6"	4'-6"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C57, 2	12"	22"	7'-0"	5'-10"	48"	36"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C59, 32, 35, 36	12"	22"	6'-0"	6'-10"	18"	12"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	
C61	12"	22"	8'-0"	8'-10"	24"	18"	6"	½"ϕ@3½" c/c	½"ϕ@3½" c/c	
C67, 7, 24, 53	12"	29"	5'-5"	6'-10"	18"	12"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	4'-0" MASS CONC. UND. (C67 C7 ONLY) DETAIL SEE PLAN
C63, 43, 49, 75, 51	12"	28"	6'-8"	8'-0"	24"	18"	6"	½"ϕ@5" c/c	½"ϕ@5" c/c	
C74, 42, 48, 68	12"	24"	6'-6"	7'-6"	24"	18"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	2'-0 MASS CONC. UND. (C74 ONLY)
C50	12"	28"	10'-2"	8'-4"	18"	12"	6"	⅝"ϕ@4½" c/c	½"ϕ@5" c/c	
C8, 78, 81	15"	15"	4'-3"	4'-3"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C96, 100	15"	15"	4'-3"	4'-3"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C87, 25, 86, 88	15"	18"	6'-3"	6'-9"	24"	18"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	
C89, 102, 103, 104	15"	15"	6'-3"	6'-9"	24"	18"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	5'-0" MASS. CONC. UND. (C89 ONLY)
C90	15"	15"	7'-2"	7'-7"	24"	18"	6"	½"ϕ@6" c/c	½"ϕ@4½" c/c	6'-0" MASS CONC. UND.
C95, 83, 84, 94, 101, 105	15"	15"	5'-3"	5'-3"	18"	12"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	5'-0" MASS. CONC. UND. (C83, 84, 95 ONLY)
C54 99	12"	20"	3'-0"	6'-2"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	
C36, C41	12"	29"	4'-0"	6'-5"	18"	12"	6"	½"ϕ@6" c/c	½"ϕ@6" c/c	
C35	12"	20"	3'-9"	4'-6"	18"	12"	6"	½"ϕ@9" c/c	½"ϕ@9" c/c	

Approved
PRO BUILDING AUTHORITY
- 9 MAR 1978

AMENDED PLAN
9 FEB 1978

PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H. K.

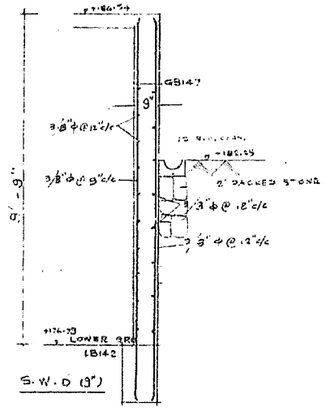
DRAWN BY	SCALE 3/8" = 1'-0"
CHECKED BY	DATE
JOB NO. 7315.06	DWG. NO. F 2/5

design 3
planners · architects · engineers
3, cite bois temple road, hong kong. 5-766921-4

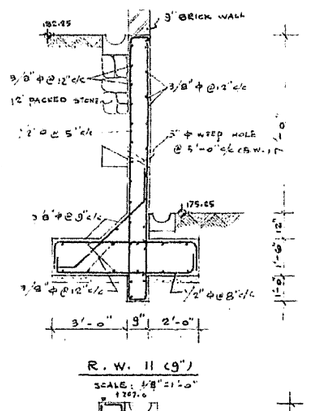
TYPE - B

a 18 3.14.78

B.O.O. REF. NO. 3/3148 A/78

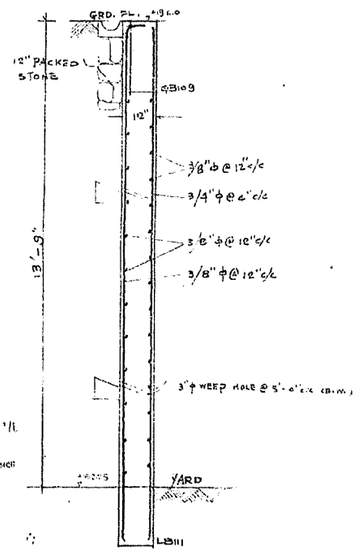


S.W.D (9")

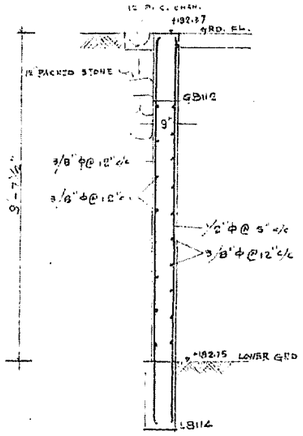


R.W. 11 (9")

SCALE: 1/8"=1'-0"

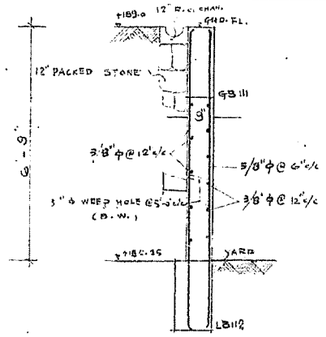


S.W.A (12")



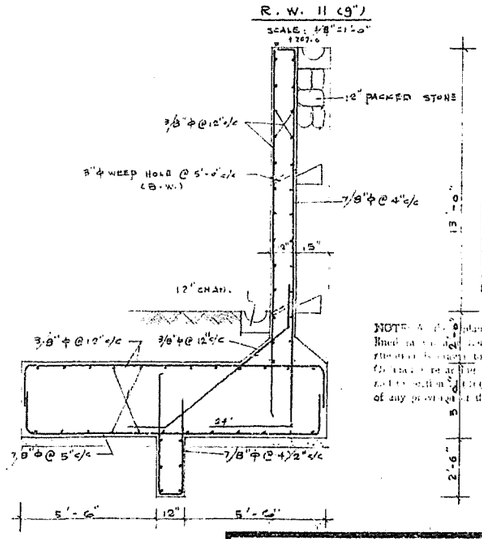
S.W.B (9")

FOR RAISE TYPE B' & C'



S.W.C (9")

FOR RAISE TYPE B' & C'



R.W. 12 (12")

SCALE 1"=1'-0"

NOTE: MILD STEEL

TYPE - B

Approved

PRO BUILDING AUTHORITY

18 MAR 1977

NOTE: A [illegible] plans have been examined only as out lined in the [illegible] Nos. [illegible] your particular [illegible] to Section [illegible] of the Building Ordinance as at the date of Authorised Person [illegible] Section [illegible] does not relieve him of contraventions of any provision of the Buildings Ordinance.

5 NOV 1976

17 DEC 1976

RECEIVED AT DEC 17 3 14 PM '76 BUILDING ORDINANCE OFFICE, P.W.D.

RECEIVED AT NOV 6 10 38 AM '76 BUILDING ORDINANCE OFFICE, P.W.D.

PROJECT

PROPOSED RESIDENTIAL COMPLEX

AT R.B.L. 333 S. A. STANLEY, H. K.

DRAWN BY	SCALE 1/8"=1'-0"
CHECKED BY	DATE
JOB NO. 7310 G	DWG. NO. F 4/5

design 3

planners · architects · engineers

3, 6th floor, tsingtao road, hong kong. T-780821-4

B.O.O. REF. NO. 3/814 B/78

SECTION 2-2

SECTION 3-3

SECTION 4-4

TYPE - B

TYPE 'B'

Approved
PRO BUILDING ADMINISTRATOR
18 MAR 1977

Plans have been examined only as out lined in Letter No. 81, your particular attention is drawn to Section 1 (3) (b) of the Building Ordinance regarding your duty as Authorised Person and to Section 14 (2) (c) regarding possible contravention of by-laws by the Buildings Ordinance.

15 NOV 1978 17 DEC 1978

PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H.

DRAWN BY	SCALE 1/8"=1'-0"
CHECKED BY	DATE
JOB NO. 78106	DWG. NO. 2 of 6

design

Nearest Footing at Stanley Knoll 42 (C52) at: 165' = 50.3mPD

FOOTING PLAN

(SCALE : 1/8" = 1'-0")

COL. OF TYPE 'D'

ELEVATION OF R.W.13

(SCALE : 1/8" = 1'-0")

SECTION 3 - 3

(SCALE : 1/8" = 1'-0")

SECTION 4 - 4

SCALE : 1/8" = 1'-0"

TYPE - C

RECORD PLAN

9 DEC 1978

RECEIVED BY

Dec 5 '78 11:11:11

PROJECT

PROPOSED RESIDENTIAL COMPLEX AT R. B. L. 333 S. A. STANLEY : H.K.

DRAWING TITLE

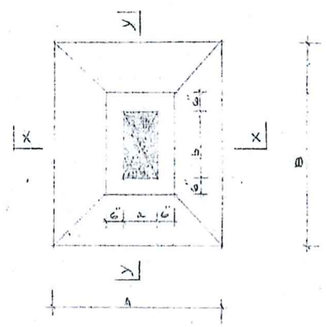
FOOTING PLAN AND SECTION

DRAWN BY	SCALE AS SHOWN
CHECKED BY	DATE
JOB NO. 7310G	DWG. NO. F 1/5

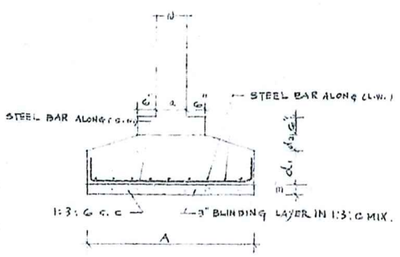
design 3

planners · architects · engineers

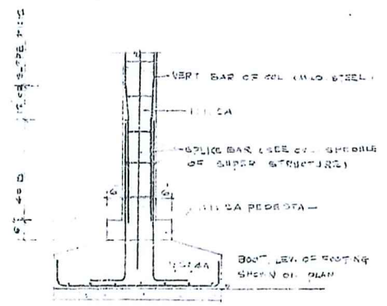
B.O.D. REF. NO. 3/3142/75



TYPICAL DETAIL OF FOOTING

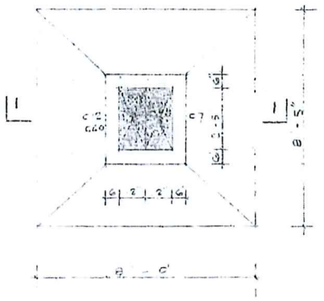


SECTION OF FOOTING

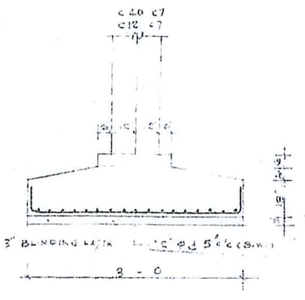


TYPICAL DETAIL OF FOOTING

NOTE: SPLICE BAR EQUAL IN AREA TO AREA OF BARS IN COLUMN.



FOOTING OF C.2, C40 & C47



SECTION 1'-1'

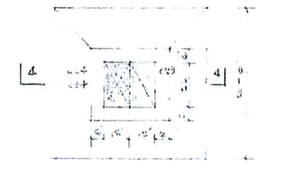
SCALE: 1" = 1'-0"

NOTE:
(1) SPLICE BAR EQUAL IN AREA TO AREA OF BARS IN COLUMN.
(2) CONCRETE MIX: TO BE 1:2:4 A
(3) STEEL BAR TO BE MILD STEEL.
(4) SOIL BEARING CAPACITY = 1½ TONS/SQ FT.
(5) COVER TO STEEL: FOOTING 3" STRAP BEAM 1½"
(6) BLINDING LAYER & MASS CONCRETE FILL TO BE 1:3:6 MIX.

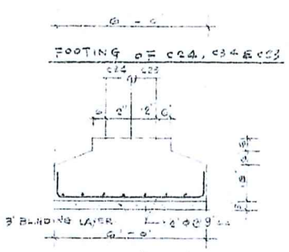
NOTE: MILD STEEL

COL. MARKS	a	b	A	B	D	l_1	l_2	STEEL BAR ALONG S.W. x-x	STEEL BAR ALONG L.W. y-y	MASS CONCRETE FILL (IF NECESSARY)
C1, 37	12"	22"	5'-0"	6'-4"	18"	12"	6"			
C 2, 28	12"	22"	6'-0"	6'-10"	42"	36"	6"			
C 60	16"	16"	10'-4"	5'-4"	30"	24"	6"			
C 29	16"	22"	7'-6"	4'-4"	18"	12"	6"			
C 57	16"	16"	5'-4"	5'-4"	18"	12"	6"			
C30, 14, 22	12"	28"	6'-0"	7'-4"	24"	18"	6"			
C 20B, 21, C2B 46	12"	28"	8'-0"	9'-4"	24"	18"	6"			
C 21A, 48 50	12"	28"	9'-6"	10'-0"	33"	27"	6"			
C 30, 3, 4, 6, 31, 33	12"	22"	6'-0"	6'-10"	24"	18"	6"			
C 5, 16, 17 43, 45	12"	29"	6'-0"	7'-5"	18"	12"	6"			
C 35	12"	29"	5'-3"	5'-6"	18"	12"	6"			
C 36, 8, 11, 39	12"	24"	7'-0"	8'-0"	24"	18"	6"			
C 38, 9, C 37	12"	24"	7'-6"	8'-6"	18"	12"	6"			
C 41	12"	24"	6'-6"	7'-0"	18"	12"	6"			
C 44,	12"	29"	6'-6"	7'-11"	18"	12"	6"			
C 49	12"	28"	11'-0"	12'-4"	26"	20"	6"			
C 59 C61	16"	16"	8'-10"	5'-4"	30"	24"	6"			
C 56	12"	22"	8'-0"	9'-0"	24"	18"	6"			
C 53, 52	16"	16"	5'-4"	5'-4"	18"	12"	6"			
C 54, 55	16"	16"	6'-10"	6'-10"	18"	12"	6"			
C 62, 63, 64 65,	16"	16"	6'-4"	5'-4"	19"	12"	6"			
C 5 - 32	12"	22"	7'-0"	6'-8"	24"	18"	6"			
C 18, 40	12"	28"	7'-0"	8'-4"	24"	18"	6"			
C 58	16"	16"	9'-10"	5'-4"	30"	24"	6"			

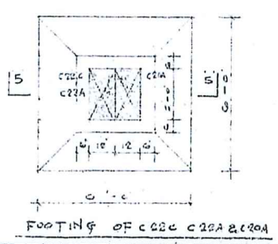
C52:
5' - 4" x 5- - 4"=
1.62m x 1.62m



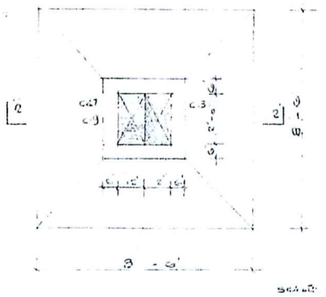
FOOTING OF C24, C34 & C23



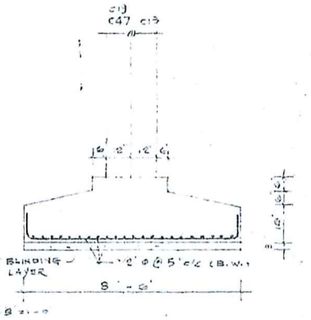
SECTION 4 - 4'



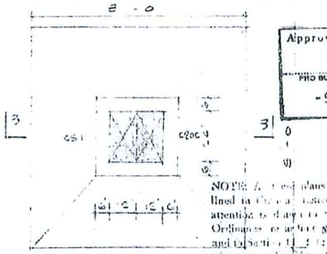
FOOTING OF C22C C22A & C20A



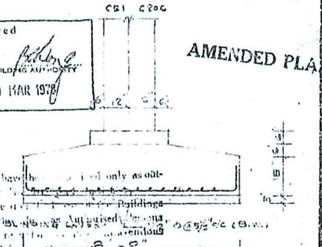
FOOTING OF C47, C13 & C18



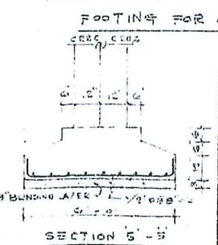
SECTION 2'-2'



FOOTING FOR C51 & C20C



SECTION 3'-3'



SECTION 5'-5'

Approved
PRO BUILDING AUTHORITY
- 9 MAR 1978

AMENDED PLAN

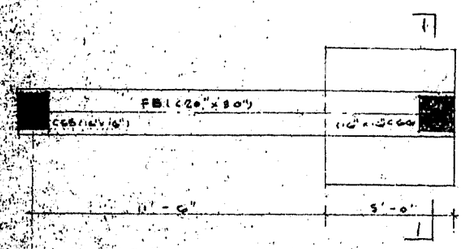
NOTE: Amended plans have been approved only as outlined in red. Attention is drawn to the provisions of the Buildings Ordinance or any regulations made thereunder and to the conditions of the approval. Any unauthorised building works are subject to enforcement action and to removal at any time and do not imply that they will be approved on application. Approval of these plans does not exempt compliance with any provision of the Buildings Ordinance or any other legislation.

PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H. K.

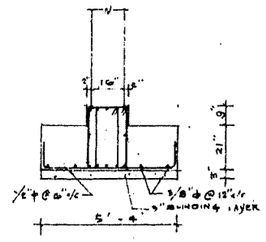
DRAWN BY	SCALE 1/8" = 1'-0"
CHECKED BY	DATE
JOB NO. 7410	DWG. NO. F 2/5

design 3
planners · architects · engineers
3, tin hau temple road, hong kong. 5-762821-4

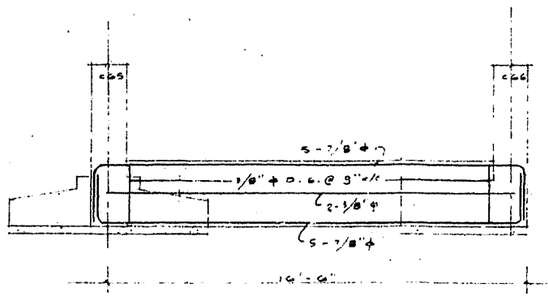
B.O.O. REF. NO. S/3146/75



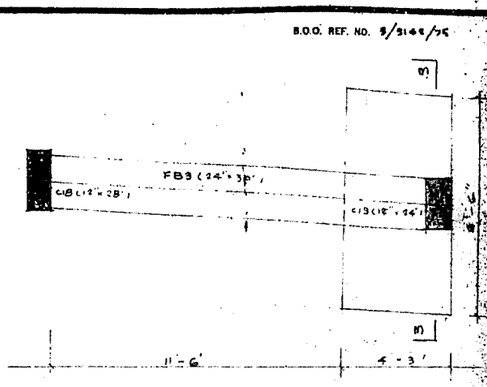
FOOTING OF C66



SECTION '1'-'1'



FB1 (20" x 30")



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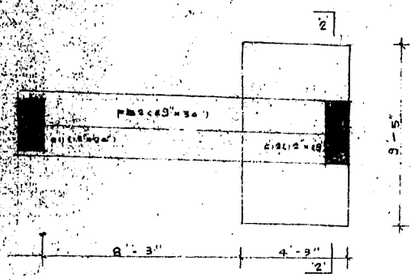

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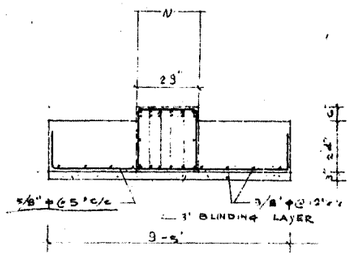

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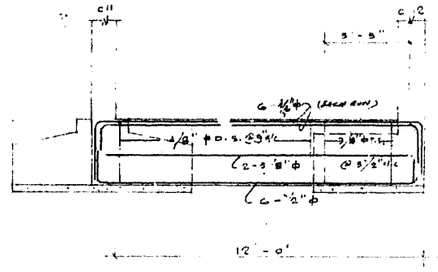
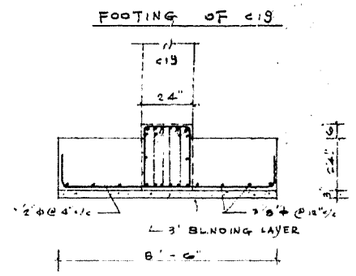
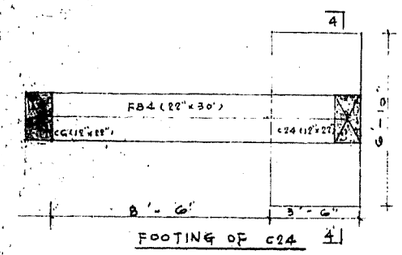


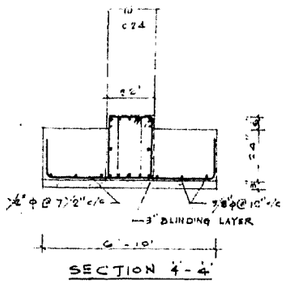
FB2 (29" x 30")



SECTION '3'-'3'



FOOTING OF C24



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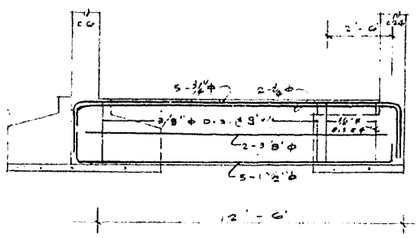
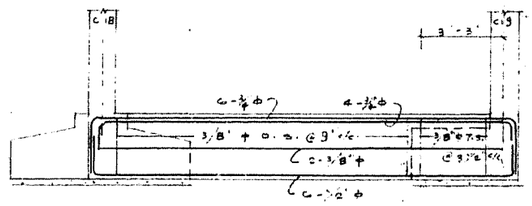
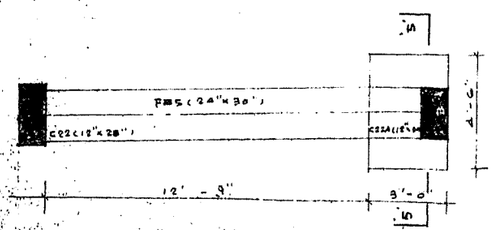


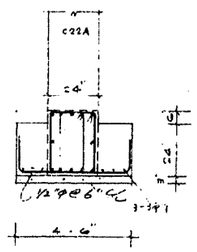
FB4 (22" x 30")



FB3 (24" x 30") AMENDED PLAN



FOOTING OF C22A



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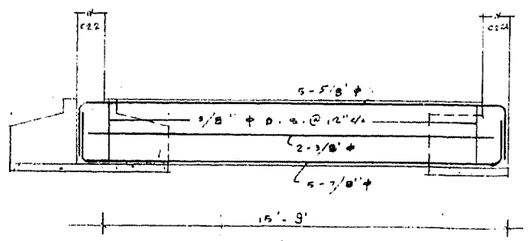


FB5 (24" x 30")

NOTE: MILD STEEL

TYPE - C

Approved
PRO BUILDING AUTHORITY
-9 MAR 1976

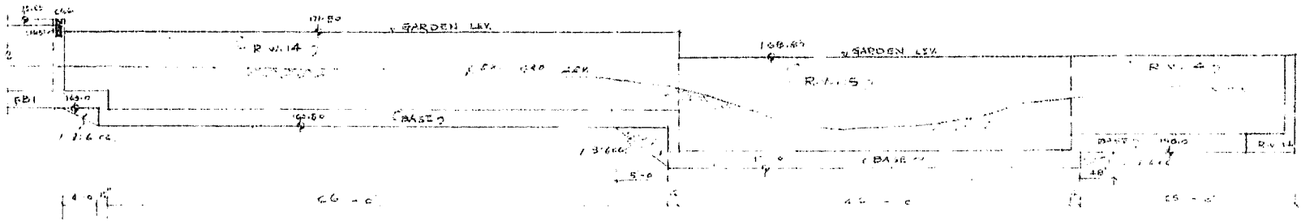
NOTE: As these plans have been approved only as outlined in Circular Letter No. 91, it is the responsibility of the Architect to submit for approval any alterations or additions to the approved plans. It is also the responsibility of the Architect to obtain approval for any Authorised Persons and Registered Structural Engineers to carry out any work which is not in accordance with the provisions of the Buildings Ordinance.

PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H. K.

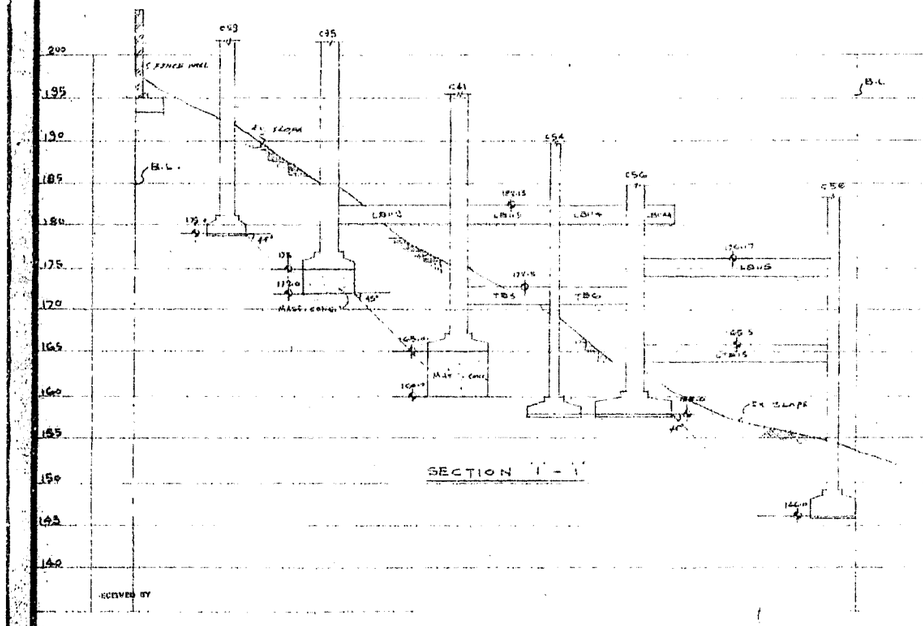
DRAWN BY	SCALE 1/8"=1'-0"
CHECKED BY Tang.	DATE
JOB NO. 7B100 G	DWG. NO. F3/5

design 3

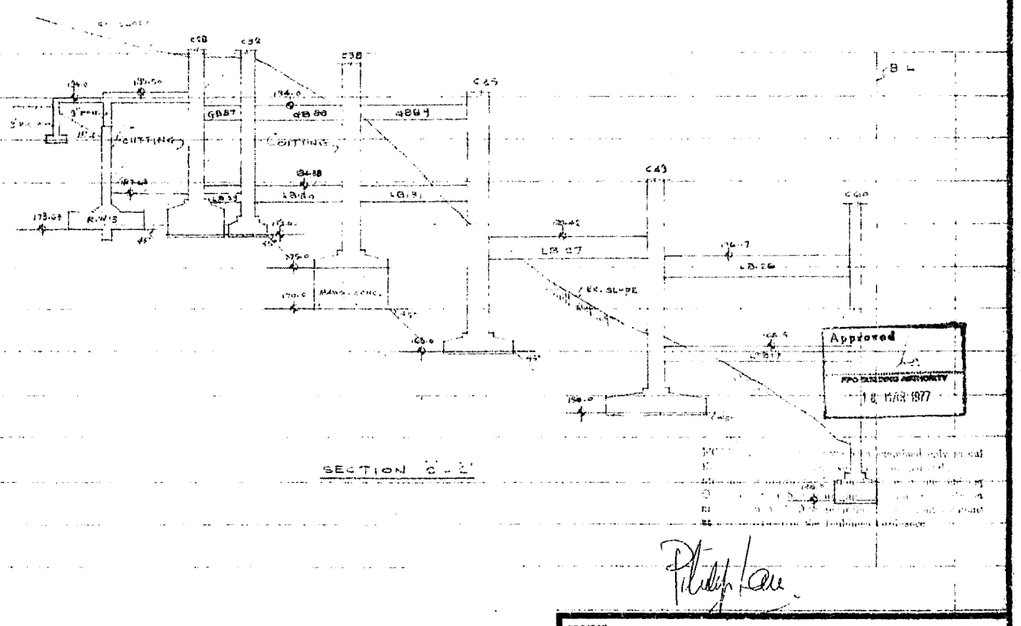
B.D.D. REF NO. 3/3142/75



ELEVATION OF R.W.5 AND R.W.4



SECTION 1 - 1



SECTION 2 - 2

RECEIVED BY
MAR 10 15 24 '77
BUILDING ORDINANCE OFFICE, H. K.

Approved
for
PROVISIONAL AUTHORITY
16 MAR 1977

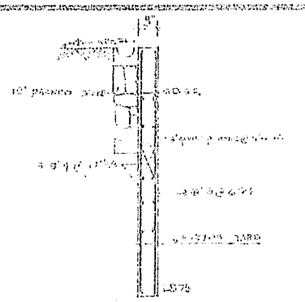
TYPE - C

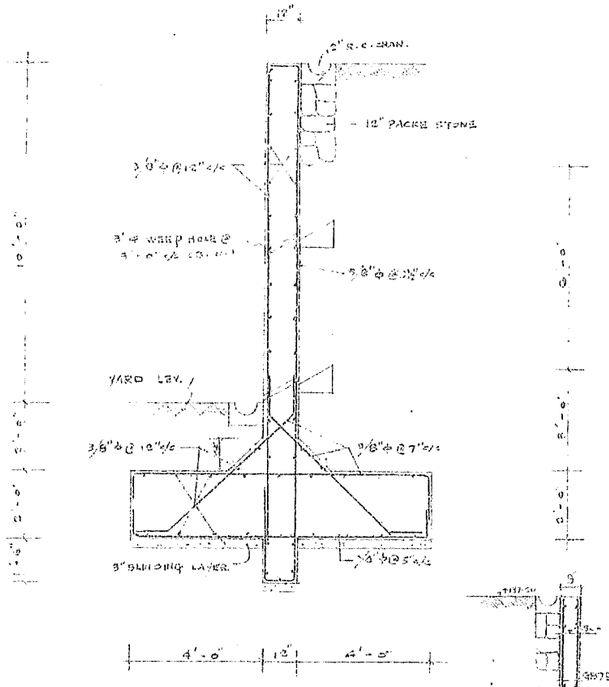
PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H. K.

DRAWN BY	SCALE 1"=10'-0"
CHECKED BY	DATE
JOB NO. 7310C	DWG. NO. F 5/5

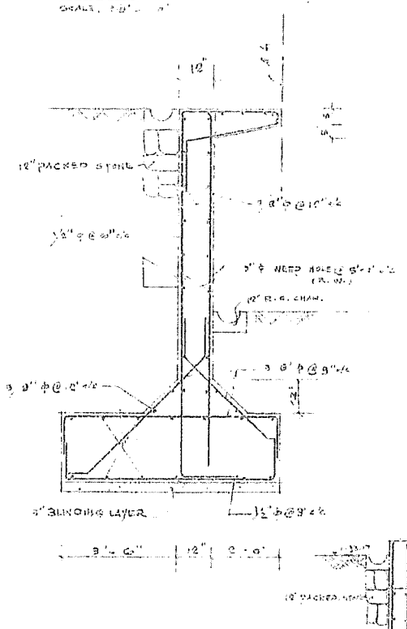
design 3
planners · architects · engineers
3, Ho Yuen Temple road, Hung Hom, Kowloon

B.D.O. REF. NO. [illegible]

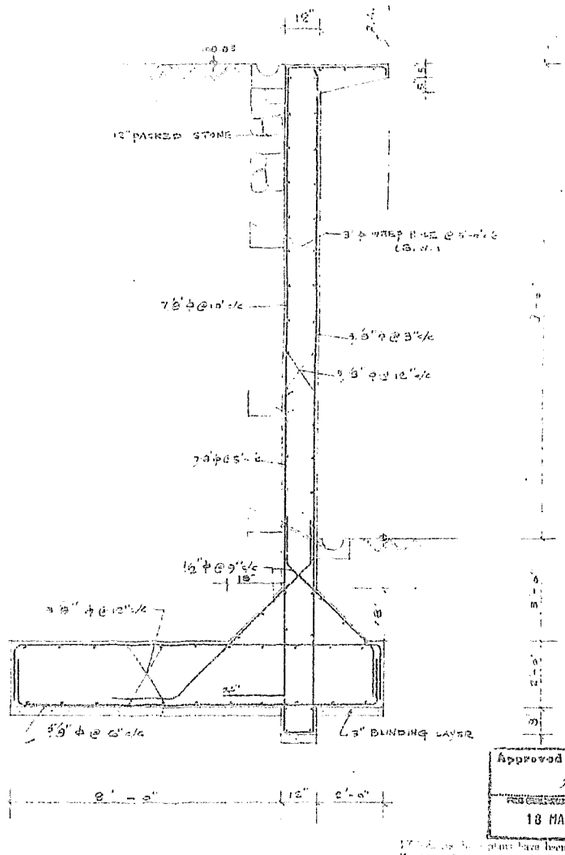




RW 13 (12")
SCALE 1/2" = 1'-0"

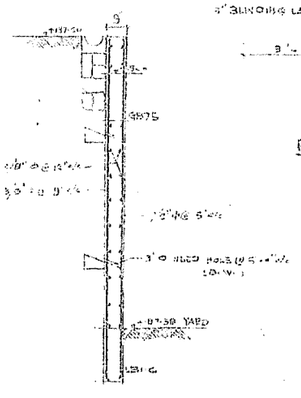


RW 14 (12")
SCALE 1/2" = 1'-0"

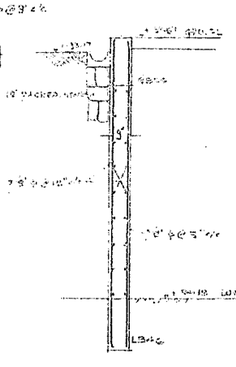


RW 15 (12")
SCALE 1/2" = 1'-0"

NOTE: MILD STEEL



S.W. 'A' (9")
SCALE 1/2" = 1'-0"



S.W. 'B' (9")
SCALE 1/2" = 1'-0"

TYPE - C

Approved
18 MAR 1977

[illegible] plans have been examined only as set forth in Circular Letter No. [illegible] and certification is drawn to Section [illegible] of the Building Ordinance as to how your plans in Conformity Therewith and to Section [illegible] of the Ordinance [illegible] any provision of the Building Ordinance.

RECEIVED BY
Mar 18 15 24 '77

PROJECT
PROPOSED RESIDENTIAL COMPLEX
AT R.B.L. 333 S. A. STANLEY, H. K.

DRAWN BY	SCALE AS SHOWN
CHECKED BY	DATE
JOB NO. 7[illegible]06	DWG. NO. F 4/5

design 3
planners · architects · engineers
3, Pui Kan Temple road, Kwun Tong. 5-730521-4

Design Surcharge for C52:
=(68.36+4.63)
= 72.99KIP
= 324.68kN
324.68 / 1.62m x 1.62m
= 123 kPa

COL.	SIZE	D.L.	L.L.	D+L. KIP	WIND KIP S	WIND KIP N	WIND KIP S	WIND KIP N
C.50	12x12	24.42	56.03	96.45	4.95	+6.74	3.12	-12.16
C.51	12x24	113.94	27.71	141.65	4.24	+7.76	3.93 / 2.60	-3.10 / +13.01
C.52	16x16	60.19	8.17	68.36	6.43	-3.71	1.92 / 4.72	-2.60 / +4.63
C.53	16x16	62.67	11.07	76.74	4.38	-6.95	3.17 / 6.90	-2.46 / +7.28
C.54	16x16	101.41	25.85	127.26	4.38	+6.54	1.15 / 7.13	-4.12 / +13.38
C.55	16x16	115.91	19.41	135.32	6.70	-9.86	3.17 / 6.90	+6.45 / -9.58
C.56	12x24	158.99	42.06	201.05	4.24	+2.09	2.99 / 18.06	+4.83 / -18.14
C.57	16x16	75.54	12.49	88.03	2.74	-3.05	0.08 / 0.18	+1.81 / -2.33
C.58	16x16	126.59	28.65	155.24	2.74	-0.77	0.08 / 0.18	+1.66 / -5.35
C.59	16x16	126.22	28.34	154.56	2.74	+2.74	0.23	-2.39
C.60	16x16	134.13	31.00	165.13	1.86	-0.10	2.19	-22.58
C.61	16x16	113.67	28.58	141.25	1.86	-1.71	1.89	-19.45
C62	16x16	80.45	18.58	99.03	1.86	+2.45	0.38 / 1.99	+3.90 / -14.25
C.63	16x16	63.18	31.31	94.49				
C.64	16x16	62.80	31.81	94.61				
C.65	16x16	63.18	31.31	94.49				
C.66	16x16	48.98	10.49	59.47				

COL.	SIZE	D.L.	L.L.	D+L KIP	WIND → KIP. S	WIND → KIP. N	WIND ↑ KIP. E	WIND ↑ KIP. N
C22C	12x24	56.40	9.93	66.33	2.36	± 3.98	1.33 2.43	+1.59 -7.87
C23	12x12	41.00	8.67	49.67	2.31	∓ 13.50	1.02 1.89	-5.88 +8.99
C24	12x22	51.33	9.37	60.70	2.31	± 13.50	1.02 1.89	-5.88 +8.99
C25	12x12	30.85	0.18	31.03	2.66	∓ 4.09	8.97	+9.18
C26	12x12	31.36	6.47	37.83	2.66	± 4.09	8.04	-6.46
C27	12x22	66.11	11.53	77.64	4.02	∓ 39.29	2.17	-4.14
C28	12x12	37.37	4.07	41.44	4.02	± 39.29	1.14	-25.73
C29	12x12	26.31	3.27	29.58	5.16	∓ 11.16		
C30	12x12	104.35	11.01	115.36	5.16	∓ 0.22	8.97	-8.06
C31	12x12	89.82	21.04	111.86	5.16	± 10.35	8.04	-3.11
C32	12x12	86.48	11.59	98.07	4.54	± 10.01	13.97	+17.81
C33	12x22	91.04	14.33	105.37	4.54	± 0.42	17.04	-28.33
C34	12x22	50.46	9.84	60.30	4.54	± 16.36	1.41 4.52	-3.86 +6.94
C35	12x29	63.15	7.26	70.41	4.31	∓ 16.30	0.31 1.29	-8.73 +13.07
C36	12x24	132.92	27.05	159.97	3.57	± 10.30	0.99	+13.89
C37	12x24	140.38	33.73	174.11	3.57	∓ 1.41	0.89	-3.85
C38	12x24	144.70	33.65	178.35	3.57	± 1.41	1.54	-3.41
C39	12x24	128.01	28.73	156.74	3.57	∓ 10.30	1.88	+24.10
C40	12x29	84.22	13.74	97.96	4.31	± 16.30	0.27 0.88	-2.41 +2.93
C41	12x24	108.03	17.61	125.64	2.98	∓ 19.78	1.31 1.74	+6.47 -2.96
C42	12x28	133.19	32.95	166.14	5.89	∓ 12.81	9.92	+31.61
C43	12x29	93.19	26.63	119.82	6.07	± 11.31	0.44	+13.42
C44	12x29	117.38	36.08	153.46	6.07	± 1.90	10.13	+33.85
C45	12x29	104.56	26.70	131.26	6.07	∓ 11.31	0.76	+11.33
C46	12x28	176.90	41.17	218.07	5.89	± 12.81	9.92	+31.61
C47	12x24	110.47	18.95	129.42	4.98	± 19.78	0.04 0.14	+5.47 -7.63
C48	12x28	115.27	67.67	182.94	4.92	- 7.55	37.10	+21.32
C49	12x28	316.55	73.20	389.80	4.92	0	35.97	-12.49

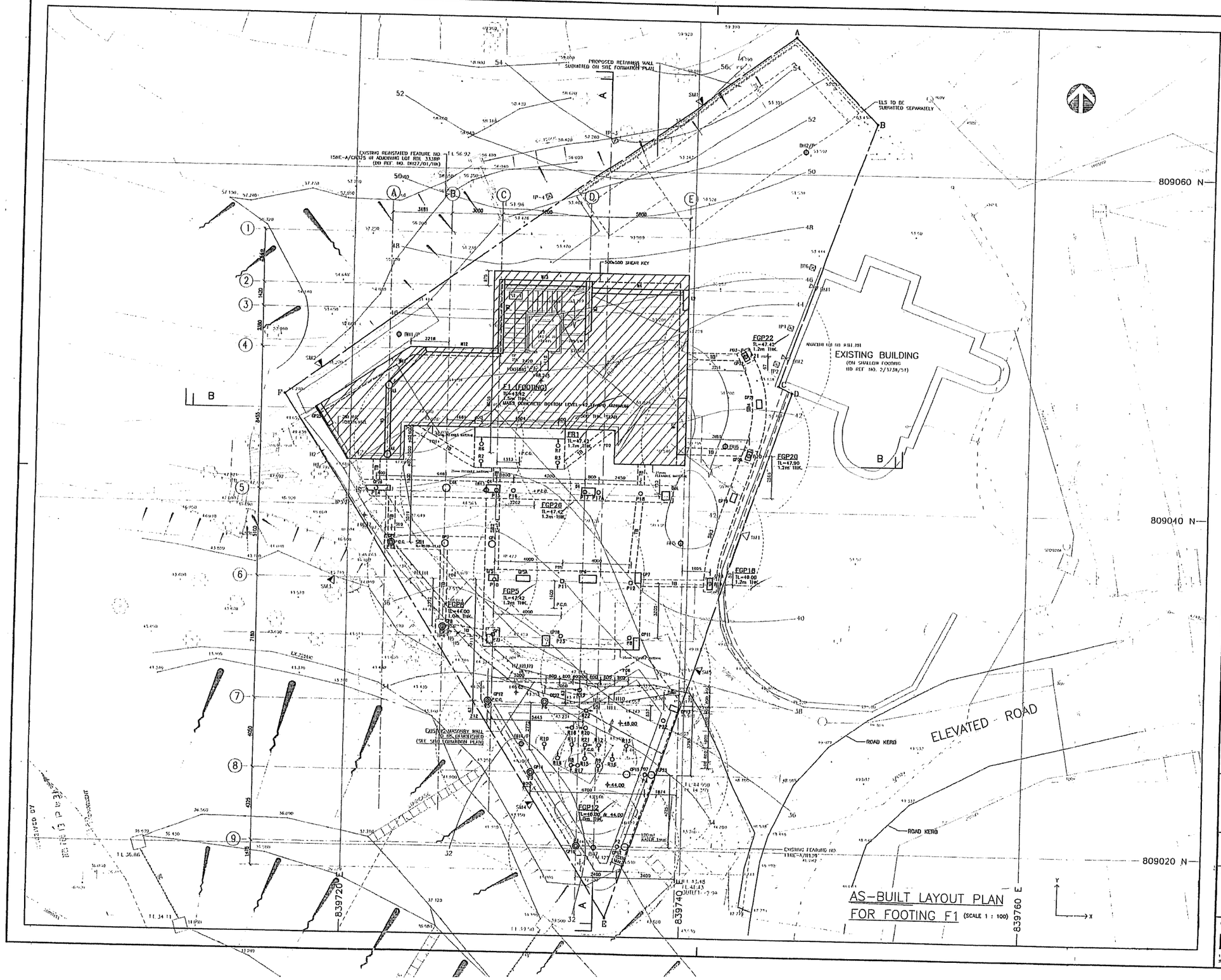
design
planners · architects · engineers

SHEET NO. 24

TYPE C'

COL.	SIZE	D.L.	LL.	D+L.	WIND ⟶ EIP. S	WIND ⟶ EIP. N	WIND ↑↓ EIP. S	WIND ↑↓ EIP. N
C-1	12x12	66.11	11.53	77.64	4.02	± 39.29	2.17	-4.14
C-2	12x12	37.37	4.07	41.44	4.02	± 39.29	3.11	-25.76
C-3	12x12	89.41	14.02	103.43	5.65	± 1.06	10.49	-36.13
C-4	12x12	83.61	22.29	105.90	5.65	± 13.37	3.79	-15.82
C-5	12x12	86.64	11.59	98.23	5.65	± 13.37	3.11	+17.44
C-6	12x12	91.12	14.33	105.55	5.65	± 1.06	10.49	-36.13
C-7	12x9	66.03	7.96	73.99	2.68	± 14.96	2.35 4.32	-2.16 +2.99
C-8	12x24	128.76	27.51	156.27	3.35	± 8.18	8.43	+29.69
C-9	12x24	143.00	33.17	176.17	5.41	± 2.13	4.92	-6.20
C-10	12x24	144.33	33.31	177.64	5.41	± 2.13	4.04	-8.55
C-11	12x24	116.50	28.10	144.60	3.35	± 8.18	8.43	+29.69
C-12	12x9	91.71	13.74	105.45	2.68	± 14.96	2.35 4.32	-2.16 +2.99
C-13	12x24	76.92	6.90	83.82	1.19	± 18.92	1.33 2.45	+6.45 -9.11
C-14	12x28	108.10	26.03	134.13	3.14	± 9.63	13.08	+33.79
C-15	12x29	88.15	23.67	111.82	8.17	± 11.87	8.69	+29.02
C-16	12x29	101.83	25.04	126.87	8.17	± 1.90	2.135	+34.37
C-17	12x29	99.81	23.85	123.66	8.17	± 11.87	7.13	+16.87
C-18	12x28	146.34	27.32	173.66	3.14	± 9.63	13.08	+33.79
C-19	12x24	84.92	9.26	94.21	1.19	± 18.92	1.33 2.45	+6.45 -9.11
C-20	12x28	103.68	27.11	130.79	5.56	± 8.95	13.08	-33.79
C-21	12x28	123.90	30.51	154.41	5.56	0	7.67	-35.59
C-22	12x28	105.66	13.65	119.31	5.56	± 8.95	13.08	-33.79
C-20A	12x24	24.89	1.79	26.68	2.36	± 3.98	1.33 2.45	+1.59 -2.87
C-20B	12x28	123.56	30.62	154.18	5.56	± 8.95	13.08	-33.79
C-20C	12x24	30.77	4.42	35.19	2.36	± 3.98	1.33 2.45	+1.59 -2.87
C-21A	12x28	249.51	53.70	303.21	5.56	0	7.67	-35.59
C-22A	12x24	25.10	1.79	26.89	2.36	± 3.98	1.33 2.45	+1.59 -2.87
C-22B	12x28	174.54	37.16	211.70	5.56	± 8.95	13.08	-33.79

BD Record Plan
RBL567, 20 CARMEL ROAD



D.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- EXISTING RETAINING WALL
- EXISTING FREE STANDING WALL
- EXISTING FENCE
- EXISTING CATCHPIT
- EXISTING DRAINAGE (IL=INVERT LEVEL)
- MF – EXISTING SEWER DRAINAGE MANHOLE
- MH – EXISTING MANHOLE
- EXISTING SLOPE
- EXISTING TREE
- EXISTING GATE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABE DUCT
- BH1/P – EXISTING BOREHOLES
- H1 – EXISTING HORIZONTAL DRILLHOLES
- IP1 – EXISTING TRIAL PITS
- +51.84 – PROPOSED FINISH FLOOR LEVEL (mPD)
- SM1 – SETTLEMENT MARKER (5 NOS.)
- TM1 – TILTING MARKER (1 NO.)
- BM1 – BUILDING MARKER (2 NOS.)
- INFERRED GRADE III ROCKHEAD CONTOUR
- PROPOSED PILE CAP/TIE BEAM/STRAP BEAM (SUBMITTED SEPARATELY)
- TB – PROPOSED TIE BEAM (SUBMITTED SEPARATELY)
- SB1 – PROPOSED STRAP BEAM (SUBMITTED SEPARATELY)
- ER1 – PROPOSED CAP MARK
- IL=45.97 – PROPOSED CAP TOP LEVEL (mPD)
- +P.C.G. – PILE C.G.
- P1 – COMPLETED #219 MINIPILE (VERTICAL)
- R1 – COMPLETED #219 MINIPILE (RAKING 1 IN 4)
- +PD1 – COMPLETED PRE-DRILLING (6 NOS.) IMPRESSION PACKER TEST SHALL BE CARRIED OUT PERFORMED HOLES PD1 & PD2
- +PD7 – COMPLETED ADDITIONAL PRE-DRILLING (1 NO.)
- AS-BUILT FOOTING F1

REV.	DATE	DESCRIPTION

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Pdq
CHECKED BY :	Pdq	SCALE :	1 : 100
APPROVED BY :		DATE :	23/08/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

AS-BUILT LAYOUT PLAN FOR FOOTING F1

DRAWING NO. CMR/AB/F01 REV.

ARCHITECT :

Prudent Design Limited

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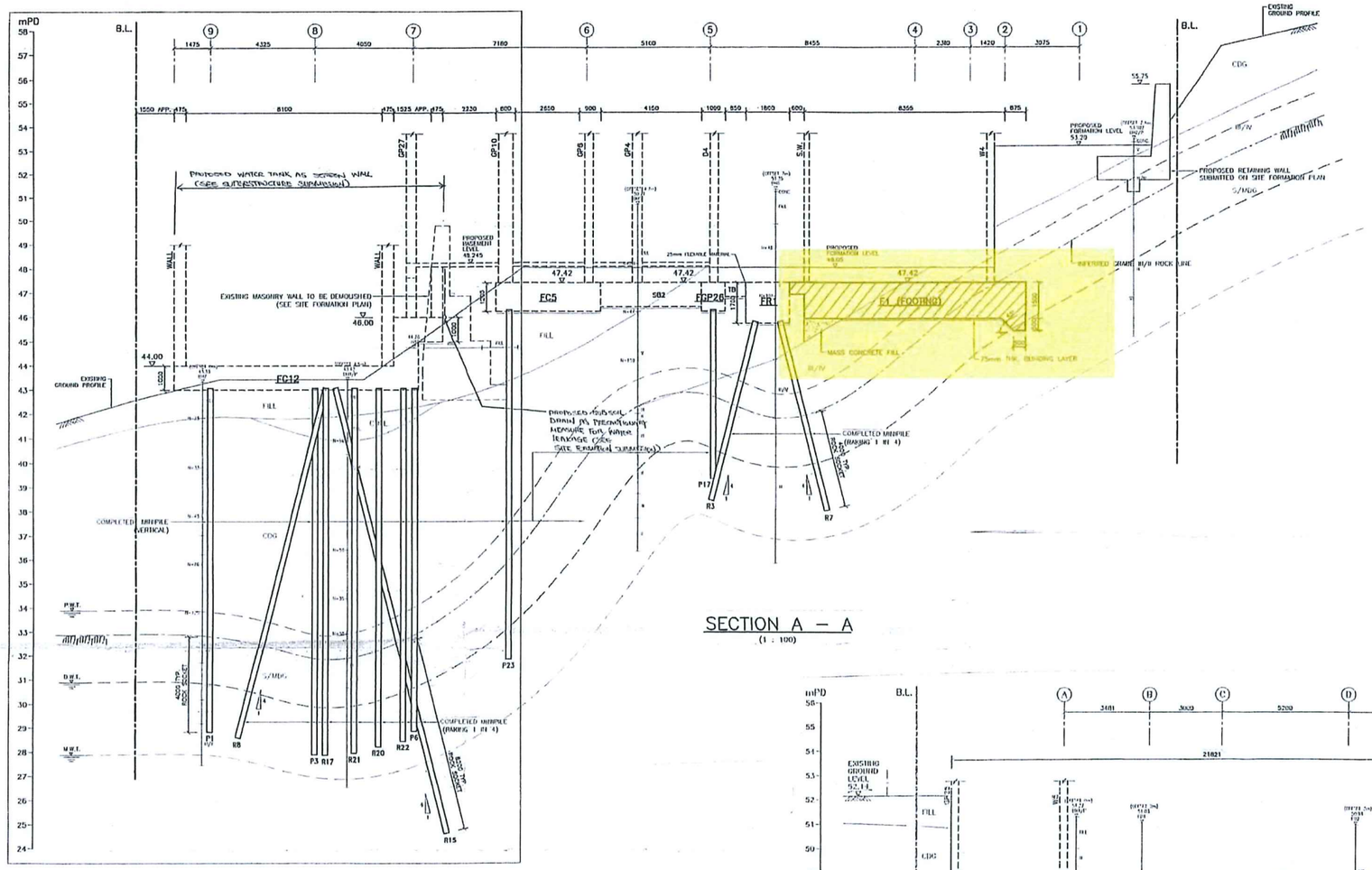
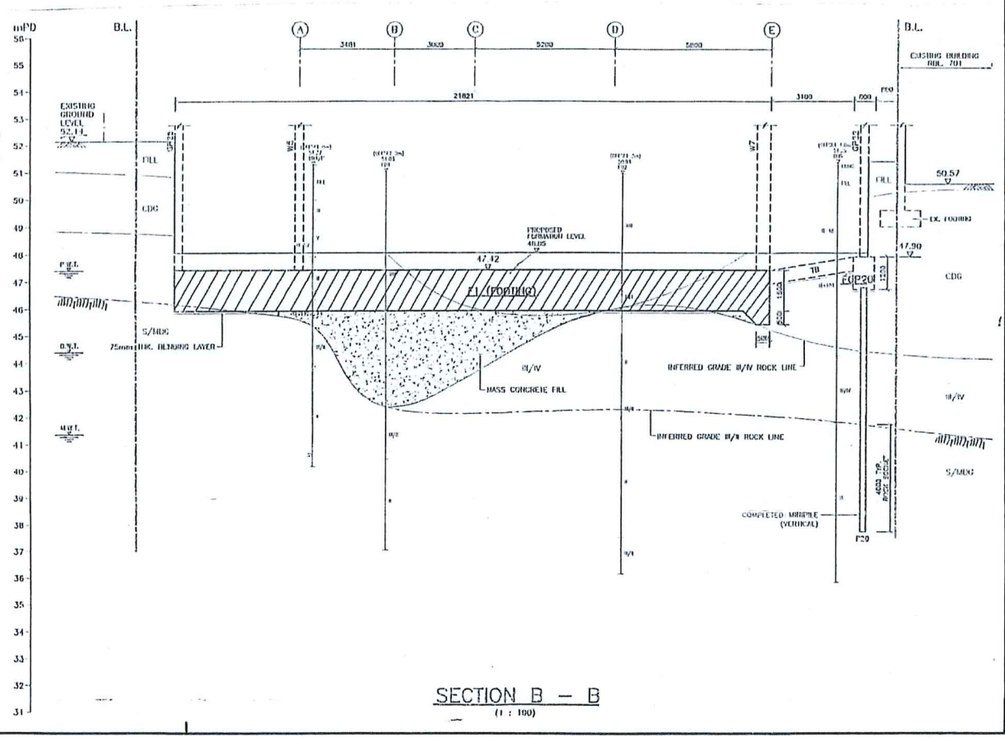


SECTION A – A
(1 : 100)



SECTION B – B
(1 : 100)

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- P.W.T. – PERCHED WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)

NOTE :

ALL PILE CAP, STRAP BEAM AND TIE BEAM ARE TO BE SUBMITTED SEPARATELY.

REV.	DATE	DESCRIPTION

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RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	PCWS
CHECKED BY :	PCWS	SCALE :	1 : 100
APPROVED BY :		DATE :	23/08/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

AS-BUILT SECTIONS FOR FOOTING F1

DRAWING NO. CMR/AB/F02

REV.

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

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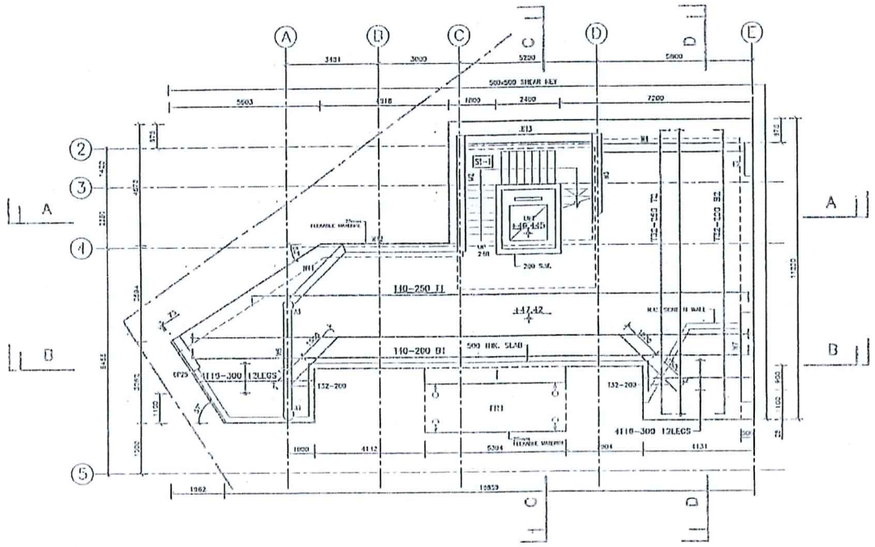
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H11
110-250 T1
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3/2001/04
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SH II

GENERAL NOTES

1. ALL DIMENSIONS ARE TO BE READ IN MILLIMETRE UNLESS OTHERWISE STATED
2. ALL LEVELS INDICATED ON PLANS ARE METRE ABOVE P.D UNLESS OTHERWISE STATED
3. ALL WORKS SHALL COMPLY WITH BUILDING (CONSTRUCTION) REGULATION (1990), 'CODE OF PRACTICE FOR THE STRUCTURAL USE OF CONCRETE 1987', AND 'CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 1987'
4. ALL REINFORCEMENT TO BE HIGH TENSILE HOT ROLLED DEFORMED BAR (DENOTED BY 'T' fy=460 MPa) OR MILD STEEL BAR (DENOTED BY 'R' fy=250 MPa). REINFORCEMENT SHALL COMPLY WITH CS2:1995 AND BS4449 (MAX. YIELD STRESS SHALL BE 425/460 MPa)
5. ALL REINFORCEMENT TO BE CUT AND BEND IN ACCORDANCE WITH BS 4466.
6. CEMENT : ORDINARY PORTLAND CEMENT COMPLY TO BS 12.
7. AGGREGATE SHALL COMPLY WITH BS882 OF MAXIMUM SIZE OF 20mm.
8. MIXING WATER SHALL BE OF POTABLE WATER QUALITY. SEA WATER IS NOT ALLOWED.
9. ADDITIVES SHALL BE CERTIFIED ACCORDING TO BS5075.
10. THE REACTIVE ALKALI OF CONCRETE OR GROUT EXPRESSED AS THE EQUIVALENT SODIUM OXIDES PER CUBIC METRE SHOULD NOT EXCEED 3.0kg WHEN DETERMINED IN ACCORDANCE WITH PNAP 180.
11. GROUTING FOR SOIL NAIL TO BE NON-SHRINK GROUT WITH MIN. CUBE STRENGTH OF 30 MPa.
12. GALVANIZATION SHALL COMPLY TO BS 729. HOT-DIP GALVANIZING OF 610g/m² MINIMUM ZINIC COATING SHALL BE PROVIDED IN ACCORDANCE WITH BS EN.ISO.1461:1999.
13. ALL SOIL NAILING WORKS SHALL COMPLY WITH PNAP 284.
14. ALL STRUCTURAL STEEL MEMBERS SHALL BE GRADE 43 COMPLYING WITH BS 4360:1986 WITH MAX. YIELD STRESS fy = 350 MPa. All Round
15. CONNECTION FOR JOINTS SHALL BE 6mm FILLET WELDING OTHERWISE SPECIFIED IN THE DRAWING. WELDING WORK SHALL BE IN COMPLIANCE WITH BS 5135:1974.
16. ALL TEMPORARY SOIL CUT SLOPES FOR SOIL (GRADE V OR BETTER) AND ROCK SHALL BE FORMED AT A MAXIMUM GRADIENT OF 45° AND 60° RESPECTIVELY UNLESS OTHERWISE SPECIFIED. THE TEMPORARY CUT SLOPES SHALL BE COVERED BY CHUNAM PLASTER OR PLASTIC SHEETING WELL SECURED AGAINST WIND TO PREVENT INFILTRATION.
17. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES WITHIN AND IN THE VICINITY OF THE SITE BEFORE COMMENCEMENT OF ANY WORKS. WHEN REQUIRED, THE CONTRACTOR SHOULD LIAISE WITH THE UTILITY UNDERTAKERS FOR THE RE-DIVERTION OF UTILITIES TO FACILITATE THE PROPOSED SHORING/EXCAVATION WORK.
18. PRIOR TO COMMENCEMENT OF WORKS CONSENT FROM RELEVANT LOT OWNERS FOR THE ENCROACHMENT OF PRIVATE LAND SHALL BE OBTAINED.
19. ROCKCORE RECOVERY SHALL BE 85% MINIMUM FOR GRADE II/III ROCK FOR PIPE PILE ROCK SOCKET.
20. ALL PIPE PILE WALL INSTALLATION SHALL COMPLY WITH PNAP 289.

HEAVY RAINFALL PRECAUTIONS

1. GENERAL
   THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXPOSED SURFACES AND CUT AND FILL SLOPES DURING PERIODS OF HEAVY RAINFALL. PROTECTION SHALL BE WITH HEAVY DUTY PLASTIC SHEETING AND THE CONTRACTOR SHALL AT ALL TIME PROVIDE ON SITE SUFFICIENT HEAVY DUTY PLASTIC SHEETING TO PROTECT ALL THE EXPOSED SURFACES THE NEED TO PROVIDE PROTECTION TO EXPOSED SURFACES SHALL BE AT THE DISCRETION OF THE ENGINEER. HOWEVER, ANY SURFACE EROSION THAT OCCURS SHALL BE MADE GOOD AT THE CONTRACTOR'S EXPENSE REGARDLESS OF WHETHER OR NOT THE ENGINEER HAS INSTRUCTED THE CONTRACTOR TO PROVIDE PROTECTION.
2. TEMPORARY DRAINAGE
   SURFACE WATER FLOWING INTO THE SITE FROM UPHILL BE INTERCEPTED AND CONDUCTED FROM THE SITE TO AN INDICATED SAFE DISCHARGE POINT. AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE DRAINAGE CHANNELS AN ACCESSIBLE CATCHPIT SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS.
   WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.
3. METHOD OF WORKING
   DURING EXCAVATION A METHOD OF WORKING SHALL BE ADOPTED IN WHICH THE MIN. OF BARE SOIL IS EXPOSED AT ANY TIME. EXCAVATION TO FORM THE FINAL FACE SHALL BE FOLLOWED UP IMMEDIATELY WITH SURFACE PROTECTION AND DRAINAGE WORKS AND THE FACE PANEL SIZE SHALL BE SMALL ENOUGH TO PERMIT THIS
4. PROTECTION
   WHERE TEMPORARY BARE EARTH SLOPE FACES ARE UNAVOIDABLE THEY SHALL BE PROTECTED WITH HEAVY DUTY PLASTIC SHEETING WELL-SECURED AGAINST THE WIND, SEALED AT THE CREST AND LAPPED AT JOINTS. WHERE SLOPE FACES ARE TO BE TEMPORARILY EXPOSED FOR MORE THAN TWO WEEKS TEMPORARY CHUNAM SURFACING SHALL BE PROVIDED AND TEMPORARY DRAINS SHALL BE INSTALLED.

PRECAUTIONARY MONITORING PROGRAMME

1. SETTLEMENT CHECK POINTS AND TILTING CHECK POINTS SHALL BE INSTALLED AT LOCATIONS AS SHOWN IN THE DRAWING. INITIAL READINGS SHALL BE TAKEN PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS AND SUBMITTED TO THE BUILDING AUTHORITY
2. THE LEVELING OF SETTLEMENT CHECK POINTS, TILTING CHECK POINTS AND MEASUREMENT OF GROUND WATER LEVEL IN PIEZOMETER SHALL BE CARRIED OUT ON DAILY BASIS DURING THE PROGRESS OF WORK.
3. ALL MONITORING RECORDS SHALL BE REVIEWED AND ANALYSED BY THE ENGINEER. SHOULD SIGNS OF UNDUE GROUND SETTLEMENT, TILTING OR DRAW DOWN OF GROUND WATER LEVEL BE REVEALED, THE WORK AT THE AFFECTED AREA SHALL BE CEASED. BUILDING AUTHORITY SHALL BE NOTIFIED IMMEDIATELY AND NECESSARY REMEDIAL MEASURES SHALL BE SUBMITTED AND IMPLEMENTED TO THE SATISFACTION OF THE BUILDING AUTHORITY.
4. ALL WORKS SHALL BE CEASED IF DAMAGES TO EXISTING ADJACENT STRUCTURES, ROADS AND UTILITIES APPEAR TO OCCUR. THE AUTHORISED PERSON/REGISTERED STRUCTURAL ENGINEER AND BUILDING AUTHORITY SHALL BE INFORMED IMMEDIATELY. SUITABLE REMEDIAL MEASURES SHALL THEN BE SUBMITTED AND IMPLEMENTED.
5. THE MONITORING RECORDS SHALL BE SUBMITTED TO BUILDING AUTHORITY ON BI-WEEKLY BASIS.
6. ONE SET OF MONITORING RECORDS SHALL ALWAYS BE KEPT ON SITE FOR INSPECTION.
7. DAMAGED INSTRUMENTS SHALL BE REINSTATED ASAP TO THE SATISFACTION OF THE ENGINEER.
8. VIBRATION MONITORING SHALL BE CARRIED OUT DURING THE INSTALLATION OF THE TEMPORARY SHEET PILE WALL. THE UPPER LIMIT ON MAXIMUM PEAK PARTICLE VELOCITY (PPV) SHALL BE 15mm/sec.
9. MONITORING FOR INCLINOMETERS SHALL BE TWICE PER WEEK AND THE MONITORING RECORDS SHALL BE SUBMITTED TO BD ON BI-WEEKLY BASIS.

SPECIFICATION FOR QUALIFIED WELDER :

1. ALL WELDERS SHALL POSSESS VALID WELDING CERTIFICATES ENDORSED BY INDEPENDENT LABORATORY WHICH IS REGISTERED UNDER HOKLAS AT THE TIME OF THE CONTRACT WORKS
2. THE WELDER SHALL MAKE THE TEST WELDS ACCORDING TO WHICH IS MOST REPRESENTATIVE OF THE TYPE OF WORK HE IS EMPLOYED AND THE WELDING CERTIFICATES SHOULD COVER ALL THE DETAILS TO SHOW THAT EACH WELDER HAS BEEN APPROVED IN ACCORDANCE WITH B.S.4570, B.S.4871:PART 1 OR B.S 4872:PART 1 AS APPROPRIATE.
3. THE WELDER CERTIFICATES SHALL BE SUBMITTED AT LEAST 4 WEEKS BEFORE FABRICATION OF THE STEELWORK STARTS.
4. RE-APPROVAL OF A WELDER SHALL BE REQUIRED IF ANY OF THE FOLLOWING APPLY :
   i) THE WELDER CHARGES HIS EMPLOYER WITHOUT THE TRANSFER OF HIS TEST RECORDS.
   ii) SIX MONTHS OR MORE HAVE ELAPSED SINCE THE WELDER UNDERTOOK ANY WELDING.
   iii) THERE IS SOME SPECIFIC REASON TO QUESTION THE WELDER'S ABILITY.

NOTES ON STEEL PIPE PILE WALL

1. ALL PIPE PILE CASINGS SHALL BE GRADE 43 STEEL COMPLYING WITH BS4360. WELDING SHALL COMPLY WITH BS 5135 AND ELECTRODES SHALL COMPLY WITH BS 639.
2. THE PIPE PILE WALL SHALL CONSIST OF A SERIES OF GRADE 43 STEEL NOMINAL 219mmØ x 8mm THK. CIRCULAR HOLLOW STEEL SECTION.
3. TOLERANCE ON VERTICAL ALIGNMENT OF THE STEEL PIPE PILES SHALL BE WITHIN 1 IN 100 AND MAXIMUM DEVIATION SHALL NOT EXCEED 100mm.
4. THE TOP 2m OF THE PIPE PILE WALL SHALL BE TRIMMED AND REMOVED UPON THE COMPLETION OF ELS WORKS.

METHOD STATEMENT FOR PIPE PILE WALL INSTALLATION

1. THE DRILLING EQUIPMENT SHALL BE DESIGNED FOR DRILLING THROUGH OVER BURDEN, LOOSE FORMATION CONTAINING BOULDERS, GRAVEL, BEDROCK AND OTHER OBSTRUCTIONS. THE STEEL PIPE PILE HOLES SHALL BE SUNK BY ODEX-METHOD WITH CASING OR OTHER APPROVED METHOD. THE STEEL PIPE PILE SHALL BE INSTALLED IN POSITION IMMEDIATELY AFTER THE HOLE IS COMPLETE.
2. STEEL PIPE PILES SHALL BE LENGTHENED BY WELDING AND SHALL BE INSERTED TO THE HOLES DURING DRILLING THE STEEL PIPE HOLES. THERE SHALL BE NO RELATIVE ROTATION BETWEEN ADJOINING PIECES OF THE LENGTHENED PILES.
3. PRIOR TO DRILLING HOLES FOR THE INSTALLATION OF PIPE PILE, INSPECTION PIT/TRENCH SHALL BE CARRIED OUT TO CONFIRM THAT NO SERVICE UTILITY OR EXISTING FOOTINGS WILL BE AFFECTED OR DAMAGED BY THE PIPE PILE WALL.

PROCEDURE OF SOIL NAIL INSTALLATION

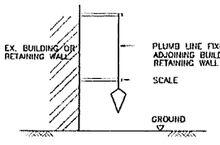
1. INSTALLATION OF SOIL NAILS SHOULD BE COMMENCED FROM THE TOP ROW.
2. DRILL HOLE OF REQUIRED DIAMETER i.e. 120mmØ AT THE REQUIRED INCLINATION AND TO THE REQUIRED DEPTH. IMMEDIATELY INSTALL THE REINFORCEMENT BAR AND FILL THE DRILLHOLE COMPLETELY WITH CEMENT GROUT. THE GROUTING IS PERFORMED BY INSERTING A GROUTING TUBE TO THE BOTTOM OF THE HOLE AND PUMPING THE CEMENT GROUT DOWN THE HOLE. THE DRILLED HOLE SHALL BE GROUTED WITHIN 24 HOURS AFTER DRILLING AND THE INSTALLED STEEL BAR SHALL NOT BE DISTURBED FOR THE NEXT 24 HOURS.
3. CONSTRUCT THE NAIL HEAD, INSTALL THE WALING, STEEL PLATE AND FIX THE STEEL NUT.
4. ALL REINFORCEMENT BARS SHALL COMPLY WITH BS4449 (MAX. YIELD STRESS SHALL BE 425/460MPa) CS2 AND ALL ACCESS ARISES SHALL BE HOT-DIP GALVANIZED COMPLY WITH BS729. HOT-DIP GALVANIZING OF 610g/m² MINIMUM SHALL BE PROVIDED.
5. THE MINIMUM EQUIVALENT CUBE STRENGTH OF CEMENT GROUT SHOULD BE 30MPa AT 28 DAYS. WATER CEMENT RATIO OF CEMENT GROUT SHOULD NOT EXCEED 0.45 BY WEIGHT.
6. NO DRILLING FOR SOIL NAILS SHALL BE CARRIED OUT WITHIN A 5m DIAMETER AREA OF THE DRILLED HOLE NOT YET GROUTED AND ALSO WITHIN 24 HOURS OF THE FRESHLY GROUTED SOIL NAIL.

PULL-OUT TEST

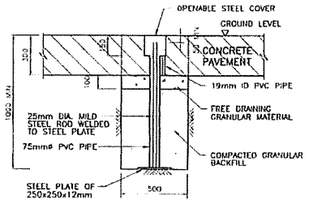
1. PULL-OUT TEST SHALL BE PERFORMED ON SOIL NAIL NOS. TN1 TO TN8. THESE EIGHT SOIL NAILS ARE INTENDED ONLY FOR THE PULL OUT TEST
2. TEST NAIL OF THE ROW SHALL BE COMPLETED AND FOUND SATISFACTORY PRIOR TO THE INSTALLATION OF WORKING NAILS OF THE ROW.
3. THE PULL OUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 30 MPa.
4. THE TEST LOAD (TP) SHALL BE 0.8 x YIELD STRESS AS SPECIFIED IN THE DRAWING.
5. THE INITIAL LOAD (TA) EQUAL TO 5% OF TP SHALL BE APPLIED. THE RANGE BETWEEN TA AND TP SHALL BE DIVIDED INTO FIVE EQUAL STEPS OF MAGNITUDE T
6. A PROGRAMME OF THREE LOADING AND UNLOADING CYCLES SHALL THEN BE CARRIED OUT THE LOAD BEING INCREASED FROM TA IN SUCCESSIVE CYCLES T, 2T UP TO TP. AFTER THE PEAK LOADING IN EACH CYCLE IS REACHED, MEASUREMENTS OF THE DEFORMATION INCREASE WITH THE LOAD HELD CONSTANT SHALL BE TAKEN AT 15 MINUTES INTERVALS FOR 60 MINUTES. WHEN REQUIRED THE LOAD SHALL BE HELD LONGER AS DIRECTED BY THE ENGINEERING.
7. AFTER THE ABOVE MEASUREMENTS HAVE BEEN TAKEN FOR EACH CYCLE, THE LOAD SHALL BE REDUCED TO TA AND THE EXTENTION SHALL BE RECORDED.
8. THROUGH OUT THE TEST, THE SOIL NAIL MOVEMENT VERSES THE APPLIED LOAD SHALL BE MEASURED AND PLOTTED ON A GRAPH. ALL THE RESULTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN 3 DAYS OF COMPLETION OF THE TESTS. A COPY OF RESULTS SHALL BE KEPT ON SITE FOR INSPECTION BY STAFF OF BD/GEO.
9. IF NO UNDUE MOVEMENT OCCURS DURING THE PULL OUT TEST, THE BARS SHALL BE CUT-OFF TO FLUSH WITH THE FINISHED GROUND AND THE REMAINING PART OF DRILLHOLE SHALL BE GROUTED. OTHERWISE, THE DESIGN OF SOIL NAILS SHALL BE REVIEWED AND RESUBMITTED TO THE SATISFACTION OF BUILDING AUTHORITY.
10. PULL OUT TEST REPORT WILL BE SUBMITTED TO B.D./GEO.

TEST NAIL	DIA.	PULL OUT LOAD (kN)	ELEVATION (mPD)	INCLINATION	TENTATIVE TOTAL LENGTH (m)	BOND LENGTH (m)	TENTATIVE FREE LENGTH (m)
TN1	T32	295.0	47.50	20°	16.0	12.6	3.4
TN2	T32	295.0	49.00	25°	16.0	13.0	3.0
TN3	T32	295.0	50.50	20°	15.0	9.4	5.6
TN4	T32	295.0	50.50	20°	12.0	9.2	2.8
TN5	T32	295.0	49.00	20°	12.0	10.2	1.8
TN6	T32	295.0	44.90	20°	12.0	10.2	1.8
TN7	T32	295.0	52.00	20°	15.0	8.4	6.6
TN8	T32	295.0	52.00	20°	12.0	7.6	4.4

11. PULL-OUT TEST SHALL DEEM ACCEPTABLE IF THE PULL-OUT EXTENSION AT FULL LOAD WITH REDUCTION OF THE THEORETICAL ELASTIC EXTENSION OF THE FREE LENGTH IS LESS THAN 0.30% OF THE GROUT LENGTH OR CAN SUSTAIN THE MAXIMUM PULL-OUT LOAD.



TILTING POINT DETAIL
(FOR INFORMATION ONLY)



SETTLEMENT MONITORING MARKER
(FOR INFORMATION ONLY)

NON-DESTRUCTIVE TESTING OF INSTALLED SOIL NAILS

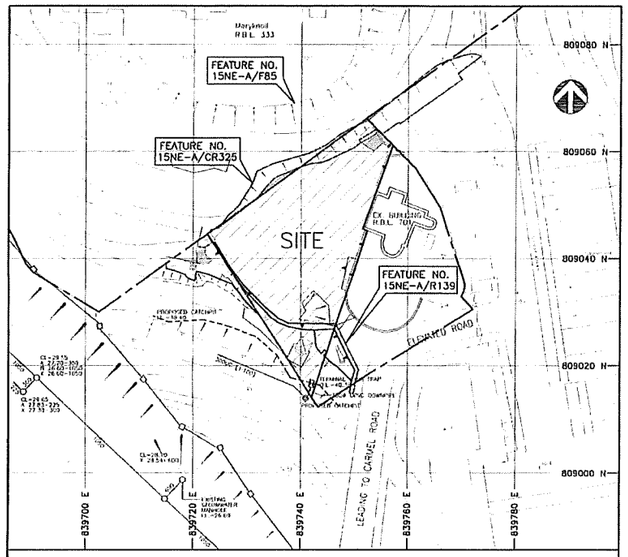
ON COMPLETION OF INSTALLATION OF SOIL NAILS, THE AP SHALL SUBMIT TO THE BA KEY SUPERVISION RECORDS IN THE FORM OF PNAP 204 APPENDIX A CERTIFIED BY THE CAT III SUPERVISION PERSONNEL. THESE RECORDS COULD BE SUBMITTED TO THE BA VIA THE CAT I MONTHLY PROGRESS REPORT. UPON REVIEW OF THE SUPERVISION RECORDS, IF THE BA CONSIDERS THAT THERE IS CAUSE FOR CONCERN IN RELATION TO THE QUALITY OF SOIL NAILING WORKS, THE BA WILL REQUIRE THE AP TO CARRY OUT NON-DESTRUCTIVE TESTING (NDT) OF AT LEAST 1% OF SOIL NAILS WITH A MINIMUM OF 2 NAILS PER SLOPE (INCLUDING WALL) TO VERIFY THE LENGTH OF THE INSTALLED SOIL NAILS.

TEST PROCEDURES OF TIME DOMAIN REFLECTOMETRY (WITH ELECTRIC WIRE INSTALLATION)

1. SELECT SOME SOIL NAILS OF KNOWN LENGTHS FOR CALIBRATION OF PULSE PROPAGATION VELOCITY.
2. THE HEAD OF THE STEEL SOIL NAIL SHALL ELECTRICALLY BY ACCESSIBLE. ALL LOOSE LOOSE MATERIALS SHALL BE REMOVED FROM THE BAR HEAD.
3. CONNECT THE TDR INSTRUVENT TO THE STEEL SOIL NAIL HEAD AND THE ELECTRIC WIRE.
4. SEND A SHORT PULSE INTO THE STEEL SOIL NAIL AND RECORD THE TIME OF REFLECTION (IF THE WIRE IS ELECTRICALLY IN CONTACT WITH THE STEEL SOIL NAIL END, THE RETURN SIGNAL FROM THE NAIL END SHOULD GO DOWN AND VICE VERSA).
5. SEND A LONG PULSE INTO THE STEEL SOIL NAIL AND RECORD THE TIME OF REFLECTION (IF THE WIRE IS ELECTRICALLY IN CONTACT WITH THE STEEL SOIL NAIL END, THE RETURN SIGNAL FROM THE NAIL END SHOULD GO DOWN AND VICE VERSA).
6. DETERMINE THE AVERAGE PROPAGATION VELOCITY OF THE PULSE FROM THE RESULTS OBTAINED IN STEPS (4) AND (5).
7. REPEAT STEPS (2) TO (6) FOR STEEL SOIL NAIL TO BE TESTED AND ESTIMATE ITS LENGTH BY USING THE CALIBRATED PROPAGATION VELOCITY.
8. THE MEASUREMENT SHALL BE TAKEN WITH PULSE OF THE FOLLOWING WIDTHS: LESS THAN 5 NANO-SECOND (ns), BETWEEN 5 TO 20ns AND GREATER THAN 20ns.

SOIL NAIL SCHEDULE :

SOIL NAIL MARK	DIA.	WORKING LOAD (kN)	MINIMUM TOTAL LENGTH (m)	INCLINATION	LEVEL (mPD)	SKEW ANGLE
N1-N2	T32	85.0	12.0	20°	52.00	0°
N3	T32	82.0	12.0	20°	52.00	0°
N4-N6	T32	64.0	12.0	20°	50.50	0°
N7-N11	T32	63.0	12.0	20°	50.50	0°
N12-N13	T32	91.0	12.0	20°	50.50	0°
N14	T32	60.0	12.0	20°	50.50	0°
N15-N17	T32	67.0	12.0	20°	49.00	0°
N18-N22	T32	87.0	12.0	20°	49.00	0°
N23-N24	T32	86.0	12.0	20°	49.00	0°
N25	T32	72.0	12.0	20°	49.00	0°
N26-N28	T32	72.0	12.0	20°	47.50	0°
N29-N33	T32	81.0	12.0	20°	47.50	0°
N34-N35	T32	90.0	12.0	20°	47.50	0°
N36	T32	80.0	12.0	20°	47.50	0°
N37-N39	T32	101.0	12.0	20°	46.00	0°
N40-N44	T32	2.0	12.0	20°	46.00	0°
N45-N48	T32	27.0	12.0	20°	46.00	0°
N47	T32	38.0	12.0	20°	46.00	0°
N48-N49	T32	103.0	12.0	20°	44.50	0°
N50-N53	T32	76.0	15.0	20°	52.00	0°
N54-N57	T32	73.0	15.0	20°	50.50	0°
N58-N61	T32	67.0	18.0	25°	50.50	0°
N62	T32	74.0	16.0	25°	50.50	10°
N63-N66	T32	84.0	15.0	20°	49.00	0°
N67-N70	T32	74.0	16.0	25°	49.00	0°
N71	T32	58.0	16.0	25°	49.00	10°
N72-N73	T32	43.0	16.0	20°	49.00	0°
N74-N77	T32	83.0	15.0	20°	47.50	0°
N78-N81	T32	64.0	16.0	25°	47.50	0°
N82	T32	19.0	16.0	25°	47.50	10°
N83-N84	T32	37.0	16.0	20°	47.50	0°
N85-N86	T32	39.0	15.0	20°	46.00	0°
N87-N88	T32	23.0	16.0	20°	46.00	0°
NA1-NA2	T32	72.0	12.0	20°	47.50	0°
NA3-NA4	T32	101.0	12.0	20°	46.00	0°
NA5-NA6	T32	103.0	12.0	20°	44.50	0°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FEATURE NO. 15NE-A/R139
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TERMINAL POLE T.L. 49.70
TRAP
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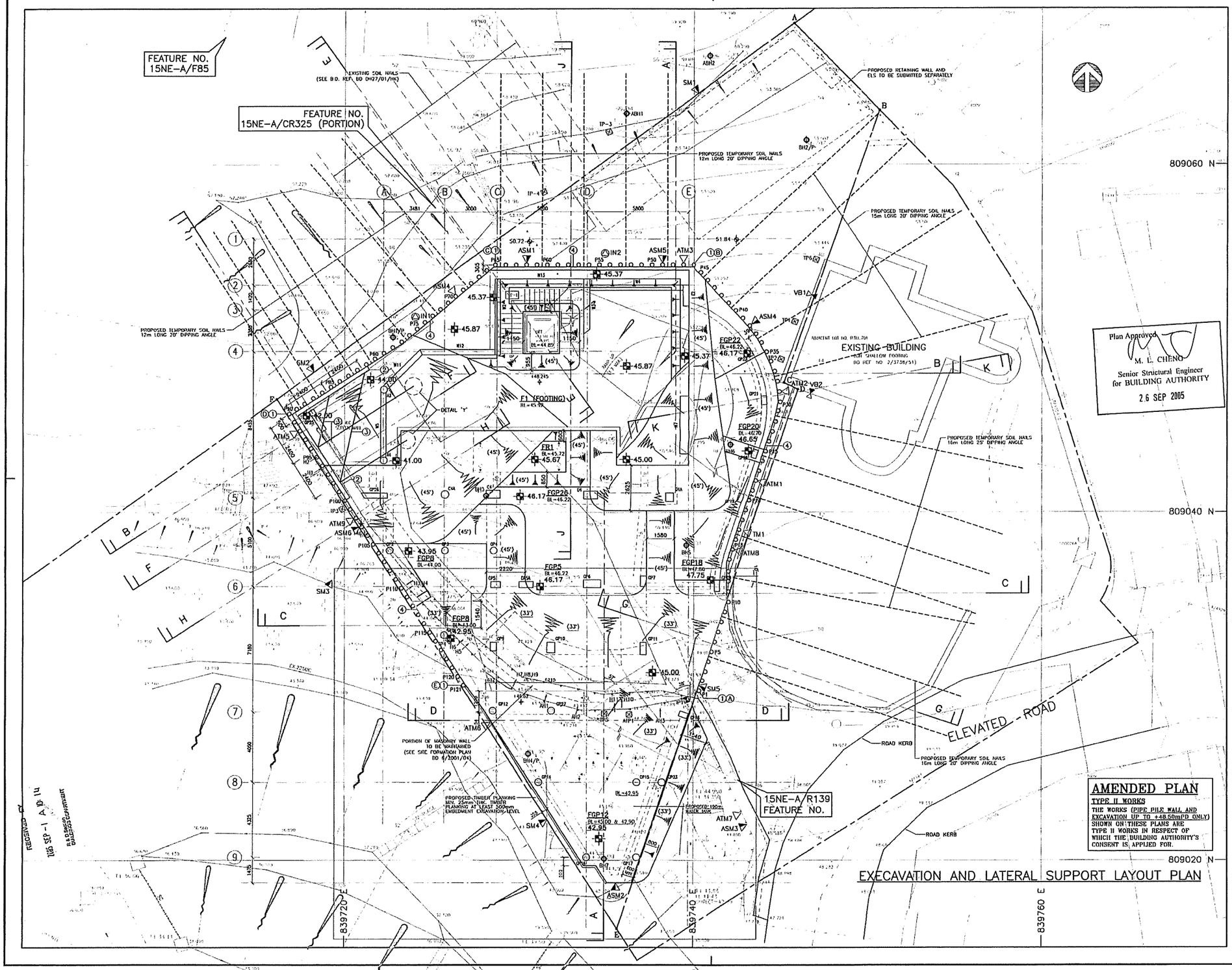

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- FEATURE BOUNDARY
- EXISTING WALL
- EXISTING CATCHPIT
- EXISTING DRAINAGE (IL=INVERT LEVEL)
- EXISTING SLOPE
- EXISTING TREE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABLE DUCT
- BH1 – EXISTING BOREHOLES
- ABH1 – EXISTING ADDITIONAL BOREHOLES
- H1 – EXISTING HORIZONTAL DRILLHOLES
- AH1 – EXISTING ADDITIONAL HORIZONTAL DRILLHOLES
- TP1 – EXISTING TRAIL PITS
- ATP1 – EXISTING ADDITIONAL TRAIL PITS
- IP1 – PROPOSED INSPECTION PIT
- BL=44.89 – PROPOSED FOOTING/PILE CAP BOTTOM LEVEL
- 45.95 – PROPOSED EXECAVATION LEVEL (mPD)
- SM1 – PROPOSED SETTLEMENT MARKER (5 NOS.)
- ASM1 – PROPOSED ADDITIONAL SETTLEMENT MARKER (6 NOS.)
- TM1 – PROPOSED TILTING MARKER (1 NO.)
- ATM1 – PROPOSED ADDITIONAL TILTING MARKER (9 NO.)
- VB1 – PROPOSED VIBRATION CHECK POINT (2 NOS.)
- – PROPOSED MINIPILE (SUBMITTED SEPARATELY)
- FGP20 – PROPOSED PILE CAP MARK (SUBMITTED SEPARATELY)
- – PROPOSED 45° MAX. PERMANENT CUT SLOPE WITH HYDROSEEDING (SUBMITTED SEPARATELY)
- (45°) – PROPOSED TEMPORARY CUT SLOPE (45° MAX. INCLINATION)
- – PROPOSED TEMPORARY SOIL NAIL
- ① – PROPOSED ø219 8mm THK. PIPE PILE WALL AT 0.6m c/c
- ② – PROPOSED WALING (2×152×89×23.84kg/m G)
- ③ – PROPOSED STRUT (254×254×73kg/m U.C.)
- ④ – PROPOSED LAGGING (127x64x14.90kg/m C)
- – INFERRED GRADE III/IV CONTOUR
- RI1 – PROPOSED INCLINOMETER (2 NOS.)

Authorized Person

FONG KWOK WAI
BA(ASS), M Arch., H.K.I.A., R.A., A.P. (Architect)

REV.	DATE	DESCRIPTION
B	30/08/05	GENERAL REVISION
–	22/06/05	APPROVED BY B.D.
A	25/05/05	GENERAL REVISION
–	10/03/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Chiu
CHECKED BY :	Wong	SCALE :	1 : 100
APPROVED BY :		DATE :	10/01/2005

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

EXECAVATION AND LATERAL SUPPORT – LAYOUT PLAN

DRAWING NO.	REV.
ELS-02	B

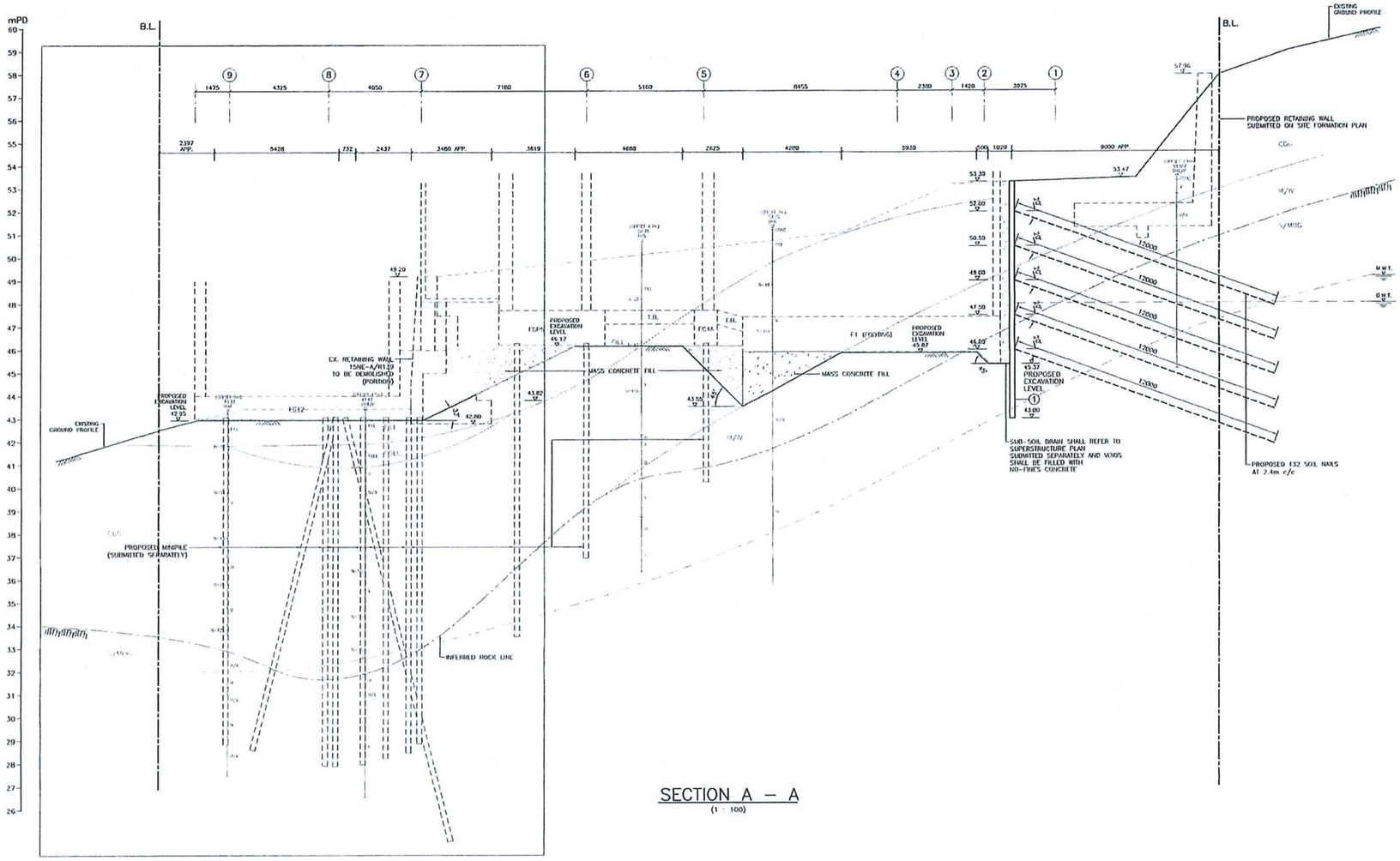
ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.

15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong
TEL (852) 2733 9333
FAX (852) 2722 2603



SECTION A – A
(1 : 100)

RECEIVED BY
2005 SEP -1 A 10:14
B.D. BUILDING DEPARTMENT

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- (1) – PROPOSED ø219 PIPE PILE WALL (0.6m c/c)
- (2) – PROPOSED WALING (2x127x64x14.90kg/m C)
- (3) – PROPOSED STRUT (254x254x73kg/m U.C.)
- PROPOSED TEMPORARY SOIL NAIL

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
26 SEP 2005

Authorized Person
FONG KWOK WAI
DAIA, H Arch, H.K.I.A., R.P.I., A.P. (Architect)

AMENDED PLAN
TYPE II WORKS
THE WORKS (PIPE PILE WALL AND EXCAVATION UP TO +48.50mPD ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

REV.	DATE	DESCRIPTION
B	30/08/05	GENERAL REVISION
-	22/06/05	APPROVED BY B.D.
A	25/05/05	GENERAL REVISION
-	10/03/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Polly
CHECKED BY :	Marvin	SCALE :	1 : 100
APPROVED BY :		DATE :	10/01/2005

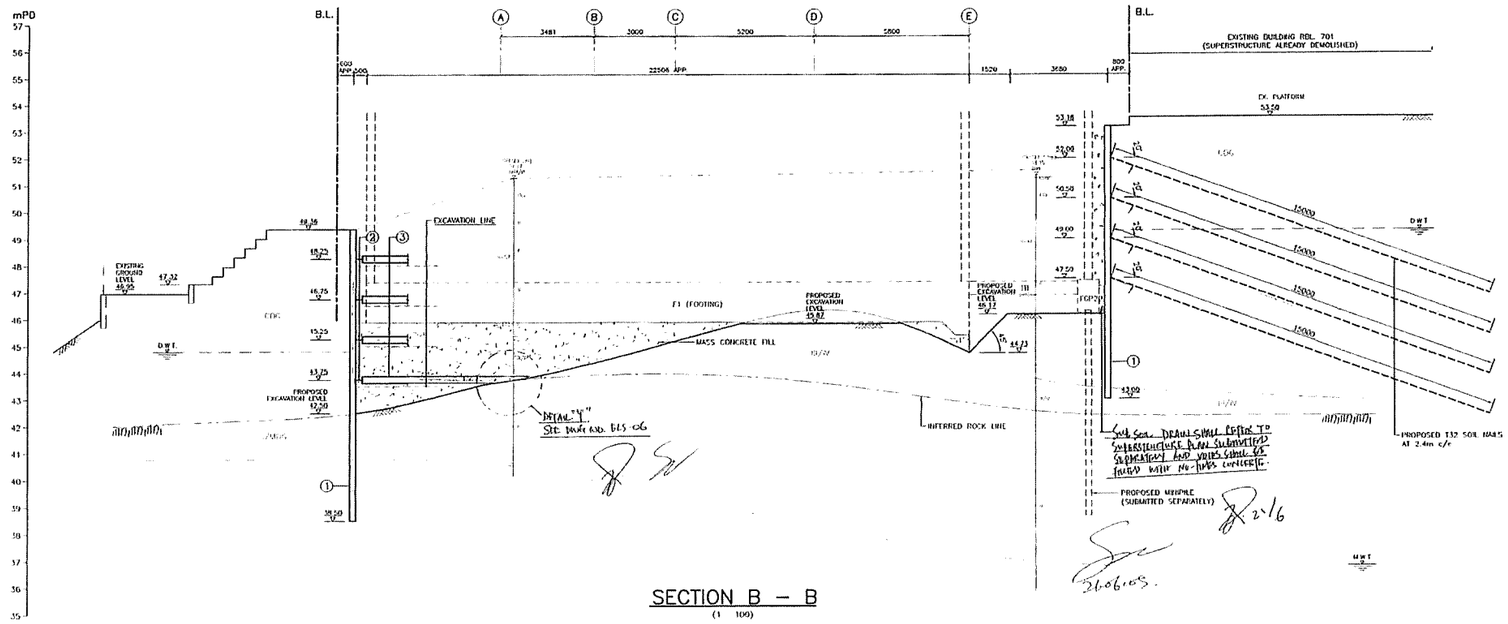
PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
EXECAVATION AND LATERAL SUPPORT – SECTION
(SHEET 1 OF 4)

DRAWING NO. ELS–03
REV. B

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F, Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong
TEL (852) 2723 5333
FAX (852) 2723 2563



SECTION B – B
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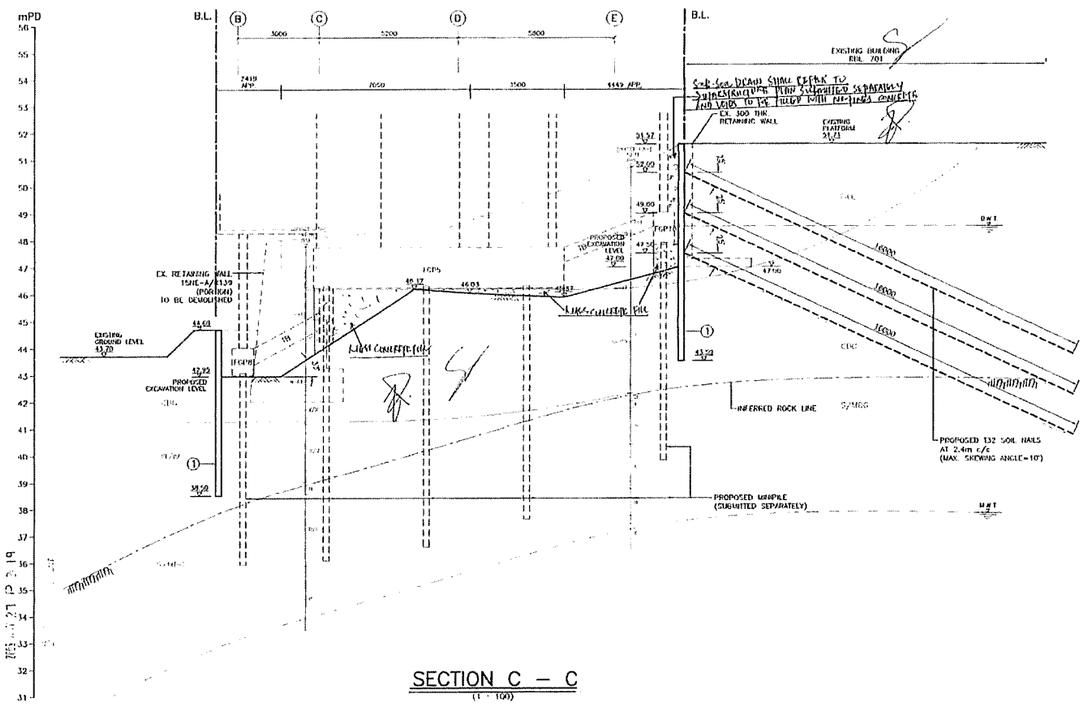

SECTION C – C
(1 : 100)

B.D. REF.	3/2001/04

LEGEND :

- BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- (1) – PROPOSED #219 PIPE PILE WALL (0.6m c/c)
- (2) – PROPOSED WALING (2x127x64x14.90kg/m C)
- (3) – PROPOSED STRUT (254x254x73kg/m U.C.)
- PROPOSED TEMPORARY SOIL NAIL

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
22 JUN 2005

AMENDED PLAN
TYPE II WORKS (PIPE PILE WALL ONLY)
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

Authorized Person

REV.	DATE	DESCRIPTION
A	25/05/05	GENERAL REVISION
–	10/03/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Poly
CHECKED BY :	Wyse	SCALE :	1 : 100
APPROVED BY :		DATE :	10/01/2005

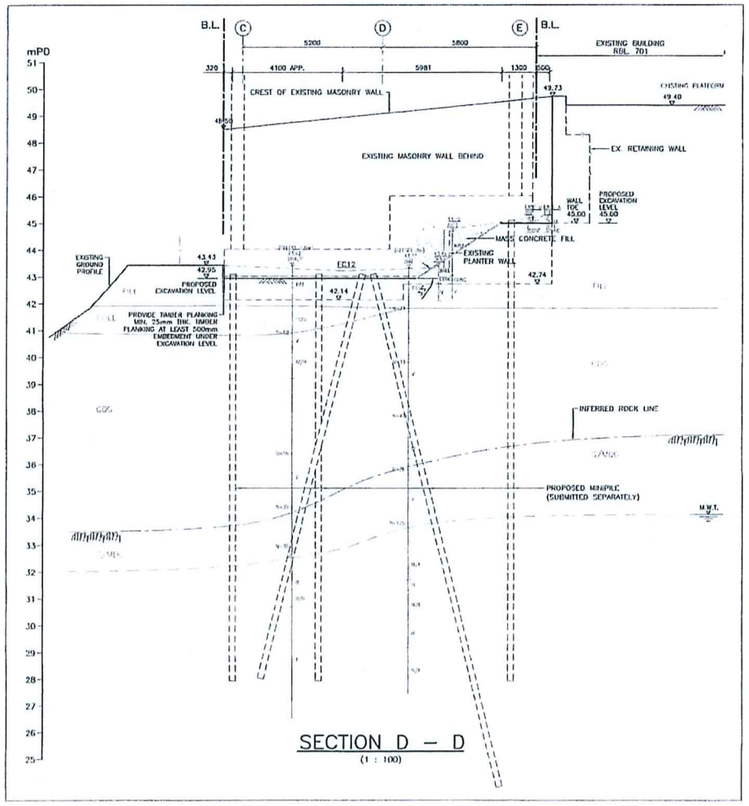
PROJECT
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE
EXECAVATION AND LATERAL SUPPORT – SECTIONS
(SHEET 2 OF 4)

DRAWING NO.	REV.
ELS-04	A

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
19/F., Good Harvest Commercial Building, No. 486-487, Nathan Road, Kowloon, Hong Kong
TEL (852) 2780 9909
FAX (852) 2780 3663



SECTION D – D
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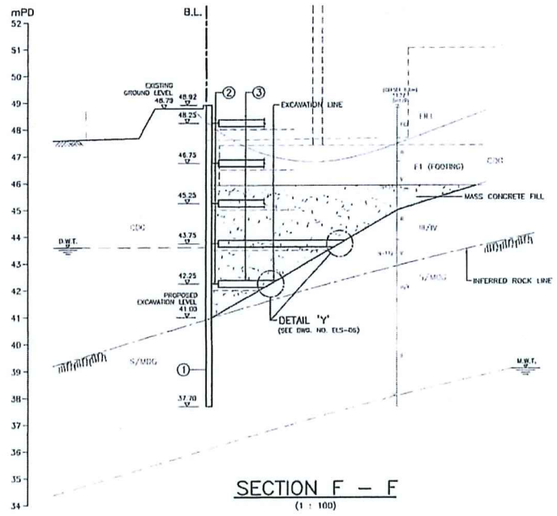

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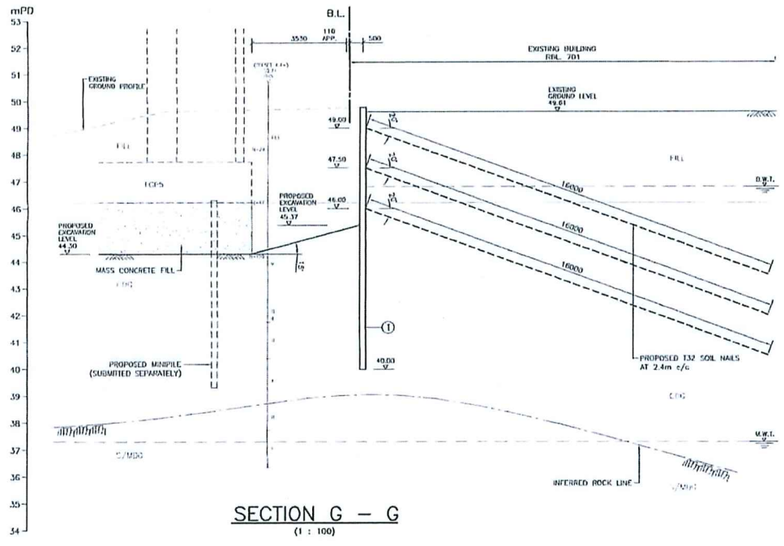

SECTION G – G
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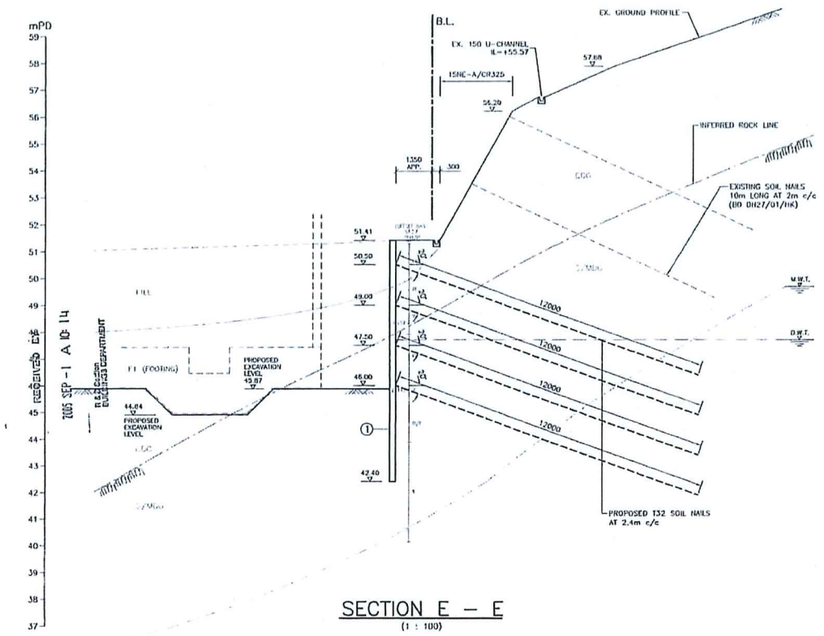

SECTION E – E
(1 : 100)

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- (1) – PROPOSED ø219 PIPE PILE WALL (0.6m c/c)
- (2) – PROPOSED WALING (2x127x64x14.90kg/m C)
- (3) – PROPOSED STRUT (254x254x73kg/m U.C.)
- PROPOSED TEMPORARY SOIL NAIL

Plan Approved
M. L. CHING
Senior Structural Engineer
for BUILDING AUTHORITY
26 SEP 2005

Authorized Person
FONG KWOK WAI
BA(Arch), M.Arch., H.K.I.A., R.A., A.P. (Architect)

AMENDED PLAN
TYPE II WORKS
THE WORKS (PIPE PILE WALL AND EXCAVATION UP TO +40.50mPD ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

REV.	DATE	DESCRIPTION
B	30/08/05	GENERAL REVISION
–	22/06/05	APPROVED BY B.D.
A	25/05/05	GENERAL REVISION
–	10/03/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	DLL
CHECKED BY :	Manni	SCALE :	1 : 100
APPROVED BY :		DATE :	10/01/2005

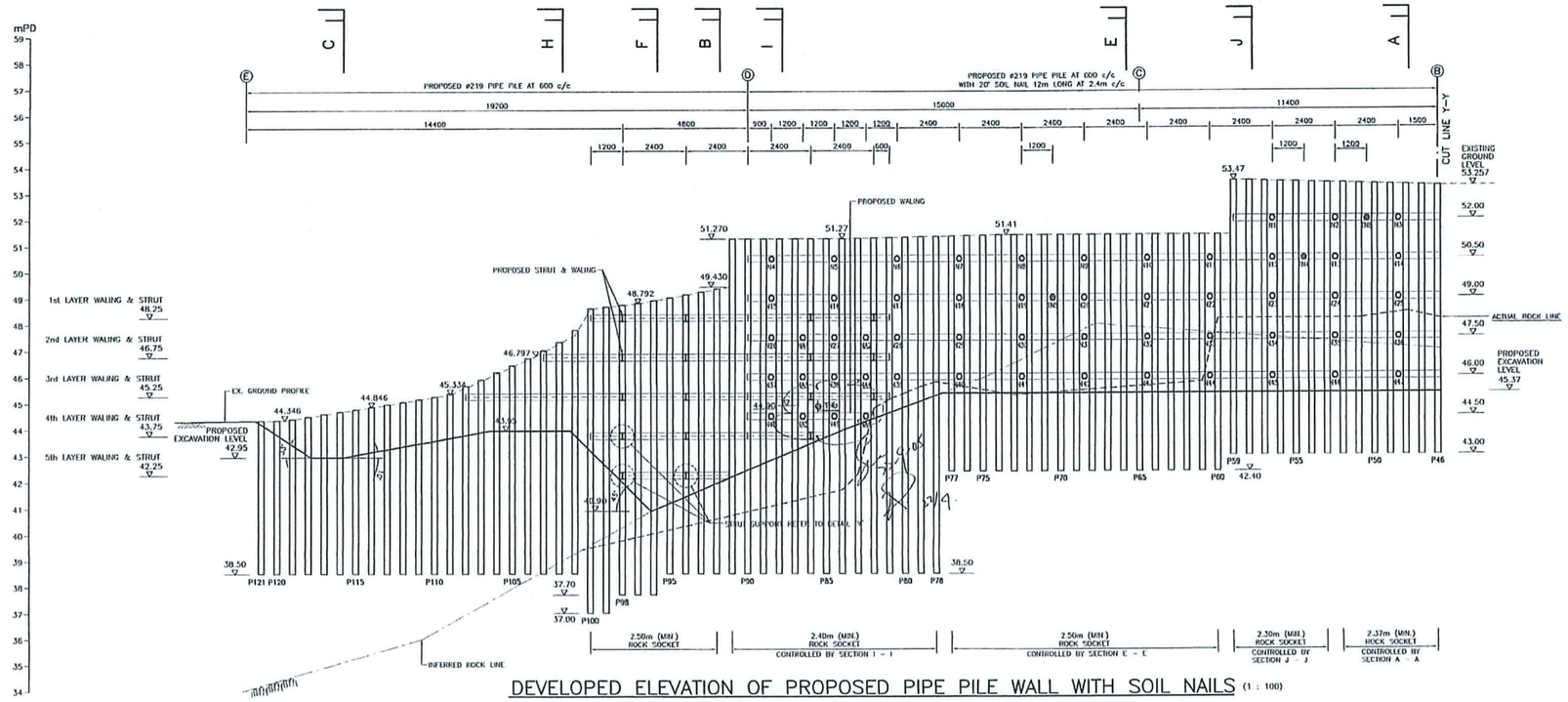
PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
EXECAVATION AND LATERAL SUPPORT – SECTIONS
(SHEET 3 OF 4)

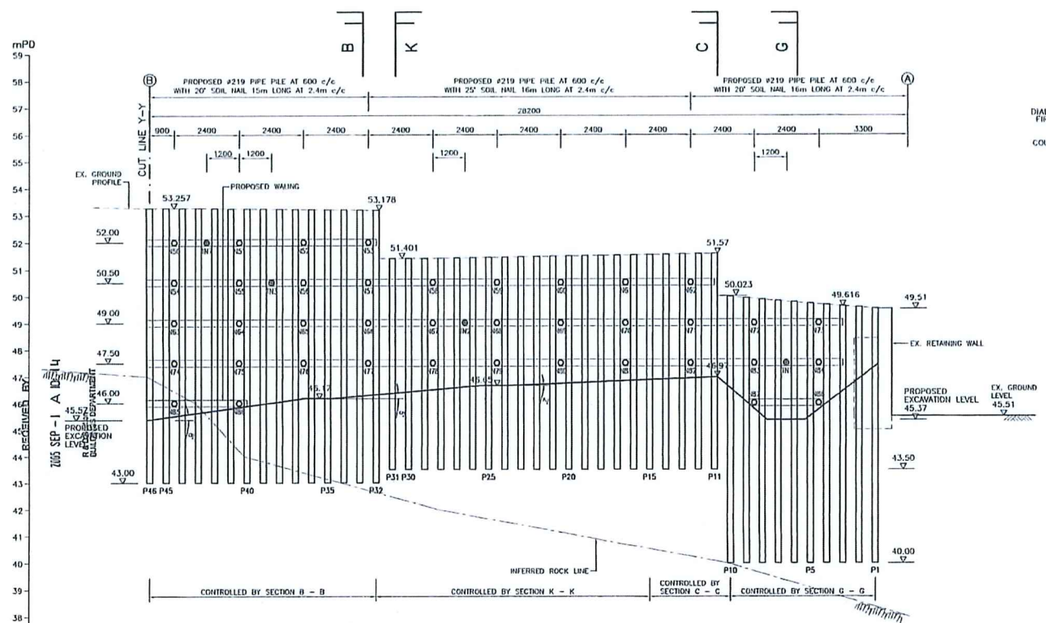
DRAWING NO. ELS–05 REV. B

ARCHITECT :
Prudent Design Limited

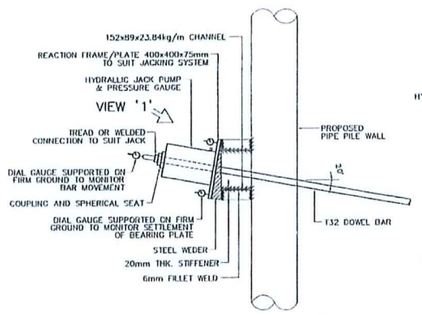
GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong
TEL (852) 2720 0333
FAX (852) 2732 2663



DEVELOPED ELEVATION OF PROPOSED PIPE PILE WALL WITH SOIL NAILS (1 : 100)

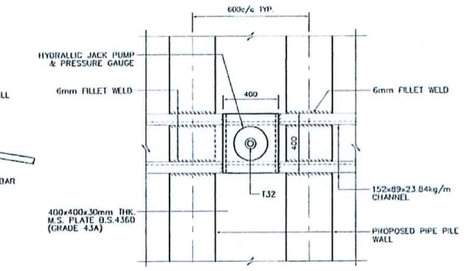


DEVELOPED ELEVATION OF PROPOSED PIPE PILE WALL WITH SOIL NAILS (1 : 100)



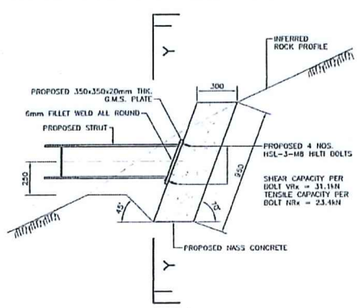
TEST NAIL DETAIL (N.T.S.)

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)



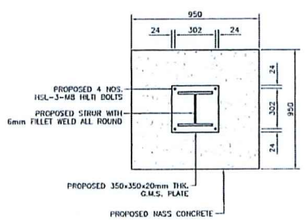
VIEW '1' (N.T.S.)

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)



DETAIL 'Y'

(SCALE 1 : 20)



SECTION Y – Y

(SCALE 1 : 20)

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- N1 – PROPOSED SOIL NAIL
- TN1 – PROPOSED TEST NAIL

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
26 SEP 2005

Autherized Person
FONG KWOK WAI
BA(Arch), M Arch., R.I.B.A., R.A., A.P. (Architect)

AMENDED PLAN
TYPE II WORKS
THE WORKS (PIPE PILE WALL AND EXCAVATION UP TO +40.50mPD ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

B	30/09/05	GENERAL REVISION
-	22/09/05	APPROVED BY B.D.
A	25/05/05	GENERAL REVISION
-	10/03/05	APPROVED BY B.D.
REV.	DATE	DESCRIPTION

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE. THE RELEVANT DRAWINGS, ALL DRAWING AMENDMENTS AND THEIR COPYRIGHTS ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, SURVEYORS, WHO SHALL BE RETAINED AT THE COMPLETION OF THE WORK. THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS DIFFERENTLY CERTIFIED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY	Dicky
CHECKED BY :	Minnie	SCALE :	1 : 100
APPROVED BY :		DATE :	10/01/2005

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE

EXECAVATION AND LATERAL SUPPORT – DEVELOPED ELEVATION

DRAWING NO. ELS-06 REV B

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 565-569, Nathan Road, Kowloon, Hong Kong
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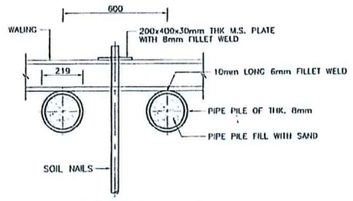
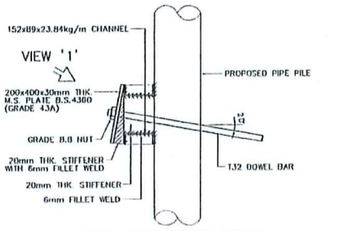
FAX (852) 2730 3663

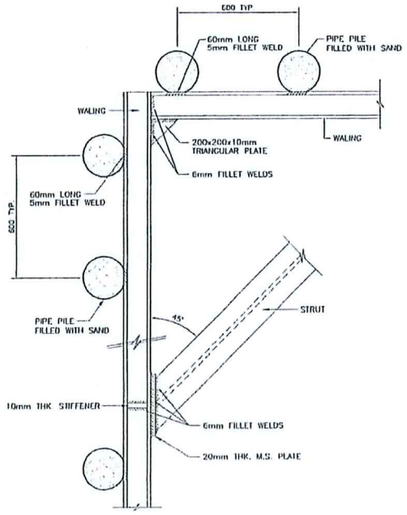


TYPICAL CONNECTION DETAILS BETWEEN PIPE PILE AND SOIL NAILS



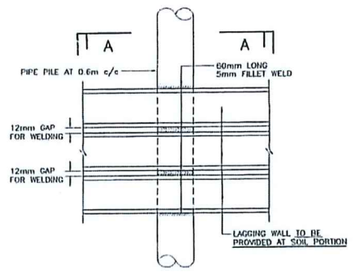
SOIL NAIL HEAD DETAIL

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)

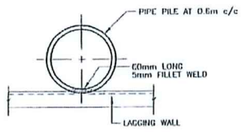


TYPICAL PIPE PILE CONNECTION DETAIL FOR CORNER STRUT

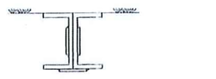
(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)

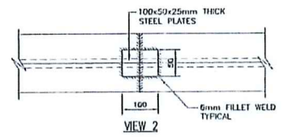


TYPICAL PIPE PILE CONNECTION DETAIL FOR LAGGING WALL

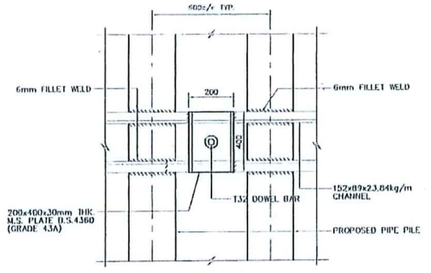


SECTION A



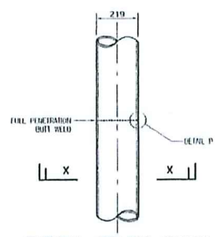


TYPICAL SPLICING DETAILS FOR WALING

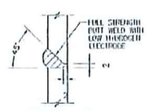


VIEW '1'

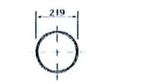
(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)



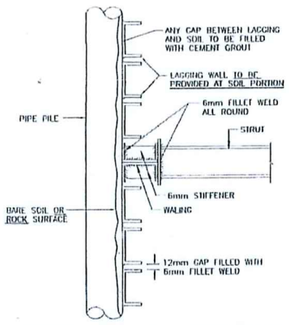
TYPICAL SPLICE DETAIL FOR PIPE PILE



DETAIL P



SECTION X – X



TYPICAL PIPE PILE CONNECTION DETAIL FOR STRUT

NOTE:
NO LAGGING WALL IS REQUIRED FOR ROCK PORTION (GRADE III OR BETTER) OF THE PROPOSED EXCAVATED AREA UNLESS ADVERSELY ORIENTATED ROCK JOINT REVEALED. INSTALL LAGGING AS DIRECTED BY ENGINEER.

THE EXPOSED ROCK FACE SHALL BE MAPPED, REVEALED AND ASSESSED BY ENGINEER. AREA WITH ADVERSELY ORIENTATED ROCK JOINT SHALL BE IDENTIFIED AND LAGGING SHALL BE INSTALLED. THE MAPPING AND ASSESSMENT SHALL BE SUBMITTED VIA CAT I PROGRESS REPORT.

17.11.05.

STEEL MEMBER FOR LATERAL SUPPORT

PIPE PILE WALL	①	219ø x 8mm THK. CHS AT 0.6m c/c
WALING	②	2 NOS. x 152x89x23.84kg/m CHANNEL
STRUT	③	254x254x73kg/m UNIVERSAL COLUMN
LAGGING	④	127x64x14.90kg/m CHANNEL

SECTIONAL PROPERTIES FOR PIPE PILE WALL

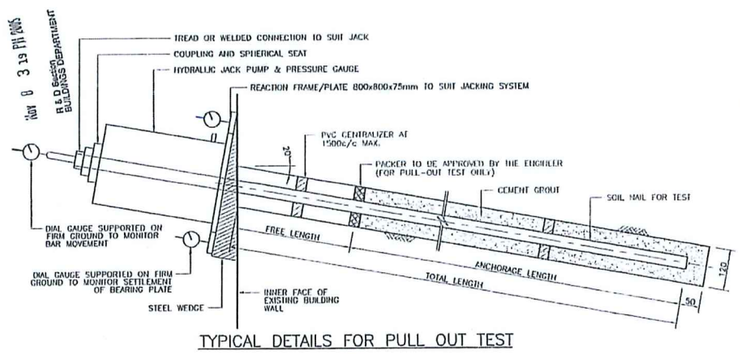
NOMINAL SIZE	THICKNESS t (mm)	MASS PER METRE (kg)	AREA OF SECTION A (cm^2)	SECOND MOMENT OF AREA I (cm^4)	RADIUS OF GYRATION r (cm)	ELASTIC MODULUS z (cm^3)	SURFACE AREA PER METRE (m^2)
219mmø CHS PIPE PILE	8	41.8	53.1	2960	7.47	270	0.688

SECTIONAL PROPERTIES FOR WALING AND LAGGING

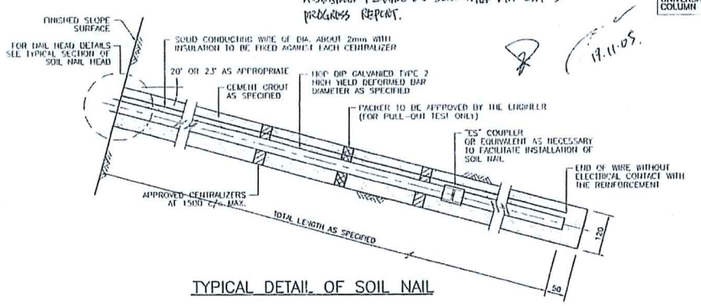
NOMINAL SIZE	MASS PER METRE (kg)	DEPTH D (mm)	WIDTH B (mm)	THICKNESS t (mm)	T (mm)	SECOND MOMENT OF AREA x–x (cm^4)	SECOND MOMENT OF AREA y–y (cm^4)	RADIUS OF GYRATION x–x (cm)	RADIUS OF GYRATION y–y (cm)	ELASTIC MODULUS x–x (cm^3)	ELASTIC MODULUS y–y (cm^3)	AREA OF SECTION A (m^2)
152x152 CHANNEL	23.84	152.4	88.9	7.1	11.6	1168	216	6.20	2.68	153	35.8	30.4
127x64 CHANNEL	14.90	127.0	63.5	6.4	9.2	482	67.2	5.04	1.88	76.0	15.2	19.0

SECTIONAL PROPERTIES FOR STRUT

NOMINAL SIZE	MASS PER METRE (kg)	DEPTH D (mm)	WIDTH B (mm)	THICKNESS t (mm)	T (mm)	SECOND MOMENT OF AREA x–x (cm^4)	SECOND MOMENT OF AREA y–y (cm^4)	RADIUS OF GYRATION x–x (cm)	RADIUS OF GYRATION y–y (cm)	ELASTIC MODULUS x–x (cm^3)	ELASTIC MODULUS y–y (cm^3)	AREA OF SECTION A (m^2)
254x254x73 UNIVERSAL COLUMN	73.1	254.1	254.6	8.6	14.2	11410	3908	11.1	6.48	898	307	93.1



TYPICAL DETAILS FOR PULL OUT TEST



TYPICAL DETAIL OF SOIL NAIL

Authorised Person
TONG Shiu-kai

B.D. REF. 3/2001/04

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
22 NOV 2005

AMENDED PLAN
TYPE II WORKS

THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

REV.	DATE	DESCRIPTION
B	08/11/05	GENERAL REVISION
–	26/09/05	APPROVED BY B.D.
A	30/08/05	GENERAL REVISION
–	10/03/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Poky
CHECKED BY :	Mimi	SCALE :	N.T.S.
APPROVED BY :		DATE :	10/01/2005

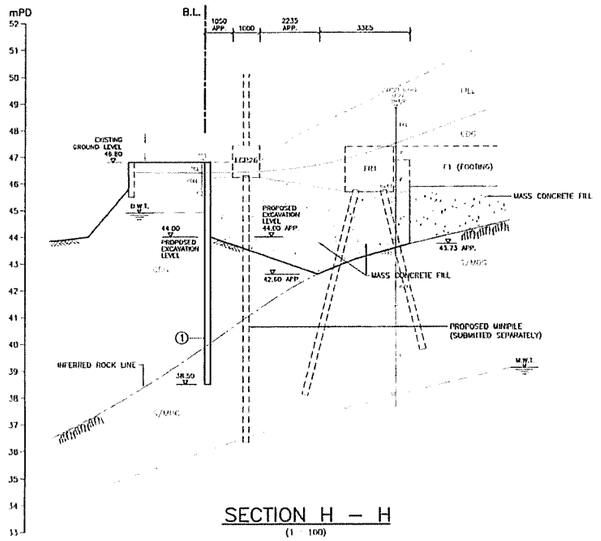
PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
EXCAVATION AND LATERAL SUPPORT – TYPICAL CONNECTION DETAILS

DRAWING NO. ELS-07 | REV. B

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
13/F, Good Harvest Commercial Building, No. 615-617, Nathan Road, Kowloon, Hong Kong.
TEL. (852) 2559 0333 FAX. (852) 2736 2863



SECTION H – H
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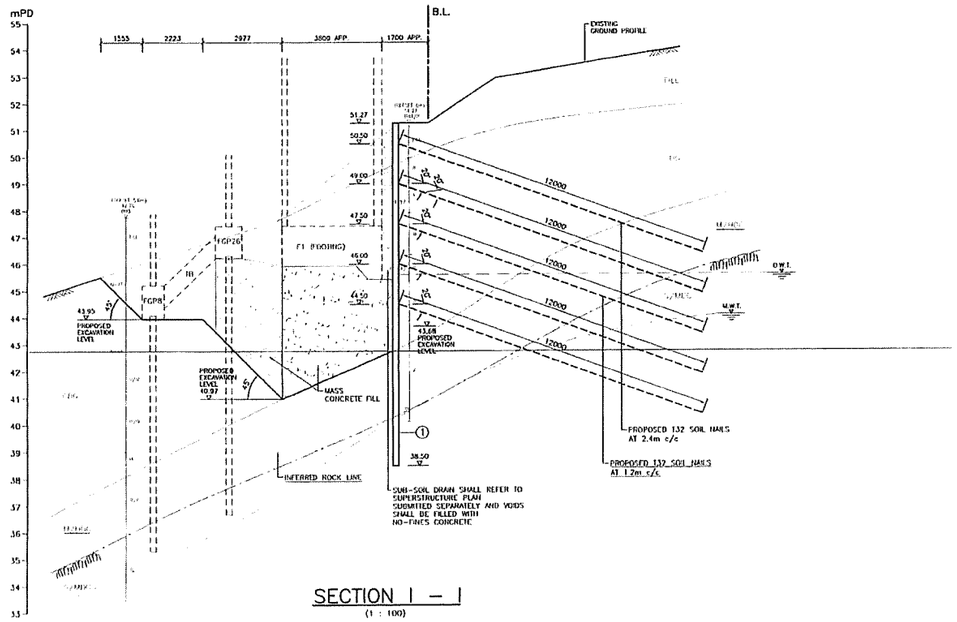

SECTION I – I
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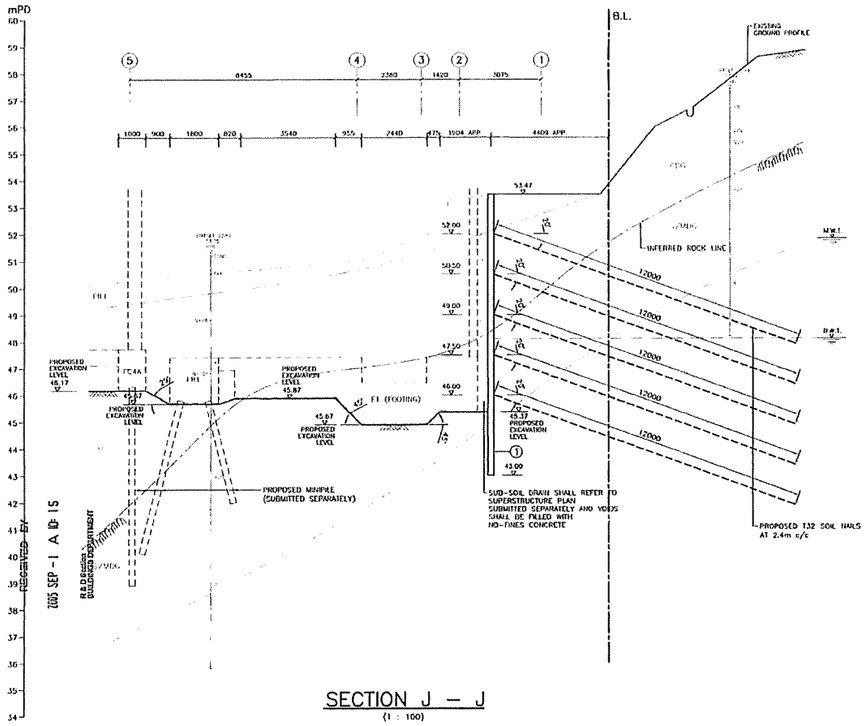

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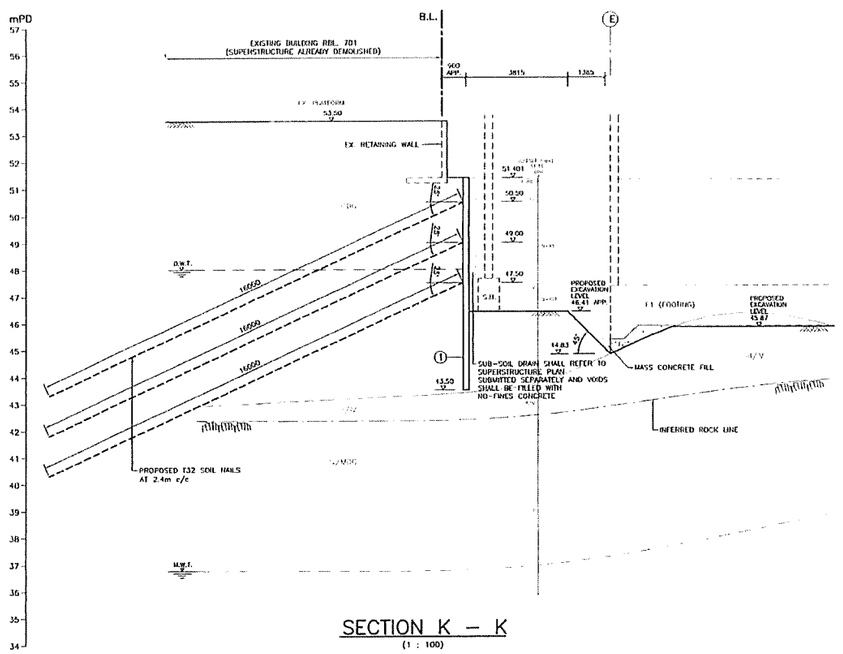

SECTION K – K
(1 : 100)

RECEIVED BY
1 0 SEP 2005
R & D DESIGN BUILDING DEPARTMENT

B.D. REF. 3/2001/04

LEGEND :

- ——— – BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- ① – PROPOSED Ø219 PIPE PILE WALL (0.6m c/c)
- ② – PROPOSED WALING (2x127x64x14.90kg/m U.C.)
- ③ – PROPOSED STRUT (254x254x73kg/m U.C.)
- – – – – – PROPOSED TEMPORARY SOIL NAIL

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
26 SEP 2005

Authorized Person
FONG KWOK WAI
MAARP, M Arch, HKIA., R.A., A.P. (Architect)

AMENDED PLAN
TYPE II WORKS
THE WORKS (PIPE PILE WALL AND EXCAVATION UP TO +40.50mPD ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

REV.	DATE	DESCRIPTION
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–	22/06/05	APPROVED BY B.D.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY	DJ/g
CHECKED BY :	Mimi	SCALE	1 : 100
APPROVED BY :		DATE :	25/05/2005

PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE
EXECAVATION AND LATERAL SUPPORT – SECTIONS
(SHEET 4 OF 4)

DRAWING NO. ELS–08 REV. A

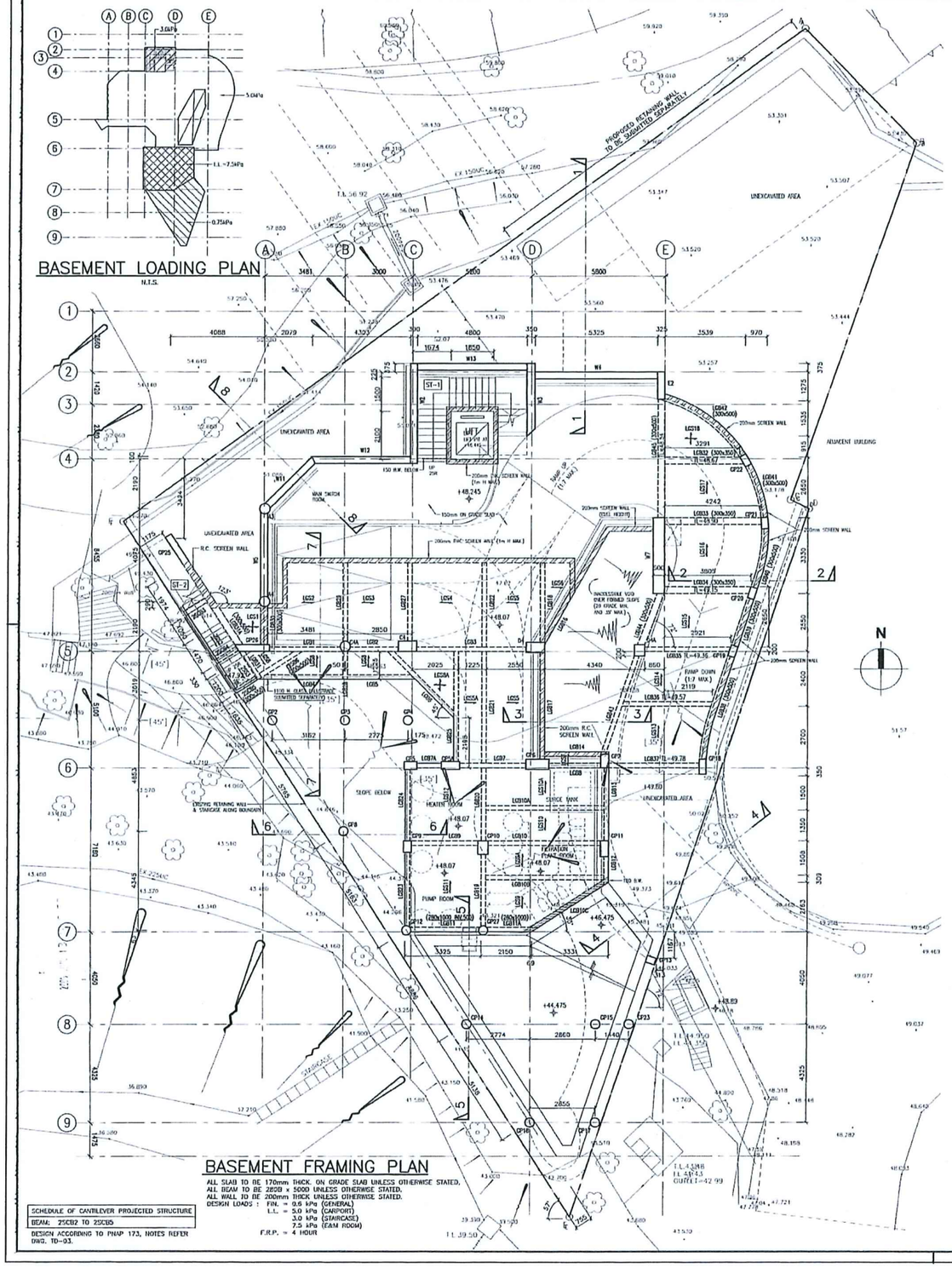
ARCHITECT
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PSA PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong
TEL. (852) 2729 5333 FAX. (852) 2732 2063

3/2001/04 pt 2

(37)

Sd I

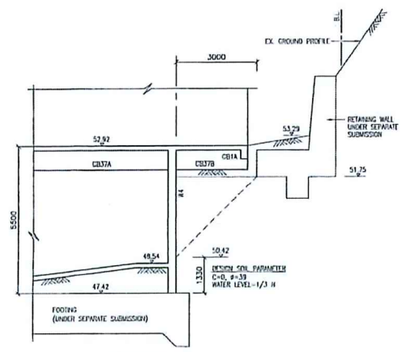


BASEMENT FRAMING PLAN

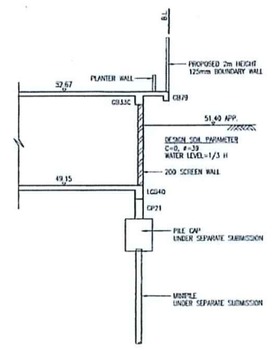
ALL SLAB TO BE 170mm THICK ON GRADE SLAB UNLESS OTHERWISE STATED.
ALL BEAM TO BE 2800 x 5000 UNLESS OTHERWISE STATED.
ALL WALL TO BE 200mm THICK UNLESS OTHERWISE STATED.
DESIGN LOADS : FIN. = 0.6 kPa (GENERAL)
L.L. = 5.0 kPa (CARPORT)
3.0 kPa (STAIRCASE)
7.5 kPa (E&M ROOM)
F.R.P. = 4 HOUR

SCHEDULE OF CANTILEVER PROJECTED STRUCTURE
BEAM: 2SCB2 TO 2SCB5

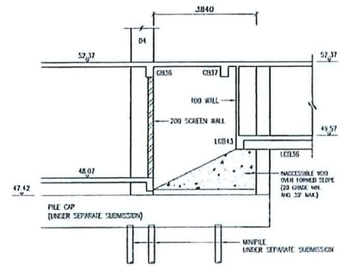
DESIGN ACCORDING TO PNAP 173, NOTES REFER DWG. TD-03.



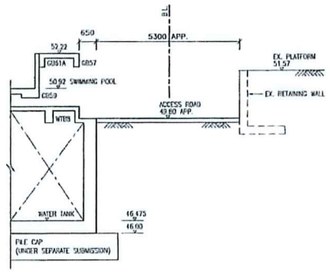
SECTION 1 – 1



SECTION 2 – 2



SECTION 3 – 3



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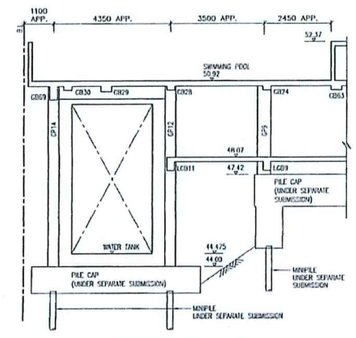

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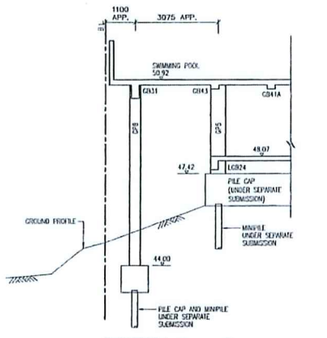

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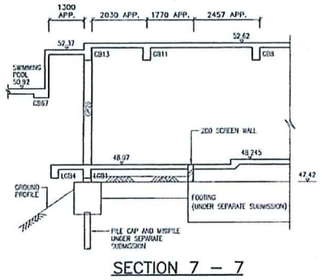

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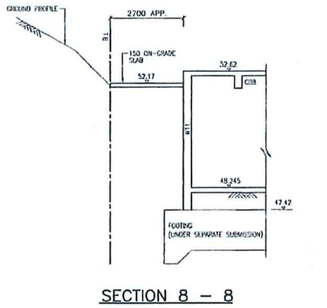

SECTION 8 – 8

B.D. REF. 3/2001/04

LEGEND :

——— – BOUNDARY LINE

SW – PROPOSED 200mm THK. SCREEN WALL

Plan Approved

M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY

- 9 AUG 2006

AMENDED PLAN

THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS (SUPERSTRUCTURE) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

MASTER FRAMING

REV.	DATE	DESCRIPTION
C	12/07/06	GENERAL REVISION
–	13/01/06	APPROVED BY B.D.
B	12/12/05	GENERAL REVISION
A	27/10/05	GENERAL REVISION
–	21/04/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Dicky
CHECKED BY :	Toby	SCALE :	1 : 100
APPROVED BY :		DATE :	31/01/2005

PROJECT :

R.B.L. NO. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

BASEMENT FLOOR FRAMING PLAN

DRAWING NO. FP–01

REV. C

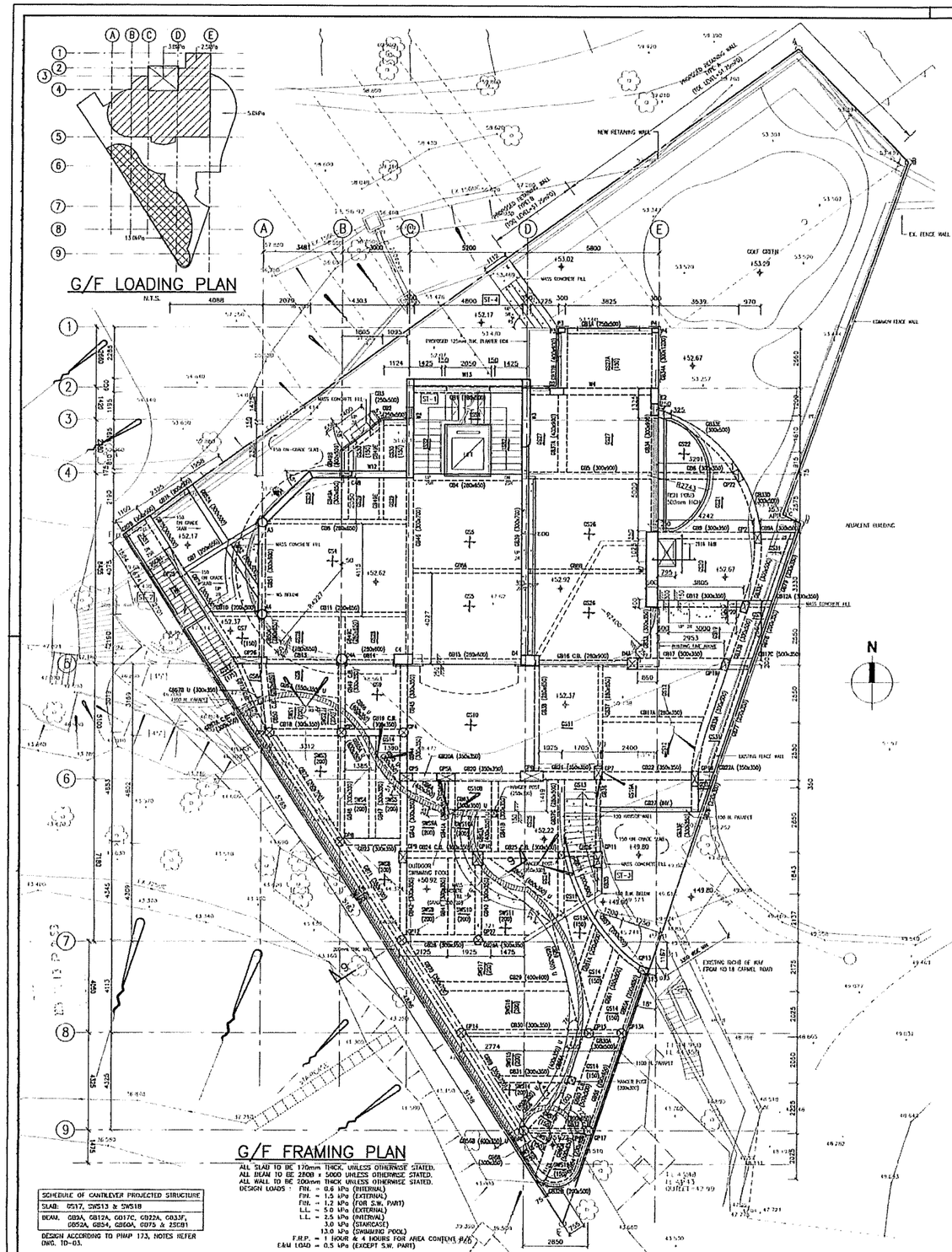
ARCHITECT :

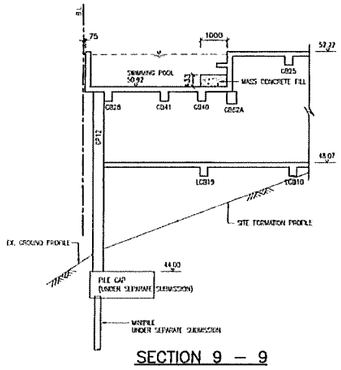
Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.

15/F., Good Harvest Commercial Building, No 515-517, Nathan Road, Kowloon, Hong Kong.
TEL (852) 2709 3333
FAX (852) 2732 2663





SECTION 9 – 9

D.D. REF.	3/2001/04

LEGEND :

——— – BOUNDARY LINE

SW – PROPOSED 200mm THK. SCREEN WALL

Plan Approved

M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY

- 9 AUG 2006

AMENDED PLAN

THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS (SUPERSTRUCTURE) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 23 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

MASTER FRAMING

REV.	DATE	DESCRIPTION
C	12/01/06	GENERAL REVISION
–	13/01/06	APPROVED BY B.D.
B	12/12/05	GENERAL REVISION
A	27/10/05	GENERAL REVISION
–	21/04/05	APPROVED BY B.D

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Peka
CHECKED BY :	Edw	SCALE :	1 : 100
APPROVED BY :		DATE :	31/01/2005

PROJECT :

R.B.L. NO. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

GROUND FLOOR
FRAMING PLAN

DRAWING NO.	REV.
FP–02	C

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
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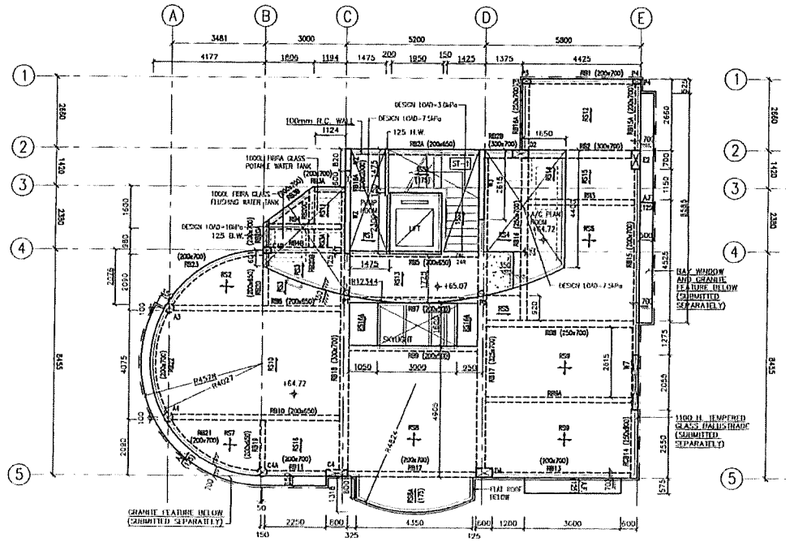
16/F, Good Harvest Commercial Building, No. 518-519, Nathan Road, Kowloon, Hong Kong
TEL (852) 2928 9333
FAX (852) 2722 2063

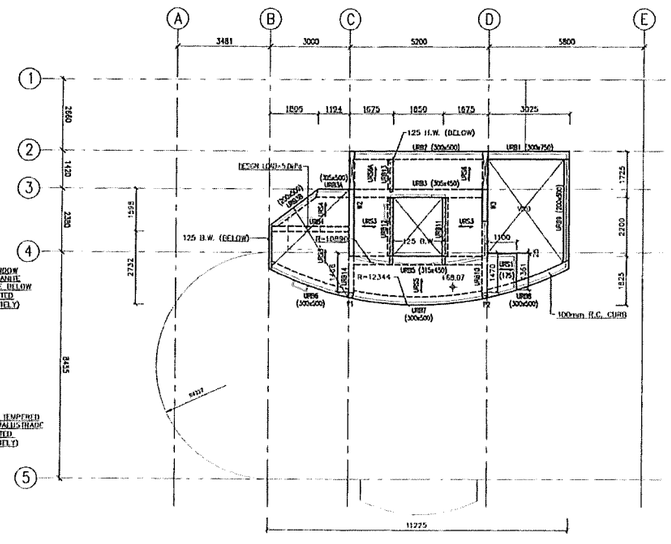


ROOF FRAMING PLAN

MASS CONCRETE FILL

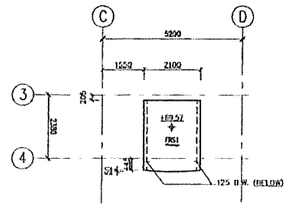
ALL SLAB TO BE 150mm THICK UNLESS OTHERWISE STATED.
ALL BEAM TO BE 2000 x 5000 UNLESS OTHERWISE STATED.
ALL WALL TO BE 200mm THICK UNLESS OTHERWISE STATED.
DESIGN LOADS : F/W. = 0.6 kPa (FOR INTERNAL AREA)
F/W. = 2.4 kPa (FOR OUTSIDE AREA)
L.L. = 2.0 kPa (GENERAL)
3.0 kPa (FOR STAIRCASE)
7.5 kPa (FOR A/C PLANT ROOM & PUMP ROOM)
10.0 kPa (FOR WATER TANK ROOM)
F.R.P. = 1 HOUR (FOR GENERAL)
F.R.P. = 2 HOUR (FOR E&M ROOM)

LOADING RESERVE FOR SKYLIGHT RB7 & RB9 D.L. = 2.0 kN/m
L.L. = 1.0 kN/m



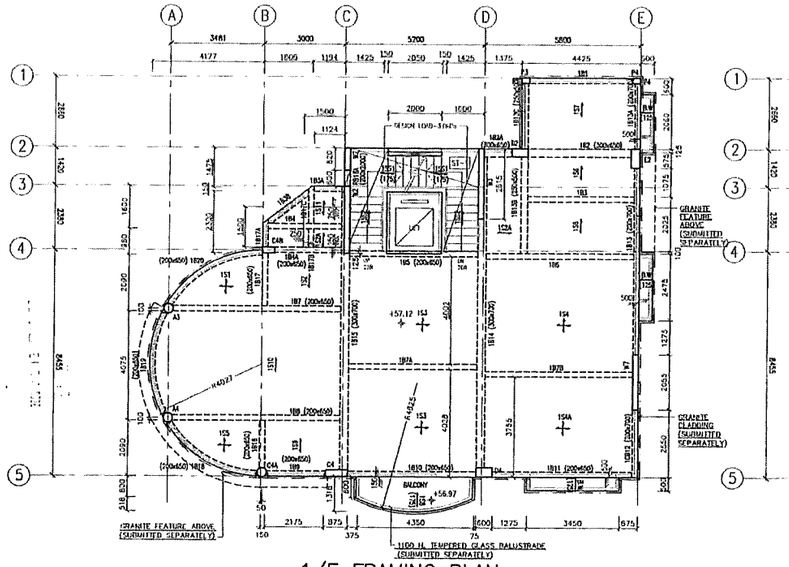
UPPER ROOF FRAMING PLAN

ALL SLAB TO BE 150mm THICK UNLESS OTHERWISE STATED.
ALL BEAM TO BE 2000 x 4500 UNLESS OTHERWISE STATED.
ALL WALL TO BE 200mm THICK UNLESS OTHERWISE STATED.
DESIGN LOADS : F/W. = 1.5 kPa (GENERAL)
L.L. = 0.75 kPa (GENERAL)
F.R.P. = 2 HOUR



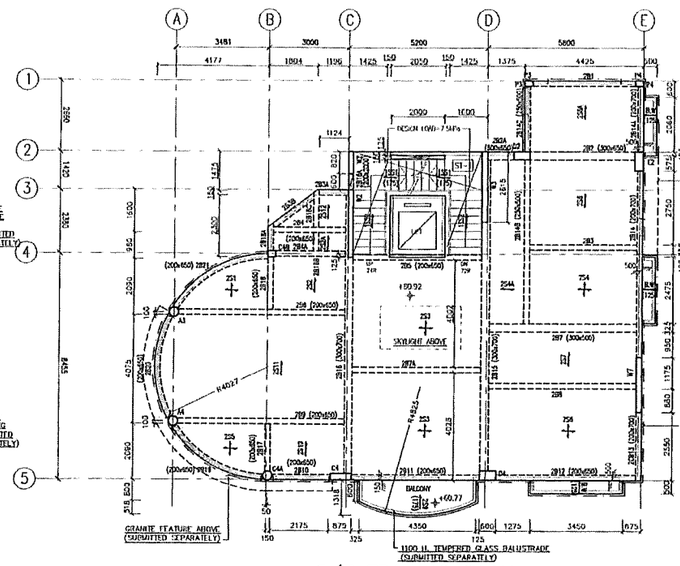
FLAT ROOF FRAMING PLAN

ALL SLAB TO BE 150mm THICK UNLESS OTHERWISE STATED.
ALL BEAM TO BE 2000 x 3000 UNLESS OTHERWISE STATED.
DESIGN LOADS : F/W. = 2.4 kPa (GENERAL)
L.L. = 0.75 kPa (GENERAL)
F.R.P. = 2 HOUR



1/F FRAMING PLAN

ALL SLAB TO BE 150mm THICK UNLESS OTHERWISE STATED.
ALL BEAM TO BE 2000 x 5000 UNLESS OTHERWISE STATED.
ALL WALL TO BE 200mm THICK UNLESS OTHERWISE STATED.
DESIGN LOADS : F/W. = 0.6 kPa (GENERAL)
L.L. = 2.5 kPa (GENERAL)
3.0 kPa (STAIRCASE)
F.R.P. = 1 HOUR

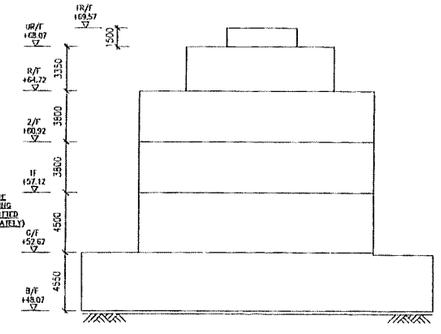


2/F FRAMING PLAN

ALL SLAB TO BE 150mm THICK UNLESS OTHERWISE STATED.
ALL BEAM TO BE 2000 x 5000 UNLESS OTHERWISE STATED.
ALL WALL TO BE 200mm THICK UNLESS OTHERWISE STATED.
DESIGN LOADS : F/W. = 0.6 kPa (GENERAL)
L.L. = 2.5 kPa (GENERAL)
3.0 kPa (STAIRCASE)
F.R.P. = 1 HOUR

SCHEDULE OF CANTILEVER PROJECTED STRUCTURE
SLAB: 259, 158, RS8A & UR61
BEAM: UR63A, UR69, RCB14 & UR81

DESIGN ACCORDING TO PNAP 173, NOTES REFER DWG. ID-03.



SCHEMATIC ELEVATION OF BUILDING

(N.T.S.)

B.D. REF. 3/2001/04

LEGEND :

——— – BOUNDARY LINE

Plan Approved
M. L. CHANG
Senior Structural Engineer
for BUILDING AUTHORITY
- 9 AUG 2006

AMENDED PLAN
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS (SUPERSTRUCTURE) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

MASTER FRAMING

REV.	DATE	DESCRIPTION
C	12/07/06	GENERAL REVISION
-	13/01/06	APPROVED BY B.D
B	12/12/05	GENERAL REVISION
A	27/10/05	GENERAL REVISION
-	21/04/05	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	[illegible]
CHECKED BY :	[illegible]	SCALE :	1 : 100
APPROVED BY :		DATE :	31/01/2006

PROJECT :

R.B.L. NO. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

1/F TO UPPER ROOF FRAMING PLAN

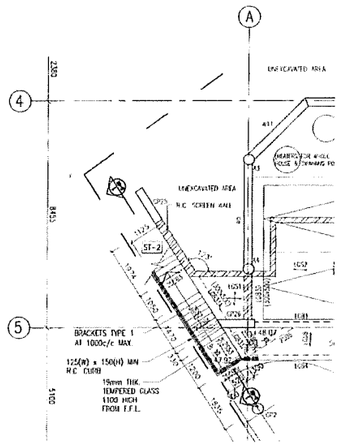
DRAWING NO. FP-03 REV. C

ARCHITECT :

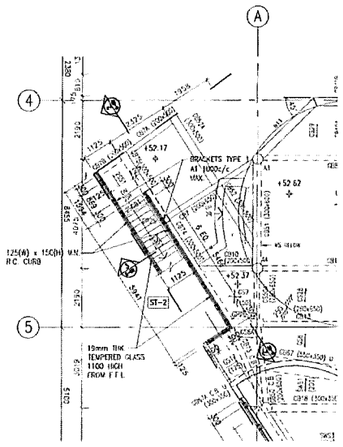
Prudent Design Limited

GEOTECHNICAL CONSULTANT :

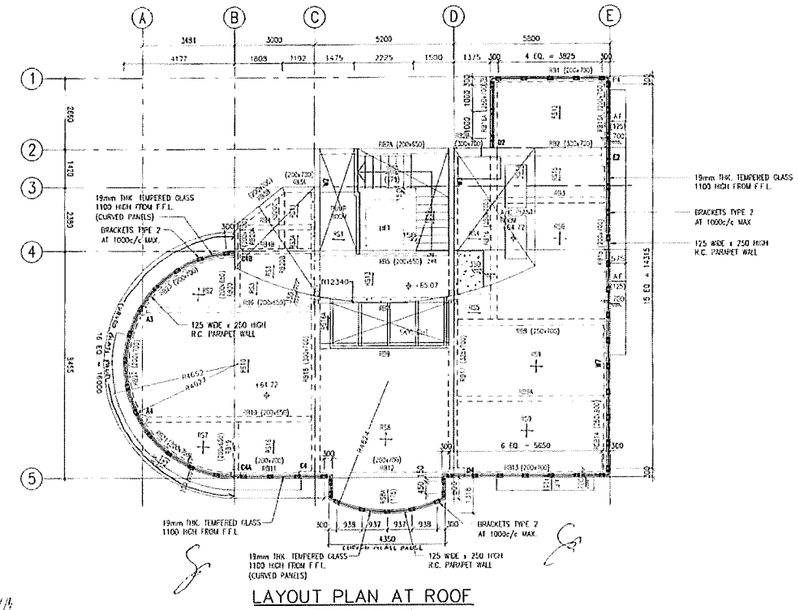
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
18/F, Good Harvest Commercial Building, TEL (852) 2722 8333
No. 618-619, Nathan Road, Kowloon, Hong Kong. FAX (852) 2722 2693



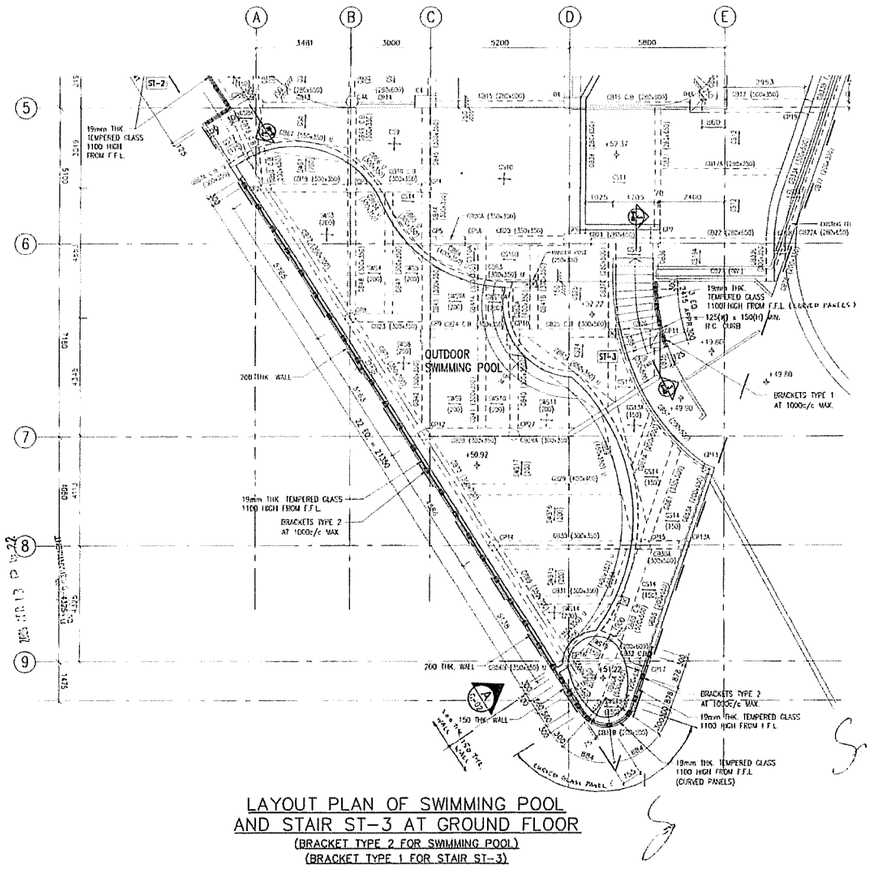
LAYOUT PLAN OF STAIRCASE ST-2
AT BASEMENT FLOOR
(BRACKET TYPE 1)



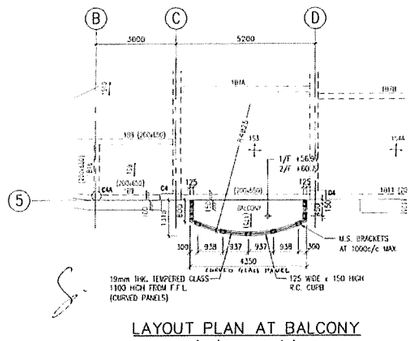
LAYOUT PLAN OF STAIRCASE ST-2
AT GROUND FLOOR
(BRACKET TYPE 1)



LAYOUT PLAN AT ROOF
(BRACKET TYPE 2)



LAYOUT PLAN OF SWIMMING POOL
AND STAIR ST-3 AT GROUND FLOOR
(BRACKET TYPE 2 FOR SWIMMING POOL)
(BRACKET TYPE 1 FOR STAIR ST-3)



LAYOUT PLAN AT BALCONY
(1/F & 2/F)
(BRACKET TYPE 2)

	LOADING CASES	ALLOWABLE LOAD	ACTUAL LOAD
BRACKET TYPE 1	CASE 1 - GROUND LOAD CASE 2 - WIND LOAD	58.9kN	46.2kN
BRACKET TYPE 2	CASE 1 - UNIFORMLY DISTRIBUTED LOAD CASE 2 - HORIZONTAL LINE LOAD CASE 3 - WIND LOAD	37.7kN	36.8 kN

THIS SUBMISSION IS FOR GLASS BALUSTRADE ONLY

LEGEND:
GLASS BALUSTRADE

Plan Approved

HUI KWOK HUNG
Chief Structural Engineer
for BUILDING AUTHORITY

- 7 JUN 2006

DESIGN LOAD FOR GLASS BALUSTRADE.

Loading for type 1 Bracket (Crowd load)	Live load	case 1	Line load 3.0kN/m at 1.1m top of railing
		case 2	U.D.L. 1.5kN/m²
		case 3	Pt load 1.5kN at any location
	Wind L	2.37kN/m² with C_f=2.0	
Loading for type 2 Bracket (Uniform load)	Live Load	case 1	Line load 0.75kN/m at 1.1m top of railing
		case 2	1.0 kN/m²
		case 3	Pt load 0.5kN at any location
	Wind L	2.37kN/m² with C_f=2.0	

GENERAL NOTE

NOTES:

1. ALL DIMENSIONS SHOWN ARE IN MILLIMETRES. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF FABRICATION AND CONSTRUCTION
2. DESIGN IN ACCORDANCE WITH THE FOLLOWING :
   - THE STRUCTURAL USE OF STEEL HONG KONG 1987.
   - THE STRUCTURAL USE OF CONCRETE HONG KONG 1987.
   - BS6262 GLAZING FOR BUILDINGS
   - BUILDINGS DEPARTMENT PNAP 235
   - BUILDING REGULATION CAP 123
   - CODE OF PRACTICE ON WIND EFFECTS IN HONG KONG 2004
3. ALL STRUCTURAL STEEL SHALL BE GRADE S-275 COMPLYING WITH BS 4360 UNLESS NOTED.
   PERMISSIBLE BENDING STRESS Fb = 152N/mm²
   PERMISSIBLE TENSILE STRESS Ft = 152N/mm²
   PERMISSIBLE SHEAR STRESS Fs = 112.5N/mm²
   PERMISSIBLE BEARING STRESS Fc = 187.5N/mm²
4. ALL WELDING SPECIFIED SHALL BE 6mm FILLET WELD ALL AROUND WITH PERMISSIBLE STRESS OF Fw=115N/mm² UNLESS OTHERWISE STATED
5. ALL WELDING COMPLIANT TO BS5135. WELDING ELECTRODES COMPLIANT TO BS639. ALL WELDS TO BE CARRIED OUT BY QUALIFIED WELDERS.
   APPLY TWO COATS OF ZINC PRIMER ON WELD AFFECTED AREA FOR SITE WELDING.
6. ALL GALVANISED STEEL SHALL BE HOT DIP GALVANIZED TO BS729. THICKNESS OF ZINC COATING SHALL BE MINIMUM 85um AND TO BE PROVIDED REGULAR MAINTENANCE.
7. ALL GLASS SHALL BE MONOLITHIC TEMPERED TO BS6262 & BS952
   PERMISSIBLE STRESS = 50N/mm²
   YIELD STRESS = 175N/mm²
   YOUNG'S MODULUS E = 70000N/mm
   MAX. DEFLECTION = 20mm OR L/60
8. DESIGN WIND PRESSURE
   DESIGN BASIC WIND PRESSURE = 2.37kN/m² (50m)
   PRESSURE COEFFICIENT = 2.0
   DESIGN WIND LOAD = 4.74kN/m²
9. ALL REINFORCEMENT TO BE HIGH TENSILE DEFORMED BARS, Fy=460N/mm² TO CS2 1995
10. CONCRETE GRADE FOR CURB : TO BE 30/20 and concrete cover to RE 25mm
11. JOINT FOR U-SHAPE CLIPS SHOULD BE LOCATED ON CAST-IN BRACKETS
12. ALL STRUCTURAL SEALANT TO BE DOW CORNING DC795 OR SIMILAR APPROVED.
    PERMISSIBLE STRESS = 0.138MPa
    MIN. BITE LENGTH = 15mm
    MIN. BITE THICKNESS = 6mm
13. QC TESTS OF GLASS TO BE COMPLIED WITH BS 6206.

Philip C. W. So
Civil & Geotechnical Engineer
Registered Consultant

14. THE REACTIVE ALKALI OF CONCRETE EXPRESSED AS THE EQ. SODIUM OXIDE PER CUBIC METRE OF CONCRETE SHOULD NOT EXCEED 3.0Kg WHEN DETERMINED IN ACCORDANCE WITH THE SPECIFICATION ITEMS GIVEN IN APP. A OF PRACTICE NOTE FOR APPROVED

REV.	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

ARCHITECTS
PRUDENT DESIGN LIMITED
誠藝建築設計有限公司
ROOM 1509, WEALTH COMMERCIAL CENTRE,
48 KWONG WA STREET, MONGKOK, HONG KONG
TEL 2499 2229 FAX 2374 4229

CIVIL & STRUCTURAL ENGINEER
PHILIP SO & ASSOCIATES LTD.
蘇志偉工程顧問有限公司

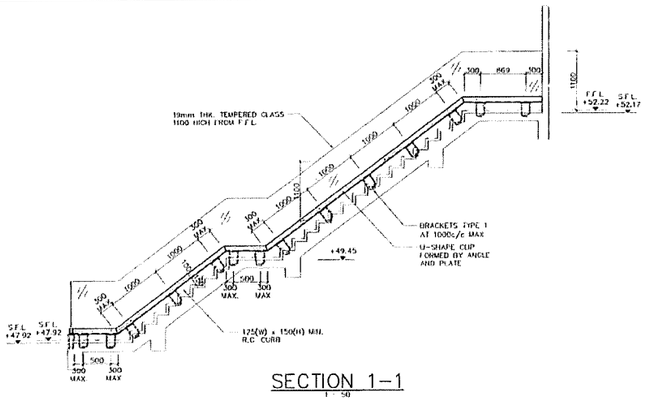
MAIN CONTRACTOR
HIGHTECH CONSTRUCTION CO. LTD.

PROJECT:
PROPOSED RESIDENTIAL RE-DEVELOPMENT
AT NO: 20-CARMEL ROAD, STANLEY,
HONG KONG R.B.L. 567

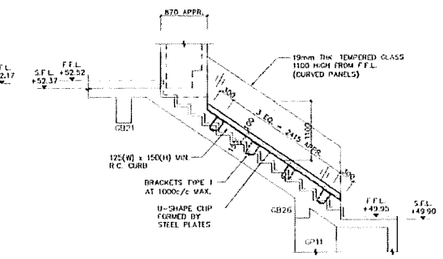
TITLE
LAYOUT PLAN OF GLASS BALUSTRADE

DATE	DEC. 2005	SCALE	AS SHOWN
DRAWN BY	WKL	DESIGNED BY	F.H.
CHECKED BY	N.N.	APPROVED BY	

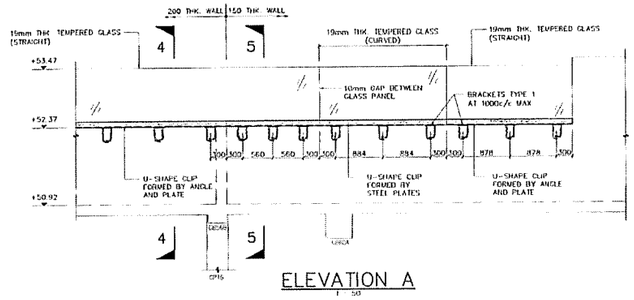
DRAWING NO. HT/GB/G-01 REV



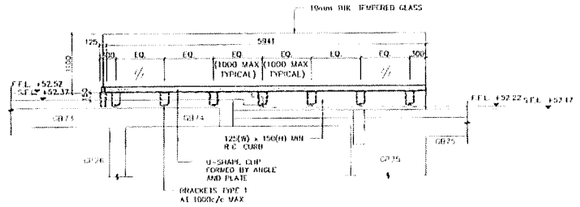
SECTION 1–1
1 : 50



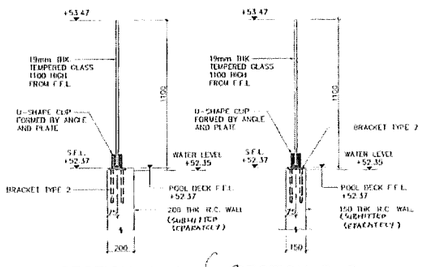
SECTION 3–3
1 : 50



ELEVATION A
1 : 50

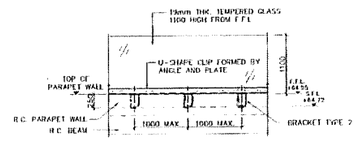


SECTION 2–2
1 : 50

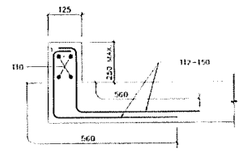


SECTION 4–4
1 : 20

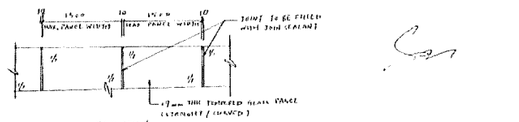
SECTION 5–5
1 : 20



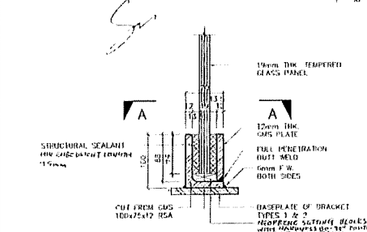
TYPICAL ELEVATION OF GLASS BALUSTRADE AT ROOF
1 : 20



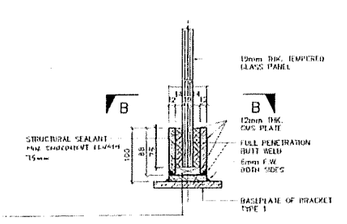
TYPICAL R.C. DETAILS FOR CURB/PARAPET WALL
1 : 10



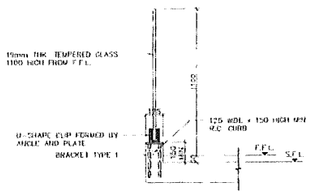
ELEVATION
TYPICAL JOINT DETAIL BETWEEN GLASS PANELS



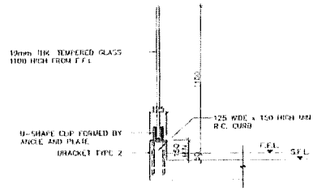
TYPICAL DETAILS OF U-SHAPE CLIP FOR STRAIGHT GLASS PANEL
1 : 5



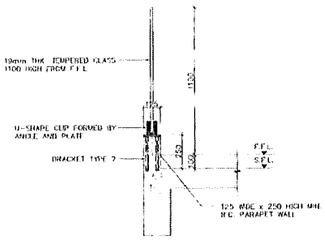
TYPICAL DETAILS OF U-SHAPE CLIP FOR CURVED GLASS PANEL
1 : 5



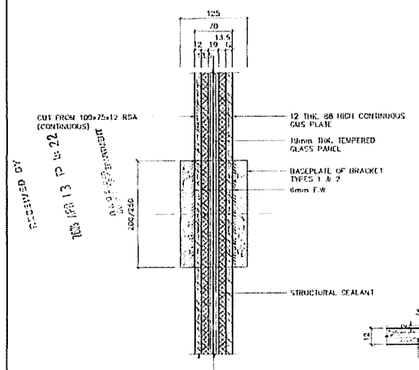
TYPICAL CROSS SECTION FOR STAIRS ST-2 & ST-3
1 : 20



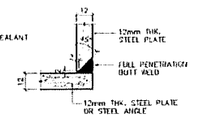
TYPICAL CROSS SECTION FOR BALCONY AT 1/F & 2/F
1 : 20



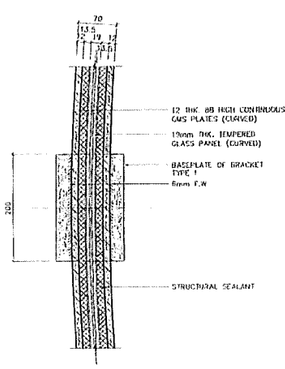
TYPICAL CROSS SECTION AT ROOF
1 : 20



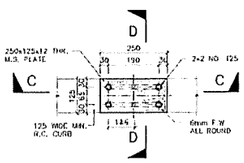
SECTION A–A
1 : 5



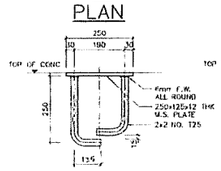
DETAILS OF FULL PENETRATION BUTT WELD



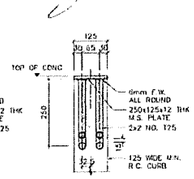
SECTION B–B
1 : 5



PLAN

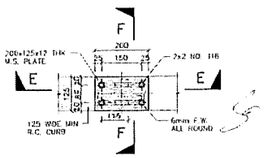


SECTION C–C

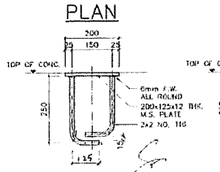


SECTION D–D

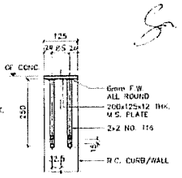
BRACKET TYPE 1
1 : 10



PLAN



SECTION E–E



SECTION F–F

BRACKET TYPE 2
1 : 10

Plan Approved
HUI KWOK HUNG
Chief Structural Engineer
for BUILDING AUTHORITY
- 7 JUN 2006

GENERAL NOTE

NOTES:

1. FOR GENERAL NOTES SEE DRG. NO. HT/GD/G-01

Philip C. W. So
Fellow (Civil & Geotechnical)
Registered Structural Engineer

REV	DATE	DESCRIPTION	DRAWN	CHECKED	APPROVED

ARCHITECTS
PRUDENT DESIGN LIMITED
誠藝建築設計有限公司
ROOM 1509, WEALTH COMMERCIAL CENTRE, 48 KWONG WA STREET, MONGKOK, HONG KONG
TEL 2499 2229 FAX 2374 4229

CIVIL & STRUCTURAL ENGINEER
PHILIP SO & ASSOCIATES LTD.
蘇志偉工程顧問有限公司

MAIN CONTRACTOR
HIGHTECH CONSTRUCTION CO. LTD.

PROJECT
PROPOSED RESIDENTIAL RE-DEVELOPMENT AT NO. 20 CARMEL ROAD, STANLEY, HONG KONG R.B.L. 567

TITLE
ELEVATIONS, SECTIONS AND DETAILS OF GLASS BALUSTRADE

DATE	MAR. 2006	SCALE	AS SHOWN
DRAWN BY	WKL	DESIGNED BY	F.H.
CHECKED BY	N.H.	APPROVED BY	

DRAWING NO. HT/GB/G-02 REV

NOTES:

1. DESIGN OF STRUCTURE IN ACCORDANCE WITH : -
   a. HONG KONG BUILDING (CONSTRUCTION) REGULATION 1990,
   b. STRUCTURAL USE OF STEEL : 1997.
2. ALL STRUCTURAL STEEL SHALL BE S 275 AND COMPLY WITH THE APPROPRIATE PROVISIONS OF BS5950 PART 2 AND ALL MILD STEEL (MS) TO BS 729. THE THICKNESS OF ZINC COATING SHALL BE MINIMUM 85 UM UNLESS OTHERWISE SPECIFIED. ANY DAMAGED SUFACE ARE COATED WITH AT LEAST TWO COATS OF ZINC RICH PAINT TO BS4652. THOROUGHLY CLEAN ALL AREAS AFFECTED BY WELDING WITH ABRASIVES OR MECHANICAL DRIVEN TOOLS BEFORE APPLYING THE ZINC RICH PAINT.
3. WELDING SHALL BE CARRIED OUT IN ACCORDANCE WITH B.S. 5135 AND ELECTRODES SHALL COMPLY WITH B.S.639. (All Round)
4. ALL WELDING TO BE 6mm CONTINUOUS FILLET WELD, UNLESS OTHERWISE STATED.
5. ALL WELDING SHALL BE CARRIED OUT BY QUALIFIED WELDER HAVING SATISFACTORY COMPLETED THE APPROPRIATE WELDING TESTS SPECIFIED IN B.S. 4871 PRIOR TO THE COMMENCEMENT OF STRUCTURAL STEELWORKS.
6. ALL STRUCTURAL STEELWORK INCLUDING BOLTED AND WELDED CONNECTION TO BE CLEANED OF LOOSE SCALE AND RUST.
7. DURING ERECTION, TEMPORARY PROPPING TO THE STEEL MEMBERS SHALL BE PROVIDED. WELDING SHALL NOT BE PERFORMED UNTIL PROPER ALIGNMENT OF STEEL MEMBERS HAS BEEN OBTAINED.
8. CERTIFICATION OF ORIGIN AND CHEMICAL COMPOSITION OF THE STRUCTURAL STEEL TO BE USED SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE COMMENCEMENT OF FABRICATON WORK.
9. A SPECIALIST TESTING FIRM SHALL BE ENGAGED FOR INSPECTION AND TESTING OF WELDED JOINT WHICH WILL INCLUDE:
   I) VISUAL INSPECTION OF ALL WELDED JOINTS.
   II) ULTRASONIC TESTS TO ALL FULL PENETRATION BUTT JOINTS.
   III) ULTRASONIC TESTS TO ALL OF FILLET WELD TO MEMBER WITH METAL THICKNESS EQUAL TO OR GREATER THAN 20mm.
   IV) MAGNETIC PARTICAL TEST TO 10% OR MORE OF FILLET WELDS IN OTHER CASES.
10. ALL PERMANENT STRUCTURAL STEEL SHALL BE COVERED BY 'FIRECUT FM-900' INTUMESCENT BASECOAT OR OTHER EQUIVALENT MATERIAL BD APPROVED FOR PROVIDING UPTO 1 HOUR F.R.P. (B.D. REF. No. - BD-FP(48))

Hp/A	THICKNESS
135	1.62mm

11. ALL ANCHOR BOLT TO BE HILTI BOLT. THE INSTALLATION MUST BE ACCORDING TO MANUFACTORY SPECIFICATION.

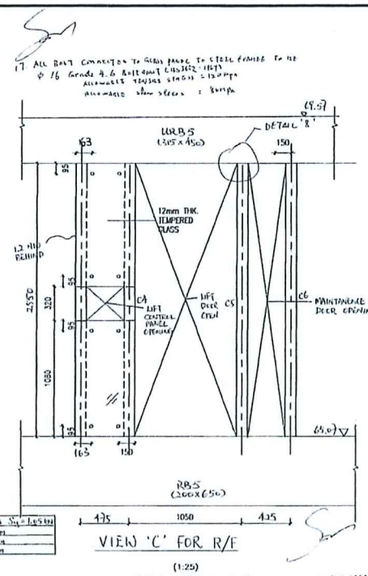
TYPE	RECOMMENDED LOAD	Tension - Characteristic Load
HSA-M6	2.4KN	3.6KN

DESIGN LOAD	V_d = 1.33kN, N_d = 1.65kN
Min Spacing	45mm
Min Edge Dist.	30mm
Min Thickness	40mm

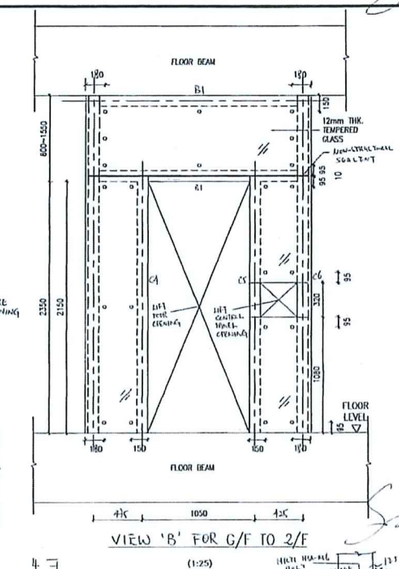
12. DESIGN LOAD FOR GLASS PANEL
    CASE 1 - 0.75KN/M² UNIFORMLY DISTRIBUTED LOAD TO BE APPLIED AT 1.1M HEIGHT
    CASE 2 -1.0KPA INFILL 1.1M HEIGHT ABOVE FLOOR
    CASE 3 -0.5KN APPLIED ON ANY PART OF THE INFILL.
13. ALL GLASS DESIGN TO BE COMPLIED WITH BS6262 AND BS 5152
    PERMISSIBLE FLEXURAL STRENGTH = 50 N/MM2
    TENSION STRESS : 12.1 N/mm²

16 Add: Allowable bearing stress for steel 190 N/mm²
15. Before installation of anchors, connection tests is provided first for drawing approval RE-MSW i.e. used to provide optimum design parameters installation anchor bolt
16. Q.C. Test for Glass to be complied with BS6206
    Heat soaking test for Glass to be complied with BS6262

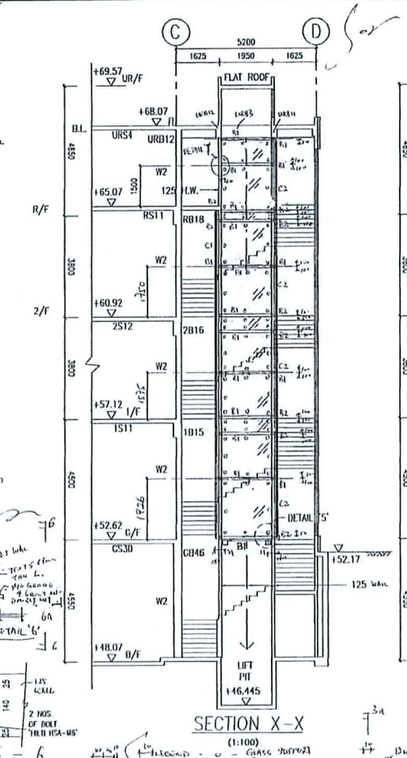
17 All Bolt Connection to steel plate to steel member to be ϕ 16 Grade 4.6 Ordinary Carbon Steel Hexagon Head Bolt and Nut to BS 4190 Alternate shear stress : 120mpa

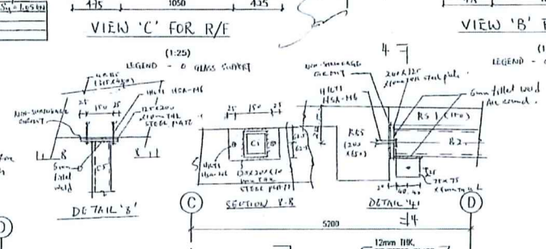


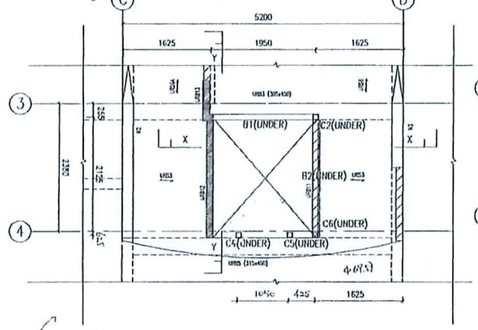
VIEW 'C' FOR R/F



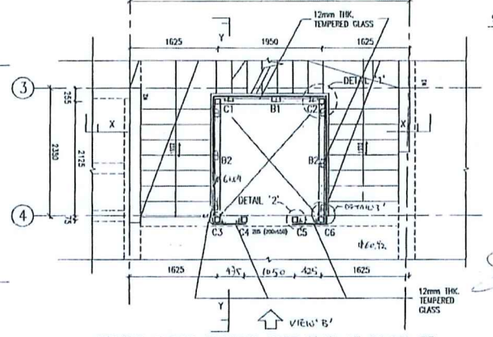
VIEW 'B' FOR G/F TO 2/F



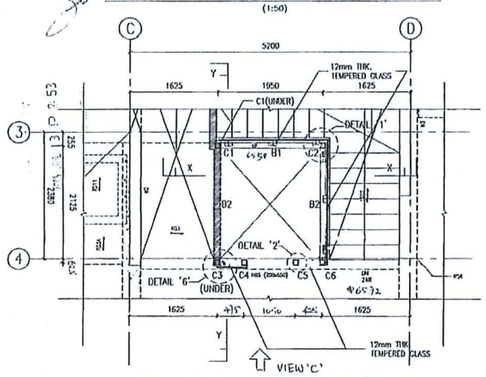




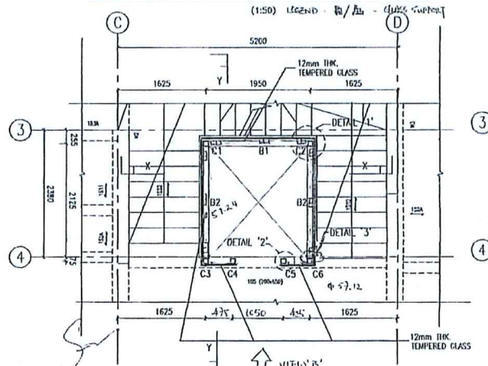
UPPER ROOF FRAMING PART PLAN AT 69.57 mPD
(1:50)



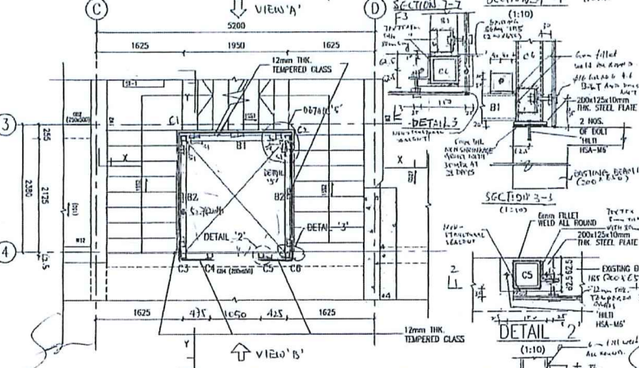
SECOND FLOOR FRAMING PART PLAN AT 60.92mPD
(1:50) LEGEND : ⊟ / ⊟ - GLASS SUPPORT



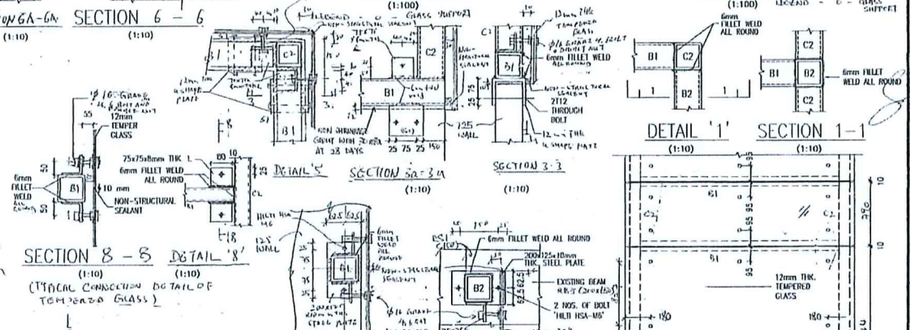
ROOF FRAMING PART PLAN AT 65.07mPD
(1:50) LEGEND : ⊟ / ⊟ - GLASS SUPPORT



FIRST FLOOR FRAMING PART PLAN AT 57.12 mPD
(1:50) LEGEND : ⊟ / ⊟ - GLASS SUPPORT



GROUND FLOOR FRAMING PART PLAN AT 52.62 mPD
(1:50) LEGEND : ⊟ / ⊟ - GLASS SUPPORT



(TYPICAL CONNECTION DETAILOF TEMPERED GLASS)

B.D. REF. 3/2001/04

LEGEND:
- TEMPERED GLASS
- SUPPORT SI
- GLASS SUPPORT

MEMBER SCHEDULE:

B1	100x100x8mm THK. SHS
B2	100x100x8mm THK. SHS
C1	100x100x8mm THK. SHS
C2	100x100x8mm THK. SHS
C3	100x100x8mm THK. SHS
C4	100x100x8mm THK. SHS
C5	100x100x8mm THK. SHS
CL	100x100x8mm THK. SHS

Plan Approved
M. L. CHENG
Chief Structural Engineer
for BUILDING AUTHORITY
7 - 8 SEP 2006

NEW DRAWING

REV.	DATE	DESCRIPTION

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE - DO NOT SCALE DRAWINGS - ALL DRAWING SPECIFICATIONS AND THEIR COPY RIGHT ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, DESIGNERS, AND SHALL BE RETURNED AT THE COMPLETION OF THE WORK. - THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS COUNTERSIGNED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	PP
CHECKED BY :	PCWS	SCALE :	1 : 100
APPROVED BY :		DATE :	12/07/2006

PROJECT :

R.B.L. NO. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

NOTES,
FRAMING PLANS, SECTIONS
AND DETAILS (LIFT SHAFT)

DRAWING NO. LS-01 REV.

ARCHITECT :

Prudent Design Limited

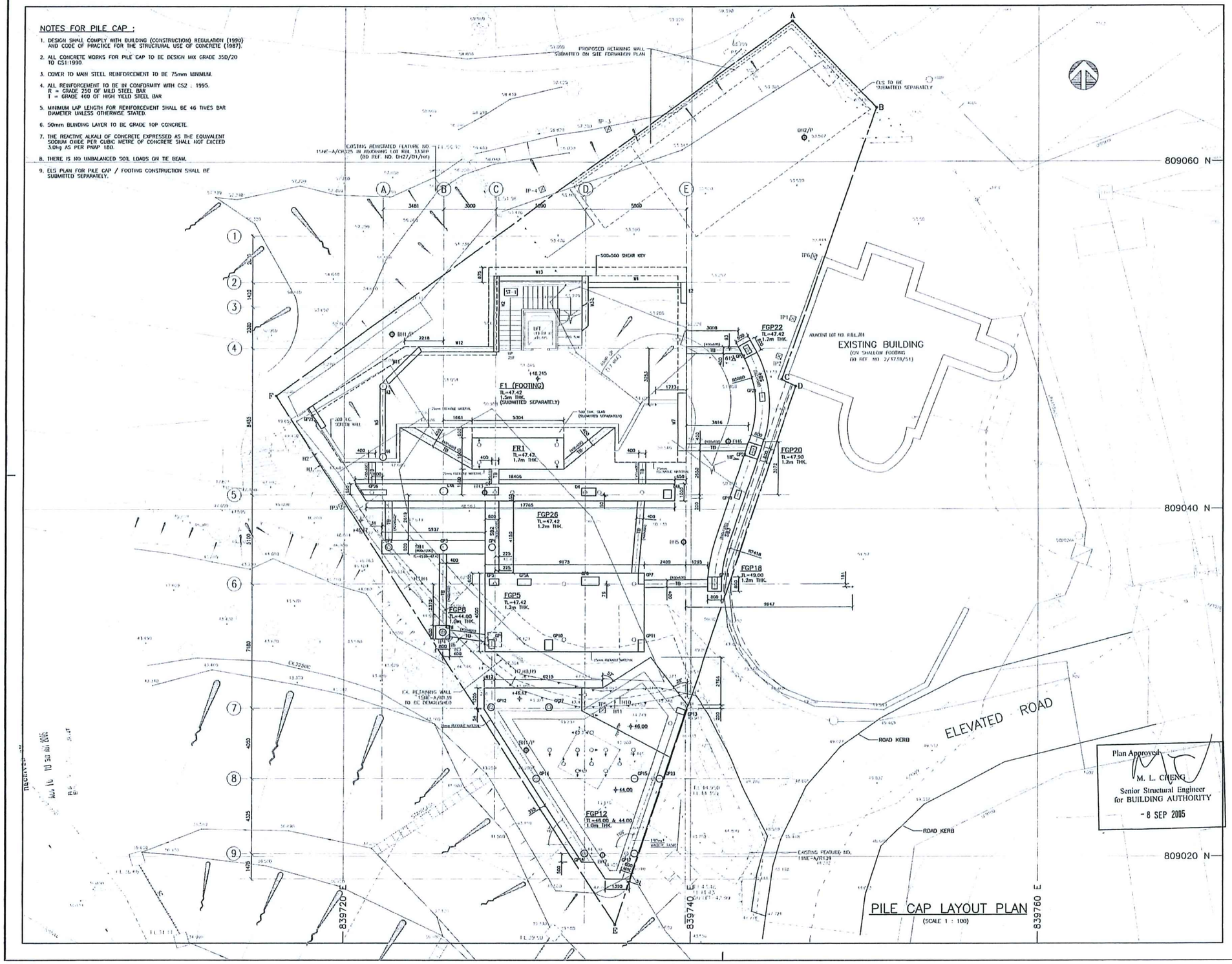
GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong.
TEL. (852) 2730 9333 FAX. (852) 2782 2683

3/2001/04
(10)
5/1

NOTES FOR PILE CAP :

1. DESIGN SHALL COMPLY WITH BUILDING (CONSTRUCTION) REGULATION (1990) AND CODE OF PRACTICE FOR THE STRUCTURAL USE OF CONCRETE (1987).
2. ALL CONCRETE WORKS FOR PILE CAP TO BE DESIGN MIX GRADE 35D/20 TO CS1:1990.
3. COVER TO MAIN STEEL REINFORCEMENT TO BE 75mm MINIMUM.
4. ALL REINFORCEMENT TO BE IN CONFORMITY WITH CS2 : 1995.
   R = GRADE 250 OF MILD STEEL BAR
   T = GRADE 460 OF HIGH YIELD STEEL BAR
5. MINIMUM LAP LENGTH FOR REINFORCEMENT SHALL BE 46 TIMES BAR DIAMETER UNLESS OTHERWISE STATED.
6. 50mm BLINDING LAYER TO BE GRADE 10P CONCRETE.
7. THE REACTIVE ALKALI OF CONCRETE EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METRE OF CONCRETE SHALL NOT EXCEED 3.0kg AS PER PNAP 180.
8. THERE IS NO UNBALANCED SOIL LOADS ON TIE BEAM.
9. ELS PLAN FOR PILE CAP / FOOTING CONSTRUCTION SHALL BE SUBMITTED SEPARATELY.



PILE CAP LAYOUT PLAN

(SCALE 1 : 100)

LEGEND :

- BOUNDARY LINE
- EXISTING RETAINING WALL
- EXISTING FREE STANDING WALL
- EXISTING FENCE
- EXISTING CATCHPIT
- EXISTING DRAINAGE (IL=INVERT LEVEL)
- MF – EXISTING SEWER DRAINAGE MANHOLE
- MH – EXISTING MANHOLE
- EXISTING SLOPE
- EXISTING TREE
- EXISTING GATE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABE DUCT
- BH1/P – EXISTING BOREHOLES
- H1 – EXISTING HORIZONTAL DRILLHOLES
- TP1 – EXISTING TRIAL PITS
- -51.84 – PROPOSED STRUCTURAL FLOOR LEVEL (mPD)
- TB – PROPOSED TIE BEAM (400×600mm)
- SB1 – PROPOSED STRAP BEAM
- FR1 – PROPOSED CAP MARK
- TL=45.97 – PROPOSED CAP TOP LEVEL (mPD)
- PROPOSED #219 MINIPILE (VERTICAL) (SUBMITTED SEPARATELY)
- PROPOSED #219 MINIPILE (RAKING 1 IN 4) (SUBMITTED SEPARATELY)

AMENDED PLAN

NOTE :

1. ALL PILING WORKS AND FOOTING (F1) ARE TO BE SUBMITTED SEPARATELY.
2. ALL CHECK POINTS, BUILDING AND TILTING MARKERS REFER TO ELS APPROVED PLAN.

REV.	DATE	DESCRIPTION
B	10/08/05	CAP GP12 REVISED
–	03/06/05	APPROVED BY B.D.
A	05/05/05	GENERAL REVISION
–	28/04/05	APPROVED BY B.D.

B.D. REF. 3/2001/04

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Eddy
CHECKED BY :	Eddy	SCALE :	1 : 100
APPROVED BY :		DATE :	21/03/2005

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE

PILE CAP LAYOUT PLAN

DRAWING NO.	REV.
PC-01	B

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.

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TEL (852) 2729 6333
FAX (852) 2732 2653

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- EXISTING RETAINING WALL
- EXISTING FREE STANDING WALL
- EXISTING FENCE
- EXISTING CATCHPIT
- EXISTING DRAINAGE (IL=INVERT LEVEL)
- MF – EXISTING SEWER DRAINAGE MANHOLE
- MH – EXISTING MANHOLE
- EXISTING SLOPE
- EXISTING TREE
- EXISTING GATE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABE DUCT
- BH1/P – EXISTING BOREHOLES
- HI – EXISTING HORIZONTAL DRILLHOLES
- TP1 – EXISTING TRIAL PITS
- 51.84 – PROPOSED FINISH FLOOR LEVEL (mPD)
- SM1 – SETTLEMENT MARKER (5 NOS.)
- TM1 – TILTING MARKER (1 NO.)
- BM1 – BUILDING MARKER (2 NOS.)
- INFERRED GRADE III ROCKHEAD CONTOUR
- PROPOSED PILE CAP/TIE BEAM/STRAP BEAM (SUBMITTED SEPARATELY)
- TB – PROPOSED TIE BEAM (SUBMITTED SEPARATELY)
- SB1 – PROPOSED STRAP BEAM (SUBMITTED SEPARATELY)
- ER1 – PROPOSED CAP MARK
- TL=45.97 – PROPOSED CAP TOP LEVEL (mPD)
- +P.C.G. – PROPOSED PILE C.G
- P1 – AS-BUILT #219 MINIPILE (VERTICAL)
- R1 – AS-BUILT #219 MINIPILE (RAKING 1 IN 4)
- +PD1 – PRE-DRILLING (6 NOS.) IMPRESSION PACKER TEST WAS CARRIED ON PERFORED HOLES PD1 & PD2
- +PD7 – ADDITIONAL PRE-DRILLING (1 NO.)
- +PDH-1 – POSTDRILL HOLE 2 NOS.

REV.	DATE	DESCRIPTION
AB	SEPT., 2005	AS-BUILT RECORD PLAN.
C	11/07/05	GENERAL REVISION
-	03/06/05	APPROVED BY B.D.
B	05/05/05	GENERAL REVISION
-	03/03/05	APPROVED BY B.D.
A	02/02/05	GENERAL REVISION
-	21/10/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	PJq
CHECKED BY :	EAL	SCALE :	1 : 100
APPROVED BY		DATE :	23/08/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

AS-BUILT RECORD FOR FOOTING PILING LAYOUT PLAN

DRAWING NO.	REV.
PL-01	AB

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
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15/F., Good Harvest Commercial Building, No. 245-247, Nathan Road, Kowloon, Hong Kong.
TEL (852) 2733 3233
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809060 N

809040 N

809020 N

839720 E

839740 E

839760 E

EXISTING BUILDING
(ON SHALLOW FOOTING)
(BD REF. NO. 2/3736/54)

ELEVATED ROAD

ROAD KERB

ROAD KERB

EXISTING RENOVATED FEATURE NO. 15NE-A/C325 IN ADJOINING LOT (RL 33.39mPD) (BD REF. NO. DH27/01/HK)

PROPOSED RETAINING WALL SUBMITTED ON SITE FORMATION PLANS

ELS TO BE SUBMITTED SEPARATELY

EXISTING RETAINING WALL 15NE-A/R119 TO BE DEMOLISHED

EXISTING MASONRY WALL TO BE DEMOLISHED (SEE SHEET CONTAINING DETAIL)

EXISTING FEATURE NO. 15NE-A/R119

EXISTING FEATURE NO. 15NE-A/R120

ADJACENT LOT NO. KBL 701

500x500 SHEAR KEY

F1 (FOOTING)
TL=47.42 + PDH-1
1.5m THK.
MASS CONCRETE BOTTOM LEVEL=42.34mPD MINIMUM

500 THK. SLAB

FOOTING C.C.
148.215

EGP22
TL=47.42
1.2m THK.

EGP20
TL=47.80
1.2m THK.

EGP26
TL=47.42
1.2m THK.

EGP18
TL=49.00
1.2m THK.

EGP5
TL=47.42
1.2m THK.

EGP8
TL=44.00
1.0m THK.

EGP12
TL=46.00 & 44.00
1.0m THK.

ER1
TL=47.42
1.7m THK.

+PDH2

+PDH1

SM1 SM2 SM3 SM4 SM5

TM1

BM1

BH1/P BH2/P

IP1 IP2 IP3 IP4

HI1 HI2 HI3 HI4

TP1

EV-2266C

1000mm WATER MAIN

203 R.C. RETAINING WALL

FOOTING C.C.

AMENDED PLAN
TYPE II WORKS
THE WORKS (FOR MINIPILE ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
- 5 AUG 2005

FOOTING/PILING LAYOUT PLAN (SCALE 1 : 100)

TOTAL NOS. OF #219 MINIPILE (VERTICAL) = 24 (P1~P23 & P17A)
TOTAL NOS. OF #219 MINIPILE (RAKING 1 IN 4) = 19 (R2, R3, R6, R7, R8 TO R22)

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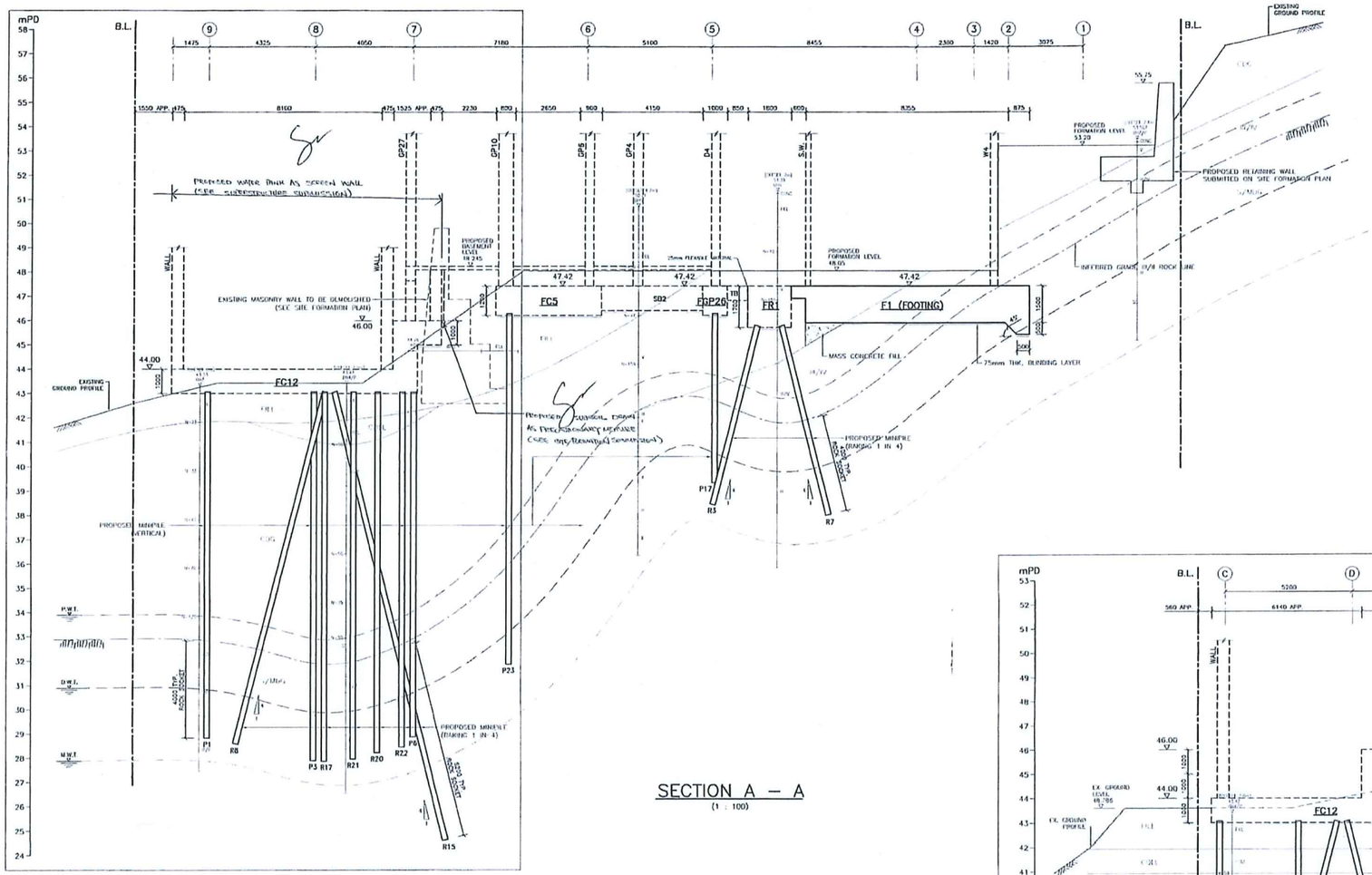
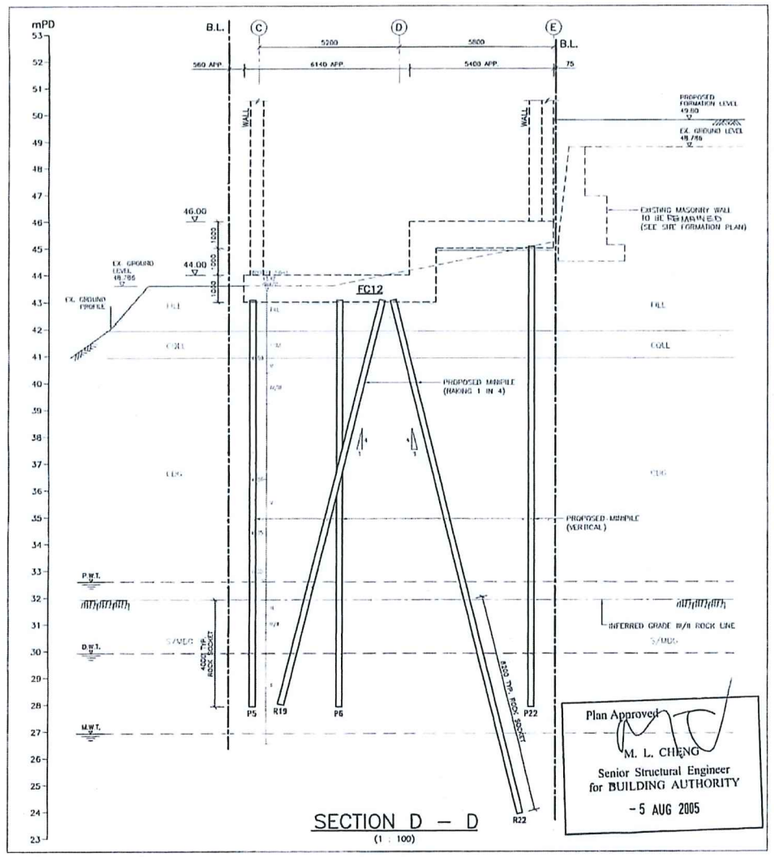
2005 SEP 15 P 2:42
BUILDING DEPARTMENT



SECTION A – A
(1 : 100)



SECTION D – D
(1 : 100)

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
– 5 AUG 2005

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- P.W.T. – PERCHED WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)

NOTE :

ALL PILE CAP, STRAP BEAM AND TIE BEAM ARE TO BE SUBMITTED SEPARATELY.

AMENDED PLAN

TYPE II WORKS

THE WORKS (FOR MINIPILE ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

REV.	DATE	DESCRIPTION
C	11/07/05	GENERAL REVISION
–	03/06/05	APPROVED BY B.D.
B	05/05/05	GENERAL REVISION
–	03/03/05	APPROVED BY B.D.
A	02/02/05	GENERAL REVISION
–	21/10/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	[illegible]
CHECKED BY :	[illegible]	SCALE :	1 : 100
APPROVED BY :		DATE :	23/08/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SECTION

(SHEET 1 OF 2)

DRAWING NO. PL-02 REV. C

ARCHITECT :

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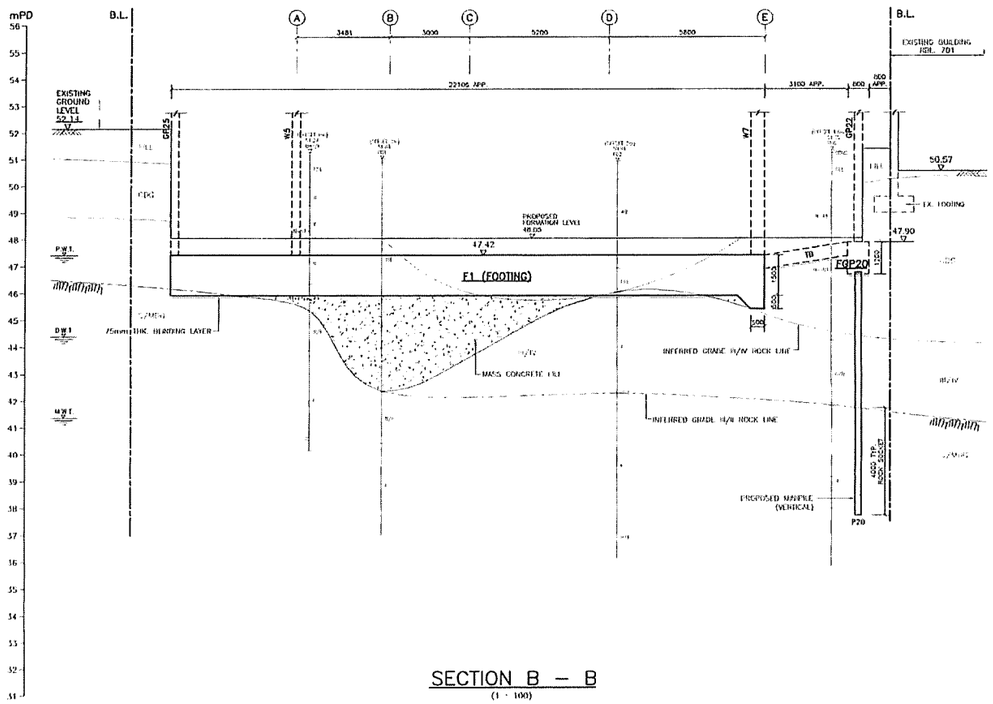
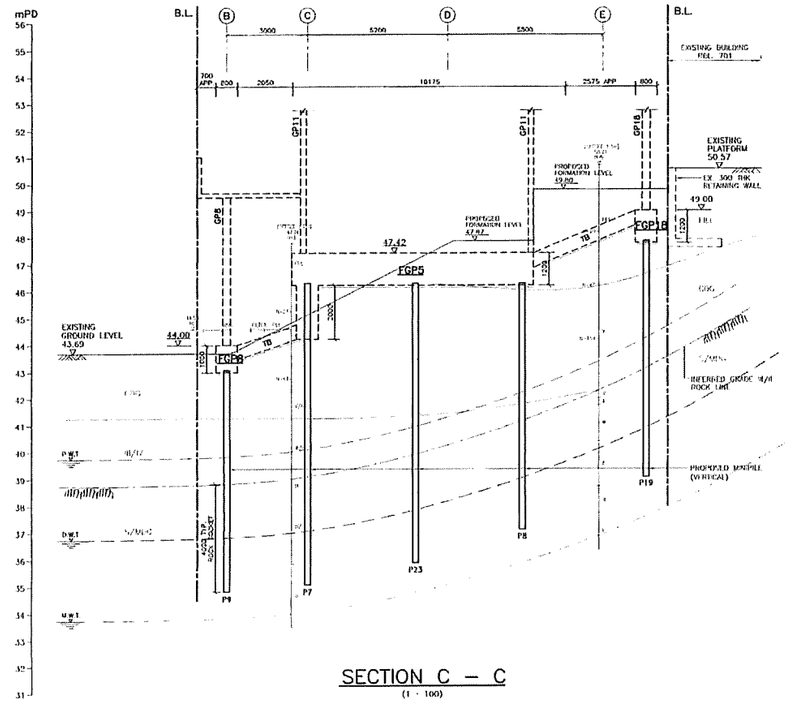


SECTION B – B
(1 : 100)



SECTION C – C
(1 : 100)

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Mar 9 4 24 PM 2005

AMENDED PLAN
TYPE II WORKS
THE WORKS (FOR MINIPILE ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

B.D. REF. 3/2001/04

LEGEND :

- BOUNDARY LINE
- D.W.T. – DESIGN WATER TABLE (mPD)
- P.W.T. – PERCHED WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)

NOTE :

ALL PILE CAP, STRAP BEAM AND TIE BEAM ARE TO BE SUBMITTED SEPARATELY

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
03 JUN 2005

REV.	DATE	DESCRIPTION
B	04/05/05	GENERAL REVISION
-	03/03/05	APPROVED BY B.D.
A	02/02/05	GENERAL REVISION
-	21/10/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY	Peng
CHECKED BY :	Phil	SCALE	1 : 100
APPROVED BY :		DATE :	23/08/2004

PROJECT
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE
SECTIONS
(SHEET 2 OF 2)

DRAWING NO. PL–03 REV. B

ARCHITECT
Prudent Design Limited

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B.D. REF. | 3/2001/04

GENERAL NOTES

1. DESIGN SHALL COMPLY WITH
BUILDING (CONSTRUCTION) REGULATION 1990
CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 1987
CODE OF PRACTICE FOR STRUCTURAL USE OF CONCRETE 1987

2. PILE CAPACITY SHALL AS FOLLOW:

LOAD CASE	COMPRESSION		TENSION	
	D+L+S	D+L+S+W	D-S	D-S-W
PILE CAPACITY (kN)	1360	1700	1359	1701

PROOF LOAD TEST FOR TENSION PILE WITH CAPACITY 1360kN SHALL BE CONDUCTED IN ACCORDING TO PNAP 66.

3. ALL PERMISSIBLE STRESSES TO BE INCREASED BY 25% FOR LOADING INDUCED BY WIND EFFECT.

4. PROPOSED TOP OF PILE CAP LEVEL TO BE AS SHOWN ON PILE SCHEDULE.

5. PROPOSED CONCRETE MIX FOR PILE CAP AND FOOTING TO BE GRADE 35/20. CONCRETE GRADE FOR MASS CONCRETE TO BE GRADE 10P

6. SUPERIMPOSED LOAD ON PILE CAP AND FOOTING TO BE 7.5 kPa AND 20 kPa AT LIFT PIT AREA

7. PILE CAP & SHORING DETAILS TO BE SUBMITTED SEPARATELY.

8. BACKFILL ON PILE CAP AND FOOTING TO BE 1.0m THICK MAXIMUM.

9. ALL STRUCTURAL STEEL TO BE GRADE 43 M.S. COMPLYING WITH BS4360 (FY =250MPA). ALL REINFORCEMENT TO BE HIGH YIELD DEFORMED BAR, DENOTED BY 'T' AND COMPLY WITH CS2:1995

10. ALL GROUTING TO BE NON-SHRINK GROUT WITH MIN. CUBE STRENGTH OF 30MPa AND COMPLY WITH CS1:1990.

11. ALL LEVEL ARE REFEREED TO PRINCIPAL DATUM (P.D.) OF HONG KONG METER.

12. ALL DIMENSIONS ARE IN METRIC UNITS.

13. ALL PILES WERE SOCKETED IN GRADE III ROCK OR BETTER WITH AT LEAST 80% TOTAL CORE RECOVERY. (WITH POINT LOAD INDEX NOT LESS THAN 1)

14. ALL FOOTING SHALL BE RESTED ON GRADE III/IV ROCK (WITH TOTAL CORE RECOVERY NOT LESS THAN 50%) MASS WITH MINIMUM ALLOWABLE GROUND BEARING PRESSURE OF 1000 kPa (WITHOUT WIND) AND 1250 kPa (WITH WIND)

15. CONCRETE COVER TO REINFORCEMENT TO BE 50mm.

16. ALL LATERAL LOAD TO BE RESISTED BY RAKING PILES OR FOOTING'S BASE FRICTION.

17. PREDRILLING AT LEAST 5m FROM TOP OF GRADE III OR BETTER ROCK SHOULD BE CARRIED OUT FOR ALL PILE WORKS TO VERIFY THE FOUNDING MATERIALS AND DESIGN FOUNDING LEVEL. THE PREDRILLING RECORDS FOR ALL PILES SHALL BE SUBMITTED BY THE AP/RSE TO THE BUILDINGS DEPARTMENT.

18. THE PREDRILLING LAYOUT AND LOCATION SHALL BE AGREED BY THE AP/RSE AND PREDRILLING WORKS SHOULD BE CARRIED OUT IN SUCH A MANNER THAT THE DISTANCE BETWEEN THE PROPOSED PREDRILLHOLE AND THE PILES WILL NOT EXCEED 5m.

19. POST DRILL BOREHOLE (AT LEAST 2 NOS.) SHALL BE SUNK TO VERIFY THE ROCK HEAD PROFILE. THE RECORD SHALL BE SUBMITTED BY THE AP/RSE TO THE BUILDINGS DEPARTMENT.

20. ALL PREDRILLING AND POST DRILLING BOREHOLE SHOULD COMPLY WITH PNAP66.

21. THE REACTIVE ALKALI OF CONCRETE EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METRE OF CONCRETE, SHOULD NOT EXCEED 3.0kg WHEN DETERMINED IN ACCORDANCE WITH THE SPECIFICATION GIVEN IN APPENDIX A OF PNAP 180.

22. ALL MINIPILES WERE 4 NOS. T50 HOT-ROLLED HIGH TENSILE STEEL BARS IN NON-SHRINK CEMENT GROUT WITH A MAXIMUM WATER/CEMENT RATIO OF 0.45.

23. NO GROUNDWATER DRAWDOWN SHALL BE PERMITTED DURING MINIPILE INSTALLATION.

24. THE ESTIMATED FOUNDING LEVELS OF THE MINIPILES SHOWN ON THE PLAN ARE TENTATIVE ONLY. ACTUAL FOUNDING LEVELS SHALL BE DETERMINED ON SITE.

25. DESIGN GROUND WATER LEVEL TO BE 2m BELOW GRADE III ROCK HEAD LEVEL.

26. DEVIATION OF PILE FROM SPECIFIED POSITION SHALL NOT EXCEEDS 75mm IN ANY DIRECTIONS ON PLAN. THE DEVIATION OF INCLINATION FOR VERTICAL AND RAKING PILE SHALL NOT EXCEEDS 1 IN 75 AND 1 IN 25 RESPECTIVELY.

27. PRIOR TO CONSENT APPLICATION FOR COMMENCEMENT OF THE MIN-PILE WORKS AN ASSESSMENT REPORT ON THE STABILITY OF THE EXISTING/ FORMED SLOPES DUE TO THE EFFECT OF THE TEMPORARY CONSTRUCTION STAGING AND CONSTRUCTION PLANTS SHALL BE SUBMITTED TO THE SATISFACTION OF BD.

28. PRIOR TO CONSENT APPLICATION FOR CONSTRUCTION OF THE RAFT AND PILE CAP WORKS, AN ELS PLAN SHALL BE SUBMITTED TO THE SATISFACTION OF BD.

29. PRIOR TO BA14 APPLICATION FOR THE FOUNDATION WORKS, AN ASSESSMENT BASED ON THE AS-BUILT CONDITIONS OF THE FOOTING F1 TO CONFIRM THAT THERE IS NO ADVERSE EFFECT ON THE STABILITY OF THE SLOPES SHALL BE SUBMITTED TO THE SATISFACTION OF BD AND IF FOUND NECESSARY, SUBMIT UPGRADING PROPOSAL FOR THE SLOPES CONCERNED.

PRECAUTIONARY MONITORING PROGRAMME

1. SETTLEMENT CHECK POINTS SHALL BE INSTALLED AT LOCATIONS AS SHOWN IN THE DRAWING. INITIAL READINGS SHALL BE TAKEN PRIOR TO COMMENCEMENT OF CONTRACTION WORKS AND SUBMITTED TO THE BUILDING AUTHORITY.

2. THE LEVELING OF SETTLEMENT CHECK POINTS AND MEASUREMENT OF GROUND WATER LEVEL IN PIEZOMETER SHALL BE CARRIED OUT ON DAILY BASIS DURING THE PROGRESS OF WORK.

3. ALL MONITORING RECORDS SHALL BE REVIEWED AND ANALYSED BY THE ENGINEER. SHOULD SIGNS OF UNDUE GROUND SETTLEMENT, TILTING OR DRAW DOWN OF GROUND WATER LEVEL BE REVEALED, THE WORK AT THE AFFECTED AREA SHALL BE CEASED. BUILDING AUTHORITY SHALL BE NOTIFIED IMMEDIATELY AND NECESSARY REMEDIAL MEASURES SHALL BE SUBMITTED AND IMPLEMENTED TO THE SATISFACTION OF THE BUILDING AUTHORITY.

4. ALL WORKS SHALL BE CEASED IF DAMAGES TO EXISTING ADJACENT STRUCTURES, ROAD AND UTILITIES APPEAR TO OCCUR. THE AUTHORISED PERSON/REGISTERED STRUCTURAL ENGINEER AND BUILDING AUTHORITY SHALL BE INFORMED IMMEDIATELY. SUITABLE REMEDIAL MEASURES SHALL THEN BE SUBMITTED AND IMPLEMENTED.

5. THE MONITORING RECORDS SHALL BE SUBMITTED TO BUILDING AUTHORITY ON BI-WEEKLY

6. ONE SET OF MONITORING RECORDS SHALL ALWAYS BE KEPT ON SITE FOR INSPECTION.

7. DAMAGED INSTRUMENTS SHALL BE REINSTATED IMMEDIATELY TO THE SATISFACTION OF THE ENGINEER.

MINIPILE INSTALLATION PROCEDURES

1. SURVEY AND ESTABLISH THE CENTERLINE OF THE MINIPILE, SET UP FOR DRILLING AND CONNECT DISCHARGE PIPES TO THE APPROVAL OF ENGINEER PRIOR TO THE START OF WORK. THE CONTRACTOR SEARCHED FOR ANY DEVIATE WHERE NECESSARY ALL UTILITIES, PIPES, CABLES AND ANY SERVICES WITHIN A RADIUS OF 600mm OF THE CENTERLINE OF THE MINIPILE. THE CONTRACTOR DEMOLISHED WHERE NECESSARY THE EXISTING SLABS LOCALLY FOR PILING INSTALLATION.

2. A HOLE OF MINIMUM DIAMETER 235MM WAS DRILLED FROM GROUND LEVEL TO ROCKHEAD USING THE ODEX METHOD.

3. A GRADE 43 MILD STEEL CASING FOLLOWTHE DRILL BIT AND TERMINATE AT ROCKHEAD. THE CASING REMAIN IN THE COMPLETED MINIPILE AND WAS NOT WITHDRAWN AT ANY STAGE OF CONSTRUCTION. THE CASING OUTSIDE DIAMETER SHALL BE 219mm. THE WALL THICKNESS WAS 5mm MINIMUM.

4. THE ROCK SOCKET WAS FORMED BY REAMING THE DRILLHOLE IN ROCK TO A DIAMETER OF 190mm.

5. THE MINIMUM DIAMETER OF MINIPILE IN THE ROCK SOCKET WAS 190mm.

6. AFTER REAMING OF THE ROCK SOCKET TO THE REQUIRED DEPTH THE HOLE WAS FLUSHED WITH FOAM OR COMPRESSED AIR TO REMOVE ANY DEBRIS.

7. DURING DRILLING OR FLUSHING, THE DISCHARGE OF EXCAVATED MATERIAL FROM THE HOLE WAS PREVENTED FROM SPILLING ONTO EXISTING SLOPE OR DISCHARGING DIRECTLY TO THE EXISTING DRAINAGE SYSTEM. A DISCHARGE COWLING OR COVER WAS FIXED TO THE TOP OF THE CASING AND CONNECTED TO A PIPE OR HOSE WHICH DRAWTHE SPOIL OR SLURRY TO A SETTING TANK OF FILTERING DEVICE TO BE LOCATED AND DESIGNED BY THE CONTRACTOR AND APPROVED BY THE ENGINEER.

8. GROUT TUBES WERE TIED TO THE WHOLE LENGTH OF THE REINFORCEMENT WHICH WAS CONSISTOF 4 NO. 150 HOT-ROLLED HIGH YIELD STEEL BARS. CLEARANCE BETWEEN THE BARS WERE ACHIEVED BY SPACERS AND CONTINUITY OF REINFORCEMENT WERE ACHIEVED BY USING COUPLERS IN A STAGGERED ARRANGEMENT ALONG THE FULL LENGTH OF THE PILE.

9. NON-SHRINKAGE CEMENT GROUT (WITH MINIMUM STRENGTH OF 30MPa) WAS PLACED USING TREMIE METHOD THROUGH THE GROUT TUBES INTO THE FULL LENGTH OF THE HOLE AT PRESSURE BETWEEN 2 AND 4 BARS, UNTIL GROUT SPILL OUT FROM TOP WITH UNIFORM CONSISTENCY.

10. ALL COUPLERS IN THE MINIPILES WERE "BAR TEC" WERE INSTALLED TO THE MANUFACTURER'S SPECIFICATION. THE WORKS WERE CARRIED OUT BY TRAINED TECHNICAL STAFF FROM THE MANUFACTURER COMPLY.

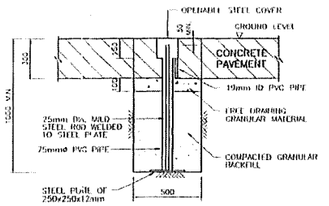
11. THE REACTIVE ANKALI OF GROUT EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METRE OF GROUT WAS NOT EXCEEDED 0.6g/m³ . (THE ACCORDING TO PNAP 180)

12. THE CONTRACTOR CHECKSAND MONITORSTHE VERTICALITY, INCLINATION AND ALIGNMENT OF PILE DURING INSTALLATION. PAJARI INSTRUMENT WAS ADOPTED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATION.

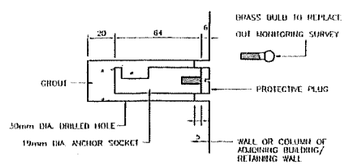
13. DESIGN BOND STRENGTH BETWEEN GROUT AND REINFORCEMENT TO BE 1.0 MPa WITH REDUCTION FACTOR OF 0.8 FOR GROUTING UNDER WATER. DESIGN BOND STRENGTH BETWEEN GROUT AND ROCK TO BE 0.7 MPa FOR COMPRESSION AND 0.35 MPa FOR TENSION.

14. WELDING WAS CARRIED OUT IN ACCORDANCE WITH BS5135 AND ELECTRODES COMPLY WITH BS639.

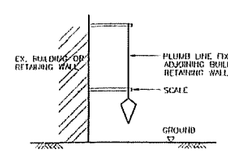
15. ALL WELDS WERE 8mm FILLET WELD UNLESS OTHERWISE STATED AND WERE CARRIED OUT BY QUALIFIED WELDERS.



SETTLEMENT MONITORING STATION ON PAVEMENT
(FOR INFORMATION ONLY)
(N.T.S.)



TYPICAL INSTALLATION OF BUILDING MONITORING POINT
(FOR INFORMATION ONLY)
(N.T.S.)



TILTING POINT DETAIL
(FOR INFORMATION ONLY)
(N.T.S.)

AS-BUILT PILE SCHEDULE FOR RAKING PILE (FOR FUTURE EXTENSION)

PILE NO	CUT-OFF LEVEL (mPD)	TENTATIVE: ROCKHEAD LEVEL (mPD)	TENTATIVE: ROCK SOCKET LENGTH (m)	TENTATIVE: MIN PILE LENGTH (m)	TENTATIVE: PILE LENGTH (m)	AS-BUILT: ROCKHEAD LEVEL (mPD)	AS-BUILT: ROCK SOCKET LENGTH (m)	AS-BUILT: FOUNDING LEVEL (mPD)	AS-BUILT: PILE LENGTH (m)	PROPOSED CO-ORDINATES: EASTING (m)	PROPOSED CO-ORDINATES: NORTHING (m)	AS-BUILT CO-ORDINATES: EASTING (m)	AS-BUILT CO-ORDINATES: NORTHING (m)	OFFSET ALONG EASTERN DIRECTION (mm)	OFFSET ALONG NORTHERN DIRECTION (mm)	RESULTANT DEVIATION (mm)
R2	+47.370	+39.000	4.000	10.500	13.318	+38.978	4.104	34.455	13.304	839727.756	809042.728	839727.758	809042.728	2	10	10
R3	+47.370	+39.500	4.000	10.500	12.832	+39.406	4.234	34.670	13.091	839732.260	809042.728	839732.260	809042.718	9	-10	13
R6	+47.370	+42.000	4.000	10.500	10.500	+42.000	5.000	35.183	12.683	839727.756	809043.728	839727.715	809043.735	-41	7	42
R7	+47.370	+42.000	4.000	10.500	10.500	+42.078	5.083	35.158	12.586	839732.260	809043.728	839732.251	809043.714	-9	-14	17

NOTES: ALL RAKING PILE TO BE 1 IN 4 RAKED
SUBMERGED UNIT WEIGHT OF ROCK TO BE 16.2kN/m³
PRESUMED LATERAL LOAD ON PILE : SOIL LOAD = 500kN IN - Y DIRECTION
(AT CENTRE OF CAP FR1) WIND LOAD = 120kN IN ± Y DIRECTION
TENTATIVE PILE LENGTH TO BE THE LENGTH FROM CUT OFF LEVEL TO PILE TIP
SOIL IS CONSIDERED AS LIVE LOAD AND WILL NOT BE COUNTED FOR COMPRESSION WHEN CHECKING UPLIFT
i.e. D-S = D) IF SOIL LOAD IS +ve
D-2S = D)
D-S = D-S) IF SOIL LOAD IS -ve
D-2S = D-2S)

AS-BUILT PILE SCHEDULE

PILE NO	CUT-OFF LEVEL (mPD)	TENTATIVE: ROCKHEAD LEVEL (mPD)	TENTATIVE: ROCK SOCKET LENGTH (m)	TENTATIVE: MIN PILE LENGTH (m)	TENTATIVE: PILE LENGTH (m)	AS-BUILT: ROCKHEAD LEVEL (mPD)	AS-BUILT: ROCK SOCKET LENGTH (m)	AS-BUILT: FOUNDING LEVEL (mPD)	AS-BUILT: PILE LENGTH (m)	PROPOSED CO-ORDINATES: EASTING (m)	PROPOSED CO-ORDINATES: NORTHING (m)	AS-BUILT CO-ORDINATES: EASTING (m)	AS-BUILT CO-ORDINATES: NORTHING (m)	OFFSET ALONG EASTERN DIRECTION (mm)	OFFSET ALONG NORTHERN DIRECTION (mm)	RESULTANT DEVIATION (mm)
P1	+43.200	+32.100	4.000	3.000	15.650	+30.665	4.230	+25.885	17.315	839733.665	809020.173	839733.937	809020.188	42	15	44
P2	+43.200	+32.900	4.000	3.000	14.850	+32.525	4.140	+27.535	16.265	839736.295	809020.173	839736.287	809020.189	-8	16	18
P3	+43.200	+31.500	4.000	3.000	16.250	+29.810	4.230	+25.030	18.170	839731.121	809024.495	839731.112	809024.512	-9	14	17
P4	+43.200	+33.600	4.000	3.000	14.150	+31.658	4.240	+27.878	16.322	839737.821	809024.495	839737.854	809024.455	33	-43	54
P5	+43.200	+33.100	4.000	3.000	14.650	+30.875	4.250	+26.075	17.125	839729.483	809028.611	839728.482	809028.616	-1	5	5
P6	+43.200	+34.000	4.000	3.000	13.750	+32.316	4.160	+27.600	15.600	839731.845	809028.611	839731.872	809028.648	27	37	46
P7	+44.500	+34.500	4.000	3.000	14.550	+34.150	4.250	+29.370	15.130	839728.696	809032.528	839728.728	809032.547	33	19	38
P8	+46.420	+36.200	4.000	3.000	12.770	+35.938	4.260	+31.108	15.312	839736.095	809032.529	839736.725	809032.554	30	26	40
P9	+43.200	+38.400	4.000	3.000	12.350	+35.387	4.160	+30.627	12.573	839725.665	809032.966	839725.680	809032.978	-15	12	27
P10	+46.420	+35.200	4.000	3.000	14.770	+35.122	4.140	+30.422	15.998	839728.695	809035.726	839728.684	809035.719	-11	-9	14
P11	+46.420	+38.800	4.000	3.000	12.970	+38.065	4.150	+34.365	15.035	839732.695	809035.728	839732.688	809035.709	-7	-19	20
P12	+46.420	+39.800	4.000	3.000	11.170	+37.143	4.170	+32.423	13.997	839736.095	809035.728	839736.668	809035.629	-26	-29	33
P13	+44.050	+37.500	4.000	3.000	10.750	+35.647	4.170	+31.167	12.833	839722.583	809037.809	839722.606	809037.834	22	25	33
P14	+46.420	+39.500	4.000	3.000	11.470	+38.983	4.240	+34.183	12.227	839721.614	809040.978	839721.620	809040.987	6	9	11
P15	+46.420	+40.000	4.000	3.000	10.970	+39.927	4.160	+35.217	11.205	839728.695	809040.978	839728.718	809041.007	23	29	37
P16	+46.420	+40.700	4.000	3.000	10.270	+40.699	4.186	+35.958	10.451	839729.898	809040.978	839729.953	809040.970	-15	-8	17
P17	+46.420	+40.500	4.000	3.000	10.470	+40.478	4.088	+35.848	10.572	839733.695	809040.978	839733.687	809040.969	-8	11	14
P17A	+46.420	+41.200	4.000	3.000	9.370	+40.855	4.150	+36.155	10.265	839734.695	809040.978	839734.681	809040.967	-14	-11	18
P18	+46.420	+41.200	4.000	3.000	9.970	+41.576	4.330	+36.956	9.724	839737.145	809040.978	839737.161	809040.985	16	7	17
P19	+48.000	+40.500	4.000	3.000	12.050	+39.949	4.220	+35.179	12.830	839741.330	809035.728	839741.317	809035.765	-13	37	39
P20	+48.000	+41.000	4.000	3.000	10.150	+41.264	4.200	+36.514	10.386	839743.564	809043.394	839743.572	809043.401	8	7	10
P21	+46.420	+41.200	4.000	3.000	9.770	+41.209	4.305	+36.354	10.066	839743.243	809049.218	839743.219	809049.246	-27	30	40
P22	+45.250	+39.300	4.000	3.000	13.450	+37.270	4.190	+32.320	17.070	839738.815	809027.091	839738.804	809027.687	49	-4	49
P23	+46.420	+38.200	4.000	3.000	14.770	+34.167	4.240	+29.377	17.043	839732.695	809032.528	839732.659	809032.542	-36	14	39
R8	+43.200	+32.100	4.000	3.000	15.992	+31.947	4.283	+27.258	16.433	839733.455	809024.948	839733.480	809024.940	-15	-8	17
R9	+43.200	+32.100	4.000	3.000	15.992	+31.970	4.350	+27.218	16.476	839735.095	809024.948	839735.055	809024.945	-12	-3	12
R10	+43.200	+32.900	4.000	3.000	15.579	+32.318	4.265	+27.607	15.910	839731.895	809028.148	839731.881	809028.139	-4	-9	10
R11	+43.200	+32.500	4.000	3.000	15.579	+32.471	4.238	+27.807	15.887	839733.455	809028.148	839733.480	809028.147	15	-1	15
R12	+43.200	+32.500	4.000	3.000	15.579	+32.320	4.263	+27.646	17.323	839735.095	809028.148	839735.101	809028.145	6	-3	7
R13	+43.200	+32.000	4.000	3.000	15.879	+32.235	4.264	+27.545	18.255	839738.695	809028.145	839738.690	809028.149	-5	1	5
R14	+45.925	+35.000	8.200	17.400	17.950	+34.637	8.538	+25.820	17.915	839732.695	809025.348	839732.694	809025.347	-1	-0	0
R15	+45.925	+35.000	8.200	17.400	17.950	+34.580	8.669	+25.738	21.321	839734.295	809025.348	839734.307	809025.337	12	-11	16
R16	+45.925	+35.000	8.200	17.400	17.950	+34.855	8.884	+25.918	21.135	839735.895	809025.348	839735.892	809025.351	-3	3	4
R17	+43.200	+31.500	4.000	0.000	18.610	+31.350	4.220	+26.714	20.312	839733.895	809024.948	839733.881	809024.946	-14	-2	14
R18	+43.200	+32.000	4.000	0.000	18.695	+31.998	4.228	+27.302	17.232	839733.455	809027.148	839733.568	809027.139	10	-9	13
R19	+43.200	+32.000	4.000	0.000	18.695	+31.850	4.191	+27.251	19.259	839733.895	809029.348	839733.892	809029.355	-3	7	8
R20	+43.200	+32.000	4.000	0.000	18.695	+31.918	4.284	+27.228	19.763	839734.295	809027.148	839734.290	809027.145	-5	-3	6
R21	+43.925	+35.000	8.200	18.450	20.011	+32.949	8.405	+24.160	22.945	839734.295	809029.148	839734.310	809028.148	15	-2	16
R22	+43.925	+35.000	8.200	18.450	20.011	+32.781	8.418	+24.081	23.027	839734.295	809028.148	839734.279	809028.145	-16	-3	16

NOTES: SOIL IS CONSIDERED AS LIVE LOAD AND WILL NOT BE COUNTED FOR COMPRESSION WHEN CHECKING UPLIFT
i.e. D-S = D) IF SOIL LOAD IS +ve
D-2S = D)
D-S = D-S) IF SOIL LOAD IS -ve
D-2S = D-2S)
TENTAIVE PILE LENGTH TO BE THE LENGTH FROM CUT OFF LEVEL TO PILE TIP

SUMMARY OF BORED HOLE INFORMATION

BORED HOLE NO.	GRADE III OR BETTER ROCK HEAD LEVEL (mPD)	GRADE IV/III ROCK HEAD LEVEL (mPD)
BH1	45.370	45.370
BH2	50.707	52.787
BH3	39.010	41.260
BH4	31.920	31.920
BH5	42.310	42.310
BH6	41.800	43.450
BH7	32.880	32.880

SUMMARY OF PREDRILL HOLE INFORMATION

PREDRILL HOLE NO.	GRADE III OR BETTER ROCK HEAD LEVEL (mPD)	GRADE IV/III ROCK HEAD LEVEL (mPD)
PD1	42.34	42.34
PD2	41.79	46.05
PD3	42.18	42.48
PD4	36.22	36.22
PD5	38.19	38.19
PD6	37.49	39.08
PD7	33.66	33.66

CONSTRUCTION SEQUENCE

1. CARRY OUT PERDRILL HOLE AS SUPERVISED BY RSE IN ACCORDANCE WITH QSP.
2. INSTALL MIN-PILES.
3. INSTALL TEMPORARY SHORING WORK THAT WILL BE SUBMITTED SEPARATELY.
4. EXCAVATE TO GRADE III/IV ROCK HEAD LEVEL.
5. INSPECT THE BEARING STRATUM.
6. CONSTRUCT THE FOOTING AND SCREEN WALL UP TO O/FL LEVEL.

SUMMARY OF POSTDRILL HOLE INFORMATION

POSTDRILL HOLE NO.	GRADE III OR BETTER ROCK HEAD LEVEL (mPD)	GRADE IV/III ROCK HEAD LEVEL (mPD)
PDH-1	43.13	43.13
PDH-2	34.15	34.15

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
- 5 AUG 2005

AMENDED PLAN
TYPE II WORKS
THE WORKS (FOR MINIPILE ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

REV.	DATE	DESCRIPTION
AB	SEPT. 2005	AS-BUILT RECORD
C	11/07/05	GENERAL REVISION
-	03/06/05	APPROVED BY B.D.
B	05/05/05	GENERAL REVISION
-	03/03/05	APPROVED BY B.D.
A	07/02/05	GENERAL REVISION
-	21/10/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	WJ
CHECKED BY :	PWL	SCALE :	AS SHOWN
APPROVED BY :		DATE :	23/08/2004

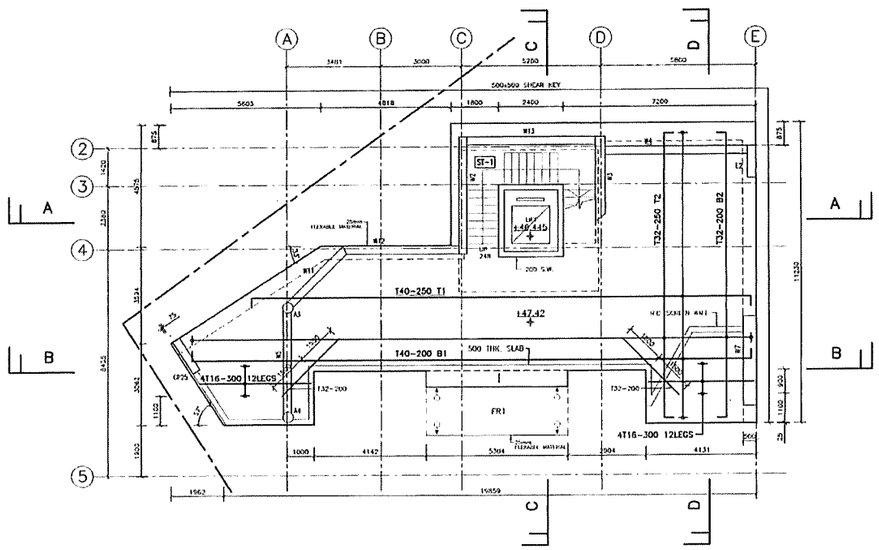
PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
GENERAL NOTES, TYPICAL DETAIL AND AS-BUILT PILE SCHEDULE RECORD

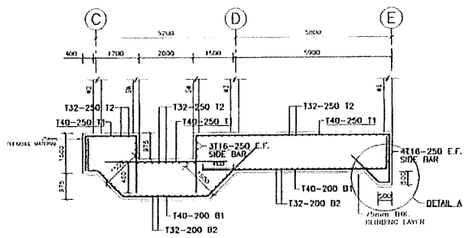
DRAWING NO. PL-04 REV. AB

ARCHITECT :
Prudent Design Limited

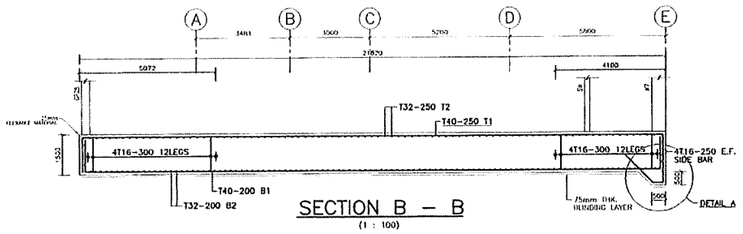
GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
Unit, Good Harvest Commercial Building, No 745-747, Nathan Road, Kowloon, Hong Kong
TEL (852) 2339 8322
FAX (852) 2781 0681



FOOTING F1 R.C. DETAIL
(1 : 100)



SECTION A — A
(1 : 100)



SECTION B — B
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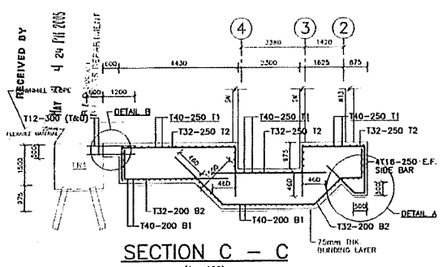

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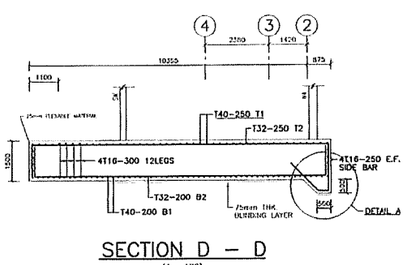
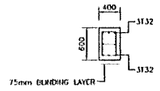


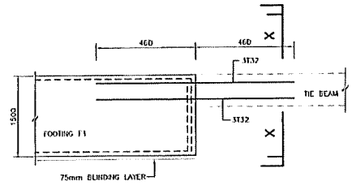
SECTION D — D
(1 : 100)

FOOTING SCHEDULE

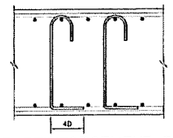
FOOTING MARK	FOOTING TOP LEVEL (mPD)	MASS CONCRETE BOTTOM LEVEL (TENTATIVE FOUNDING LEVEL) (mPD)	CRITICAL GROUND BEARING PRESSURE (kPa)			FACTOR OF SAFETY (EXCLUDING PILING PILE R1, R2, R5, R7)	
			D+L+S (kPa)	D+L+S+W (kPa)	D−S−W (kPa)	SLIDING	OVERTURNING
F1	47.42/46.445	43.5 ~ 42.34	308	336	0.0	1.70	2.5



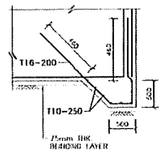
SECTION X — X
(FOR INFORMATION ONLY NOT FOR APPROVAL)
(1 : 50)



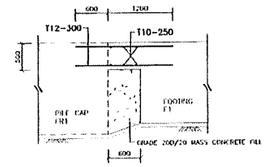
TIE BEAM STARTER BAR DETAIL (TB)
(FOR INFORMATION ONLY NOT FOR APPROVAL)
(1 : 50)



SHEAR REINFORCEMENT DETAILS
(N.T.S.)



DETAIL A
(TYPICAL DETAIL FOR SHEAR KEY)
(1 : 50)



DETAIL B
(TYPICAL RC SLAB DETAIL BETWEEN FOOTING & PILE CAP)
(1 : 50)

AMENDED PLAN
TYPE II WORKS
THE WORKS (FOR MINIPILE ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR.

B.D. REF. 3/2001/04

LEGEND :

——— - BOUNDARY LINE

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
03 JUN 2005

REV	DATE	DESCRIPTION
B	05/05/05	GENERAL REVISION
-	03/03/05	APPROVED BY B.D.
A	02/02/05	GENERAL REVISION
-	21/10/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO			
PROJECT NO		DRAWN BY	[illegible]
CHECKED BY	[illegible]	SCALE	1 : 100
APPROVED BY		DATE	23/08/2004

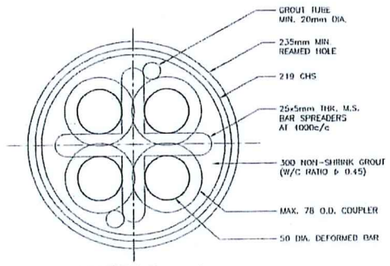
PROJECT
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE
R.C. F1 FOOTING DETAILS AND FOOTING SCHEDULE

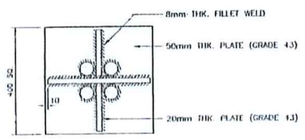
DRAWING NO: PL—05 REV: B

ARCHITECT
Prudent Design Limited

GEOTECHNICAL CONSULTANT
PSA PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong.
TEL. (852) 2739 9333
FAX. (852) 2732 2063



SECTION 1 – 1
(SCALE 1 : 5)



SECTION 2 – 2
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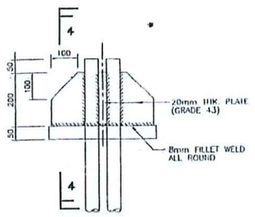

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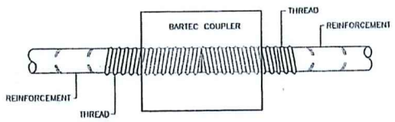
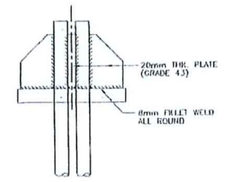


TYPICAL DETAILS OF COUPLER
(N.T.S.)



SECTION 4 – 4
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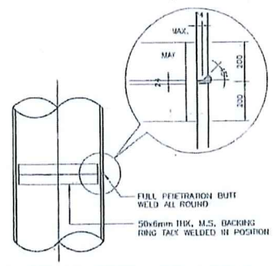


TYPICAL SPLICE DETAIL FOR CASING
(N.T.S.)

Plan Approved
M. L. CHENG
Senior Structural Engineer
for BUILDING AUTHORITY
- 5 AUG 2005

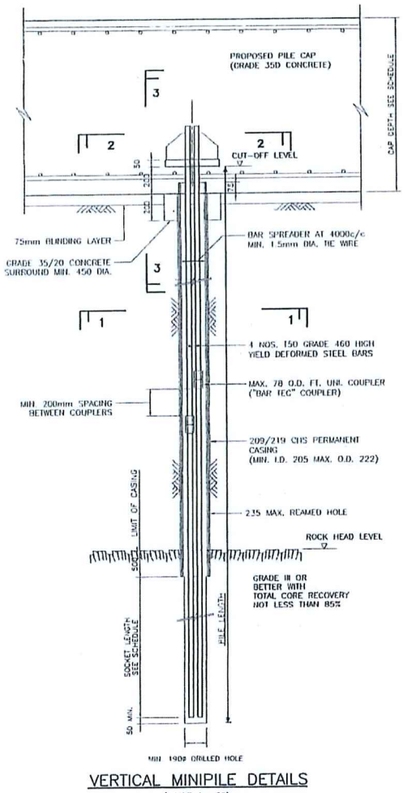
B.D. REF. 3/2001/04

LEGEND :

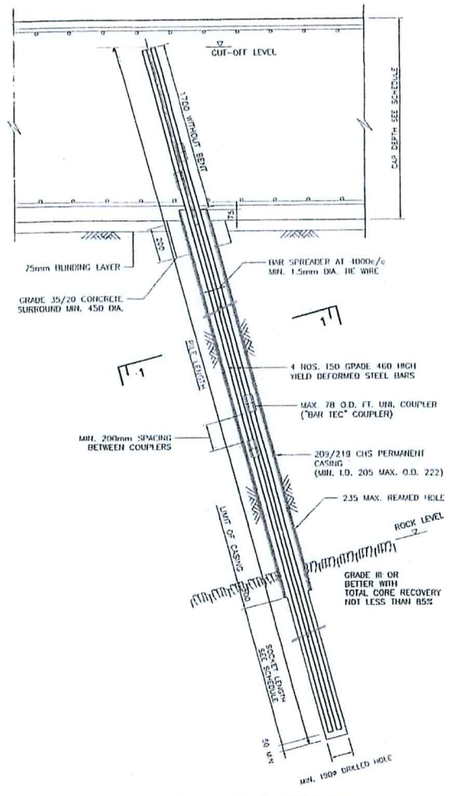
Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

AMENDED PLAN

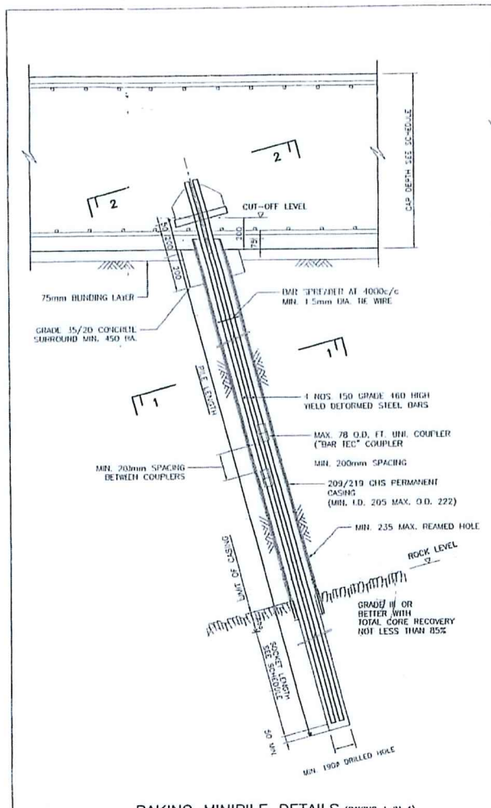
TYPE II WORKS
THE WORKS (FOR MINIPILE ONLY) SHOWN ON THESE PLANS ARE TYPE II WORKS IN RESPECT OF WHICH THE BUILDING AUTHORITY'S CONSENT IS APPLIED FOR



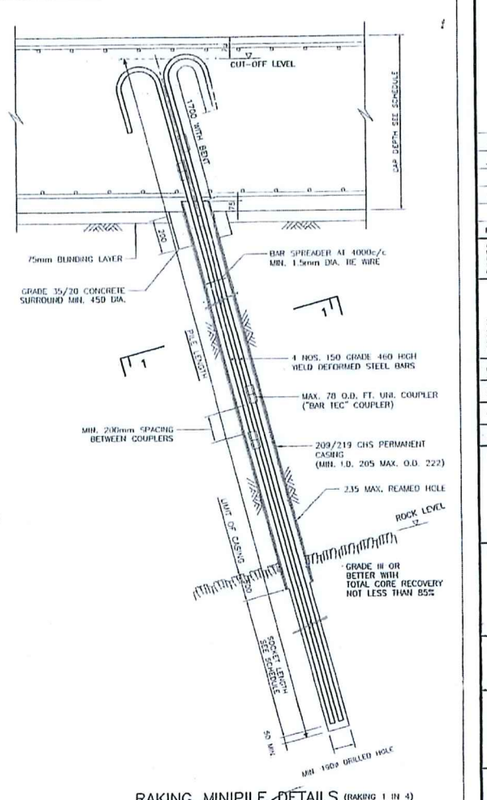
VERTICAL MINIPILE DETAILS
(SCALE 1 : 20)
(FOR P1 TO P23)



RAKING MINIPILE DETAILS (RAKING 1 IN 4)
(SCALE 1 : 20)
(FOR R2, R3 AND R6, R7)



RAKING MINIPILE DETAILS (RAKING 1 IN 4)
(SCALE 1 : 20)
(FOR R8 TO R13 AND R17 TO R20)



RAKING MINIPILE DETAILS (RAKING 1 IN 4)
(SCALE 1 : 20)
(FOR R14 TO R16 AND R21 TO R22)

AB	SEPT. 2005	AS-BUILT RECORD
B	11/07/05	GENERAL REVISION
–	03/03/05	APPROVED BY B.D.
A	02/02/05	GENERAL REVISION
–	21/10/04	APPROVED BY B.D.
REV.	DATE	DESCRIPTION

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE. DO NOT SCALE DRAWINGS. ALL DESIGNS, SPECIFICATIONS AND PLANS ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, DESIGNERS, AND SHALL BE RETURNED AT THE COMPLETION OF THE WORK. THIS DRAWING IS NOT USED FOR CONSTRUCTION PURPOSES UNLESS OTHERWISE STATED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Eddy
CHECKED BY :	Eddy	SCALE :	AS SHOWN
APPROVED BY :		DATE :	23/08/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

AS-BUILT RECORD FOR
TYPICAL DETAILS

DRAWING NO.	REV.
PL-06	AB

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

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GENERAL NOTES

1. ALL DIMENSIONS ARE TO BE READ IN MILLIMETRE UNLESS OTHERWISE STATED.
2. ALL LEVELS INDICATED ON PLANS ARE METRE ABOVE P.D. UNLESS OTHERWISE STATED.
3. ALL WORKS SHALL COMPLY WITH BUILDING (CONSTRUCTION) REGULATION (1990) AND 'CODE OF PRACTICE FOR THE STRUCTURAL USE OF CONCRETE 1987'
4. CONCRETE FOR RETAINING WALL AND MANHOLE SHALL BE DESIGNED MIX GRADE 300/20. ALL CONCRETE SHALL COMPLY WITH CS1:1990.
5. AGGREGATE SHALL COMPLY WITH BS882.
6. ALL REINFORCEMENT TO BE HIGH TENSILE HOT ROLLED DEFORMED BAR (DENOTED BY 'T') (fy 425/460MPa). ALL REINFORCEMENT SHALL COMPLY WITH CS2:1995.
7. ALL REINFORCEMENT TO BE CUT AND BEND IN ACCORDANCE WITH BS 4466.
8. MINIMUM CONCRETE COVER TO MAIN REINFORCEMENT TO BE AS FOLLOWS OR THE BAR DIAMETER WHICHEVER IS THE GREATER :
   RETAINING WALL = 50mm MANHOLE= 50mm
9. NOTATION OF BAR REINFORCEMENT IS AS FOLLOWS :-
   T 32 – 150
   TYPE OF BAR — BAR DIAMETER — BAR SPACING
10. BLINDING LAYER TO BE 10P MIX. WITH MINIMUM 75mm THK.
11. MINIMUM ANCHORAGE BOND LENGTHS AND LAP LENGTHS FOR CONCRETE GRADE 30D AND HIGHER :

	HIGH TENSILE STEEL	MILD STEEL
FULL TENSION ANCHORAGE (FTA)	46 ø	35 ø
FULL TENSION LAP (FTL)	66 ø	35 ø

12. SHOTCRETE SHALL BE GRADE 30D/10 WITH MINIMUM STRENGTH 30MPa AT 28 DAYS.
13. MESH REINFORCEMENT SHALL COMPLY WITH BS4483 WITH YIELD STRENGTH NOT LESS THAN 460MPa.
14. CEMENT : ORDINARY PORTLAND CEMENT COMPLY TO BS 12.
15. MIXING WATER SHALL BE OF POTABLE WATER QUALITY. SEA WATER IS NOT ALLOWED.
16. ADDITIVES SHALL BE CERTIFIED ACCORDING TO BS5075.
17. PRIOR TO BA14 APPLICATION, SUBMISSION IN ACCORDANCE WITH THE REQUIREMENTS AS LAID DOWN IN PNAP 168 AND PNAP 189 SHALL BE SUBMITTED TO THE SATISFACTION OF BD/GEO.
18. THE PROPOSED FOUNDING MATERIALS AND ALLOWABLE BEARING CAPACITY FOR RETAINING WALL ARE AS FOLLOWS :

RETAINING WALL	MAX. RETAINING HEIGHT (m)	MAX. CALCULATED BEARING PRESSURE (KPa)	FOUNDING MATERIAL	ALLOWABLE BEARING CAPACITY (kPa)	CALCULATED FOS AGAINST: SLIDING MIN.1.5	CALCULATED FOS AGAINST: OVERTURNING MIN.2.0	DESIGN SURCHARGE ON SLOPE BEHIND WALL (kPa)
TYPE A	3.51	111.803	W/ HOG OR BETTER	300	1.817	2.105	5
TYPE B	2.21	117.185	W/ HOG OR BETTER	300	2.620	2.296	5

19. DESIGN SURCHARGE FOR 35° PERMANENT SLOPE IS 10 kPa.
20. THE REACTIVE ALKALI OF CONCRETE OR GROUT EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METRE OF CONCRETE SHALL NOT EXCEED 3.0 kg WHEN DETERMINED IN ACCORDANCE WITH PNAP 180.
21. UNIT WEIGHT FOR NO-FINES CONCRETE FILL SHALL BE 19 kN/m³.
22. ALL STRUCTURAL STEEL MEMBERS SHALL BE GRADE 43 COMPLYING WITH BS 4360:1986. ALL STEEL DESIGN SHALL COMPLY WITH BUILDING (CONSTRUCTION) REGULATION (1990) AND CODE OF PRACTISE FOR STRUCTURAL USE OF STEEL 1987.
23. GROUTING FOR SOIL NAIL TO BE NON-SHRINK GROUT WITH MIN. CUBE STRENGTH OF 30 MPa.
24. GALVANIZATION SHALL COMPLY TO BS 729. HOT-DIP GALVANIZING OF 610g/m² MIN. ZINC COATING SHALL BE PROVIDED IN ACCORDANCE WITH BS EN:ISO.1461:1999.
25. ALL SOIL NAILING WORKS SHALL COMPLY WITH PNAP 284.
26. ALL CONNECTIONS FOR JOINTS SHALL BE 6mm FILLET WELD ALL AROUND OR OTHERWISE SPECIFIED IN THE DRAWING. WELDING WORK SHALL BE IN COMPLIANCE WITH BS 5135:1974.
27. ALL TEMPORARY SOIL CUT SLOPES FOR FILL AND INSITU SOIL (GRADE V OR BETTER) SHALL BE FORMED AT A MAXIMUM GRADIENT OF 33° AND 45° RESPECTIVELY UNLESS OTHERWISE SPECIFIED. THE TEMPORARY CUT SLOPES SHALL BE COVERED BY CHUNAM PLASTER OR PLASTIC SHEETING WELL SECURED AGAINST WIND TO PREVENT INFILTRATION.
28. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF EXISTING UTILITIES WITHIN AND IN THE VICINITY OF THE SITE BEFORE COMMENCEMENT WORKS. WHEN REQUIRED, THE CONTRACTOR SHOULD LIAISE WITH THE UTILITY UNDERTAKERS FOR THE RE-DIVERSION OF UTILITIES TO FACILITATE THE PROPOSED ELS WORK.
29. PRIOR TO COMMENCEMENT OF WORKS CONSENT FROM RELEVANT LOT OWNER(S) FOR THE ENCROACHMENT OF PRIVATE LAND SHALL BE OBTAINED.
30. ALL PIPE PILE WALL INSTALLATION SHALL COMPLY WITH PNAP 289.
31. THE FOUNDING MATERIALS FOR RETAINING WALL SHALL BE INSPECTED BY ENGINEER AND CONFIRMED ADEQUOATE PRIOR TO CONCRETING. THE INSPECTION RECORD SHALL BE SUBMITTED VIA CAR REPORT OR SUBMIT AMENDMENT PLAN AS NECESSARY.
32. THE DESIGN SOIL PARAMETERS ARE AS FOLLOWS:

SOIL TYPE	(kPa)	ø(°)	γ (kN/m³)
EXISTING FILL	11	35	19
COMPACTED FILL	3	35	19
COLLUVIUM/RESIDUAL SOIL	4	35	19
CDG	8	36	19
W/HCG	10	38	19
S/HCG	15	45	24

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PRECAUTIONARY MONITORING PROGRAMME

1. MONITORING CHECK POINTS SHALL BE INSTALLED AT LOCATIONS AS SHOWN IN THE DRAWING. INITIAL READINGS SHALL BE TAKEN PRIOR TO COMMENCEMENT OF CONSTRUCTION WORKS AND SUBMITTED TO THE BUILDING AUTHORITY.
2. THE LEVELING OF MONITORING CHECK POINTS AND MEASUREMENT OF GROUND WATER LEVEL IN PIEZOMETER SHALL BE CARRIED OUT ON DAILY BASIS DURING THE PROGRESS OF WORK.
3. ALL MONITORING RECORDS SHALL BE REVIEWED AND ANALYSED BY THE ENGINEER. SHOULD SIGNS OF UNDUE GROUND SETTLEMENT, TILING OR DRAW DOWN OF GROUND WATER LEVEL BE REVEALED, THE WORK AT THE AFFECTED AREA SHALL BE CEASED. BUILDING AUTHORITY SHALL BE NOTIFIED IMMEDIATELY AND NECESSARY REMEDIAL MEASURES SHALL BE SUBMITTED AND IMPLEMENTED TO THE SATISFACTION OF THE BUILDING AUTHORITY.
4. ALL WORKS SHALL BE CEASED IF DAMAGES TO EXISTING ADJACENT STRUCTURES, ROADS AND UTILITIES APPEAR TO OCCUR. THE AUTHORISED PERSON/REGISTERED STRUCTURAL ENGINEER AND BUILDING AUTHORITY SHALL BE INFORMED IMMEDIATELY. SUITABLE REMEDIAL MEASURES SHALL THEN BE SUBMITTED AND IMPLEMENTED.
5. THE MONITORING RECORDS SHALL BE SUBMITTED TO BUILDING AUTHORITY ON BI-WEEKLY BASIS.
6. ONE SET OF MONITORING RECORDS SHALL ALWAYS BE KEPT ON SITE FOR INFECTION.
7. DAMAGED INSTRUMENTS SHALL BE REINSTATED ASAP TO THE SATISFACTION OF THE ENGINEER.

GENERAL NOTES FOR DEPOSITION AND COMPACTION OF FILL MATERIAL

1. SOURCES OF FILL MATERIAL

FILL MATERIAL SHALL BE OBTAINED FROM EXCAVATION WITHIN THE SITE. IF THERE IS INSUFFICIENT FILL MATERIAL OF THE REQUIRED TYPES WITHIN THE SITE, IMPORTED FILL MATERIAL SHALL BE PROVIDED BY THE CONTRACTOR FROM SOURCES OUTSIDE THE SITE. THE SOIL PARAMETERS OF COMPACTED FILL MATERIAL ARE AS FOLLOWS : ø'=35°, C'=3 kPa. TRIAXIAL TEST SHALL BE CARRIED OUT FOR THE RECOMPACTED FILL TO VERIFY THE SOIL PARAMETERS AND THE REPORT SHALL BE SUBMITTED TO B.D. PRIOR TO THE FORM BA14 SUBMISSION.

2. SURFACE PREPARATION FOR FILL MATERIAL

SURFACES ON WHICH FILL MATERIAL IS TO BE DEPOSITED SHALL BE PREPARED AFTER SITE CLEARANCE IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS :

2.1 TOPSOIL, GRASS AND OTHER ORGANIC MATTER SHALL BE REMOVED.
2.2 SOFT SPOTS, FILL MATERIALS, BOULDERS AND OTHER MATERIALS WHICH IN THE OPINION OF THE ENGINEER ARE UNSUITABLE OR UNSTABLE SHALL BE REMOVED.
2.3 BENCHES SHALL BE FORMED AS NECESSARY.
2.4 THE PREPARED SURFACES SHALL BE INSPECTED BY THE ENGINEER PRIOR TO DEPOSITION OF FILL MATERIAL.

3. DEPOSITION OF FILL MATERIAL

3.1 FILL MATERIAL OBTAINED FROM EXCAVATIONS WITHIN THE SITE SHALL BE DEPOSITED IN ITS FINAL LOCATION AS SOON AS PRACTICABLE AFTER IT HAS BEEN EXCAVATED.
3.2 FILL MATERIAL SHALL BE DEPOSITED IN LAYERS OF A THICKNESS OF 300mm OR OTHER THICKNESS APPROVED BY THE ENGINEER.
3.3 UNLESS OTHERWISE PERMITTED BY THE ENGINEER, LAYERS OF FILL MATERIAL SHALL BE HORIZONTAL, EXCEPT FOR ANY GRADIENT REQUIRED FOR DRAINAGE, AND THE THICKNESS OF EACH LAYER SHALL BE UNIFORM OVER THE AREA TO BE FILLED.
3.4 EXCEPT IN EXCAVATIONS FOR STRUCTURES, PITS AND TRENCHES, IF THE DIFFERENCE IN LEVEL BETWEEN ADJACENT AREAS TO BE FILLED EXCEEDS 1m, THE EDGE OF THE HIGHER AREA SHALL BE BENCHED BEFORE FILL MATERIAL IS PLACED AGAINST IT.

4. COMPACTION OF FILL MATERIAL

4.1 FILL MATERIAL IN AREAS OF FILL SHALL BE COMPACTED IN LAYERS TO 95% OF THE MAXIMUM DRY DENSITY AS SOON AS PRACTICABLE AFTER DEPOSITION AND IN A MANNER APPROPRIATE TO THE LOCATION AND TO THE MATERIAL TO BE COMPACTED.
4.2 THE PERMISSION OF THE ENGINEER SHALL BE OBTAINED BEFORE THE NEXT LAYER IS DEPOSITED ON EACH LAYER OF COMPACTED FILL MATERIAL.
4.3 FILL MATERIAL SHALL BE COMPACTED IN SUCH A MANNER THAT STRUCTURES OR UTILITIES ARE NOT DISTURBED OR DAMAGED.
4.4 MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENTS SHALL BE DETERMINED IN ACCORDANCE WITH THE GEO REPORT NO.36, 1994.
4.5 THE NUMBER OF IN-SITU FIELD DENSITY TESTS AND MOISTURE CONTENTS SHALL COMPLY WITH PNAP 85.
4.6 THE IN-SITU FIELD DENSITY TESTS AND MOISTURE CONTENTS SHALL BE DETERMINED IN GEOSPEC 3.

NOTES FOR SPRAYED CONCRETE

a) THE PLANT USED FOR SPRAYING CONCRETE SHALL BE OF THE DRY MIX DELIVERY TYPE WITH WATER ADDED AT THE NOZZLES AND SHALL BE EQUIPPED WITH WEIGH-BATCHING FACILITIES. ONLY SKILLED OPERATORS EXPERIENCED IN THE USE OF SPRAYED CONCRETE SHALL BE EMPLOYED AS NOZZLEMEN. THE CONTRACTOR SHALL SUBMIT THE NAMES AND DETAILS OF THE EXPERIENCES OF THE OPERATORS WHO WILL BE EMPLOYED ON THE WORKS FOR APPROVAL OF THE ENGINEER NOT LATER THAN TWO WEEKS PRIOR TO THE COMMENCEMENT OF SPRAYED CONCRETE WORKS.

b) SPRAYED CONCRETE SHALL BE APPLIED IN LAYERS NOT EXCEEDING 50mm THICK. THE CONTRACTOR SHALL PUT FORWARD HIS PROPOSALS FOR ACHIEVING THE REQUIRED THICKNESS TO THE ENGINEER FOR APPROVAL.

c) THE NOMINAL SIZE OF THE COARSE AGGREGATE SHALL BE 10mm. THE CONTRACTOR SHALL ENSURE THAT A SUFFICIENT SUPPLY OF MATERIAL OF UNIFORM QUALITY CORRESPONDING TO THE SAMPLES SUBMITTED IS AVAILABLE.

d) THE MOISTURE CONTENT OF THE MIX BEFORE USE SHALL NOT EXCEED 10% THE REMAINING WATER BEING ADDED AT THE INSTANT OF APPLICATION. NO MIX SHALL BE USED MORE THAN TWO HOURS AFTER ANY WATER HAS BEEN ADDED TO IT. REBOUND MATERIAL SHALL NOT BE REUSED AND WHEN SO REQUIRED BY THE ENGINEER SHALL BE REMOVED WITHIN 8 HOURS OF SPRAYING.

e) SOIL SURFACES TO WHICH SPRAYED CONCRETE IS TO BE APPLIED SHALL BE CLEARED OF ALL BUSHES STAMPS ROOTS AND OTHER VEGETATION EXCEPT TREES. IMMEDIATELY PRIOR TO APPLICATION OF CONCRETE THE CONTRACTOR SHALL MEASURE THE SURFACE SURFACE TEMPERATURE AND THE MOISTURE CONTENT OF THE SOIL BY APPROVAL METHODS. THE CONTRACTOR SHALL SUBMIT HIS PROPOSALS FOR THESE MEASUREMENTS AT THE COMMENCEMENT OF THE CONTRACT. WHEN THE SOIL SURFACE TEMPERATURE EXCEEDS 25°C OR THE MOISTURE CONTENT IS LESS THAN 10% THE ENGINEER MAY DIRECT THAT THE SURFACE BE WATERED BY MEANS OF APPROVAL SPRAYS. THE USE OF HOSES WITHOUT SPRAYS WILL NOT BE PERMITTED. ALL SURFACES SHALL BE CLEARED OF ALL LOOSE MATERIAL BEFORE BEING SPRAYED WITH CONCRETE.

f) 75mm DIAMETER WEEPHOLES SHALL BE FORMED WITH UPVC PIPES 150mm LONG AT 1.5m CENTRES IN EACH DIRECTION.

g) A RECORD SHALL BE KEPT OF THE QUANTITIES OF ALL MATERIAL USED AT EACH SLOPE AND SHALL BE SUBMITTED DAILY TO THE ENGINEER.

h) AFTER THOROUGH WETTING THE SHOTCRETE AREA SHALL BE COVERED WITH APPROVED PLASTIC SHEET MAINTAINED IN CONTACT WITH THE CONCRETE IN ORDER TO AVOID THE EFFECTS OF WEATHER.

i) THE STRENGTH OF THE APPLIED CONCRETE SHALL BE DETERMINED BY CRUSHING 100mm DIAMETER CORES CUT FROM 250mm THICK ACCEPTANCE PANELS SPRAYED AT THE SAME TIME AND CURED IN THE SAME MANNER AS THE IN SITU CONCRETE. MOULDS FOR UNREINFORCED ACCEPTANCE PANELS SHALL BE 1000mmx1000mmx250mm THICK RIGIDLY FIXED ALONGSIDE THE WORKS TO THE APPROVAL OF THE ENGINEER. ONE ACCEPTANCE PANEL SHALL BE SPRAYED FOR EACH 40CUBIC METRE OF ACCEPTANCE SPRAYED OR AS THE ENGINEER MAY DIRECT, SIX CORES SHALL BE CUT FROM EACH PANEL AND CRUSHED AT 28 DAYS. CORES SHALL NOT BE TAKEN WITHIN 125mm OF THE EDGES OF THE PANEL. PRIOR TO CRUSHING THE DENSITY OF EACH CORE SHALL BE MEASURED. THE MINIMUM ESTIMATED IN SITU CUBE STRENGTH OF THE CORE SHALL BE 30N/mm² AT 28 DAYS. THE CONTRACTOR SHALL SUBMIT DETAILS OF AND OBTAIN THE APPROVAL OF THE ENGINEER TO THE COMMENCING SPRAYED CONCRETE WORK. TESTING OF SPRAYED CONCRETE CORES SHALL BE CARRIED OUT IN ACCORDANCE WITH B.S. 1881 : PART 4 AND THE INTERPRETATION OF RESULTS SHALL BE IN ACCORDANCE WITH B.S. 6089.

j) IN ADDITION TO PROVISION OF ACCEPTANCE PANELS COMPLETE AREAS OF SPRAYED CONCRETE SHALL BE TESTED FROM TIME TO TIME SOUNDING THEM WITH A WOODEN MALLET. HOLLOW SOUNDING AREAS SHALL BE REMOVED AND RESPRAYED OR AT THE DISCRETION OF THE ENGINEER A SECOND LAYER OF SPARYED CONCRETE SHALL BE ADDED. ANY SUCH REMEDIAL WORK SHALL NOT BE MEASURED FOR PAYMENT.

k) STEEL REINFORCEMENT SHALL BE INCLUDED IN SPRAYED CONCRETE. IT SHALL CONSIST OF MESH AS SHOWN ON THE DRAWINGS EITHER FIXED BY NAILS OR WIRE AFTER THE APPLICATION OF THE FIRST LAYER OF CONCRETE OR RAWBOLTS BEFORE THE APPLICATION OF ANY SPARYED CONCRETE.

l) A MINIMUM LAP OVER OF 200mm SHALL BE REQUIRED FOR THE MESH WITH EACH SIDE OF THE LAP TIED AT 300mm CENTRES AS DIRECTIOND.MINIMUM DEPTH OF CONCRETE COVER SHALL BE 25mm.

m) THE MINIMUM EQUIPMENT CUBE STRENGTH OF SPRAYED CONCRETE APPLIED SHOULD BE 30MPa AT 28 DAYS.

SPECIFICATION FOR QUALIFIED WELDER :

1. ALL WELDERS SHALL POSSESS VALID WELDING CERTIFICATES ENDOORSED BY INDEPENDENT LABORATORY WHICH IS REGISTERED UNDER HOKLAS AT THE TIME OF THE CONTRACT WORKS
2. THE WELDER SHALL MAKE THE TEST WELDS ACCORDING TO WHICH IS MOST REPRESENTATIVE OF THE TYPE OF WORK HE IS EMPLOYED AND THE WELDING CERTIFICATES SHOULD COVER ALL THE DETAILS TO SHOW THAT EACH WELDER HAS BEEN APPROVED IN ACCORDANCE WITH B.S.4570, B.S.4871,PART 1 OR B.S.4872:PART 1 AS APPROPRIATE.
3. THE WELDER CERTIFICATES SHALL BE SUBMITTED AT LEAST 4 WEEKS BEFORE FABRICATION OF THE STEELWORK STARTS.
4. RE-APPROVAL OF A WELDER SHALL BE REQUIRED IF ANY OF THE FOLLOWING APPLY :
   i) THE WELDER CHARGES HIS EMPLOYER WITHOUT THE TRANSFER OF HIS TEST RECORDS.
   ii) SIX MONTHS OR MORE HAVE ELAPSED SINCE THE WELDER UNDERTOOK ANY WELDING.
   iii) THERE IS SOME SPECIFIC REASON TO QUESTION THE WELDER'S ABILITY.

HEAVY RAINFALL PRECAUTIONS

1. GENERAL

THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING EXPOSED SURFACES AND CUT AND FILL SLOPES DURING PERIODS OF HEAVY RAINFALL. PROTECTION SHALL BE WITH HEAVY DUTY PLASTIC SHEETING AND THE CONTRACTOR SHALL AT ALL TIME PROVIDE ON SITE SUFFICIENT HEAVY DUTY PLASTIC SHEETING TO PROTECT ALL THE EXPOSED SURFACES THE NEED TO PROVIDE PROTECTION TO EXPOSED SURFACES SHALL BE AT THE DISCRETION OF THE ENGINEER. HOWEVER, ANY SURFACE EROSION THAT OCCURS SHALL BE MADE GOOD AT THE CONTRACTOR'S EXPENSE REGARDLESSOF WHETHER OR NOT THE ENGINEER HAS INSTRUCTED THE CONTRACTOR TO PROVIDE PROTECTION.

2. TEMPORARY DRAINAGE

SURFACE WATER FLOWING INTO THE SITE FROM UPHILL BE INTERCEPTED AND CONDUCTED FROM THE SITE TO AN INDICATED SAFE DISCHARGE POINT, AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE DRAINAGE CHANNELS AN ACCESSIBLE CATCHPIT SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS. WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.

3. METHOD OF WORKING

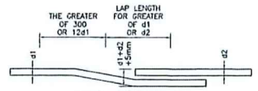
DURING EXCAVATION A METHOD OF WORKING SHALL BE ADOPTED IN WHICH THE MINIMUM OF BARE SOIL IS EXPOSED AT ANY TIME. EXCAVATION TO FORM THE FINAL FACE SHALL BE FOLLOWED UP IMMEDIATELY WITH SURFACE PROTECTION AND DRAINAGE WORKS AND THE FACE PANEL SIZE SHALL BE SMALL ENOUGH TO PERMIT THIS.

4. PROTECTION

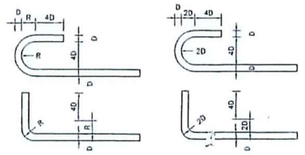
WHERE TEMPORARY BARE EARTH SLOPE FACES ARE UNAVOIDABLE THEY SHALL BE PROTECTED WITH HEAVY DUTY PLASTIC SHEETING WELL-SECURED AGAINST THE WIND, SEALED AT THE CREST AND LAPPED AT JOINTS. WHERE SLOPE FACES ARE TO BE TEMPORARY EXPOSED FOR MORE THAN TWO WEEKS TEMPORARY CHUNAM SURFACING SHALL BE PROVIDED AMD TEMPORARY DRAINS SHALL BE INSTALLED.

ROCK JOINT MAPPING

1. EXPOSE THE ROCK OUTCROPS BY SUITABLE EXCAVATION METHOD AND OBTAIN DISCONTINUITY DATA. THE EXTENT OF THE EXCAVATION FOR ROCK JOINT MAPPING SHALL BE CONFIRMED BY ENGINEER. THE APPROXIMATE EXTENT FOR ROCK JOINT MAPPING SHALL REFER TO DRAWING NO. SF-13.
2. AN ASSESSMENT REPORT FOR THE DISCONTINUITY SURVEY SHALL BE SUBMITTED TO B.D. VERIFYING THE DESIGN ASSUMPTIONS. VIA THE CAT I MONTHLY PROGRESS REPORT.



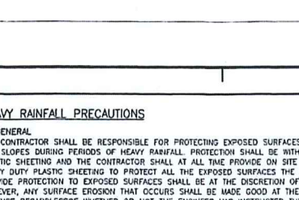
DETAIL OF LAPPING



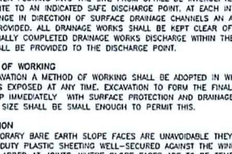
HIGH TENSILE STEEL BARS MILD STEEL BARS

FOR D > 25 R=4D FOR D < 25 R=3D

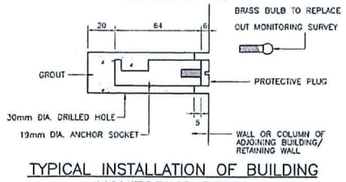
BEND AT END OF MAIN REINFORCEMENT BARS



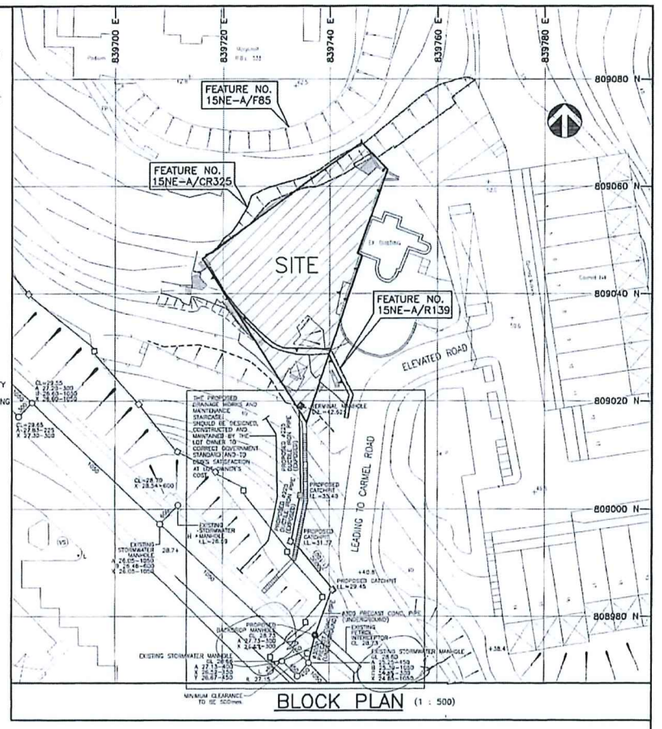
SETTLEMENT MONITORING MARKER
(FOR INFORMATION ONLY)



TILTING POINT DETAIL
(FOR INFORMATION ONLY)



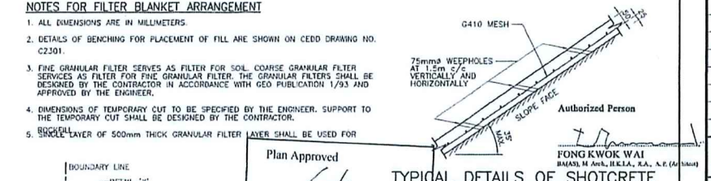
TYPICAL INSTALLATION OF BUILDING MONITORING POINT
(FOR INFORMATION ONLY)



BLOCK PLAN (1 : 500)

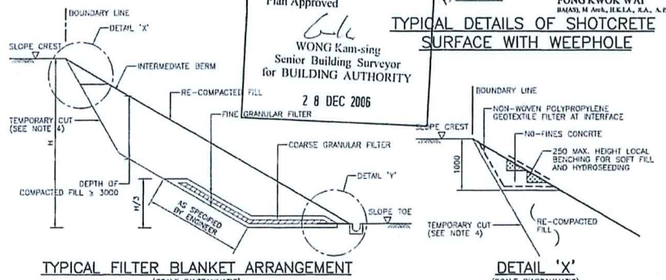
NOTES FOR FILTER BLANKET ARRANGEMENT

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DETAILS OF BENCHING FOR PLACEMENT OF FILL ARE SHOWN ON CEDD DRAWING NO. C2301.
3. FINE GRANULAR FILTER SERVES AS FILTER FOR SOIL. COARSE GRANULAR FILTER SERVICES AS FILTER FOR FINE GRANULAR FILTER. THE GRANULAR FILTERS SHALL BE DESIGNED BY THE CONTRACTOR IN ACCORDANCE WITH GEO PUBLICATION 1/93 AND APPROVED BY THE ENGINEER.
4. DIMENSIONS OF TEMPORARY CUT TO BE SPECIFIED BY THE ENGINEER. SUPPORT TO THE TEMPORARY CUT SHALL BE DESIGNED BY THE CONTRACTOR.
5. SINGLE LAYER OF 500mm THICK GRANULAR FILTER LAYER SHALL BE USED FOR BOCKFILL.



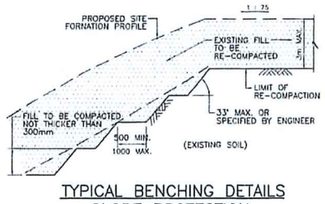
Plan Approved
WONG Kam-sing
Senior Building Surveyor
for BUILDING AUTHORITY
2 8 DEC 2006

TYPICAL DETAILS OF SHOTCRETE SURFACE WITH WEEPHOLE

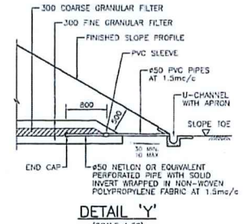


TYPICAL FILTER BLANKET ARRANGEMENT
(SCALE DIAGRAMMATIC)

DETAIL 'X'
(SCALE DIAGRAMMATIC)



TYPICAL BENCHING DETAILS SLOPE PROTECTION



DETAIL 'Y'
(SCALE 1:50)

B.D. REF. 6/2001/04

CONSTRUCTION SEQUENCE FOR SITE FORMATION WORKS

PHASE 1 CONSENT APPLICATION COMPRISES STEP 1) TO 5)

1) CARRY OUT SITE CLEARANCE.
2) INSTALL ALL MONITORING CHECK POINTS AROUND THE SITE AND TAKE INITIAL READING.
3) UPON THE COMPLETION OF THE EXCAVATION WORKS FOR THE PILE CAPS / RAFT FOOTING CONSTRUCTION, THE MASONRY WALL NO. 15NE-A/R139 WILL BE SAW CUT AT THE SITE BOUNDARY LINE TO SEPARATE THE PORTION WITHIN THE SITE BOUNDARY AND WILL BE DEMOLISHED.
4) CUT THE SLOPING GROUND DUE WEST OF SITE TO 45° MAX. INCLINED TO HORIZONTAL AND FILL THE NO-FINES CONCRETE TO THE PROPOSED FORMATION PROFILE. TRIM ALSO THE EXISTING STAIRCASE TO THE PROPOSED SITE FORMATION LEVELS.
5) BACKFILL TO THE PROPOSED SITE FORMATION LEVEL AFTER THE COMPLETION OF PILE CAPS / RAFT FOOTING CONSTRUCTION. COMMENCE THE CONSTRUCTION OF THE BUILDING BASEMENT AND ACCESS RAMP SCREEN WALL ACCORDING TO SUPERSTRUCTURE SUBMISSION.

PHASE 2 CONSENT APPLICATION COMPRISES OF STEP 6) TO 9)

6) UPON THE COMPLETION OF THE BUILDING BASEMENT AND ACCESS RAMP SCREEN WALL CONSTRUCTION, COMMENCE THE ELS WORKS FOR THE RETAINING WALL CONSTRUCTION. SEQUENCE FOR EXCAVATION WORKS SHALL REFER TO "CONSTRUCTION SEQUENCE FOR ELS WORKS".
7) CONSTRUCT RETAINING WALL AND BACKFILL TO THE PROPOSED SITE FORMATION LEVEL.
8) CONSTRUCT THE DRAINAGE NETWORK.
9) THE STORMWATER CONNECTION WORKS SHALL BE CONSTRUCTED AND MAINTAINED BY THE DEVELOPER TO CURRENT GOVERNMENT STANDARD AND TO BD/DSD'S SATISFACTION AT THE DEVELOPER'S OWN COST.

NOTES

1. DRAWING NO. SF-02 SF-06 AND SF-08 ARE DELETED.

AMENDED PLAN
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS
(SITE FORMATION WORKS) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

REV.	DATE	DESCRIPTION
C	29/11/06	GENERAL REVISION
–	14/09/05	APPROVED BY B.D.
B	15/08/05	GENERAL REVISION
A	07/02/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE - DO NOT SCALE DRAWING - ALL DRAWING SPECIFICATIONS AND THEIR COPY RIGHT ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, DESIGNERS, AND SHALL BE RETURED AT THE COMPLETION OF THE WORK - THIS DRAWING IS NOT USED FOR CONSTRUCTIVE PURPOSES UNLESS EXPRESSLY CERTIFIED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer, RSE

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Dchy
CHECKED BY :	Wmw	SCALE :	N.T.S.
APPROVED BY :		DATE :	26/07/2004

PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
SITE FORMATION – BLOCK PLAN, NOTES AND TYPICAL DETAILS

DRAWING NO. SF-01 REV. C

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
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15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong.
TEL. (852) 2729 9333 FAX. (852) 2702 2063

B.D. REF.

LEGEND :

- BOUNDARY LINE
- FEATURE BOUNDARY
- EXISTING WALL
- EXISTING FREE STANDING WALL
- EXISTING FENCE
- EXISTING CATCHPIT
- EXISTING DRAINAGE (IL=INVERT LEVEL)
- MF - EXISTING SEWER DRAINAGE MANHOLE
- MH - EXISTING MANHOLE
- EXISTING SLOPE
- EXISTING TREE
- EXISTING GATE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABLE DUCT
- BH - EXISTING BOREHOLES
- ABH - REVISED ADDITIONAL BOREHOLE
- HH - EXISTING HORIZONTAL DRILLHOLES
- AHH - PROPOSED ADDITIONAL HORIZONTAL DRILLHOLES (IF REQ'D)
- TP - EXISTING TRIAL PITS
- ATP - PROPOSED ADDITIONAL TRIAL PITS
- 46.82 - PROPOSED FORMATION LEVEL (mPD)
- 51.84 - PROPOSED FINISH FLOOR LEVEL (mPD)
- SM - PROPOSED SETTLEMENT MARKER (6 NOS.)
- TM - PROPOSED TILTING MARKER (2 NO.)
- BM - PROPOSED BUILDING MARKER (2 NOS.)
- PROPOSED SAND TRAP
- PROPOSED CATCHPIT
- IL=51.405 - PROPOSED INVERT LEVEL
- 225UC - PROPOSED 225 U-CHANNEL (FALL 1 100)
- 225SC - PROPOSED 225 STEP CHANNEL (FALL 1:25)
- 225HR - PROPOSED 200 TEMPORARY HALF ROUND CHANNEL
- PROPOSED RETAINING WALL
- PROPOSED 35° MAX. PERMANENT CUT SLOPE WITH SHOTCRETE AND WEEPHOLES
- PROPOSED 35° MAX. TEMPORARY CUT SLOPE WITH SHOTCRETE
- PROPOSED 45° MAX. PERMANENT CUT SLOPE WITH HYDROSEEDING

REV.	DATE	DESCRIPTION

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE - DO NOT SCALE DRAWINGS. ALL DRAWING DIFFERENCES AND NEW COPY MUST BE TO THE SATISFACTION OF ENGINEERS, ARCHITECTS, DESIGNERS, AND SHALL BE ATTENDED AT THE COMPLETION OF THE WORK - THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS SIGNATURE CERTIFIED

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Philip
CHECKED BY :	Peter	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SITE FORMATION –
LAYOUT PLAN (PHASE 1)

DRAWING NO.	REV.
SF-02	

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.

15/F., Good Harvest Commercial Building, No. 615-617, Nathan Road, Kowloon, Hong Kong.
TEL. (852) 2739 2233
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Plan Approved
Anita S.W. CHAN
Senior Building Surveyor
for BUILDING AUTHORITY
- 6 NOV 2004

Authorized Person
FONG KWOK WAI
B.Arch(), M.Arch., R.P.A.(), R.A., A.P. (Architect)

RECEIVED BY
Jan 26 3 29 PM 2005
B.D. DIVISION
BUILDING DEPARTMENT

SITE FORMATION LAYOUT PLAN
(PHASE 1)

FEATURE NO. 15NE-A/F85

FEATURE NO. 15NE-A/CR325 (PORTION)

EXISTING SOIL NAILS (SEE B.D. REF. BD DH27/01/HK)

PROPOSED RETAINING WALL TYPE A & B ADDRESSING DH ORDER 14/HK/04/C DATED 3-3-04

PROPOSED RETAINING WALL TYPE A 15.0m LONG TOE LEVEL=51.75mPD

PROPOSED RETAINING WALL TYPE B 4.0m LONG TOE LEVEL=51.75mPD

EX. WALL TO BE REMOVED DURING EXCAVATION WORKS

EXISTING BUILDING
ALREADY DEMOLISHED
BD REF NO. 1/20337/04

BUILDING BASEMENT AND ACCESS RAMP SCREEN WALL REFER TO SUPERSTRUCTURE SUBMISSION

EX. SLOPE & PARAPET WALL ASSESSMENT, DETAIL REFERS SECTION F-F OF DRAWING NO. SF-10

PROVIDE TREE RING FOR EXISTING TREE TO SUIT SITE PROFILE

PROPOSED 45° MAX. PERMANENT NO-FINES CONCRETE FILL SLOPE

PROPOSED 45° MAX. PERMANENT CUT SLOPE WITH HYDROSEEDING

EXISTING STAIRCASE AND SLOPE WILL BE DEMOLISHED DURING SITE FORMATION

EX.225UC THE TRIMMED GROUND SHALL BE HYDROSEEDED

EX. MASONRY WALL FEATURE NO. 15NE-A/R139 (PORTION) TO BE DEMOLISHED

WATER TANK REFER TO SUPERSTRUCTURE SUBMISSION

SAW CUT THE MASONRY WALL PRIOR TO DEMOLITION OF FEATURE NO. 15NE-A/R139 (PORTION)

MASS CONCRETE FILL REFER TO SUPERSTRUCTURE SUBMITTED SEPARATELY TOP LEVEL +49.8 BOTTOM LEVEL +46.0

FEATURE NO. 15NE-A/R139

ELEVATED ROAD

ROAD KERB

ROAD KERB

#200 UPVC DOWN PIPE

#225 D.I. PIPE

(SEE BLOCK PLAN)

809060 N

809040 N

809020 N

839720 E

839760 E

839740 E

RESERVED FOR BUILDING PERMANENT ACCESS

Plan Approved

WONG Kam-sing
Senior Building Surveyor
for BUILDING AUTHORITY

20 DEC 2006

AMENDED PLAN
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS (SITE FORMATION WORKS) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

SITE FORMATION LAYOUT PLAN

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- FEATURE BOUNDARY
- EXISTING WALL
- EXISTING FREE STANDING WALL
- EXISTING FENCE
- EXISTING CATCHPIT
- EXISTING DRAINAGE (IL=INVERT LEVEL)
- EXISTING SEWER DRAINAGE MANHOLE
- EXISTING MANHOLE
- EXISTING SLOPE
- EXISTING TREE
- EXISTING GATE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABLE DUCT
- EXISTING BOREHOLES
- EXISTING ADDITIONAL BOREHOLES
- EXISTING HORIZONTAL DRILLHOLES
- EXISTING ADDITIONAL HORIZONTAL DRILLHOLES
- EXISTING TRIAL PITS
- EXISTING ADDITIONAL TRIAL PITS
- PROPOSED FORMATION LEVEL (mPD)
- PROPOSED SETTLEMENT MARKER (5 NOS.)
- PROPOSED TILTING MARKER (2 NOS.)
- PROPOSED TERMINAL MANHOLE
- PROPOSED CATCHPIT
- I.L.=51.405 – PROPOSED INVERT LEVEL
- 225UC – PROPOSED 225 U-CHANNEL (FALL 1:100)
- 225SC – PROPOSED 225 STEP CHANNEL (FALL 1:25)
- ø150SD – PROPOSED ø150 SUB-SOIL DRAIN
- PROPOSED RETAINING WALL
- PROPOSED 35° MAX. PERMANENT RE-COMPACTED FILL SLOPE WITH SHOTCRETE AND WEEPHOLES
- PROPOSED 45° MAX. PERMANENT CUT SLOPE WITH HYDROSEEDING
- PROPOSED 45° MAX. PERMANENT NO-FINES CONCRETE FILL SLOPE

Authorized Person

FONG KWOK WAI
BA(Arch), M.Arch., H.K.I.A., R.A., A.P. (Architect)

REV.	DATE	DESCRIPTION
C	29/11/06	GENERAL REVISION
–	14/09/05	APPROVED BY B.D.
B	15/08/05	GENERAL REVISION
A	07/02/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE. DO NOT SCALE DRAWINGS. ALL DRAWING SPECIFICATIONS AND THEIR COPY RIGHT ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, DESIGNERS AND SHALL BE RETURNED AT THE COMPLETION OF THE WORK. THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY CERTIFIED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Gary
CHECKED BY :	Mimi	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SITE FORMATION – LAYOUT PLAN

DRAWING NO. SF-03 REV. C

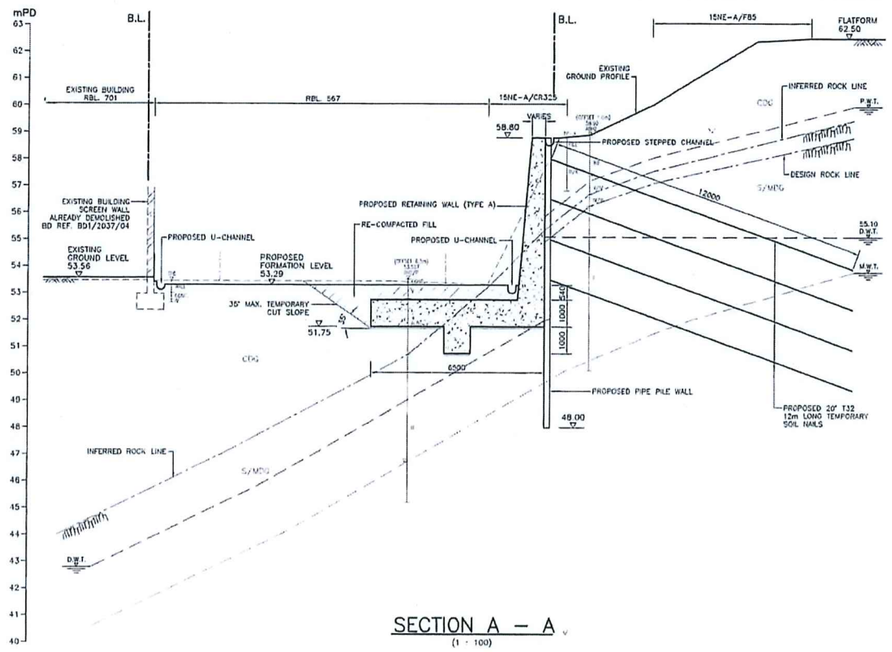
ARCHITECT :

Prudent Design Limited

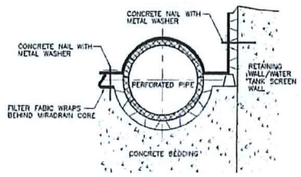
GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.

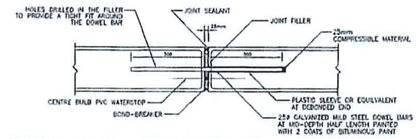
15/F, Good Harvest Commercial Building, No. 516-517, Nathan Road, Kowloon, Hong Kong.
TEL. (852) 2730 9263
FAX (852) 2732 2063



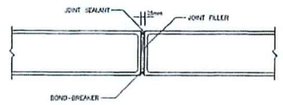
SECTION A – A
(1 : 100)



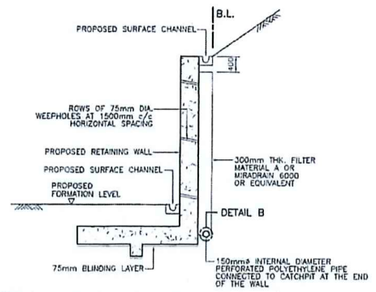
DETAIL B
(N.T.S.)



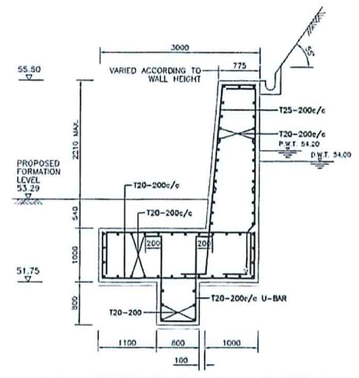
TYPICAL CONSTRUCTION JOINT DETAIL FOR WALL STEM
(N.T.S.)



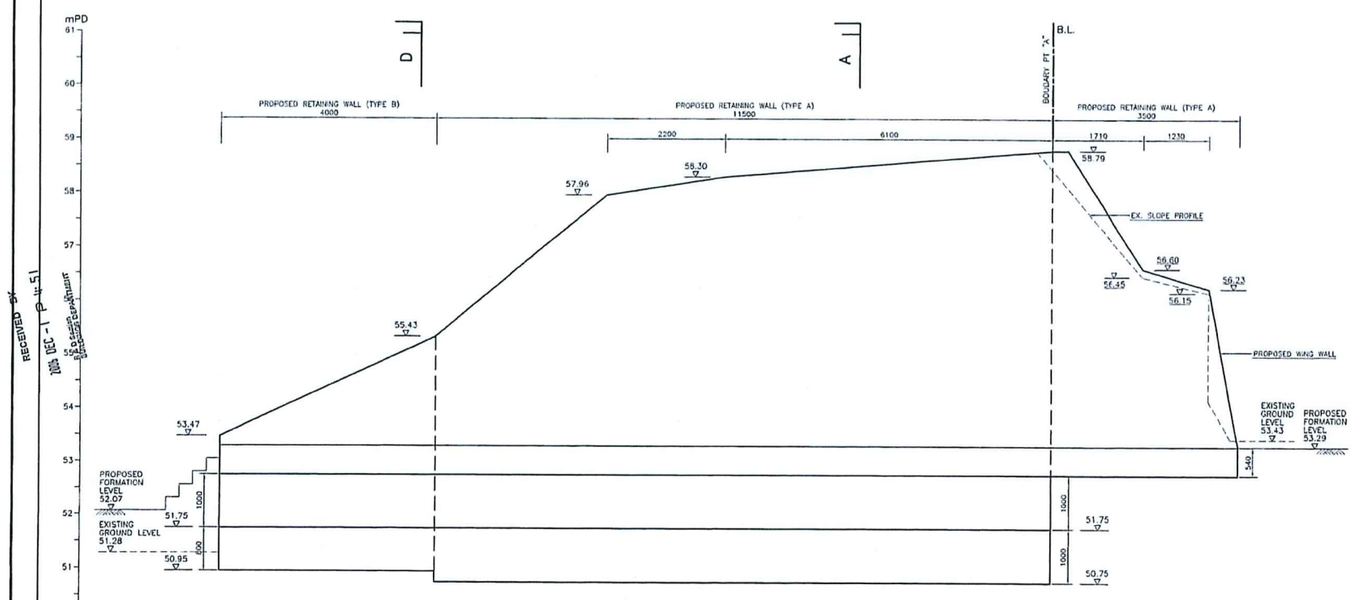
TYPICAL CONSTRUCTION JOINT DETAIL FOR WALL BASE
(N.T.S.)



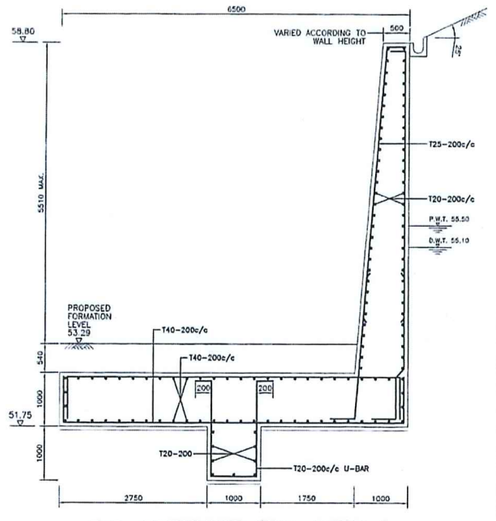
TYPICAL DETAILS FOR SUB-SOIL DRAIN
(N.T.S.)



R.C. RETAINING WALL TYPE B
(1 : 50)



DEVELOPED ELEVATION OF PROPOSED RETAINING WALL (TYPE A & TYPE B)
(1 : 50)



R.C. RETAINING WALL TYPE A
(1 : 50)

RECEIVED BY BUILDING DEPARTMENT 1 DEC 2006

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- PROPOSED RETAINING WALL
- RE-COMPACTED FILL

Plan Approved
WONG Kam-sing
Senior Building Surveyor
for BUILDING AUTHORITY
28 DEC 2006

Authorized Person
FONG KWOK WAI
BAARD, M Arch., HKIEA., A.P. (Architect)

AMENDED PLAN
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS
(SITE FORMATION WORKS) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

REV.	DATE	DESCRIPTION
B	29/11/06	GENERAL REVISION
–	14/9/05	APPROVED BY B.D.
A	15/08/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer. RSE

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Peter
CHECKED BY :	Wong	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
SITE FORMATION – SECTION, DEVELOPED ELEVATION & R.C. DETAILS

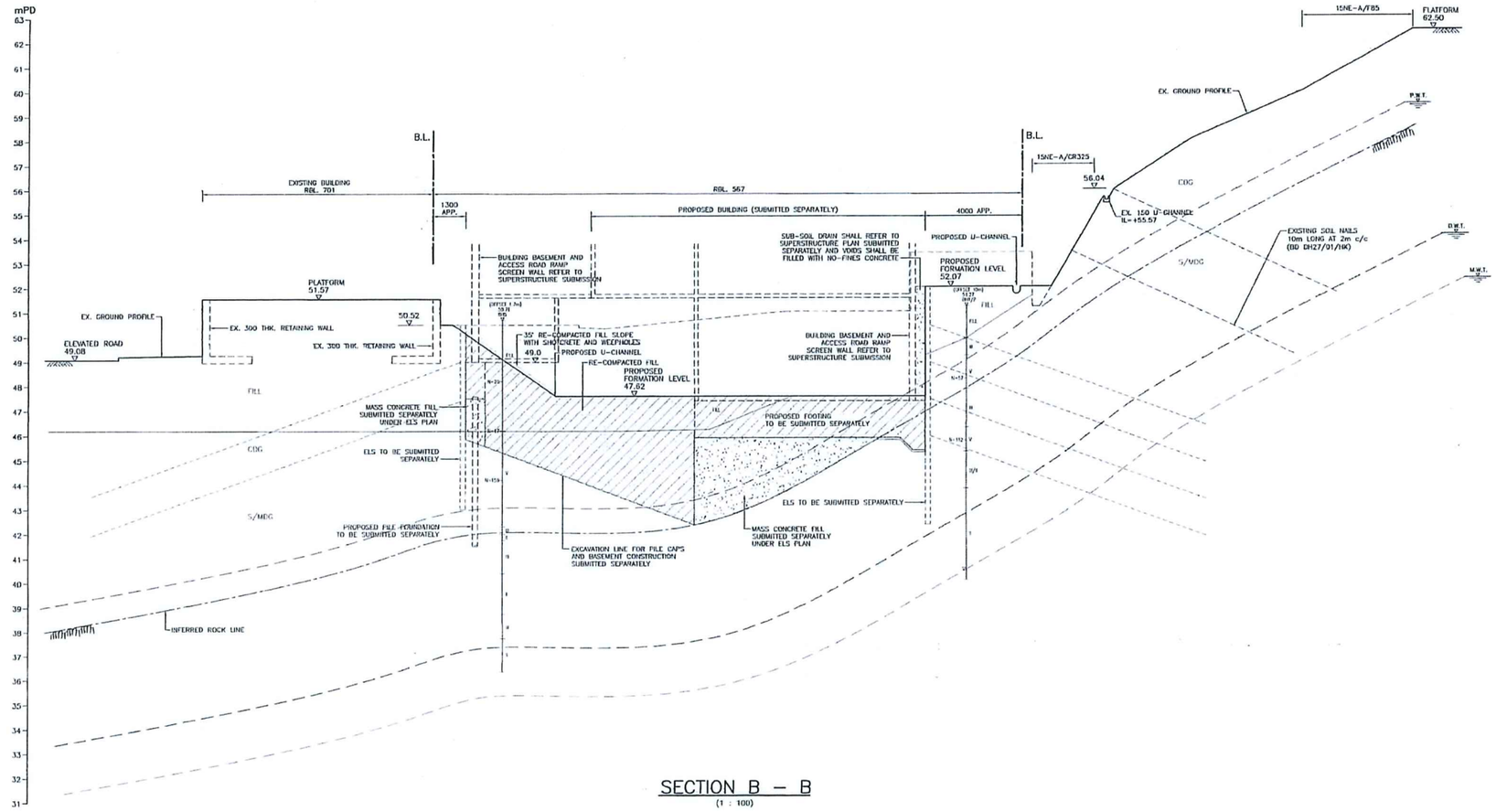
DRAWING NO. SF-04 REV. B

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F, Good Harvest Commercial Building, No. 618-619, Nathan Road, Kowloon, Hong Kong.
TEL (852) 2730 8223
FAX (852) 2730 2083

6/2001/04

F(126) Sht 1



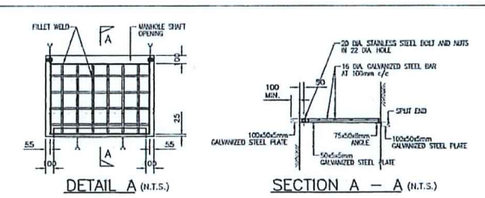
SECTION B – B
(1 : 100)

NOTES FOR MANHOLE:

1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. PIPE DIAMETER : 150 TO 900mm
3. USED IN : STORMWATER DRAIN.
4. JUNCTION : POSITION OF JUNCTION TO BE DETERMINED IN EACH INDIVIDUAL CASE. CHANNELS IMMEDIATELY UNDER ACCESS TO MANHOLE SHOULD BE AVOIDED.
5. TOP TREATMENT : SEE DRG. NO. DS 1032.
6. STEP IRON : SEE DRG. NO. DS 1043.
7. FOUNDATION : FOUNDATION OF MANHOLE VARIES WITH SITE CONDITION. THEREFORE, IT SHOULD BE DETERMINED ON SITE BY THE ENGINEER.
8. CONCRETE : GRADE 30/20 COMPLY TO CS1:1990.
9. REINFORCEMENT SHALL COMPLY WITH CS2:1995, BENDING OF REINFORCEMENT SHALL COMPLY WITH BS 4466.
10. COVER TO REINFORCEMENT SHALL BE 40 mm UNLESS OTHERWISE STATED.
11. BARS INTERCEPTED BY PIPE TO BE CUT OFF AS DIRECTED ON SITE AND 20 mm DIAMETER TRIMMING BARS TO BE ADDED AS DIRECTED BY THE ENGINEER.
12. ALL BAR MARKS APPEARING ARE USED FOR REFERENCE IN THIS DRAWING ONLY.
13. THE REACTIVE ALKALI OF CONCRETE OR GROUT EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METRE OF CONCRETE SHALL NOT EXCEED 3.0kg WHEN DETERMINED IN ACCORDANCE WITH PNAP 190.
14. MINIMUM ANCHORAGE BOND LENGTHS AND LAP LENGTHS FOR CONCRETE GRADE 30D AND HIGHER:

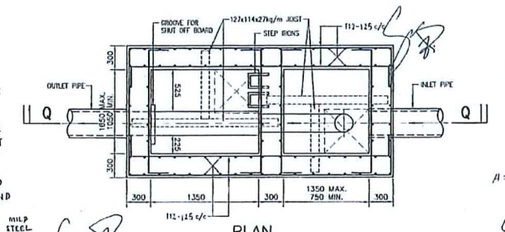
	HIGH TENSILE STEEL	MILD STEEL
FULL TENSION ANCHORAGE (FTA)	46ϕ	35ϕ
FULL TENSION LAP (FTL)		

15. BACKDROP MANHOLE IS FOUNDED ON GRADE.
16. APPROPRIATE SHORING SHALL BE PROVIDED PRIOR TO EXCAVATION WORKS
17. LOCATION OF THE BACKDROP MANHOLE SHALL REFER TO BLOCK PLAN AS SHOWN ON DRAWING NO SF-01



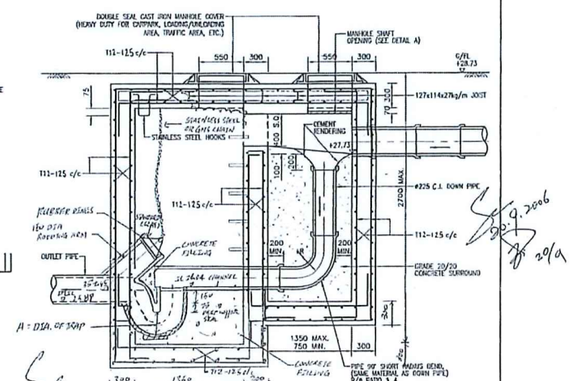
DETAIL A (N.T.S.)

SECTION A – A (N.T.S.)



PLAN

DETAILS OF BACKDROP MANHOLE (1:30)
(LOCATION SEE DWG. NO. SF-01 – BLOCK PLAN)



SECTION Q – Q (1:30)

RECEIVED BY
2006 AUG 20 PM 2:58

Plan Approved

WONG Kam-sing
Senior Building Surveyor
for BUILDING AUTHORITY

22 SEP 2006

AMENDED PLAN
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS
(SITE FORMATION WORKS) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- RE-COMPACTED FILL

Y Mmmmmm.
FOR KWOK WAI
AUTHORIZED PERSON

REV.	DATE	DESCRIPTION
B	24/08/06	BACKDROP MANHOLE DETAILS ADDED
–	14/9/05	APPROVED BY B.D.
A	15/08/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE - DO NOT SCALE DRAWINGS. ALL DRAWING SPECIFICATIONS AND THEIR COPY RIGHT ARE THE PROPERTY OF LOCAL AGENTS, ARCHITECTS, AND SAMPLE TO BE RETAINED AT THE OFFICE OF LOCAL AGENTS. THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS EXPRESSELY CONFIRMED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer, RSE

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Vicky
CHECKED BY :	Norma	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SITE FORMATION – SECTIONS

DRAWING NO. SF-05 REV. B

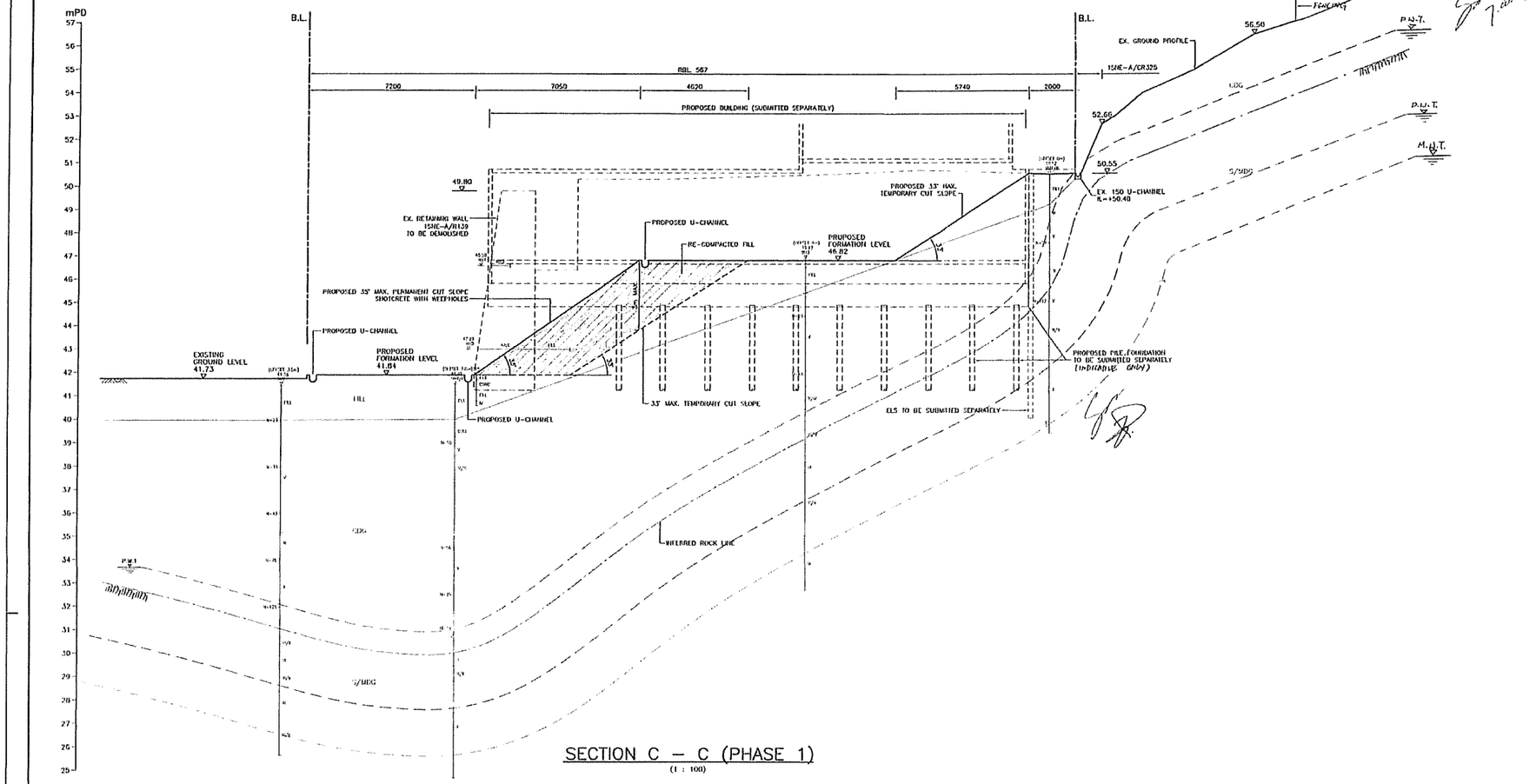
ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.

15/F., Good Harvest Commercial Building, TEL (852) 2789 9283
No. 515-517, Nathan Road, Kowloon, Hong Kong. FAX (852) 2732 2063



SECTION C – C (PHASE 1)
(1 : 100)

RECEIVED BY
Jul 26 3 25 PM 2004
R & D SECTION
BUILDINGS DEPARTMENT

B.D. REF.

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- PROPOSED RE-COMPACTED FILL

Plan Approved
Anita S.W. CHAN
Senior Building Surveyor
for BUILDING AUTHORITY
– 6 NOV 2004

Authorized Person
FONG KWOK WAI
RAIA(R), M Arch., R.C.L.A., R.A., A.P. (Architect)

REV.	DATE	DESCRIPTION

ALL MEASUREMENTS ARISE BY CHECKING AT SITE – DO NOT SCALE
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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Dd.4
CHECKED BY :	Mark	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
SITE FORMATION – SECTION

DRAWING NO. SF–06 | REV.

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
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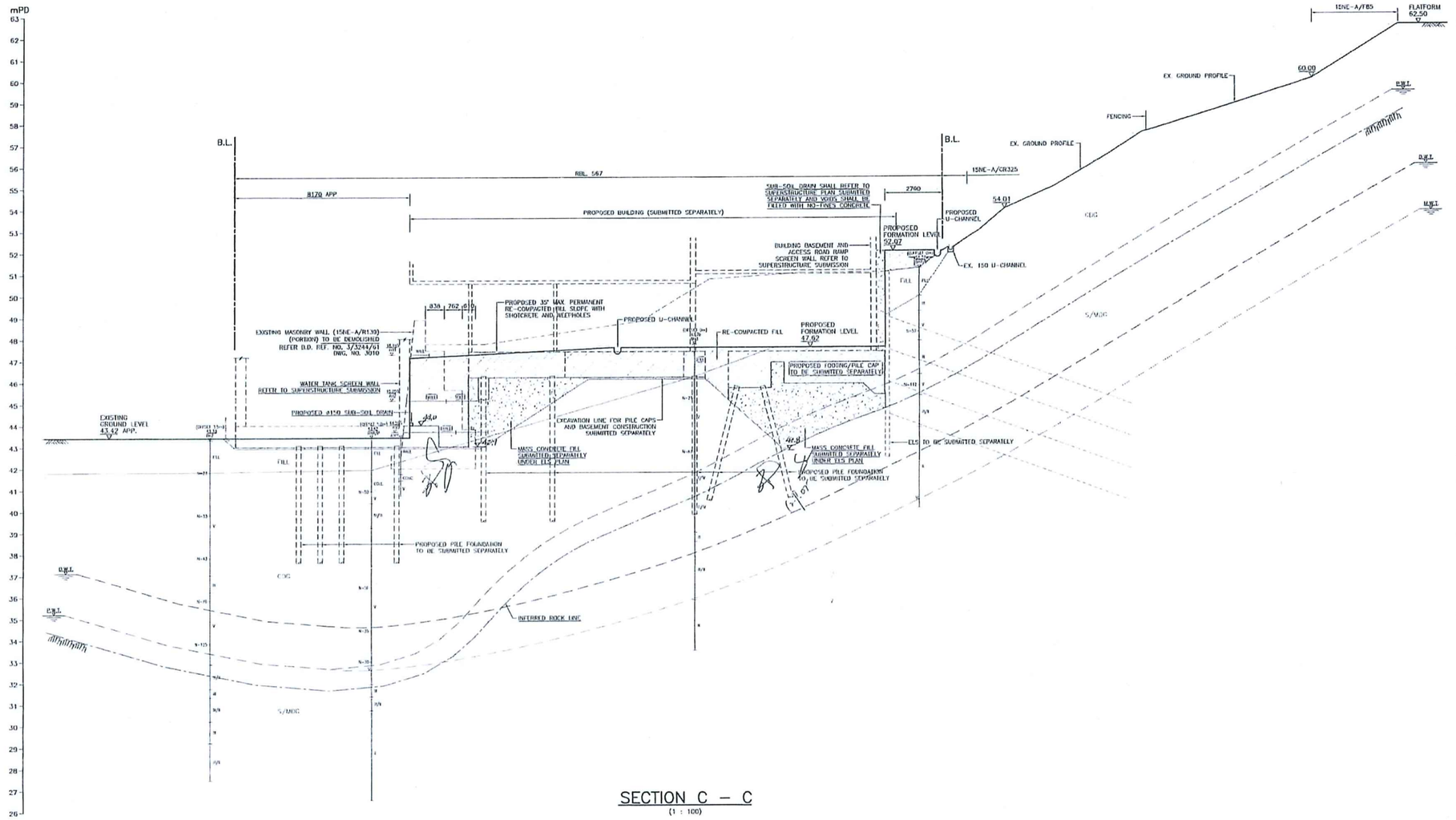
15/F., Good Harvest Commercial Building, No. 515–517, Nathan Road, Kowloon, Hong Kong
TEL. (852) 2729 9332
FAX. (852) 2722 2553



SECTION C – C
(1 : 100)

RECEIVED BY
2005 AUG 16 P 3:29
B.D. Secretariat Buildings Department

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- RE-COMPACTED FILL

Plan Approved
TSE Alisa
Building Surveyor
for BUILDING AUTHORITY
14 SEP 2005

AMENDED PLAN

REV.	DATE	DESCRIPTION
A	15/08/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	[illegible]
CHECKED BY :	[illegible]	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

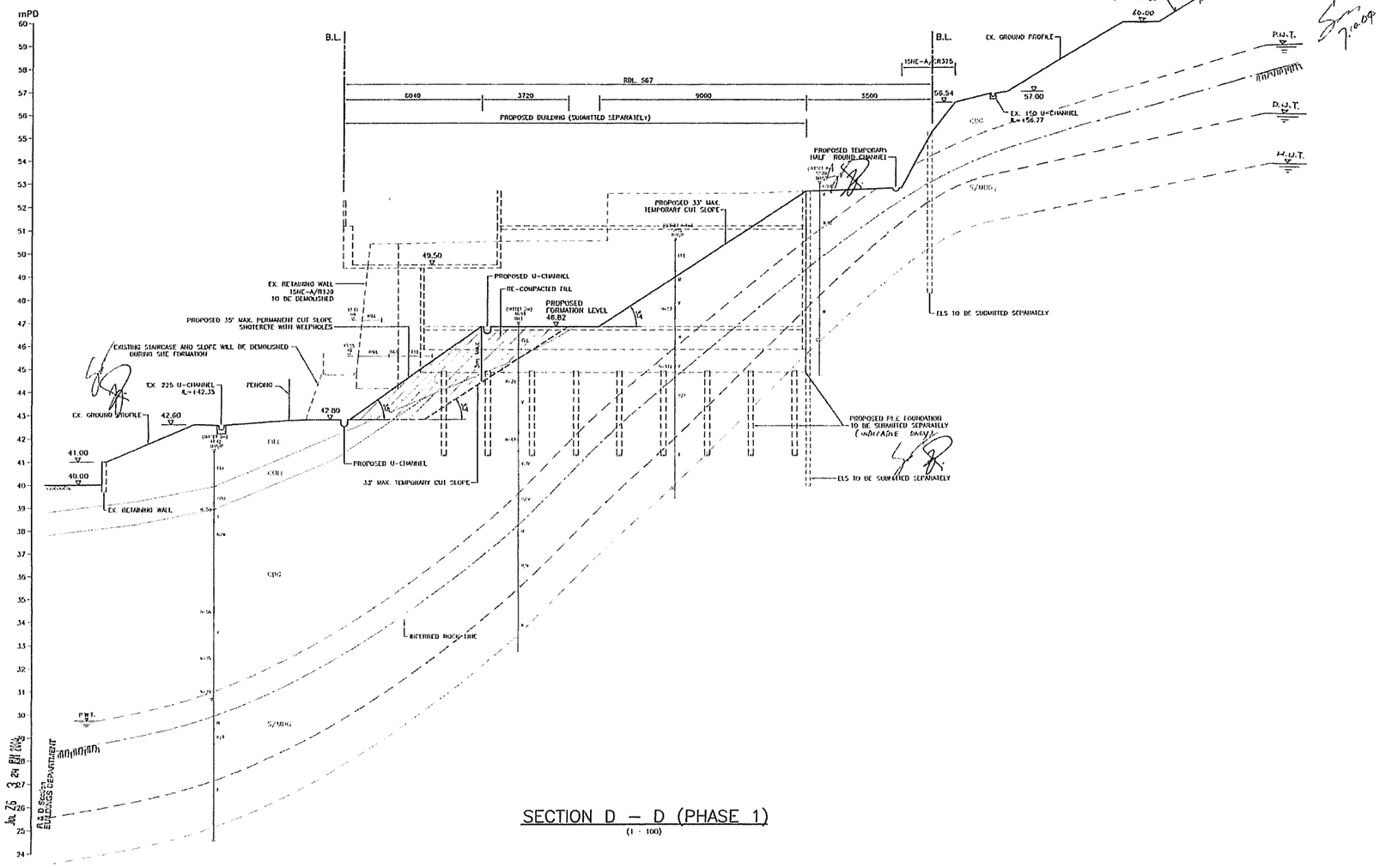
PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

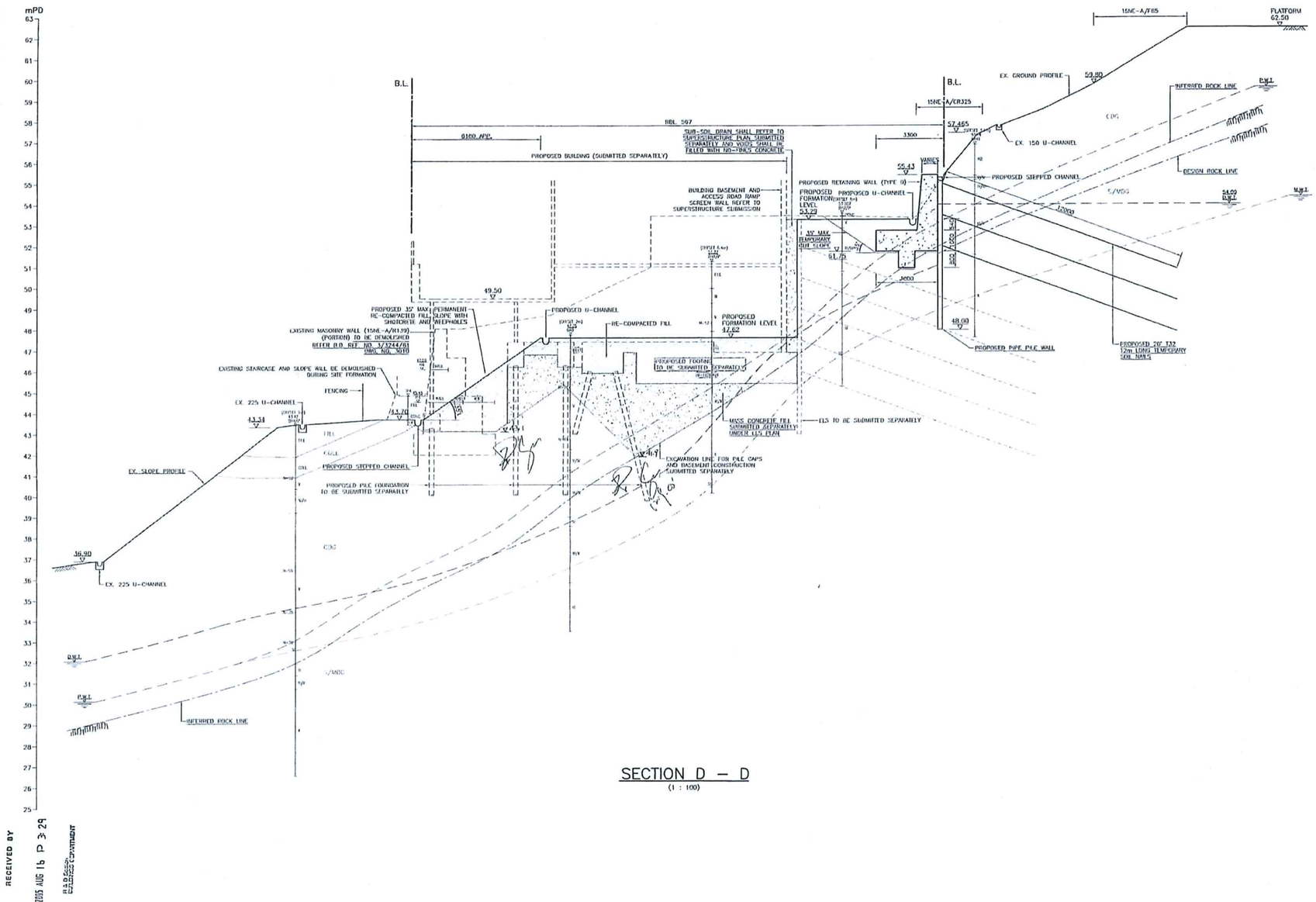
DRAWING TITLE :
SITE FORMATION – SECTION

DRAWING NO. SF-07 REV. A

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong.
TEL (852) 2739 0333
FAX (852) 2732 2603


mPD
B.L.
B.L.
EX. GROUND PROFILE
15NE-A/R85
40.00
P.W.T.
D.W.T.
M.W.T.
RBL 567
6040
3720
9000
5500
56.54
57.00
PROPOSED BUILDING (SUBMITTED SEPARATELY)
EX. 150 U-CHANNEL
R=456.77
15NE-A/CR325
PROPOSED TEMPORARY HALF ROUND CHANNEL
PROPOSED 33° MAX. TEMPORARY CUT SLOPE
49.50
PROPOSED U-CHANNEL
EX. RETAINING WALL 15NE-A/R139 TO BE DEMOLISHED
RE-COMPACTED FILL
PROPOSED FORMATION LEVEL 48.82
PROPOSED 35° MAX. PERMANENT CUT SLOPE SHOTCRETE WITH WEEPHOLES
ELS TO BE SUBMITTED SEPARATELY
EXISTING STAIRCASE AND SLOPE WILL BE DEMOLISHED DURING SITE FORMATION
EX. 225 U-CHANNEL R=142.35
FENCING
42.60
42.80
EX. GROUND PROFILE
41.00
40.00
FILL
COLL
EX. RETAINING WALL
PROPOSED U-CHANNEL
33° MAX. TEMPORARY CUT SLOPE
PROPOSED PILE FOUNDATION TO BE SUBMITTED SEPARATELY (INDICATIVE ONLY)
ELS TO BE SUBMITTED SEPARATELY
CDG
RECEIVED
No. 25 JUN 2004
B.D. Section
BUILDINGS DEPARTMENT
P.W.T.
S/MDG
RECEIVED
No. 25 JUN 2004
B.D. Section
BUILDINGS DEPARTMENT
CDG
RECEIVED
No. 25 JUN 2004
B.D. Section
BUILDINGS DEPARTMENT



SECTION D – D
(1 : 100)

RECEIVED BY
2005 AUG 16 P 3:29
B.D. Design & Safety Department

B.D. REF.	6/2001/04

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- PROPOSED RETAINING WALL
- RE-COMPACTED FILL

Plan Approved
TSE Alisa
Building Surveyor
for BUILDING AUTHORITY
14 SEP 2005

Approved Person
AMENDED PLAN

REV.	DATE	DESCRIPTION
–	06/11/04	APPROVED BY B.D.
A	15/08/05	GENERAL REVISION

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	[illegible]
CHECKED BY :	[illegible]	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
SITE FORMATION – SECTION

DRAWING NO. SF-09 | REV. A

ARCHITECT :
Prudent Design Limited

GEOTECHNICAL CONSULTANT :
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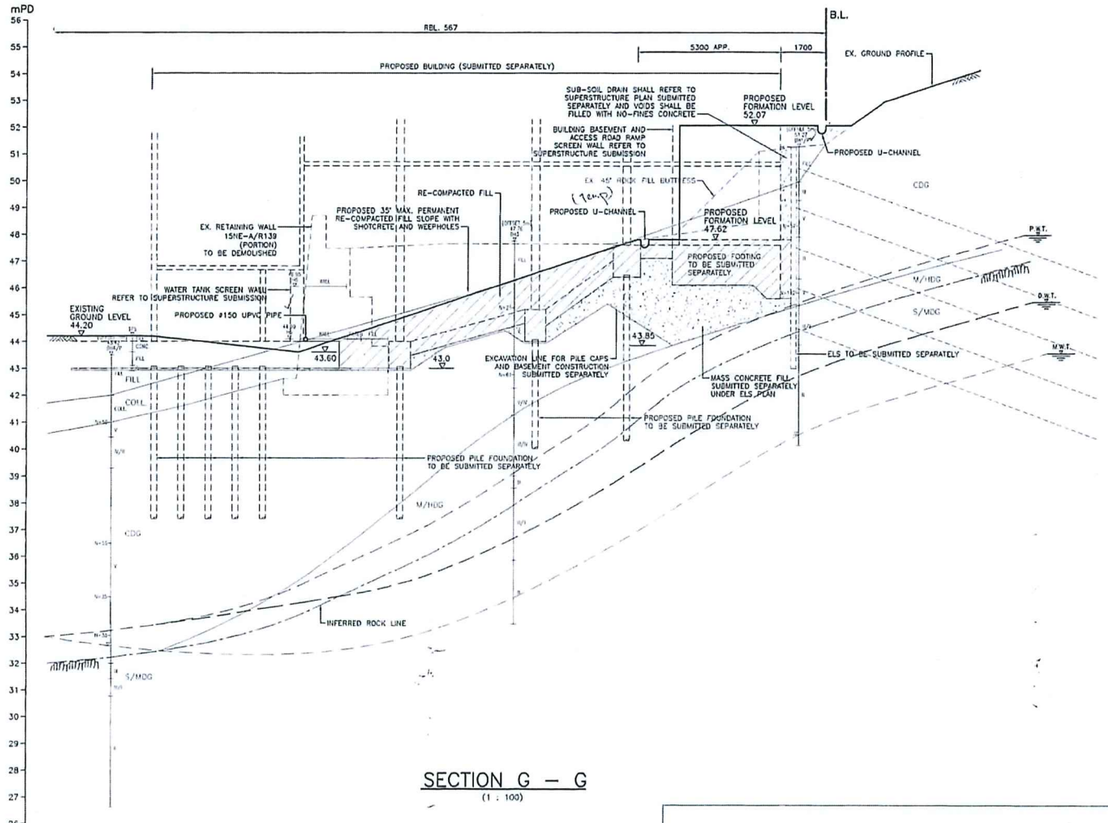
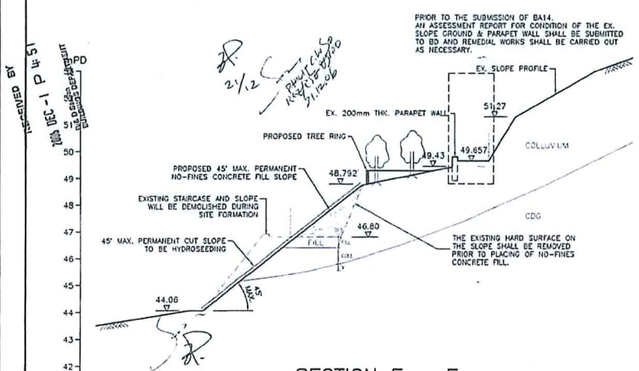
FAX (852) 2732 2663



SECTION G – G
(1 : 100)



SECTION F – F
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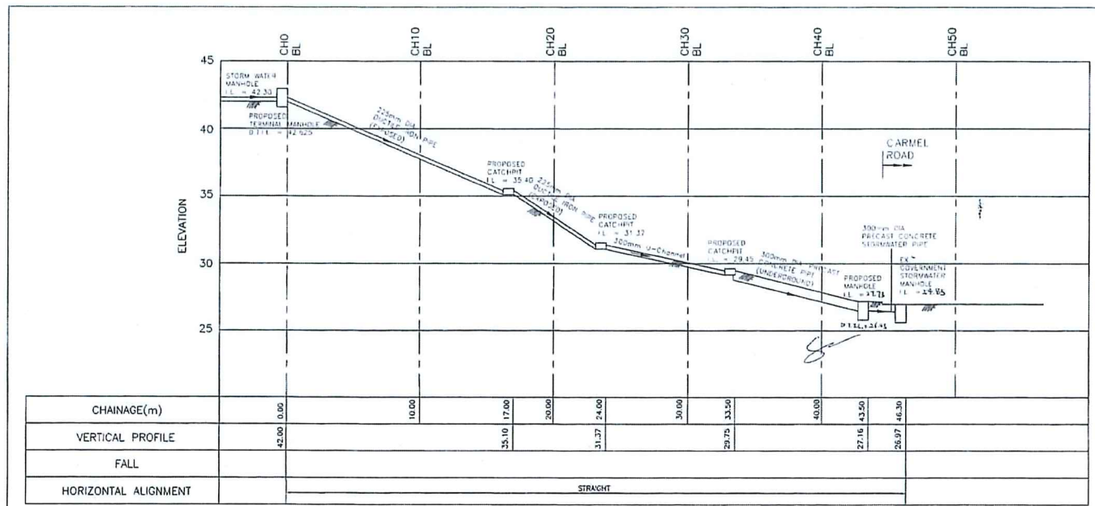

PROPOSED DRAINAGE ALIGNMENT (OUTSIDE SITE)
(SCALE 1:200)

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- RE-COMPACTED FILL

Plan Approved
WONG Kam-sing
Senior Building Surveyor
for BUILDING AUTHORITY
20 DEC 2006

Authorized Person
FONG KWOK WAI
BA(Arch), M.Arch., H.K.I.A., R.A., A.P. (Architect)

AMENDED PLAN
THE WORKS SHOWN ON THESE PLANS ARE TYPE II WORKS (SITE FORMATION WORKS) IN RESPECT OF WHICH CONSENT IS APPLIED FOR THE PURPOSE OF FAST TRACK CONSENT APPLICATION UNDER REGULATION 33 OF THE BUILDING (ADMINISTRATION) REGULATIONS.

REV.	DATE	DESCRIPTION
B	29/11/06	GENERAL REVISION
–	14/9/05	APPROVED BY B.D.
A	15/08/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer. RSE

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Vicky
CHECKED BY :	Wong	SCALE :	1 : 100
APPROVED BY :		DATE :	26/07/2004

PROJECT :
R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :
SITE FORMATION – SECTIONS

DRAWING NO. SF–10 REV. B

ARCHITECT :
Prudent Design Limited

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TEL (852) 2728 8323
FAX (852) 2728 2063

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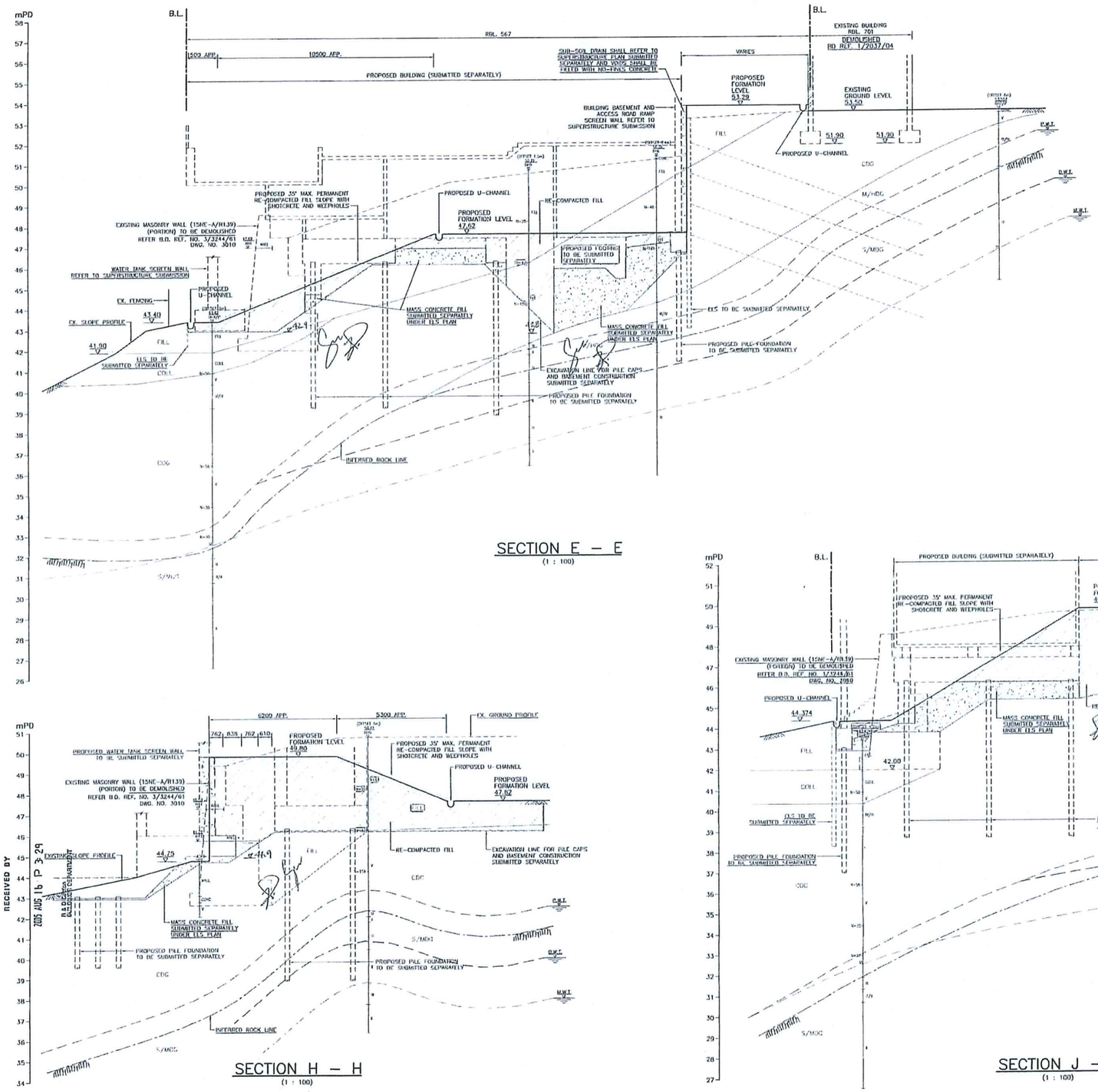
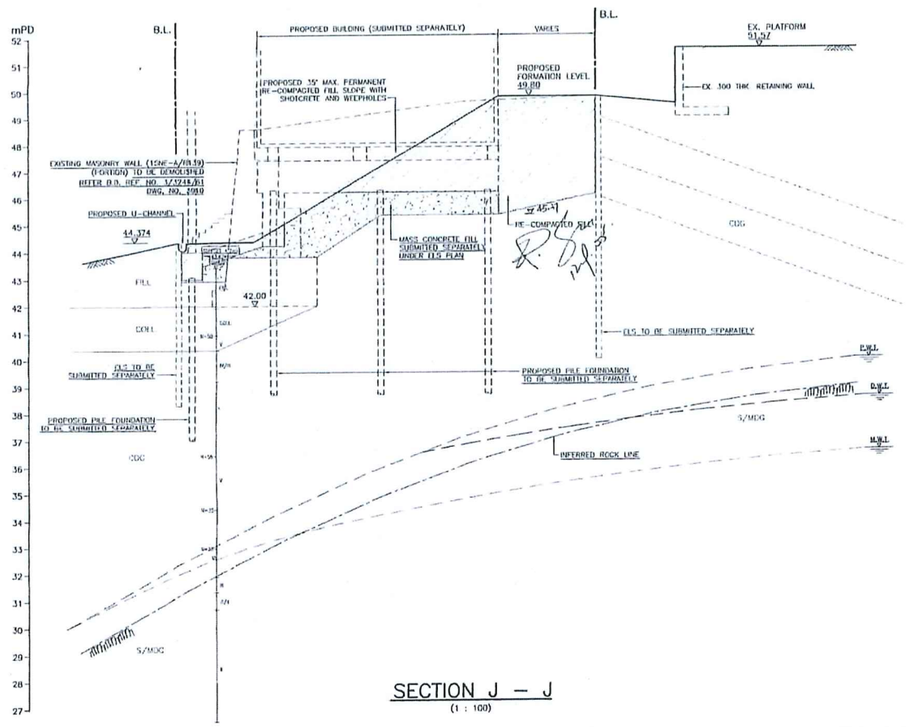
BUILDING DEPARTMENT



SECTION E – E
(1 : 100)

SECTION H – H
(1 : 100)



SECTION J – J
(1 : 100)

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- P.W.T. – PERCHED WATER TABLE (mPD)
- D.W.T. – DESIGN WATER TABLE (mPD)
- M.W.T. – MEASURED WATER TABLE (mPD)
- RE-COMPACTED FILL

Plan Approved
TSE Alisa
Building Surveyor
for BUILDING AUTHORITY
14 SEP 2005

Fong Kwok Wah
Authorized Person
AMENDED PLAN

REV.	DATE	DESCRIPTION
A	15/09/05	GENERAL REVISION
–	06/11/04	APPROVED BY B.D.

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Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.		DRAWN BY :	Sicha
PROJECT NO.		SCALE	1 : 100
CHECKED BY :	Mirac	DATE :	26/07/2004
APPROVED BY :			

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SITE FORMATION – SECTION

DRAWING NO. SF–11 REV. A

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
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TEL (852) 2739 9333
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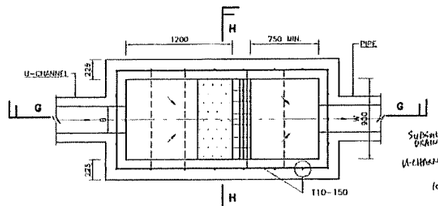
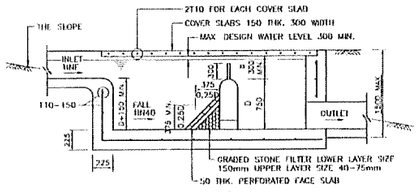
TYPICAL SAND TRAP ARRANGENENT

NOTES :

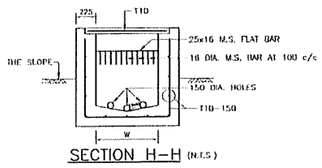
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. NORMALLY FOR DRAINS OF 900mm DIA AND BELOW. FOR BIGGER DRAINS AND STEEP TERRAIN, SNAD TRAP SHOULD BE SPECIALLY DESIGNED.
3. SIZE :
   DEPTH : D + 750
   WIDTH : W+38 = 900
   LENGTH : L = 4.8 D^W h^H F^H + 4B = 1200
4. GRADED STONE FILTER SHALL BE CRUSHER RUN GRANITE AGGREGATE.
5. CAPACITY DAL TO BE ACCORDING TO SIZE AND NATURE OF CATCHMENT, PROVIDING DETENTION TIME NOT LESS THAN 5 MINUTES FOR MAX. DESIGN FLOW OF INLET.



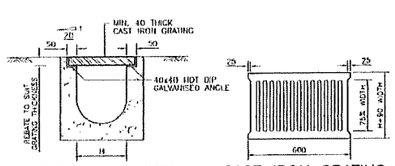
SECTIONAL PLAN (N.T.S.)



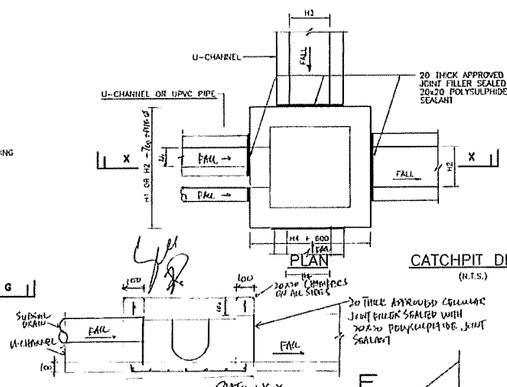
SECTION G-G (N.T.S.)

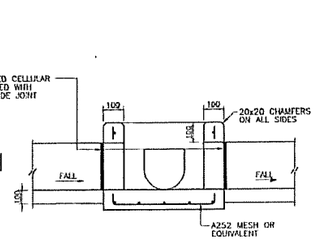


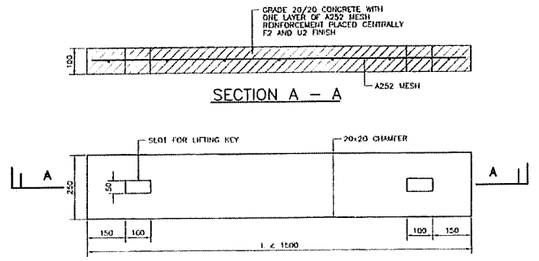
SECTION H-H (N.T.S.)

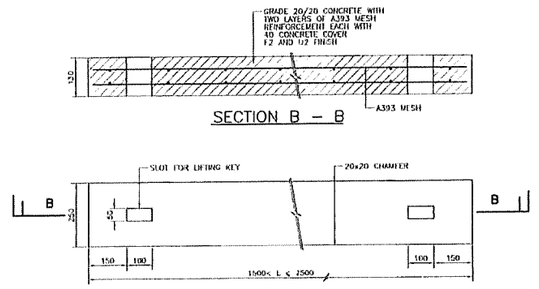


TYPICAL SECTION CAST IRON GRATING
U-CHANNEL WITH CAST IRON GRATING (N.T.S.)







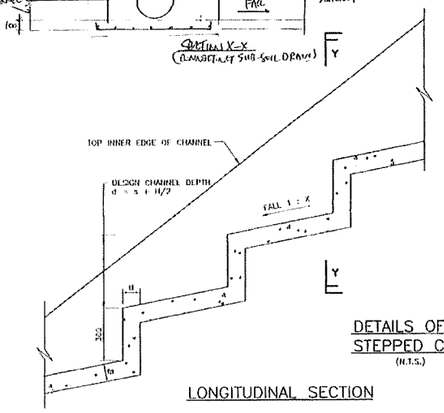


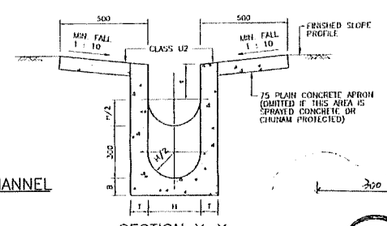
NOTES FOR U-CHANNEL AND STEPPED CHANNEL:

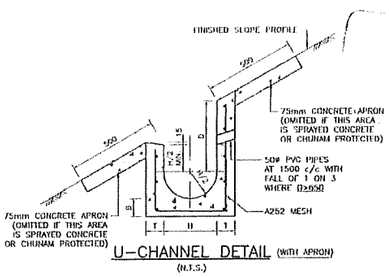
1. ALL DIMENSIONS ARE IN MILLIMETRES.
2. FOR DIMENSIONS OF CHANNEL SEE TABLE.

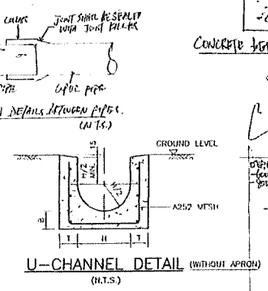
NOMINAL SIZE H	T	B	s	REINFORCEMENT
225/300	100	100	200	A252 MESH PLACED CENTRALLY

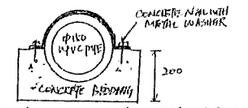
3. CONCRETE SURFACE FINISH SHALL BE CLASS U2 OR F2 AS APPROPRIATE.
4. EXPANSION JOINTS SHALL BE PROVIDED AT A MAXIMUM SPACING OF 10 METRES.
5. 750-900 CHANNELS ARE REINFORCED.
6. X=20 UNLESS OTHERWISE SPECIFIED.

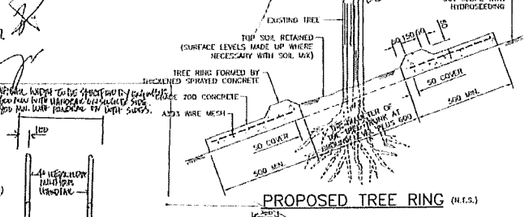


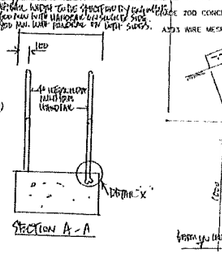


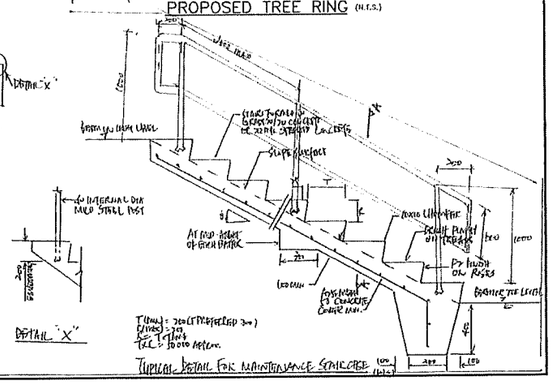


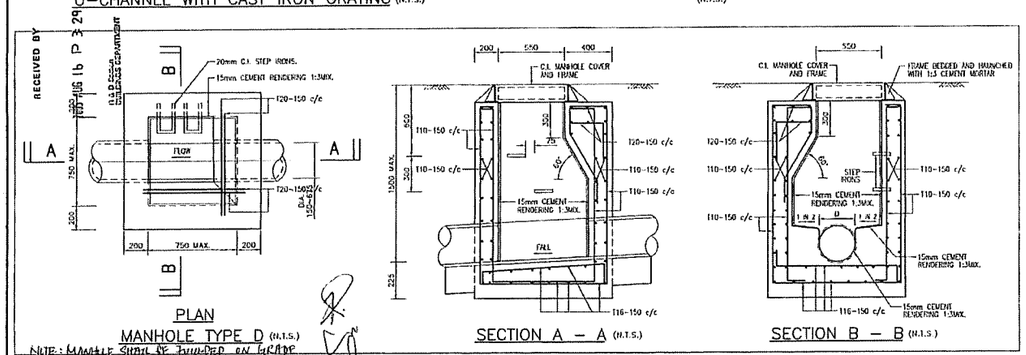












B.D. REF.	6/2001/04

LEGEND :

Plan Approved
TSE Alisa
Building Surveyor
for BUILDING AFFAIRS OFFICE
14 SEP 2005

FONG KWOK WAI
Registered Person
AMENDED PLAN

REV.	DATE	DESCRIPTION
A	15/08/05	GENERAL REVISION
-	06/11/04	APPROVED BY B.D.

ALL MEASUREMENTS MUST BE CHECKED AT SITE. - DO NOT SCALE DRAWINGS - ALL DRAWING SPECIFICATIONS AND THEIR COPYRIGHT ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, DESIGNERS, AND SHALL BE RETURNED AT THE COMPLETION OF THE WORK. THIS DRAWING IS NOT USED FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY CLARIFIED

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	P.W.
CHECKED BY :	Mario	SCALE :	N.T.S.
APPROVED BY		DATE :	26/07/2004

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE

SITE FORMATION -
TYPICAL DRAINAGE DETAILS

DRAWING NO.	REV.
SF-12	A

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
10/F., Good Harvest Commercial Building, TEL (852) 2730 9233
No 515-517, Nathan Road, Kowloon, Hong Kong FAX (852) 2730 2663

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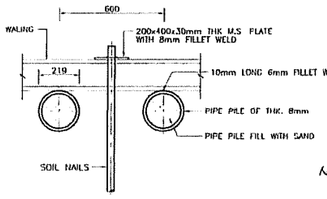
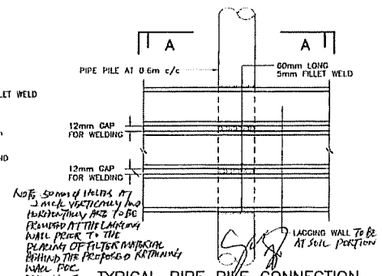
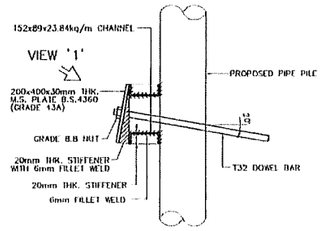


TYPICAL CONNECTION DETAILS BETWEEN PIPE PILE AND SOIL NAILS (N.T.S.)

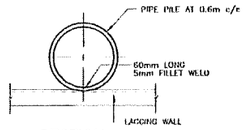


TYPICAL PIPE PILE CONNECTION DETAIL FOR LAGGING WALL (N.T.S.)

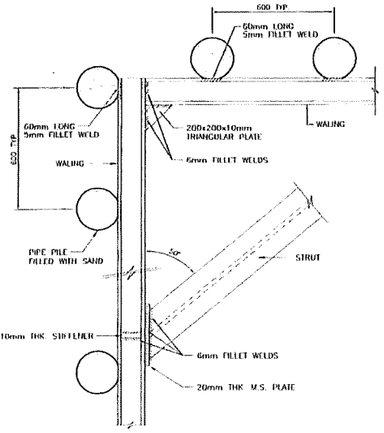


SOIL NAIL HEAD DETAIL (N.T.S.)

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)

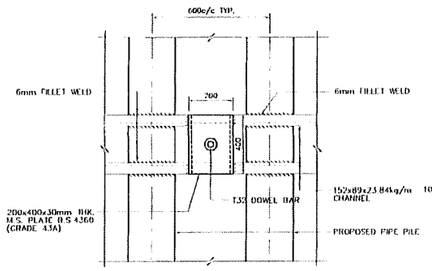


SECTION A (N.T.S.)



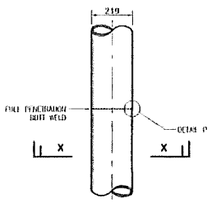
TYPICAL PIPE PILE CONNECTION DETAIL FOR CORNER STRUT

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)

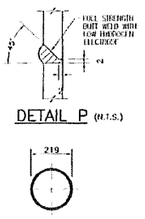


VIEW '1' (N.T.S.)

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)

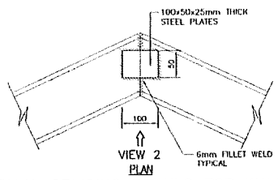


TYPICAL SPLICE DETAIL FOR PIPE PILE (N.T.S.)

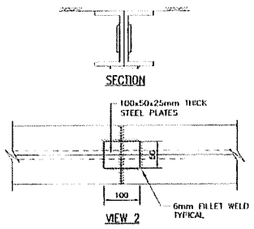


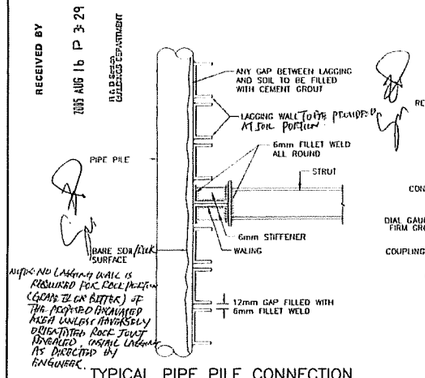
DETAIL P (N.T.S.)

SECTION X – X (N.T.S.)

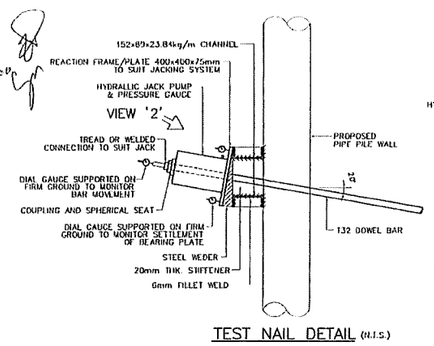


TYPICAL SPLICING DETAILS FOR WALING (N.T.S.)



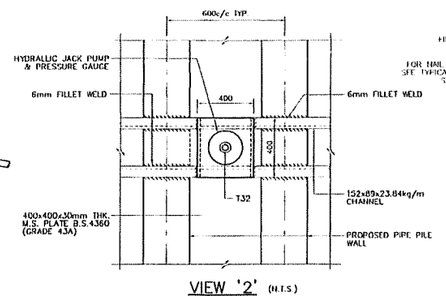


TYPICAL PIPE PILE CONNECTION DETAIL FOR STRUT (N.T.S.)



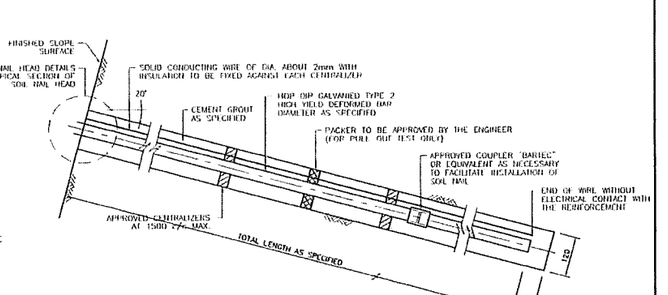
TEST NAIL DETAIL (N.T.S.)

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)

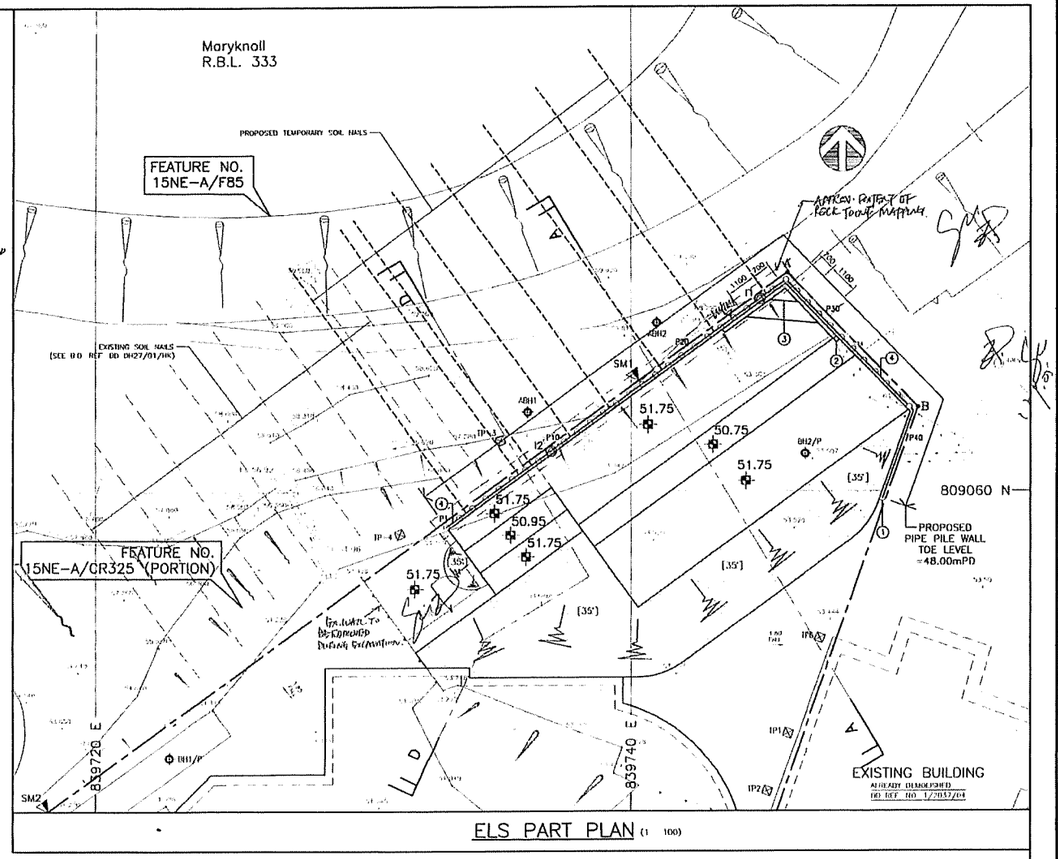


VIEW '2' (N.T.S.)

(ALL WELD TO BE 6mm F.W. ALL ROUND UNLESS OTHERWISE STATED)



TYPICAL DETAIL OF SOIL NAIL (N.T.S.)



ELS PART PLAN (1 : 100)

G.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- EXISTING WALL
- EXISTING CATCHPIT
- EXISTING DRAINAGE (R=INVERT LEVEL)
- EXISTING SLOPE
- EXISTING TREE
- EXISTING SEWER PIPE
- EXISTING GAS PIPE
- EXISTING WATER MAIN
- EXISTING TELEPHONE LINE
- EXISTING CABE DUCT
- BH1 – EXISTING BOREHOLES
- ABH1 – EXISTING ADDITIONAL BOREHOLES
- TP1 – EXISTING TRAIL PITS
- ATP1 – EXISTING ADDITIONAL TRAIL PITS
- 45.95 – PROPOSED EXCAVATION LEVEL (mPD)
- SM1 – PROPOSED SETTLEMENT MARKER (5 NOS.)
- TM1 – PROPOSED TILTING MARKER (1 NO.) (SEE GD REF)
- ~~BM1 – PROPOSED BUILDING MARKER (2 NOS.)~~
- (35°) – PROPOSED TEMPORARY CUT SLOPE (35° MAX. INCLINATION)
- PROPOSED TEMPORARY SOIL NAIL
- ① – PROPOSED Ø219 8mm THK. PIPE PILE WALL AT 0.6m c/c
- ② – PROPOSED WALING (2 NOS. 152x89x23.84kg/m C)
- ③ – PROPOSED STRUT (152x152x37kg/m U.C.)
- ④ – PROPOSED LAGGING (127x64x14.90kg/m C)
- PROPOSED 35° TEMPORARY CUT SLOPE
- I1 – PROPOSED INCLINOMETER (2 NOS.)

Plan Approved .
TSE Alisa
Building Surveyor
for BUILDING AUTHORITY
14 SEP 2005

NEW DRAWING

REV.	DATE	DESCRIPTION

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	[illegible]
CHECKED BY :	[illegible]	SCALE :	1 : 100
APPROVED BY :		DATE	15/08/2005

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SITE FORMATION – ELS PART PLAN AND TYPICAL DETAILS

DRAWING NO. SF-13 REV. –

ARCHITECT :

Prudent Design Limited

GEOTECHNICAL CONSULTANT :

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NOTES ON STEEL PIPE PILE WALL

1. ALL PIPE PILE ~~PAVING~~ SHALL BE GRADE 43 STEEL COMPLYING WITH BS4360[WITH WELDING SHALL COMPLY WITH BS 5135 AND ELECTRODES SHALL COMPLY WITH BS 639.
2. THE PIPE PILE WALL SHALL CONSIST OF A SERIES OF GRADE 43 STEEL NOMINAL 219mmø x 8mm THK. CIRCULAR HOLLOW STEEL SECTION.
3. TOLERANCE ON VERTICAL ALIGNMENT OF THE STEEL PIPE PILES SHALL BE WITHIN 1 IN 100 AND MAXIMUM DEVIATION SHALL NOT EXCEED 100mm.
4. THE TOP 2m OF THE PIPE PILE WALL SHALL BE TRIMMED AND REMOVED UPON THE COMPLETION OF ELS WORKS.

METHOD STATEMENT FOR PIPE PILE WALL INSTALLATION

1. THE DRILLING EQUIPMENT SHALL BE DESIGNED FOR DRILLING THROUGH OVER BURDEN, LOOSE FORMATION CONTAINING BOULDERS, GRAVEL, BEDROCK AND OTHER OBSTRUCTIONS. THE STEEL PIPE PILE HOLES SHALL BE SUNK BY ODEX-METHOD WITH CASING OR OTHER APPROVED METHOD. THE STEEL PIPE PILE SHALL BE INSTALLED IN POSITION IMMEDIATELY AFTER THE HOLE IS COMPLETE.
2. STEEL PIPE PILES SHALL BE LENGTHENED BY WELDING AND SHALL BE INSERTED TO THE HOLES DURING DRILLING OF THE HOLES. THERE SHALL BE NO RELATIVE ROTATION BETWEEN ADJOINING PIECES OF THE LENGTHENED PILES.
3. PRIOR TO DRILLING HOLES FOR THE INSTALLATION OF PIPE PILE, INSPECTION PIT/TRENCH SHALL BE CARRIED OUT TO CONFIRM THAT NO SERVICE UTILITY OR EXISTING FOOTINGS WILL BE AFFECTED OR DAMAGED BY THE PIPE PILE WALL.

PROCEDURE OF SOIL NAIL INSTALLATION

1. INSTALLATION OF SOIL NAILS SHOULD BE COMMENCED FROM THE TOP ROW.
2. DRILL HOLE OF REQUIRED DIAMETER i.e. 120mmø AT THE REQUIRED INCLINATION AND TO THE REQUIRED DEPTH. IMMEDIATELY INSTALL THE REINFORCEMENT BAR AND FILL THE DRILLHOLE COMPLETELY WITH CEMENT GROUT. THE GROUTING IS PERFORMED BY INSERTING A GROUTING TUBE TO THE BOTTOM OF THE HOLE AND PUMPING THE CEMENT GROUT DOWN THE HOLE. THE DRILLED HOLE SHALL BE GROUTED WITHIN 24 HOURS AFTER DRILLING AND THE INSTALLED STEEL BAR SHALL NOT BE DISTURBED FOR THE NEXT 24 HOURS.
3. CONSTRUCT THE NAIL HEAD, INSTALL THE WALING, STEEL PLATE AND FIX THE STEEL NUT.
4. ALL REINFORCEMENT BARS SHALL COMPLY WITH BS4449 (MAX. YIELD STRESS SHALL BE 425/460MPa) CS2:1995 AND ALL ACCESS ARISES SHALL BE HOT-DIP GALVANIZED COMPLY WITH BS729. HOT-DIP GALVANIZING OF 610g/m² MINIMUM SHALL BE PROVIDED.
5. THE MINIMUM EQUIVALENT CUBE STRENGTH OF CEMENT GROUT SHOULD BE 30MPa AT 28 DAYS. WATER CEMENT RATIO OF CEMENT GROUT SHOULD NOT EXCEED 0.45 BY WEIGHT.
6. NO DRILLING FOR SOIL NAILS SHALL BE CARRIED OUT WITHIN A 5m DIAMETER AREA OF THE DRILLED HOLE NOT YET GROUTED AND ALSO WITHIN 24 HOURS OF THE FRESHLY GROUTED SOIL NAIL.

PULL-OUT TEST

1. PULL-OUT TEST SHALL BE PERFORMED ON SOIL NAIL NOS. TN1 TO TN3 THESE THREE SOIL NAILS ARE INTENDED ONLY FOR THE PULL OUT TEST.
2. TEST NAIL OF THE ROW SHALL BE COMPLETED AND FOUND SATISFACTORY PRIOR TO THE INSTALLATION OF WORKING NAILS OF THE ROW.
3. THE PULL OUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A CUBE STRENGTH OF 30 MPa.
4. THE TEST LOAD (TP) SHALL BE 2 TIMES WORKING LOAD AS SPECIFIED IN THE DRAWING.
5. THE INITIAL LOAD (TA) EQUAL TO 5% OF TP SHALL BE APPLIED. THE RANGE BETWEEN TA AND TP SHALL BE DIVIDED INTO THREE EQUAL STEPS OF MAGNITUDE T.
6. A PROGRAMME OF THREE LOADING AND UNLOADING CYCLES SHALL THEN BE CARRIED OUT THE LOAD BEING INCREASED FROM TA IN SUCCESSIVE CYCLES T, 2T UP TO TP. AFTER THE PEAK LOADING IN EACH CYCLE IS REACHED, MEASUREMENTS OF THE DEFORMATION INCREASE WITH THE LOAD HELD CONSTANT SHALL BE TAKEN AT 15 MINUTES INTERVALS FOR 60 MINUTES. WHEN REQUIRED THE LOAD SHALL BE HELD LONGER AS DIRECTED BY THE ENGINEERING.
7. AFTER THE ABOVE MEASUREMENTS HAVE BEEN TAKEN FOR EACH CYCLE, THE LOAD SHALL BE REDUCED TO TA AND THE EXTENTION SHALL BE RECORDED.
8. THROUGH OUT THE TEST, THE SOIL NAIL MOVEMENT VERSES THE APPLIED LOAD SHALL BE MEASURED AND PLOTTED ON A GRAPH. ALL THE RESULTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN 3 DAYS OF COMPLETION OF THE TESTS.
9. IF NO UNDUE MOVEMENT OCCURS DURING THE PULL OUT TEST, THE BARS SHALL BE CUT-OFF TO FLUSH WITH THE FINISHED GROUND AND THE REMAINING PART OF DRILLHOLE SHALL BE GROUTED. OTHERWISE, THE DESIGN OF SOIL NAILS SHALL BE REVIEWED AND RESUBMITTED TO THE SATISFACTION OF BUILDING AUTHORITY.
10. PULL OUT TEST REPORT WILL BE SUBMITTED TO B.D./GEO.

TEST NAIL	DIA.	PULL OUT LOAD (kN)	ELEVATION (mPD)	INCLINATION	TENTATIVE TOTAL LENGTH (m)	BOND LENGTH (m)	TENTATIVE FREE LENGTH (m)
TN1	T32	146.0	53.50	20°	12.0	10.4	1.6
TN2	T32	146.0	50.50	20°	12.0	10.4	1.6
TN3	T32	292.0	48.50	20°	12.0	4.4	7.6

11. PULL-OUT TEST SHALL DEEM ACCEPTABLE IF THE PULL-OUT EXTENSION AT FULL LOAD WITH REDUCTION OF THE THEORETICAL ELASTIC EXTENSION OF THE FREE LENGTH IS LESS THAN 0.3OR OF THE GROUT LENGTH OR CAN SUSTAIN THE MAXIMUM PULL-OUT LOAD.

NON-DESTRUCTIVE TESTING OF INSTALLED SOIL NAILS

ON COMPLETION OF INSTALLATION OF SOIL NAILS, THE AP SHALL SUBMIT TO THE BA KEY SUPERVISION RECORDS IN THE FORM OF PNAP 284 APPENDIX A CERTIFIED BY THE CAT III SUPERVISION PERSONNEL. THESE RECORDS COULD BE SUBMITTED TO THE BA VIA THE CAT I MONTHLY PROGRESS REPORT. UPON REVIEW OF THE SUPERVISION RECORDS, IF THE BA CONSIDERS THAT THERE IS CAUSE FOR CONCERN IN RELATION TO THE QUALITY OF SOIL NAILING WORKS, THE BA WILL REQUIRE THE AP TO CARRY OUT NON-DESTRUCTIVE TESTING (NDT) OF AT LEAST 1% OF SOIL NAILS WITH A MINIMUM OF 2 NAILS PER SLOPE (INCLUDING WALL) TO VERIFY THE LENGTH OF THE INSTALLED SOIL NAILS.

TEST PROCEDURES OF TIME DOMAIN REFLECTOMETRY (WITH ELECTRIC WIRE INSTALLATION)

1. SELECT SOME SOIL NAILS OF KNOWN LENGTHS FOR CALIBRATION OF PULSE PROPAGATION VELOCITY.
2. THE HEAD OF THE STEEL SOIL NAIL SHALL ELECTRICALLY BY ACCESSIBLE. ALL LOOSE LOOSE MATERIALS SHALL BE REMOVED FROM THE BAR HEAD.
3. CONNECT THE TDR INSTRUMENT TO THE STEEL SOIL NAIL HEAD AND THE ELECTRIC WIRE.
4. SEND A SHORT PULSE INTO THE STEEL SOIL NAIL AND RECORD THE TIME OF REFLECTION (IF THE WIRE IS ELECTRICALLY IN CONTACT WITH THE STEEL SOIL NAIL END, THE RETURN SIGNAL FROM THE NAIL END SHOULD GO DOWN AND VICE VERSA).
5. SEND A LONG PULSE INTO THE STEEL SOIL NAIL AND RECORD THE TIME OF REFLECTION (IF THE WIRE IS ELECTRICALLY IN CONTACT WITH THE STEEL SOIL NAIL END, THE RETURN SIGNAL FROM THE NAIL END SHOULD GO DOWN AND VICE VERSA).
6. DETERMINE THE AVERAGE PROPAGATION VELOCITY OF THE PULSE FROM THE RESULTS OBTAINED IN STEPS (4) AND (5).
7. REPEAT STEPS (2) TO (5) FOR STEEL SOIL NAIL TO BE TESTED AND ESTIMATE ITS LENGTH BY USING THE CALIBRATED PROPAGATION VELOCITY.
8. THE MEASUREMENT SHALL BE TAKEN WITH PULSE OF THE FOLLOWING WIDTHS: LESS THAN 5 NANO-SECOND (ns), BETWEEN 5 TO 20ns AND GREATER THAN 20ns.

SOIL NAIL SCHEDULE :

SOIL NAIL MARK	DIA.	WORKING LOAD (kN)	MAXIMUM TOTAL LENGTH (m)	INCLINATION	LEVEL (mPD)	SKEW ANGLE
N1	T32	14.0	12.0	20°	52.00	0°
N2	T32	15.0	12.0	20°	52.00	0°
N3	T32	32.0	12.0	20°	53.50	0°
N4	T32	36.0	12.0	20°	53.50	0°
N5	T32	55.0	12.0	20°	53.50	0°
N6~N9	T32	73.0	12.0	20°	53.50	0°
N10	T32	42.0	12.0	20°	55.00	0°
N11	T32	49.0	12.0	20°	55.00	0°
N12~N15	T32	70.0	12.0	20°	55.00	0°
N16	T32	56.0	12.0	20°	56.50	0°
N17~N20	T32	66.0	12.0	20°	56.50	0°
N21~N24	T32	53.0	12.0	20°	58.00	0°

SUMMARY OF STRUT LOAD

STRUT LAYER	MAX. STRUT FORCE PER m	MAX. SPACING (mm)	MAX. STRUT LOAD
1st LAYER LEVEL=57.25mPD	20.2kN/m	1800	36.4kN
2nd LAYER LEVEL=55.75mPD	25.8kN/m	1800	46.5kN
3rd LAYER LEVEL=54.25mPD	54.3kN/m	1800	97.8kN

STEEL MEMBER FOR LATERAL SUPPORT

PIPE PILE WALL ①	219ø x 8mm THK. CHS AT 0.6m c/c
WALING ②	2 NOS. x 152x89x23.84kg/m CHANNEL
STRUT ③	152x152x37kg/m UNIVERSAL COLUMN
LAGGING ④	127x64x14.90kg/m CHANNEL

SECTIONAL PROPERTIES FOR PIPE PILE WALL

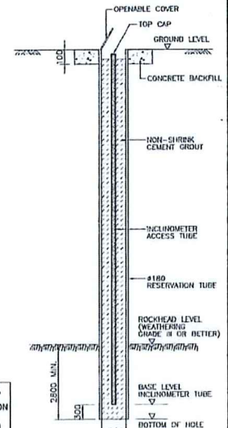
NOMINAL SIZE	THICKNESS t (mm)	MASS PER METRE (kg)	AREA OF SECTION A (cm²)	SECOND MOMENT OF AREA I (cm⁴)	RADIUS OF GYRATION r (cm)	ELASTIC MODULUS z (cm³)	SURFACE AREA PER METRE (m²)
219mmø CHS PIPE PILE	8	41.6	53.1	2960	7.47	270	0.688

SECTIONAL PROPERTIES FOR WALING AND LAGGING

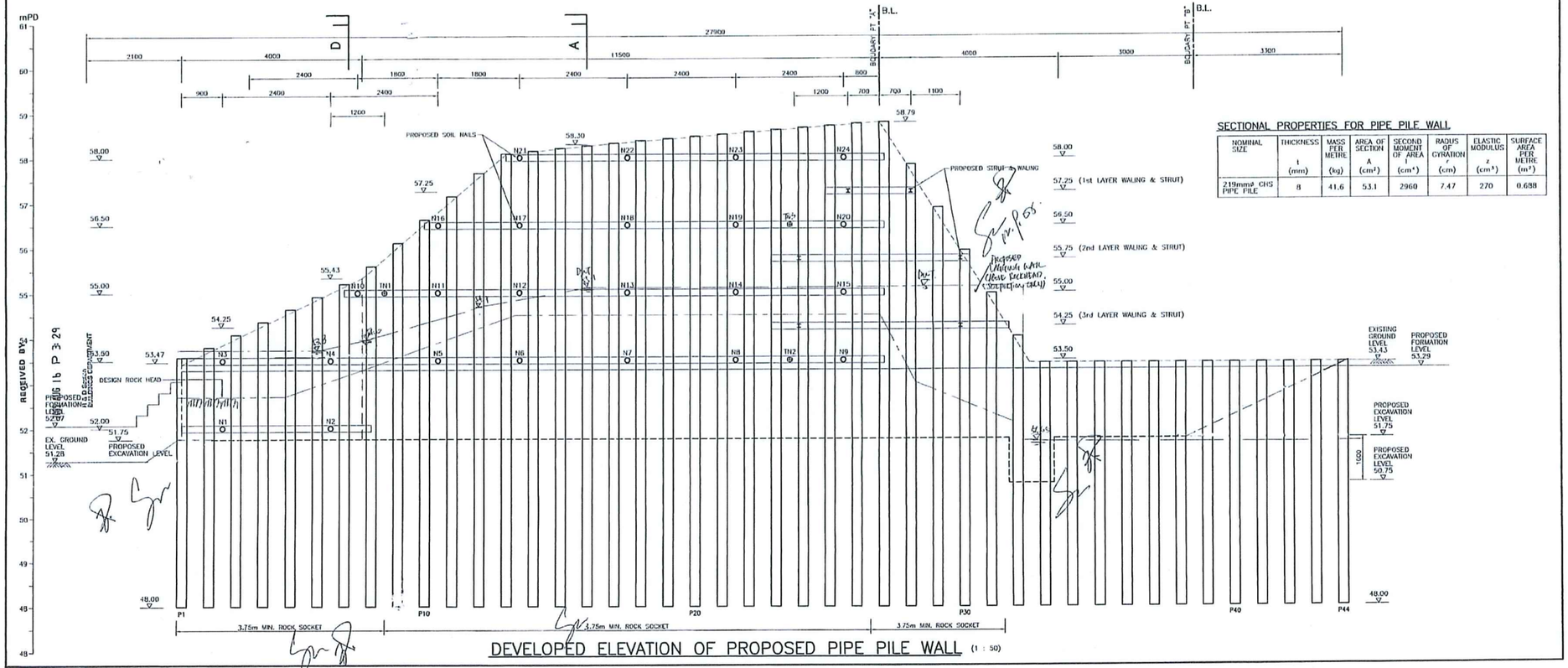
NOMINAL SIZE	MASS PER METRE (kg)	DEPTH D (mm)	WIDTH B (mm)	THICKNESS t (mm)	THICKNESS T (mm)	SECOND MOMENT OF AREA x-x (cm⁴)	SECOND MOMENT OF AREA y-y (cm⁴)	RADUS OF GYRATION x-x (cm)	RADUS OF GYRATION y-y (cm)	ELASTIC MODULUS x-x (cm³)	ELASTIC MODULUS y-y (cm³)	AREA OF SECTION A (m²)
152x89x23.84 CHANNEL	23.84	152.4	88.9	7.1	11.6	1168	216	6.20	2.06	153	35.8	30.4
127x64x14.9 CHANNEL	14.90	127.0	63.5	6.4	9.2	482	67.2	5.04	1.88	76.0	15.2	19.0

SECTIONAL PROPERTIES FOR STRUT

NOMINAL SIZE	MASS PER METRE (kg)	DEPTH D (mm)	WIDTH B (mm)	THICKNESS t (mm)	THICKNESS T (mm)	SECOND MOMENT OF AREA x-x (cm⁴)	SECOND MOMENT OF AREA y-y (cm⁴)	RADUS OF GYRATION x-x (cm)	RADUS OF GYRATION y-y (cm)	ELASTIC MODULUS x-x (cm³)	ELASTIC MODULUS y-y (cm³)	AREA OF SECTION A (m²)
152x152x37 UNIVERSAL COLUMN	37.0	161.8	154.4	8.0	11.5	2210	706	6.85	3.87	27.3	91.5	47.1



TYPICAL DETAILS OF INCLINOMETER (N.T.S.)



DEVELOPED ELEVATION OF PROPOSED PIPE PILE WALL (1 : 50)

SECTIONAL PROPERTIES FOR PIPE PILE WALL

NOMINAL SIZE	THICKNESS t (mm)	MASS PER METRE (kg)	AREA OF SECTION A (cm²)	SECOND MOMENT OF AREA I (cm⁴)	RADUS OF GYRATION r (cm)	ELASTIC MODULUS z (cm³)	SURFACE AREA PER METRE (m²)
219mmø CHS PIPE PILE	8	41.6	53.1	2960	7.47	270	0.688

B.D. REF. 6/2001/04

LEGEND :

- BOUNDARY LINE
- O N1 – PROPOSED SOIL NAIL
- ⊕TN1 – PROPOSED TEST NAIL

CONSTRUCTION SEQUENCE FOR ELS WORKS FOR RETAINING WALL

i) INSTALL THE VERTICAL PIPE PILE WALL AND THE PROPOSED INCLINOMETER TO THE PROPOSED FOUNDING LEVEL AND SUBMIT RECORD TO BD AS NECESSARY. AN ASSESSMENT REPORT FOR THE SITE GEOLOGY REGARDING THE ROCKHEAD PROFILE SHALL BE SUBMITTED TO BD TOGETHER WITH FORM BA14 FOR THE PIPE PILE WALL INSTALLATION AND FOUND SATISFACTORY BY GEO/BD.

ii) PRIOR TO THE CONSENT APPLICATION FOR THE EXCAVATION WORKS, THE BUILDING BASEMENT AND ACCESS RAMP SCREEN WALL CONSTRUCTION SHALL BE COMPLETED.

iii) EXCAVATE TO 250MM BELOW THE 1ST LAYER OF SOIL NAIL THE EXCAVATION DEPTH SHALL BE LIMITED TO MAX. 500mm EACH TIME AND LAGGING WALL SHALL BE INSTALLED PRIOR TO FURTHER EXCAVATION. INSTALL THE WALING AT THE PROPOSED LEVEL. CARRY OUT THE PULL- OUT TEST. UPON THE RESULTS FOUND SATISFACTORY, COMMENCE THE INSTALLATION OF THE 1ST ROW OF SOIL NAILS. THE PULL-OUT TEST RESULTS AND ASSESSMENT SHALL BE SUBMITTED TO BD VIA THE CAT. I MONTHLY PROGRESS REPORT.

iv) REPEAT STEP iii) FOR ALL PULL-OUT TESTS AND SOIL NAILS, LAGGING WALL AND WALING INSTALLATIONS UNTIL THE FINAL EXCAVATION LEVEL IS REACHED. INSTALL ALSO THE STRUTS AND WALING AT THE NORTH EASTERN CORNER OF THE SITE, OPEN CUT OF MAX. 33° IN FILL MATERIAL AND 45° IN INSITU SOIL (GRADE V OR BETTER) SHALL BE ADOPTED AT THE WALL BASE AREA.

v) COMMENCE THE CONSTRUCTION OF RETAINING WALLS AS INDICATED ON THE PLAN.

Plan Approved
TSE Alisa
Building Surveyor
for BUILDING AUTHORITY
14 SEP 2005

Fong Kwok Wai
Authorized Person

NEW DRAWING

REV.	DATE	DESCRIPTION

ALL MEASUREMENTS MUST BE CHECKED AT THE SITE – DO NOT SCALE DRAWINGS – ALL DRAWING SPECIFICATIONS AND THEIR COPY RIGHT ARE THE PROPERTY OF ENGINEERS, ARCHITECTS, DESIGNERS, AND SHALL BE RETURNED AT THE COMPLETION OF THE WORK – THIS DRAWING IS NOT VALID FOR CONSTRUCTION PURPOSES UNLESS EXPRESSLY VERIFIED.

Philip C.W. So
RPE (Civil & Geotechnical)
Registered Structural Engineer

CONTRACT NO.			
PROJECT NO.		DRAWN BY :	Vicky
CHECKED BY :	Manus	SCALE :	1 : 50
APPROVED BY :		DATE :	15/08/2005

PROJECT :

R.B.L. 567,
20 CARMEL ROAD,
STANLEY, HONG KONG.

DRAWING TITLE :

SITE FORMATION –
ELS NOTES AND
DEVELOPED ELEVATION

DRAWING NO. SF-14 REV. –

ARCHITECT :

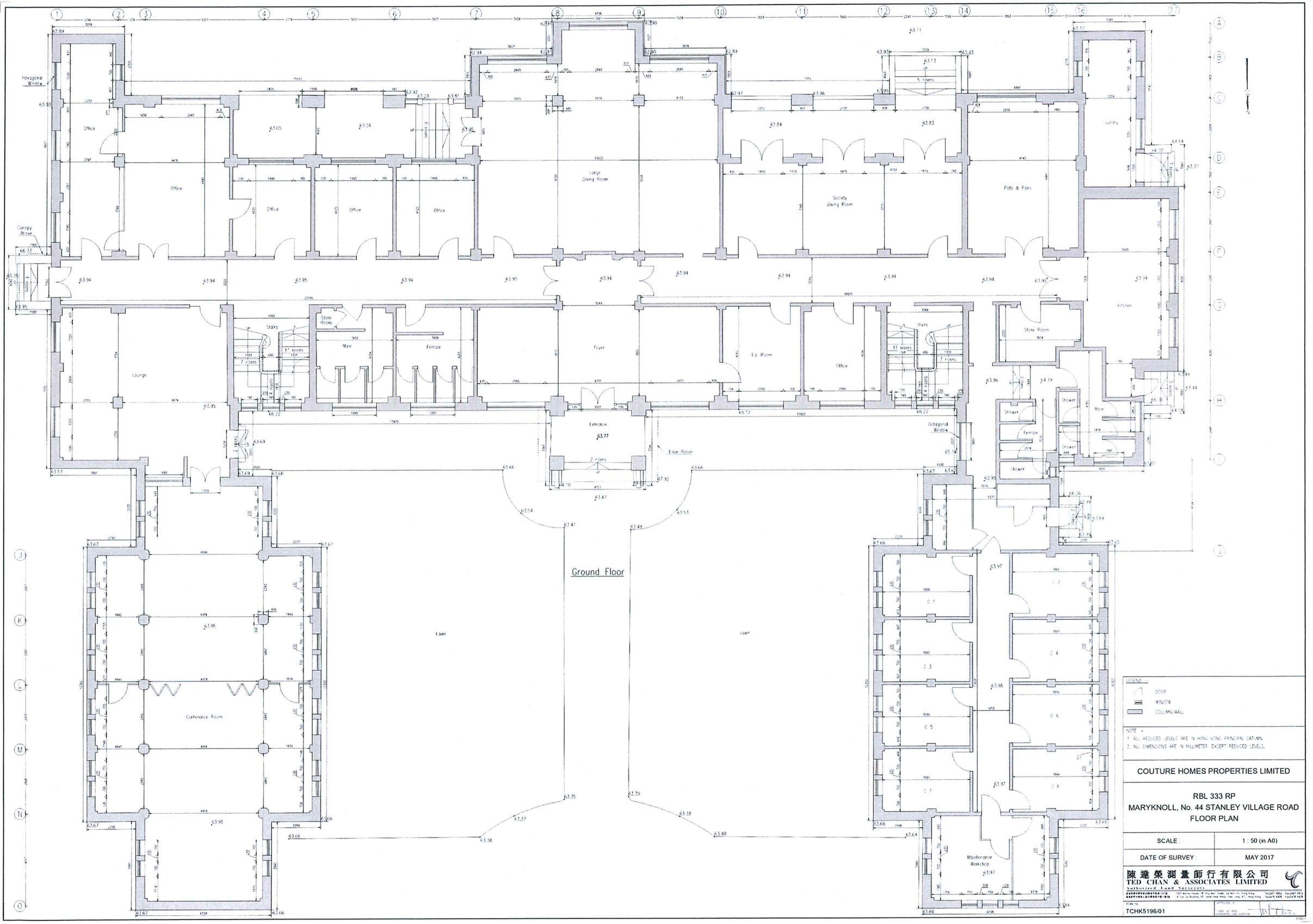
Prudent Design Limited

GEOTECHNICAL CONSULTANT :

PSA PHILIP SO & ASSOCIATES
CONSULTING CIVIL AND GEOTECHNICAL ENGINEERS LTD.
15/F., Good Harvest Commercial Building, No. 515-517, Nathan Road, Kowloon, Hong Kong
TEL (852) 2730 8333 FAX (852) 2722 2663

RECEIVED BY: 16 P 3:29

Survey Plan of Maryknoll House



LEGEND

DOOR
WINDOW
COLUMN/WALL

NOTE –
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER EXCEPT REDUCED LEVELS.

COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FLOOR PLAN

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN NO. TCHK5196/01

First Floor

LEGEND :-

DOOR — COLUMN/WALL

WINDOW — LEVEL DIFF. MARK

Cab. CABINET

NOTE :-

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2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

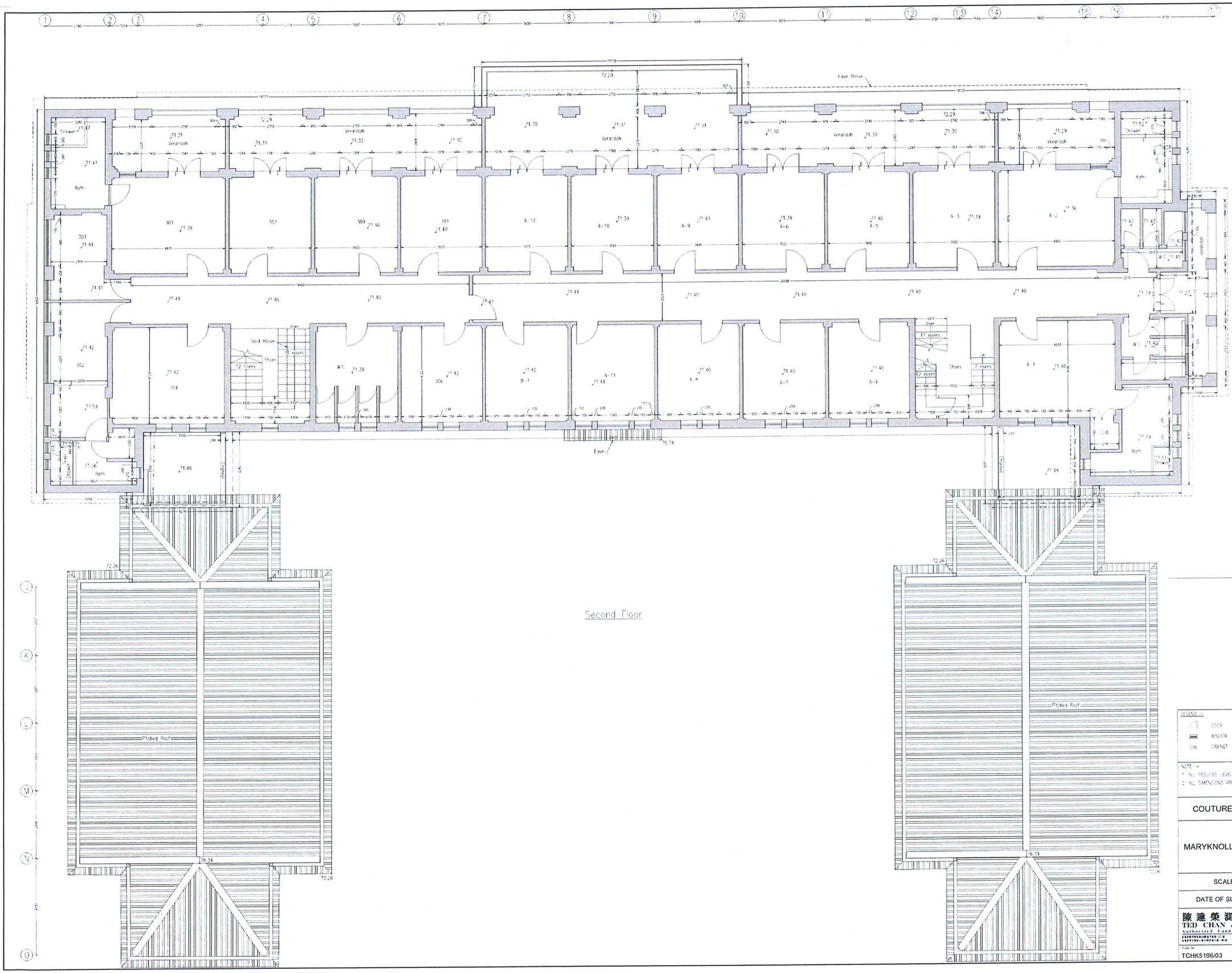
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FLOOR PLAN

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達乘測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN No. TCHK5196/02



LEGEND :-

	DOOR		GULLY
	WINDOW		COLUMN / WALL
Cab.	CABINET		LEVEL DIFF. MARK

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

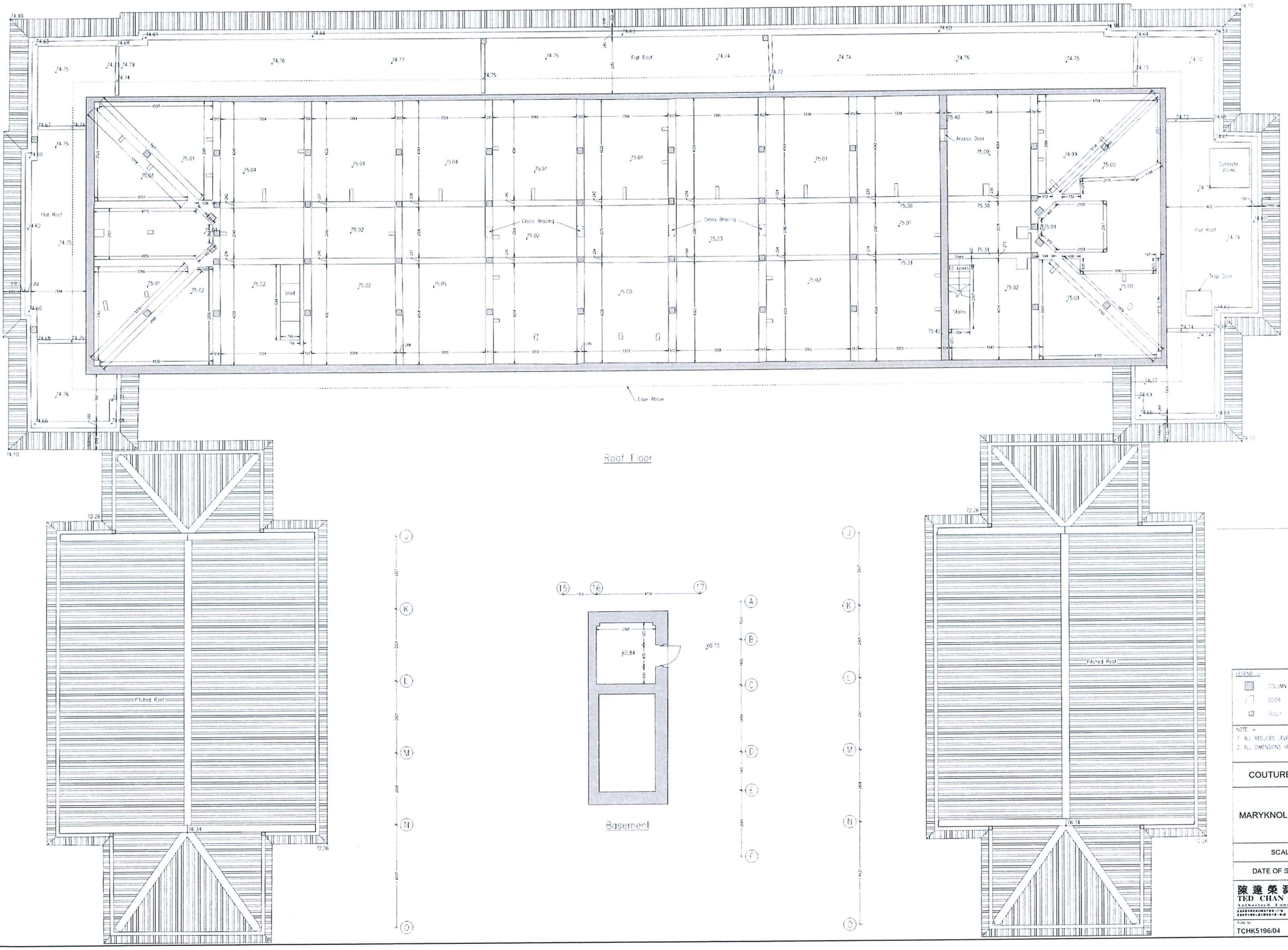
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FLOOR PLAN

SCALE :	1 : 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN No.
TCHK5196/03



LEGEND :-

- COLUMN
- DOOR
- RAILY

NOTE :-

1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER EXCEPT REDUCED LEVELS.

COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FLOOR PLAN

SCALE :	1 : 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN NO. TCHK5196/04

Top Roof

LEGEND

Roof and Pent Tile

Concrete Roof Tile

NOTE -

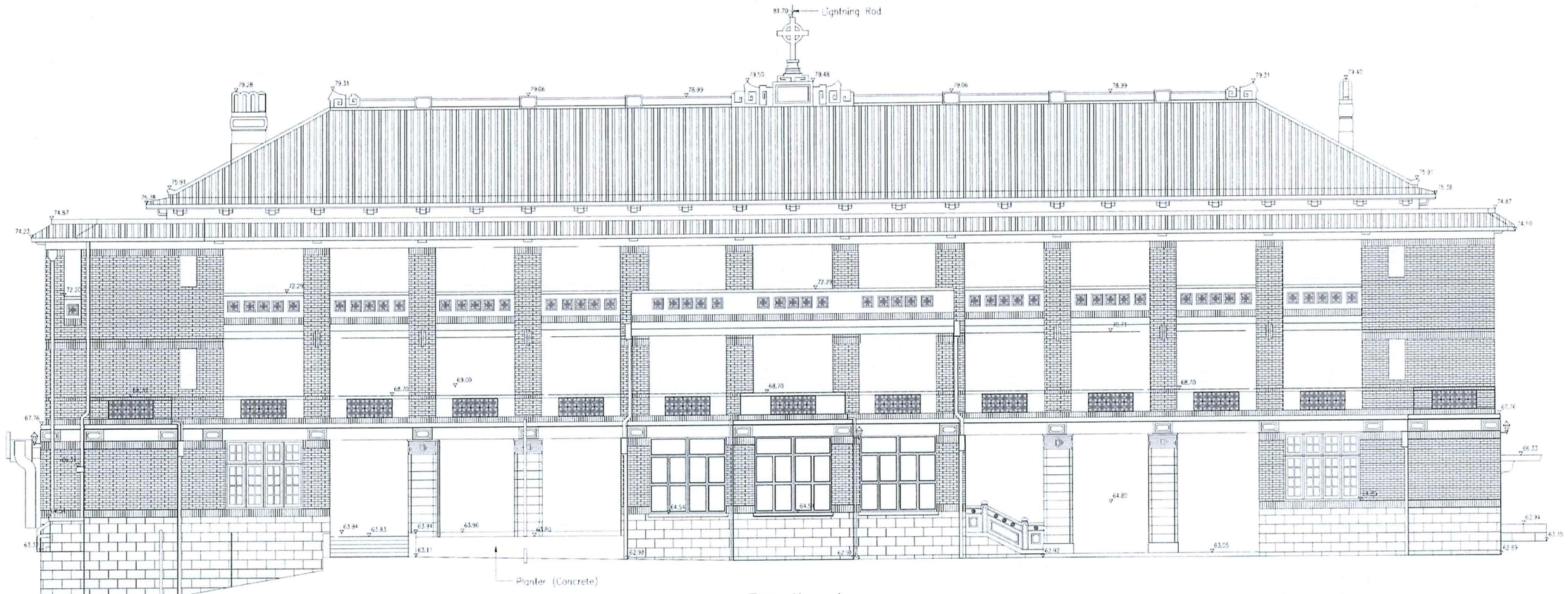
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
TOP ROOF

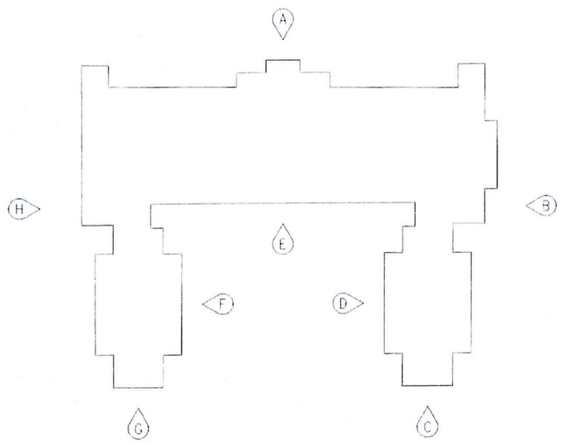
SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN NO. TCHK5196/20



Elevation A



Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- 63.11 Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

COUTURE HOMES PROPERTIES LIMITED

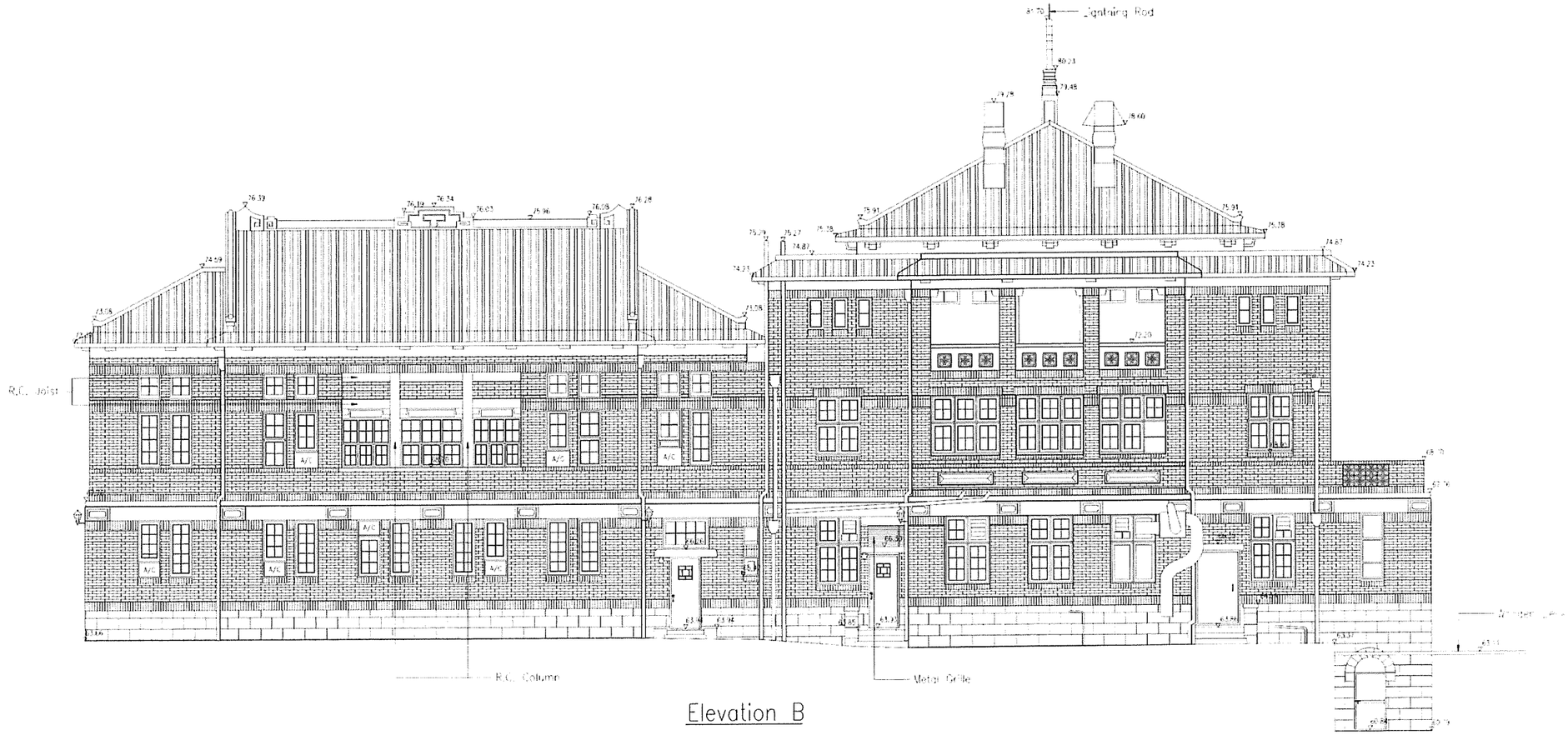
RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
ELEVATIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN No. TCHK5196/08

AUTHORIZED BY



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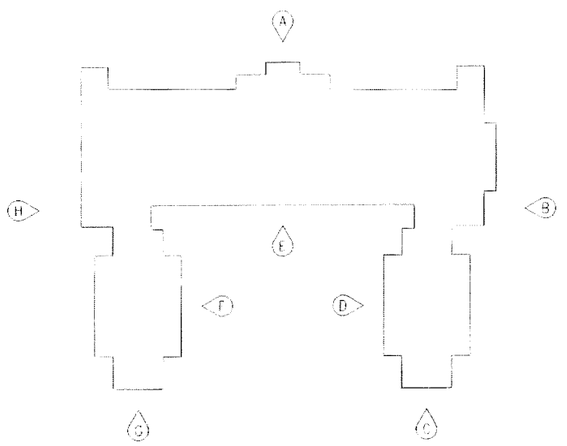


Key Plan

LEGEND :

- Roll and Pan Tile
- Red Brick
- Granite
- Finished Level
- Office Block
- A/C Air-Conditioner

NOTE :
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER UNLESS REQUIRED OTHERWISE.

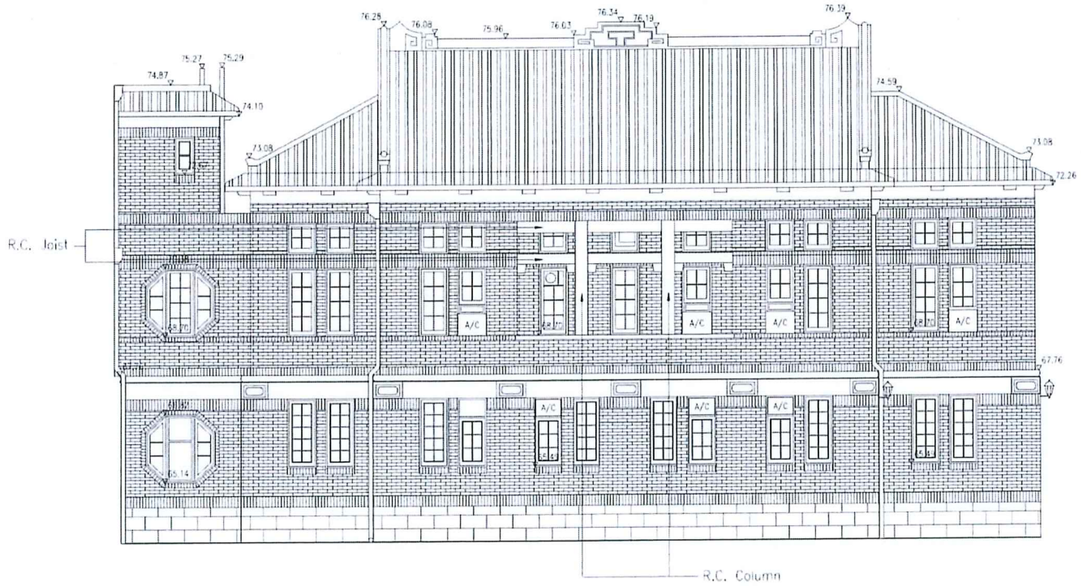
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
ELEVATIONS

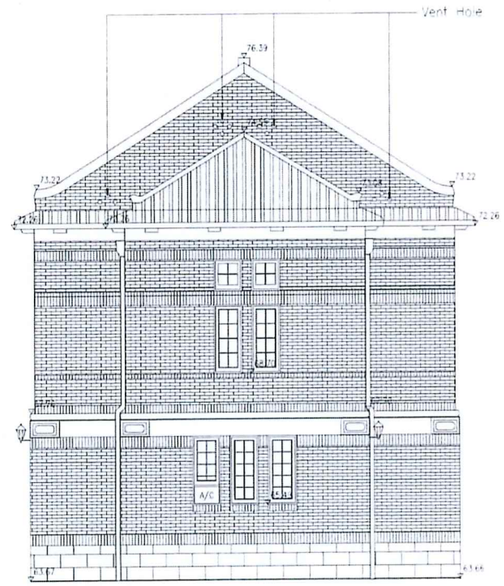
SCALE	1 : 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

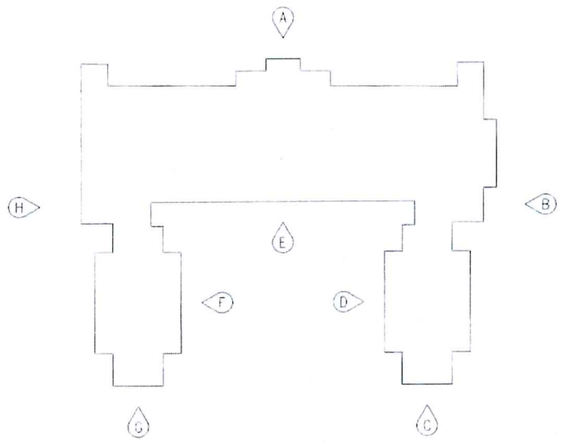
Plan No.
TCHK5196/09



Elevation D



Elevation C



Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- 63.11 Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

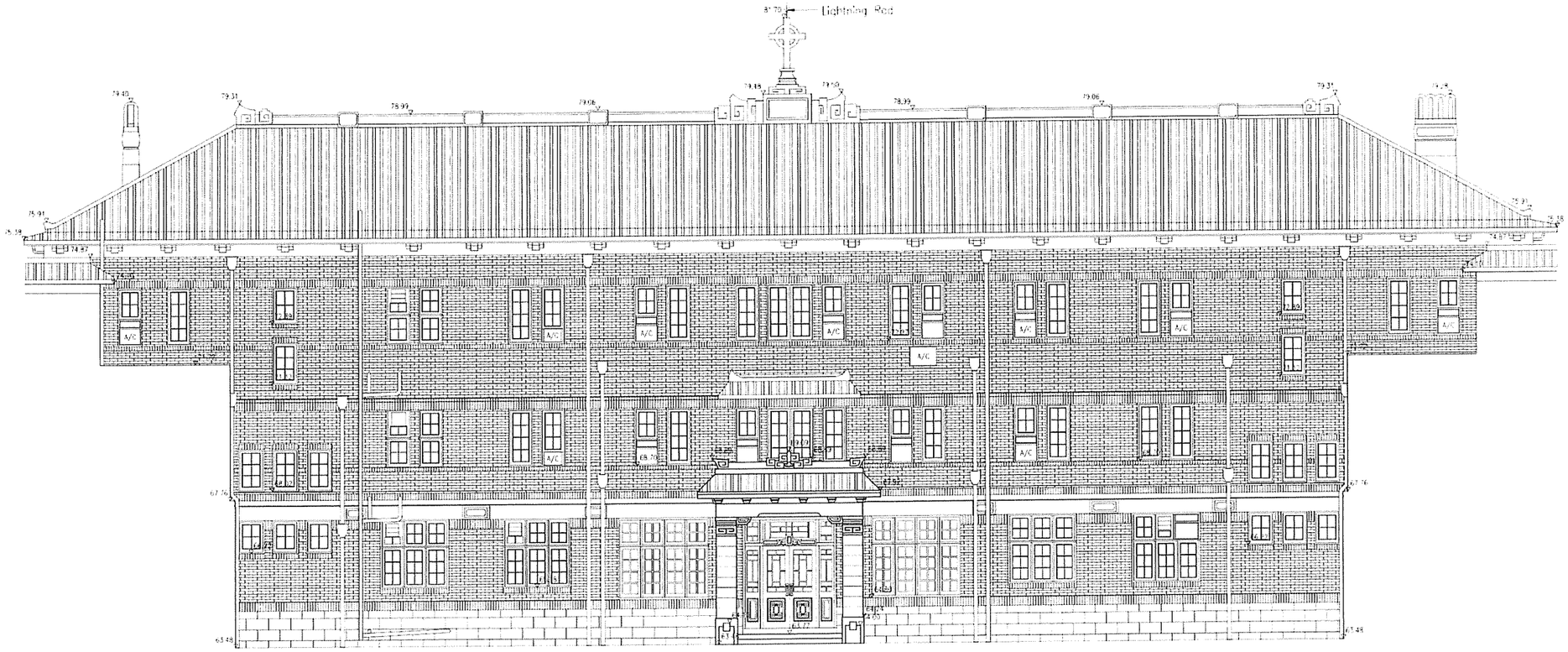
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
ELEVATIONS

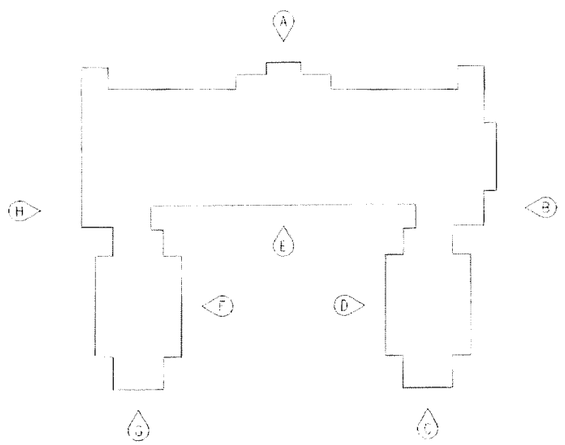
SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN NO.
TCHK5196/10



Elevation E



Key Plan

LEGEND : -

- Roll and Pan Tile
- Red Brick
- Granite
- Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
1. ALL REVISED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REVISED LEVELS.

COUTURE HOMES PROPERTIES LIMITED

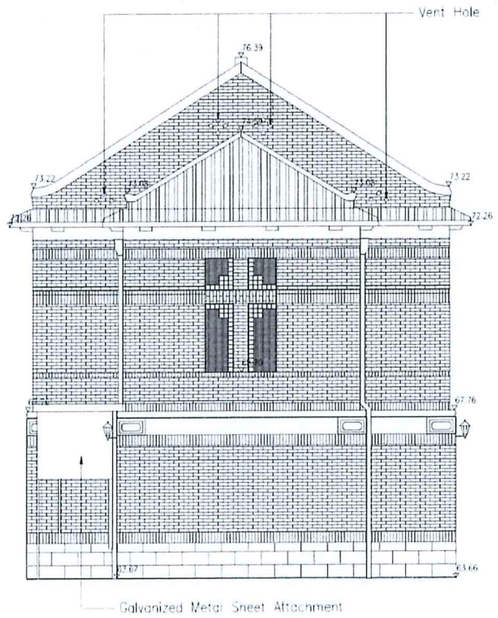
RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
ELEVATIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達乘測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

FILE NO. TCHK5196/11

APPROVED BY



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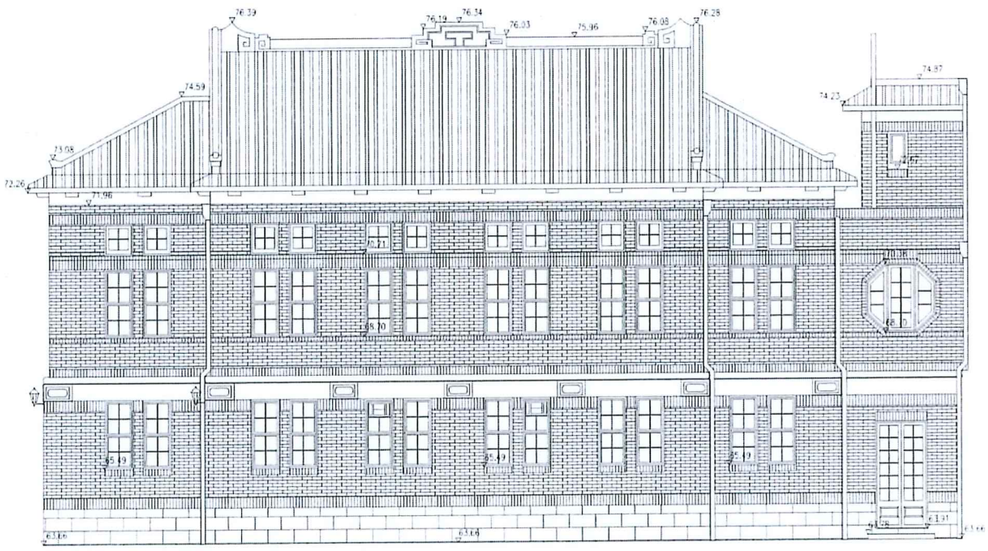

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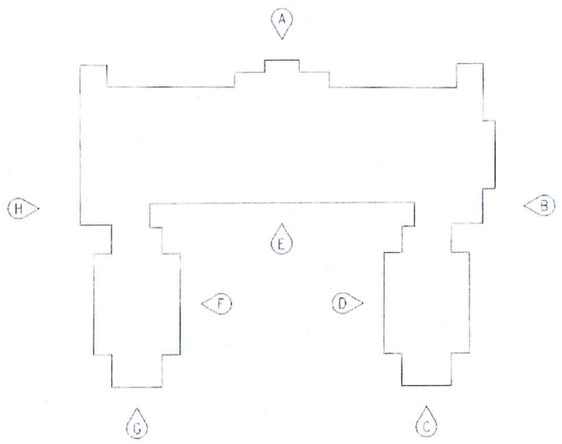


Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- 63.11 Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

COUTURE HOMES PROPERTIES LIMITED

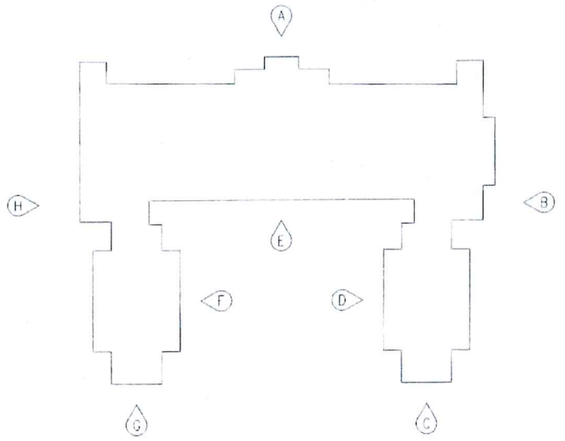
RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
ELEVATIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN NO.
TCHK5196/12

Elevation H



Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- 63.11 Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
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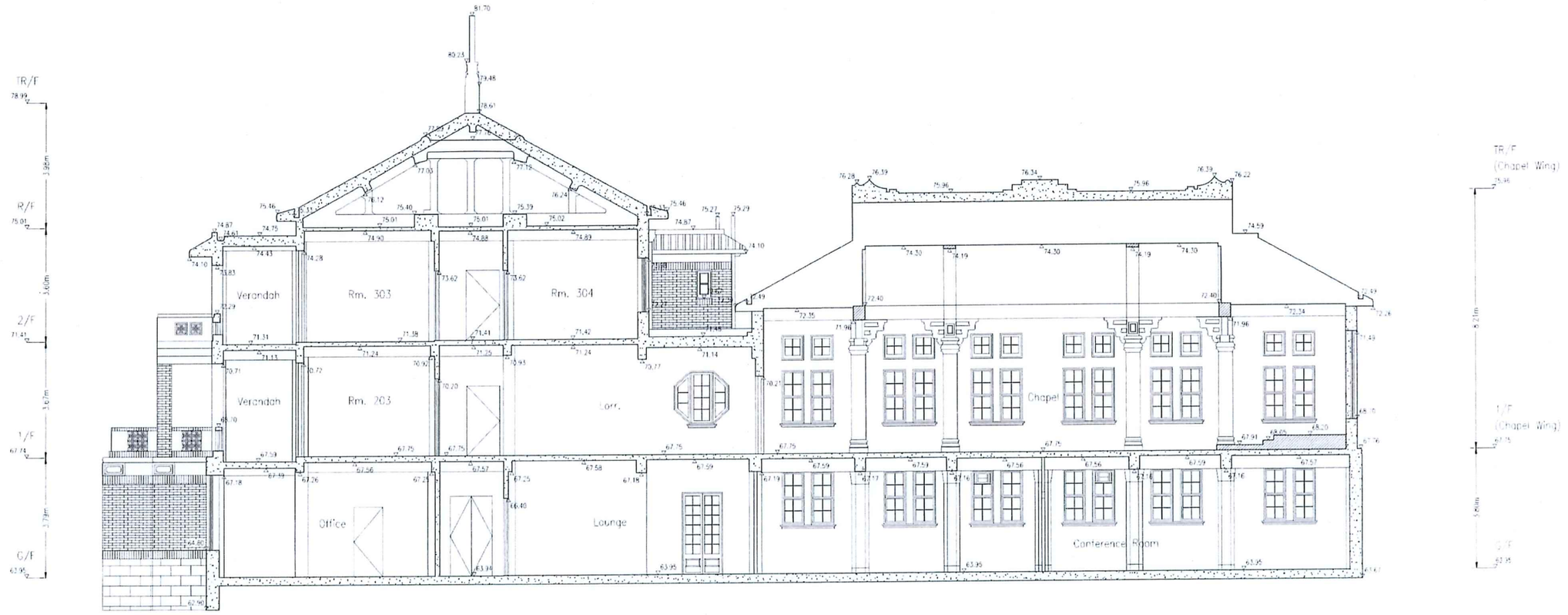
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
ELEVATIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN No.
TCHK5196/13



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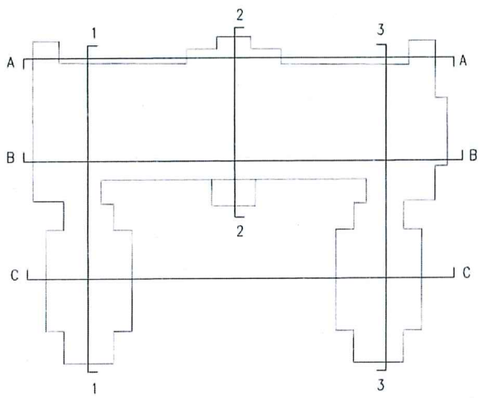

Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- 63.11 Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
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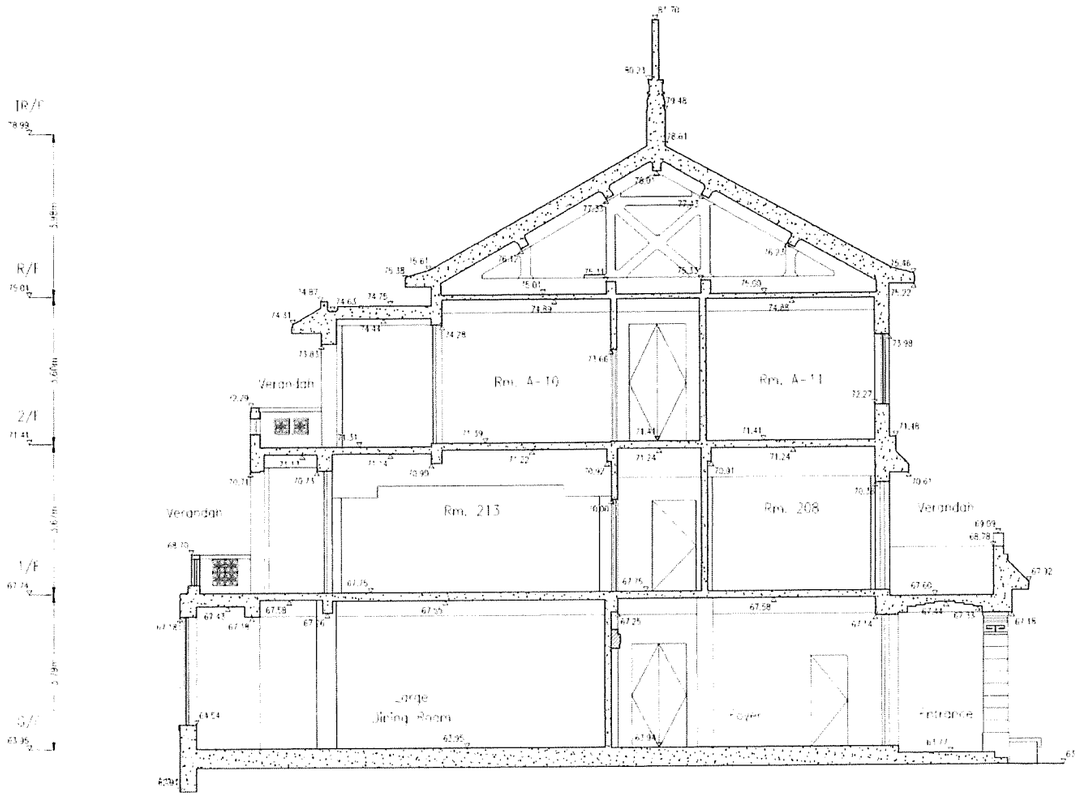
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
SECTIONS

SCALE	1 : 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

JOB NO. TCHK5196/14



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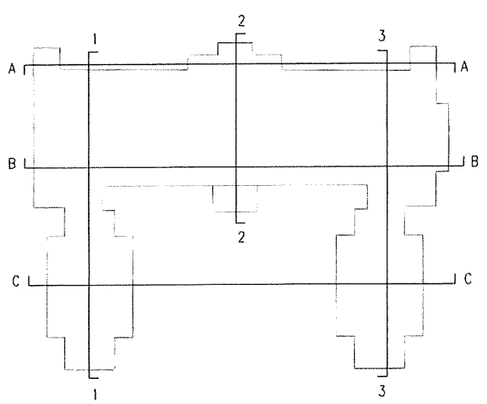

Key Plan

LEGEND :

- Red and Pan Tile
- Red Brick
- Granite
- Chiseled Level
- Grille Block
- A/C — Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
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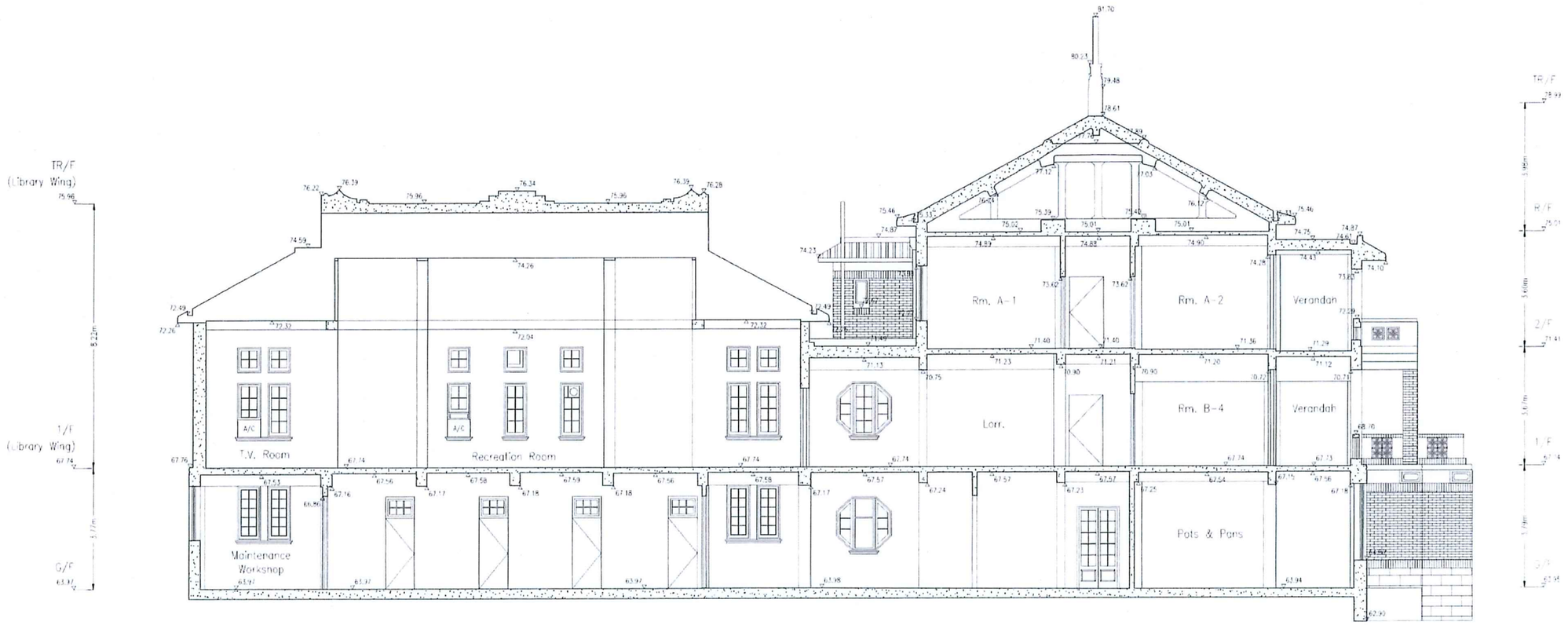
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
SECTIONS

SCALE :	1 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

FILE NO.
TCHK5196/15



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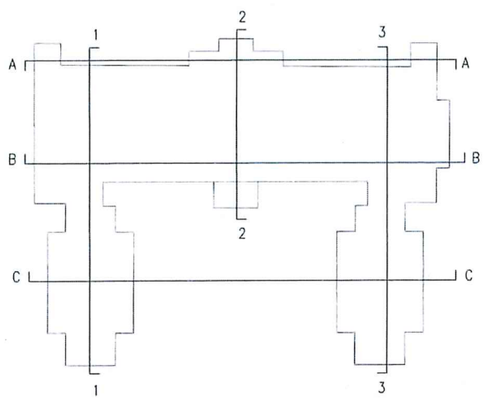

Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- Finished Level
- Grille Block
- A/C — Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
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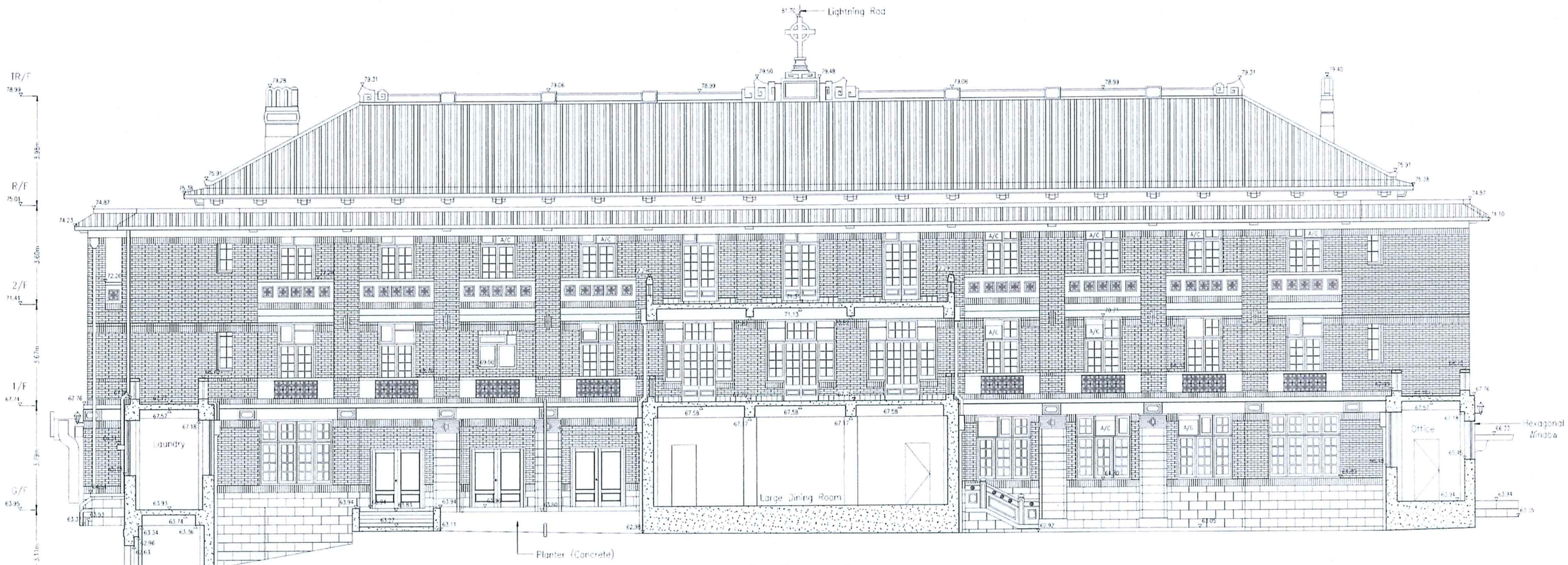
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
SECTIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN No.	APPROVED BY
TCHK5196/16	CHAN TAT WING AUTHORIZED LAND SURVEYOR



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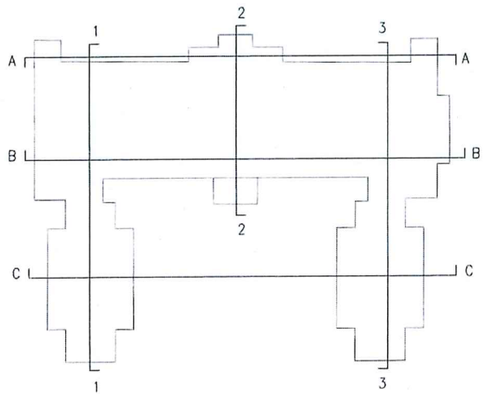

Key Plan

LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- 63.11 Finished Level
- Grille Block
- A/C Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
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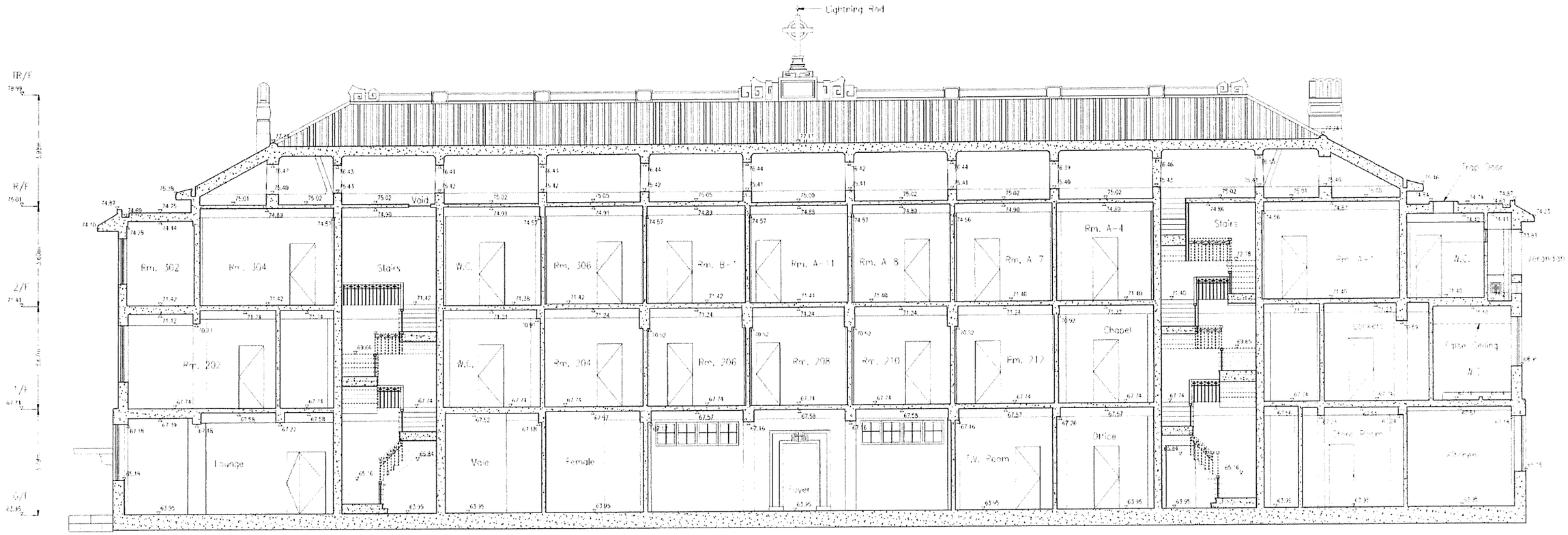
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
SECTIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

PLAN No.	TCHK5196/17
AUTHORIZED BY	



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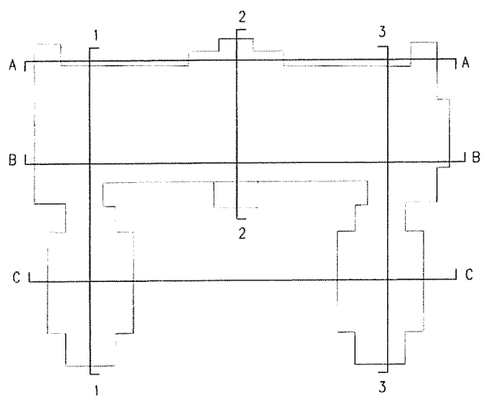


Key Plan

LEGEND :-

- Pole and Pan Tile
- Red Brick
- Granite
- Finished Level
- Grille Block
- A/C — Air-Conditioner

NOTE :-
1. ALL REDUCED LEVEL ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER EXCEPT REDUCED LEVELS.

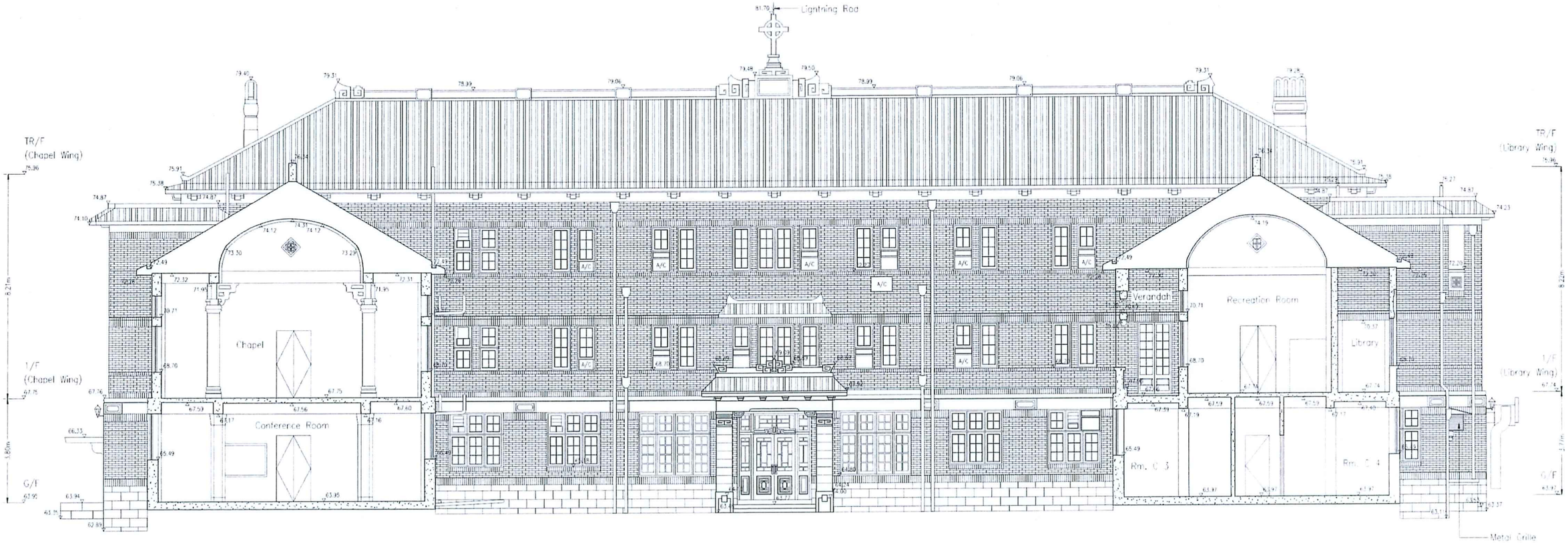
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
SECTIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorised Land Surveyors

Plan No.
TCHK5196/18



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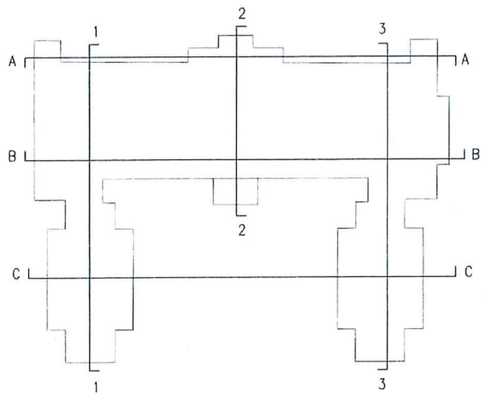


LEGEND :-

- Roll and Pan Tile
- Red Brick
- Granite
- Finished Level
- Grille Block
- A/C — Air-Conditioner

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

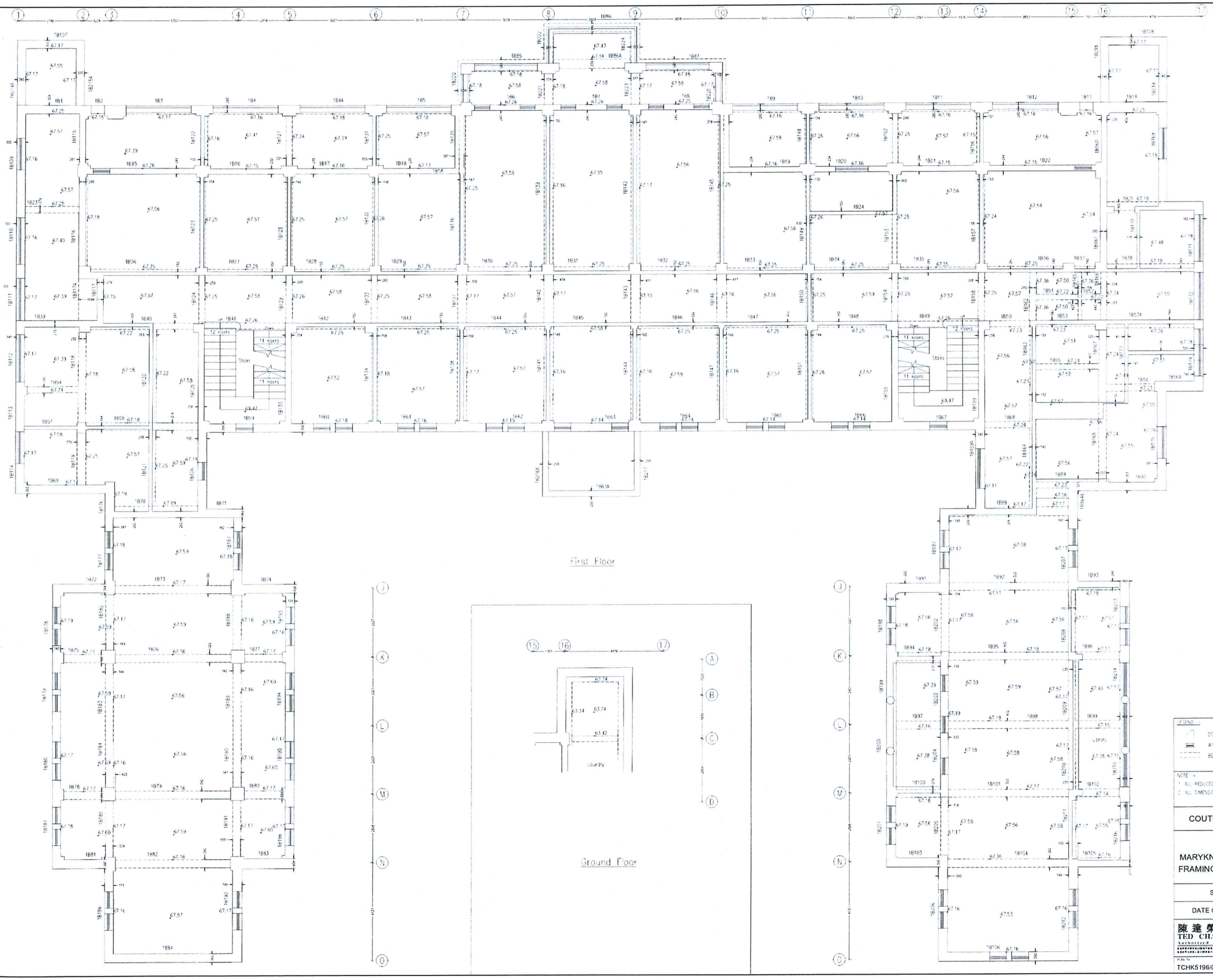
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
SECTIONS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

Plan No.
TCHK5196/19



First Floor

Ground Floor

LEGEND

DOOR
WINDOW
BEAM
67.17 SOFFIT LEVEL OF BEAM
67.18 SOFFIT LEVEL OF CEILING

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

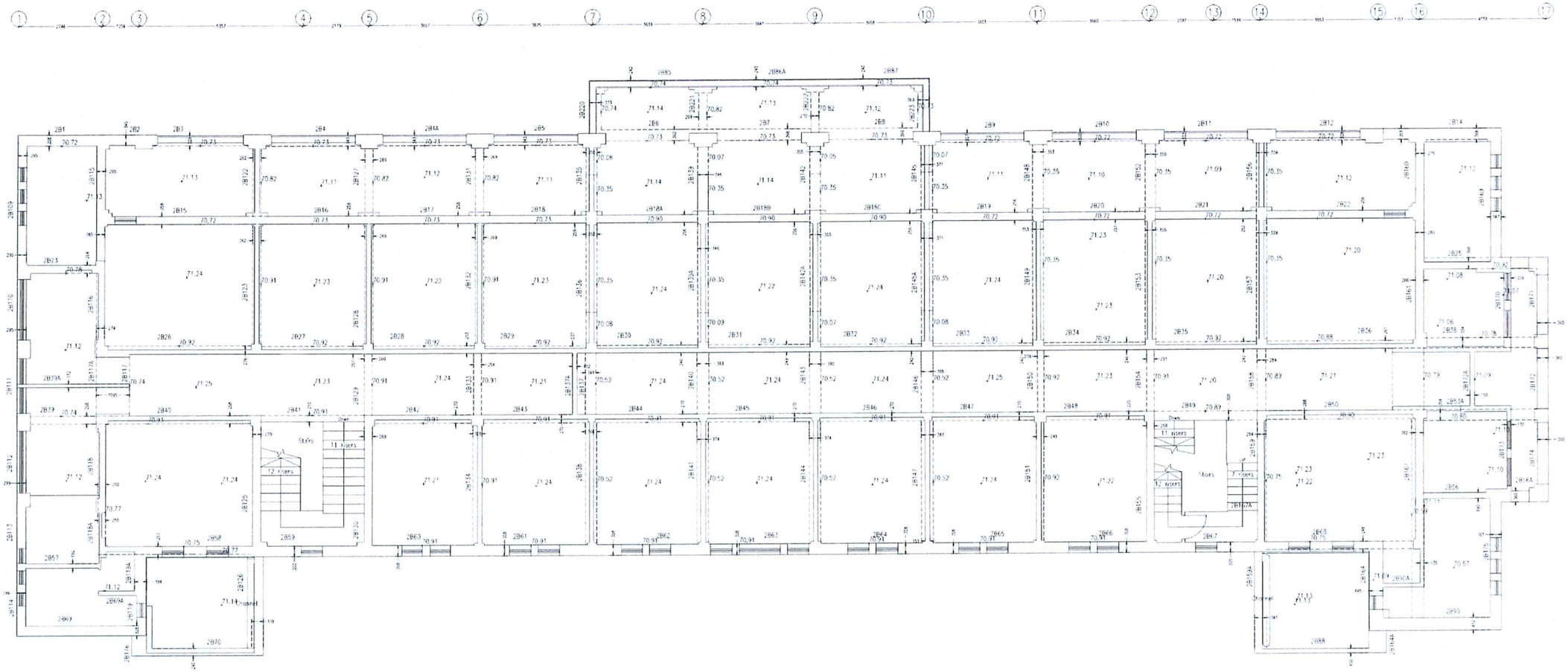
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FRAMING PLAN OF GROUND & FIRST FLOORS

SCALE :	1 : 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

File No.
TCHK5196/05



Second Floor

LEGEND

DOOR

WINDOW

BEAM

67.17 SOFFIT LEVEL OF BEAM

67.08 SOFFIT LEVEL OF CEILING

NOTE :-
1. ALL REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER, EXCEPT REDUCED LEVELS.

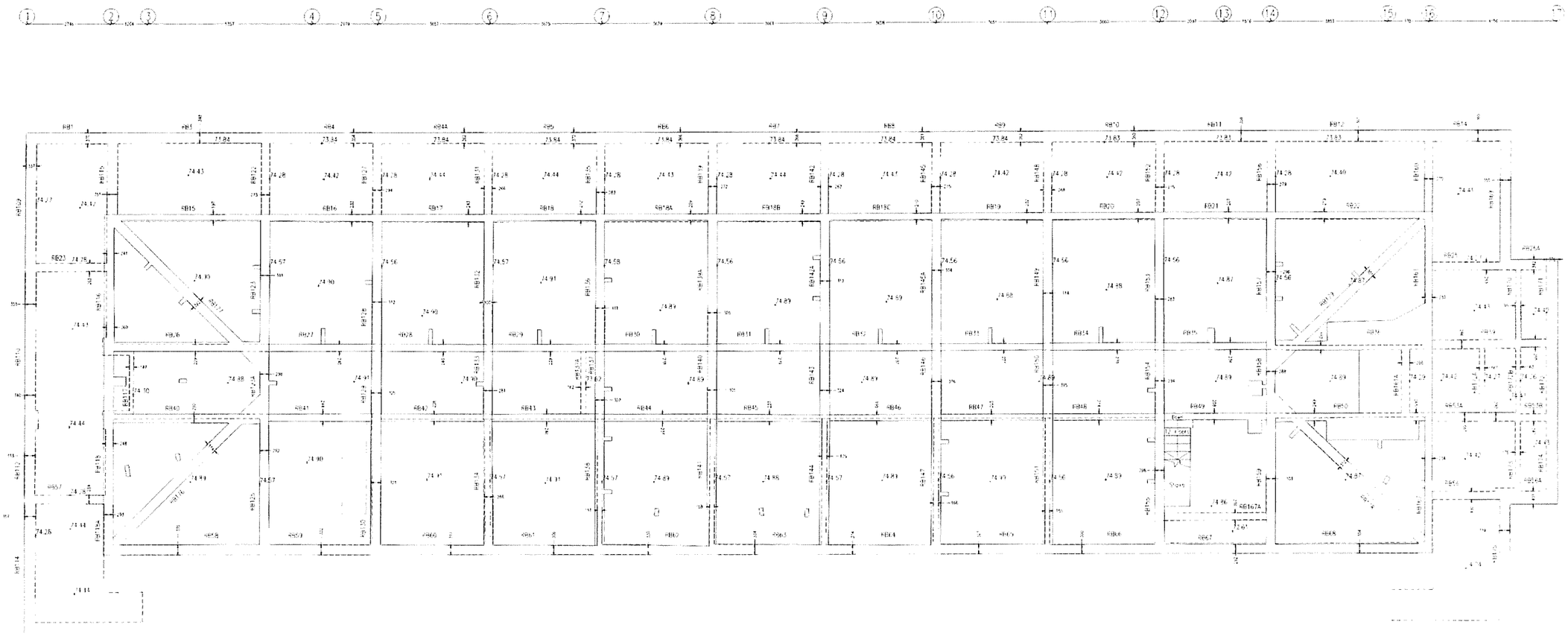
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FRAMING PLAN OF SECOND FLOOR

SCALE :	1 ; 50 (in A0)
DATE OF SURVEY :	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

FILE NO.
TCHK5196/06



Roof Floor

NOTE :-
1. REDUCED LEVELS ARE IN HONG KONG PRINCIPAL DATUM.
2. ALL DIMENSIONS ARE IN MILLIMETER EXCEPT REDUCED LEVELS.

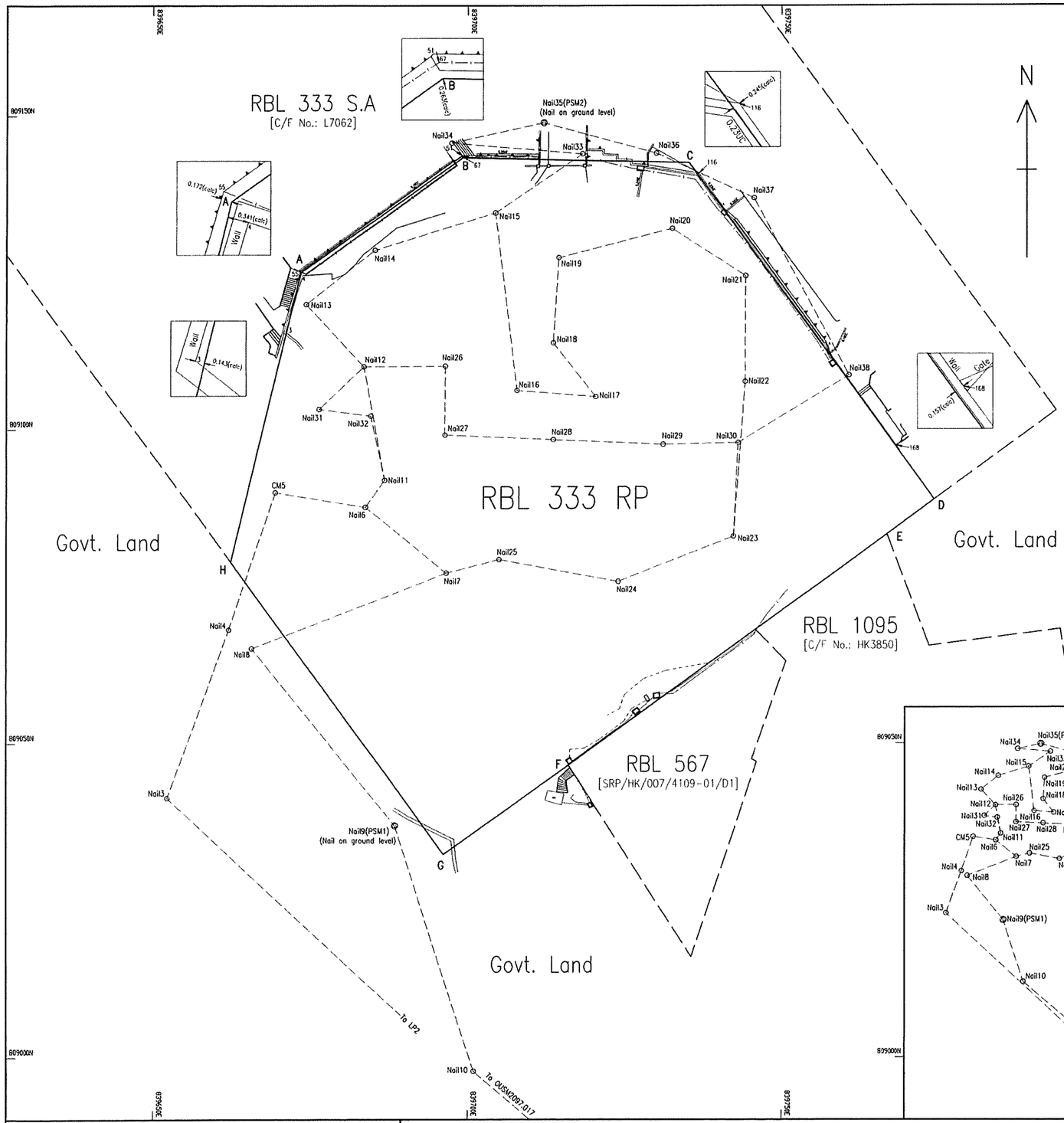
COUTURE HOMES PROPERTIES LIMITED

RBL 333 RP
MARYKNOLL, No. 44 STANLEY VILLAGE ROAD
FRAMING PLAN OF ROOF FLOOR

SCALE	1 : 50 (in A0)
DATE OF SURVEY	MAY 2017

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED
Authorized Land Surveyors

FILE NO.
TCHK5196/07



RADIATIONS:

Surveyed Point	Bearing	Distance	1980 Grid Geodetic N	E
From Nail2			809110.064	839683.542
To 3	293° 56' 37"	13.601	809115.584	839671.111
4	326° 29' 58"	17.603	809124.743	839673.826
From Nail30			809145.722	839697.445
To 51	141° 12' 48"	2.541	809143.741	839699.037
55	229° 32' 33"	31.571	809125.236	839673.423
67	141° 26' 57"	2.707	809143.605	839699.132
From Nail32			809144.081	839730.072
To 116	115° 31' 21"	7.448	809140.872	839736.793
From Nail34			809108.691	839760.599
To 168	145° 54' 41"	13.560	809097.461	839768.199

Remark: 1. The age given to any feature on this plan must be accepted by the map-user as approximate only. The estimated age is based solely on observation related where possible to other evidence. No guarantee, either express or implied, is attributable in any manner whatsoever to any age for any feature stated on this plan.

2. All enlarged diagrams shown on this plan are not to scale.

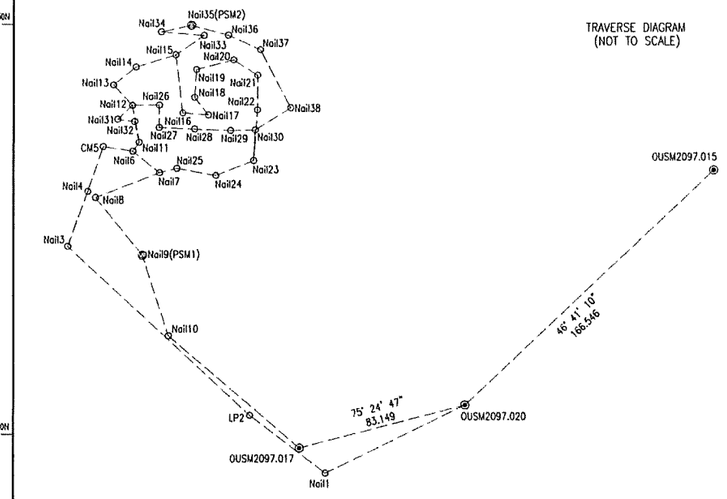
SUBJECT LOT CO-ORDINATES & DIMENSIONS:

Boundary Point	Bearing	Distance	1980 Grid Geodetic N	E
RBL 333 RP				
A			809125.070	839673.554
B	54° 30' 59"	31.492	809143.350	839699.197
C	91° 14' 37"	36.071	809142.567	839735.259
D	144° 01' 16"	66.369	809088.859	839774.251
E	233° 45' 35"	9.341	809083.337	839766.717
F	233° 59' 20"	62.591	809046.537	839716.087
G	234° 28' 44"	24.429	809032.344	839696.205
H	324° 01' 30"	57.565	809078.930	839662.389
A	13° 36' 11"	47.471	809125.070	839673.554

TRAVERSE:

Station	Bearing	Distance	1980 Grid Geodetic N	E
OUSM2097 020			808963.679	839845.547
Nail1	243° 49' 48"	75.260	808930.484	839778.000
LP2	307° 08' 51"	46.881	808958.792	839740.630
Nail3	313° 03' 04"	120.892	809041.315	839652.285
Nail4	20° 00' 58"	28.529	809068.120	839662.050
CM5	18° 52' 04"	23.090	809089.968	839669.516
Nail6	99° 12' 53"	14.426	809087.658	839683.755
Nail7	129° 12' 32"	16.611	809077.157	839696.625
Nail8	248° 44' 06"	33.109	809065.148	839665.769
Nail9(PSM1)	141° 18' 44"	36.152	809036.928	839688.366
Nail10	162° 11' 44"	41.111	808997.784	839700.935
OUSM2097 017	130° 37' 59"	84.525	808942.738	839765.078
Nail6			809087.658	839683.755
Nail11	34° 46' 50"	5.238	809091.960	839686.743
Nail12	349° 58' 27"	18.384	809110.064	839683.542
Nail13	317° 13' 45"	13.493	809119.969	839674.379
Nail14	51° 28' 00"	13.899	809128.627	839685.252
Nail15	72° 45' 49"	20.056	809134.570	839704.407
Nail16	173° 06' 28"	28.513	809106.263	839707.828
Nail17	94° 29' 49"	12.629	809105.273	839720.418
Nail18	321° 39' 08"	10.924	809113.841	839713.640
Nail19	3° 40' 51"	13.597	809127.409	839714.513
Nail20	75° 34' 36"	18.663	809132.057	839732.587
Nail21	123° 01' 33"	13.888	809124.488	839744.231
Nail22	180° 11' 40"	16.811	809107.677	839744.174
Nail23	184° 22' 23"	24.744	809083.005	839742.287
Nail24	248° 34' 21"	19.648	809075.827	839723.997
Nail25	280° 23' 45"	19.333	809079.315	839704.981
Nail7	255° 31' 09"	8.631	809077.157	839696.625
Nail12			809110.064	839683.542
Nail26	89° 41' 09"	12.936	809110.134	839696.478
Nail27	180° 21' 54"	10.987	809099.147	839696.408
Nail28	92° 25' 05"	17.237	809098.419	839713.629
Nail29	92° 30' 30"	17.555	809097.650	839731.167
Nail30	88° 42' 20"	11.880	809097.918	839743.044
Nail23	182° 54' 28"	14.932	809083.005	839742.287
Nail12			809110.064	839683.542
Nail31	226° 19' 33"	9.864	809103.252	839676.407
Nail32	97° 22' 06"	8.259	809102.193	839684.598
Nail11	168° 09' 33"	10.456	809091.960	839686.743
Nail15			809134.570	839704.407
Nail33	55° 50' 22"	16.766	809143.985	839718.280
Nail34	274° 45' 57"	20.906	809145.722	839697.445
Nail35(PSM2)	77° 36' 29"	15.005	809148.942	839712.100
Nail36	105° 08' 10"	18.618	809144.081	839730.072
Nail37	114° 46' 41"	17.085	809136.921	839745.584
Nail38	151° 59' 29"	31.976	809108.691	839760.599
Nail30	238° 27' 46"	20.596	809097.918	839743.044

TRAVERSE DIAGRAM
(NOT TO SCALE)



Lot No.	Area
RBL 333 RP	7,646 sq.m. (About)

I, Chan Tat Wing, an Authorized Land Surveyor registered under the Land Survey Ordinance (Cap. 473), hereby certify that this survey record plan has been prepared from land boundary surveys that were carried out by me, or under my direct supervision in conformity with the Code of Practice approved by the Land Survey Authority under the above Ordinance, and that this plan correctly represents that survey completed on the 22nd day of November 2017.

Dated this 9th day of March 2018.

Chan Tat Wing
Authorized Land Surveyor

陳達榮測量師行有限公司
TED CHAN & ASSOCIATES LIMITED

Survey District: HONG KONG
Date of Survey: May 2017
Scale: 1:500 Field Bk.: TCHK5196
Survey Sheet No: 15-NE-12A & 12B
Reference SRP's: SRP/HK/007/4109-01/D1

DIMENSION PLAN OF RURAL BUILDING LOT 333 RP

FOR OFFICIAL USE

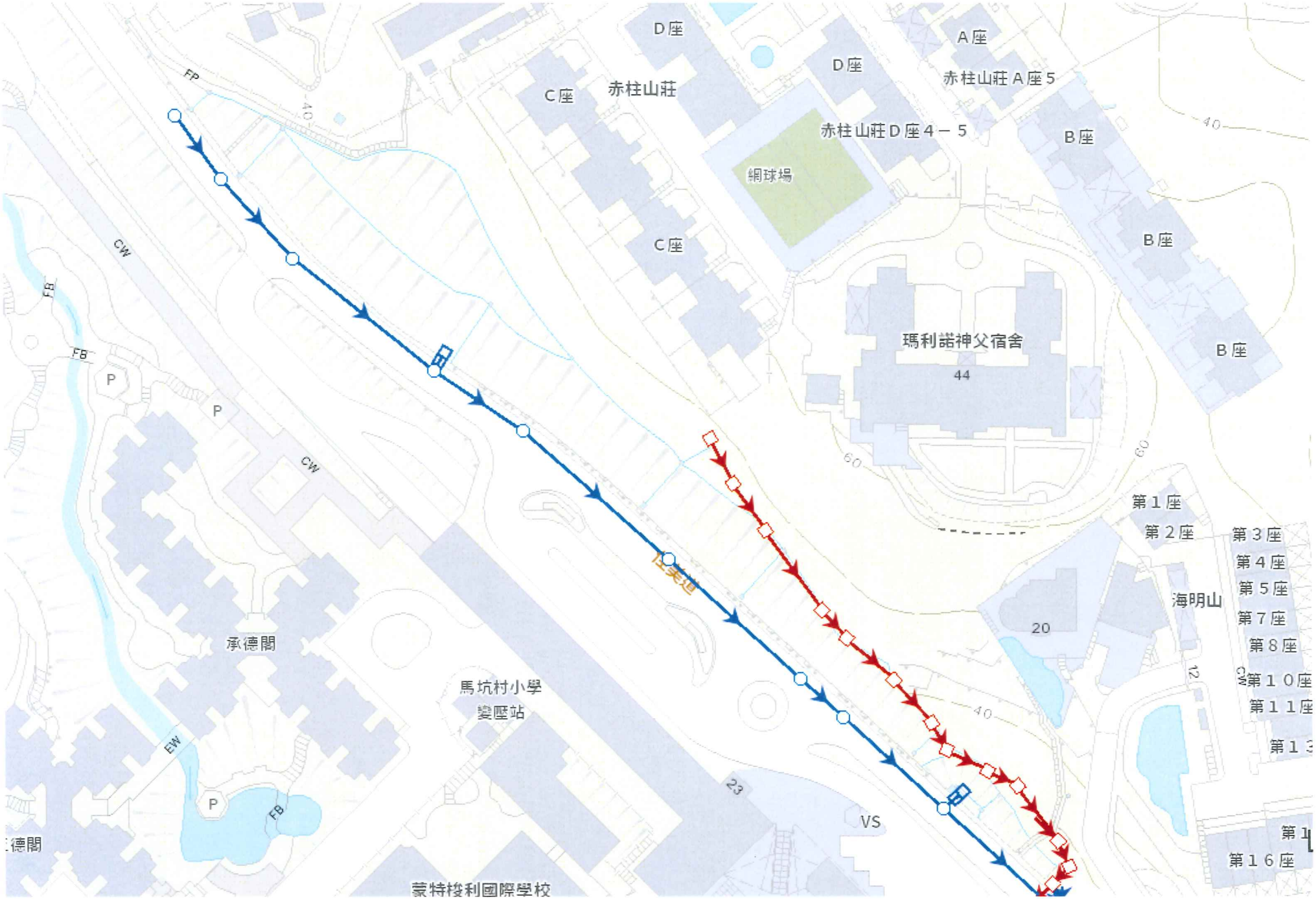
Plan No. : SRP/HK/007/5196/D1

80180321

Appendix C

Record Plans of Adjacent Utilities

Sewage Water Main Pipe and Storm Water Drain Pipe


D座
A座
D座
赤柱山莊A座5
C座
赤柱山莊
赤柱山莊D座4－5
網球場
B座
C座
B座
瑪利諾神父宿舍
44
B座
第1座
第2座
第3座
第4座
第5座
第7座
第8座
第10座
第11座
海明山
20
承德閣
馬坑村小學
婆壓站
蒙特梭利國際學校
VS
第16座
FP
CW
FB
P
EW
40
60
23
12

Appendix D

Ground Investigation Record

	INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: CP4
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 1 OF 2

JOB NO. & LOCATION: Ma Hang Phase 2 Development (W.O. 115)

METHOD: ROTARY	GROUND LEVEL: 33.82 mPD	COORDS E. 839705.09	
MACHINE: Long Year	ORIENTATION: VERTICAL	N. 809016.70	
HOLE DIA: 140mm 0.00m–4.50m, 114mm 4.50m–13.50m, 101mm 13.50m–18.70m		DATE: 10.3.92 TO 11.3.92	

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
10/3	P		80					Inspection pit	0.00	+33.82				
									0.20	+33.62		Loose, dark brown silty SAND (COLLUVIUM)		
									1.00					
									2.00					
							N=16	1	2.45			Extremely weak, light brown, greyish pink, completely decomposed coarse grained GRANITE		
				85					3.00				V	
								2	3.50			(Medium dense, silty SAND)		
							N=16		4.00					
								3	4.45					
				80					5.00					
								4	5.50					
				67	67	N.I.		T2	6.00	+27.82				
									6.30	+27.52		Moderately decomposed coarse grained GRANITE, highly decomposed inpart (CORE STONE)	III	
				95					7.00					
								5	7.50			Extremely weak to very weak, light brownish pink with some white speckle, completely decomposed coarse grained GRANITE		
							N=187		8.00					
								6	8.45			(Very dense, slightly silty SAND below 12.50m with rock fragments)	V	
				95					9.00					
10/3		2.85m at 18:00						7	9.50					
11/3		9.00m at 8:00												
10/3	H		80						10.00	+23.82				

Legend

Samples:
- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample

- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

1 Excavated an Inspection Pit from depth 0.00m–1.50m

2 Installed a Piezometer at depth 13.65m, with sandpacket from depth 12.85m–14.15m

Logged by : S.P.Su

Checked by : Chan

	INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: CP4
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 2 OF 2

JOB NO. & LOCATION: Ma Hang Phase 2 Development (W.O. 115)

METHOD: ROTARY	GROUND LEVEL: 33.82 mPD	COORDS	E. 839705.09
MACHINE: Long Year	ORIENTATION: VERTICAL		N. 809016.70
HOLE DIA: 140mm 0.00m–4.50m, 114mm 4.50m–13.50m, 101mm 13.50m–18.70m		DATE: 10.3.92	TO 11.3.92

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
11/3	H		80	90			N=196	8	10.00	+23.82		Extremely weak to very weak, light brownish pink with some white speckle, completely decomposed coarse grained GRANITE	V	
								9	10.45					
									11.00					
									11.50					
							50/50mm 200/115mm	10	12.00			(Very dense, slightly silty SAND below 12.50m with rock fragments)		
				80					12.16					
									12.50					
									13.00					
	13.50m H							11	13.50	+20.32				
				100	100	3			14.00			Moderately strong, light brownish pink with white speckle, moderately decomposed coarse grained GRANITE medium to widely spaced joint dipping 0°–5° occasionally 50°	III	
									14.75					
				100	88	3			15.00					
									16.00					
				100	100	5		T2	16.43					
									17.00					
				100	93	7			17.50					
									18.00					
11/3			80	100	98	6			18.70	+15.12				
									19.00			Operation stopped at 18.70m		
									20.00					

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : S.P.Su

Checked by : Chan

INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: CP7
DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 1 OF 2

JOB NO. & LOCATION: Ma Hang Phase 2 Development (W.O. 115)

METHOD: ROTARY	GROUND LEVEL: 35.41 mPD	COORDS E. 839688.83 N. 809024.75
MACHINE: Long Year (D50)	ORIENTATION: VERTICAL	
HOLE DIA: 140mm 0.00m–2.50m; 114mm 2.50m–6.50m; 101mm 6.50m–8.00m; 78mm 8.00m–11.51m	DATE: 12.3.92 TO 13.3.92	

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
12/3	P		80					Inspection pit	0.00	+35.41				
									0.15	+35.26		Loose, dark brown, silty SAND (FILL)		
									1.00			Extremely weak, light yellowish brown completely decomposed coarse grained GRANITE (Medium dense, slightly silty SAND)	V	
				100				T2	2.00	+33.41				
	2.50m P H								2.30	+33.11		Moderately decomposed coarse grained GRANITE	III	
							N=12	1	2.95					
				85					3.00					
								2	4.00			Extremely weak, light pinkish brown, completely decomposed coarse grained GRANITE (Medium dense, slightly silty SAND)	V	
							N=15	3	4.95					
				85					5.00					
								4	6.00					
	6.50m H								6.50	+28.91				
									6.75	+28.66		Moderately decomposed coarse grained GRANITE	III	
				99	88	2		T2	7.00					
12/3		3.20m at 18:00												
13/3		6.55m at 8:00		100	100	1			8.00			Strong, light greyish pink, slightly decomposed coarse grained GRANITE, medium to widely spaced joint dipping 10°–20°	II	
								TNW	9.00					
				100	90	2			9.30					
13/3			80						10.00	+25.41				

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

1 Excavated an Inspection Pit from depth 0.00m–1.50m

2 Installed a Piezometer at depth 6.65m, with sandpocket from depth 5.85m–7.15m

Logged by : S.P.Su

Checked by : Chan

	INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: CP7
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 2 OF 2

JOB NO. & LOCATION: Ma Hang Phase 2 Development (W.O. 115)

METHOD: ROTARY	GROUND LEVEL: 35.41 mPD	COORDS	E. 839688.83
MACHINE: Long Year (D50)	ORIENTATION: VERTICAL		N. 809024.75

HOLE DIA: 140mm 0.00m–2.50m; 114mm 2.50m–6.50m; 101mm 6.50m–8.00m; 78mm 8.00m–11.51m

DATE: 12.3.92 TO 13.3.92

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
13/3			80	100	90	2		TNW	10.00	+25.41				
									10.55			Strong, light greyish pink, slightly decomposed coarse grained GRANITE, medium to widely spaced joint dipping 10°–20°	II	
				100	100	0			11.00					
13/3			80						11.51	+23.90				
												Operation stopped at 11.51m		
									12.00					
									13.00					
									14.00					
									15.00					
									16.00					
									17.00					
									18.00					
									19.00					
									20.00					

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : S.P.Su

Checked by : Chan

INTRUSION — PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: CP9
DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 1 OF 2

JOB NO. & LOCATION: Ma Hang Phase 2 Development (W.O. 115)

METHOD: ROTARY	GROUND LEVEL: 37.85 mPD	COORDS E. 839671.34 N. 809047.02
MACHINE: Long Year (D50)	ORIENTATION: VERTICAL	
HOLE DIA: 140mm 0.00m–3.50m; 114mm 3.50m–8.00m; 101mm 8.00m–9.80m; 78mm 9.80m–13.06m		DATE: 14.3.92 TO 17.3.92

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
14/3	P		80					Inspection Pit	0.00	+37.85				
									0.10	+37.75		Loose, dark brown, silty SAND (FILL)		
												Loose to medium dense, light pinkish brown silty SAND (RESIDUAL SOIL)	VI	
				100	91	N.I.		T2	0.60	+37.25				
									1.00			Moderately decomposed coarse grained GRANITE (CORE STONE)		
									1.15	+36.70				
							N=15	1	1.95					
									2.00					
		Nil at 18:00		75				2	3.00					
14/3 16/3	3.50m P H	3.25m at 8:00												
							N=20	3	3.95					
									4.00			Extremely weak, light brownish pink, completely decomposed coarse grained GRANITE		
				40				4	5.00			(Medium dense to dense, silty SAND)	V	
							N=27	5	5.95					
									6.00					
				97				6	7.00					
	8.00m H						N=52	7	8.00	+29.85				
									8.10	+29.75		Moderately decomposed coarse grained GRANITE	III	
				100	92	1		T2	9.00			Strong, light greyish pink with dark green speckle, slightly decomposed coarse grained GRANITE, very widely spaced tight joint dipping 5°–10°	II	
				100	83	3			9.30					
16/3			80	100	100	0		TNW	9.80					
									10.00	+27.85				

Legend

Samples:
- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample

- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

1 Excavated an Inspection Pit from depth 0.00m–0.60m

2 Installed a Piezometer at depth 8.15m, with sandpocket from depth 7.35m–8.55m

Logged by : S.P.Su

Checked by : Chan

	INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: CP9
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 2 OF 2

JOB NO. & LOCATION: Ma Hang Phase 2 Development (W.O. 115)

METHOD: ROTARY	GROUND LEVEL: 37.85 mPD	COORDS	E. 839671.34
MACHINE: Long Year (D50)	ORIENTATION: VERTICAL		N. 809047.02

HOLE DIA: 140mm 0.00m–3.50m, 114mm 3.50m–8.00m, 101mm 8.00m–9.80m, 78mm 9.80m–13.06m

DATE: 14.3.92 TO 17.3.92

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
16/3			80	100	100	0			10.00	+27.85				
				100	100	2			11.01			Strong, light greyish pink with dark green speckle, slightly decomposed coarse groined GRANITE, very widely spaced tight joint dipping 5°–10°		
				100	100	0		TNW	11.55				II	
16/3		3.40m at 18:00							12.00					
17/3		7.04m at 8:00		100	100	0			12.55					
17/3			80						13.06	+24.79		Operation stopped at 13.06m		
									14.00					
									15.00					
									16.00					
									17.00					
									18.00					
									19.00					
									20.00					

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : S.P.Su

Checked by : Chan

INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 122 of 1990	DRILLHOLE NO.: MH19
DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 1 OF 1

JOB NO. & LOCATION: MA HANG PHASE 2 (W.O. 50)

METHOD: ROTARY	GROUND LEVEL: 29.87 mPD	COORDS E. 839710.91 N. 809002.27
MACHINE: TOHO	ORIENTATION: VERTICAL	
HOLE DIA: 140mm 0.00m–2.92m, 89mm 2.92m–4.43m, 78mm 4.43m–9.75m	DATE: 16.11.91 TO 16.11.91	

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
16/11	H		70						0.00	+29.87		Dark yellowish brown, silty SAND with gravel (FILL)		
									1.00	+28.87		Extremely weak, light pinkish brown, Completely Decomposed medium grained GRANITE (Very dense, silty SAND with fine gravel)	V	
							N=65	1	2.00					
	2.95m H N			81	60	3		TNW	2.45					
									2.92	+26.95		Moderately strong, pinkish brown spotted dark green, Moderately Decomposed medium grained GRANITE, limonite stained at medium spaced rough planar and undulating very narrow aperture joint, dipping 30° (3.94m – 4.43m grade IV)	III	
	4.43m N								3.91				IV	
				89	91	4			4.43	+25.44		Strong, pinkish grey spotted dark green, Slightly Decomposed medium grained GRANITE, limonite stained at medium spaced rough planar and undulating, extremely to very narrow aperture joint, dipping 0° – 30°, occasional 60°	II	
									5.00					
				90	85	2			5.83					
									6.00					
				100	84	0		TNW	6.83					
									7.00					
				93	83	2			7.33					
									8.00					
									8.65					
				100	91	3			9.00					
16/11		6.30m at 18:00	70						9.75	+20.12		Operation stopped at 9.75m		
									10.00					

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : S.P.SU

Checked by : CHAN

Gammon Construction Limited
Geotechnical Contracting Department

CONTRACT NO.: 91 OF 1992		DRILLHOLE NO.: MH–103
CLIENT : H.K.H.A.		SHEET 1 OF 3

JOB NO. & LOCATION: W.O. NO. 56 MA HANG VILLAGE REDEVELOPMENT PHASES 2 & 3

METHOD: ROTARY	GROUND LEVEL: 49.70 mPD	COORDS E. 839700.19 N. 809047.86
MACHINE: D2G–16	ORIENTATION: VERTICAL	

HOLE DIA: 0.00m 141mm 4.00m 118mm 17.74m 101mm 26.38m

DATE: 21/9/93 TO 23/9/93

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
21/9	PX								0.00	+49.70				
									1.00			Loose, pinkish brown, clayey silty medium to coarse SAND.		
												(RESIDUAL SOIL)	VI	
							N=7	1	2.00					
									2.45					
									3.00					
									3.20	+46.50				
	4.00m PX								4.00					
	HX			90				2	5.00					
												Extremely weak, pink to brownish pink mottled with white, completely decomposed, medium to coarse grained GRANITE.		
							N=14	3	6.00					
									6.45			(Medium dense, clayey silty medium to coarse SAND)	V	
									7.00					
				100					8.00					
								4	9.00					
21/9	HX								10.00	+39.70				

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample

- Standard penetration test
- Permeability test
- Piezometer
- Standpipe
- Water table

Remarks:

A standpipe was installed at 17.72m.

Logged by : KEI

Checked by : CHU

Gammon Construction Limited
Geotechnical Contracting Department

CONTRACT NO.: 91 OF 1992
CLIENT : H.K.H.A.

DRILLHOLE NO.: MH-103
SHEET 2 OF 3

JOB NO. & LOCATION: W.O. NO. 56 MA HANG VILLAGE REDEVELOPMENT PHASES 2 & 3

METHOD: ROTARY
MACHINE: D2G-16
GROUND LEVEL: 49.70 mPD
ORIENTATION: VERTICAL
COORDS E. 839700.19
N. 809047.86

HOLE DIA: 0.00m 141mm 4.00m 118mm 17.74m 101mm 26.38m
DATE: 21/9/93 TO 23/9/93

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
	HX	1.76m at 17:30					N=27	5	10.00	+39.70				
21/9									10.45			See sheet 1 of 3	V	
22/9		DRY at 09:00							10.70	+39.00				
									11.00					
				100					12.00					
								6	13.00			Extremely weak to very weak, pink mottled with white, completely decomposed, medium to coarse grained GRANITE. (Very dense, clayey silty medium to coarse SAND)	V	
							N=68	7	14.00					
									14.45					
									15.00					
				100				8	16.00					
	17.74m HX						SP at 17.72m		17.00					
									17.72	+31.96			III	
									17.74					
				100	68	6.1			17.90					
								T2-101	18.88			See sheet 3 of 3	III/II	
				100	86	4.8			19.00					
									19.16					
									19.30					
				100	93	2.6			19.67					
22/9									20.00	+29.70				

Legend
Samples:
- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer
- Standpipe
- Water table

Remarks:

Logged by : KEI
Checked by : CHU

Gammon Construction Limited
Geotechnical Contracting Department

CONTRACT NO.: 91 OF 1992		DRILLHOLE NO.: MH–103
CLIENT : H.K.H.A.		SHEET 3 OF 3

JOB NO. & LOCATION: W.O. NO. 56 MA HANG VILLAGE REDEVELOPMENT PHASES 2 & 3

METHOD: ROTARY	GROUND LEVEL: 49.70 mPD	COORDS E. 839700.19 N. 809047.86
MACHINE: D2G–16	ORIENTATION: VERTICAL	

HOLE DIA: 0.00m–141mm–4.00m–118mm–17.74m–101mm–26.38m DATE: 21/9/93 TO 23/9/93

Drilling progress	Water level	Core recovery %	R.Q.D. %	Fracture Index	Samples	Depth (m)	Reduced Level	Description	Grade	Zone
22/9		100	93	2.6		20.00	+29.70	Moderately strong, pink spotted grey and white, moderately to slightly decomposed, medium to coarse grained GRANITE, with closely to medium spaced, extremely to very narrow, rough planar and undulating, kaolin infilled and manganese stained joints, dipping 0°–10°, 25°–35°, 50°–60° and 70°–75°.	III/II	
						20.81				
		100	94	3.3		21.00				
	8.50m at 17:30					22.00				
22/9						22.33		Moderately weak, pinkish brown, moderately decomposed zone at 17.74m to 17.90m.		
23/9	16.40m at 09:00					22.43	+27.27			
		100	100	3.3	T2–101	23.00		Pink, APLITE DYKE at 19.16m to 19.67m.		
						23.85				
		100	79	7.9		24.00		Strong, pink spotted with white and black, slightly decomposed, medium to coarse grained GRANITE, with medium spaced and occasionally closely spaced, extremely narrow, rough planar, clean and iron stained joints, dipping 5°– 15°, 25°–35°, 40°–45° and 55°–65°.	II	
		100	93	3.6		24.23				
						25.00				
		100	100	1.9		25.35				
23/9						26.00				
						26.38	+23.32	Operation stopped at 26.38m		
						27.00				
						28.00				
						29.00				
						30.00				

Legend
Samples:
- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer
- Standpipe
- Water table

Remarks:

Logged by : KEI
Checked by : CHU

THE BORING ENGINEERING LTD.

EXPLORATORY HOLE LOG

Hole No.: BH3 Sheet 1 of 2

Project: R.B.L. NO. 567, NO. 20 CARMEL ROAD, STANLEY, HONG KONG

Ground level: +46.93 m.P.D. Inclination: VERTICAL Coordinates: E 839734.58 N 809039.01

Method: ROTARY DRILL Rig type & no.: BEL-11 Operator: FU

Drilling progress	Casing depth, size	Water level (m)	Water recovery %	Tests & samples	Blow counts	Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture index	Reduced level	Legend	Description	Grade
20/2	PX	- 08:00				0.00					+46.93		Inspection pit. Greyish brown to brown, sandy fine to medium GRAVEL. (FILL)	
					M-101 (75%)	1.50					+45.43		Very weak, light yellow to light brownish yellow, completely decomposed GRANITE. (Medium dense to very dense, sandy fine GRAVEL.)	V
					2,2,4,5,5,7 N=21	2.50								
	HX					2.45								
					M-101 (100%)	3.50								
					7,10,13,15,15,18 N=61	4.50								
						4.95								
					M-101 (90%)	5.50					+41.43		Weak to moderately weak, pink and light brown to yellowish brown, completely to highly decomposed GRANITE. (Very dense, sandy fine to coarse GRAVEL.)	V/IV
						5.65								
				T2-101		6.50					+40.43		Moderately strong to moderately weak, light brown to light brownish yellow and pinkish brown, mottled with black, moderately to highly decomposed medium grained GRANITE with very closely to closely spaced, rough undulating, iron and manganese stained joints, dipping at 10°, 35°-40°, 60°.	III/IV
						8.00	89	65	28	N.I.	+38.93			
						8.75	90	61	47	9.1	+38.18			III
						9.20					+37.73			
						9.30	99	99	86		+37.63			III/II
						10.00					+36.93		See sheet 2 of 2 for detail.	

Date started 20-2-2004
Date finished 20-2-2004

Logged by LEE
Checked by LO
Date 24-2-2004

Remarks:

Legend:

- ● Small disturbed
- ◆ Large disturbed
- ▨ SPT liner sample
- ▮ U76 undisturbed
- ■ U100 undisturbed
- ▨ Mazier sample
- P Pressuremeter test
- ▼ Water level
- ↓ Standard penetration test
- ◉ Permeability test
- ▲ Piezometer tip
- ▲ Standpipe tip
- V In-situ vane shear test

THE BORING ENGINEERING LTD.

EXPLORATORY HOLE LOG

Hole No.: BH3 Sheet 2 of 2

Project: R.B.L. NO. 567, NO. 20 CARMEL ROAD, STANLEY, HONG KONG

Ground level: +46.93 m.P.D. Inclination: VERTICAL Coordinates: E 839734.58 N 809039.01

Method: ROTARY DRILL Rig type & no.: BEL-11 Operator: FU

Drilling progress	Casing depth, size	Water level (m)	Water recovery %	Tests & samples	Blow counts	Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture index	Reduced level	Legend	Description	Grade
						10.00	99	99	86		+36.93			
						10.08					+36.85		Moderately strong to strong pinkish grey to grey, mottled with black, moderately to slightly decomposed medium grained GRANITE with closely to medium spaced, rough planar and rough undulating, iron and manganese stained joints, dipping at 20°-30°, 55°-60°.	III II
						10.73	100	100	85		+36.20			
						11.90	100	100	100	3.4	+35.03		8.75m-9.20m: Moderately decomposed medium grained GRANITE.	
				T2-101		12.20					+34.73			III
						13.45	100	100	100		+33.48		Moderately strong, pink and greyish brown to brown, mottled with black, moderately decomposed medium grained GRANITE with closely to medium spaced, rough planar, iron and manganese stained and chlorite coated joints, dipping at 15°, 45°-50°, 70°.	
20/2		11.03m 18:00				14.27	100	100	96		+32.66		Bottom of borehole No. BH3 at depth of 14.27m.	

Date started 20-2-2004
Date finished 20-2-2004

Logged by LEE
Checked by LO
Date 24-2-2004

Remarks:

Legend:

- Small disturbed
- Large disturbed
- SPT liner sample
- U76 undisturbed
- U100 undisturbed
- Mazier sample
- P Pressuremeter test
- Water level
- Standard penetration test
- Permeability test
- Piezometer tip
- Standpipe tip
- In-situ vane shear test

THE BORING ENGINEERING LTD.

EXPLORATORY HOLE LOG

Hole No.: BH4P 43.42mPD Sheet 1 of 2

Project: R.B.L. NO. 567, NO. 20 CARMEL ROAD, STANLEY, HONG KONG

Ground level: +41.42 m.P.D. Inclination: VERTICAL Coordinates: E 839737.02 N 809024.17

Method: ROTARY DRILL Rig type & no.: BEL-11 Operator: WONG

Drilling progress	Casing depth, size	Water level (m)	Water recovery %	Tests & samples	Blow counts	Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture index	Reduced level	Legend	Description	Grade
4/2						0.00					+41.42		Inspection pit. Brownish grey to brown, slightly silty gravelly fine to coarse SAND. (FILL)	
	PX				M-101 (100%)	1.50					+39.92		Grey and brownish grey, silty clayey gravelly fine to coarse SAND. (COLLUVIUM)	
					3,5,6,10,16,18 N=50	2.50					+38.92		Very weak, yellow and light brownish yellow, completely decomposed GRANITE. (Very dense, slightly silty gravelly fine to coarse SAND.)	V
				T2-101		2.95 3.05	96	0	0	N.I.	+38.37		Moderately weak to moderately strong, yellow and brownish yellow, fractured, highly to moderately decomposed medium grained GRANITE.	IV III
4/2 5/2						4.20					+37.22			
					M-101 (90%)	4.50								
					50/70mm,100/30mm 100/30mm	5.50 5.60								
	HX					6.00								
					M-101 (90%)	7.00							Very weak, yellow and pinkish yellow to light brownish yellow, completely decomposed GRANITE. (Medium dense to very dense, sandy fine to medium GRAVEL.)	V
					3,6,12,19,11,14 N=56	7.45 7.50								
					M-101 (95%)	8.50								
					2,2,4,8,10,13 N=35	8.95 9.00								
					M-101 (90%)	10.00					+31.42			

Date started 4-2-2004
Date finished 7-2-2004

Logged by LEE
Checked by LO
Date 10-2-2004

Remarks:

Piezometer installed at depth of 11.50m.

Legend:

- Small disturbed
- Large disturbed
- SPT liner sample
- U76 undisturbed
- U100 undisturbed
- Mazier sample
- P Pressuremeter test
- Water level
- Standard penetration test
- Permeability test
- Piezometer tip
- Standpipe tip
- In-situ vane shear test

THE BORING ENGINEERING LTD.

EXPLORATORY HOLE LOG

Hole No.: BH4P (50.71mPD) Sheet 2 of 2

Project: R.B.L. NO. 567, NO. 20 CARMEL ROAD, STANLEY, HONG KONG

Ground level: +41.42 m.P.D. Inclination: VERTICAL Coordinates: E 839737.02 N 809024.17

Method: ROTARY DRILL Rig type & no.: BEL-11 Operator: WONG

Drilling progress	Casing depth, size	Water level (m)	Water recovery %	Tests & samples	Blow counts	Depth (m)	T.C.R.%	S.C.R.%	R.Q.D.%	Fracture index	Reduced level	Legend	Description	Grade
5/2						10.00					+31.42			
6/2	HX				2,3,5,7,8,10 N=30	10.45								
					M-101 (100%)	10.50							See sheet 1 of 2 for detail.	V
						11.50					+29.92			
						12.07	99	95	85	7.6	+29.35			III
						12.55					+28.87			III/II
						12.72					+28.70		Strong, pinkish grey to grey, mottled with black, slightly decomposed medium grained GRANITE with closely to medium spaced, rough planar and rough undulating, iron and manganese stained and chlorite coated joints, dipping at 10°, 25°-30°, 55°.	
						13.49	100	100	100		+27.93			
				T2-101			100	100	100	2.1			11.50m-12.07m: Moderately decomposed medium grained GRANITE.	II
6/2						14.91					+26.51		12.07m-12.72m: Moderately to slightly decomposed medium grained GRANITE.	
7/2							100	100	98					
						15.93					+25.49			
7/2							100	100	100					
						16.88					+24.54			
													Bottom of borehole No. BH4P at depth of 16.88m.	

Date started 4-2-2004
Date finished 7-2-2004

Logged by LEE
Checked by LO
Date 10-2-2004

Remarks:

Legend:

- ● Small disturbed
- ◆ Large disturbed
- ▨ SPT liner sample
- ▮ U76 undisturbed
- ■ U100 undisturbed
- ▨ Mazier sample
- P Pressuremeter test
- ▼ Water level
- ↓ Standard penetration test
- ◉ Permeability test
- ▲ Piezometer tip
- ▲ Standpipe tip
- V In-situ vane shear test

MEMBER PREPAKT INTERNATIONAL

INTRUSION – PREPAKT
(FAR EAST) LIMITED

DRILL / BORE HOLE LOG

CONTRACT NO.: 143/88

CLIENT : H.K.H.A.

DRILLHOLE NO.: BH13

SHEET 1 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY

MACHINE: D75

GROUND LEVEL: +30.34mPD

ORIENTATION: VERTICAL

COORDS E. 839738.75
N. 808992.18

HOLE DIA: 0.00m–120mm–6.75m–101mm–11.82m

DATE: 18/9 TO 18/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
18/9	HX							Inspection pit	0.00	+30.34		Loose, brown, fine to coarse SAND (FILL)		
									1.00					
									2.00					
							216/230mm	1	3.00	+27.34		Very dense, pink, silty coarse SAND (C.TO H.D. GRANITE)	V / IV	
									3.38					
								2	4.00					
			80						4.90					
							69/150mm 229/250mm	3	5.00					
									5.90					
									6.00					
	6.75m HX								6.75	+23.59		Strong, pink, mottled brown, coarse grained, slightly decomposed GRANITE closely to medium jointed with grade III zone at 9.10–9.30m & dip 18° & 25°	II	
				100	53	5.3			7.00					
								T2101	8.00					
									8.25					
				90	80	4.7			9.00					
									9.79	+20.55				

Legend

Samples:
- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample

- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

An Inspection pit was excavated at 2.50m

Logged by : SOC

Checked by : BCT

MEMBER PREPAKT INTERNATIONAL	INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 143/88	DRILLHOLE NO.: BH13
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 2 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY	GROUND LEVEL: +30.34mPD	COORDS	E. 839738.75
MACHINE: D75	ORIENTATION: VERTICAL		N. 808992.18

HOLE DIA: 0.00m–120mm–6.75m–101mm–11.82m DATE: 18/9 TO 18/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
									9.79	+20.55				
18/9			80	100	100	2.0		T2101	11.00			Strong, pink, with green spots coarse grained, slightly decomposed GRANITE medium to widely jointed	II	
				100	100	3.3			11.29					
									11.82	+18.52		Operation stopped at 11.82m		

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : SOC

Checked by : BCT

MEMBER PREPAKT INTERNATIONAL	**INTRUSION – PREPAKT** (FAR EAST) LIMITED DRILL / BORE HOLE LOG	CONTRACT NO.: 143/88 CLIENT : H.K.H.A.	DRILLHOLE NO.: BH14 SHEET 1 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY	GROUND LEVEL: +32.92mPD	COORDS E. 839716.69	
MACHINE: D75	ORIENTATION: VERTICAL	N. 809011.11	

HOLE DIA: 0.00m 120mm 9.28m 101mm 14.50m DATE: 21/9 TO 21/9/90

Depth (m)	Reduced Level	Description	Grade	Zone
0.00	+32.92	SOIL (FILL)		
0.80	+32.12			
3.45		Medium dense, pink, silty coarse SAND (C.D. GRANITE)	V	
8.00	+24.92	Very dense, pink, SAND & rock fragments (C.TO H.D. GRANITE)		
8.14		Moderately strong to strong, pink, mottled black, coarse grained, slightly to moderately decomposed GRANITE	V / IV	
9.28			II / III	
9.90	+23.02	As sheet 2 of 2		
10.38	+22.54		II	

Drilling progress: 21/9
Casing depth size: HX; 9.28m HX
Water level:
Water recovery %: 80
Core recovery %: 95; 95; 100
R.Q.D. %: 58
Fracture Index: 7.0
Tests: N=16; N=43; 50/65mm 200/75mm
Samples: Inspection pit; 1; 2; 3; 4; 5; T2101

Legend

Samples:
- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

An Inspection pit was excavated at 2.50m

Logged by : SOC
Checked by : BCT

MEMBER PREPAKT INTERNATIONAL	INTRUSION – PREPAKT (FAR EAST) LIMITED DRILL / BORE HOLE LOG	CONTRACT NO.: 143/88 CLIENT : H.K.H.A.	DRILLHOLE NO.: BH14 SHEET 2 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY	GROUND LEVEL: +32.92mPD	COORDS E. 839716.69 N. 809011.11
MACHINE: D75	ORIENTATION: VERTICAL	

HOLE DIA: 0.00m–120mm–9.28m–101mm–14.50m DATE: 21/9 TO 21/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
									10.38	+22.54				
21/9				100	33	6.0			11.00			Strong, pink, coarse grained slightly decomposed GRANITE medium to widely jointed with thin moderately weathered zone at joints & with vertical joints at 10.38–12.0m	II	
			80	100	100	3.3			11.83 12.00					
				100	100	1.0		T2101	12.43					
				100	100	0			13.00 13.33 14.00					
									14.50	+18.42		Operation stopped at 14.50m		

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : SOC

Checked by : BCT

MEMBER PREPAKT INTERNATIONAL	INTRUSION — PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 143/88	DRILLHOLE NO.: BH15
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 1 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY	GROUND LEVEL: +35.25 mPD	COORDS	E. 839689.97
MACHINE: D75	ORIENTATION: VERTICAL		N. 809024.39

HOLE DIA: 0.00m 120mm 6.40m 101mm 11.42m DATE: 22/9 TO 24/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
22/9	HX							Inspection pit	0.00	+35.25				
									1.00					
									2.00					
							N=19	1	3.00			Medium dense, pink, silty coarse SAND (C.D. GRANITE)	V	
									3.45					
									4.00					
				95					5.00					
								2	5.50					
							N=36	3	5.95					
	6.40m HX								6.00					
									6.40	+28.85				
				100	86	5.7			7.00					
		2.00m at 18:00		100	100	0			7.17			Strong, pink, coarse grained, slightly decomposed GRANITE medium to widely jointed	II	
24/9		Dry at 8:00							7.77					
				100	100	0.8		T2101	8.00					
									9.00					
				100	100	0.7			9.11					
									10.68	+24.57				

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

An inspection pit was excavated at 2.50m

Logged by : SOC

Checked by : BCT

MEMBER PREPAKT INTERNATIONAL	INTRUSION – PREPAKT (FAR EAST) LIMITED DRILL / BORE HOLE LOG	CONTRACT NO.: 143/88 CLIENT : H.K.H.A.	DRILLHOLE NO.: BH15 SHEET 2 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY	GROUND LEVEL: +35.25 mPD	COORDS	E. 839689.97
MACHINE: D75	ORIENTATION: VERTICAL		N. 809024.39

HOLE DIA: 0.00m 120mm 6.40m 101mm 11.42m DATE: 22/9 TO 24/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
24/9				100	25	2.5		T2101	10.68 11.00 11.42	+24.57 +23.83	+ + +	Strong, pink, coarse grained, slightly decomposed GRANITE medium jointed with vertical joints & grade III–zone at joints Operation stopped at 11.42m	II	

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : SOC

Checked by : BCT

MEMBER PREPAKT INTERNATIONAL	INTRUSION – PREPAKT (FAR EAST) LIMITED	CONTRACT NO.: 143/88	DRILLHOLE NO.: BH16
	DRILL / BORE HOLE LOG	CLIENT : H.K.H.A.	SHEET 1 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY	GROUND LEVEL: +37.22 mPD	COORDS	E. 839677.78
MACHINE: D75	ORIENTATION: VERTICAL		N. 809035.88

HOLE DIA: 0.00m 120mm 8.51m 101mm 13.94m DATE: 25/9 TO 25/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
25/9	HX							Inspection pit	0.00	+37.22		Pinkish brown, silty coarse SAND (C.D. GRANITE)	V	
									1.00					
									2.00					
				70	70	7.0		T2101	2.50	+34.72		Moderately strong, pink, coarse grained, moderately decomposed GRANITE (CORESTONE)	III	
									2.83	+34.39				
							N=49	1	3.00					
									3.45					
									4.00					
			80	95					5.00			Medium dense, pinkish brown, slightly silty coarse SAND with some rock fragments (C.TO H.D. GRANITE)	V / IV	
							N=22	2	5.50					
								3	5.95					
				95					7.00					
								4	8.00					
	8.51m HX								8.51	+28.71		Strong, pink, coarse grained, slightly decomposed GRANITE medium to widely jointed Dip 65° & 25°	II	
				100	100	1.3		T2101	9.00					
									9.96	+27.26				

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample

- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

An inspection pit was excavated at 2.50m

Logged by : SOC

Checked by : BCT

MEMBER PREPAKT INTERNATIONAL

INTRUSION – PREPAKT (FAR EAST) LIMITED

DRILL / BORE HOLE LOG

CONTRACT NO.: 143/88

CLIENT : H.K.H.A.

DRILLHOLE NO.: BH16

SHEET 2 OF 2

JOB NO. & LOCATION: W.O. 243 Ma Hang Redevelopment

METHOD: ROTARY

MACHINE: D75

GROUND LEVEL: +37.22 mPD

ORIENTATION: VERTICAL

COORDS E. 839677.78
N. 809035.88

HOLE DIA: 0.00m–120mm–8.51m–101mm–13.94m

DATE: 25/9 TO 25/9/90

Drilling progress	Casing depth size	Water level	Water recovery %	Core recovery %	R.Q.D. %	Fracture Index	Tests	Samples	Depth (m)	Reduced Level	Legend	Description	Grade	Zone
25/9									9.96	+27.26				
				100	100	2.0						As sheet 1 of 2	II	
									11.00					
			80	100	100	0			11.19					
									11.49					
								T2101	12.00	+25.22				
				100	93	3.3						Strong, pink, fine to coarse grained slightly decomposed GRANITE medium jointed with grade III–zone & iron stained	II	
									12.93					
				100	100	3.0			13.00					
									13.94	+23.28		Operation stopped at 13.94m		

Legend

Samples:

- Small disturbed
- Large disturbed
- U76 undisturbed
- U100 undisturbed
- Mazier
- Liner sample
- Piston sample
- Water sample
- Standard penetration test
- Permeability test
- Piezometer test
- Standpipe test
- Water table

Remarks:

Logged by : SOC

Checked by : BCT

INTRUSION–PREPAKT (FAR EAST) LIMITED	Contract No.: 122 OF 1990 Client Office: H.K.H.A.	Works Order No. : 115

PIEZOMETER MONITORING

Ground Water Level Record

LOCATION	Ma Hang Phase 2 Development (W.O.115)		
INSTRUMENT INSTALLED	Piezometer	GROUND LEVEL (mPD)	33.82
STANDPIPE/PIEZOMETER NO.	CP4	TIP LEVEL (mPD)	20.17
DATE OF INSTALLATION	11.3.92	RESPONSE ZONE (mPD)	From 20.97 m To 19.67 m
PIPE TOP LEVEL (mPD)	33.74	BASE OF DRILLHOLE (mPD)	15.12
CO–ORDINATES OF INSTRUMENT N	809016.70	DEPTH OF BUCKETS (if any)	From m To m.bgl
E	839705.09		at m spacing

DATE	WEATHER	TIME	GROUNDWATER LEVEL		HIGHEST BUCKET WITH ENTRAPPED WATER (if any)		REMARKS
			DEPTH BELOW * Pipe Top/~~G.L~~ (m)	ELEVATION (mPD)	DEPTH BELOW * Pipe Top/G.L (m)	ELEVATION (mPD)	
19-3-92	Fine	9:00	11.55	22.19			
20-3-92	Fine	9:10	11.53	22.21			
21-3-92	Fine	9:07	11.53	22.21			
23-3-92	Fine	9:30	11.52	22.22			
24-3-92	Fine	10:10	11.52	22.22			
25-3-92	Cloudy	9:30	11.52	22.22			
26-3-92	Cloudy	9:25	11.52	22.21			

Reported By :

Checked By :

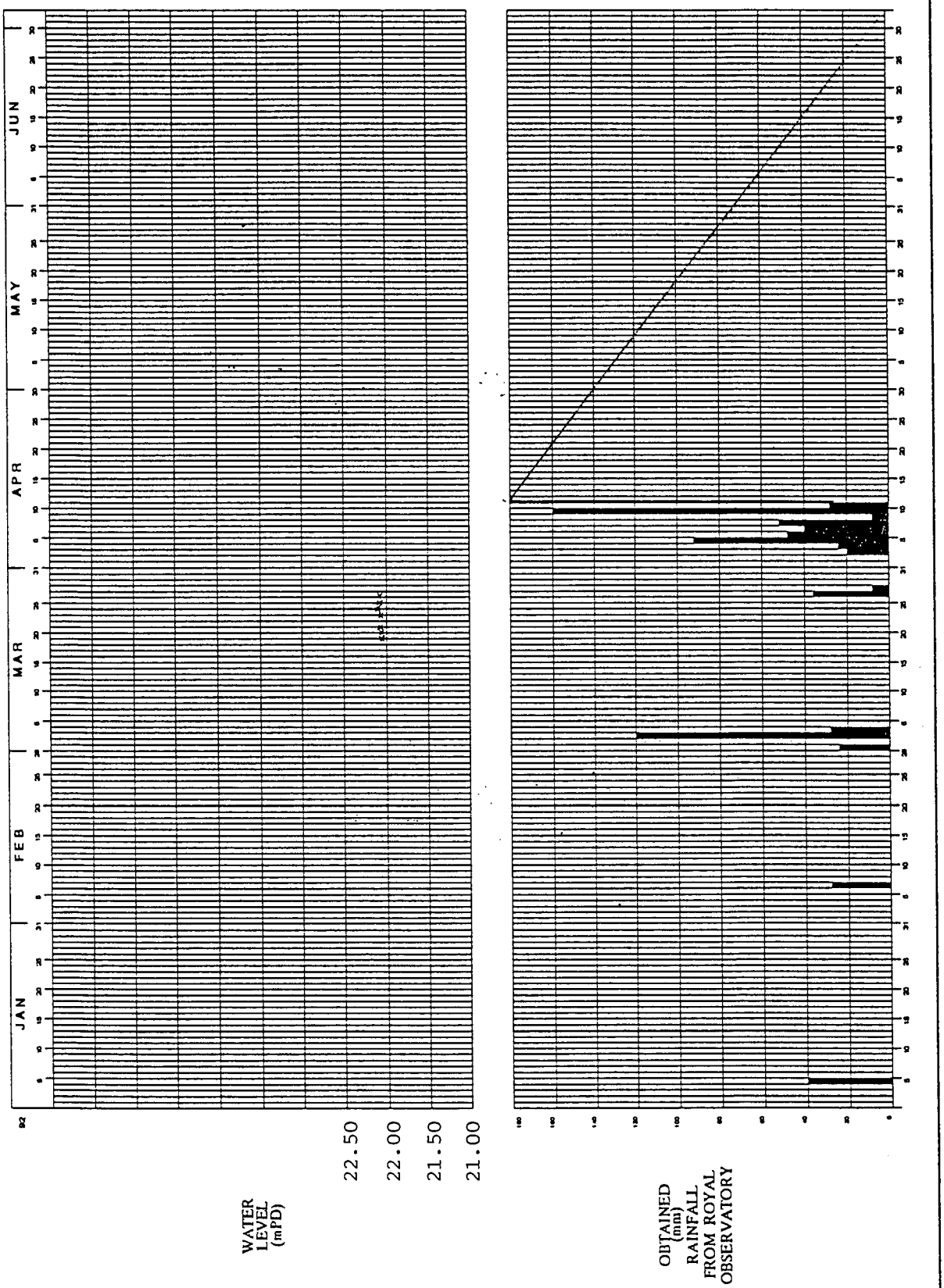
~~STANDPIPE~~ / PIEZOMETER MONITORING
GROUND – WATER LEVEL RECORD

LOCATION Ma Hang Phase 2 Development (W.O.115) GROUND LEVEL : 33.82 mPD DRILLHOLE NO. : CP4

TIP DEPTH : 13.65 m PIEZOMETER

TIP LEVEL : 20.17 mPD

CO-ORDINATES : N 809016.70
E 839705.09



INTRUSION – PREPAKT (FAR EAST) LIMITED

WORKS ORDER NO.: 115

INTRUSION–PREPAKT (FAR EAST) LIMITED	Contract No.: 122 OF 1990 Client Office: H.K.H.A.	Works Order No. : 115

PIEZOMETER MONITORING

Ground Water Level Record

LOCATION	Ma Hang Phase 2 Development (W.O. 115)		
INSTRUMENT INSTALLED	Piezometer	GROUND LEVEL (mPD)	35.41
STANDPIPE/PIEZOMETER NO.	CP7	TIP LEVEL (mPD)	28.76
DATE OF INSTALLATION	13.3.92	RESPONSE ZONE (mPD)	From 29.56 m To 28.26 m
PIPE TOP LEVEL (mPD)	35.36	BASE OF DRILLHOLE (mPD)	23.90
CO–ORDINATES OF INSTRUMENT N E	809024.75 839688.83	DEPTH OF BUCKETS (if any)	From m To m.bgl at m spacing

DATE	WEATHER	TIME	GROUNDWATER LEVEL		HIGHEST BUCKET WITH ENTRAPPED WATER (if any)		REMARKS
			DEPTH BELOW * Pipe Top/~~G.L.~~ (m)	ELEVATION (mPD)	DEPTH BELOW * Pipe Top/G.L (m)	ELEVATION (mPD)	
19-3-92	Fine	9:00	Dry				
20-3-92	Fine	9:10	Dry				
21-3-92	Fine	9:07	Dry				
23-3-92	Fine	9:30	Dry				
24-3-92	Fine	10:10	Dry				
25-3-92	Cloudy	9:30	Dry				
26-3-92	Cloudy	9:25	Dry				

Reported By :

Checked By :

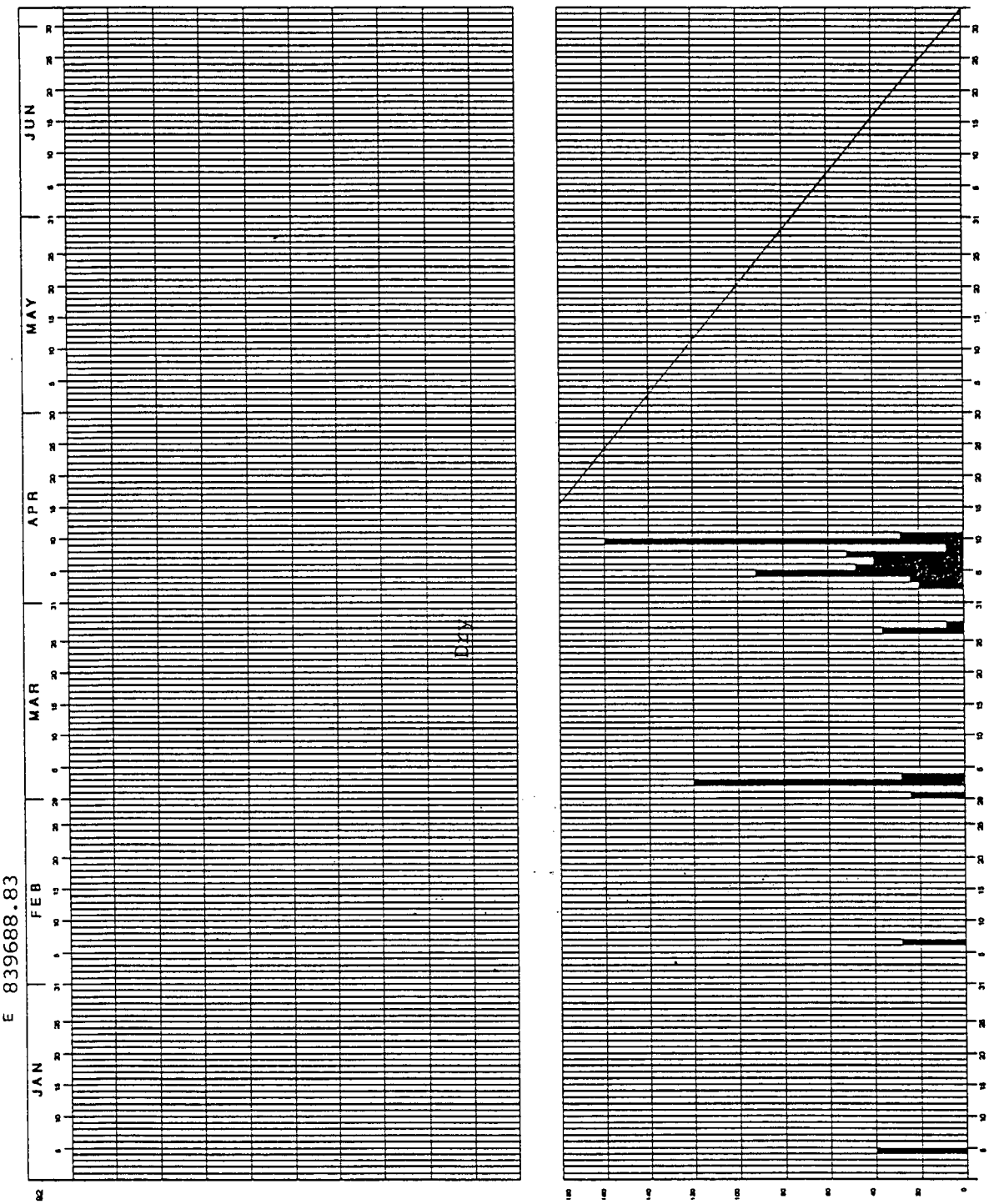
~~STANDPIPE~~ / PIEZOMETER MONITORING
GROUND – WATER LEVEL RECORD

LOCATION Ma Hang Phase 2 Development(W.O.115) GROUND LEVEL : 35.41 mPD DRILLHOLE NO. : CP7

TIP DEPTH : 6.65 m PIEZOMETER

TIP LEVEL : 28.76 mPD

CO-ORDINATES : N 809024.75
E 839688.83



WATER LEVEL (mPD)

OBTAINED (mm) RAINFALL FROM ROYAL OBSERVATORY

INTRUSION – PREPAKT
(FAR EAST) LIMITED

WORKS ORDER NO.: 115

INTRUSION–PREPAKT (FAR EAST) LIMITED	Contract No.: 122 OF 1990 Client Office: H.K.H.A.	Works Order No. : 115

PIEZOMETER MONITORING

Ground Water Level Record

LOCATION	Ma Hang Phase 2 Development (W.O. 115)		
INSTRUMENT INSTALLED	Piezometer	GROUND LEVEL (mPD)	37.85
STANDPIPE/PIEZOMETER NO.	CP9	TIP LEVEL (mPD)	29.70
DATE OF INSTALLATION	17.3.92	RESPONSE ZONE (mPD)	From 30.50 m To 29.30m
PIPE TOP LEVEL (mPD)	37.78	BASE OF DRILLHOLE (mPD)	24.79
CO–ORDINATES OF INSTRUMENT N	809047.02	DEPTH OF BUCKETS (if any)	From m To m.bgl
CO–ORDINATES OF INSTRUMENT E	839671.34		at m spacing

DATE	WEATHER	TIME	GROUNDWATER LEVEL		HIGHEST BUCKET WITH ENTRAPPED WATER (if any)		REMARKS
			DEPTH BELOW * Pipe Top/~~G.L~~ (m)	ELEVATION (mPD)	DEPTH BELOW * Pipe Top/G.L (m)	ELEVATION (mPD)	
19-3-92	Fine	9:00	7.05	30.73			
20-3-92	Fine	9:10	7.05	30.73			
21-3-92	Fine	9:07	7.08	30.70			
23-3-92	Fine	9:30	7.08	30.70			
24-3-92	Fine	10:10	7.08	30.70			
25-3-92	Cloudy	9:30	7.10	30.68			
26-3-92	Cloudy	9:25	7.14	30.64			

Reported By :

Checked By :

~~STANDPIPE~~ / PIEZOMETER MONITORING
GROUND – WATER LEVEL RECORD

LOCATION : Ma Hang Phase 2 Development (W.O.115)

CO-ORDINATES : N 809047.02
E 839671.34

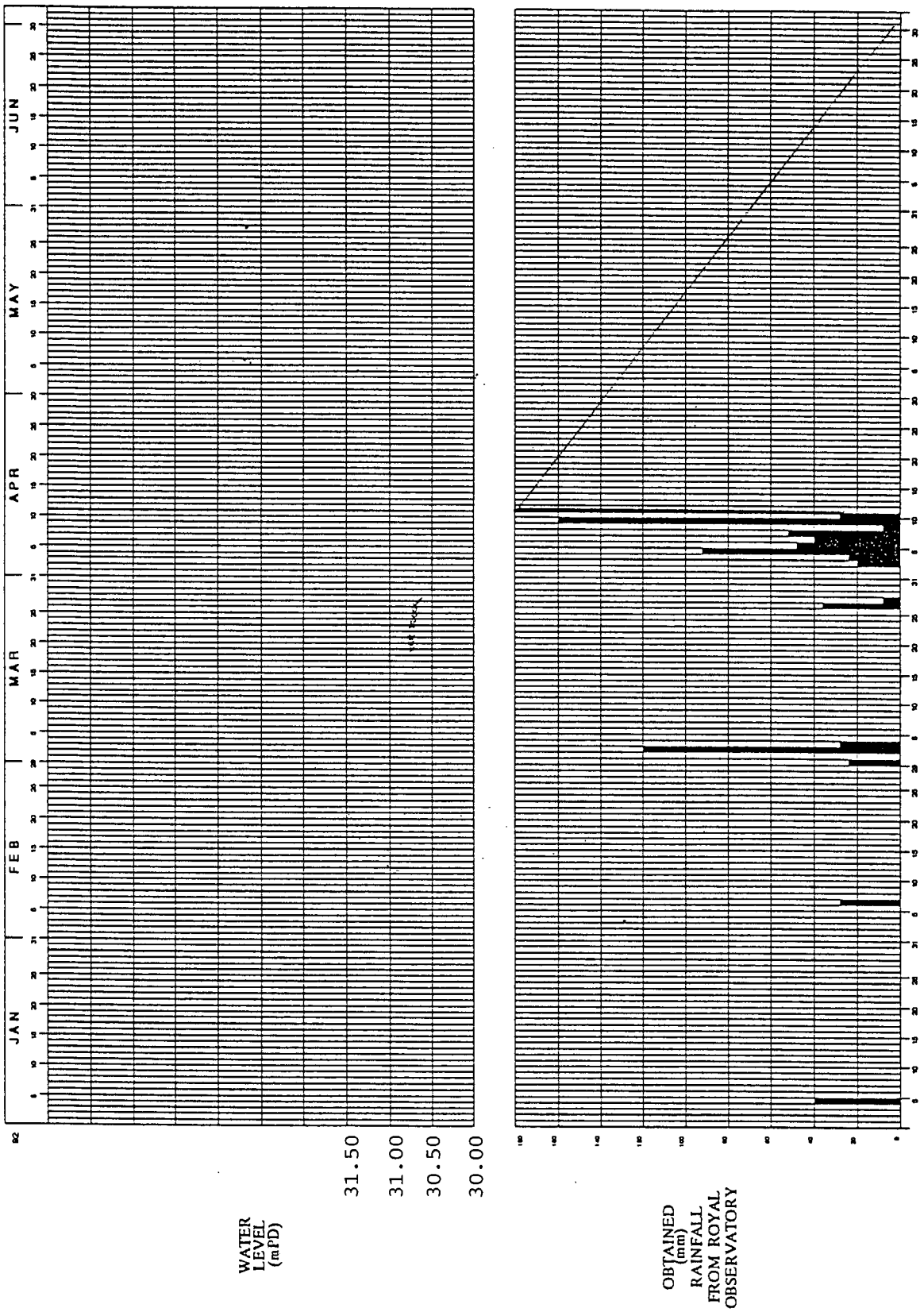
GROUND LEVEL : 37.85 mPD

TIP DEPTH : 8.15 m

TIP LEVEL : 29.70 mPD

DRILLHOLE NO. : CP9

PIEZOMETER



INTRUSION – PREPAKT
(FAR EAST) LIMITED

WORKS ORDER NO. : 115

Gammon Construction Limited	Contract No: Client Office:	WORKS ORDER NO.: 56

STANDPIPE MONITORING

Ground Water Level Record

LOCATION	MA HANG VILLAGE		
INSTRUMENT INSTALLED	STANDPIPE	GROUND LEVEL (mPD)	49.70
STANDPIPE NO.	MH 103	TIP LEVEL (mPD)	31.98
DATE OF INSTALLATION	24 September, 1993	RESPONSE ZONE (mPD)	From +48.70 m To +31.98 m
PIPE TOP LEVEL (mPD)	49.80	BASE OF DRILLHOLE (mPD)	23.32
CO-ORDINATES OF INSTRUMENT	E 839700.19 N 809047.86	DEPTH OF BUCKETS (if any)	From m To m bgl at m spacing

DATE	WEATHER	TIME	GROUND WATER LEVEL		HIGHEST BUCKET WITH ENTRAPPED WATER (if any)		REMARKS
			DEPTH BELOW ± Pipe Top/GL (m)	ELEVATION (mPD)	DEPTH BELOW ± Pipe Top/GL (m)	ELEVATION (mPD)	
5 OCT 93	FINE	AM	11.90	37.90			
6 Oct 93	FINE	AM	12.13	37.67			
7 OCT 93	FINE	AM	12.36	37.44			
8 OCT 93	FINE	AM	12.59	37.21			
9 OCT 93	FINE	AM	12.50	37.30			
10 OCT 93	FINE	AM	12.52	37.28			
11 OCT 93	FINE	AM	12.39	37.41			
12 OCT 93	FINE	AM	12.43	37.37			

Taken & Reported By:

Checked By:

Gammon Construction Limited

WORKS ORDER NO.: 56

STANDPIPE MONITORING

GROUND-WATER LEVEL RECORD

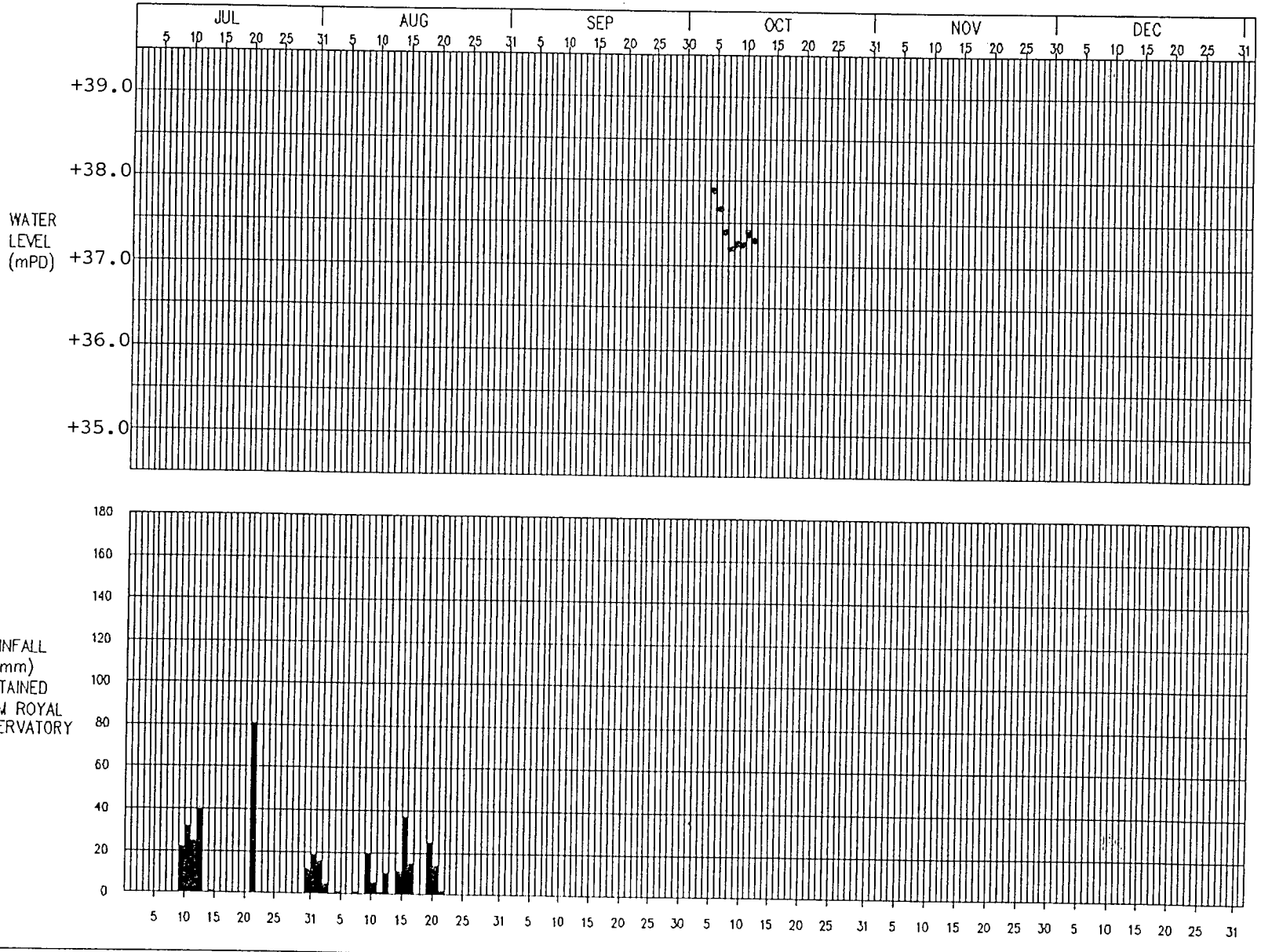
LOCATION : MA HANG VILLAGE REDEVELOPMENT PH. 2 & 3
MA HANG

CO-ORDINATES : E 839700.19
N 809047.86

GROUND LEVEL : +49.70 mPD DRILLHOLE NO. : MH 103

TIP DEPTH : 17.72m

TIP LEVEL : +31.98 mPD



THE BORING ENGINEERING LTD.

RECORD OF WATER TABLE READING

Project: R.B.L. NO. 567, NO. 20 CARMEL ROAD, STANLEY, HONG KONG

Borehole No.: BH4P Date of Installation: 07/Feb/2004

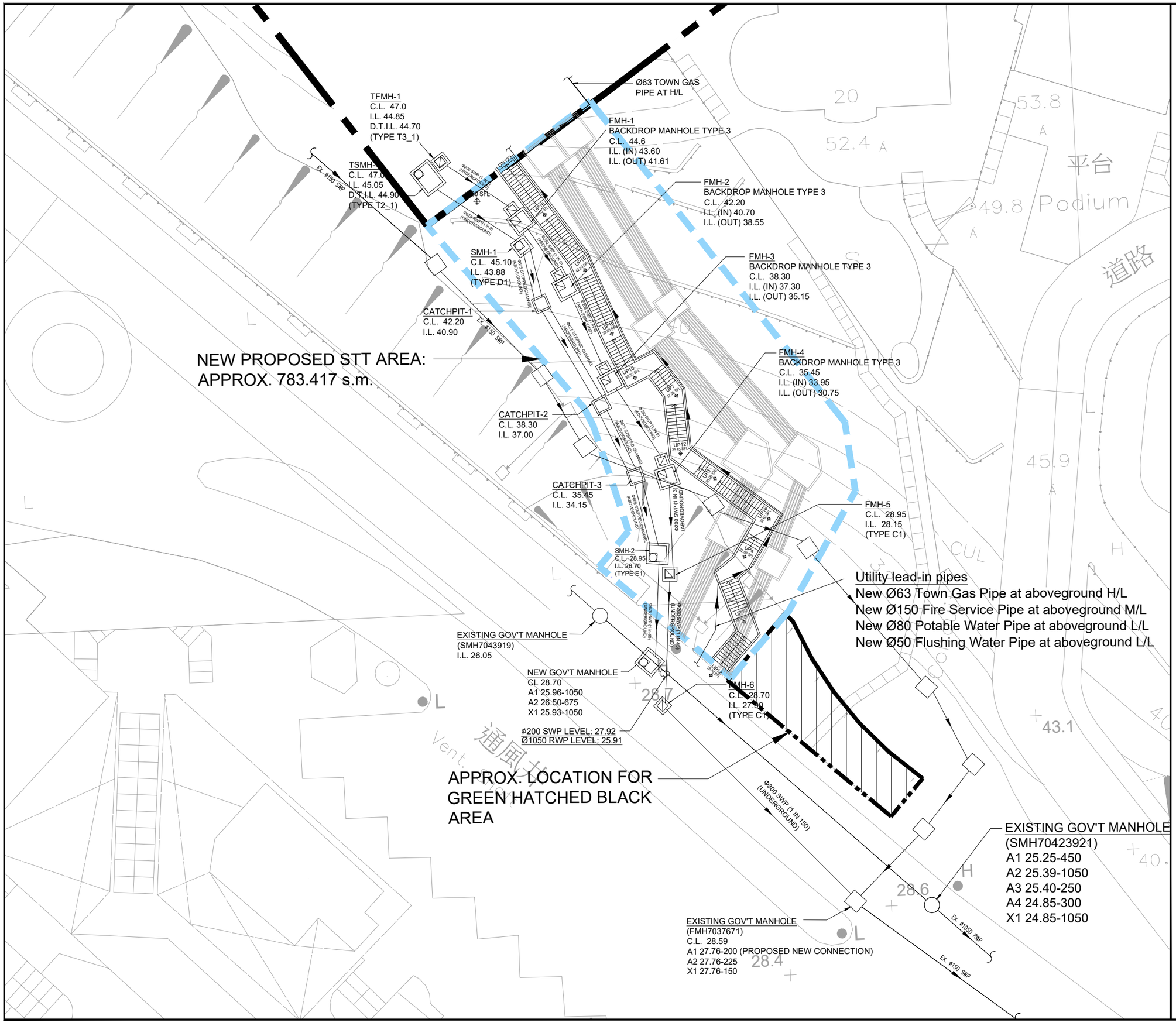
Ex. Ground Level: +41.42 m.P.D. 43.42mPD

Borehole Depth: 16.88 m

		Piezometer	
	Depth	***11.50 m***	
Date	Time	Depth of Water Table Below Ground (m)	Elevation of Water Table (m.P.D.)
23/Feb/2004	9:00 a.m.	10.84	+ 30.58
24/Feb/2004	9:00 a.m.	10.89	+ 30.53
25/Feb/2004	9:00 a.m.	10.93	+ 30.49
26/Feb/2004	9:00 a.m.	10.98	+ 30.44
27/Feb/2004	9:00 a.m.	11.13	+ 30.29
28/Feb/2004	9:00 a.m.	11.21	+ 30.21
01/Mar/2004	9:00 a.m.	11.27	+ 30.15

Appendix E

Schematic Architectural Drawing
for the Proposed STT



Rev.	Date	Amendment	Purpose
Rev.0	12/2021		Submission
Rev.1	05/2023		Submission
Rev.2	06/2024		Submission

PROPOSED STT AREA FOR RBL 333RP

- This drawing and the contents herein are the copyright of LWK & Partners (HK) Ltd.
- No part of the drawing and the design contained herein may be reproduced without the prior written consent of a director of LWK & Partners (HK) Ltd.
- Do not take measurements directly from this drawing.
- Check and verify all dimensions on site.
- Read this drawing in conjunction with the specifications and all other related drawings.
- Notify the Architect immediately of any discrepancy found herein.

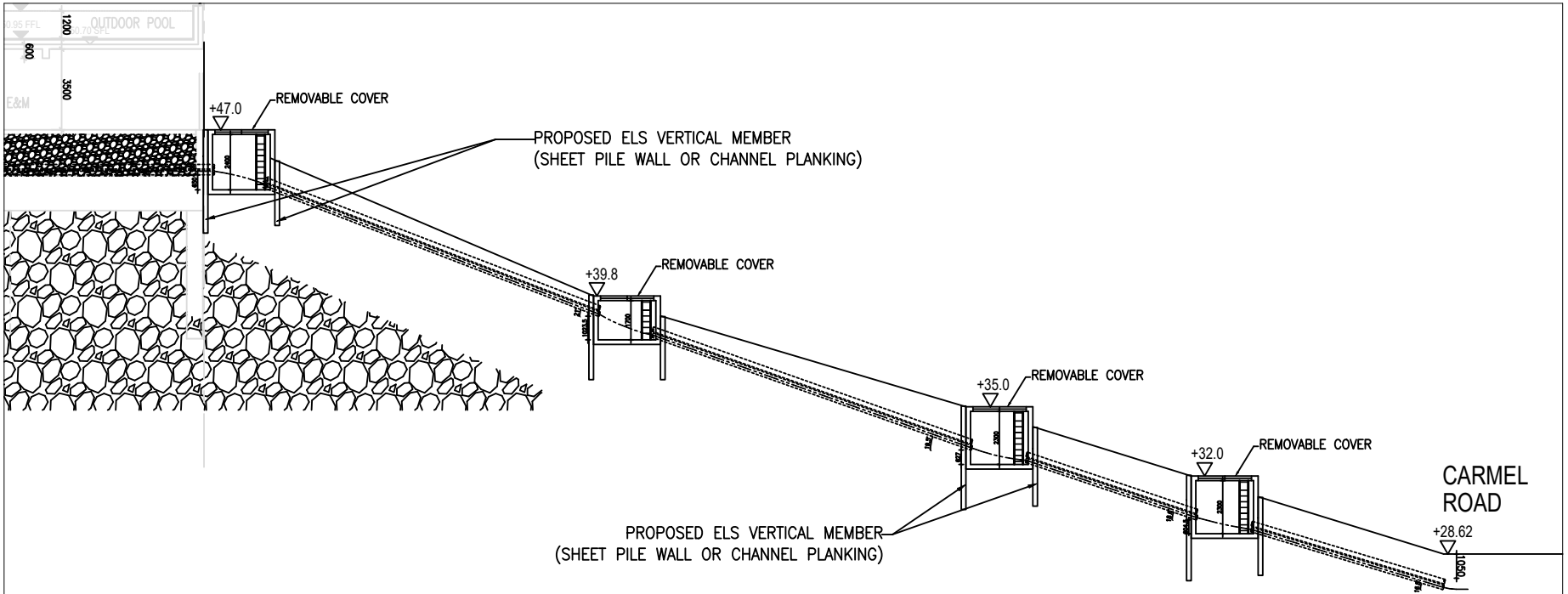
Client
COUTURE HOMES PROPERTIES LINITED

Project
PROPOSED RESIDENTIAL DEVELOPMENT AT MARYKNOLL HOUSE 44 STANLEY VILLAGE ROAD, STANLEY, HONG KONG

Drawing Title
PROPOSED STT LOCATION - INSTALLATION OF DRAINAGE SERVICES AND ANCILLARY SERVICES

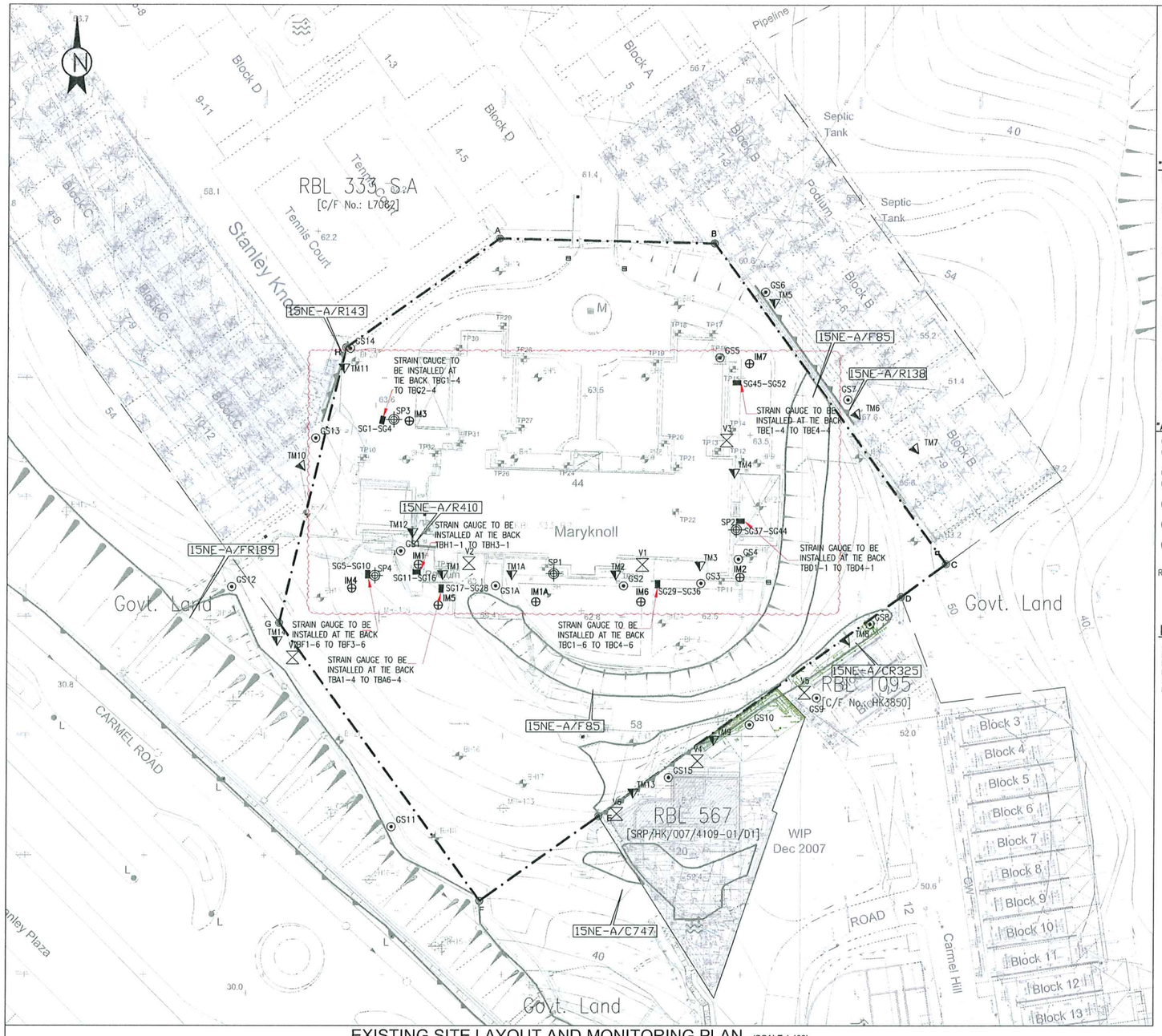
Job No.	Drawing No.	Revision No.
1269	MS-001	Rev.2
Scale	**Date**	**CAD Ref.**
1:300 (A3)	05/2023	
Drawn	**Checked**	**Approved**
	--	--

LWK + PARTNERS
15/F, North Tower, World Finance Centre, Harbour City, Tsim Sha Tsui, Kowloon.
T: 852-2574 1633 F: 852-2572 4906 E: lwk@lwkp.com
梁黃顧建築師(香港)事務所有限公司
九龍尖沙咀海港城環球金融中心北座15樓



TYPICAL SECTION FOR DRAINAGE AND CABLE

Appendix F
ELS Works Approval Plans
for Development at R.B.L 333RP



EXISTING SITE LAYOUT AND MONITORING PLAN (SCALE 1:400)

NOTES ON EXISTING UTILITIES

1. THE POSITION OF EXISTING UTILITIES SHOWN ON THIS DRAWING IS APPROXIMATE ONLY. EXACT LOCATION AND DEPTH OF THE UTILITIES MUST BE ASCERTAINED BY TRIAL PITS ON SITE. EXTREME CARE MUST BE TAKEN DURING EXCAVATIONS IN THE PROXIMITY OF THE UTILITIES. PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO ANY OF THE UTILITIES.
2. THE INFORMATION INDICATED IS GIVEN IN GOOD FAITH AND NO GUARANTEE IS GIVEN AS TO ITS ACCURACY OR COMPLETENESS. THE USE OF THIS INFORMATION BY THE CONTRACTOR OR ANY OTHER PARTY SHALL NOT RELIEVE HIM OF ANY OF HIS OBLIGATIONS OR RESPONSIBILITY UNDER THE CONTRACT.
3. THE CONTRACTOR SHALL ARRANGE FOR ANY REALIGNMENT OF THE EXISTING UTILITIES AT THE WORKING LOCATION PRIOR TO THE CONSTRUCTION OF WORKS, IF REQUIRED.
4. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO THE EXISTING UTILITIES DURING THE CONSTRUCTION WORKS, IF REQUIRED.
5. THE CONTRACTOR'S PARTICULAR ATTENTION IS DRAWN TO THE EXISTENCE OF UNDERGROUND SERVICE WITHIN AND AROUND THE SITE. HE SHALL PROTECT AND MAINTAIN ALL THOSE WORKS DURING THE ENTIRE CONTRACT PERIOD. NECESSARY PRECAUTIONS AND MONITORING SHALL BE TAKEN TO PREVENT DAMAGE TO THE EXISTING UPPER GROUND SERVICE.
6. THE CONTRACTOR SHALL IDENTIFY AND ESTABLISH HIMSELF THE TYPES AND EXACT LAYOUT/LOCATION OF THE EXISTING SERVICES BEFORE CARRYING OUT ANY CONSTRUCTION WORKS ON SITE. HE SHALL ALSO PLAN AND ARRANGE HIS WORKS TAKING INTO ACCOUNT THE EXISTENCE OF ALL SUCH WORKS THAT MAY AFFECT THE CONSTRUCTION SEQUENCE OF HIS WORKS. SHALL ANY SERVICES FALL WITHIN THE SITE, THE CONTRACTOR SHALL PROPOSE AND SUBMIT A METHOD STATEMENT ON PROTECTING OR DIVERTING THE EXISTING UTILITIES FOR AP/RSE APPROVAL AT NO EXTRA COST. IF NECESSARY, THE CONTRACTOR SHALL MODIFY THE DESIGN OF WORKS AND/OR PROVIDE TEMPORARY SUPPORTS FOR THE SERVICES AND SUBMIT THE METHOD STATEMENT FOR THE SERVICES AND SUBMIT THE METHOD STATEMENT FOR AP/RSE APPROVAL. SHOULD ANY DAMAGE OCCUR, NOTIFY THE AP/RSE AND RELEVANT AUTHORITIES CONCERNED IMMEDIATELY AND MAKE GOOD BY THE CONTRACTOR AT NO EXTRA COST.

NOTES ON MONITORING

1. INSTALL ALL CHECK POINTS AS SHOWN ON PLAN.
2. INITIAL READINGS OF CHECK POINTS AND BENCH MARKS SHALL BE SUBMITTED TO BUILDINGS DEPT. BEFORE COMMENCEMENT OF THE WORK.
3. ALL CHECK POINTS SHALL BE PROPERLY MAINTAINED AND MONITORED ON DAILY INTERVAL AND THE READINGS SHALL BE SUBMITTED TO THE AP/RSE AND BUILDING AUTHORITY BI-WEEKLY. ANY DEFECTIVE MONITORING DEVICES SHALL BE REPLACED ASAP.
4. THE LEVEL SHALL BE REPORTED IN mPD AND THE CHECK POINTS SHALL BE SURVEYED ACCORDING TO HONG KONG METRIC GRID.
5. PIEZOMETERS/STANDPIPES INSTALLED ON SITE SHOULD BE MONITORED ON DAILY BASIS CONTINUOUSLY THROUGHOUT THE CONSTRUCTION. THE READINGS SHOULD BE SUBMITTED TO RSE/RGE/BA ON BIWEEKLY BASIS. INITIAL READING SHOULD ALSO BE SUBMITTED BEFORE THE COMMENCEMENT OF WORKS.
6. CHECK POINT READINGS TO BE KEPT ON SITE FOR INSPECTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLICATION OF EXCAVATION PERMIT FOR INSTALLATION OF MONITORING CHECK POINTS OUTSIDE SITE BOUNDARY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR SEEKING CONSENT FROM THE ADJACENT LOT OWNERS FOR INSTALLATION OF MONITORING CHECK POINT AT ADJACENT LOTS / BUILDINGS. WHEN INSTALLATION OF CHECKPOINTS IN PRIVATE LOT IS OBJECTED, THE CONTRACTOR SHALL PROPOSED ALTERNATIVE LOCATION.
8. ACCURACY OF ALL READING SHALL BE 1.0mm FOR BOTH VERTICAL AND HORIZONTAL PLANES.
9. AGREEMENT FROM ADJACENT LOT OWNER SHALL BE OBTAINED FOR MONITORING THE CHECK POINT.

DESIGN GROUND WATER LEVEL(DGWL) SCHEDULE

STANDPIPE MARK	DESIGN GROUND WATER LEVEL
SP1	+ 50.1 mPD
SP2	+ 56.8 mPD
SP3	+ 58.7 mPD
SP4	+ 49.2 mPD

NOTE: STANDPIPE SP4 SHALL BE INSTALLED UPON FINAL EXCAVATION LEVEL IS FORMED AND WILL BE REMOVED AFTER THE CONSTRUCTION OF PILE CAP.

"ALERT LEVEL" RESPONSE ACTION:

(i) RC TO NOTIFY AND SUBMIT WRITTEN REPORT TO RSE/RGE.
(ii) AP/RSE/RGE TO ASSESS EFFECT OF MOVEMENT AND PREDICT FUTURE MOVEMENTS.
(iii) AP/RSE/RGE TO AGREE WITH RC ON THE SUITABLE ACTION PLAN WHICH MAY INCLUDE THE INSTALLATION OF ADDITIONAL CHECK POINTS AND/OR INCREASING MONITORING FREQUENCY AND THE REMEDIAL/MITIGATION MEASURES TO BE TAKEN UPON REACHING THE "THE ALARM LEVEL"

"ALARM LEVEL" RESPONSE ACTION:

(i) RC TO NOTIFY AND SUBMIT UPDATED REPORT TO AP/RSE/RGE AND NOTIFY THE BD IMMEDIATELY.
(ii) AP/RSE/RGE AND RC TO CONDUCT JOINT SITE INSPECTION TO DETERMINE IF ANY CONSTRUCTION ACTIVITIES SHOULD BE TEMPORARILY SUSPENDED.
(iii) RC TO IMPLEMENT THE NECESSARY REMEDIAL/MITAGATION MEASURES IN ACCORDANCE WITH THE AGREED ACTION PLAN.
(iv) AP/RSE/RGE AND RC TO DISCUSS THE INSTRUMENT RESPONSE AND REVIEW THE EFFECTIVENESS OF THE RESPONSE ACTION.
(v) AP/RSE/RGE TO AGREE WITH RC ON THE EMERGENCY PLAN DETAILING THE MEASURES TO BE TAKEN UPON REACHING "ACTION LEVEL".
(vi) ANY CONSTRUCTION ACTIVITIES MAY BE SUSPENDED IF THE RESPONSE ACTION HAS BEEN IMPLEMENTED AND ON THE ADVICE OF
(vii) AP/RSE/RGE TO REVIEW THE METHOD STATEMENTS OF PILING WORKS TO DETERMINE WHETHER MODIFICATION TO THE CONSTRUCTION METHODS IS REQUIRED TO PREVEN ACTION LEVEL FROM BEING REACHED.

"ACTION LEVEL" RESPONSE ACTION:

(i) ALL WORKS WITH THE AFFECTED AREA ARE TO BE CEASED.
(ii) RC TO NOTIFY AND CARRY OUT A JOINT SITE INSPECTION WITH THE AP/RSE/RGE IMMEDIATELY. THE BD AND THE RELEVANT PARTIES SHOULD BE NOTIFIED IMMEDIATELY.
(iii) RC TO IMPLEMENT THE NECESSARY EMERGENCY MEASURES IN ACCORDANCE WITH THE AGREED EMERGENCY PLAN.
(iv) RC TO SUBMIT AN INCIDENT REPORT TO AP/RSE/RGE AND THE BD DETAILING THE FULL HISTORY OF THE MOVEMENTS AND REMEDIAL/EMERGENCY MEASURES IMPLEMENTED.
(v) AP/RSE/RGE TO REVIEW THE INCIDENT AND AGREE WITH RC ON FURTHER REMEDIAL AND PREVENTIVE MEASURES TO ENABLE RESUPMTION OF THE SUSPENDED WORKS.
(vi) CONSTRUCTION ACTIVITIES SHOULD NOT BE RESUMED UNTIL THE NECESSARY REMEDIAL AND PREVENTIVE MEASURE HAVE BEEN COMPLETED TO THE SATISFACTION OF THE BD.
(vii) IF THE TRIGGER VALUES AND RESPONSE ACTION ARE REVISED. THE AMENDED PLANS SHOULD BE SUBMITTED TO THE BD FOR APPROVAL . THE SUSPENDED CONSTRUCTION ACTIVITIES SHOULD NOT BE RESUMED UNTIL THE AMEDNED PLANS ARE APPROVED BY THE BA AND THE CONSENT IS GIVEN

REMARKS:
(i) THE 'ACTION LEVEL' RESPONSE ACTION SHOULD BE TAKEN IF ANY OF THE FOLLOWING SITUATIONS OCCUR:
- ANY MONITORING STATION HAS A READING REACHING THE SERVICEABILITY LIMIT.
- UNDUE SETTLEMENT AS INDICATED IN ANY CHECKPOINTS CEG: AN INCREASE OF 5MM BETWEEN TWO CONSECUTIVE DAILY READING.
- SIGN OF DISTRESS OR DAMAGES OBSERVED IN ANY ADJACENT STRUCTURES AND/OR UTILITIES.

INSTRUMENTATION AND MONITORING

WHEN THE MONITORING VALUES RECORDED AT ANY MONITORING STATIONS REACH THE MAXIMUM PREDICTED/ CALCULATED MOVEMENTS/ GROUNDWATER FLUCTUATIONS INDUCED BY OR ASSOCIATED WITH THE PROPOSED WORKS, THE RSE/RGE SHALL INVESTIGATE THE CAUSES OF THE RECORDED UNDUE PERFORMANCE, REVIEW THE RECORDED VALUES WITH THE CONSTRUCTION SEQUENCE AND ACTIVITIES, ASSESS THE EFFECTS ON THE PROPOSED WORKS, PREDICT FURTHER MOVEMENTS/ GROUNDWATER FLUCTUATIONS AND TAKE ANY EMERGENCY ACTION ON SITE AS NECESSARY. A REVIEW REPORT COVERING THE ABOVE ASPECTS TOGETHER WITH THE DETAILED PLAN OF REMEDIAL ACTION SHALL BE PREPARED BY THE RSE/RGE AND SUBMITTED TO THE BD FOR AGREEMENT. IF REQUIRED, THE RSE/RGE SHALL SUBMIT AMENDMENT PLANS TO THE BD FOR APPROVAL.

GENERAL MONITORING CHECKPOINTS

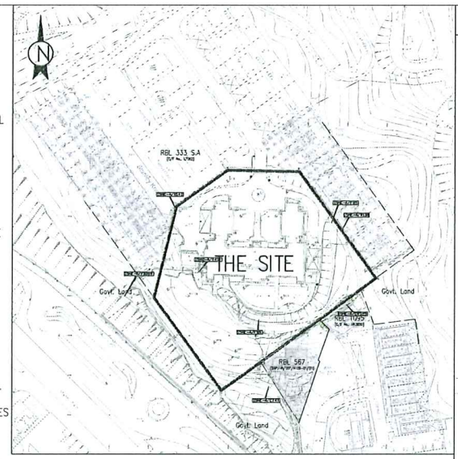
INSTRUMENT		STAGE	CRITERION	ALERT	ALARM	ACTION
FOR GRADE I HISTORICAL BUILDING	GROUND SETTLEMENT CHECK POINT (GS1-GS5,GS1A)	DURING AND BEFORE ELS STAGE 6	TOTAL SETTLEMENT			4mm
		AFTER ELS STAGE 6		6mm	8mm	10mm
	TILTING CHECK POINT (TM1-TM4,TM1A)	ALL STAGES	ANGULAR DISTORTION	1:2000	1:1500	1:1000
		DURING AND BEFORE ELS STAGE 6	BUILDING SETTLEMENT			4mm
		AFTER ELS STAGE 6		6mm	8mm	10mm
	VIBRATION CHECK POINT (M-10)	ALL STAGES	VIBRATION (PEAK PARTICLE VELOCITY)	3mm/s	4mm/s	5mm/s
STANDPIPE (SP1-SP4)			GROUND WATER LEVEL	1m BELOW DGWL	0.5m BELOW DGWL	DGWL
VIBRATION CHECK POINT (V4-V7)			VIBRATION (PEAK PARTICLE VELOCITY)	7.5mm/s	10mm/s	15mm/s
GROUND SETTLEMENT CHECK POINT(GS6-GS15)			TOTAL SETTLEMENT	12mm	18mm	25mm
TILTING CHECK POINT (TM5-TM14)			ANGULAR DISTORTION	1:1000	1:750	1:500
INCLINOMETER (IM1 - IM7,IM1A)		DURING AND BEFORE ELS STAGE 6	LATERAL DEFLECTION			8mm
		AFTER ELS STAGE 6		12mm	16mm	20mm
STRAIN GAUGE (SG1 - SG52)		ALL STAGES	TIE BACK FORCE	0.75 X TD	0.9 X TD	TD

TD DENOTES DESIGN TIE BACK FORCE AS SPECIFIED TIE BACK SCHEDULE AS SHOWN ON DRAWING BPW-10.

MONITORING OF THE STRAIN GAUGE SHALL BE CARRIED OUT MONTHLY. THE INTERPRETATION OF TIE BACK FORCE MONITORING RESULT SHALL BE INCLUDED IN TS REPORT.

INCLINOMETER OF BORED PILE WALL SCHEDULE

INCLINOMETER MARK	BORED PILE WALL
IM1A	BPW-A19
IM1	BPW-G20
IM2	BPW-D03
IM3	BPW-F11
IM4	BPW-E09
IM5	BPW-A07
IM6	BPW-C01
IM7	BPW-D32



SITE PLAN (1:1500 IN A1)

B.D. REF NO. : BD 3/3008/22(HU)

LEGEND:

- SITE BOUNDARY
- GS1 — PROPOSED GROUND SETTLEMENT CHECK POINT (GS1 TO GS15,GS1A)
- TM1 — PROPOSED TILTING CHECK POINT (TM1 TO TM14,TM1A)
- EXISTING TRIAL PIT
- V1 — PROPOSED VIBRATION CHECK POINT (V1 TO V7)
- EXISTING BOREHOLE WITH STANDPIPE
- SP1 — PROPOSED STANDPIPE (SP1-SP4)
- EXISTING FRESH WATER MAIN
- EXISTING SEWER PIPES
- EXISTING STORM WATER PIPES
- IM1 — PROPOSED INCLINOMETERS (IM1 TO IM7,IM1A)
- PROPOSED STRAIN GAUGE (SG1 – SG52)

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
MONITORING PLAN

Drawing Number:
ELS-01

Revision Number:
A

Digitally signed by LEUNG Chi Hung Ben
RSE 7055
02 October 2024

Received on
02 October 2024

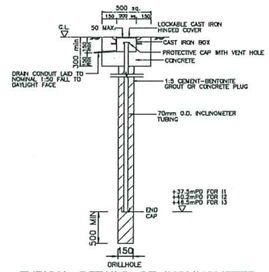
Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

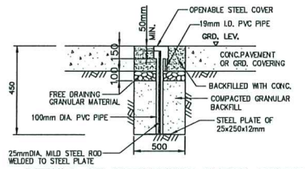
TIE BACK SCHEDULE

TYPE BACK TYPE	TIE BACK NO.	INSTALLATION LEVEL (+mPD)	TIE BACK CUT OFF LEVEL (mPD)	DRILLHOLE SIZE (mm)	NUMBER OF BARS	BAR SIZE (mm)	HORIZONTAL SPACING (m)	INCLINATION FROM HORIZON (°)	FREE LENGTH (m)	DESIGN BOND LENGTH IN ROCK (m)	TOTAL BOND LENGTH IN ROCK (m)	TOTAL LEGTH (m)	OVERALL DESIGN TIE BACK FORCE (kN)	(DURING ELS STAGE 6-1) DESIGN TIE BACK FORCE (kN)
A	TBA 1 - 1 - TBA 1 - 10	58.5	58.5	219	4	T50	2.4	45	18.2	5.0	5.3	23.5	285	285
A	TBA 2 - 1 - TBA 2 - 10	56.3	56.3	219	4	T50	2.4	45	15.9	5.0	5.3	21.2	345	278
A	TBA 3 - 1 - TBA 3 - 10	54.1	54.1	219	4	T50	2.4	45	14.0	5.0	5.3	19.3	403	210
A	TBA 4 - 1, 3, 10	51.9	51.9	219	4	T50	2.4	45	11.5	5.0	5.3	16.8	460	NOT INSTALLED
A	TBA 4 - 4 - TBA 4 - 9	51.7	51.7	219	4	T50	2.4	45	11.3	5.0	5.3	16.6	460	NOT INSTALLED
A	TBA 5 - 1, 3, 10	49.7	49.7	219	4	T50	2.4	45	9.6	5.0	5.3	14.9	508	NOT INSTALLED
A	TBA 5 - 4 - TBA 5 - 9	49.5	49.5	219	4	T50	2.4	45	9.5	5.0	5.3	14.8	508	NOT INSTALLED
A	TBA 6 - 1, 3, 10	47.5	47.5	219	4	T50	2.4	45	8.2	5.0	5.3	13.5	558	NOT INSTALLED
A	TBA 6 - 4 - TBA 6 - 9	47.1	47.1	219	4	T50	2.4	45	6.9	5.0	5.3	12.2	558	NOT INSTALLED
B	TBB 1 - 1 - TBB 1 - 4	61.0	61.0	219	4	T50	2.4	45	17.0	5.0	5.3	22.3	438	328
B	TBB 2 - 1 - TBB 2 - 4	58.0	58.0	219	4	T50	2.4	45	12.7	5.0	5.3	18.0	525	330
B	TBB 3 - 1 - TBB 3 - 4	55.0	55.0	219	4	T50	2.4	45	8.5	5.0	5.3	13.8	675	300
B	TBB 4 - 1 - TBB 4 - 4	52.0	52.0	219	4	T50	2.4	45	4.2	5.0	5.3	9.5	1050	NOT INSTALLED
C	TBC 1 - 1 - TBC 1 - 7	61.0	61.0	219	4	T50	2.4	45	17.0	5.0	5.3	22.3	438	328
C	TBC 2 - 1 - TBC 2 - 7	58.0	58.0	219	4	T50	2.4	45	12.7	5.0	5.3	18.0	525	330
C	TBC 3 - 1 - TBC 3 - 7	55.0	55.0	219	4	T50	2.4	45	8.5	5.0	5.3	13.8	675	300
C	TBC 4 - 1 - TBC 4 - 5	52.0	52.0	219	4	T50	2.4	45	4.2	5.0	5.3	9.5	1050	NOT INSTALLED
C	TBC 4 - 6 - TBC 4 - 7	52.5	52.5	219	4	T50	2.4	45	4.6	5.0	5.3	9.9	1050	NOT INSTALLED
D	TBD 1 - 1	61.0	61.0	219	4	T50	2.4	45	17.0	5.0	5.3	22.3	438	328
D	TBD 1 - 2 - TBD 1 - 5		60.7	219	4	T50	2.4	45	16.8	5.0	5.3	22.1	438	328
D	TBD 1 - 6 - TBD 1 - 10		61.5	219	4	T50	2.4	45	17.3	5.0	5.3	22.6	438	328
D	TBD 1 - 11	60.5	60.5	219	4	T50	2.4	45	16.6	5.0	5.3	21.9	438	328
D	TBD 2 - 1, 6, 7, 8	58.0	58.0	219	4	T50	2.4	45	12.7	5.0	5.3	18.0	525	330
D	TBD 2 - 2	58.3	58.3	219	4	T50	2.4	45	12.9	5.0	5.3	18.2	525	330
D	TBD 2 - 3 - TBD 2 - 5	58.5	58.5	219	4	T50	2.4	45	13.1	5.0	5.3	18.4	525	330
D	TBD 2 - 9 - TBD 2 - 11	57.5	57.5	219	4	T50	2.4	45	12.4	5.0	5.3	17.7	525	330
D	TBD 3 - 1, 2, 3, 6, 10, 11	55.0	55.0	219	4	T50	2.4	45	8.5	5.0	5.3	13.8	675	300
D	TBD 3 - 4	54.3	54.3	219	4	T50	2.4	45	8.0	5.0	5.3	13.3	675	300
D	TBD 3 - 5, 7	55.5	55.5	219	4	T50	2.4	45	8.8	5.0	5.3	14.1	675	300
D	TBD 3 - 8	54.9	54.9	219	4	T50	2.4	45	8.4	5.0	5.3	13.7	675	300
D	TBD 3 - 9	54.5	54.5	219	4	T50	2.4	45	8.1	5.0	5.3	13.4	675	300
D	TBD 4 - 1, 10	52.5	52.5	219	4	T50	2.4	45	4.6	5.0	5.3	9.9	1050	NOT INSTALLED
D	TBD 4 - 2, 11	51.3	51.3	219	4	T50	2.4	45	3.8	5.0	5.3	9.1	1050	NOT INSTALLED
D	TBD 4 - 3 - TBD 4 - 6	52.0	52.0	219	4	T50	2.4	45	4.2	5.0	5.3	9.5	1050	NOT INSTALLED
D	TBD 4 - 7 - TBD 4 - 8	51.5	51.5	219	4	T50	2.4	45	3.9	5.0	5.3	9.2	1050	NOT INSTALLED
D	TBD 4 - 9	51.7	51.7	219	4	T50	2.4	45	4.0	5.0	5.3	9.3	1050	NOT INSTALLED
E	TBE 1 - 1 - TBE 1 - 11	62.5	62.5	219	4	T50	2.4	45	18.0	7.0	7.3	25.3	478	478
E	TBE 2 - 1 - TBE 2 - 11	59.5	59.5	219	4	T50	2.4	45	14.6	7.0	7.3	21.9	585	585
E	TBE 3 - 1 - TBE 3 - 10	56.5	56.5	219	4	T50	2.4	45	11.2	7.0	7.3	18.5	515	445
E	TBE 4 - 1 - TBE 4 - 10	53.5	53.5	219	4	T50	2.4	45	7.8	7.0	7.3	15.1	408	NOT INSTALLED
F	TBF 1 - 1 - TBF 1 - 8	51.0	51.0	219	4	T50	2.4	45	17.2	5.0	5.3	22.5	775	NOT INSTALLED
F	TBF 2 - 1 - TBF 2 - 8	47.0	47.0	219	4	T50	2.4	45	12.6	5.0	5.3	17.9	1203	NOT INSTALLED
F	TBF 3 - 1 - TBF 3 - 8	43.0	43.0	219	4	T50	2.4	45	8.3	5.0	5.3	13.6	1110	NOT INSTALLED
G	TBG 1 - 1 - TBG 1 - 6	61.1	61.1	219	4	T50	2.4	45	19.7	5.0	5.3	25.0	305	295
G	TBG 2 - 1 - TBG 2 - 6	57.7	57.7	219	4	T50	2.4	45	16.3	5.0	5.3	21.6	343	255
H	TBH 1 - 1 - TBH 1 - 3	61.7	61.7	219	4	T50	2.4	45	21.4	5.0	5.3	26.7	233	NOT INSTALLED
H	TBH 1 - 4 - TBH 1 - 11	61.5	61.5	219	4	T50	2.4	45	21.2	5.0	5.3	26.5	233	NOT INSTALLED
H	TBH 2 - 1 - TBH 2 - 2		59.5	219	4	T50	2.4	45	19.1	5.0	5.3	24.4	275	NOT INSTALLED
H	TBH 2 - 3 - TBH 2 - 6		59.3	219	4	T50	2.4	45	19.0	5.0	5.3	24.3	275	NOT INSTALLED
H	TBH 2 - 7 - TBH 2 - 11		59.3	219	4	T50	2.4	45	19.0	5.0	5.3	24.3	275	NOT INSTALLED
H	TBH 3 - 1 - TBH 3 - 6		57.1	219	4	T50	2.4	45	16.8	5.0	5.3	22.1	258	NOT INSTALLED
H	TBH 3 - 7 - TBH 3 - 11	57.5	57.5	219	4	T50	2.4	45	17.1	5.0	5.3	22.4	258	NOT INSTALLED

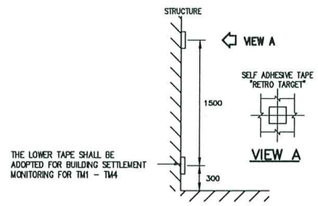
FOR INFORMATION ONLY



TYPICAL DETAILS OF INCLINOMETER
(N.T.S.)

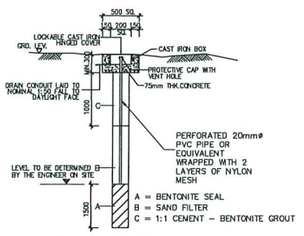


DETAILS OF SETTLEMENT CHECK POINTS ON GROUND
(N.T.S.)



VIEW A

DETAILS OF TILTING CHECKPOINT
(N.T.S.)



DETAILS OF STANDPIPE
(N.T.S.)

NEW DRAWING

B.D. REF NO. : BD 3/3008/22(HU)

-	07/2024	1ST AMENDMENT	CJX	SKS
Revision	Date	Description	By	Chk

CMA
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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
TYPICAL DETAIL

Drawing Number:
ELS-01A

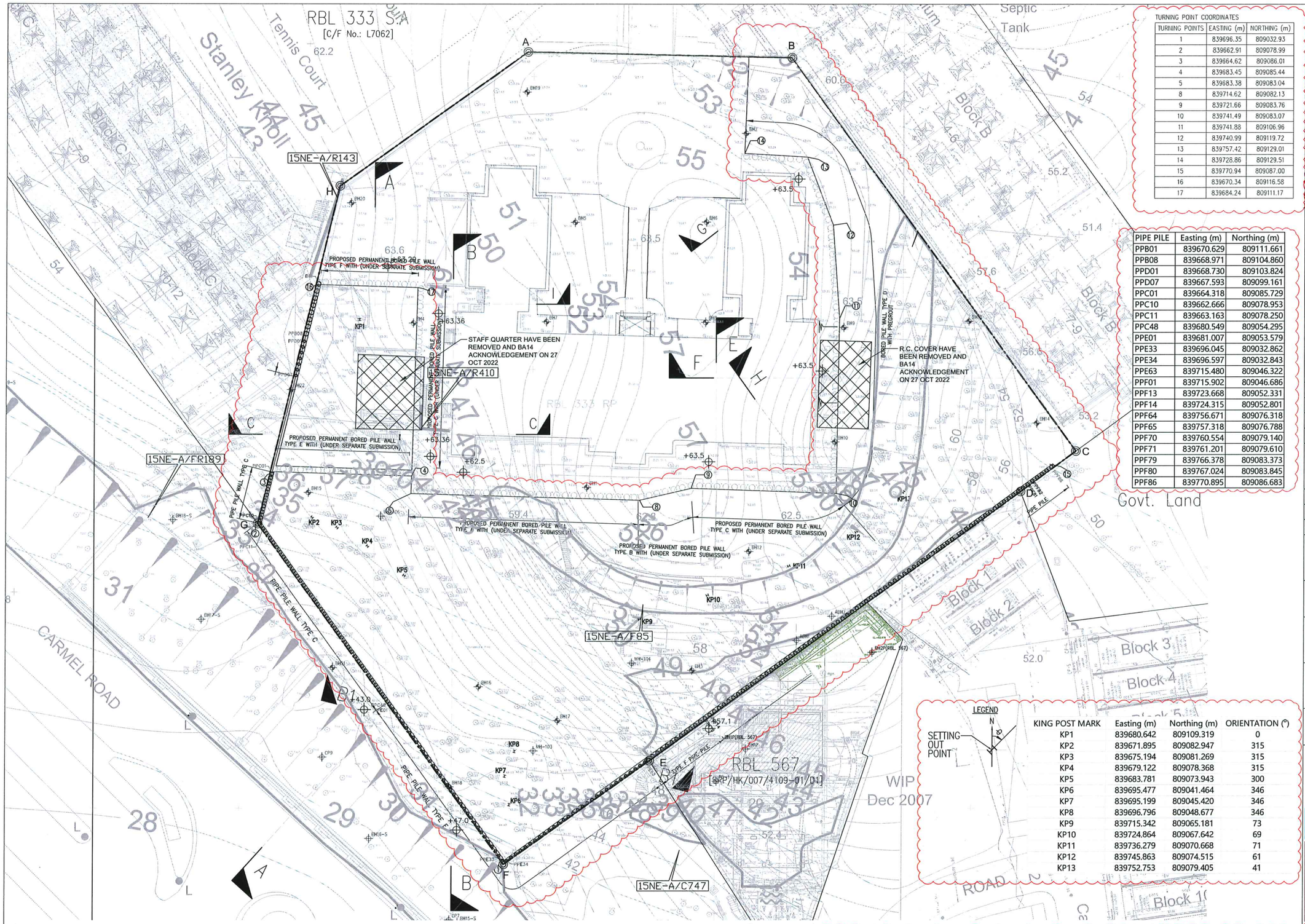
Revision Number:
-

Digitally signed by LEUNG Chi Hung Ben
RSE 7055
02 October 2024

Received on
02 October 2024

Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.



TURNING POINT COORDINATES

TURNING POINTS	EASTING (m)	NORTHING (m)
1	839696.35	809032.93
2	839662.91	809078.99
3	839664.62	809086.01
4	839683.45	809085.44
5	839683.38	809083.04
8	839714.62	809082.13
9	839721.66	809083.76
10	839741.49	809083.07
11	839741.88	809106.96
12	839740.99	809119.72
13	839757.42	809129.01
14	839728.86	809129.51
15	839770.94	809087.00
16	839670.34	809116.58
17	839684.24	809111.17

PIPE PILE	Easting (m)	Northing (m)
PPB01	839670.629	809111.661
PPB08	839668.971	809104.860
PPD01	839668.730	809103.824
PPD07	839667.593	809099.161
PPC01	839664.318	809085.729
PPC10	839662.666	809078.953
PPC11	839663.163	809078.250
PPC48	839680.549	809054.295
PPE01	839681.007	809053.579
PPE33	839696.045	809032.862
PPE34	839696.597	809032.843
PPE63	839715.480	809046.322
PPF01	839715.902	809046.686
PPF13	839723.668	809052.331
PPF14	839724.315	809052.801
PPF64	839756.671	809076.318
PPF65	839757.318	809076.788
PPF70	839760.554	809079.140
PPF71	839761.201	809079.610
PPF79	839766.378	809083.373
PPF80	839767.024	809083.845
PPF86	839770.895	809086.683

LEGEND

KING POST MARK	Easting (m)	Northing (m)	ORIENTATION (°)
KP1	839680.642	809109.319	0
KP2	839671.895	809082.947	315
KP3	839675.194	809081.269	315
KP4	839679.122	809078.368	315
KP5	839683.781	809073.943	300
KP6	839695.477	809041.464	346
KP7	839695.199	809045.420	346
KP8	839696.796	809048.677	346
KP9	839715.342	809065.181	73
KP10	839724.864	809067.642	69
KP11	839736.279	809070.668	71
KP12	839745.863	809074.515	61
KP13	839752.753	809079.405	41

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 AS-BUILT BOREHOLE
- P MH-103 PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 EXISTING GROUND LEVEL
- KP1 PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- 50 INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

CMA
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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 1)

Drawing Number:
ELS-02

Revision Number:
A

Digitally signed by LEUNG Chi Hung Ben
RSE 7915
02 October 2024

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02 October 2024

Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 1)

(SCALE 1:250)

STAGE 1
1-1. INSTALL MONITORING CHECKPOINTS AND TAKE INITIAL READING.
1-2. CARRY OUT PREGROUTING WORKS FOR TEMPORARY PIPE PILES, INSTALLATION OF TEMPORARY PIPE PILES, PREGROUTING WORKS FOR PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION), PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION), GROUT CURTAIN AND KING POSTS AS SHOWN ON PLAN WITH CONSENT OBTAINED.
1-3. DESIGN GROUND WATER LEVEL TO BE REVIEWED BEFORE THE COMMENCEMENT OF EXCAVATION WORKS TO CONFIRM IF PUMPING TEST IS REQUIRED.(DETAILS REFER TO DWG NO. ELS-16A) CARRY OUT PUMPING TEST AND SUBMIT ASSESSMENT REPORT TO BUILDING DEPARTMENT IF REQUIRED.
1-4. UPON COMPLETION OF PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION) , TEMPORARY PIPE PILE WALL & KING POST INSTALLATION, SUBMIT FORM BA14 OF PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION), TEMPORARY PIPE PILE & KING POST TO THE BUILDINGS DEPARTMENT.

PRIOR TO CONSENT, THE AP/RSE/RGE SHALL OBTAIN RECORDS OF PIPE LEAKAGE/ BURST INCIDENTS FROM THE RELEVANT DEPARTMENTS (E.G. WSD, DSD, HYD) OCCURRED WITHIN THE AFFECTED AREA IN THE PAST 12 MONTHS. AN INVESTIGATION SHALL BE CARRIED OUT TO ASCERTAIN THE EXISTING CONDITION OF THE SURROUNDING GROUND, IN PARTICULAR THE EXISTENCE OF GROUND LOSS OR UNDERGROUND CAVITY. THE AP/RSE/RGE SHOULD APPROACH THE DEPARTMENTS FOR FURTHER INFORMATION ABOUT THE CAUSES OF THE INCIDENTS AND REMEDIAL ACTIONS TAKEN TO FACILITATE THE INVESTIGATION. A DESIGN REVIEW REPORT SHALL BE SUBMITTED TO AND FOUND ACCEPTABLE BY THE BA TO DISCUSS THE FINDINGS OF THE INVESTIGATION AND REVIEW THE ADEQUACY OF THE PROPOSED SITE FORMATION AND EXCAVATION AND LATERAL SUPPORT WORKS TAKING DUE CONSIDERATION OF THE INVESTIGATION RESULTS.

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- +60.5mPD — PROPOSED EXCAVATION LEVEL
- PROPOSED PRE DRILLING
- 50 — INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 2)

Drawing Number:
ELS-03

Revision Number:
A

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RGE 7905
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04 October 2024

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STAGE 2
2-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
2-2. CARRY OUT PREGROUT WORK FOR TIE BACK AS SHOWN ON PLAN. (UNDER SEPARATE SUBMISSION)
2-3. INSTALL PERMANENT TIE BACKS (TBB1-1 TO TBB1-4, TBC1-1 TO TBC1-7, TBD1-1 TO TBD1-11, TBE1-1 TO TBE1-13, TBG1-1 TO TBG1-6 AND TBH1-1 TO TBH1-11). (UNDER SEPARATE SUBMISSION)

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 2)

(SCALE 1:250)

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- +60.5mPD — PROPOSED EXCAVATION LEVEL
- 50 — INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 3)

Drawing Number:
ELS-04

Revision Number:
A

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LUNG Chi-wang
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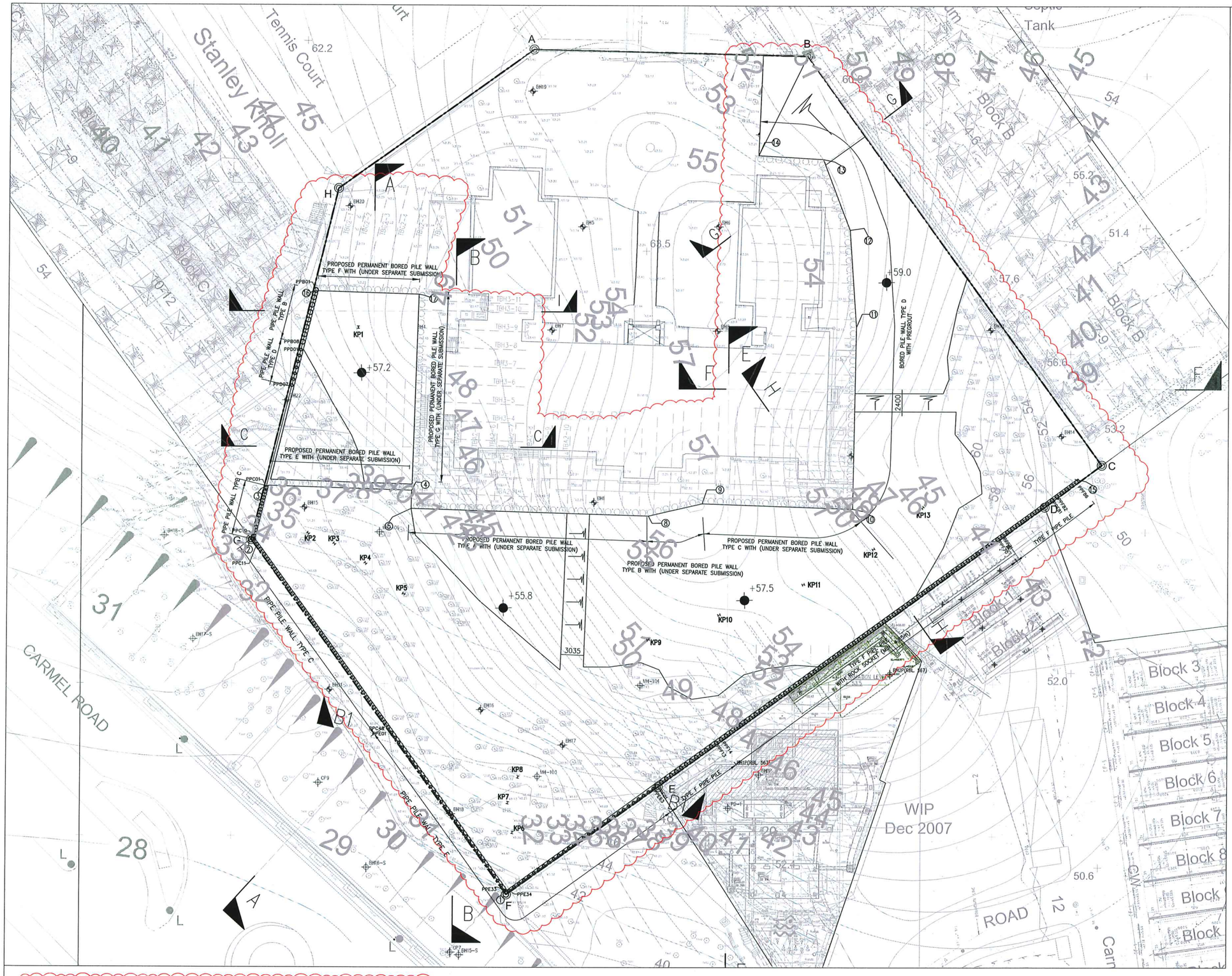
STAGE 3
3-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
3-2. CARRY OUT PREGROUT WORK FOR TIE BACK AS SHOWN ON PLAN. (UNDER SEPARATE SUBMISSION)
3-3. INSTALL PERMANENT TIE BACKS (TBA1-1 TO TBA1-10, TBB2-1 TO TBB2-4, TBC2-1 TO TBC2-7, TBD2-1 TO TBD2-11, TBE2-1 TO TBE2-11 AND TBH2-1 TO TBH2-11). (UNDER SEPARATE SUBMISSION)

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 3)

(SCALE 1:250)



STAGE 4
4-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
4-2. INSTALL PERMANENT TIE BACKS (TBA2-1 TO TBA2-10, TBH3-1 TO TBH3-11 AND TBG2-1 TO TBG2-6). (UNDER SEPARATE SUBMISSION)

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 4)

(SCALE 1:250)

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 AS-BUILT BOREHOLE
- P PIEZOMETER
- MH-103 EXISTING BOREHOLE OF NEARBY SITE
- 142.1 EXISTING GROUND LEVEL
- KP1 PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- +60.5mPD PROPOSED EXCAVATION LEVEL
- 50 INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 4)

Drawing Number:
ELS-05

Revision Number:
A

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RBE 7305
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LUNG Chi-wang
Senior Structural Engineer
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04 October 2024

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B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- T1 — PROPOSED TIE / BRACING
- +60.5mPD — PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 — WALING MARK
- 50 — INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 5)

Drawing Number:
ELS-06

Revision Number:
A

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FILE 79/05
02 October 2024

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Plan Approved
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LUNG Chi-wang
Senior Structural Engineer
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04 October 2024

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STAGE 5
5-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
5-2. INSTALL TIE BACKS (TBA3-1 TO TBA3-10, TBB3-1 TO TBB3-4, TBC3-1 TO TBC3-7, TBD3-1 TO TBD3-11 AND TBE3-1 TO TBE3-10). (UNDER SEPARATE SUBMISSION)
5-3. INSTALL STRUTS (HS1 AND IS1) AND CORRESPONDING WALINGS (W1), SPACERS AND BRACKETS.

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 5)

(SCALE 1:250)

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 6)

(SCALE 1:250)

STAGE 6

6-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.

6-2. INSTALL TIE BACKS (TBA4-1 TO TBA4-10, TBB4-1 TO TBB4-4, TBC4-1 TO TBC4-7, TBD4-1 TO TBD4-11 AND TBE4-1 TO TBE4-10 AND TBF1-1 TO TBF1-8). (UNDER SEPARATE SUBMISSION)

6-3. INSTALL STRUTS (HS1-2, BS1 AND ES1) AND CORRESPONDING WALINGS (W1), SPACERS AND BRACKETS.

6-4 SUBMIT ELS DESIGN REVIEW OF ELS SYSTEM WITH THE MONITORING RESULTS UPON STAGE 6-1 TO THE SATISFACTION OF BD AND GEO.

6-5 SUBMIT CONSENT FOR THE ELS STAGE 8 TO ELS STAGE 11.

* NOTE THE STEP 6-4 CAN BE CARRIED OUT CONCURRENTLY WITH STEP 6-2 AND 6-3.

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 AS-BUILT BOREHOLE
- P MH-103 PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 EXISTING GROUND LEVEL
- KP1 PROPOSED KING POST
- PROPOSED PIPE PILE / GROUT CURTAIN / PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- T1 PROPOSED TIE / BRACING
- +60.5mPD PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 WALING MARK
- 50 INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 6)

Drawing Number:
ELS-07

Revision Number:
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RSE 7905
02 October 2024

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for BUILDING AUTHORITY
04 October 2024

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B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- T1 — PROPOSED TIE / BRACING
- +60.5mPD — PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 — WALING MARK
- 50 — INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
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Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 7)

Drawing Number:
ELS-08

Revision Number:
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RSE 7905
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Plan Approved
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LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

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STAGE 7
7-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
7-2. INSTALL PERMANENT TIE BACKS (TBA5-1 TO TBA5-10). (UNDER SEPARATE SUBMISSION)
7-3. INSTALL STRUTS (HS2 AND ES2) AND CORRESPONDING WALINGS (W1), SPACERS AND BRACKETS.

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 7)

(SCALE 1:250)

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE / GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- T1 — PROPOSED TIE / BRACING
- +60.5mPD — PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 — WALING MARK
- 50 — INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
-	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
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Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 8)

Drawing Number:
ELS-08A

Revision Number:
-

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RSE 7905
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LUNG Chi-wang
Senior Structural Engineer
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STAGE 8
8-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
8-2. INSTALL PERMANENT TIE BACKS (TBF2-1 TO TBF2-8 AND TBA6-1 TO TBA6-10). (UNDER SEPARATE SUBMISSION)
8-3. INSTALL STRUTS (BS1-2 AND AS1) AND CORRESPONDING WALINGS (W1), SPACERS AND BRACKETS.

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 8)

(SCALE 1:250)

NEW DRAWING

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- T1 — PROPOSED TIE / BRACING
- +60.5mPD — PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 — WALING MARK
- 50 — INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
-	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
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Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 9)

Drawing Number:
ELS-08B

Revision Number:
-

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RGE 7595
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LUNG Chi-wang
Senior Structural Engineer
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04 October 2024

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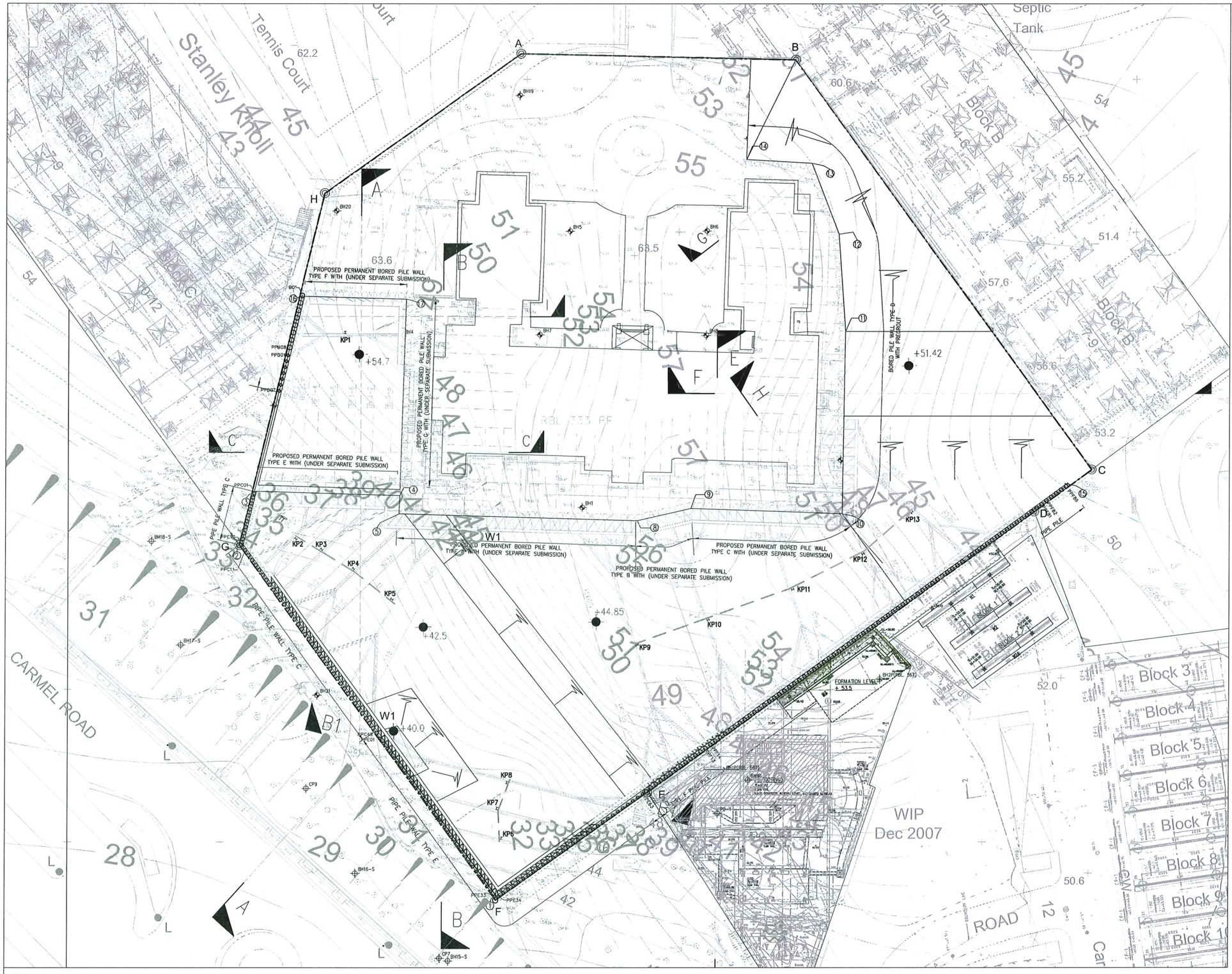
STAGE 9
9-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
9-2. INSTALL STRUTS (AS1-2), CORRESPONDING WALINGS (W1), SPACERS AND BRACKETS.

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 9)

(SCALE 1:250)

NEW DRAWING



STAGE 10
10-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.
10-2. INSTALL PERMANENT TIE BACKS (TBF3-1 TO TBF3-8). (UNDER SEPARATE SUBMISSION)

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 10)

(SCALE 1:250)

NEW DRAWING

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 AS-BUILT BOREHOLE
- P MH-103 PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 EXISTING GROUND LEVEL
- KP1 PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- T1 PROPOSED TIE / BRACING
- +60.5mPD PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 WALING MARK
- 50 INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
-	07/2024	1ST AMENDMENT	CJX	SKS

CMA
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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 10)

Drawing Number:
ELS-08C

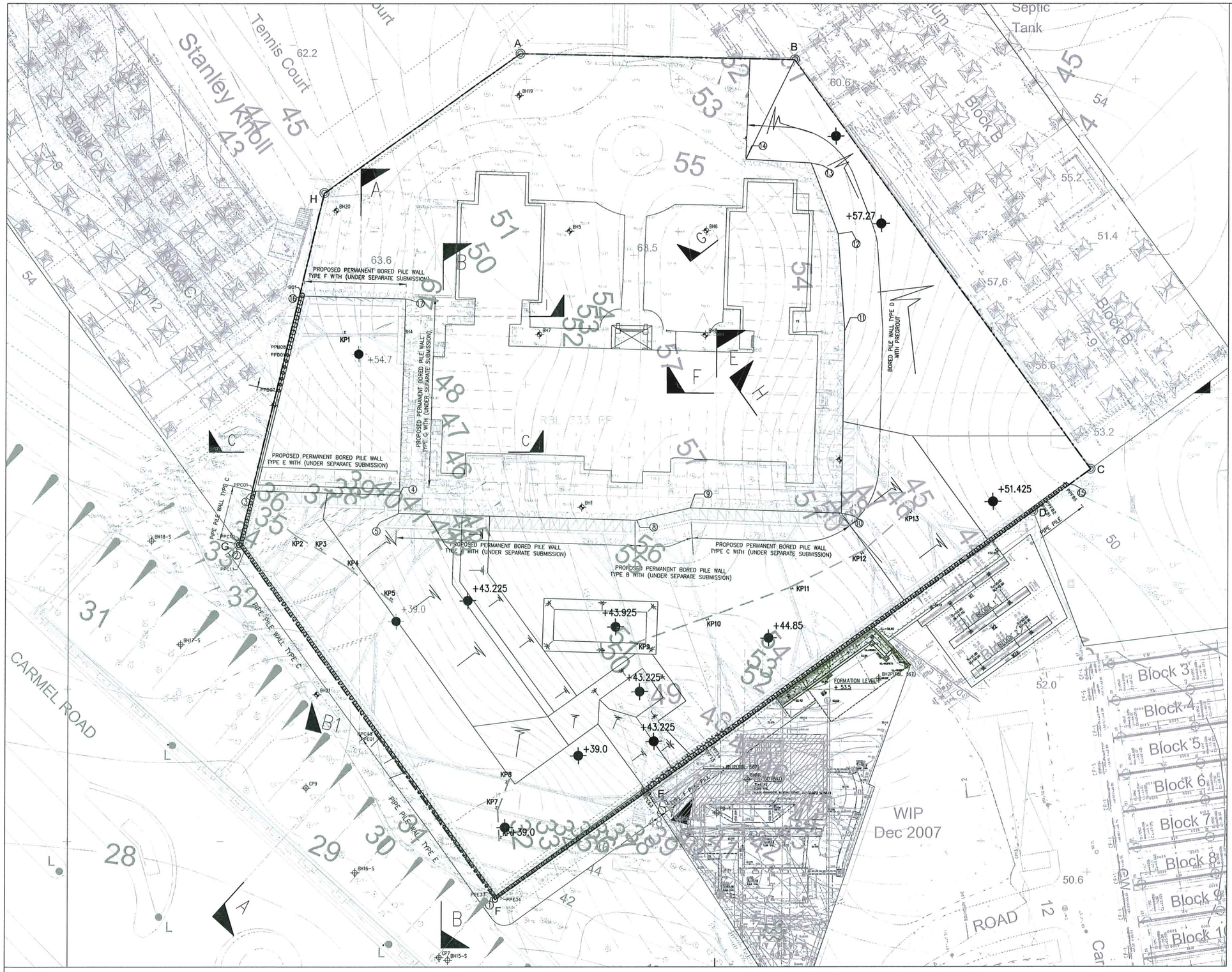
Revision Number:
-

Digitally signed by LEUNG Chi-Hung Ben
REE 7505
02 October 2024

Received on
02 October 2024

Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.



STAGE 11
11-1. EXCAVATE TO THE LEVEL AS SHOWN ON PLAN.

EXCAVATION AND LATEARL SUPPORT PLAN (STAGE 11)

(SCALE 1:250)

NEW DRAWING

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 AS-BUILT BOREHOLE
- P MH-103 PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 EXISTING GROUND LEVEL
- KP1 PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)
- PROPOSED MAX. 70° ROCK CUT SLOPE
- T1 PROPOSED TIE / BRACING
- +60.5mPD PROPOSED EXCAVATION LEVEL
- PROPOSED SPACER
- W1 WALING MARK
- 50 INFERRED ROCKHEAD PROFILE (CAT (c))

Revision	Date	Description	By	Chk
-	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
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Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELS PLAN (STAGE 11)

Drawing Number:
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Revision Number:
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RGE 7655
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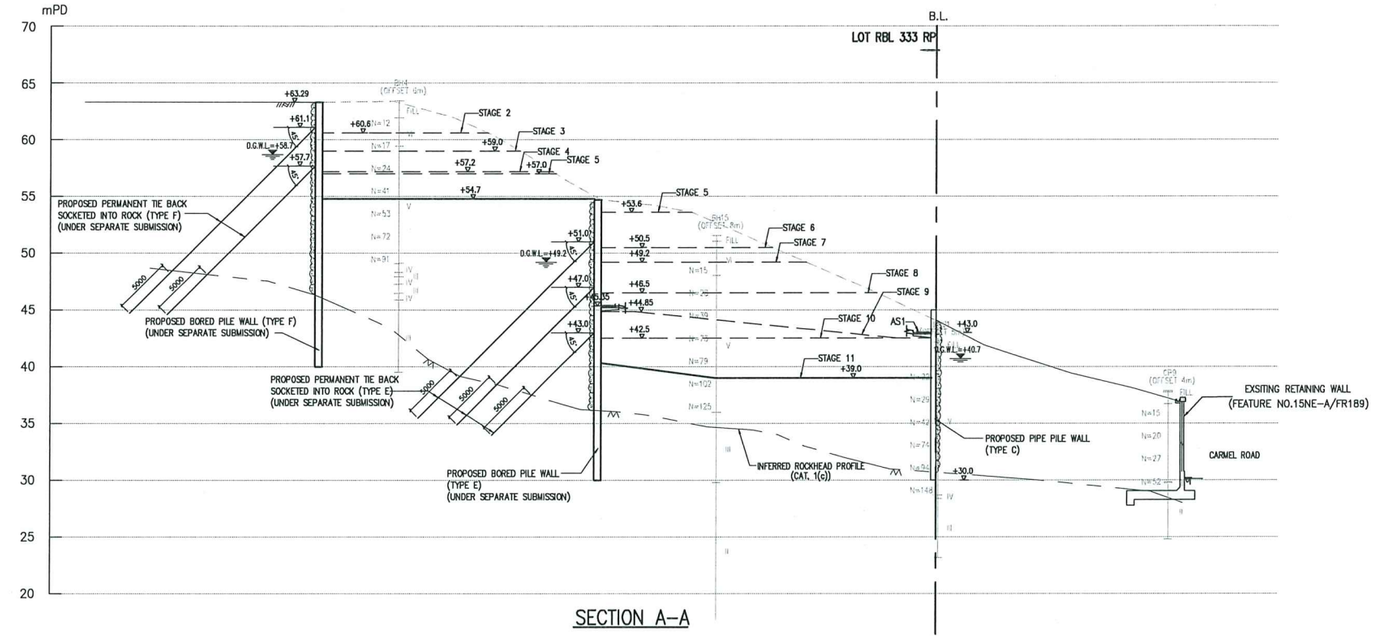
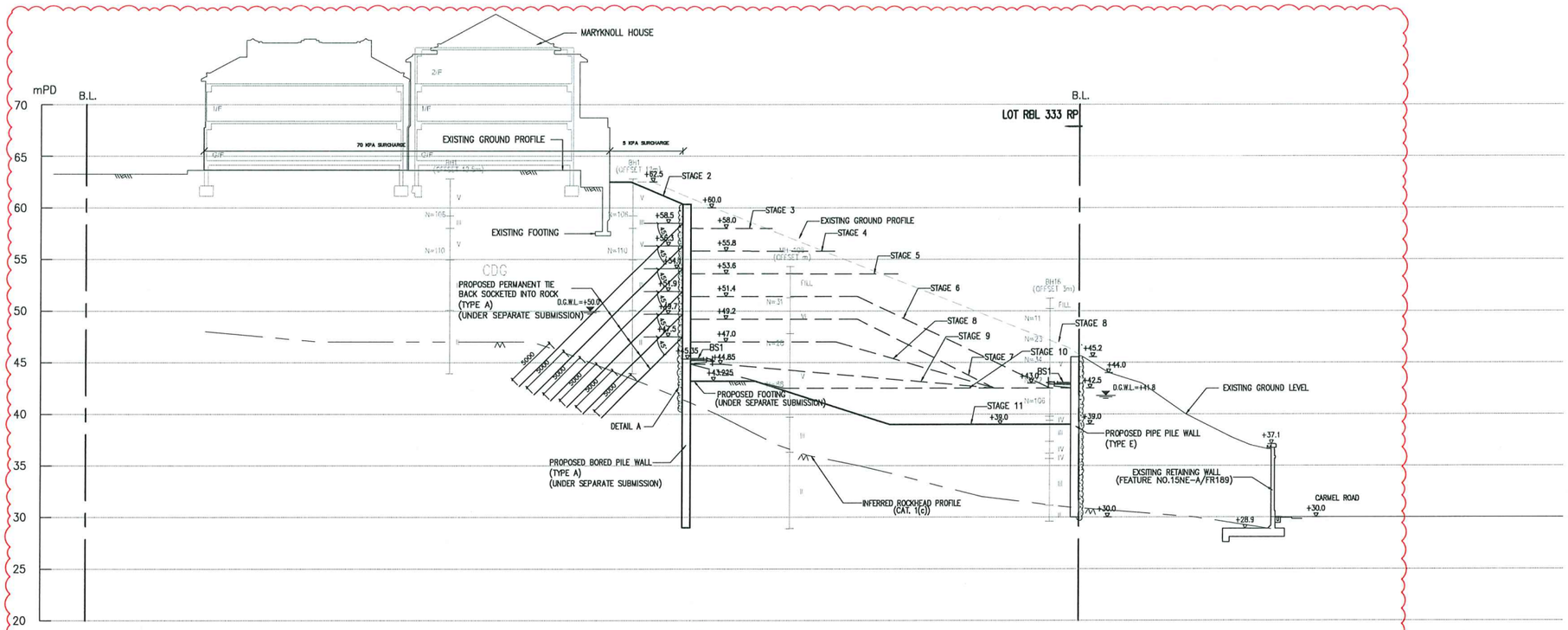


SECTION A–A

LEGEND:

- LOT BOUNDARY
- PROPOSED PIPE PILE/ BORED PILE WALL
- EXISTING GROUND PROFILE
- EXCAVATION PROFILE FOR INTERMEDIATE STAGES
- PROPOSED FINAL EXCAVATION PROFILE
- PROPOSED SPACER AND BRACKET (INTERMEDIATE EXCAVATION LEVEL SHALL BE 500mm BELOW STRUT INSTALLATION LEVEL)
- PROPOSED STRUT
- STAGE 2 — PROPOSED STAGE EXCAVATION
- D.G.W.L. — DESIGN GROUNDWATER TABLE
- FILL — FILL
- RS — RESIDUAL SOIL
- V — COMPLETELY DECOMPOSED GRANITE
- IV — HIGHLY DECOMPOSED GRANITE
- III — MODERATELY DECOMPOSED GRANITE
- II — SLIGHTLY DECOMPOSED GRANITE
- N=70 — SPT N VALUE
- PROPOSED GROUT CURTAIN (TOE LEVEL TO BE 1m BELOW INFERRED ROCKHEAD LEVEL (CAT 1(C) OR FINAL EXCAVATION LEVEL, WHICHEVER IS LOWER.)
- FT1 — PROPOSED FOOTING OR PILE CAP

NOTE: THE MAXIMUM GRADIENT FOR SOIL CUT SLOPE IS 30°.
THE MAXIMUM GRADIENT FOR ROCK CUT SLOPE IS 70°.



SECTION B–B

B.D. REF NO. : BD 3/3008/22(HU)

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
SECTION A-A, SECTION B-B

Drawing Number:
ELS-09

Revision Number:
A

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RSE TG05
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LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

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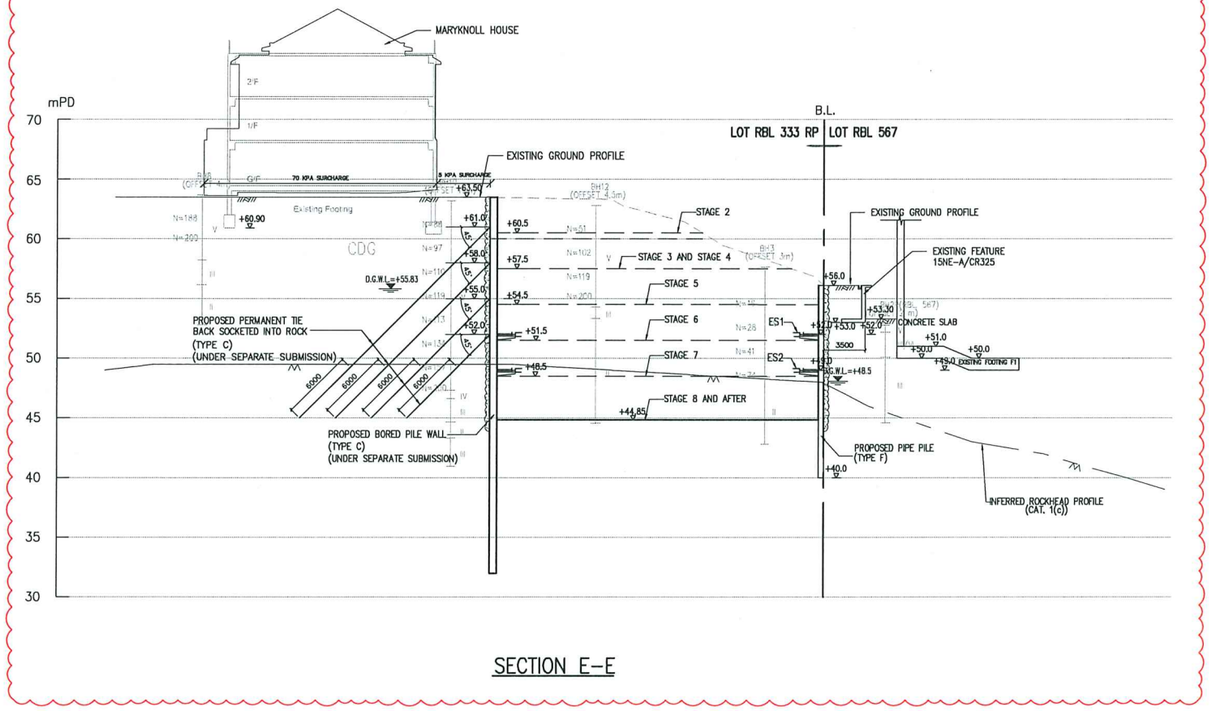

SECTION E-E

LEGEND:

- LOT BOUNDARY
- PROPOSED PIPE PILE/ BORED PILE WALL
- EXISTING GROUND PROFILE
- EXCAVATION PROFILE FOR INTERMEDIATE STAGES
- PROPOSED FINAL EXCAVATION PROFILE
- PROPOSED SPACER AND BRACKET (INTERMEDIATE EXCAVATION LEVEL SHALL BE 500mm BELOW STRUT INSTALLATION LEVEL)
- PROPOSED STRUT
- STAGE 2 — PROPOSED STAGE EXCAVATION
- D.G.W.L. — DESIGN GROUNDWATER TABLE
- FILL — FILL
- RS — RESIDUAL SOIL
- V — COMPLETELY DECOMPOSED GRANITE
- IV — HIGHLY DECOMPOSED GRANITE
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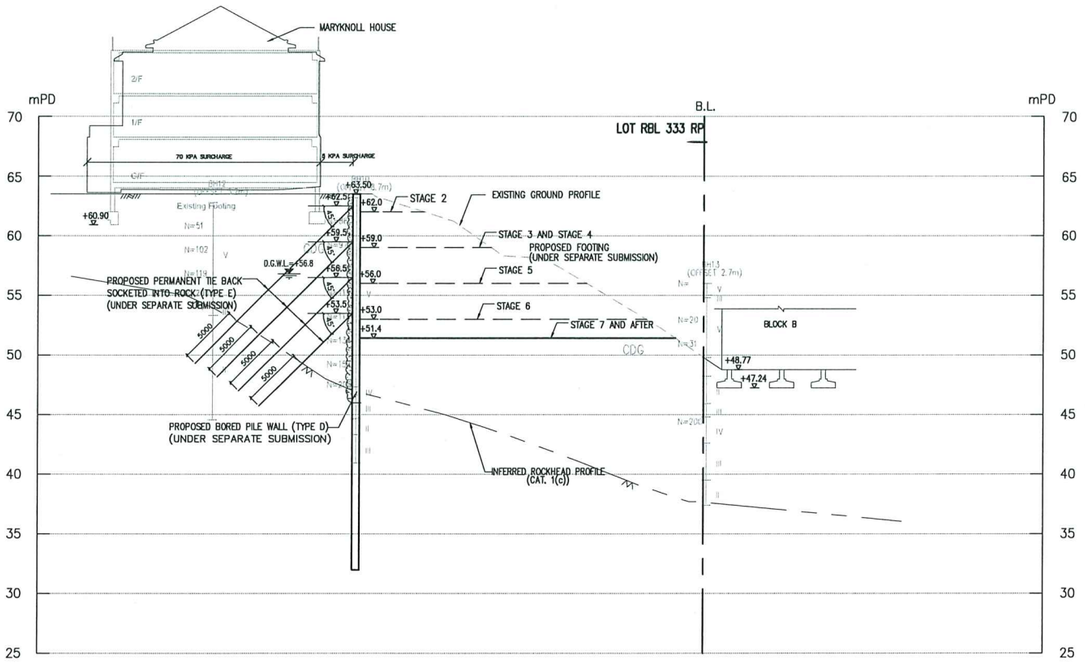
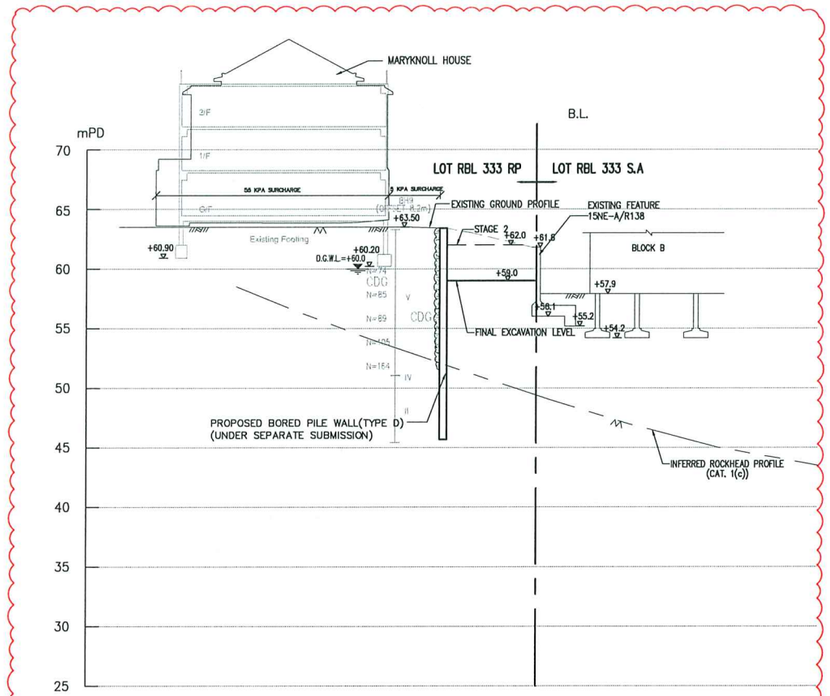
- II — SLIGHTLY DECOMPOSED GRANITE
- N=70 — SPT N VALUE
- PROPOSED GROUT CURTAIN (TOE LEVEL TO BE 1m BELOW INFERRED ROCKHEAD LEVEL (CAT 1(C) OR FINAL EXCAVATION LEVEL, WHICHEVER IS LOWER.)
- FT1 — PROPOSED FOOTING OR PILE CAP

NOTE: THE MAXIMUM GRADIENT FOR SOIL CUT SLOPE IS 30°.
THE MAXIMUM GRADIENT FOR ROCK CUT SLOPE IS 70°.



SECTION F-F



SECTION G-G

B.D. REF NO. : BD 3/3008/22(HU)

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
SECTION E-E, SECTION F-F

Drawing Number:
ELS-10

Revision Number:
A

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RSE(T)/05
02 October 2024

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LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

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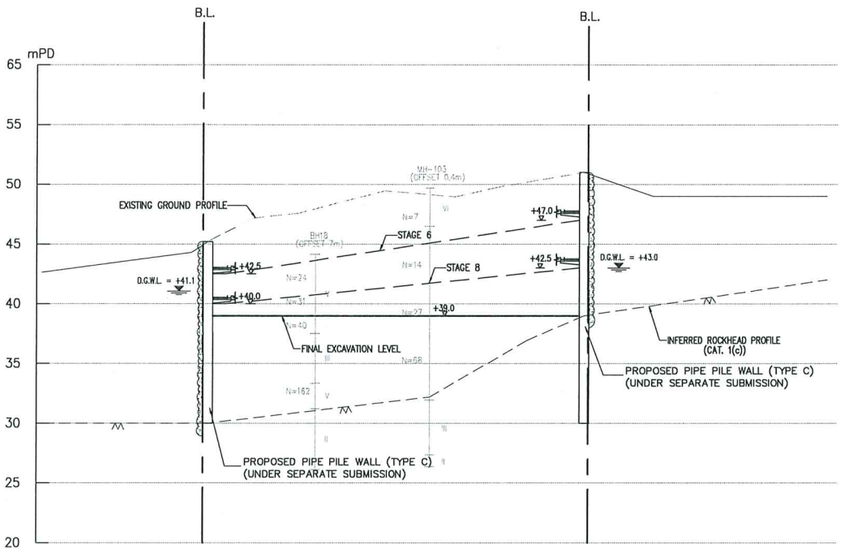
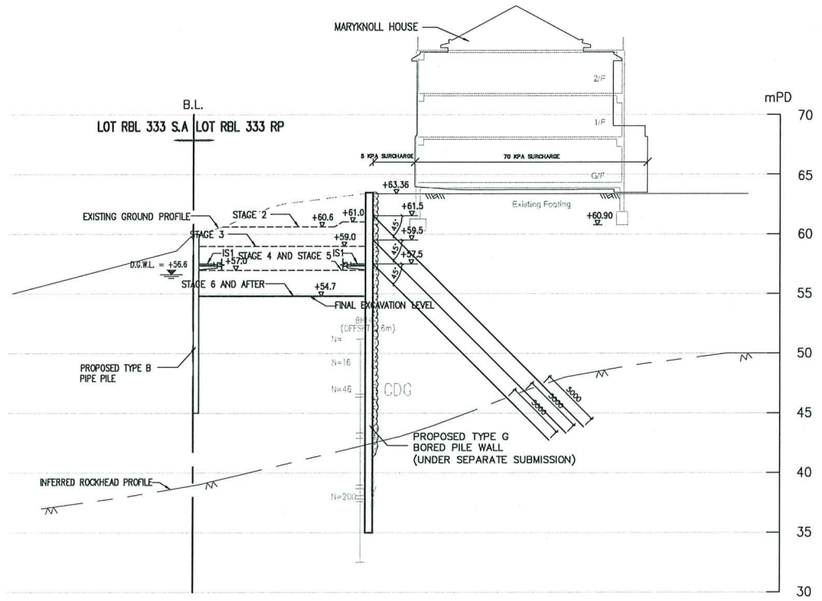


SECTION B1–B1



SECTION I–I

LEGEND:

- LOT BOUNDARY
- PROPOSED PIPE PILE/ BORED PILE WALL
- EXISTING GROUND PROFILE
- EXCAVATION PROFILE FOR INTERMEDIATE STAGES
- PROPOSED FINAL EXCAVATION PROFILE
- PROPOSED SPACER AND BRACKET (INTERMEDIATE EXCAVATION LEVEL SHALL BE 500mm BELOW STRUT INSTALLATION LEVEL)
- PROPOSED STRUT
- STAGE 2 — PROPOSED STAGE EXCAVATION
- D.G.W.L. — DESIGN GROUNDWATER TABLE
- FILL — FILL
- RS — RESIDUAL SOIL
- V — COMPLETELY DECOMPOSED GRANITE
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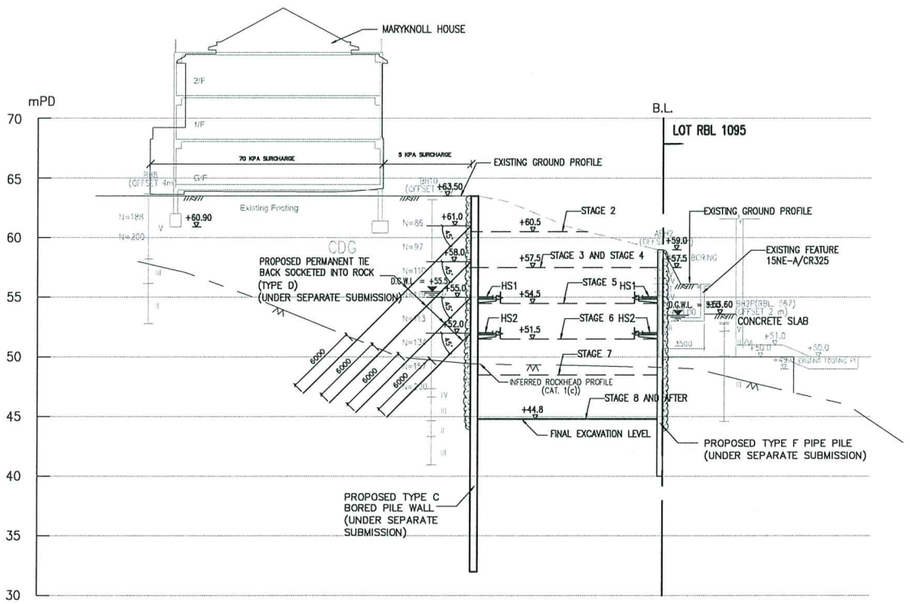
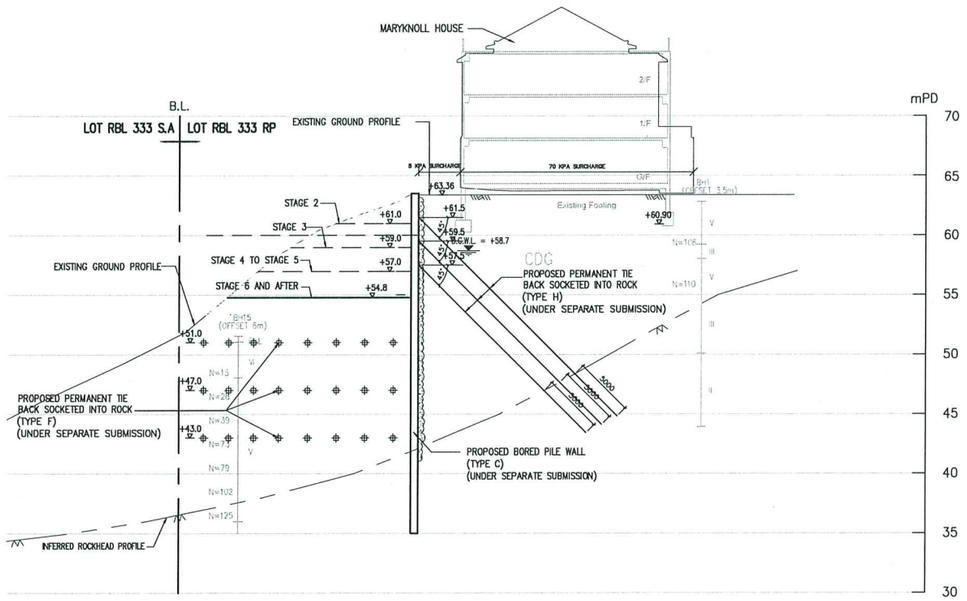
- III — MODERATELY DECOMPOSED GRANITE
- II — SLIGHTLY DECOMPOSED GRANITE
- N=70 — SPT N VALUE
- PROPOSED GROUT CURTAIN (TOE LEVEL TO BE 1m BELOW INFERRED ROCKHEAD LEVEL (CAT 1(C) OR FINAL EXCAVATION LEVEL, WHICHEVER IS LOWER.)
- FT1 — PROPOSED FOOTING OR PILE CAP

NOTE: THE MAXIMUM GRADIENT FOR SOIL CUT SLOPE IS 30°.
THE MAXIMUM GRADIENT FOR ROCK CUT SLOPE IS 70°.



SECTION H–H



SECTION C–C

NEW DRAWING

B.D. REF NO. : BD 3/3008/22(HU)

Revision	Date	Description	By	Chk
-	07/2024	1ST AMENDMENT	CJX	SKS

CMA
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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
SECTION C-C, SECTION H-H, SECTION I-I

Drawing Number:
ELS-10A

Revision Number:
-

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IRSE FSDS
02 October 2024

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Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

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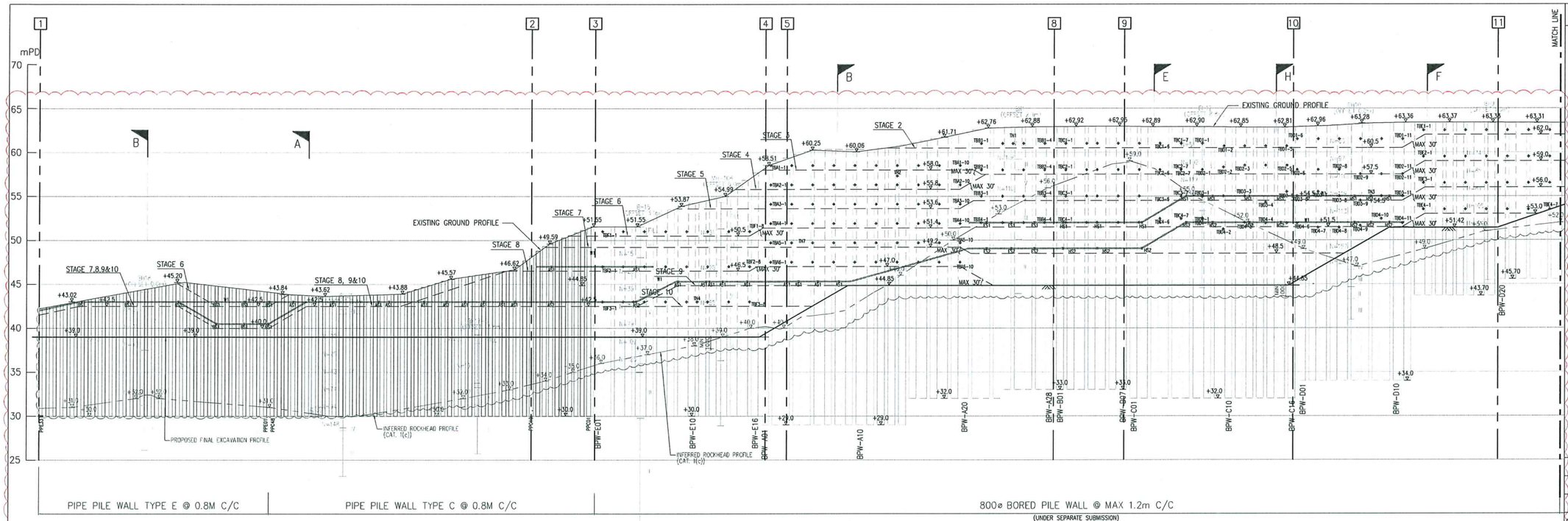
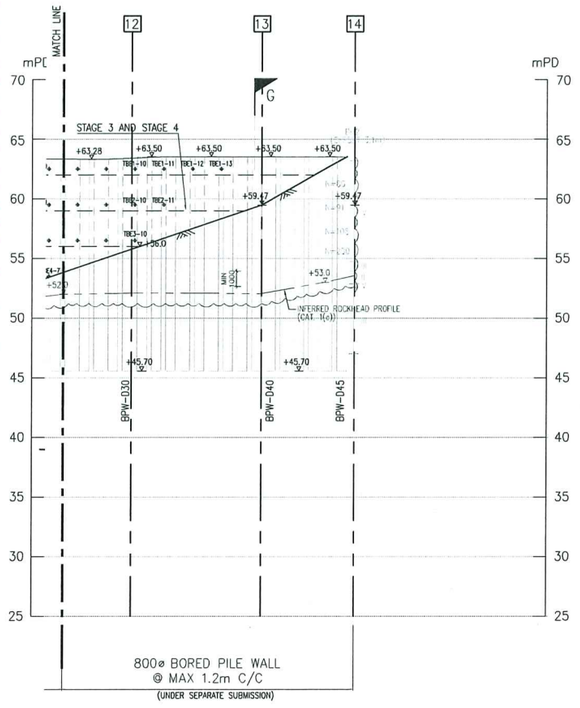
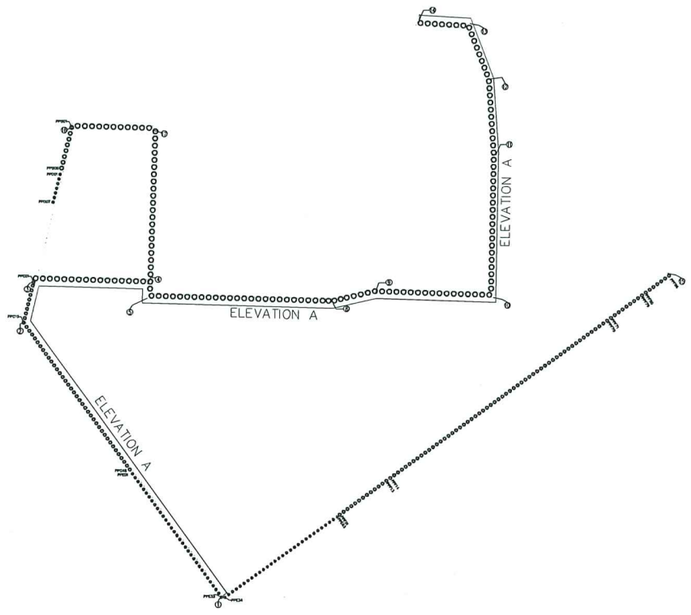


ELEVATION A



ELEVATION A



LEGEND:

- SITE BOUNDARY
- PROPOSED BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- PROPOSED PIPE PILE WALL
- PROPOSED GROUT CURTAIN
- TBB1-1 PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK (UNDER SEPARATE SUBMISSION)
- PROPOSED STRUT WALING
- PROPOSED STRUT

B.D. REF NO. : BD 3/3008/22 (HU)

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

CMA
TEL: (852) 2522 1068
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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELEVATION A

Drawing Number:
ELS-11

Revision Number:
A

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RSE 7905
02 October 2024

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LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

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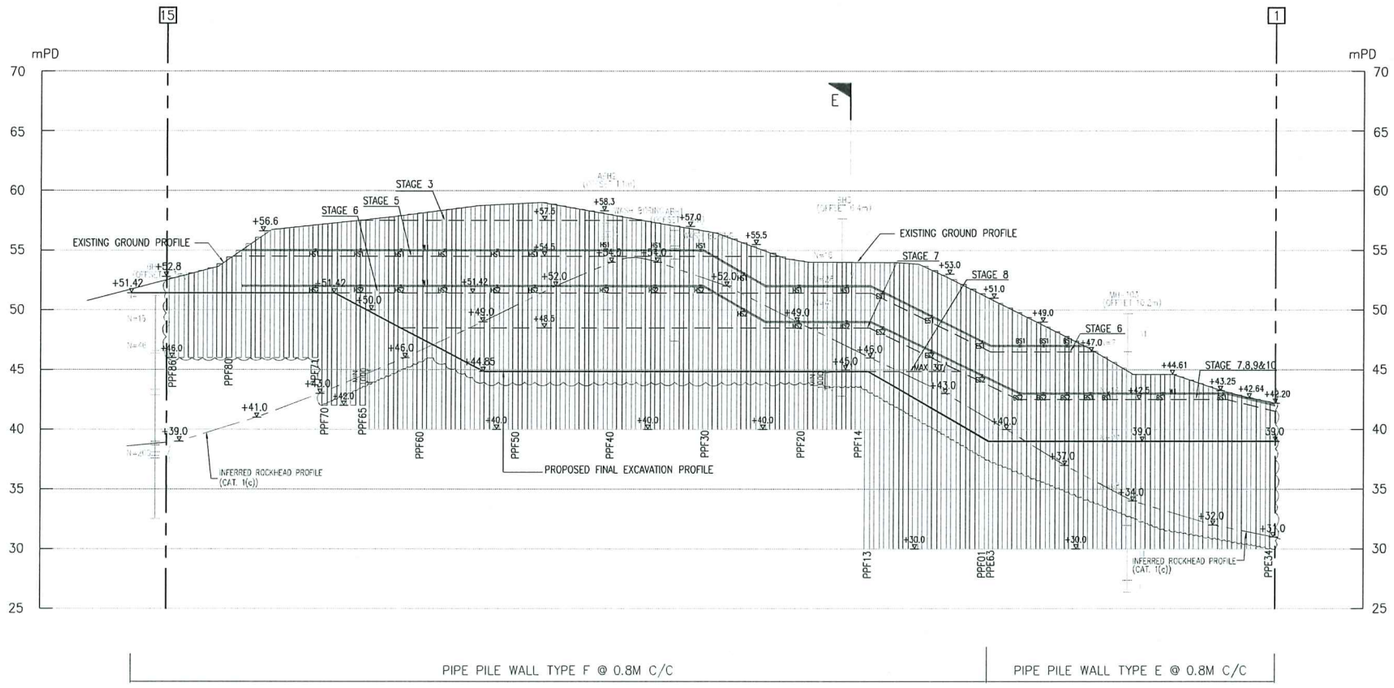
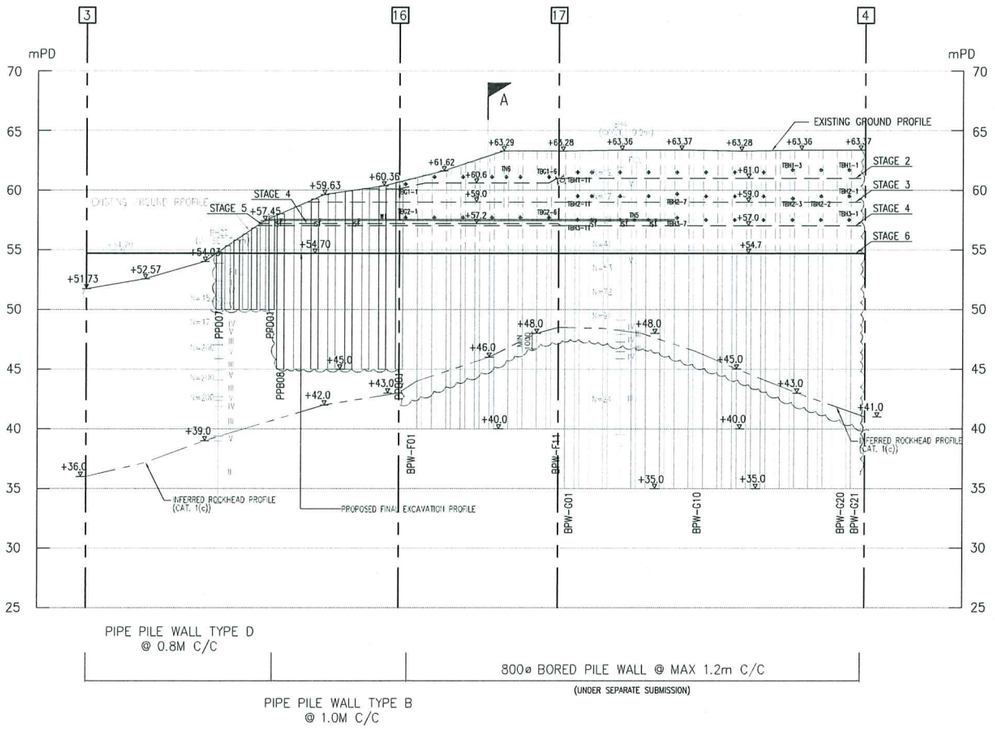
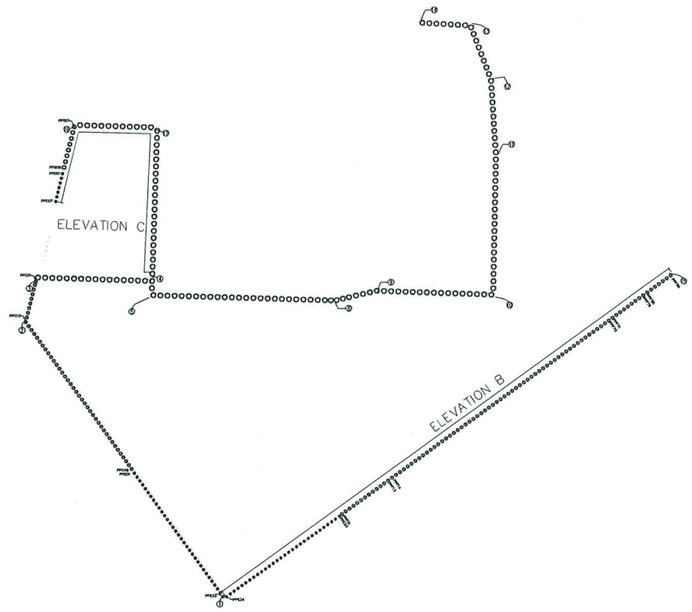


ELEVATION B



ELEVATION C



LEGEND:

- SITE BOUNDARY
- PROPOSED BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- PROPOSED PIPE PILE WALL
- PROPOSED GROUT CURTAIN
- PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK (UNDER SEPARATE SUBMISSION)
- PROPOSED STRUT WALING
- PROPOSED STRUT

NEW DRAWING

B.D. REF NO. : BD 3/3008/22 (HU)

Revision	Date	Description	By	Chk
-	07/2024	1ST AMENDMENT	CJX	CKS

CMA
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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:250 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
ELEVATION B & ELEVATION C

Drawing Number:
ELS-11A

Revision Number:
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REE 7505
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(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

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GENERAL NOTES

1. DO NOT SCALE DRAWINGS.
2. ALL DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT DRAWINGS ISSUED UNDER THE CONTRACT. INFORM THE ENGINEER ANY DISCREPANCIES WHICH MAY BE FOUND AMONG THESE DRAWINGS.
3. THE CONTRACTOR SHALL INSPECT THE CONDITIONS OF ADJOINING AREAS AND RECORD THE EXISTING LANDSCAPE FEATURES, STRUCTURES, UTILITIES, ROADS, PAVEMENTS, AND THE LIKE LYING OUTSIDE AND WITHIN A DISTANCE OF MIN. 10m FROM THE LOT BOUNDARY PRIOR TO THE COMMENCEMENT AND AFTER COMPLETION OF THE WORKS. THE CONTRACTOR SHALL SUBMIT THE CONDITION SURVEY REPORT TO THE ARCHITECT FOR RECORD BEFORE CONSTRUCTION.
4. ALL EXISTING FOUNDATION INFORMATION GIVEN IS FOR REFERENCE ONLY. THE CONTRACTOR SHALL CARRY OUT HIS OWN INVESTIGATION WORKS TO VERIFY THE ACTUAL LOCATION AND LEVEL OF THE EXISTING FOUNDATION BEFORE WORK COMMENCES.
5. THE CONTRACTOR SHALL CARRY OUT ALL SITE FORMATION PROCEDURES IN ACCORDANCE WITH THE DRAWINGS.
6. ALL WORKS SHALL COMPLY WITH THE HONG KONG BUILDING (CONSTRUCTION) REGULATION 2020 AND RELEVANT PRATICE NOTES FOR AUTHORIZED PERSONS AND REGISTERED STRUCTURAL ENGINEERS AND PRACTICE NOTES FOR REGISTERED CONTRACTORS.
7. ALL DIMENSIONS ARE IN mm AND LEVELS IN mPD.
8. PRIOR TO CONSENT, THE AP/RSE/RGE SHALL OBTAIN RECORDS FO PIPE LEAKAGE/BURST INCIDENTS FROM THE RELEVANT DEPARTMENTS OCCURRED WITHIN THE AFFECTED AREA IN THE PAST 12 MONTHS. AN INVESTIGATION SHALL BE CARRIED OUT TO ASCERTAIN THE EXISTING CONSITION OF THE SURROUNDING GROUND, IN PARTICULAT THE EXISTENCE OF GROUND LOSS OF UNDERGROUND CAVITY.
9. THE AP/RES/RGE SHOULD APPROACH THE DEPARTMENTS FOR FURTHER INFORMATION ABOUT THE CAUSES OF THE INCIDENT AND REMEDIAL ACTIONS TAKEN TO FACILITATE THE INVESTIGATION. A DESIGN REVIEW REPORT SHALL BE SUBMITTED TO AND FOUND ACCEPTABLE BY THE BA TO DISCUSS THE FINDINGS OF THE INVESTIGATION AND REVIEW THE ADEQUACY OF THE PROPOSED SITE FORMATION AND EXCAVATION AND LATERAL SUPPORT WORKS TAKING DUE CONSIDERATION OF THE INVESTIGATION RESULTS.

NOTES FOR EXCAVATION AND LATERAL SUPPORT (ELS) WORKS (TEMPORARY)

1. THE CONTRACTOR SHALL TAKE FULL RESPONSIBILITY FOR THE ERECTION, MAINTENANCE AND REMOVAL OF ALL TEMPORARY WORKS DURING CONSTRUCTION.
2. NECESSARY PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO EXISTING FOUNDATIONS, DRAINS, PAVEMENTS, FEATURES, SERVICES ETC. SHOULD ANY DAMAGE OCCUR, NOTIFY THE ARCHITECT AND RELEVANT AUTHORITIES CONCERNED IMMEDIATELY AND MAKE GOOD BY THE CONTRACTOR AT NO EXTRA COST AND NO EXTENSION OF TIME.
3. ALL TEMPORARY WORKS SHALL BE WITHIN THE SITE BOUNDARY.
4. DURING SUBSTRUCTURE CONSTRUCTION, THE GROUNDWATER LEVEL SHALL BE KEPT BELOW THE FINAL FORMATION LEVEL.
5. THE CONTRACTOR SHALL INCREASE THE FREQUENCY OF MONITORING AS INSTRUCTED BY THE ENGINEER SHOULD ANY UNDUE GROUND MOVEMENT BE OBSERVED.
6. MAX. ANGLE FOR TEMPORARY SOIL CUT SLOPE SHALL NOT EXCEED 30°, UNLESS OTHERWISE STATED
7. IF NECESSARY, THE CONTRACTOR IS RESPONSIBLE TO FURTHER EXCAVATE BELOW THE TENTATIVE FOUNDING LEVEL IN ORDER TO REACH THE SPECIFIED FOUNDING MATERIALS OR TO REMOVE ANY LOOSE MATERIALS. IF THIS HAPPENS, THE VOID BELOW THE TENTATIVE FOUNDING LEVEL SHALL BE BACKFILLED WITH MASS CONCRETE, SHORING SHALL BE MODIFIED TO FACILITATE EXCAVATION AND AMENDMENT SHALL BE MADE IF NECESSARY.

NOTES ON STRUCTURAL STEELWORK

1. ALL STRUCTURAL STEELWORK SHALL BE CARRIED OUT IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
2. ALL LEVEL SHOWN ARE IN METERS AND OTHER DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
3. ALL STRUCTURAL STEEL SECTION SHALL BE WELDABLE STRUCTURAL STEEL TO BS EN 10025:2019 FOR STEEL OTHER THAN HOLLOW SECTION AND BS EN 10210:2019 FOR HOLLOW SECTION.
4. SHOULD THE CONTRACTOR BE UNABLE TO OBTAIN THE SPECIFIED STEEL SECTION, THEY SHALL SUBMIT ALTERNATIVE SECTIONS OF AT LEAST EQUAL STRENGTH AND PROPERTIES TO THE ENGINEER. FOR APPROVAL. WHERE JOINT DETAILS HAVE TO BE MODIFIED AS A RESULT, JOINT DETAILS AND SHOP DRAWING ALSO HAVE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE WORK IS PUT IN HAND.

NOTES ON WELDING

1. THE CONTRACTOR SHALL SUBMIT TO THE ARCHITECT HIS PROPOSED PROCEDURE FOR WELDING. THIS PROCEDURE WILL BE TESTED IN ACCORDANCE WITH BS EN 1418:1998.
2. THE CONTRACTOR SHALL ONLY USE QUALIFIED WELDERS WHO HAVE DEMONSTRATED THEIR COMPETENCE IN WELDING TO THE AGREED PROCEDURE. EACH WELDER WILL BE TESTED AS DESCRIBED IN BS EN 287:2011.
3. PERMANENT WELDS SHALL MEET THE ACCEPTANCE CRITERIA LAID DOWN IN BS EN 1011:2009.
4. UPON REQUESTED BY THE ARCHITECT WELDS WILL BE TESTED BY RADIOGRAPHIC EXAMINATION TO BS EN 1435:1997 OR ULTRASONIC EXAMINATION TO BS EN 1714:1998
5. UNLESS OTHERWISE APPROVED, ALL SPLICES TO BE CONTINUOUS FULL–STRENGTH FULL PENETRATION BUTT WELDS.
6. UNLESS OTHERWISE STATED, ALL FILLET WELDS SHALL BE 15mm ALL ROUND.
7. ALL IMPROPER MATERIALS (e.g. SLAG, DIRT, IRREGULARITIES, OIL etc.) TO BE REMOVED FROM JOINTS PRIOR TO WELDING.
8. ALL WELDING SHALL COMPLY WITH BS EN 1011 & BS EN 756:2004.
9. SAMPLES OF ALL MATERIALS USED SHALL BE TESTED & TEST RESULTS SHALL BE SUBMITTED TO THE ENGINEER FOR APPROVAL. ALL WORKS, MATERIALS AND TESTING SUCH AS TESTING OF STEEL BAR SHALL COMPLY WITH GENERAL SPECIFICATION FOR CIVIL ENGINEER WORKS 2006 EDITION AND HONG KONG BUILDING (CONSTRUCTION) REGULATION 2020 EDITION UNLESS OTHERWISE STATED IN THE DRAWNG.

NOTES ON EXISTING SERVICES, UTILITIES AND STRUCTURES

1. BEFORE CONSTRUCTION COMMENCES, THE CONTRACTOR SHALL CONSULT THE VARIOUS SERVICES AND UTILITY AUTHORITIES FOR THE EXTENT OF WORKS TO BE CARRIED OUT.
2. THE CONTRACTOR SHALL EXERCISE DUE CARE DURING THE WORKS ON SITE TO AVOID CAUSING DAMAGE TO ADJACENT STRUCTURES PAVETMENT, UTILITIES/SERVICES, PRIVATE AND GOVERNMENT PROPERTIES.
3. SHOULD ANY DAMAGE OCCUR TO THE ADJACENT STRUCTURES, PAVEMENT, UTILITIES/SERVICES, PRIVATE AND GOVERNMENT PROPERTIES DUE TO THE CONTRACTOR'S WORKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST INCURRED FROM THE DAMAGE. THE CONTRACTOR SHALL REPAIR, REINSTATE AND MAKE GOOD ANY DAMAGE DUE TO THE CONTRACTOR'S WORKS TO THEIR ORIGINAL CONDITIONS OR TO THE SATISFACTION OF THE CM, UNLESS OTHERWISE SPECIFIED.

NOTES ON METHOD STATEMENT FOR KINGPOST INSTALLATION

1. THE KINGPOST SHALL BE INSTALLED TO THE TOE LEVEL AS SHOWN ON TOE KINGPOST SCHEDULE

NOTES ON METHOD STATEMENT FOR TEMPORARY PIPE PILE INSTALLATION

1. ALL PIPE PILES SHALL BE S275 STEEL COMPLYING WITH BS EN 10025:2019, WELDING SHALL COMPLY WITH BS EN 1011-1:2009 AND BS EN 1011-2:2001 UNLESS OTHERWISE SPECIFIED AND ELECTRODES SHALL COMPLY WITH BS EN 2560:2005
2. THE TEMPORARY PIPE PILE WALL SHALL BE INSTALLED TO THE TOE LEVEL AS SHOWN ON THE ELEVATION.
3. DRILL 813mm/ 610mm/ 456mm / 356mm DIA. HOLE WITH PIPE PILE CASING USING UNDERREAMING METHOD DOWN TO THE REQUIRED TOE LEVEL. THE HOLE VERTICALITY SHOULD BE CHECKED. FLUSH AND CLEAN UP THE HOLE BY AIR. VERTICALITY OF PIPE PILE SHALL NOT EXCEED 1:100.
4. THE PIPE PILE SHALL BE GROUTED WITH CEMENT GROUT (GRADE 30)
5. UPON COMPLETION OF PIPE PILE, A RECORD PLAN FOR PIPE PILE SHALL BE SUBMITTED TO THE BUILDING AUTHORITY VIA THE RSE FOR CONSENT APPLICATION.
6. THE CONTRACTOR SHALL SUBMIT, 2 WEEKS PRIOR TO COMMENCE DRILLING, TO THE ENGINEER THE PROPOSED METHOD OF INSTALLATION OF PIPE PILE WHEN ENCOUNTER EXISTING TIE BACK BEFORE INSTALLATION.

NOTES ON PROTECTION OF EARTHWORKS

1. SURFACE WATER FLOWING INTO AND OUT OF THE SITE SHALL BE INTERCEPTED AND CONDUCTED FROM THE SITE TO AN INDICATED SAFE DISCHARGE POINT. AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE DRAINAGE, CHANNELS AND ACCESSIBLE CATCH PIT SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS.
2. WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE, A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.
3. DURING EXCAVATION, A METHOD OF WORKING SHALL BE ADOPTED IN WHICH THE MINIMUM AMOUNT OF BARE SOIL IS EXPOSED AT ANY TIME. EXCAVATION TO FORM THE FINAL FACE SHALL BE FOLLOWED UP IMEDIATELY WITH SURFACE PROTECTION AND DRAINAGE WORKS AND THE FACE PANEL SIZE SHALL BE SMALL ENOUGH TO PERMIT THIS.
4. WHERE TEMPORARY BARE EARTH SLOPE FACES ARE UNAVOIDABLE, THEY SHALL BE PROTECTED WITH HEAVY DUTY SHEETING ADEQUATELY SECURED AT THE EDGES, SEALED AT THE CREST, AND LAPPED AT JOINTS. WHERE SLOPE FACES ARE TO BE TEMPORARILY EXPOSED FOR MORE THAN TWO WEEKS, TEMPORARY DRAINS SHALL BE INSTALLED IN ADDITION TO PROVISION OF HARD SURFACING.
5. TRENCHES ON/OR ADJACENT TO SLOPES SHALL BE EXCAVATED WITH EXTREME CARE IN SHORT SECTIONS AT A TIME. PRECAUTIONS SHALL ALWAYS BE TAKEN TO PREVENT WATER ENTERING AND CONNECTING IN THE TRENCHES. ALL EARTHWORKS SHALL BE GRADED AN SEALED TO ENSURE RUN–OFF AND TO
6. AVOID PONDING. EARTHWORKS SHALL BE SEALED TO THE SATISFACTION OF THE CM
7. OR THE ENGINEER TO PREVENT INFILTRATION AND EROSION. ALL TEMPORARY DRAINAGE WORKS SHALL BE PROVIDED BY CONTRACTOR AND
8. SHALL BE KEPT CLEAR OF DEBRIS.

CONSTRUCTION SEQUENCE OF TEMPORARY LAGGING WALL

1. EXCAVATE THE SOIL IN FRONT OF PROPOSED PIPE PILE WALL TO PROPOSED STAGE EXCAVATION LEVEL.
2. FIX THE STEEL PLATE IN POSITION.
3. LAGGING SHALL BE INSTALLED AS SOON AS PRACTICABLE BUT IN NO CASE EXCEED 1000mm INTERVAL FOR EXCAVATION IN SOIL.

NOTES FOR COMPACTION OF COMPACTED FILL

1. BACKFILL MATERIAL SHOULD BE SUITABLE MATERIAL AS DEFINED IN GENERAL SPECIFICATION FOR ENGINEERING WORKS BY THE HONG KONG GOVERNMENT, AND COMPACTED TO 95% MAXIMUM DENSITY.
2. INSITU FIELD DENSITY TEST SHALL BE PERFORMED IN ACCORDANCE WITH GEO SPEC 3 CLAUSE 11.1 TEST FREQUENCY SHALL REFER TO PNAP APP–15.
3. BACKFILLING SHOULD BE CARRIED OUT IN HORIZONTAL LAYER NOT EXCEEDING 300MM THICK WELL RAMMED AND CONSOLIDATED.
4. THE MAXIMUM DRY DENSITY AND OPTIMUM MOISTURE CONTENT SHALL BE DETERMINED IN ACCORDANCE WITH GEO SPEC 3 CLAUSE 10.1 & 10.2. EACH SOIL TYPE SHALL BE TEST WHEN FIRST USED.
5. ALL TEST SHALL BE CARRIED OUT BY INDEPENDENT HOKLAS LABORATORY.
6. COMPACTION RECORD SHALL BE SUBMITTED TO ENGINEER.

NOTES FOR GROUTING OF PIPE PILE

1. CEMENT GROUT FOR GROUTING SHALL COMPLY WITH BS12.
2. TESTING FOR GROUT SHALL INCLUDE BLEEDING, FLOW CONE AND CRUSHING STRENGTH.
3. CEMENT GROUT SHALL HAVE A MINIMUM CRUSHING STRENGTH OF 30MPa AT 28 DAYS.
4. CEMENT GROUT USED SHALL HAVE WATER CONTENT RATIO NOT EXCEEDING 0.45. ANY ADDITIVE ADMIXTURE SHALL COMPLY WITH BS5075 AND SHALL NOT BE USED WITHOUT PRIOR AGREEMENT FROM THE STRUCTURAL ENGINEER.

NOTES FOR TCP T5 SITE SUPERVISION

1. TYPICAL CONTENTS OF THE REGULAR REPORTS PREPARED BY THE TCP T5 SITE SUPERVISION PERSONNEL AND THE DSS SHOULD INCLUDE THE FOLLOWING:
   (1) PROGRESS OF THE WORKS
   (2) INTERPRETATION OF MONITORING RESULTS TAKEN DURING CONSTRUCTION
   (3) SITE OBSERVATIONS
   (4) INSPECTION RECORDS
   (5) REVIEW
   (6) COMPLIANCE WITH APPROVED PLANS
   NOTE: CUMULATIVE MONITORING RESULTS WITH THE TRIGGER VALUES AND DESIGN LEVELS (ONLY IN GRAPHICAL FORM) SHOULD BE PROVIDED IN THE APPENDIX.

   EACH REPORT SHALL COVER ONE CALENDAR MONTH OF SITE ACTIVITIES AND BE COMPLETED WITHIN 2 WEEKS AFTER EACH REPORTING PERIOD. THE REPORTS SHALL BE KEPT AT THE SITE OFFICE FOR INSPECTION OF THE BD/GEO.
2. UPON INSTALLATION / RE–PROVISION OF MONITORING STATIONS, THE TCP T5 SITE SUPERVISION PERSONNEL SHALL CHECK THE LOCATIONS OF ALL MONITORING POINTS AND CONFIRM THAT THEY ARE IN PROPER WORKING CONDITIONS. RECORDS OF SUCH CHECKING SHOULD BE PROVIDED IN THE REGULAR REPORTS PREPARED BY THE TCP T5 SITE SUPERVISION PERSONNEL / DSS.
3. 3. DESIGN REVIEW FOR TIE BACK
   UPON THE THE COMPLETION OF ELS STAGE 3, DESIGN REVIEW SHALL BE INCLUDED IN THE T5 REPORT TO REVIEW THE PERFORMANCE OF THE BACK. THE READING OF CHECKPOINTS (GS1–GS5, IM1–IM7 AND SG1 – SG2) SHALL BE PLOTTED AGAINST THE DESIGN MOVEMENT AND DESIGN TIE BACK FORCE AT CURRENT STAGE. WHEN THE MEASURED VALUE REACH THE 90% OF THE DESIGN MOVEMENT OR DESIGN TIE BACK FORCE, A DESIGN REVIEW COVERING EMERGENCY MEASURES PLAN SHALL BE PREPARED BY THE RSE/RGE AND SUBMITTED TO BD FOR AGREEMENT. WHEN THE MEASURED VALUE REACH THE 100% OF THE DESIGN VALUE, ALL EXCAVATION WORKS TO BE CEASED AND THE AGREED EMERGENCY MEASURES SHALL BE IMPLEMENTED. AP/RSE/RGE TO REVIEW THE DESIGN ON FURTHER REMEDIAL AND PREVENTIVE MEASURES TO ENABLE THE RESUMPTION OF THE CEASED WORKS. EXCAVATION WORKS SHOULD NOT BE RESUMED UNTIL THE AGREED EMERGENCY MEASURES HAVE BEEN COMPLETED TO THE SATISFACTION OF THE BD.

PRECAUTIONARY MEASURES FOR PREBORING METHOD

1. a. THE AMOUNT OF AIR SUPPLY TO LIMIT THE PRESSURE OF DRILLINGS SHOULD BE MONITORED.
   b) THE ADVANCEMENT RATE OF DRILL BIT SHOULD BE MONITORED DURING THE BORING.
2. OVERBREAK SHOULD NOT BE ALLOWED.
3. THE DRILL BIT SHOULD BE ADVANCED SIMUTANOUSLY WITH THE STEEL CASING.

NOTES ON ROCK EXCAVATION (FOR ROCK CUT AT ANGLES GREATER THAN 45°)

1. THE ROCK CUT SHALL BE CARRIED OUT IN 2.2m VERTICAL INTERVAL FOR THE FIRST (PANEL) BENCH AFTERWARDS AND 2.2m MAX VERTICAL INTERVAL. AFTER SCALING THE LOOSE BLOCKS ON THE ROCK SURFACE, THE CONTRACTOR IS REQUIRED TO CARRY OUT THE ROCK JOINT MAPPING BY A QUALIFIED GEOLOGIST AND SUBMIT THE MAPPING REPORT TO AP/RSE/RGE. THE CONTRACTOR IS ALSO REQUIRED TO CARRY OUT KINEMATIC STABILITY ANALYSES IN ORDER TO DETERMINE ANY STABLISATION WORKS.
2. NO FURTHER EXCAVATION IS ALLOWED UNLESS THE MAPPING REPORT AND THE DESIGN OF STABILISATION WORKS IS ACCEPTED BY AP/RSE/RGE AND THE NECESSARY STABLISATION WORKS ARE CARRIED OUT.
3. THE RELEVANT RECORDS AND ASSESSMENT REPORTS OF THE ROCK FACE STABILITY AND MEASURES CARRIED OUT FOR EACH PANEL SHALL BE SUBMITTED TO BE SATISFACTION OF BD BEFORE EXCAVATION FOR THE SUBSEQUENT PANEL COMMENCES. SUBMISSION FOR LAST PANEL SHALL ALSO BE REQUIRED BEFORE CARRYING OUT OF THE FOUNDATION WORKS CONCERNED.
4. THE MAPPING REPORT TOGETHER WITH THE AS–BUILT STABLISATION MEASURES SHALL BE SUBMITTED TO BD.

SECTION PROPERTIES OF PIPE PILE

MEMBER SIZE	THICKNESS (mm)	MASS PER METRE (Kg)	AREA OF SECTION (cm2)	MOMENT OF INERTIA (cm4)	ELASTIC MODULUS (cm3)	STEEL GRADE
356 x 10mm x 85 kg/m CHS	10	85	109	16200	912	S275J0
457 x 10mm x 110kg/m CHS	10	110	140	35100	1890	S275J0
610 x 12.5mm x 184Kg/m CHS	12.5	184	235	104750	3435	S275J0

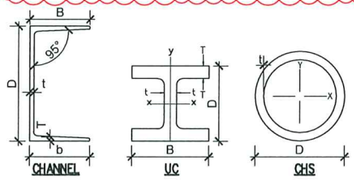
SECTION PROPERTIES OF MAIN/DIAGONAL STRUT/WALING/TIE/BARCKET/SPACER/KING POST

MEMBER	DEPTH, D (mm)	WIDTH,B (mm)	WEB THICKNESS (mm)	FLANGE THICKNESS (mm)	MOMENT OF INERTIA, Ixx (cm^4)	MOMENT OF INERTIA, Iyy (cm^4)	Sectional Area, A (cm^2)
				I&H SECTIONS			
356 x 368 x 109 UBP	346.4	370.5	12.9	12.9	30500	10000	138
356 x 368 x 174 UBP	361.5	378.1	20.4	20.4	51100	18400	222
254 x 254 x 89 UC	260.4	255.9	10.5	17.3	14300	4850	114
356 x 406 x 340 UC	406.4	403	26.5	42.9	122000	46800	433
305 x 305 x 158 UC	339.9	314.1	19.2	31.4	50800	16200	252
254 x 254 x 132 UC	276.4	261	15.6	25.3	22600	7520	169
356 x 368 x 177 UC	368.3	372.1	14.5	23.8	57200	20500	226

MEMBER	DEPTH, D (mm)	WIDTH,B (mm)	WEB THICKNESS (mm)	FLANGE THICKNESS (mm)	MOMENT OF INERTIA, Ixx (cm^4)	MOMENT OF INERTIA, Iyy (cm^4)	Sectional Area, A (cm^2)
				CHANNELS			
229 x 89 x 33 Channel	238.6	88.9	8.6	13.3	3390	255	41.7

KINGPOST SCHEDULE

KING POST MARK	MEMBER SIZE	GRADE	MIN.EMBEDMENT LENGTH (m)
KP1 – KP13	305x305x149 UBP	S355J0	1.5m IN ROCK



GROUND STABLE CASING SYSTEM

IN LINE WITH THE NEW REQUIREMENTS FOR GROUND STABILITY AROUND INSTALLED CASINGS, GROUND STABLE CASING SYSTEM SHALL BE APPLIED TO INSTALL CASING WITH ABSOLUTE MINIMAL DISTURBANCE TO THE SURROUNDING GROUND / SUB–STRUCTURE OUTSIDE THE O/D OF THE CASING. TO DO THIS, THE SYSTEM SHALL HAVE THE FOLLOWING FEATURES:

1. THE CASING SHOE FORMS A SEAL AROUND THE END OF THE CASTING PREVENTING AIR AND CUTTING PASSING AROUND THE OUTSIDE OF THE CASING.
2. THE CASING & CASING SHOE ARE CARRIED DOWN THE HOLE AS A WHOLE AT THE SAME.
3. ONLY 3.8% OF THE LIVE AIR PASSNG INTO THE SYSTEM ACTUALLY TRAVELS THROUGH THE RING TO HAVE CONTACT WITH THE GROUND. THE REMAINING 96.2% OF THE AIR TRAVELS THROUGH PASSAGES IN THE BODY AND IS THEN INJECTED INTO THE CASING AND CASING SHOE BORE. THIS AIR THEN RESULTS IN A VACUUM EFFECT, SUCKING THE CUTTING AWAY FROM THE CUTTING HEAD AND ACCELERATING THEIR 'UP HOLE VELOCITY' INSIDE THE BORE OF THE CASING.
4. IN ADDITION TO THE VACUUM METHOD OF CUTTING REMOVAL THE GROUND STABLE CASING SYSTEM INCORPORATES A NEW SHAPE OF CASING SHOE THAT PREVENTS AIR ESCAPING AROUND THE CASING AND CAUSING OVER– BREAK TO THE GROUND.
5. ANTICIPATED VALUES FOR BORING OPERATION

TYPE OF GROUND MATERIAL	RATE OF ADVANCEMENT IN DEPTH (MINUTES PER 6m)	MAXIMUM COMPRESSED AIR PRESSURE (cfm)	MAXIMUM VOLUME FOR AIR SUPPLY PER EACH COMPRESSOR (cfm)
FILL / RS	30	12	1070
CDG	30-90	15	1070
ROCK (MDG)	90	15	1070

THE OPERATING AIR VOLUME OUTPUT AND PRESSURE IS HIGHLY DEPENDENT ON THE REFERENCE THE ABOVE VALUE ARE SET FOR CONTROLLING THE OPERATION IN CASE THE ACTUAL RECORDED AND ADVANCEMENT RATE IS LOWER THAN THE ANTICIPATED VALUE, THE OPERATION SHALL BE REVIEWED TO CONTROL THE INSTALLATION OF REMAINING WORKING PILE

PRECAUTIONARY MEASURES TO PREVENT THE OCCURRENCE OF OVER–BREAK DURING PREBORING

1. A PROCEDURE SHALL BE CARRIED OUT TO MONITOR THE CONDITION OF OVER BREAK. IF THE DRILL BIT IS FOUND NOT TO PROPAGATE AFTER A CONSIDERABLE AMOUNT OF DRILLING, THE OPERATOR OF THE DRILLING RIG SHALL STOP THE DRILLING PROCESS AND INFORM THE ENGINNER IMMEDIATELY. THE RGE/ RSE SHALL REVIEW THE GEOLOGY OF THE SPECIFIC LOCATION, PROPOSAL TO LIMIT ANY OVER–BREAK OF SOIL SHALL BE SUBMITTED AND AGREED BY THE RSE/ RGE PRIOR TO ANY FURTHER DRILLING WORKS MAY COMMENCE.
2. SHOULD ANY UNDUE OVER–BREAK OF SOIL OBSERVED DURING THE DRILLING OPERATIONS, THE DRILLING WORKS AT THAT LOCATION SHOULD BE STOPPED AND THE RSE SHALL BE INFORMED IMMEDIATELY. THE MONITORING DATA AND METHOD OF PREBORING SHALL BE REVIEWED. PROPOSAL TO LIMIT ANY FURTHER OVER–BREAK OF SOIL SHALL BE SUBMITTED AND AGREED WITH THE RSE PRIOR TO ANY FURTHER DRILLING WORKS MAY COMMENCE.

TYPICAL DETAIL FOR ROCK CUT STABILISATION WORKS
(N.T.S.)

DESIGN SOIL PARAMETER

SOIL	c' (kPa)	ϕ (°)	DENSITY (kN/m^3)
FILL	0	35	19
RESIDUE SOIL	4	34	19
CDG (N VALUE <100)	4	36	19
CDG (N VALUE >100)	4	37	19

NOTES FOR REMOVAL OF STRUT

1. PRIOR TO REMOVAL OF STRUTS. THE AP/RSE/RGE SHALL BE NOTIFIED AND PRIOR COMMENCEMENT FOR REMOVAL OF STRUTS FROM AP/RSE/RGE SHALL BE OBTAINED.
2. THE STRUTS SHALL NOT BE REMOVAL UNLESS THE EXCAVATION PROFILE IS BACKFILLED TO PREVIOUS STAGE EXCAVATION PROFILE OR PERMANENT LATERAL SUPPORT IS CONSTRUCTED AND ATTAINED ADEQUATE STRENGTH.
3. THE METHOD STATEMENT FOR REMOVAL OF STRUTS SHALL BE SUBMITTED TO THE AGREEMENT OF RSE/RGE PRIOR TO COMMENCEMENT OF REMOVAL OF STRUT

GROUT CURTAIN SCHEDULE:

Pile Mark	TENTATIVE TOE LEVEL OF PIPE PILE (mPD)	TENTATIVE ROCKHEAD LEVEL (mPD)	LOWEST EXCAVATION LEVEL (mPD)
PPB01-PPB08	<5	41	54.7
PPC01-PPC10	30	33.5	39
PPC11-PPC48	30	30	39
PPD01-PPD07	50	39.5	54.7
PPH01-PPH43	30	31	39
PPF01-PPF13	30	39	39
PPF14-PPF70	<0	43	44.85
PPF71-PPF81	<1	40	51.42
PPF82-PPF86	<6	41	51.42
BPWA01-BPWA16	29	30	58.51
BPWA15-BPWA28	33	44.85	61
BPWB01-BPWB07	33	44.85	62.95
BPWC01-BPWC16	32	44.85	62.81
BPWD01-BPWD11	34	44.85	62.81
BPWD12-BPWD19	43.7	51.42	63.37
BPWD20-BPWD45	45.7	51	63.5
BPWE01-BPWE16	30	36	51.55
BPWF01-BPWF11	<0	43	54.7
BPWG01-BPWG21	35	41	54.7

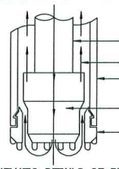
NOTES ON GROUT CURTAIN:

1. GROUT HOLE
   DRILL 75mm DIA HOLES AT MAXIMUM 1.2m C/C BY ROTARY METHOD ALONG PIPE PILE WALL, BORED PILE WALL AND GROUT THE SOIL AT LEVEL GIVEN IN GROUT CURTAIN SCHEDULE INSTALL 48mm O.D. TUBE–A–MANCHETTE GROUT PIPES WITH GROUTING ORIFICES COVERED WITH RUBBER MANCHETTES. THE BOTTOM END OF THE TUBES SHALL BE SEALED.
2. ANNULAR SPACE BETWEEN DRILL HOLE AND TAM PIPES SHALL BE FILLED WITH CEMENT/WATER SLEEVE GROUT.
3. SOIL GROUTING
   THE PROCEDURE IS SEPARATED INTO TWO STAGES (BENTONITE CEMENT GROUT AS FIRST STAGE AND CHEMICAL GROUT AS SECOND STAGE).
   STAGE 1 : BENTONITE CEMENT GROUT SHALL BE INJECTED INTO EACH GROUT HOLE USING A DOUBLE PACKER AT 1000mm INTERVAL FROM BOTTOM UP TO THE DESIGNED LEVEL

   BENTONITE 35 kg CEMENT 350 kg WATER 870 LITRES (APPROX)
   STAGE 2 : CHEMICAL GROUT
   SECOND STAGE GROUTING SHALL BE UNDERTAKEN IN A SIMILAR MANNER WITH THE FOLLOWING MIX

PROPORTION:	SOLUTION A	SOLUTION B
SODIUM SILICATE	100 LITRES	CEMENT 90 kg
WATER	100 LITRES	WATER BALANCE
TOTAL	200 LITRES	TOTAL 200 LITRES

   SOLUTION A AND B ARE MIXED TOGETHER BY THE RATIO 1:1 AT THE TIME OF APPLICATION GEL TIME IS 2–5 MINUTES GROUT SHALL BE STOPPED WITH ANY OF THE FOLLOW CRITERIA IS ATTAINED:
   a) GROUTING PRESSURE REACHES THE OVERBURDEN PRESSURE PLUS 20kPa AND MAINTAINED FOR 2–5 MINUTES
   GROUT INTAKE. THE OVERBURDEN PRESSURE IS DEFINED AS 20 kPa PER METRE DEPTH.
   b) BENTONITE GROUT INTAKE REACHES 150 LITRES PER METER RISE. THE ACTUAL GROUT INTAKE SHALL BE ACCEPTED BY CM ON SITE.
   c) CHEMICAL GROUT INTAKE REACHES 200 LITRES PER METRE RISE. THE ACTUAL GROUT INTAKE SHALL BE ACCEPTED BY CM ON SITE.
4. IN THE EVENT THAT CRITERION (B) OR (C) IS MET A PRESSURE BELOW CRITERION (A) AT ALLOW TIME FOR THE GROUT ACHIEVE AN INITIAL SET AND THEN REPEAT THE PROCEDURE CORRESPONDING PHASE OF GROUTING.
5. FOLLOWING COMPLETION OF GROUTING, GROUT PIPES SHALL BE FLUSHED AND MAINTAINED FOR RE–GROUTING IF NECESSARY.
6. (1) IF ROCKHEAD IS ABOVE FINAL EXCAVATION LEVEL, THE GROUT CURTAIN TOE LEVEL SHALL BE 1m BELOW FINAL EXCAVATION LEVEL.
   (2) IF ROCKHEAD IS BELOW FINAL EXCAVATION LEVEL AND ABOVE PIPE PILE/ BORED PILE TOE LEVEL, THE GROUT CURTAIN TOE LEVEL SHALL BE 1m BELOW ROCKHEAD.
   (3) IF ROCKHEAD IS BELOW PILE PIPE/ BORED PILE TOE LEVEL, THE GROUT CURTAIN TOE LEVEL SHALL BE PILE PIPE/ BORED PILE TOE LEVEL.
7. ALL GROUT CURTAIN TOP LEVEL SHOULD BE SAME AS PIPE PILE/ BORED PILE TOP LEVEL.



SCHEMATIC DETAILS OF RING BIT DRILLING SYSTEM
(N.T.S.)

MAIN STRUT AND CORNER STRUT SCHEDULE

LAYER	MEMBER SIZE	GRADE
AS1	356 x 368 x 109 UBP	Grade S275
BS1	356 x 368 x 174 UBP	Grade S335
ES1-2	356 x 368 x 174 UBP	Grade S275
HS1-2	356 x 368 x 174 UBP	Grade S275
IS1	356 x 368 x 174 UBP	Grade S275

WALING SCHEDULE

LAYER	MEMBER SIZE	GRADE
ALL LAYERS	356 x 368 x 174 UBP	Grade S355

KING POST

KING POST MARK	MEMBER SIZE	GRADE
KP1-13	305 x 305 x 149 UBP	Grade S355

SPACER SCHEDULE

LOCATION	MEMBER SIZE	GRADE
WALING W1	228 x 89 x 33 Channel	Grade S275

TIE SCHEDULE

LAYER	MEMBER SIZE	GRADE
ALL LAYERS	254 x 254 x 132 UC	Grade S275

BARCKET SCHEDULE

BRACKET MARK	MEMBER SIZE	GRADE
BK1	254 x 254 x 132

PIPE PILE SCHEDULE

Wall Mark	Pile Size	MAX c/c spacing	Highest Wall Top Level	Maximum Retained Height	Lowest Excavation Level	Toe Level	Minimum Embedment Length	
							In Soil	In Rock
		(m)	(m)	(m)	(mPD)	(mPD)	(m)	
PPB01-PPB08	610X12.5X184CHS @ 1.0m c/c	1.0	61	6.3	54.7	45.0	9.7	-
PPC01-PPC10	457X10X110CHS @ 0.8m c/c	0.8	52	13	39	30	9	-
PPC11-PPC48	457X10X110CHS @ 0.8m c/c	0.8	47.5	8.5	39	30	9	-
PPD01-PPD07	357X10X85CHS @ 0.8m c/c	0.8	57.8	3.1	54.7	50	4.7	-
PPE01-PPE63	357X10X85CHS @ 0.8m c/c	0.8	51	12	39	30	9	-
PPF01-PPF13	457X10X110CHS @ 0.8m c/c	0.8	54	11	39	30	9	-
PPF14-PPF64	457X10X110CHS @ 0.8m c/c	0.8	59	14.15	44.85	40	-	4.85
PPF65-PPF70	457X10X110CHS @ 0.8m c/c	0.8	57.6	2.63	49.5	42	7.5	
PPF71-PPF79	457X10X110CHS @ 0.8m c/c	0.8	57.2	5.78	51.42	46	5.42	-
PPF80-PPF86	357X10X85CHS @ 0.8m c/c	0.8	55	3.58	51.42	46	5.42	

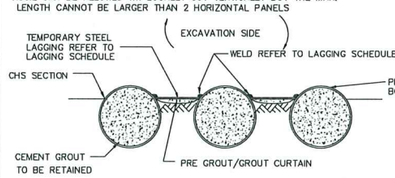
NOTES ON STRUCTURAL STEELWORK

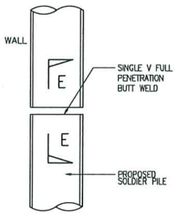
1. ALL STRUCTURAL STEELWORK SHALL BE CARRIED OUT IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
2. ALL LEVEL SHOWN ARE IN METERS AND OTHER DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
3. ALL STRUCTURAL STEEL SECTION SHALL BE WELDABLE STRUCTURAL STEEL TO BS EN 10025 AND BS EN 10219 UNLESS OTHERWISE NOTED.
4. SHOULD THE CONTRACTOR BE UNABLE TO OBTAIN THE SPECIFIED STEEL SECTION, THEY SHALL SUBMIT ALTERNATIVE SECTIONS OF AT LEAST EQUAL STRENGTH AND PROPERTIES TO THE ENGINEER FOR APPROVAL. WHERE JOINT DETAILS HAVE TO BE MODIFIED AS A RESULT, JOINT DETAILS AND SHOP DRAWING ALSO HAVE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE WORK IS PUT IN HAND.

CONSTRUCTION SEQUENCE FOR LAGGING WALL:

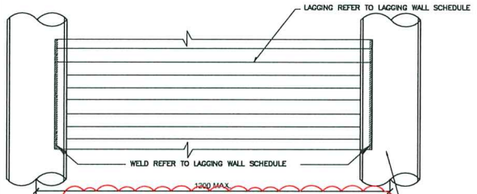
1. SOIL CAN BE ALLOWED 1m LOCALLY CUT VERTICALLY BUT THE MAX. LENGTH CANNOT BE LARGER THAN 2 HORIZONTAL PANELS
2. INSTALL LAGGING WALL IMMEDIATELY SUCH THAT IT CAN MINIMIZE THE GROUND LOSS.
3. REPEAT STEP 1) & 2) UNTIL ALL THE LAGGING WALL WITHIN THIS 1m DEPTH HAS BEEN COMPLETED.
4. REPEAT STEP 1) TO 3) DOWN TO AT LEAST FINAL EXCAVATION LEVEL.

NOTE : IF ANY SOIL LOSS HAS BEEN OCCURED OR VOIDS HAVE BEEN FORMED BEHIND THE LAGGING WALL, BACKFILLING WITH CEMENT GROUT SHOULD BE CARRIED OUT.

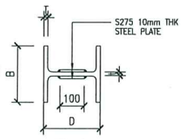




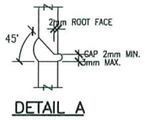
TYPICAL PIPE PILE SPLICE DETAILS (N.T.S.)



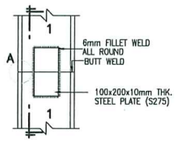
TYPICAL CONNECTION DETAILS BETWEEN LAGGINGS & PIPE PILE WALL (N.T.S.)



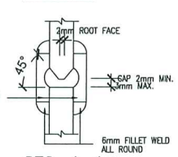
PLAN



DETAIL A

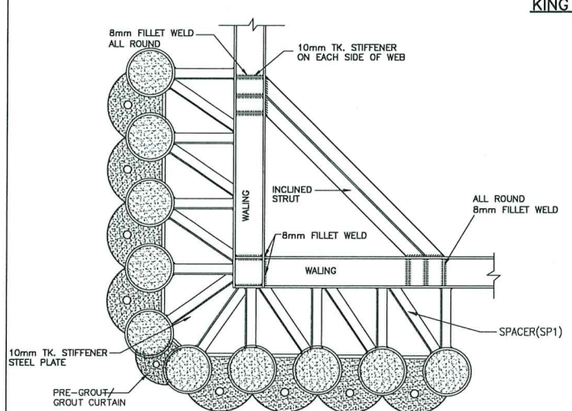


ELEVATION

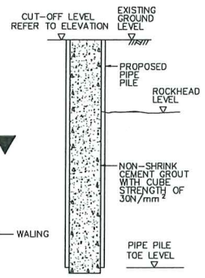


SEC. 1–1

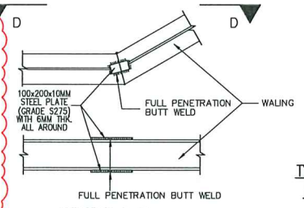
TYPICAL SPLICING DETAILS OF KING POST, WALING AND STRUT



TYPICAL CONNECTION DETAILS BETWEEN WALING (N.T.S.)

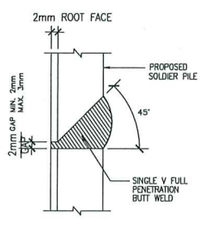


TYPICAL TEMPORARY PIPE PILE DETAIL (N.T.S.)

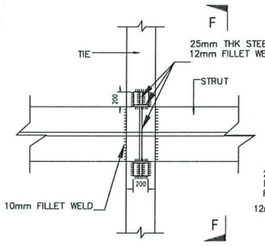


SECTION D–D

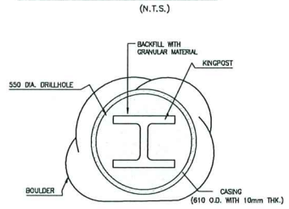
TYPICAL CONNECTION DETAIL INCLINED WALING (N.T.S.)



SECTION E–E (N.T.S.)



TYPICAL CONNECTION DETAILS BETWEEN STRUT & TIE (N.T.S.)



TYPICAL KINGPOST DETAIL TO OVERCOME UNDERGROUND OBSTRUCTION

(REFER TO NOTES ON PRECAUTIONARY MEASURES OF AVOIDING OVERBREAK)

1. PRE-DRILLING 610mm HOLES USING RING BIT DRILLING METHOD.
2. BACKFILL THE HOLE WITH GRANULAR SAND BEFORE COMMENCING DRILLING THE ADJACENT HOLE.
3. DRIVE KINGPOST TO THE REQUIRED BOTTOM LEVEL.
4. REPEAT 1–3 IF ANY OTHER OBSTRUCTION BE ENCOUNTERED.

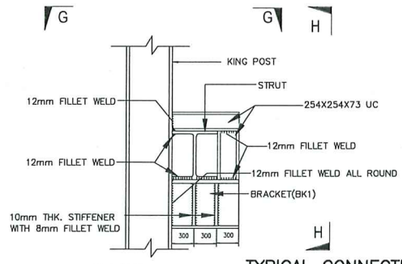
TYPICAL DETAILS FOR KING POST (N.T.S.)

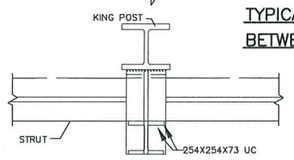
NOTES ON CEMENT GROUT

1. CEMENT GROUT WITH A WATER/CEMENT RATIO OF 0.45 SHALL BE PLACED VIA GROUTING PIPES USING THE TREMIE METHOD.
2. GROUT STRENGTH OF 30MPa SHALL BE VERIFIED BY CUBE SELECTED AND MADE IN ACCORDANCE WITH THE SPECIFICATION.

NOTES ON KING POST FOUNDING

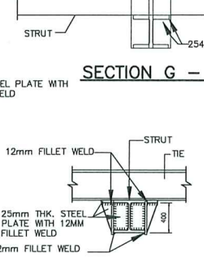
1. KING POST SHALL BE SOCKETED A MNIMUM OF 1500mm INTO GRADE III OR BETTER ROCK WITH ALLOWABLE GROUND BEARING PRESSURE OR 5000kPa.
2. THE FOUNDING MATERIALS SHALL BE MODERATELY DECOMPOSED STRONG ROCK OF MATERIAL WEATHERING GRADE III OR BETTER WITH A TOTAL CORE RECOVERY OR MORE THAN 85% OF THE GRADE.



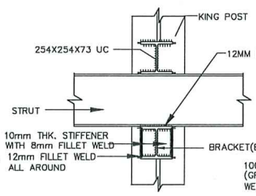


TYPICAL CONNECTION DETAILS BETWEEN KING POST & STRUT (N.T.S.)

SECTION G – G



SECTION F – F



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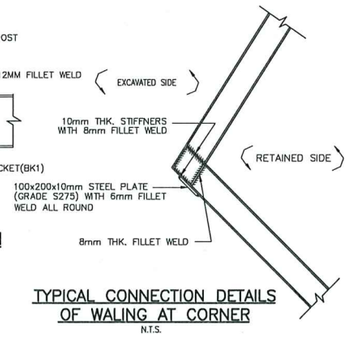
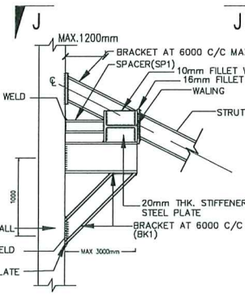
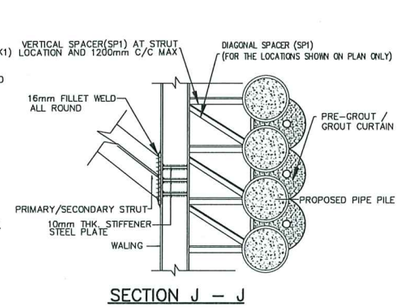


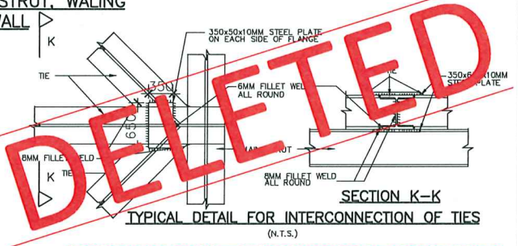
TYPICAL CONNECTION DETAILS OF WALING AT CORNER N.T.S.



TYPICAL CONNECTION DETAIL BETWEEN BRACKET, STRUT, WALING AND PILE WALL (N.T.S.)



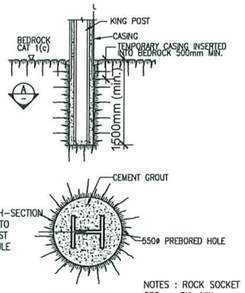
SECTION J – J



SECTION K–K

TYPICAL DETAIL FOR INTERCONNECTION OF TIES (N.T.S.)

DELETED



SECTION A
SCALE N.T.S.

NOTES : ROCK SOCKET 550mm DIA. MIN.

(TYPICAL SECTION FOR PREBORED KING POST)

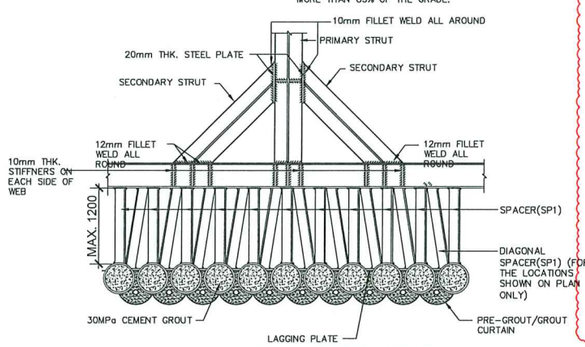
MASTER CONSTRUCTION SEQUENCE

1. INSTALL MONITORING CHECKPOINTS AND TAKE INITIAL READINGS.
2. CARRY OUT PREGROUTING WORKS, INSTALLATION OF TEMPORARY PIPE PILES, PERMANENT BORED PILE WALL(UNDER SEPARATE SUBMISSION), GROUT CURTAIN AND KING POSTS WITH CONSENT OBTAINED.
3. UPON COMPLETION OF PERMANENT BORED PILE WALL, TEMPORARY PIPE PILE AND KING POST, SUBMIT FORM BA14 OF PERMANENT BORED PILE WALL, TEMPORARY PIPE PILE, KING POST TO THE BUILDINGS DEPARTMENT.
4. DESIGN GROUND WATER LEVEL TO BE REVIEWED BEFORE THE COMMENCEMENT OF EXCAVATION WORKS TO CONFIRM IF PUMPING TEST IS REQUIRED. CARRY OUT PUMPING TEST AND SUBMIT ASSESSMENT REPORT TO BUILDING DEPARTMENT IF REQUIRED.

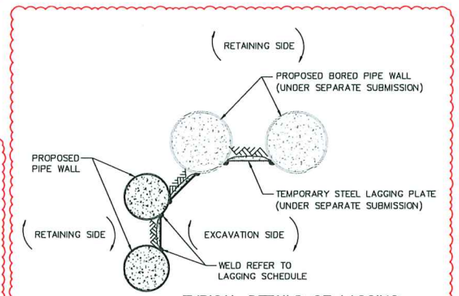
5.1 APPLY CONSENT FOR ELS STAGE 2 TO ELS STAGE 7.
5.2 CARRY OUT ELS STAGE 2 EXCAVATION WORKS
5.3 INSTALL PERMANENT TIE BACK WITH PREGROUTING WORKS (UNDER SEPARATE SUBMISSION).
5.4 CARRY OUT ELS STAGE 3 EXCAVATION WORKS
5.5 INSTALL PERMANENT TIE BACK (UNDER SEPARATE SUBMISSION).
5.6 INSTALL TEMPORARY STRUTS WALING AND SPACER, IF ANY.
5.7 REPEAT STEP 5.3 TO 5.5 WITH ELS STAGE 3 TO STAGE 7 EXCAVATION FOR STEP 5.3
5.8 UPON COMPLETION OF ELS STAGE 6 EXCAVATION WORKS, SUBMIT ELS DESIGN REVIEW REPROT TO BD AND GEO FOR SATISFACTION. ELS AMENDMENT AND SITE FORMATION AMENDMENT (UNDER SEPARATE SUBMISSION) MAY BE SUBMITTED AFTER DESIGN REVIEW, IF NECESSARY.

6.1 APPLY CONSENT FOR REMAINING ELS STAGE WORKS.
6.2 CARRY OUT ELS STAGE 8 EXCAVATION WORKS
6.3 INSTALL PERMANENT TIE BACK (UNDER SEPARATE SUBMISSION).
6.4 INSTALL TEMPORARY STRUTS WALING AND SPACER
6.5 CARRY OUT ELS STAGE 9 EXCAVATION WORKS
6.6 INSTALL TEMPORARY STRUTS WALING AND SPACER
6.7 CARRY OUT ELS STAGE 10 EXCAVATION WORKS
6.8 INSTALL PERMANENT TIE BACK (UNDER SEPARATE SUBMISSION).
6.9

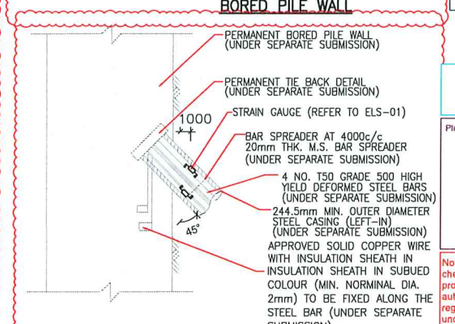
7. CARRY OUT CONSTRUCTION OF FOOTING (UNDER SEPARATE SUBMISSION) WITH CONSENT OBTAINED.
8. CARRY OUT CONSTRUCTION OF CAPPING BEAM (UNDER SEPARATE SUBMISSION), SCREEN WALL (UNDER SEPARATE SUBMISSION), LAGGING WALL (UNDER SEPARATE SUBMISSION) AND SUPERSTRUCTURE (UNDER SEPARATE SUBMISSION) WITH CONSENT OBTAINED.
9. DISMANTLE ALL OF THE TEMPORARY STRUTS. (UNDER SEPARATE SUBMISSION)



TYPICAL CONNECTION BETWEEN STRUT, WALING, SPACER AND PIPE PILE FOR SINGLE STRUT (N.T.S.)



TYPICAL DETAILS OF LAGGING WALL BETWEEN PIPE PILE AND BORED PILE WALL



TYPICAL DETAIL OF STAIN GAUGE INSTALLED IN PERMANENT TIE BACK (N.T.S.)

B.D. REF NO. : BD 3/3008/22 (HU)

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

CMA
TEL: (852) 2522 1068
E-mail: cmwa@cmwal.com
Web Site: cmwal.com

Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	N.T.S.

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
GENERAL NOTES & DETAILS

Drawing Number:
ELS-13

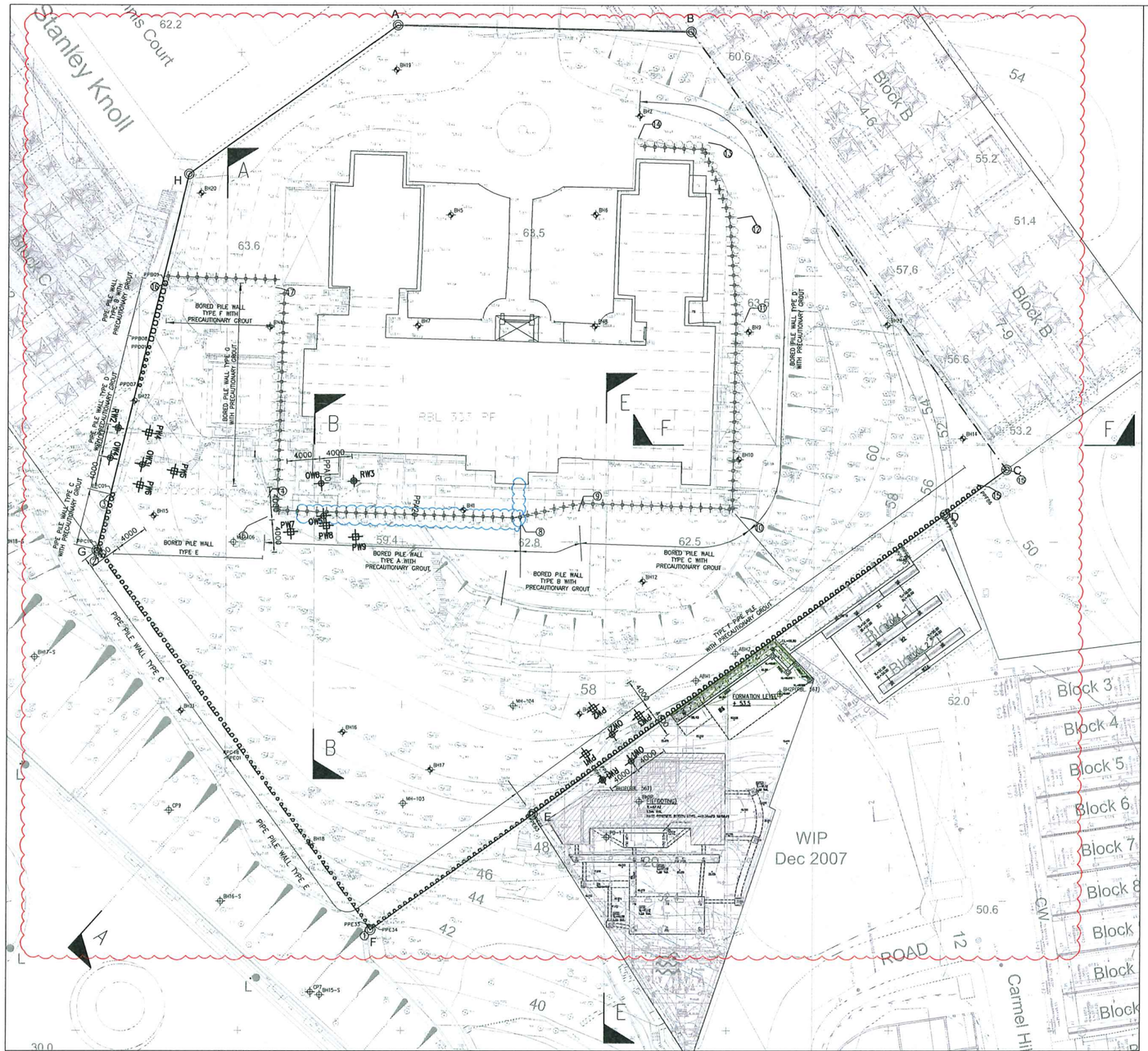
Revision Number:
A

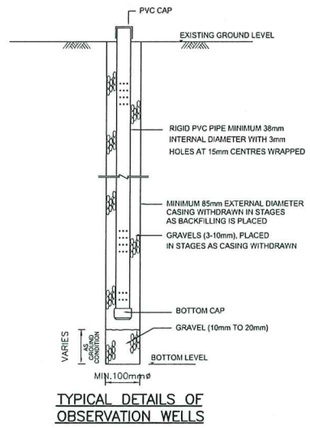
Digitally signed by LEUNG Chi Hung Ben
BSE 7509
02 October 2024

Received on
02 October 2024

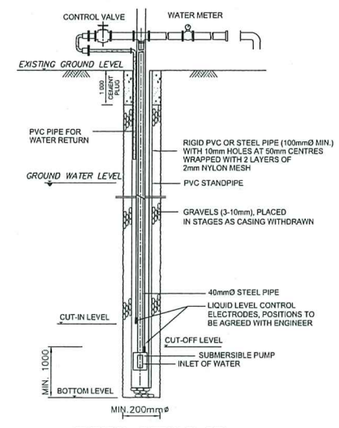
Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

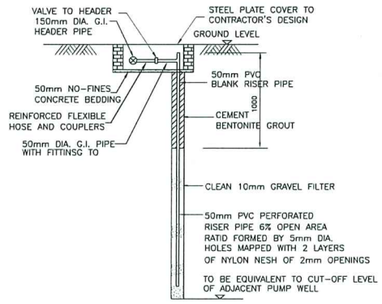




TYPICAL DETAILS OF OBSERVATION WELLS



TYPICAL DETAILS OF PUMP WELLS



TYPICAL DETAILS OF RECHARGE WELL

N.T.S.

PUMPING TEST LAYOUT PLAN

NOTES FOR PUMPING TEST:

I. PROCEDURES

1. INSTALL PUMP WELLS AND OBSERVATION WELLS AT LOCATIONS AS SHOWN ABOVE. THE DEPTHS OF PUMP WELLS AND OBSERVATION WELLS SHALL BE AS FOLLOWS:

PUMPING WELL	CUT-IN LEVEL (m.P.D.)	CUT-OFF LEVEL (m.P.D.)	BOTTOM LEVEL (m.P.D.)
PW1-PW3	+42.2	+41.2	+40.2
PW4-PW6	+53.7	+52.7	+51.7
PW7-PW9	+42.2	+41.2	+40.2

OBSERVATION WELL	BOTTOM LEVEL (mP.D.)
OW1-OW6	+44.2

2. BEFORE INSERTION OF THE SUBMERSIBLE PUMPS, THE DEWATERING WELLS SHALL BE CLEANED, FLUSHED AND THE DEPTH OF THE WELLS ACCURATELY MEASURED.
3. THE DEWATERING WELLS SHALL BE CONNECTED TO DISCHARGE PIPES AND TESTED TO BE FUNCTIONAL.
4. EACH PUMP WELL INSTALLED SHOULD HAVE A MINIMUM DISCHARGE CAPACITY OF 15m³/hr WHEN OPERATING UNDER A DELIVERY HEAD OF 10m AND BE ABLE TO LOWER WATER LEVEL TO WITHIN 1m ABOVE THE PUMP.
5. RECHARGE WELL SHOULD HAVE A MINIMUM DISCHARGE CAPACITY OF 2m³/hr.
6. FLOWS METERS AND CHOKE VALVES TO CONTROL FLOW SHOULD BE INCORPORATED INTO EACH DEWATERING WELL.
7. BEFORE COMMENCEMENT OF THE PUMPING TEST, WATER LEVELS IN ALL PUMP WELLS, OBSERVATION WELLS AND STANDPIPES SHOULD BE MEASURED AT 4 hr INTERVALS FOR A PERIOD OF 24 hrs.
8. DURING THE TESTS, THE WATER LEVELS IN ALL PUMP WELLS, OBSERVATION WELLS AND STANDPIPES WITHIN THE SITE SHOULD BE RECORDED AT REGULAR INTERVALS FOR AT LEAST 72 hrs (SEE TABLE IN 'WATER LEVEL MEASUREMENT'). FLOW RATE IN ALL PUMPS SHOULD BE MONITORED IN SIMILAR FREQUENCY.
9. PUMPING OF WATER SHALL BE CONTINUED FOR AT LEAST 24 HRS OR LONGER IF NECESSARY AFTER A STEADY STATE IS REACHED AT PUMP WELLS THE STEADY STATE IS DEFINED AS THE STATE AT WHICH THE FLUCTUATION OF WATER LEVEL IS WITHIN 0.1m WITHIN AN HOUR AND THE RATE OF CHANGE IN WATER LEVEL AT OBSERVATION WELLS OVER 24 HOURS APPEAR TO BE ZERO HORIZONTAL TREND IN THE GRAPH OF m VS TIME (HOURS).
10. IN THE EVENT THAT A STEADY STATE IN GROUNDWATER DRAWDOWN WITHIN THE SITE AS INDICATED IN (8) CANNOT BE REACHED, PUMPING SHOULD CONTINUE OR THE LEVELS OF PUMP WELLS BE LOWERED UNTIL A STEADY STATE IS ACHIEVED.
11. IF THE STEADY STATE IN (8) AND (9) ARE REACHED, PUMPING SHOULD BE CONTINUED TO MAINTAIN THE STEADY STATE FOR 72 HOURS.
12. AFTER THE STEADY STATE HAS BEEN MAINTAINED FOR 24 HOURS, AND THE CRITERIA FOR ACCEPTANCE IS ACHIEVED, ENGINEER'S AGREEMENT ON STOPPING PUMPING IS SOUGHT. PUMPING SHALL BE STOPPED TO ALLOW RECOVERY OF GROUNDWATER LEVEL WITHIN THE SITE.

12A. IF FOUND NECESSARY, ADDITIONAL PUMP WELL SHALL BE INSTALLED TO ACHIEVE DRAWDOWN OF GROUNDWATER TABLE WITHIN SITE, THE EXACT LOCATION OF ADDITIONAL PUMP WELL SHALL BE DETERMINED ON SITE.

13. THE MONITORING DATA SHALL BE PLOTTED (WATER LEVEL VS TIME) DURING THE COURSES OF THE PUMPING TEST TO EVALUATE THE GROUND CONDITIONS. THE RESULTS SHALL BE MADE AVAILABLE TO THE BUILDINGS DEPARTMENT AND THE ENGINEER THROUGHOUT THE PUMPING TEST.
14. FLOW RATE FOR PUMP WELLS AND VOLUME OF WATER PUMPED OUT SHALL BE MEASURED.

II. WATER LEVEL MEASUREMENT

DURING THE TEST AND DURING THE RECOVERY PHASE AT THE END OF THE TEST, THE WATER LEVELS IN THE PUMP WELLS, OBSERVATION WELLS AND STANDPIPE SHOULD BE MEASURED AT THE FOLLOWING TIME INTERVALS:

TIME FROM PUMP ON TO PUMP OFF (MINS.)	INTERVAL BETWEEN READINGS (MINS.)
0 – 30	10
30 – 60	15
60 – 120	30
120 – 360	60
360 – END OF TEST	120

III. SETTLEMENT CHECK POINTS

DURING AND UNTIL THE PUMPING TEST IS COMPLETED, SETTLEMENT MONITORING POINTS SHALL BE MONITORED TWICE PER DAY.

IV. CRITERIA

THE PUMPING TEST SHOULD BE CONSIDERED ACCEPTABLE IF ALL OF THE FOLLOWING ARE SATISFIED.

1. NO UNDUE SETTLEMENT OF ANY SETTLEMENT CHECK POINT. IN CASE UNDUE SETTLEMENT IS OBSERVED OUTSIDE THE SITE, RECHARGE WELLS SHALL BE SWITCHED ON IN ORDER TO REINSTATE THE GROUNDWATER TABLE OUTSIDE THE SITE TO ITS ORIGINAL LEVEL.
2. THE WATER LEVEL INSIDE THE SITE CAN BE DRAWN DOWN TO THE FINAL EXCAVATION LEVEL AS INFERRED FROM THE GROUNDWATER LEVELS AT OBSERVATION WELLS WITHIN SITE.
3. WATER DRAWDOWN AS RECORD IN OBSERVATION WELLS BEHIND PILE ON RETAINED SIDE DOES NOT EXCEED 1.0m AS COMPARED WITH THE INITAL READINGS TAKEN BEFORE THE PUMPING TEST AFTER TAKEN THE TIDAL FLUCTUATION INTO CONSIDERATION.
4. THE AP/RSE AND BD SHOULD BE NOTIFIED AND PUMPING SHALL BE CEASED IF THE DRAWDOWN RECORDED IN THE OBSERVATION WELLS BEHIND THE PILE WALL EXCEEDS THE ALLOWABLE LIMIT 1.0m DRAWDOWN DURING PUMPING TEST.

V. ASSESSMENT REPORT

AFTER COMPLETION OF THE PUMP TEST, AN ASSESSMENT REPORT SHALL BE PREPARED TO DISCUSS THE TEST RESULTS. THE REPORT SHALL BE SUBMITTED TO THE ENGINEER AND THE BD FOR ACCEPTANCE.

VI. GROUNDWATER MONITORING

FOR GROUNDWATER MONITORING IN THE DRAWING NO. ELS-01, GROUNDWATER DRAWDOWN SHALL REFER TO THE STANDPIPE ONLY DURING PUMPING TEST.

VII. GENERAL

1. PUMPPING TEST SHALL BE CARRIED OUT AFTER INSTALLATION OF SOLDIER PILES, GROUT CURTAIN AND BEFORE COMMENCEMENT OF BULK EXCAVATION.
2. PUMPING TEST SHALL BE CARRIED OUT TO VERIFY THE DESIGN ASSUMPTIONS. ALL RECHARGE WELLS AND OBSERVATION WELL SHALL BE INSTALLED PRIOR TO THE CARRYING OUT OF ALL PHASE PUMPING TEST.
3. THE EXACT LOCATION OF THE PROPOSED WELLS SHOULD BE DETERMINED ON SITE.
4. AN ASSESSMENT REPORT ON PUMPING TEST SHALL BE SUBMITTED TO THE SATISFACTION OF B.A.
5. IF THE RESULTS OF PUMPING TEST ARE FOUND UNSATISFACTORY, A REMEDIAL WORKS PROPOSAL (SUCH AS ADDITIONAL GROUT CURTAIN OR REGROUTING) SHALL BE SUBMITTED AND CARRIED OUT TO THE SATISFACTION OF B.A.

NOTES ON PUMPING TEST MONITORING PROPOSAL

1. THE MONITORING PROPOSAL FOR PUMPING TEST SHALL REFER TO THE DRAWING NO. ELS-01.
2. DURING THE PUMPING TEST, THE MONITORING CHECK POINT SHOULD BE MONITORED TWICE PER DAY.

NOTES OF PUBPING TEST

1. GROUNDWATER REVIEW SHALL BE CARRY OUT PRIOR TO THE CONSTRUCTION.
2. PUMPING TEST SHALL BE PROPOSED AND CARRIED OUT IF GROUND WATER LEVEL ENCOUNTERED ABOVE FINAL EXCAVATION LEVEL DURING CONSTUCTION.

B.D. REF NO. : BD 3/3008/22 (HU)

LEGEND:

- BOUNDARY LINE
- BH1 — AS-BUILT BOREHOLE
- P MH-103 — PIEZOMETER / EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- KP1 — PROPOSED KING POST
- PROPOSED PIPE PILE
- GROUT CURTAIN
- PROPOSED PERMANENT BORED PILE WALL (UNDER SEPARATE SUBMISSION)
- EXISTING SOIL NAIL TO BE DEMOLISHED
- PROPOSED MAX. 30° OPEN CUT EXCAVATION
- PROPOSED STRUT
- PROPOSE PERMANENT TIE BACK SOCKED INTO ROCK (UNDER SEPARATE SUBMISSION)

Revision	Date	Description	By	Chk
A	07/2024	1ST AMENDMENT	CJX	SKS

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Design	CCH	Date	JAN 2022
Checked	CCH	Drawn	KUEN
Approved	TY	Scale	1:300 IN A1

Project:
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

Drawing Type:
EXCAVATION AND LATERAL SUPPORT WORKS

Drawing Title:
PIMPING TEST LAYOUT PLAN

Drawing Number:
ELS-16A

Revision Number:
A

Digitally signed by LEUNG Chi Hung Bon
REE 70155
02 October 2024

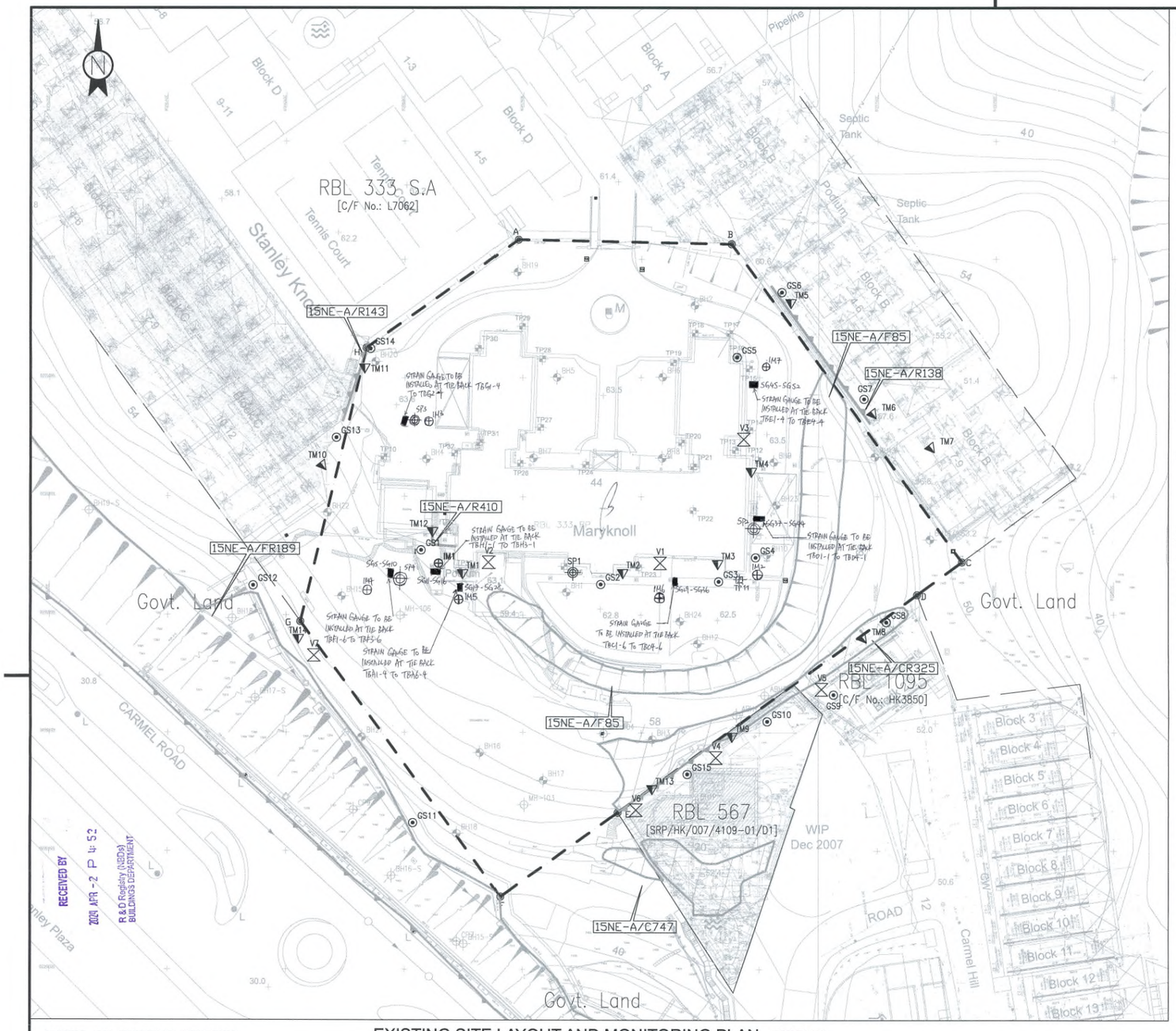
Received on
02 October 2024

Plan Approved
(Digitally Signed)
LUNG Chi-wang
Senior Structural Engineer
for BUILDING AUTHORITY
04 October 2024

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

Appendix G
Site Formation Works Approval Plans
for Development at R.B.L 333RP

BD REF NO: 3/3008/22



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2024 APR -2 P 4:52
R & D Registry (3/RDA)
BUILDINGS DEPARTMENT

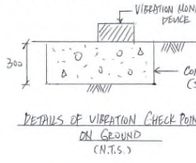
EXISTING SITE LAYOUT AND MONITORING PLAN (SCALE 1:400)

NOTES ON EXISTING UTILITIES

1. THE POSITION OF EXISTING UTILITIES SHOWN ON THIS DRAWING IS APPROXIMATE ONLY. EXACT LOCATION AND DEPTH OF THE UTILITIES MUST BE ASCERTAINED BY TRIAL PITS ON SITE. EXTREME CARE MUST BE TAKEN DURING EXCAVATIONS IN THE PROXIMITY OF THE UTILITIES. PRECAUTIONS SHALL BE TAKEN TO PREVENT DAMAGE TO ANY OF THE UTILITIES.
2. THE INFORMATION INDICATED IS GIVEN IN GOOD FAITH AND NO GUARANTEE IS GIVEN AS TO ITS ACCURACY OR COMPLETENESS. THE USE OF THIS INFORMATION BY THE CONTRACTOR OR ANY OTHER PARTY SHALL NOT RELIEVE HIM OF ANY OF HIS OBLIGATIONS OR RESPONSIBILITY UNDER THE CONTRACT.
3. THE CONTRACTOR SHALL ARRANGE FOR ANY REALIGNMENT OF THE EXISTING UTILITIES AT THE WORKING LOCATION PRIOR TO THE CONSTRUCTION OF WORKS, IF REQUIRED.
4. THE CONTRACTOR SHALL PROVIDE TEMPORARY SUPPORT TO THE EXISTING UTILITIES DURING THE CONSTRUCTION WORKS, IF REQUIRED.
5. THE CONTRACTOR'S PARTICULAR ATTENTION IS DRAWN TO THE EXISTENCE OF UNDERGROUND SERVICE WITHIN AND AROUND THE SITE. HE SHALL PROTECT AND MAINTAIN ALL THOSE WORKS DURING THE ENTIRE CONTRACT PERIOD. NECESSARY PRECAUTIONS AND MONITORING SHALL BE TAKEN TO PREVENT DAMAGE TO THE EXISTING UPPER GROUND SERVICE.
6. THE CONTRACTOR SHALL IDENTIFY AND ESTABLISH HIMSELF THE TYPES AND EXACT LAYOUT/LOCATION OF THE EXISTING SERVICES BEFORE CARRYING OUT ANY CONSTRUCTION WORKS ON SITE. HE SHALL ALSO PLAN AND ARRANGE HIS WORKS TAKING INTO ACCOUNT THE EXISTENCE OF ALL SUCH WORKS THAT MAY AFFECT THE CONSTRUCTION SEQUENCE OF HIS WORKS. SHALL ANY SERVICES FALL WITHIN THE SITE, THE CONTRACTOR SHALL PROPOSE AND SUBMIT A METHOD STATEMENT ON PROTECTING OR DIVERTING THE EXISTING UTILITIES FOR AP/RSE APPROVAL AT NO EXTRA COST. IF NECESSARY, THE CONTRACTOR SHALL MODIFY THE DESIGN OF WORKS AND/OR PROVIDE TEMPORARY SUPPORTS FOR THE SERVICES AND SUBMIT THE METHOD STATEMENT FOR THE SERVICES AND SUBMIT THE METHOD STATEMENT FOR AP/RSE APPROVAL. SHOULD ANY DAMAGE OCCUR, NOTIFY THE AP/RSE AND RELEVANT AUTHORITIES CONCERNED IMMEDIATELY AND MAKE GOOD BY THE CONTRACTOR AT NO EXTRA COST.

NOTES ON MONITORING

1. INSTALL ALL CHECK POINTS AS SHOWN ON PLAN.
2. INITIAL READINGS OF CHECK POINTS AND BENCH MARKS SHALL BE SUBMITTED TO BUILDINGS DEPT. BEFORE COMMENCEMENT OF THE WORK.
3. ALL CHECK POINTS SHALL BE PROPERLY MAINTAINED AND MONITORED ON DAILY INTERVAL AND THE READINGS SHALL BE SUBMITTED TO THE AP/RSE AND BUILDING AUTHORITY BI-WEEKLY. ANY DEFECTIVE MONITORING DEVICES SHALL BE REPLACED ASAP.
4. THE LEVEL SHALL BE REPORTED IN mPD AND THE CHECK POINTS SHALL BE SURVEYED ACCORDING TO HONG KONG METRIC GRID.
5. PIEZOMETERS/STANDPIPES INSTALLED ON SITE SHOULD BE MONITORED ON DAILY BASIS CONTINUOUSLY THROUGHOUT THE CONSTRUCTION. THE READINGS SHOULD BE SUBMITTED TO RSE/RGE/BA ON BIWEEKLY BASIS. INITIAL READING SHOULD ALSO BE SUBMITTED BEFORE THE COMMENCEMENT OF WORKS.
6. CHECK POINT READINGS TO BE KEPT ON SITE FOR INSPECTION.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR APPLICATION OF EXCAVATION PERMIT FOR INSTALLATION OF MONITORING CHECK POINTS OUTSIDE SITE BOUNDARY. THE CONTRACTOR SHALL ALSO BE RESPONSIBLE FOR SEEKING CONSENT FROM THE ADJACENT LOT OWNERS FOR INSTALLATION OF MONITORING CHECK POINT AT ADJACENT LOTS / BUILDINGS. WHEN INSTALLATION OF CHECKPOINTS IN PRIVATE LOT IS OBJECTED, THE CONTRACTOR SHALL PROPOSED ALTERNATIVE LOCATION.
8. ACCURACY OF ALL READING SHALL BE 1.0mm FOR BOTH VERTICAL AND HORIZONTAL PLANES.
9. AGREEMENT FROM ADJACENT LOT OWNER SHALL BE OBTAINED FOR MONITORING THE CHECK POINT.



DETAILS OF VIBRATION CHECK POINTS ON GROUND (N.T.S.)

"ALERT LEVEL" RESPONSE ACTION:

(i) RC TO NOTIFY AND SUBMIT WRITTEN REPORT TO RSE/RGE.
(ii) AP/RSE/RGE TO ASSESS EFFECT OF MOVEMENT AND PREDICT FUTURE MOVEMENTS.
(iii) AP/RSE/RGE TO AGREE WITH RC ON THE SUITABLE ACTION PLAN WHICH MAY INCLUDE THE INSTALLATION OF ADDITIONAL CHECK POINTS AND/OR INCREASING MONITORING FREQUENCY AND THE REMEDIAL/MITIGATION MEASURES TO BE TAKEN UPON REACHING THE "THE ALARM LEVEL"

"ALARM LEVEL" RESPONSE ACTION:

(i) RC TO NOTIFY AND SUBMIT UPDATED REPORT TO AP/RSE/RGE AND NOTIFY THE BD IMMEDIATELY.
(ii) AP/RSE/RGE AND RC TO CONDUCT JOINT SITE INSPECTION TO DETERMINE IF ANY CONSTRUCTION ACTIVITIES SHOULD BE TEMPORARILY SUSPENDED.
(iii) RC TO IMPLEMENT THE NECESSARY REMEDIAL/MITAGATION MEASURES IN ACCORDANCE WITH THE AGREED ACTION PLAN.
(iv) AP/RSE/RGE AND RC TO DISCUSS THE INSTRUMENT RESPONSE AND REVIEW THE EFFECTIVENESS OF THE RESPONSE ACTION.
(v) AP/RSE/RGE TO AGREE WITH RC ON THE EMERGENCY PLAN DETAILING THE MEASURES TO BE TAKEN UPON REACHING "ACTION LEVEL".
(vi) ANY CONSTRUCTION ACTIVITIES MAY BE SUSPENDED IF THE RESPONSE ACTION HAS BEEN IMPLEMENTED AND ON THE ADVICE OF THE AP/RSE/RGE AS NECESSARY.
(vii) AP/RSE/RGE TO REVIEW THE METHOD STATEMENTS OF PILING WORKS TO DETERMINE WHETHER MODIFICATION TO THE CONSTRUCTION METHODS IS REQUIRED TO PREVEN ACTION LEVEL FROM BEING REACHED.

"ACTION LEVEL" RESPONSE ACTION:

(i) ALL WORKS WITH THE AFFECTED AREA ARE TO BE CEASED.
(ii) RC TO NOTIFY AND CARRY OUT A JOINT SITE INSPECTION WITH THE AP/RSE/RGE IMMEDIATELY. THE BD AND THE RELEVANT PARTIES SHOULD BE NOTIFIED IMMEDIATELY.
(iii) RC TO IMPLEMENT THE NECESSARY EMERGENCY MEASURES IN ACCORDANCE WITH THE AGREED EMERGENCY PLAN.
(iv) RC TO SUBMIT AN INCIDENT REPORT TO AP/RSE/RGE AND THE BD DETAILING THE FULL HISTORY OF THE MOVEMENTS AND REMEDIAL/EMERGENCY MEASURES IMPLEMENTED.
(v) AP/RSE/RGE TO REVIEW THE INCIDENT AND AGREE WITH RC ON FURTHER REMEDIAL AND PREVENTIVE MEASURES TO ENABLE RESUPMTION OF THE SUSPENDED WORKS.
(vi) CONSTRUCTION ACTIVITIES SHOULD NOT BE RESUMED UNTIL THE NECESSARY REMEDIAL AND PREVENTIVE MEASURE HAVE BEEN COMPLETED TO THE SATISFACTION OF THE BD.
(vii) IF THE TRIGGER VALUES AND RESPONSE ACTION ARE REVISED. THE AMENDED PLANS SHOULD BE SUBMITTED TO THE BD FOR APPROVAL . THE SUSPENDED CONSTRUCTION ACTIVITIES SHOULD NOT BE RESUMED UNTIL THE AMEDNED PLANS ARE APPROVED BY THE BA AND THE CONSENT IS GIVEN

REMARKS:
(i) THE 'ACTION LEVEL' RESPONSE ACTION SHOULD BE TAKEN IF ANY OF THE FOLLOWING SITUATIONS OCCUR:
- ANY MONITORING STATION HAS A READING REACHING THE SERVICEABILITY LIMIT.
- UNDUE SETTLEMENT AS INDICATED IN ANY CHECKPOINTS CEG: AN INCREASE OF 5MM BETWEEN TWO CONSECUTIVE DAILY READING.
- SIGN OF DISTRESS OR DAMAGES OBSERVED IN ANY ADJACENT STRUCTURES AND/OR UTILITIES.

INSTRUMENTATION AND MONITORING

WHEN THE MONITORING VALUES RECORDED AT ANY MONITORING STATIONS REACH THE MAXIMUM PREDICTED/ CALCULATED MOVEMENTS/ GROUNDWATER FLUCTUATIONS INDUCED BY OR ASSOCIATED WITH THE PROPOSED WORKS, THE RSE/RGE SHALL INVESTIGATE THE CAUSES OF THE RECORDED UNDUE PERFORMANCE, REVIEW THE RECORDED VALUES WITH THE CONSTRUCTION SEQUENCE AND ACTIVITIES, ASSESS THE EFFECTS ON THE PROPOSED WORKS, PREDICT FURTHER MOVEMENTS/ GROUNDWATER FLUCTUATIONS AND TAKE ANY EMERGENCY ACTION ON SITE AS NECESSARY. A REVIEW REPORT COVERING THE ABOVE ASPECTS TOGETHER WITH THE DETAILED PLAN OF REMEDIAL ACTION SHALL BE PREPARED BY THE RSE/RGE AND SUBMITTED TO THE BD FOR AGREEMENT. IF REQUIRED, THE RSE/RGE SHALL SUBMIT AMENDMENT PLANS TO THE BD FOR APPROVAL.

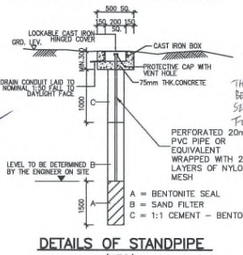
GENERAL MONITORING CHECKPOINTS

INSTRUMENT		CRITERION	ALERT	ALARM	ACTION
FOR GRADE I HISTORICAL BUILDING	GROUND SETTLEMENT CHECK POINT (GS1–GS5)	TOTAL SETTLEMENT	6mm	8mm	10mm
	TILTING CHECK POINT (TM1–TM4)	ANGULAR DISTORTION	1:2000	1:1500	1:1000
		BUILDING SETTLEMENT	6mm	8mm	10mm
	VIBRATION CHECK POINT (V1–V3)	VIBRATION (PEAK PARTICLE VELOCITY)	3mm/s	4mm/s	5mm/s
STANDPIPE (SP1–SP4)		GROUND WATER LEVEL	1m BELOW DGWL	0.5m BELOW DGWL	DGWL
VIBRATION CHECK POINT (V4–V7)		VIBRATION (PEAK PARTICLE VELOCITY)	7.5mm/s	10mm/s	15mm/s
GROUND SETTLEMENT CHECK POINT(GS6–GS15)		TOTAL SETTLEMENT	12mm	18mm	25mm
TILTING CHECK POINT (TM5–TM14)		ANGULAR DISTORTION	1:1000	1:750	1:500
INCLINOMETER (IM1 – IM7)		LATERAL DEFLECTION	12mm	16mm	20mm
STRAIN GAUGE (SG1-SG8)		TIE BACK FORCE	0.35 x TD	0.9 x TD	TD

DESIGN GROUND WATER LEVEL(DGWL) SCHEDULE

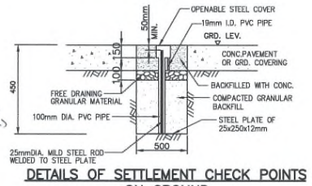
STANDPIPE MARK	DESIGN GROUND WATER LEVEL
SP1	+ 30.1 mPD
SP2	+ 56.8 mPD
SP3	+ 58.7 mPD
SP4	+ 47.2 mPD

NOTE: STANDPIPE SP4 SHALL BE INSTALLED UPON FINAL EXCAVATION LEVEL IS FORMED AND WILL BE REMOVED AFTER THE CONSTRUCTION OF PILE CAP.

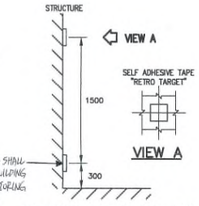


THE LOWER TAPE SHALL BE INVITED FOR BUILDING SETTLEMENT MONITORING FOR TM1 - TM4

DETAILS OF STANDPIPE (N.T.S.)

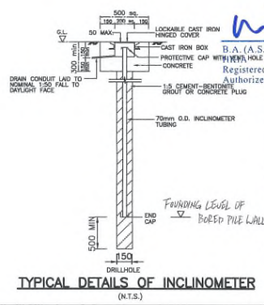


DETAILS OF SETTLEMENT CHECK POINTS ON GROUND (N.T.S.)



VIEW A

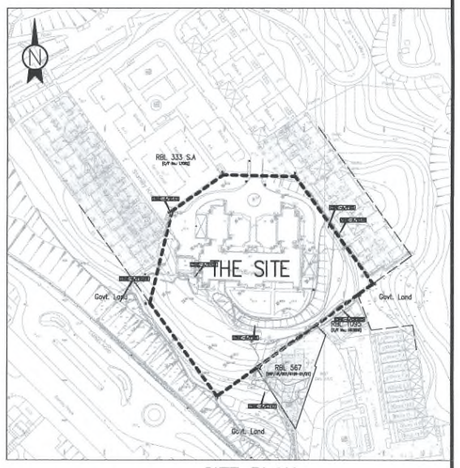
DETAILS OF TILTING CHECKPOINT (N.T.S.)



TYPICAL DETAILS OF INCLINOMETER (N.T.S.)

INCLINOMETER OF BORED PILE WALL SCHEDULE

INCLINOMETER MARK	BORED PILE WALL
IM1	BPW-G20
IM2	BPW-D03
IM3	BPW-E11
IM4	BPW-E07
IM5	BPW-A07
IM6	BPW-C01
IM7	BPW-D32



SITE PLAN (1:1500 IN A1)

LEGEND:

- SITE BOUNDARY
- GS1 — PROPOSED GROUND SETTLEMENT CHECK POINT (GS1 TO GS15)
- TM1 — PROPOSED TILTING CHECK POINT (TM1 TO TM14)
- TP9 — EXISTING TRIAL PIT (TP1 - TP39)
- V1 — PROPOSED VIBRATION CHECK POINT (V1 TO V7)
- BH1 — EXISTING BOREHOLE WITH STANDPIPE
- SP1 — PROPOSED STANDPIPE (SP1–SP3)
- FW — EXISTING FRESH WATER MAIN
- EXISTING SEWER PIPES
- EXISTING STORM WATER PIPES
- IM1 — PROPOSED INCLINOMETERS (IM1 TO IM7)
- PROPOSED STRAIN GAUGE (SG1 - SG52) (DETAIL REFER TO DWG NO. BPW-10)

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

TD DENOTES DESIGN TIE BACK FORCE AS SPECIFIED TIE BACK SCHEDULE AS SHOWN ON DRAWING BPW-10. .
MONITORING OF THE STRAIN GAUGE SHALL BE CARRIED OUT MONTHLY. THE INTERPRETATION OF THE BACK FORCE MONITORING RESULT SHALL BE INCLUDED IN TS REPORT.

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

PAUL K. F. NG
B.A.(A.S.,M.ARCH
Registered Architect (HK)
Authorized Person (Architect)

SIGNATURE OF AP/RSE/RGE
YAU CAP YAN TERENCE
Registered Geotechnical Engineer
LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

SCALE	1:400 IN A1
DATE	JAN 2022
DESIGNED	CCH
DRAWN	KUEN
CHECKED	CCH
APPROVED	TY

DRG. TYPE: SITE FORMATION WORKS
DRG. TITLE: MONITORING PLAN
DRG. NO: BPW-01

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

BD REF NO: 6/3008/22(HO)

LEGEND:

- BOUNDARY LINE
- BH1 EXISTING BOREHOLE
- P EXISTING BOREHOLE WITH PIEZOMETER
- MH-103 EXISTING BOREHOLE OF NEARBY SITE
- 142.1 EXISTING GROUND LEVEL
- PROPOSED PIPE PILE (UNDER SEPARATELY SUBMISSION)
- BORED PILE WALL
- (8) TURNING POINT
- CATEGORY 1(C) OR BETTER ROCKHEAD CONTOUR(mPD)
- PROPOSED PERMANENT LAGGING WALL
- PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK
- PROPOSED PREGROUT FOR TIE BACK
- PROPOSED PREGROUT FOR BORED PILE WALL
- #PD PROPOSED PREDRILL HOLE FOR TIE BACK & BORED PILE WALL
- EXISTING FOOTING APPROXIMATE EXTEND

NOTE: PRIOR TO CONSENT APPLICATION FOR TIE BACK, ADDITIONAL INVESTIGATION SHALL BE CARRIED OUT AND SUBMITTED TO SATISFACTION OF BD TO VERIFY 1ST LAYER OF TIE BACK WILL NOT CLASH EXISTING FOOTING.

MASTER CONSTRUCTION SEQUENCE

1. INSTALL MONITORING CHECKPOINTS AND TAKE INITIAL READINGS.
2. CARRY OUT PREGROUTING WORKS, INSTALLATION OF TEMPORARY PIPE PILES, BORED PILE WALL, GROUT CUTRAIN AND KING POSTS WITH CONSENT OBTAINED.
3. UPON COMPLETION OF BORED PILE WALL, TEMPORARY PIPE PILE AND KINGPOST, SUBMIT FORM BA14 OF BORED PILE WALL, TEMPORARY PIPE PILE, KING POST TO THE BUILDINGS DEPARTMENT.
4. DESIGN GROUND WATER LEVEL TO BE REVIEWED BEFORE THE COMMENCEMENT OF EXCAVATION WORKS TO CONFIRM IF PUMPING TEST IS REQUIRED. CARRY OUT PUMPING TEST AND SUBMIT ASSESSMENT REPORT TO BUILDING DEPARTMENT IF REQUIRED (UNDER SEPARATE SUBMISSION).
5. CARRY OUT STAGE BY STAGE EXCAVATION WORKS WITH TIE BACK WITH PRECAUTIONARY GROUT AND STRUT TO FINAL EXCAVATION LEVEL.
6. CARRY OUT CONSTRUCTION OF FOOTING WITH CONSENT OBTAINED.
7. CARRY OUT CONSTRUCTION OF SKIN WALL, SCREEN WALL, LAGGING WALL AND SUPERSTRUCTURE (UNDER SEPARATE SUBMISSION) WITH CONSENT OBTAINED.
8. DISMANTLE ALL OF THE STRUTS. (UNDER SEPARATE SUBMISSION)
9. CONSTRUCT REMAINING SUPERSTRUCTURE WITH CONSENT OBTAINED (UNDER SEPARATE SUBMISSION).

TURNING POINT COORDINATES

TURNING POINTS	EASTING (m)	NORTHING (m)
3	839649.62	809086.01
4	839683.45	809085.44
5	839683.38	809063.04
8	839719.62	809062.13
9	839721.66	809083.76
10	839741.49	809083.07
11	839741.88	809106.96
12	839740.99	809117.72
13	839757.92	809129.01
14	839728.86	809129.51
16	839670.39	809111.58
17	839681.49	809111.17

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

PAUL K. F. NG
B.A. (A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

SIGNATURE OF AP/RSE/RGE

YAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT		
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE	1:250 IN A1
	DATE	JAN 2022
	DESIGNED	CCH
	DRAWN	KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED	CCH
	APPROVED	TY
DRG. TITLE: BORED PILE WALL LAYOUT PLAN	DRG. NO	BPW-02

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

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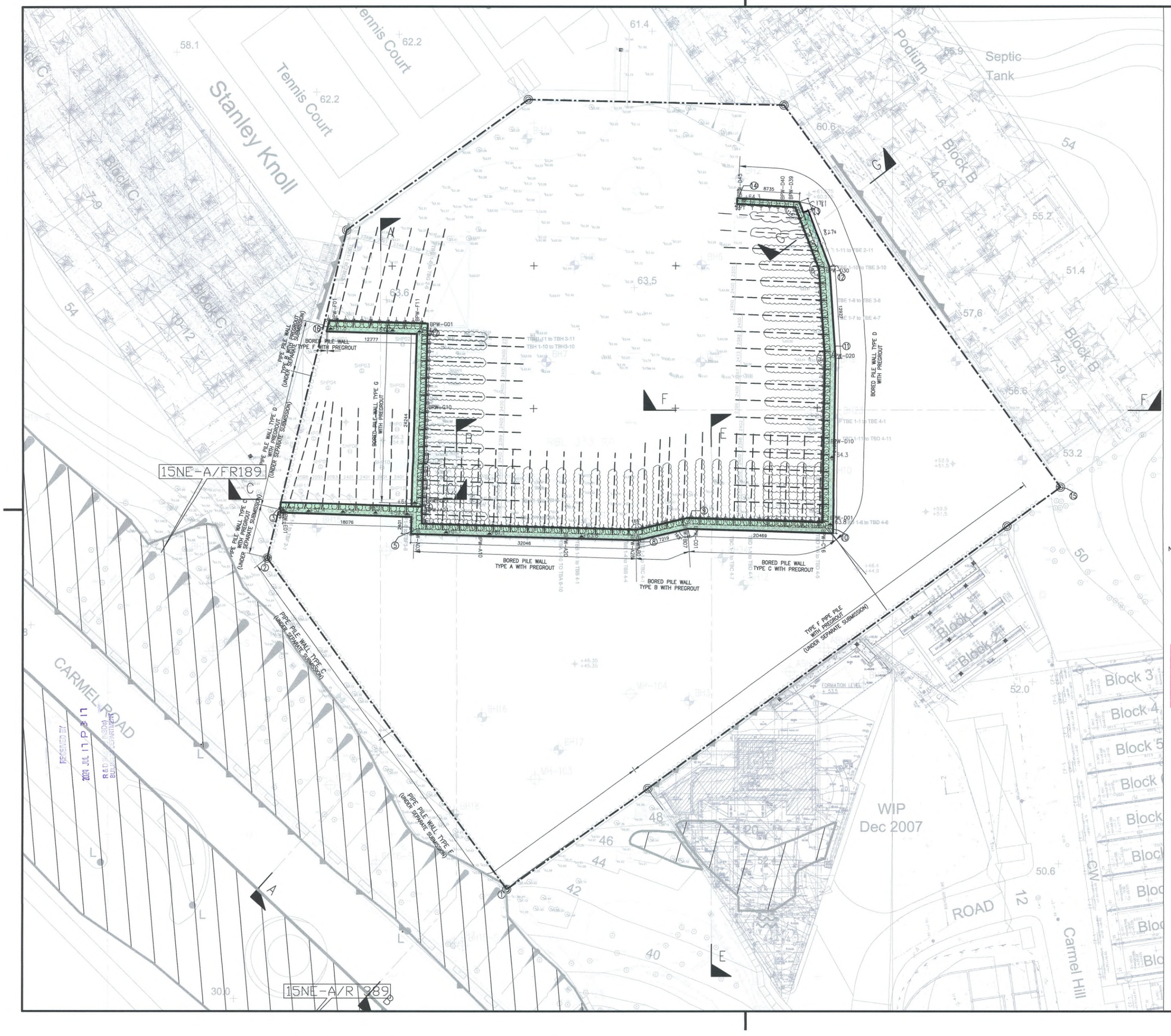
WIP Dec 2007

15NE-A/FR189

15NE-A/R 389

BD REF NO: 6/3008/22 (HU)



LEGEND:

- BOUNDARY LINE
- +60.3 — PROPOSED TOP LEVEL OF CAPPING BEAM
- BH1 — EXISTING BOREHOLE
- P — EXISTING BOREHOLE WITH PIEZOMETER
- MH-103 — EXISTING BOREHOLE OF NEARBY SITE
- 142.1 — EXISTING GROUND LEVEL
- PROPOSED PIPE PILE (UNDER SEPARATE SUBMISSION)
- BORED PILE WALL UNDER CAPPING BEAM
- PROPOSED LAGGING WALL UNDER CAPPING BEAM
- PROPOSED CAPPING BEAM
- PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK
- PROPOSED PREGROUT FOR TIE BACK
- PROPOSED PREGROUT FOR BORED PILE WALL

MASTER CONSTRUCTION SEQUENCE

1. INSTALL MONITORING CHECKPOINTS AND TAKE INITIAL READINGS.
2. CARRY OUT PREGROUTING WORKS, INSTALLATION OF TEMPORARY PIPE PILES(UNDER SEPARATE SUBMISSION), BORED PILE WALL, GROUT CURTAIN AND KING POSTS(UNDER SEPARATE SUBMISSION) WITH CONSENT OBTAINED.
3. UPON COMPLETION OF BORED PILE WALL, TEMPORARY PIPE PILE AND KINGPOST, SUBMIT FORM BA14 OF BORED PILE WALL, TEMPORARY PIPE PILE, KING POST TO THE BUILDINGS DEPARTMENT (UNDER SEPARATE SUBMISSION).
4. DESIGN GROUND WATER LEVEL TO BE REVIEWED BEFORE THE COMMENCEMENT OF EXCAVATION WORKS (UNDER SEPARATE SUBMISSION) TO CONFIRM IF PUMPING TEST IS REQUIRED. CARRY OUT PUMPING TEST AND SUBMIT ASSESSMENT REPORT TO BUILDING DEPARTMENT IF REQUIRED (UNDER SEPARATE SUBMISSION).

5.1 CARRY OUT STAGE 1 EXCAVATION WORKS (UNDER SEPARATE SUBMISSION)
5.2 INSTALL 1ST LAYER OF TIE BACK WITH PREGROUT.
5.3 CARRY OUT STAGE 2 EXCAVATION WORKS (UNDER SEPARATE SUBMISSION)
5.4 INSTALL 2ND LAYER OF TIE BACK.
5.5 INSTALL STRUTS WALING AND SPACER, IF ANY, UNDER SEPARATE SUBMISSION
5.6 REPEAT STEP 5.3 TO 5.5 WITH STAGE 3 TO STAGE 6 EXCAVATION (UNDER SEPARATE SUBMISSION) FOR STEP 5.3 AND 3RD LAYER TO 6 LAYER OF TIE BACK FOR STEP 5.4
5.7 CARRY OUT STAGE 7 EXCAVATION WORKS TO FINAL EXCAVATION LEVEL (UNDER SEPARATE SUBMISSION)

NOTES DURING THE COURSE OF EXCAVATION, ELS DESIGN REVIEW (UNDER SEPARATE SUBMISSION) SHALL BE SUBMITTED TO THE BUILDINGS DEPARTMENT. IF NECESSARY, AMENDMENT SHOULD BE SUBMITTED FOR REMEDIAL OR PREVENTIVE MEASURES.

6. CARRY OUT CONSTRUCTION OF FOOTING (UNDER SEPARATE SUBMISSION) WITH CONSENT OBTAINED.
7. CARRY OUT CONSTRUCTION OF CAPPING BEAM, SCREEN WALL (UNDER SEPARATE SUBMISSION), LAGGING WALL AND SUPERSTRUCTURE (UNDER SEPARATE SUBMISSION) WITH CONSENT OBTAINED.
8. DISMANTLE ALL OF THE STRUTS. (UNDER SEPARATE SUBMISSION)

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

PAUL K. F NG
B.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

SIGNATURE OF AP/RSE/RGE

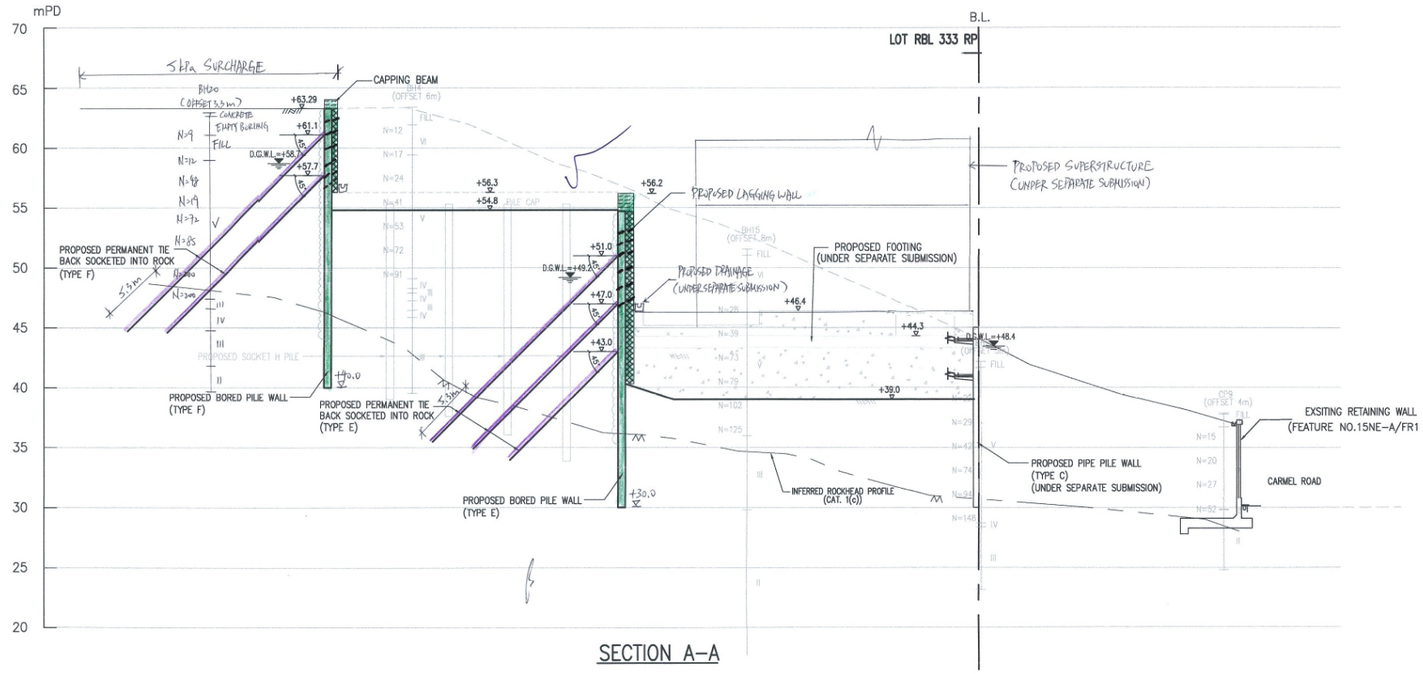
YAU HAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

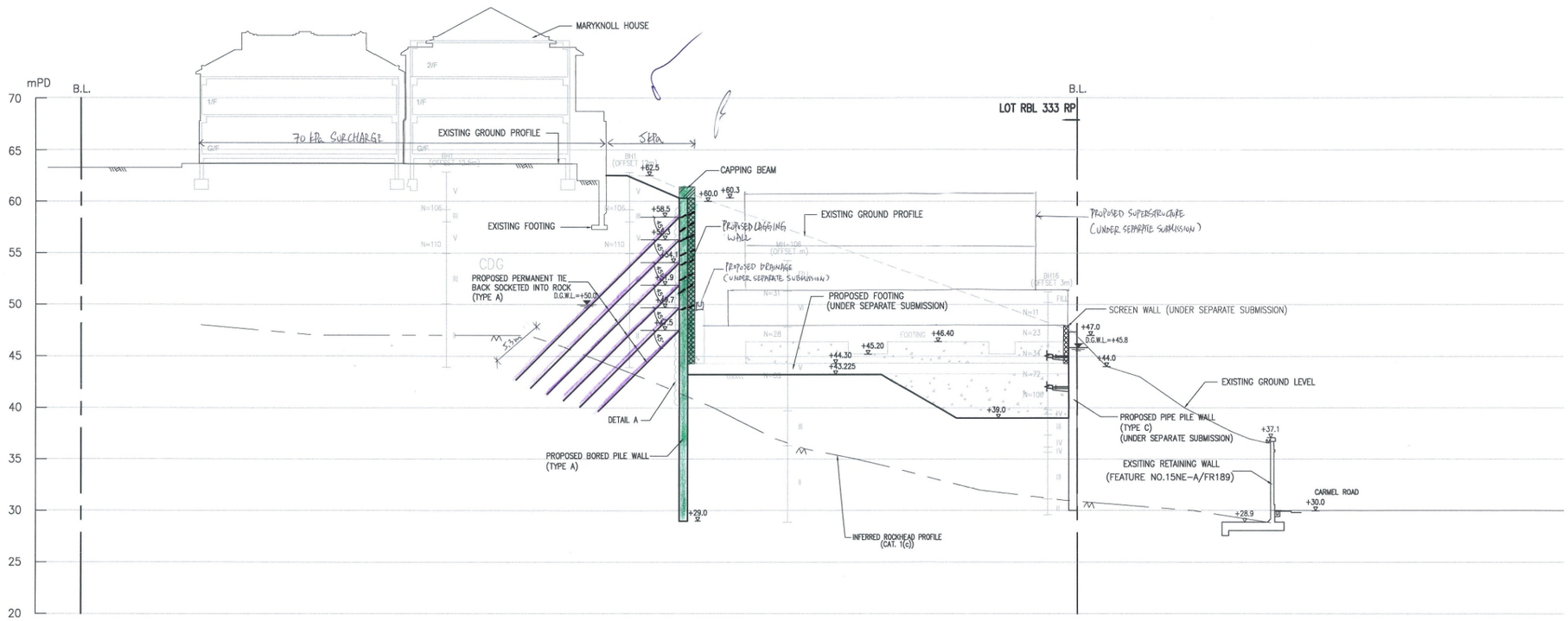
PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE	1:250 IN A1
	DATE	JAN 2022
	DESIGNED	CCH
	DRAWN	KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED	CCH
	APPROVED	TY
DRG. TITLE: CAPPING BEAM LAYOUT PLAN	DRG. NO	BPW-02A

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

BD REF NO: 6/3008/22(H)



SECTION A-A



SECTION B-B

LEGEND:

- LOT BOUNDARY
- PROPOSED BORED PILE WALL
- EXISTING GROUND PROFILE
- PROPOSED FINAL EXCAVATION PROFILE (UNDER SEPARATED SUBMISSION)
- D.G.W.L. — DESIGN GROUNDWATER TABLE
- FILL — FILL
- RS — RESIDUAL SOIL
- V — COMPLETELY DECOMPOSED GRANITE
- IV — HIGHLY DECOMPOSED GRANITE
- III — MODERATELY DECOMPOSED GRANITE
- II — SLIGHTLY DECOMPOSED GRANITE
- N=70 — SPT N VALUE
- PROPOSED PIPE GROUT / GROUT CURTAIN (TOE LEVEL TO BE 1m BELOW INFERRED ROCKHEAD LEVEL (CAT 1(C)) OR FINAL EXCAVATION LEVEL, WHICHEVER IS LOWER.
- FT1 — PROPOSED FOOTING (UNDER SEPARATE SUBMISSION)
- PROPOSED WEEPHOLE

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R & D Registry (NBDs)
BUILDINGS DEPARTMENT

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(h) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

PAUL K. F. NG
SIGNATURE OF AP/RSE/RGE
B.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

YAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE: 1:250 IN A1
	DATE: JAN 2022
	DESIGNED: CCH
	DRAWN: KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED: CCH
	APPROVED: TY
DRG. TITLE: SECTION A-A, SECTION B-B	DRG. NO: BPW-03

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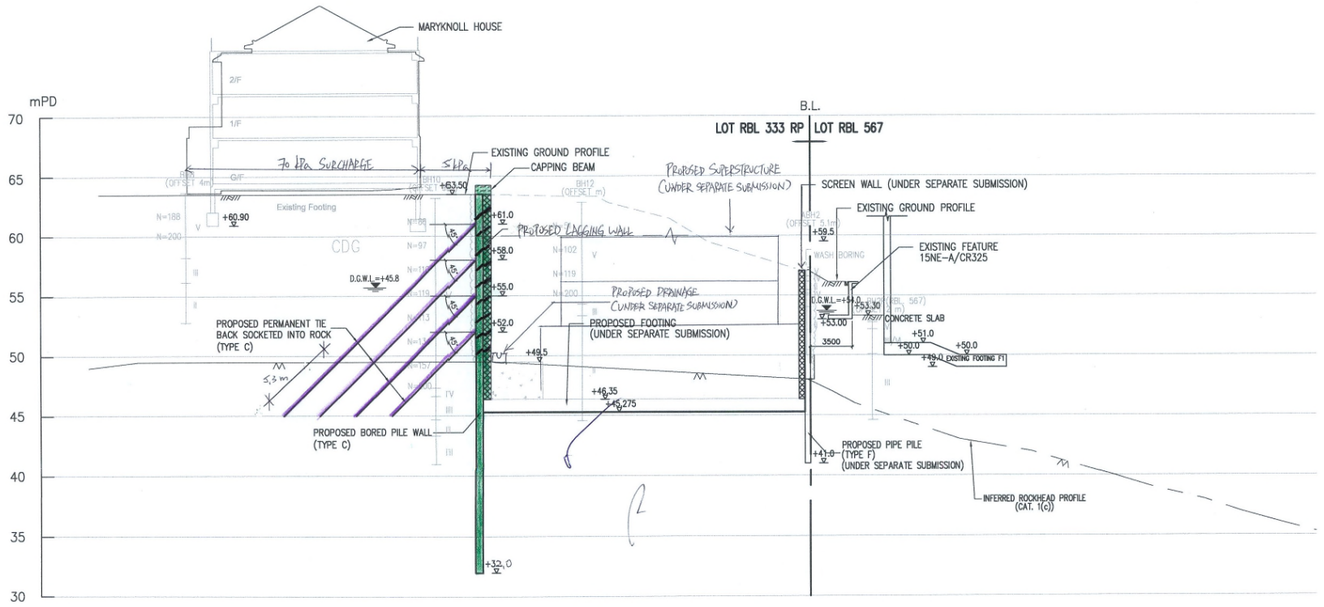
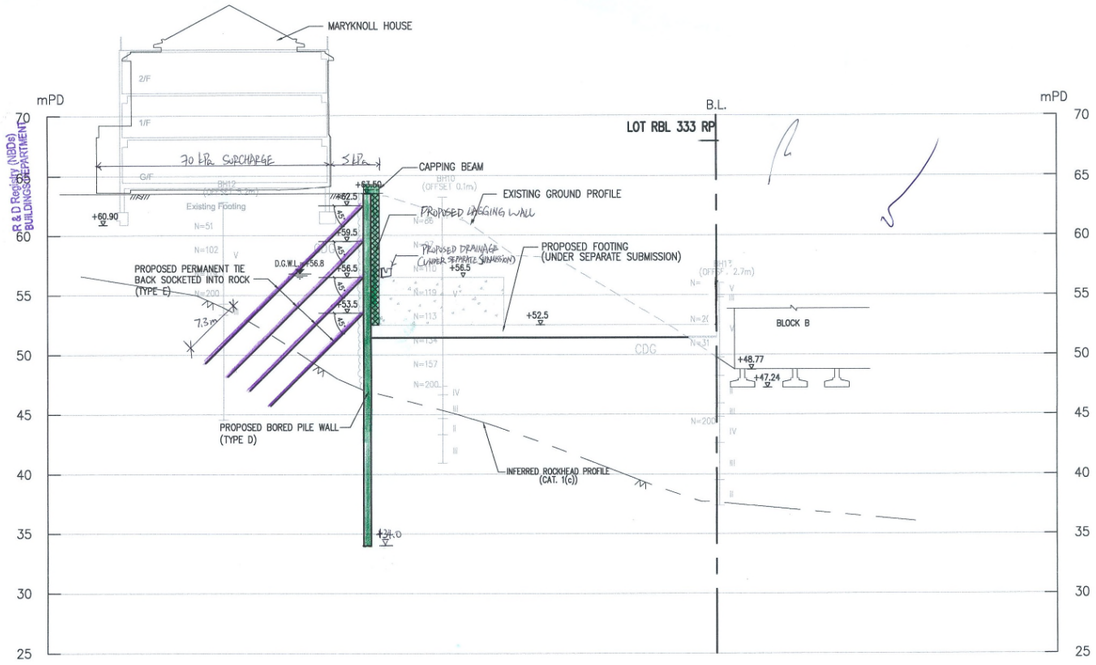
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

BD REF NO: 6/3008/22CH0



SECTION E-E



SECTION F-F

LEGEND:

- LOT BOUNDARY
- PROPOSED BORED PILE WALL
- EXISTING GROUND PROFILE
- PROPOSED FINAL EXCAVATION PROFILE (UNDER SEPARATED SUBMISSION)
- D.G.W.L. — DESIGN GROUNDWATER TABLE
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- III — MODERATELY DECOMPOSED GRANITE
- II — SLIGHTLY DECOMPOSED GRANITE
- N=70 — SPT N VALUE
- PROPOSED PRE-GROUT / GROUT CURTAIN (TOE LEVEL TO BE 1m BELOW INFERRED ROCKHEAD LEVEL (CAT 1(C)) OR FINAL EXCAVATION LEVEL, WHICHEVER IS LOWER.
- FT1 — PROPOSED FOOTING (UNDER SEPARATE SUBMISSION)
- PROPOSED WEEPHOLE

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BUILDINGS DEPARTMENT

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REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

PAUL K. F. NG

SIGNATURE OF AP/RSE/RGE

B.A.(A.S.)M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

YAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

SCALE	1:250 IN A1
DATE	JAN 2022
DESIGNED	CCH
DRAWN	KUEN
CHECKED	CCH
APPROVED	TY

DRG. TYPE: SITE FORMATION WORKS

DRG. TITLE: SECTION E-E, SECTION F-F

DRG. NO: BPW-04

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E-mail: cmwal@cmwal.com

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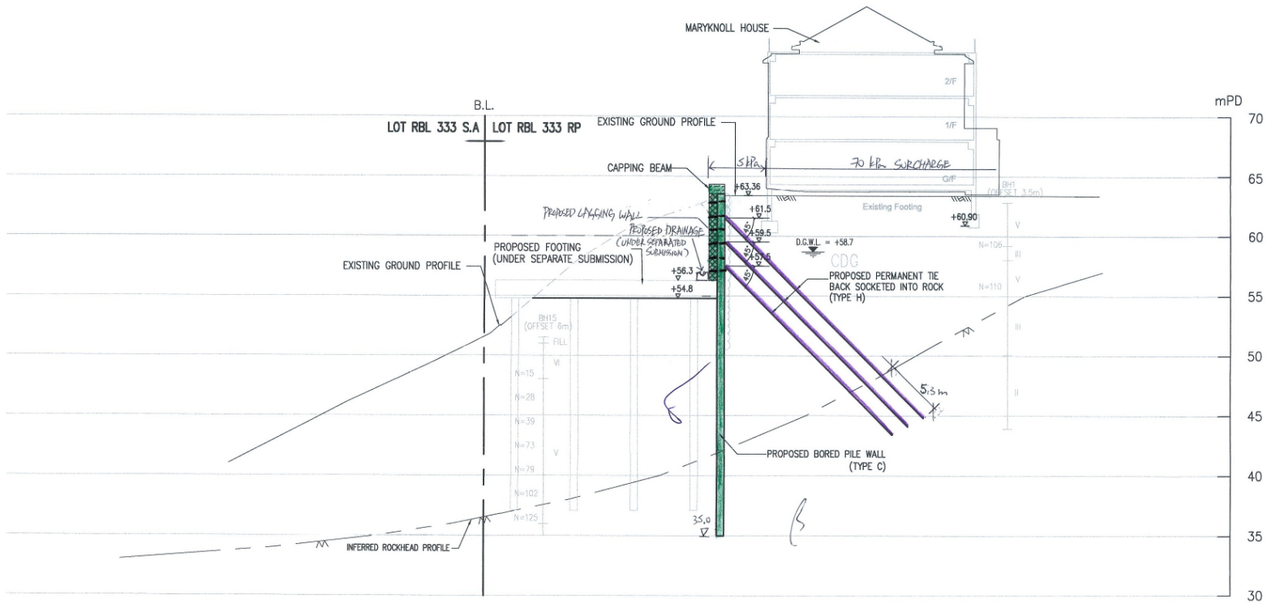
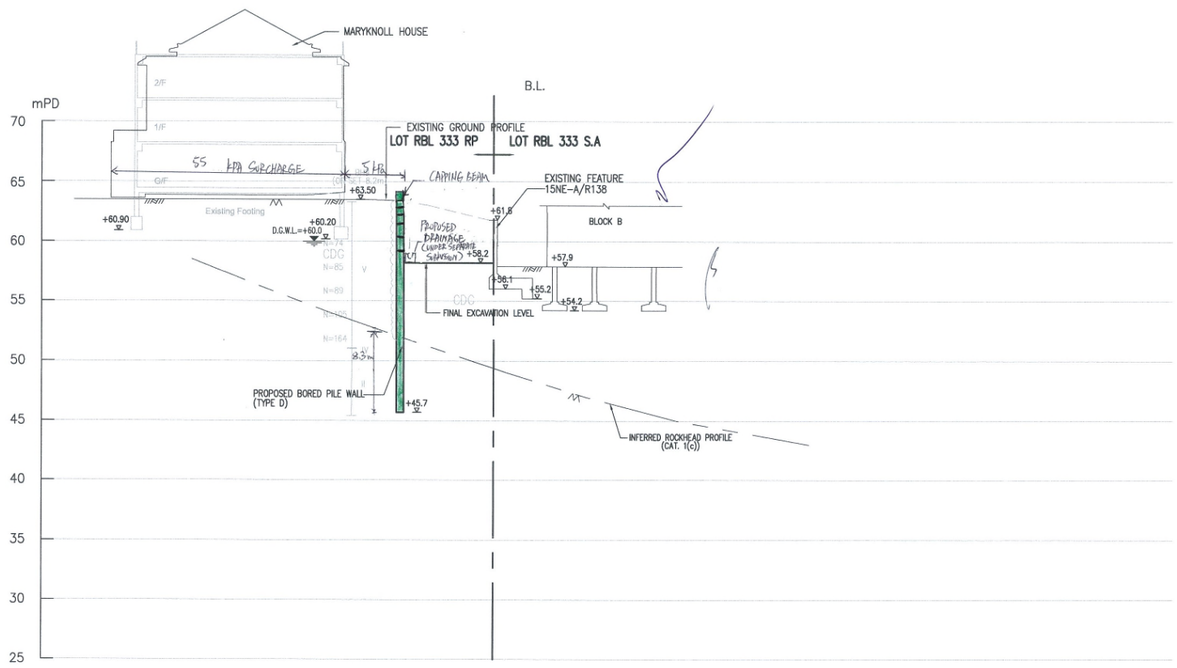


SECTION C–C



SECTION G–G

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2024 APR -2 P 4:52
R & D Rogsley (HSDoB)
BUILDINGS DEPARTMENT

LEGEND:

- LOT BOUNDARY
- PROPOSED BORED PILE WALL
- EXISTING GROUND PROFILE
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- PROPOSED PRE GROUT / GROUT CURTAIN (TOE LEVEL TO BE 1m BELOW INFERRED ROCKHEAD LEVEL (CAT 1(C)) OR FINAL EXCAVATION LEVEL, WHICHEVER IS LOWER.
- FT1 — PROPOSED FOOTING (UNDER SEPARATE SUBMISSION)
- PROPOSED WEEPHOLE

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REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

PAUL K. F. NG
B.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

SIGNATURE OF AP/RSE/RGE

YAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE: 1:250 IN A1
	DATE: JAN 2022
	DESIGNED: CCH
	DRAWN: KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED: CCH
	APPROVED: TY
DRG. TITLE: SECTION C–C, SECTION G–G	DRG. NO: BPW–05

CMA C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwwl@cmwwl.com

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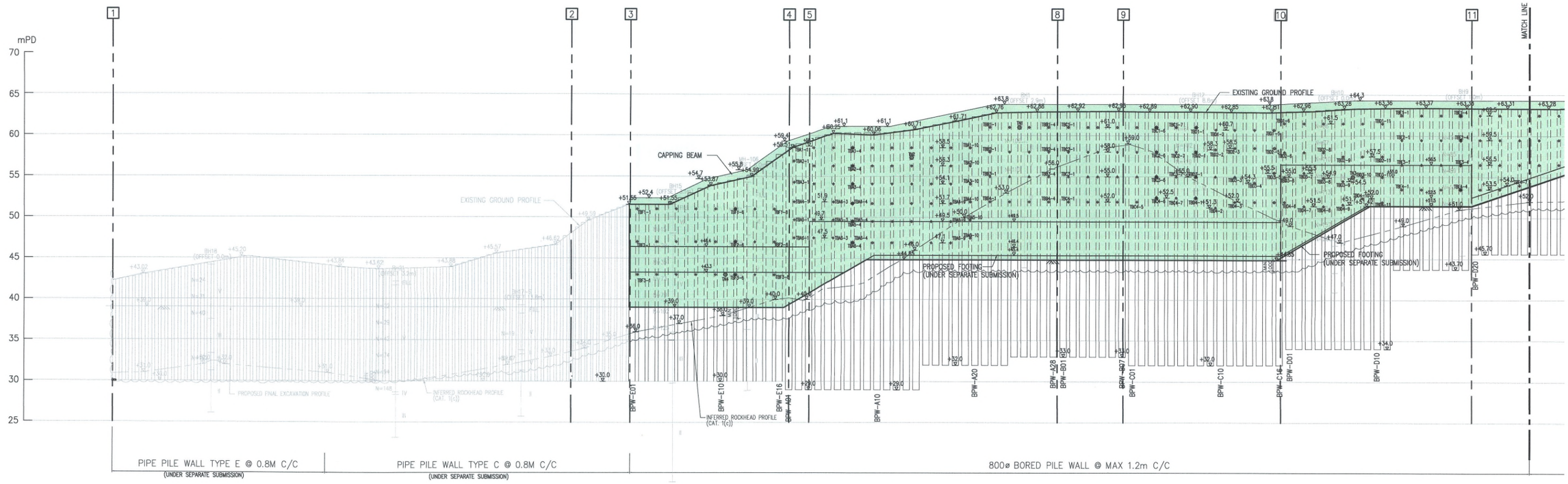
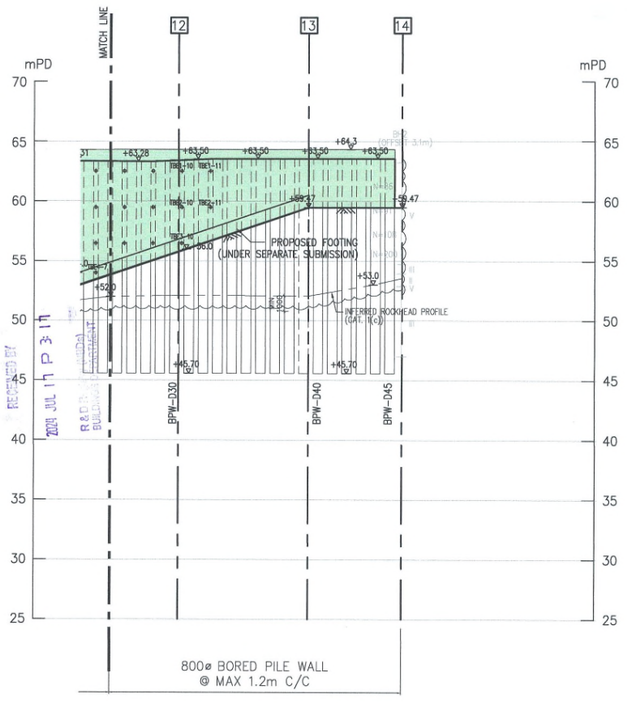


ELEVATION A



ELEVATION A

LEGEND:

- SITE BOUNDARY
- PROPOSED BORED PILE WALL
- PROPOSED PIPE PILE WALL (UNDER SEPARATE SUBMISSION)
- PROPOSED GROUT CURTAIN
- TBB1-1 — PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK
- PROPOSED PERMANENT RC LAGGING WALL
- TN1 — PROPOSED TEST NAIL
- TBF1-6 — PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK WITH STRAIN GAUGE

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REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

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B.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

SIGNATURE OF AP/RSE/RGE

YAU CAP YAN TERRENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY

SCALE	1:250 IN A1
DATE	JAN 2022
DESIGNED	CCH
DRAWN	KUEN
CHECKED	CCH
APPROVED	TY

DRG. TYPE
SITE FORMATION WORKS

DRG. TITLE
ELEVATION A

DRG. NO
BPW-06

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E-mail: cmwal@cmwal.com

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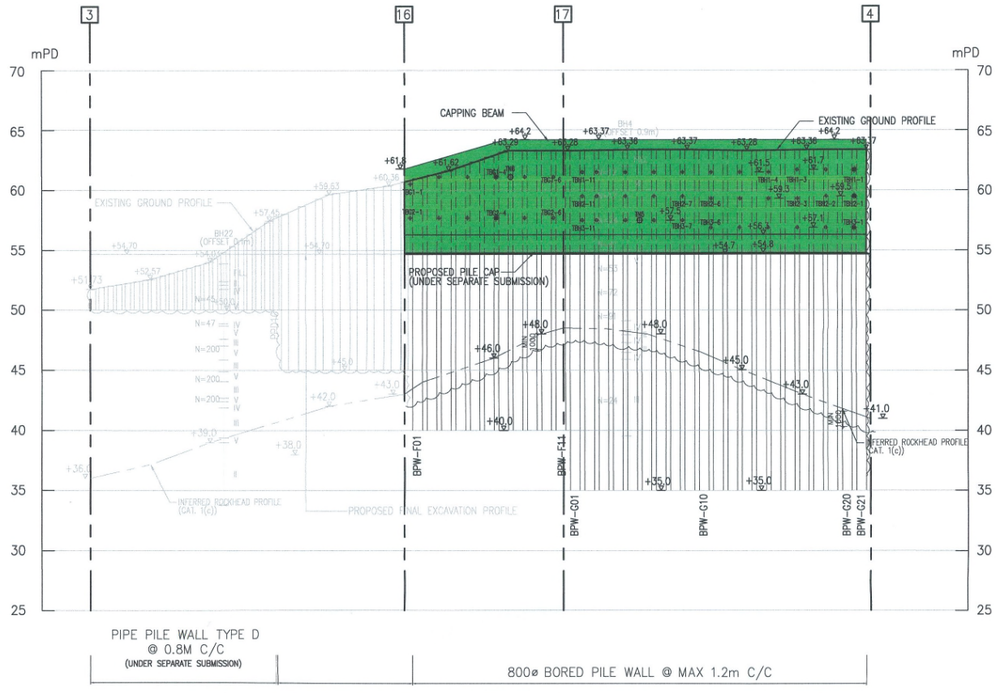

PIPE PILE WALL TYPE D
@ 0.8M C/C
(UNDER SEPARATE SUBMISSION)

800ø BORED PILE WALL @ MAX 1.2m C/C

PIPE PILE WALL TYPE B
@ 1.0M C/C
(UNDER SEPARATE SUBMISSION)

ELEVATION B

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R & C Division (HKBDs)
BUILDING DEPARTMENT

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LEGEND:

- SITE BOUNDARY
- PROPOSED BORED PILE WALL
- PROPOSED PIPE PILE WALL (UNDER SEPARATE SUBMISSION)
- PROPOSED GROUT CURTAIN
- TBB1-1 — PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK
- PROPOSED PERMANENT RC LAGGING WALL
- TN1 — PROPOSED TEST NAIL
- TBF1-6 — PROPOSED PERMANENT TIE BACK SOCKETED INTO ROCK WITH STRAIN GAUGE

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

PAUL K. F. NG
B.A. (A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

SIGNATURE OF AP/RSE/RGE

YAU SAP YAN TERRENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE: 1:250 IN A1
	DATE: JAN 2022
	DESIGNED: CCH
	DRAWN: KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED: CCH
	APPROVED: TY
DRG. TITLE: ELEVATION B	DRG. NO: BPW-06A

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

BORED PILE WALL SCHEDULE

Pile Mark	PILE DIAMETER		BORED PILE CUT OFF LEVEL	TENTATIVE EXCAVATED LEVEL	TENTATIVE FOUNDING LEVEL	TOTAL PILE LENGTH	TENTATIVE ROCKHEAD LEVEL	EFFECTIVE WEIGHT OF ROCK CONE&SOIL COLUMN	EFFECTIVE WEIGHT OF BORED PILE	Ru	Ra	REQUIRED ROCK SOCKET	REINFORCEMENT				
	SHAFT DIAMETER	ROCK SOCKET DIAMETER											VERTICAL		SHEAR REINFORCEMENT		STEEL RATIO
	(m)	(m)	(mPD)	(mPD)	(mPD)	(m)	(m)	(kN)	(kN)	(kN)	(kN)	(m)	1ST LAYER	2ND LAYER	1ST LAYER	2ND LAYER	
BPW-A01	0.8	0.8	+60.33	+44.85	+29.00	31.33	+41.00	2101	231	2332	2332	10					
BPW-A02	0.8	0.8	+60.33	+44.85	+29.00	31.33	+40.00	2101	231	2332	2332	10					
BPW-A03	0.8	0.8	+60.33	+44.85	+29.00	31.33	+40.00	2101	231	2332	2332	10					
BPW-A04	0.8	0.8	+60.33	+44.85	+29.00	31.33	+40.00	2101	231	2332	2332	10					
BPW-A05	0.8	0.8	+60.33	+44.85	+29.00	31.33	+40.50	2101	231	2332	2332	10					
BPW-A06	0.8	0.8	+60.33	+44.85	+29.00	31.33	+41.00	2101	231	2332	2332	10					
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BPW-A09	0.8	0.8	+60.33	+44.85	+29.00	31.33	+44.00	2101	231	2332	2332	10					
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BPW-B03	0.8	0.8	+62.95	+44.85	+33.00	29.95	+57.00	1274	221	1495	1495	8					
BPW-B04	0.8	0.8	+62.95	+44.85	+33.00	29.95	+57.00	1274	221	1495	1495	8					
BPW-B05	0.8	0.8	+62.95	+44.85	+33.00	29.95	+57.00	1274	221	1495	1495	8					
BPW-B06	0.8	0.8	+62.95	+44.85	+33.00	29.95	+57.50	1274	221	1495	1495	8					
BPW-B07	0.8	0.8	+62.95	+44.85	+33.00	29.95	+57.50	1274	221	1495	1495	8					
BPW-C01	0.8	0.8	+63.08	+44.85	+32.00	31.08	+57.50	1320	229	1550	1550	8					
BPW-C02	0.8	0.8	+63.08	+44.85	+32.00	31.08	+57.00	1320	229	1550	1550	8					
BPW-C03	0.8	0.8	+63.08	+44.85	+32.00	31.08	+56.50	1320	229	1550	1550	8	16T32	9T32	LINKS SCHEDULE TYPE A		4.00%
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BPW-C07	0.8	0.8	+63.08	+44.85	+32.00	31.08	+54.50	1320	229	1550	1550	8					
BPW-C08	0.8	0.8	+63.08	+44.85	+32.00	31.08	+54.00	1320	229	1550	1550	8					
BPW-C09	0.8	0.8	+63.08	+44.85	+32.00	31.08	+53.00	1320	229	1550	1550	8					
BPW-C10	0.8	0.8	+63.08	+44.85	+32.00	31.08	+53.00	1320	229	1550	1550	8					
BPW-C11	0.8	0.8	+63.08	+44.85	+32.00	31.08	+52.00	1320	229	1550	1550	8					
BPW-C12	0.8	0.8	+63.08	+44.85	+32.00	31.08	+51.50	1320	229	1550	1550	8					
BPW-C13	0.8	0.8	+63.08	+44.85	+32.00	31.08	+51.00	1320	229	1550	1550	8					
BPW-C14	0.8	0.8	+63.08	+44.85	+32.00	31.08	+51.00	1320	229	1550	1550	8					
BPW-C15	0.8	0.8	+63.08	+44.85	+32.00	31.08	+50.00	1320	229	1550	1550	8					
BPW-C16	0.8	0.8	+63.08	+44.85	+32.00	31.08	+49.00	1320	229	1550	1550	8					
BPW-D01	0.8	0.8	+63.58	+44.85	+34.00	29.58	+49.00	1259	218	1478	1478	8					
BPW-D02	0.8	0.8	+63.58	+44.85	+34.00	29.58	+48.00	1259	218	1478	1478	8					
BPW-D03	0.8	0.8	+63.58	+44.85	+34.00	29.58	+48.00	1259	218	1478	1478	8					
BPW-D04	0.8	0.8	+63.58	+44.85	+34.00	29.58	+47.50	1259	218	1478	1478	8					
BPW-D05	0.8	0.8	+63.58	+44.85	+34.00	29.58	+47.00	1259	218	1478	1478	8					
BPW-D06	0.8	0.8	+63.58	+44.85	+34.00	29.58	+47.00	1259	218	1478	1478	8					
BPW-D07	0.8	0.8	+63.58	+44.85	+34.00	29.58	+48.00	1259	218	1478	1478	8					
BPW-D08	0.8	0.8	+63.58	+44.85	+34.00	29.58	+47.00	1259	218	1478	1478	8					
BPW-D09	0.8	0.8	+63.58	+44.85	+34.00	29.58	+47.00	1259	218	1478	1478	8					
BPW-D10	0.8	0.8	+63.58	+44.85	+34.00	29.58	+48.50	1259	218	1478	1478	8					
BPW-D11	0.8	0.8	+63.58	+44.85	+34.00	29.58	+48.50	1259	218	1478	1478	8					
BPW-D12	0.8	0.8	+63.58	+44.85	+43.70	19.88	+49.00	330	147	476	476	5					
BPW-D13	0.8	0.8	+63.58	+44.85	+43.70	19.88	+49.50	330	147	476	476	5					
BPW-D14	0.8	0.8	+63.58	+51.50	+43.70	19.88	+50.00	330	147	476	476	5					
BPW-D15	0.8	0.8	+63.58	+51.50	+43.70	19.88	+50.00	330	147	476	476	5					
BPW-D16	0.8	0.8	+63.58	+51.50	+43.70	19.88	+50.00	330	147	476	476	5					
BPW-D17	0.8	0.8	+63.58	+51.50	+43.70	19.88	+51.00	330	147	476	476	5					
BPW-D18	0.8	0.8	+63.58	+51.50	+43.70	19.88	+51.00	330	147	476	476	5					
BPW-D19	0.8	0.8	+63.58	+51.50	+43.70	19.88	+51.00	330	147	476	476	5					
BPW-D20	0.8	0.8	+63.58	+51.50	+45.70	17.88	+51.50	298	132	430	430	5					
BPW-D21	0.8	0.8	+63.58	+51.50	+45.70	17.88	+51.50	298	132	430	430	5					
BPW-D22	0.8	0.8	+63.58	+51.50	+45.70	17.88	+51.50	298	132	430	430	5					
BPW-D23	0.8	0.8	+63.58	+51.50	+45.70	17.88	+51.50	298	132	430	430	5					
BPW-D24	0.8	0.8	+63.58	+51.50	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D25	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D26	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D27	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D28	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D29	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D30	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D31	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D32	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D33	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	298	132	430	430	5					
BPW-D34	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	183	132	315	315	5					
BPW-D35	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	183	132	315	315	5					
BPW-D36	0.8	0.8	+63.58	+57.35	+45.70	17.88	+52.00	183	132	315	315	5					
BPW-D37	0.8	0.8	+63.58	+59.55	+45.70	17.88	+52.00	278	132	410	410	5					
BPW-D38	0.8	0.8	+63.58	+59.55	+45.70	17.88	+52.00	278	132	410	410	5					
BPW-D39	0.8	0.8	+63.58	+59.55	+45.70	17.88	+52.00	278	132	410	410	5					
BPW-D40	0.8	0.8	+63.58	+59.55	+45.70	17.88	+52.50	278	132	410	410	5					
BPW-D41	0.8	0.8	+63.58	+59.55	+45.70	17.88	+52.50	278	132	410	410	5					
BPW-D42	0.8	0.8	+63.58	+59.55	+45.70	17.88	+53.00	278	132	410	410	5					
BPW-D43	0.8	0.8	+63.58	+59.55	+45.70	17.88	+53.00	278	132	410	410	5					
BPW-D44	0.8	0.8	+63.58	+59.55	+45.70	17.88	+53.00	278	132	410	410	5					
BPW-D45	0.8	0.8	+63.58	+59.55	+45.70	17.88	+53.00	278	132	410	410	5	16T32	4T32	LINKS SCHEDULE TYPE B		3.20%

Pile Mark	PILE DIAMETER		BORED PILE CUT OFF LEVEL	TENTATIVE EXCAVATED LEVEL	TENTATIVE FOUNDING LEVEL	TOTAL PILE LENGTH	TENTATIVE ROCKHEAD LEVEL	EFFECTIVE WEIGHT OF ROCK CONE&SOIL COLUMN	EFFECTIVE WEIGHT OF BORED PILE	Ru	Ra	REQUIRED ROCK SOCKET	REINFORCEMENT				
	SHAFT DIAMETER	ROCK SOCKET DIAMETER											VERTICAL		SHEAR REINFORCEMENT		STEEL RATIO
	(m)	(m)	(mPD)	(mPD)	(mPD)	(m)	(m)	(kN)	(kN)	(kN)	(kN)	(m)	1ST LAYER	2ND LAYER	1ST LAYER	2ND LAYER	
BPW-E01	0.8	0.8	+56.28	+44.85	+30.00	26.28	+36.00	274	194	468	468	4					
BPW-E02	0.8	0.8	+56.28	+44.85	+30.00	26.28	+36.00	274	194	468	468	4					
BPW-E03	0.8	0.8	+56.28	+44.85	+30.00	26.28	+36.00	274	194	468	468	4					
BPW-E04	0.8	0.8	+56.28	+44.85	+30.00	26.28	+36.00	274	194	468	468	4					
BPW-E05	0.8	0.8	+56.28	+44.85	+30.00	26.28	+36.50	274	194	468	468	4					
BPW-E06	0.8	0.8	+56.28	+44.85	+30.00	26.28	+37.00	274	194	468	468	4					
BPW-E07	0.8	0.8	+56.28	+44.85	+30.00	26.28	+37.00	274	194	468	468	4					
BPW-E08	0.8	0.8	+56.28	+44.85	+30.00	26.28	+37.00	274	194	468	468	4					
BPW-E09	0.8	0.8	+56.28	+44.85	+30.00	26.28	+37.50	274	194	468	468	4					
BPW-E10	0.8	0.8	+56.28	+44.85	+30.00	26.28	+38.00	274	194	468	468	4					
BPW-E11	0.8	0.8	+56.28	+44.85	+30.00	26.28	+38.00	274	194	468	468	4					
BPW-E12	0.8	0.8	+56.28	+44.85	+30.00	26.28	+38.00	274	194	468	468	4					
BPW-E13	0.8	0.8	+56.28	+44.85	+30.00	26.28	+38.50	274	194	468	468	4					
BPW-E14	0.8	0.8	+56.28	+44.85	+30.00	26.28	+39.00	274	194	468	468	4					
BPW-E15	0.8	0.8	+56.28	+44.85	+30.00	26.28	+40.00	274	194	468	468	4					
BPW-E16	0.8	0.8	+56.28	+44.85	+30.00	26.28	+40.00	274	194	468	468	4	16T32	9T32	LINKS SCHEDULE TYPE A		4.00%
BPW-F01	0.8	0.8	+60.19	+54.80	+40.00	20.19	+43.50	52	149	201	201	2					
BPW-F02	0.8	0.8	+61.70	+54.80	+40.00	21.70	+44.00	56	160	216	216	2					
BPW-F03	0.8	0.8	+62.43	+54.80	+40.00	22.43	+44.50	58	166	223	223	2					
BPW-F04	0.8	0.8	+63.31	+54.80	+40.00	23.31	+44.50	60	172	232	232	2					
BPW-F05	0.8	0.8	+63.31	+54.80	+40.00	23.31	+45.00	60	172	232	232	2					
BPW-F06	0.8	0.8	+63.31	+54.80	+40.00	23.31	+45.50	60	172	232	232	2					
BPW-F07	0.8	0.8	+63.53	+54.80	+40.00	23.53	+46.00	61	174	234	234	2					
BPW-F08	0.8	0.8	+63.53	+54.80	+40.00	23.53	+46.50	61	174	234	234	2					
BPW-F09	0.8	0.8	+63.53	+54.80	+40.00	23.53	+47.00	61	174	234	234	2					
BPW-F10	0.8	0.8	+63.53	+54.80	+40.00	23.53	+47.50	61	174	234	234	2					
BPW-F11	0.8	0.8	+63.53	+54.80	+40.00	23.53	+48.00	61	174	234	234	2					
BPW-G01	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.50	676	211	887	887	6					
BPW-G02	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.50	676	211	887	887	6					
BPW-G03	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.50	676	211	887	887	6					
BPW-G04	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.50	676	211	887	887	6					
BPW-G05	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.00	676	211	887	887	6					
BPW-G06	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.00	676	211	887	887	6					
BPW-G07	0.8	0.8	+63.53	+54.80	+35.00	28.53	+48.00	676	211	887	887	6					
BPW-G08	0.8	0.8	+63.53	+54.80	+35.00	28.53	+47.50	676	211	887	887	6					
BPW-G09	0.8	0.8	+63.53	+54.80	+35.00	28.53	+47.00	676	211	887	887	6					
BPW-G10	0.8	0.8	+63.53	+54.80	+35.00	28.53	+46.50	676	211	887	887	6					
BPW-G11	0.8	0.8	+63.53	+54.80	+35.00	28.53	+46.00	676	211	887	887	6					
BPW-G12	0.8	0.8	+63.53	+54.80	+35.00	28.53	+46.00	676	211	887	887	6					
BPW-G13	0.8	0.8	+63.53	+54.80	+35.00	28.53	+46.00	676	211	887	887	6					
BPW-G14	0.8	0.8	+63.53	+54.80	+35.00	28.53	+45.50	676	211	887	887	6					
BPW-G15	0.8	0.8	+63.53	+54.80	+35.00	28.53	+45.00	676	211	887	887	6					
BPW-G16	0.8	0.8	+63.53	+54.80	+35.00	28.53	+44.00	676	211	887	887	6					
BPW-G17	0.8	0.8	+63.53	+54.80	+35.00	28.53	+43.50	676	211	887	887	6					
BPW-G18	0.8	0.8	+63.53	+54.80	+35.00	28.53	+43.00	676	211	887	887	6					
BPW-G19	0.8	0.8	+63.53	+54.80	+35.00	28.53	+41.50	676	211	887	887	6					
BPW-G20	0.8	0.8	+63.53	+54.80	+35.00	28.53	+42.00	676	211	887	887	6					
BPW-G21	0.8	0.8	+63.53	+54.80	+35.00	28.53	+41.00	676	211	887	887	6	16T32	9T32	LINKS SCHEDULE TYPE A		4.00%

NOTE:
- THE TENTATIVE FOUNDING LEVELS ARE FOR INFORMATION ONLY. THE BORED PILE WALL SHOULD BE CARRIED OUT IN ACCORDANCE WITH THE ACCEPTANCE CRITERIA SPECIFIED IN THE SITE FORMATION PLANS. THE ACTUAL FOUNDING LEVELS SHOULD BE AS SHOWN IN THE AS-BUILT RECORD PLANS SUBMITTED TOGETHER WITH THE FORM BA14 CERTIFYING COMPLETION OF THE SITE FORMATION WORKS.
- THE FOUNDING LEVELS SHALL BE THE LOWEST OF THE FOLLOWING:
  (1) TENTATIVE FOUNDING LEVEL
  (2) ROCKHEAD LEVEL – REQUIRED ROCK SOCKET, IF REQUIRED ROCK SOCKET > 0.

	LINKS SCHEDULE TYPE A	
	1ST LAYER	2ND LAYER
ABOVE +49mPD	T12-200	T12-200
BELOW +49mPD	2T16-100	T12-200

LINKS SCHEDULE TYPE B	
1ST LAYER	2ND LAYER
T12-200	T12-200

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

PAUL K. F. NG
B.A. (A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

SIGNATURE OF AP/RSE/RGE

YAU LAP YAN TERRENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE: 1:200 IN A1
	DATE: JAN 2022
	DESIGNED: CCH
	DRAWN: KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED: CCH
	APPROVED: TY
DRG. TITLE: BORED PILE WALL SCHEDULE	DRG. NO: BPW-07

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

DESIGN SOIL PARAMETER

DESIGN SOIL PARAMETER

SOIL	c' (kPa)	ϕ (°)	DENSITY (kN/m³)
FILL	0	35	19
RESIDUE SOIL	4	34	19
CDG (N VALUE <100)	4	36	19
CDG (N VALUE >100)	4	37	19

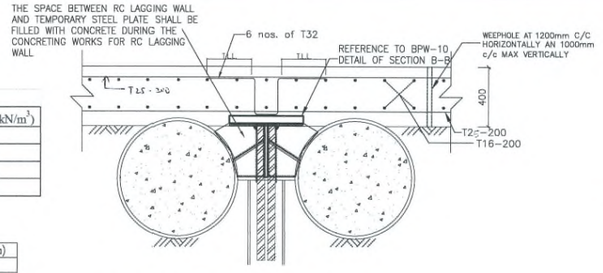
DESIGN SURCHARGE

TYPE	LOADING (kPa)
FOOTPATH	5
MARYKNOLL HOUSE (ALONG BORED PILE WALL EXCEPT BPW-P31 TO BPW-D45	70
MARYKNOLL HOUSE (ALONG BORED PILE WALL BPW-D33 TO BPW-D45	55

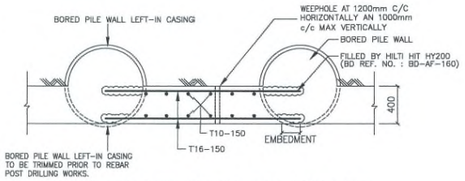
DESIGN GROUNDWATER LEVEL

DESIGN GROUNDWATER LEVEL TO BE 1/3 OF RETAINED HEIGHT, 2m ABOVE CATEGORY 1 (C) OR BETTER ROCKHEAD OR HIGHEST MEASURED GROUNDWATER LEVEL, WHICHEVER IS THE HIGHEST.

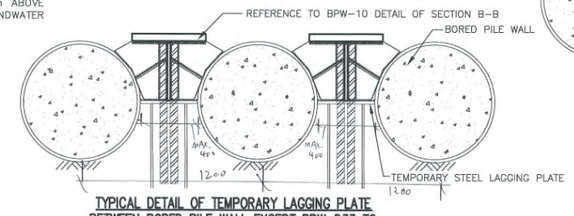
TYPE	DGWL (mPD)
TYPE A BORED PILE WALL	+50.0
TYPE B BORED PILE WALL	+55.7
TYPE C BORED PILE WALL	+55.7
TYPE D BORED PILE WALL (BPW-D01 TO BPW-D11)	+55.7
TYPE D BORED PILE WALL (BPW-D12 TO BPW-D33)	+56.8
TYPE D BORED PILE WALL (BPW-D33 TO BPW-D45)	+60.0
TYPE E BORED PILE WALL	+49.2
TYPE F BORED PILE WALL	+58.7



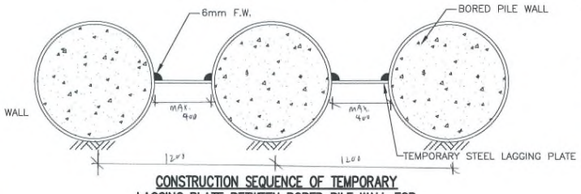
TYPICAL DETAILS FOR PERMANENT R.C. LAGGING WALL CONNECTION WITH PROPOSED BORED PILE WALL EXCEPT BPW-D33 TO BPW-D45
(N.T.S)



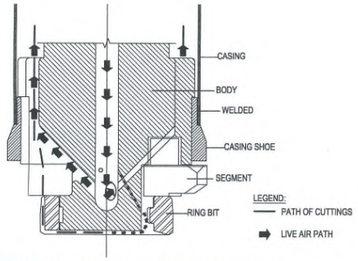
TYPICAL DETAILS FOR PERMANENT R.C. LAGGING WALL CONNECTION WITH PROPOSED BORED PILE WALL FOR BPW-D33 TO BPW-D45
(N.T.S)



TYPICAL DETAIL OF TEMPORARY LAGGING PLATE BETWEEN BORED PILE WALL EXCEPT BPW-D33 TO BPW-D45
(N.T.S)



CONSTRUCTION SEQUENCE OF TEMPORARY LAGGING PLATE BETWEEN BORED PILE WALL FOR BPW-D33 TO BPW-D45
(N.T.S)



TYPICAL DETAIL FOR "SUPER MAXBIT G-RF-MODEL" CONCENTRIC GROUND STABLE CASING SYSTEM

NOTES ON DRILL-IN BAR WITH HIT-HY200 (BD REF. BD-AF160)

1. INSTALL THE DRILL-IN BAR IN ACCORDANCE TO THE MANUFACTURER SPECIFICATION.
2. REMOVE THE CONCRETE COVER TO EXPOSE THE EXISTING REINFORCEMENT.
3. MARK THE LOCATIONS OF DRILL-IN BAR.
4. THE ADHESIVE SHALL BE TESTED IN ACCORDANCE WITH EOTA OR EAD 330087-00-0601 ON POST-INSTALLED REBAR CONNECTION.
5. FOR OVERHEAD INJECTIONS, THE ADHESIVE SHALL ALSO BE APPROVED ACCORDING TO EUROPEAN TECHNICAL ASSESSMENT (ETA). INJECTION PISTONS AND FLEXIBLE EXTENSION HOSES SHALL BE USED TO ENSURE THE CONSISTENT INJECTION.
6. PIOR TO INJECTION OF ADHESIVE, ALL DRILL HOLES SHALL BE CLEANED BY MEANS OF APPROVAED METHOD STATED IN EUROPEAN TECHNICAL ASSESSMENT (ETA) OR DILL HOLES SHALL BE FORMED BY AUTOCLEANING SOLUTION – HOLLOW DRILL BIT TO REDUCE THE HUMAN ERROR IN BOREHOLE CLEANING.
7. DRILL-IN REBAR SHALL BE TESTED ON-SITE ACCORDING TO BS5080 PART 1 FOR TENSILE LOAD BY PULL-OUT TEST. TEST LOAD SHALL NOT BE LESS THAN 1.5 TIMES THE RECOMMENDED LOAD OF THE DRILL-IN REBAR AS SPECIFIED BY MANUFACTURER
8. STRENGTH TESTS ON A REPRESENTATIVE NUMBER OF THE GROUTED REINFORCING BARS SHOULD BE CARRIED OUT AS DIRECTED BY THE REGISTERED STRUCTURAL ENGINEER TO VERIFY THE PERFORMANCE AND WORKMANSHIP OF THE GROUTED REINFORCING BARS. SAMPLING RATE SHOULD BE AT LEAST 1% OR 5 NUMBERS, WHICHEVER IS MORE, OF EACH TYPE, SIZE AND EMBEDMENT OF THE GROUTED REINFORCING BARS INSTALLED. THE STRENGTH TESTS SHOULD BE CARRIED OUT BY A RECOGNIZED LABORATORY INDEPENDENT OF THE CONTRACTOR.

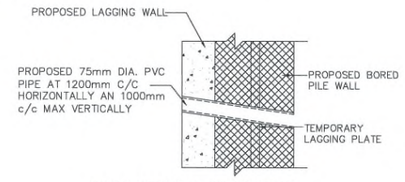
DRILL-IN BAR WITH HILTI HY-200	BAR SIZE
REBAR DIA. (mm)	16mm
HOLE DIA. (mm)	20mm
MIN.EMBEDMENT (mm)	200mm
RECOMMENDED LOAD (kN)	23.9kN
TEST LOAD	35.9kN

METHOD STATEMENT OF ALL BORED PILE WALL CONSTRUCTION

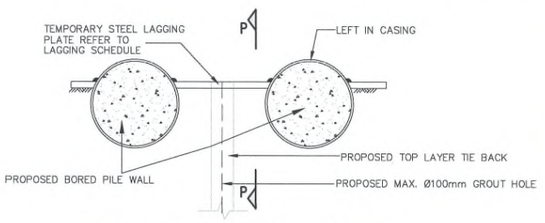
1. BEFORE THE COMMENCEMENT OF THE BORED PILE WALL CONSTRUCTION, PREDRILL-HOLES TO BE CARRIED OUT AT PILE POSITION TO VERIFY THE FOUNDING LEVEL.
2. SET OUT THE BORED PILE WALL LOCATION CORRECTLY ON SITE.
3. FOR 800mm DIA. BORED PILE WALL, DRILLING RIG WITH RING BIT DRILLING METHOD SHALL BE USED IN CONJUNCTION WITH A CRANE FOR THE EXCAVATION OF SOIL/ ROCK AND INSTALLATION OF THE REQUIRED DIAMETER STEEL CASING INTO THE GROUND.
4. A CONSTANT HEAD EQUAL TO GROUND LEVEL OF DRILLING FLUID SHALL BE MAINTAINED SO AS TO CREATE A "BALANCED HEAD CONDITION" TO PREVENT ANY INGRESS OF MATERIALS AT THE BOTTOM OF CASING.
5. THE STEEL CASING SHALL BE EXTENDED BY WELDING ON ADDITIONAL CASING AND BE DRIVED DOWN BY DRILLING RIG.
6. VERTICALITY OF THE CASING SHALL BE MONITORED BY MEANS OF SPIRIT LEVEL FROM TIME TO TIME.
7. TOLERANCE FOR BORE PILES WALL :
   THE MAX. DEVIATION OF THE CENTRE OF THE HEAD OF EACH PILE FROM THE DESIGNED CENTRE POINT SHALL NOT BE MORE THAN 50mm IN ANY DIRECTION. THE MAX. DEVIATION FROM THE VERTICAL AXIS OF THE PILE THROUGH THE CENTROID OF THE FINISHED PILE SHALL NOT BE MORE THAN 1 IN 100. THE BORED PILE WALL SHALL IN NO CASE LESS THAN 3M FROM FROM THE MTR TUNNELS.
8. THE MUDDY WATER WITHIN THE STEEL CASING SHALL BE CLEANED BY AIR LIFTING.
9. THE CONTRACTOR SHALL CARRY OUT KODEN PILE MONITORING TESTS ON ALL (100%) BORED PILES WALL OR SIMILAR ELECTRONIC CALIBRATION TEST METHOD APPROVED BY THE ENGINEER TO CHECK THE DIMENSION, ALIGNMENT AND INTEGRITY OF THE PILE ROCK SOCKET AND BELLOUT. THE CONTRACTOR SHALL SUBMIT THE PROPOSED METHOD FOR APPROVAL PRIOR TO COMMENCEMENT OF THE WORKS. A COPY OF THE TEST RESULTS SHALL BE PROVIDED TO THE ENGINEER IMMEDIATELY AFTER TESTING AND SUBMITTED TO BD TOGETHER WITH FORM BA14.
10. STEEL REINFORCEMENT SHALL BE PRE-FABRICATED INTO CAGES AND LOWERED INTO THE PERMANENT STEEL CASING.
11. FINAL CLEANING SHALL BE ACHIEVED BY MEANS OF AIR LIFTING METHOD USING HIGH PRESSURE AIR COMPRESSORS.
12. THE MUDDY WATER WITHIN THE STEEL CASING SHALL BE CLEANED AND DELIVERED INTO A DESILTING TANK BEFORE DISCHARGED INTO DRAINS.
13. THE PILE SHAFT SHALL THEN BE CONCRETED USING HIGH SLUMP TREMIE CONCRETE THROUGH TREMIE PIPE DISPLACING FLUID UPWARDS.
14. THE BASE OF THE TREMIE PIPE SHALL BE KEPT AT A MINIMUM DEPTH OF APPROX. 3m BELOW THE SURFACE OF THE CONCRETE.
15. CONCRETING SHALL BE CARRIED OUT IN ONE CONTINUOUS OPERATION UNTIL 2.0m ABOVE THE CUT-OFF LEVEL OR EXISTING GROUND WHICHEVER IS LOWER FOR THE FOLLOWING BPW, OTHERWISE SHALL BE 5.0m ABOVE THE CUT OF LEVEL OR EXISTING GROUND WHICHEVER IS LOWER . THE TREMIE PIPE WILL BE EXTRACTED AFTER CONCRETING.

QUALITY CONTROL NOTES ON WELDING

1. ALL WELDED JOINTS SHALL BE TESTED IN ACCORDANCE WITH THE REQUIREMENT IN CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2011.
2. NON-DESTRUCTIVE TESTS AND INSPECTION ON WELDS SHALL BE CARRIED OUT BY QUALIFIED PERSONS WHO CAN PROVIDE EVIDENCE OF HAVING BEEN TRAINED AND ASSESSED FOR COMPETENT BY A RECOGNIZED AUTHORITY.
3. NON-DESTRUCTIVE TESTS AND INSPECTIONS ON WELDS SHALL BE CARRIED OUT AS FOLLOWS:
   a. VISUAL INSPECTION IN ACCORDANCE WITH BS EN 970:1997
   b. MAGNETIC PARTICLE INSPECTION (M.P.I.) IN ACCORDANCE WITH BS EN 1290:1998
   c. ULTRASONIC TESTS IN ACCORDANCE WITH BS EN 1714:1998
4. FREQUENCY OF NON-DESTRUCTIVE TESTS AND INSPECTION ON WELDS SHALL BE:
5. THE ACCEPTANCE LEVELS OF NON-DESTRUCTIVE TESTS AND INSPECTION ON WELDS SHALL BE IN ACCORDANCE WITH CODE OF PRACTICE FOR STRUCTURAL USE OF STEEL 2011.
   a. ALL WELDS – 100% VISUAL INSPECTION PRIOR TO NON-DESTRUCTIVE TEST
   b. FILLET WELDS WITH LEG LENGTH 15mm –10% ULTRASONIC TESTS
   c. PARTIAL PENETRATION BUTT WELDS – 20% ULTRASONIC TESTS AND M.P.I.
   d. FULL PENETRATION BUTT WELDS – 100% ULTRASONIC TESTS AND M.P.I.
   e. All SITE WELDS ON THE PRINCIPLE MEMBERS AND CONNECTION OF THE PRINCIPLE MEMBER – 100% ULTRASONIC TEST
6. THE PROPOSED WELDING STRENGTH IS 250N/mm² WITH STEEL GRADE TO BE S355 AND ELECTRODE CLASSIFICATION TO BE 42N/mm²

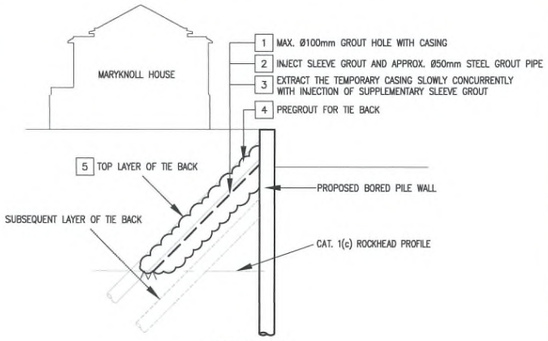


TYPICAL DETAILS OF WEEPHOLES IN BORED PILE WALL
(N.T.S.)



TYPICAL DETAILS FOR PREGROUT FOR TIE BACK

NOTES :
1. NO PREGROUT SHOULD BE INJECTED CONCURRENTLY WITHIN 5m APART.



SECTION P-P
(N.T.S.)

SEQUENCE OF INSTALLATION:
1. CARRY OUT ROTATORY DRILLING WITH CASING FOR THE MAX. Ø100mm GROUT HOLE.
2. INJECT SLEEVE GROUT, UPON OVERFLOW IS OBSERVED, INSTALL APPROX. Ø50mm STEEL GROUT PIPE TO THE BOTTOM OF THE GROUT HOLE.
3. UPON SLEEVE GROUT ACHIEVE INITIAL SET, EXTRACT THE TEMPORARY CASING SLOWLY CONCURRENTLY WITH INJECTION OF SUPPLEMENTARY SLEEVE GROUT.
4. CARRY OUT PREGROUT FOR TIE BACK.
5. INSTALL TIE BACK.

NOTES ON PREGROUT FOR TIE BACK INSTALLATION:

1. GROUT HOLE DRILL MAX. 100mm DIA HOLES SHALL BE DRILLED BY ROTARY METHOD WITH TEMPORARY STEEL CASING ALONG TOP LAYER OF TIE BACK AND GROUT THE SOIL FROM ROCK HEAD LEVEL TO GROUND LEVEL BY APPROX. 50 mm O.D. STEEL GROUT PIPES WITH GROUTING ORIFICES COVERED WITH RUBBER MANCHETTES. THE BOTTOM END OF THE TUBES SHALL BE SEALED.
2. ANNULAR SPACE BETWEEN DRILL HOLE AND GROUT PIPES SHALL BE FILLED WITH CEMENT/WATER SLEEVE GROUT. SLEEVE GROUT SHALL BE 1:10:20 BY WEIGHT OF BENTONITE, CEMENT AND WATER.
3. SOIL GROUTING
   BENTONITE CEMENT GROUT SHALL BE INJECTED INTO EACH GROUT HOLE USING A DOUBLE PACKER AT 1000mm INTERVAL IN SUCCESSIVE PHASES FROM BOTTOM UP TO GROUND LEVEL.
   THE PROVISIONAL PROPORTIONS FOR 1 m³ GROUT SHALL BE AS FOLLOWS:
   BENTONITE 35 kg CEMENT 350 kg WATER 870 LITRES (APPROX)
   GROUT SHALL BE STOPPED WITH ANY OF THE FOLLOW CRITERIA IS ATTAINED:
   a) GROUTING PRESSURE REACHES THE OVERBURDEN PRESSURE PLUS 20kPa AND MAINTAINED FOR 2-5 MINUTES GROUT INTAKE. THE OVERBURDEN PRESSURE IS DEFINED AS 20 kPa PER METRE DEPTH.
   b) BENTONITE CEMENT GROUT INTAKE REACHES 150 LITRES PER METER RISE WITHOUT REACHING THE LIMITING GROUT PRESSURE IN (a). THE ACTUAL GROUT INTAKE SHALL BE ACCEPTED BY ENGINEER ON SITE IN THE EVENT THAT CRITERION (b) IS MET A PRESSURE BELOW CRITERION (a) TO ALLOW TIME FOR THE GROUT TO ACHIEVE AN INITIAL SET AND THEN REGROUT THE HOLE TO THE CRITERIA (a) USING THE SAME SEQUENCE.
4. ACHIEVE AN INITIAL SET AND THEN REPEAT THE PROCEDURE CORRESPONDING PHASE OF GROUTING. FOLLOWING COMPLETION OF GROUTING, GROUT PIPES SHALL BE FLUSHED AND MAINTAINED FOR RE-GROUTING.
5. GROUTING RECORD INCLUDING DRILLING, TAM INSTALLATION, GROUT INTAKE AND GROUT PRESSURES ACHIEVED SHALL BE SUBMITTED TO THE AP/RSE/RGE FOR ACCEPTANCE.
6. ALL GROUT HOLES OR TAM PIPES SHALL BE THOROUGHLY FLUSHED AFTER THE COMPLETION OF ANY PHASE OF GROUTING FOR REGROUTING.

NOTES ON EXISTING SERVICES, UTILITIES AND STRUCTURES

1. BEFORE CONSTRUCTION COMMENCES, THE CONTRACTOR SHALL CONSULT THE VARIOUS SERVICES AND UTILITY AUTHORITIES FOR THE EXTENT OF WORKS TO BE CARRIED OUT.
2. THE CONTRACTOR SHALL EXERCISE DUE CARE DURING THE WORKS ON SITE TO AVOID CAUSING DAMAGE TO ADJACENT STRUCTURES PAVEMENT, UTILITIES/SERVICES, PRIVATE AND GOVERNMENT PROPERTIES.
3. SHOULD ANY DAMAGE OCCUR TO THE ADJACENT STRUCTURES, PAVEMENT, UTILITIES/SERVICES, PRIVATE AND GOVERNMENT PROPERTIES DUE TO THE CONTRACTOR'S WORKS, THE CONTRACTOR SHALL BE RESPONSIBLE FOR ANY COST INCURRED FROM THE DAMAGE. THE CONTRACTOR SHALL REPAIR, REINSTATE AND MAKE GOOD ANY DAMAGE DUE TO THE CONTRACTOR'S WORKS TO THEIR ORIGINAL CONDITIONS OR TO THE SATISFACTION OF THE CM, UNLESS OTHERWISE SPECIFIED.

NOTES ON STRUCTURAL STEELWORK

1. ALL STRUCTURAL STEELWORK SHALL BE CARRIED OUT IN ACCORDANCE WITH CODE OF PRACTICE FOR THE STRUCTURAL USE OF STEEL 2011.
2. ALL LEVEL SHOWN ARE IN METERS AND OTHER DIMENSIONS SHOWN ARE IN MILLIMETERS UNLESS OTHERWISE STATED.
3. ALL STRUCTURAL STEEL SECTION SHALL BE WELDABLE STRUCTURAL STEEL TO BS EN 10025:2019 FOR STEEL OTHER THAN HOLLOW SECTION AND BS EN 10210:2019 FOR HOLLOW SECTION.
4. SHOULD THE CONTRACTOR BE UNABLE TO OBTAIN THE SPECIFIED STEEL SECTION, THEY SHALL SUBMIT ALTERNATIVE SECTIONS OF AT LEAST EQUAL STRENGTH AND PROPERTIES TO THE ENGINEER. FOR APPROVAL. WHERE JOINT DETAILS HAVE TO BE MODIFIED AS A RESULT, JOINT DETAILS AND SHOP DRAWING ALSO HAVE TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL BEFORE WORK IS PUT IN HAND.

RECEIVED 27 JUL 2022

NOTES ON PROTECTION OF EARTHWORKS

1. SURFACE WATER FLOWING INTO AND OUT OF THE SITE SHALL BE INTERCEPTED AND CONDUCTED FROM THE SITE TO AN INDICATED SAFE DISCHARGE POINT. AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE DRAINAGE, CHANNELS AND ACCESSIBLE CATCH PIT SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS.
2. WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE, A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.
3. DURING EXCAVATION, A METHOD OF WORKING SHALL BE ADOPTED IN WHICH THE MINIMUM AMOUNT OF BARE SOIL IS EXPOSED AT ANY TIME. EXCAVATION TO FORM THE FINAL FACE SHALL BE FOLLOWED UP IMMEDIATELY WITH SURFACE PROTECTION AND DRAINAGE WORKS AND THE FACE PANEL SIZE SHALL BE SMALL ENOUGH TO PERMIT THIS.
4. WHERE TEMPORARY BARE EARTH SLOPE FACES ARE UNAVOIDABLE, THEY SHALL BE PROTECTED WITH HEAVY DUTY SHEETING ADEQUATELY SECURED AT THE EDGES, SEALED AT THE CREST, AND LAPPED AT JOINTS. WHERE SLOPE FACES ARE TO BE TEMPORARILY EXPOSED FOR MORE THAN TWO WEEKS, TEMPORARY DRAINS SHALL BE INSTALLED IN ADDITION TO PROVISION OF HARD SURFACING.
5. TRENCHES ON/OR ADJACENT TO SLOPES SHALL BE EXCAVATED WITH EXTREME CARE IN SHORT SECTIONS AT A TIME. PRECAUTIONS SHALL ALWAYS BE TAKEN TO PREVENT WATER ENTERING AND CONNECTING IN THE TRENCHES.
6. ALL EARTHWORKS SHALL BE GRADED AN SEALED TO ENSURE RUN-OFF AND TO AVOID PONDING.
7. EARTHWORKS SHALL BE SEALED TO THE SATISFACTION OF THE CM OR THE ENGINEER TO PREVENT INFILTRATION AND EROSION.
8. ALL TEMPORARY DRAINAGE WORKS SHALL BE PROVIDED BY CONTRACTOR AND SHALL BE KEPT CLEAR OF DEBRIS.

"SUPER MAXBIT G-RF-MODEL" GROUND STABLE CASING SYSTEM

IN LINE WITH THE NEW REQUIREMENTS FOR GROUND STABILITY AROUND INSTALLED CASINGS, SUPER MAXBIT SYSTEM HAVE BEEN ADOPTED TO INSTALL Min.813mm O/D CASING WITH ABSOLUTE MINIMAL DISTURBANCE TO THE SURROUNDING GROUND/SUB-STRUCTURE OUTSIDE THE O/D OF THE CASING. TO DO THIS THEIR SYSTEM HAS THE FOLLOWING FEATURES :

1. THE CASING SHOE FORMS A SEAL AROUND THE END OF THE CASING PREVENTING AIR AND CUTTING PASSING AROUND THE OUTSIDE OF THE CASING.
2. THE CASING & CASING SHOE ARE CARRIED DOWN THE HOLE AS A WHOLE AT THE SAME TIME.
3. ONLY 3.8% OF THE LIVE AIR PASSING INTO THE SYSTEM ACTUALLY TRAVELS THROUGH THE RING TO HAVE CONTACT WITH THE GROUND. THE REMAINING 96.2% OF THE AIR TRAVELS THROUGH PASSAGES IN THE BODY AND IS THEN INJECTED INTO THE CASING AND CASING SHOE BORE. THIS AIR THEN RESULTS IN A VACUUM EFFECT, SUCKING THE CUTTING AWAY FROM THE CUTTING HEAD AND ACCELERATING THEIR "UP HOLE VELOCITY" INSIDE THE BORE OF THE CASING.
4. IN ADDITION TO THE VACUUM METHOD OF CUTTING REMOVAL THE COSS60RS INCORPORATES A NEW SHAPE OF CASING SHOE THAT PREVENTS AIR ESCAPING AROUND THE CASING AND CAUSING OVER-BREAK TO THE GROUND

PRECAUTIONARY MEASURES TO PREVENT THE OCCURRENCE OF OVER BREAK DURING PREBORING

1. A PROCEDURE SHALL BE CARRIED OUT TO MONITOR THE CONDITION OF OVER BREAK. IF THE DRILL BIT IS FOUND NOT TO PROPAGATE AFTER A CONSIDERABLE AMOUNT OF DRILLING, THE OPERATOR OF THE DRILLING RIG SHALL STOP THE DRILLING PROCESS AND INFORM THE ENGINEER IMMEDIATELY. THE RGE/RSE SHALL REVIEW THE GEOLOGY OF THE SPECIFIC LOCATION. PROPOSAL TO LIMIT ANY OVER BREAK OF SOIL SHALL BE SUBMITTED TO AND AGREED BY THE RSE/RGE PRIOR TO ANY FURTHER DRILLING WORKS MAY COMMENCE.
2. SHOULD ANY UNDUE OVER BREAK OF SOIL OBSERVED DURING THE DRILLING OPERATIONS, THE DRILLING AT THAT LOCATION SHOULD BE STOPPED AND THE RSE SHALL BE INFORM IMMEDIATELY. THE MONITORING DATA AND METHOD OF PREBORING SHALL BE REVIEWED. PROPOSAL TO LIMIT ANY FURTHER OVER BREAK OF SOIL SHALL BE SUBMITTED AND AGREED WITH RSE PRIOR TO ANY FURTHER DRILLING WORKS MAY COMMENCE.

NOTES ON PREGROUT FOR BORED PILE WALL INSTALLATION:

1. GROUT HOLE DRILL 75 mm DIA HOLES SHALL BE DRILLED BY ROTARY METHOD ALONG BORED PILE WALL AND GROUT THE SOIL FROM 1m BELOW ROCK HEAD LEVEL TO GROUND LEVEL BY APPROX. 50 mm O.D. TUBE-A-MANCHETTE GROUT PIPES WITH GROUTING ORIFICES COVERED WITH RUBBER MANCHETTES. THE BOTTOM END OF THE TUBES SHALL BE SEALED.
2. ANNULAR SPACE BETWEEN DRILL HOLE AND TAM PIPES SHALL BE FILLED WITH CEMENT/WATER SLEEVE GROUT. SLEEVE GROUT SHALL BE 1:10:20 BY WEIGHT OF BENTONITE, CEMENT AND WATER.
3. SOIL GROUTING
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REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

PAUL K. F. NG
B.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

SIGNATURE OF AP/RSE/RGE

YAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

PROJECT	PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY
SCALE	1:400 IN A1
DATE	JAN 2022
DESIGNED	CCH
DRAWN	KUEN
DRG. TYPE: SITE FORMATION WORKS	
CHECKED	CCH
APPROVED	TY
DRG. TITLE: NOTES	
DRG. NO	BPW-08

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

BD REF NO: 6/3008/22(HW)

GENERAL NOTES FOR BORED PILE WALL (ALL) AND CAPPING BEAM

ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL AND BUILDING SERVICES DRAWINGS. SETTING OUT TO BE IN ACCORDANCE WITH RELEVANT ARCHITECTURAL DRAWINGS.

1. ALL STRUCTURAL DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECTURAL AND BUILDING SERVICES DRAWINGS. SETTING OUT TO BE IN ACCORDANCE WITH RELEVANT ARCHITECTURAL DRAWINGS.
2. ALL DESIGN IS IN ACCORDANCE WITH "HONG KONG(CONSTRUCTION) REGULATION
3. THE CONTRACTOR SHALL ESTABLISH THE BASE SETTING OUT POINTS AND LINES FOR THE ENGINEERS.
4. THE CONTRACTOR IS ADVISED TO INSPECT THE CONDITIONS ON SITE AND TO RECORD THE EXISTING LANDSCAPING FEATURES AND UTILITIES WITHIN AND CLOSE TO THE EXCAVATION AREA. THE CONTRACTOR SHALL CARRY OUT PRE-CONSTRUCTION DIVERSION OF THE EXISTING UNDERGROUND UTILITIES WITHIN THE WORK AREA.
5. ALL REINFORCEMENTS ARE HIGH TENSILE DEFORMED STEEL BAR (T) AND MILD STEEL ROUND BAR (R) COMPLYING WITH CS2 : 2012 WITH MINIMUM YIELD STRESS AS FOLLOWS : HIGH TENSILE DEFORMED STEEL BAR = 500 N/mm²
6. CONCRETE MIX FOR ALL BORED PILES TO BE GRADE C45 COMPLYING WITH HONG KONG BUILDING (CONSTRUCTION) REGULATION CONCRETING METHOD TO BE BY TREMIE. A REDUCTION FACTOR OF 0.8 SHALL BE APPLIED FOR CONCRETE STRENGTH. CONCRETE MIX FOR ALL LAGGING WALL & CAPPING BEAM TO BE GRADE C45 WITH HONG KONG (CONSTRUCTION) REGULATION.
7. CUT-OFF LEVEL AND TENTATIVE FOUNDING LEVEL FOR ALL PILES ARE SHOWN IN THE BORED PILE WALL SCHEDULE.
8. COVER TO ALL REINFORCEMENT FOR BORED PILES TO BE 75mm.
9. ALL DIMENSIONS ARE IN mm.
10. ALL LEVELS ARE IN mPD.
11. ESTIMATED PILE LENGTHS GIVEN IN THE PILING SCHEDULE ARE MEASURED FROM THE CUT-OFF LEVEL OF INDIVIDUAL PILES.
12. ESTIMATED PILE LENGTHS GIVEN ARE TENTATIVE. ACTUAL PILE LENGTH FOR INDIVIDUAL PILES SHALL BE VERIFIED ON SITE.
13. THE TENTATIVE FOUNDING LEVELS OF BORED-PILES ARE APPROXIMATE AS DETERMINED FROM THE BOREHOLE INFORMATION.
14. CONCRETE SHALL BE COMPILED WITH CS1 : 2010.
15. MIN. ϕ813 LEFT-IN CASING IS DISREGARDED FROM PERMANENT DESIGN.

NOTES ON FOUNDING CRITERIA AND PREDRILLING

16. 5 kPa IS ALLOWED ON TOP OF CAPPING BEAM.

ALL BORED PILES SHOULD BE FOUNDED AT THE PRESCRIBED LEVELS WHICH ARE DETERMINED BY THE FOLLOWING CRITERIA:

1. THE FOUNDING STRATUM SHALL BE SLIGHTLY TO MODERATELY DECOMPOSED MODERATELY STRONG GRANITE OR VOLCANIC ROCK OF MATERIAL WEATHERING GRADE III OR BETTER, AND WITH NOT LESS THAN 85% TCR OF THE DESIGNATED GRADE, WHICH HAS A MINIMUM UCS OF ROCK MATERIAL NOT LESS THAN 25MPa (OR AN EQUIVALENT POINT LOAD INDEX STRENGTH PL_{50} NOT LESS THAN 1MPa.THE ALLOWABLE BEARING CAPACITY SHOULD BE 5000 kPa (WITHOUT WIND) AND 6250kPa (WITH WIND).
2. PRE-DRILLING SHALL BE CARRIED OUT SUCH THAT THE EVERY PILE SHALL BE WITHIN 5m DISTANCE FROM A PRE-DRILLED HOLES. THE PRE-DRILLING SHALL BE SUNK TO AT LEAST 5m BELOW THE ROCK HEAD OR THE DESIGNED LENGTH OF THE ROCK SOCKET OF THE PILE INTO CONTINUOUS CATEGORY 1(c) ROCK OR BETTER WITH TCR > 85% WHICHEVER IS DEEPER.
3. PRIOR TO THE COMMENCEMENT OF BORED PILE WORKS, PRE-DRILLING RECORDS SHALL BE SUBMITTED TO THE SATISFACTION OF THE RSE. IN CASE CHANGE IN FOUNDING LEVEL IS REQUIRED, CORRESPONDING AMENDMENT SHALL BE SUBMITTED TO BD FOR APPROVAL.
4. THE ALLOWABLE BOND BETWEEN ROCK AND CONCRETE SHOULD BE 700 kPa UNDER COMPRESSION OR TRANSIENT TENSION, AND 350kPa UNDER PERMANENT TENSION.

NOTES ON MINOR IMPERFECTION OF PILE / ROCK INTERFACE

1. SHOULD ANY SEDIMENT AND/OR SEGREGATION LESS THAN 50mm THICK BE FOUND AT THE CONCRETE / ROCK INTERFACE DURING THE INTERFACE PROOF DRILLING. REMEDIAL WORKS BY MEANS OF PRESSURE GROUTING SHALL BE CARRIED OUT.
2. THE PILE BASE SHOULD BE CLEANED BY HIGH WATER JETTING WITH MINIMUM JET PRESSURE OF 200 BARS PRIOR TO PRESSURE GROUT.
3. THE GROUT SHOULD BE CEMENT GROUT AND THE GROUT STRENGTH SHOULD NOT BE LESS THAN THE CONCRETE STRENGTH OF BORED PILES.
4. THE GROUT PRESSURE SHALL NOT BE LESS THAN 25 BAR AND SHALL BE MAINTAINED FOR AT LEAST 5 MINUTES UNTIL NO SIGNIFICANT GROUT INTAKE IS NOTED.
5. DETAILED METHOD STATEMENT FOR THE GROUTING WORKS SHALL BE SUBMITTED BY CONTRACTOR TO THE RSE FOR HIS ACCEPTANCE PRIOR TO CARRYING OUT THE GROUTING WORKS.THE GROUTING WORKS SHALL BE SUPERVISED BY THE RSE AND ALL RELEVANT RECORDS SHALL BE KEPT ON SITE FOR INSPECTION AT ALL TIMES.
6. FULL DETAILS OF THE REMEDIAL GROUTING WORKS INCLUDING IDENTIFICATION OF THE PILES FOR GROUTING, NATURE AND THICKNESS OF THE SEDIMENT/SEGREGATION DISCOVERED, EFFECTIVENESS OF FLUSHING AND GROUTING WORKS, GROUTING RECORDS AND GROUT CUBE TEST REPORTS SHALL BE INCORPORATED IN THE PILING REPORTS TO BE SUBMITTED TO THE BUILDING AUTHORITY UPON COMPLETION OF THE PILING WORKS.

RECEIVED BY BUILDING AUTHORITY 26 APR 2024

PRECAUTIONARY MEASURES FOR PREBORING METHOD

1. THE AMOUNT OF AIR SUPPLY TO LIMIT THE PRESSURE OF DRILLINGS SHOULD BE MONITORED.
2. THE ADVANCEMENT RATE OF DRILL BIT SHOULD BE MONITORED DURING THE BORING.
3. OVERBREAK SHOULD NOT BE ALLOWED.
4. THE DRILL BIT SHOULD BE ADVANCED SIMULTANEOUSLY WITH THE STEEL CASING.

CONSTRUCTION SEQUENCE OF LAGGING WALL

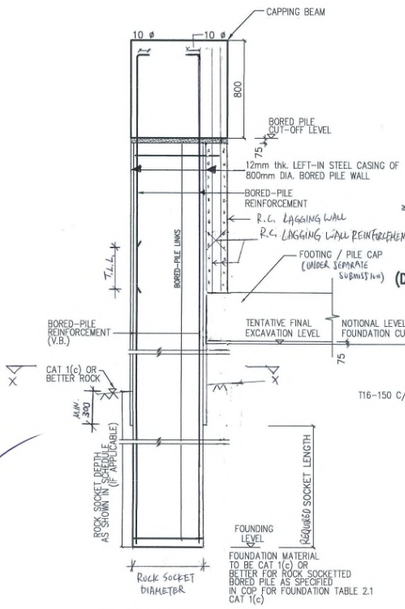
1. EXCAVATE THE SOIL IN FRONT OF PROPOSED BORED PILE WALL TO PROPOSED STAGE EXCAVATION LEVEL.
2. FIX THE STEEL PLATE IN POSITION.
3. LAGGING SHALL BE INSTALLED AS SOON AS PRACTICABLE BUT IN NO CASE EXCEED 1000mm INTERVAL FOR EXCAVATION IN SOIL.

CONTINGENCY PLAN FOR SIGNIFICANT GROUND LOSS

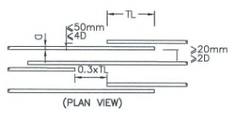
1. IN CASE SIGNIFICANT GROUND LOSS IS OBSERVED DURING EXCAVATION, EXCAVATION SHALL BE SUSPENDED TO PREVENT ANY UNDUE MOVEMENT.
2. RE-GROUTING SHALL BE CARRIED OUT ALONG THE AREA WITH SIGNIFICANT GROUND LOSS. GROUT MIX SHALL REFER TO FIRST PHASE OF GROUTING OF GROUT CURTAIN.
3. RC SHALL ALSO BACKFILL ANY BARE SOIL FACE EXPOSED BEHIND SOLDIER PILES WITH CEMENT GROUT ALONG THE AREA WITH SIGNIFICANT GROUND LOSS.
4. EXCAVATION SHALL NOT RESUME UNTIL RE-GROUTING AND INSTALLATION OF LAGGING WALL ALONG THE EXPOSED SURFACE ALONG THE AREA WITH SIGNIFICANT GROUND LOSS ARE COMPLETED.

NOTES ON REMOVING UNDERGROUND OBSTRUCTIONS

1. OVERCOME UNDERGROUND OBSTRUCTION BY USING FOR 800mm DIA. BORED PILE WALL.
2. THE CONTRACTOR SHALL SUBMIT DETAILS OF THE DRILLING SYSTEM FOR THE ENGINEER'S APPROVAL BEFORE ANY WORKS COMMENCE.



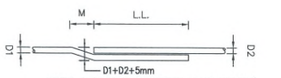
BORED-PILE WALL DETAILS



(PLAN VIEW)

DETAILS OF LAPS AND ADJACENT LAPS

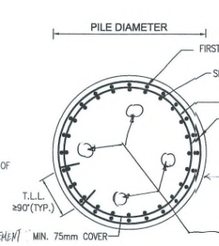
(N.T.S.)



NOTES: D=D1 OR D2 (WHICHEVER IS THE SMALLER)

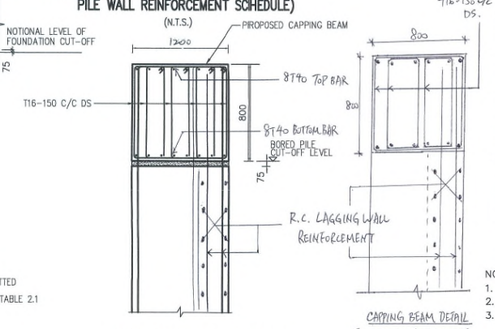
TYPICAL DETAILS OF BAR LAPPING

(N.T.S.)



SECTION X-X

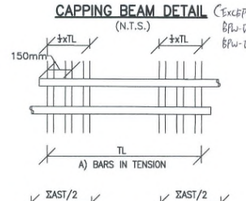
(DETAILED REINFORCEMENT REFER TO BORED PILE WALL REINFORCEMENT SCHEDULE)

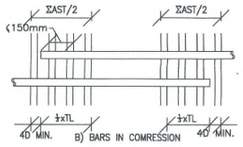


CAPPING BEAM DETAIL (EXCEPT BPW-033 TO BPW-045)

(N.T.S.)

CAPPING BEAM DETAIL FOR BPW-033 TO BPW-045 (N.T.S.)





TRANSVERSE REINFORCEMENT FOR LAPPED SPLICES

(N.T.S.)

NOTES ON PRE-DRILLING

1. PREDRILLING REPORT SHALL BE SUBMITTED TO BD FOR THE ENGINEER'S REVIEW.
2. PRE-DRILLING SHALL BE CARRIED OUT SUCH THAT THE TIP OF BORED PILE (DESIGNED TO BE SOCKETTED INTO CATEGORY 1(C) ROCK AS STIPULATED IN THE CoP FOR FOUNDATIONS) SHOULD BE WITHIN 5m DISTANCE FROM A PRE-DRILLING HOLE. WHERE THE ROCKHEAD LEVEL VARIED SIGNIFICANTLY, EXTRA BOREHOLE SHALL BE ADDED AS AGREED BY THE AP/RSE/RGE.
3. METHOD OF PREDRILLING:
   A). ROTARY DRILLING METHOD SHALL BE ADOPTED. NO PERCUSSIVE DRILLING IS ALLOWED.
   B). WASH BORING THROUGH SOIL STRATA WITH CASING ADVANCED TO ROCKHEAD.
   C). CONTINUOUS CORE SAMPLES SHALL BE RECOVERED WHEN DRILLING THROUGH ROCK.
   D). DOUBLE-TUBE CORE BARREL SHALL BE USED WHEN CORING THROUGH GRADE III OR BETTER ROCK IF NECESSARY TRIPLE-TUBE CORE BARREL SHALL BE USED AS AGREED BY THE AP/RSE. THE TRIPLE-TUBE BORE BARREL SHALL BE OF NON-RETRACTABLE TYPE WITH THIN WALL SPLIT TYPE INNER TUBE OF WHICH THE DIAMETER OF CORE SAMPLE OBTAINED SHALL NOT BE LESS THAN 64mm. DETAILS OF CORE BARREL, DRILL BIT AND DRILLING FLUID SHALL BE SUBMITTED TO THE 'AP/RSE/RGE FOR APPROVAL PRIOR TO COMMENCEMENT OF THE PREDRILLING WORK.
4. CORES SHALL BE CAREFULLY REMOVED FROM THE CORE BARRELS USING HYDRAULIC PRESSURE. NO HAMMERING WILL BE ALLOWED DURING THE REMOVAL OF CORES FROM THE CORE BARREL.
5. THE CONTRACTOR SHALL PROPOSE THE FOUNDING LEVEL OF THE BORED PILE
6. DRILLHOLES SHALL BE AT LEAST 5m INTO CATEGORY 1(C) ROCK AS STIPULATED IN THE COP FOR FOUNDATIONS.

NOTES FOR STRUCTURAL CONCRETE

1. THESE NOTES ARE TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S DRAWINGS, ENGINEER'S DRAWINGS AND SPECIFICATIONS.
2. THE REACTIVE ALKALI OF CONCRETE EXPRESSED AS THE EQUIVALENT SODIUM OXIDE PER CUBIC METRE OF CONCRETE SHOULD NOT EXCEED 3.0kg WHEN DETERMINED IN ACCORDANCE WITH THE PNAP APP-74.
3. THE REINFORCED CONCRETE ELEMENT DESIGNS OF THE BORED PILE WALL ARE CARRIED OUT TO CODE OF PRACTICE FOR STRUCTURAL USE OF CONCRETE 2013. PARTIAL LOAD FACTORS SHALL BE IN ACCORDANCE WITH TABLE 2.1.
4. REINFORCEMENT IS TO BE HIGH YIELD (T) OR MILD STEEL (R) AS SPECIFIED ON THE DRAWINGS AND IS TO COMPLY WITH CS2. CHARACTERISTIC STRENGTH OF HIGH YIELD (T) BARS TO BE AT LEAST 500N/mm .(GRADE 500B)
5. RADII AND BENDS IN REINFORCEMENT TO BE IN ACCORDANCE WITH THE BUILDING (CONSTRUCTION) REGULATIONS.
6. CONCRETE MIX FOR ALL BORED PILE WALL TO BE GRADE C45 DESIGN MIX TREMIE CONCRETE WITH MIN. 175mm SLUMP, COMPLYING WITH HONG KONG BUILDING (CONSTRUCTION) REGULATION. SAMPLE AND TESTING OF CONCRETE SHALL BE IN ACCORDANCE WITH METHOD SPECIFIED IN CS1:2010.

NOTES OF TENSION ANCHORAGE LENGTH AND LAP LENGTH

1. UNLESS NOTED OTHERWISE, MINIMUM LAP LENGTHS AND MINIMUM ANCHORAGE LENGTHS OF BEAM BARS AND COLUMN BARS SHALL COMPLY WITH CODE OF PRACTICE FOR STRUCTURAL USE OF CONCRETE 2013 OR BE AS FOLLOW, WHICHEVER IS THE GREATER.

(A) GENERAL CASE

a) MINIMUM TENSION ANCHORAGE LENGTH (T.A.L.)

HIGH YIELD BAR DIA. (mm.)	DESIGNED MIX. (CONC. GRADE)
10	450
10	330
12	400
16	530
20	660
25	830
32	1060
40	1320

b) MINIMUM TENSION LAP LENGTH (T.L.L.)

BAR DIAMETER (mm.)		CONCRETE GRADE
		450
10	(1.0 L.L.)	330
	(1.4 L.L.)	470
	(2.0 L.L.)	660
12	(1.0 L.L.)	400
	(1.4 L.L.)	570
	(2.0 L.L.)	800
16	(1.0 L.L.)	530
	(1.4 L.L.)	760
	(2.0 L.L.)	1060
20	(1.0 L.L.)	660
	(1.4 L.L.)	940
	(2.0 L.L.)	1320
25	(1.0 L.L.)	830
	(1.4 L.L.)	1180
	(2.0 L.L.)	1650
32	(1.0 L.L.)	1060
	(1.4 L.L.)	1510
	(2.0 L.L.)	2120
40	(1.0 L.L.)	1320
	(1.4 L.L.)	1880
	(2.0 L.L.)	2640

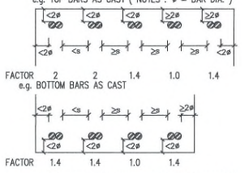
NOTES :
1. TENSION LAP LENGTH (T.L.L.) NORMALLY EQUAL TO LAP LENGTH (L.L.) ;
2. LAP LENGTH FOR UNEQUAL SIZE BARS MAY BE BASED UPON THE SMALLER BAR.
3. (2.0 L.L.) APPEARS ON TOP MOST LAYERS OF STEEL BARS ONLY.

(B) SPECIAL CASE FOR TENSION LAP LENGTH

a) WHERE A LAP OCCURS AT THE TOP OF A SECTION AS CAST AND THE MINIMUM COVER IS LESS THAN TWICE THE SIZE OF THE LAPPED REINFORCEMENT, THE LAP LENGTH SHOULD BE INCREASED BY A FACTOR OF 1.4.

b) WHERE A LAP OCCURS AT THE CORNER OF A SECTION AND THE MINIMUM COVER TO EITHER FACE IS LESS THAN TWICE THE SIZE OF THE LAPPED REINFORCEMENT OR, WHERE THE CLEAR DISTANCE BETWEEN ADJACENT LAPS IS LESS THAN 75mm OR SIX TIMES THE SIZE OF THE LAPPED REINFORCEMENT, WHICHEVER IS THE GREATER, THE LAP LENGTH SHOULD BE INCREASED BY A FACTOR OF 1.4.

c) IN CASE WHERE BOTH CONDITIONS (a) & (b) APPLY, THE LAP LENGTH SHOULD BE INCREASED BY A FACTOR OF 2.0.
e.g. TOP BARS AS CAST (NOTES : ϕ = BAR DIA.)



*NOTE: FOR LAPS IN BOTTOM OF SECTION AS CAST MINIMUM COVER CRITERIA APPLIES TO CORNER BARS ONLY
s = 75mm OR 6ϕ, WHICHEVER IS GREATER
ϕ = DIAMETER OF THE LAPPED REINFORCEMENT

LAPPED BAR	TRANSVERSE REINFORCEMENT PROVIDED
16	T10-100
20	T10-100
25	T10-100
32	T12-100
40	T12-100

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

PAUL K. F. NG
B.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

SIGNATURE OF AP/RSE/RGE

YAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT		
PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE	1:400 IN A1
	DATE	JAN 2022
	DESIGNED	CCH
	DRAWN	KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED	CCH
	APPROVED	TY
DRG. TITLE: NOTES	DRG. NO	BPW-09

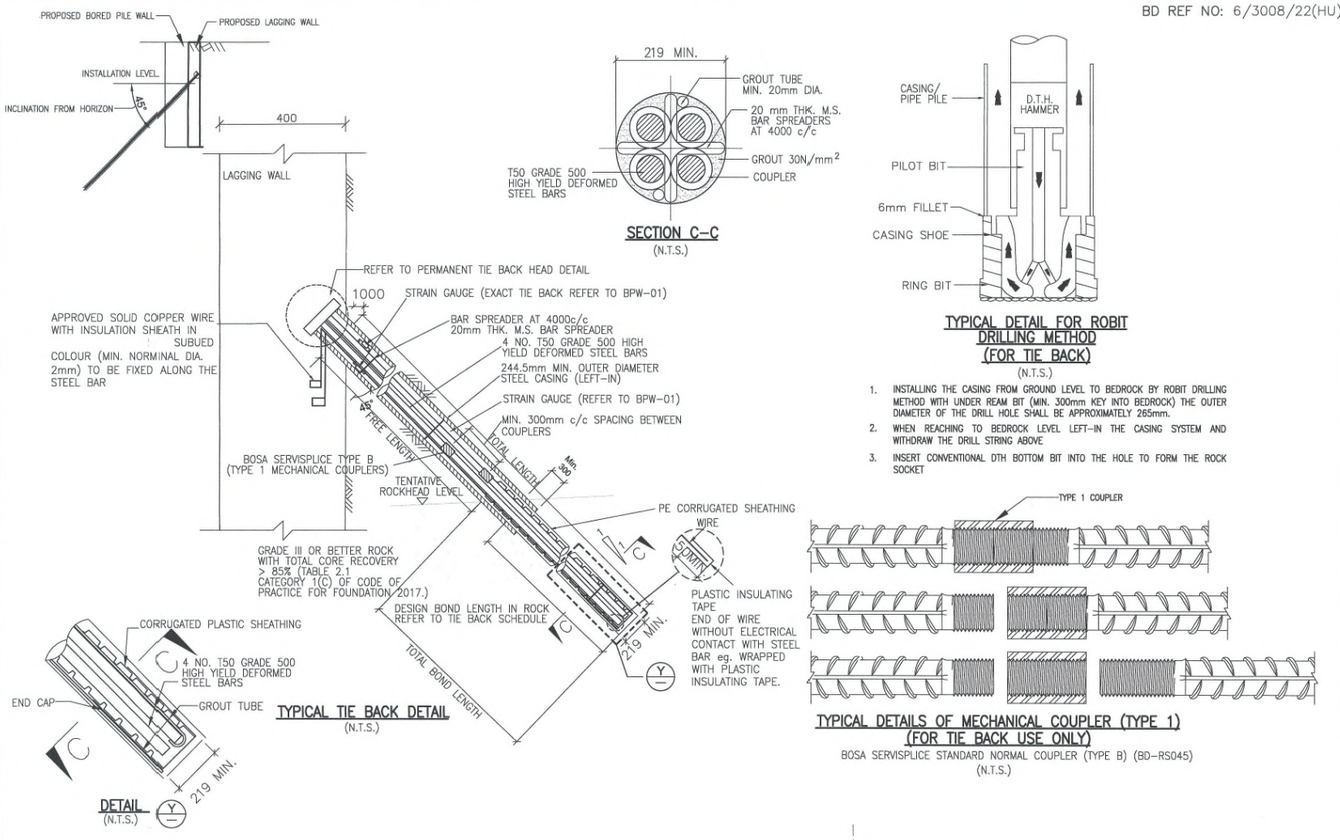
C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwal@cmwal.com

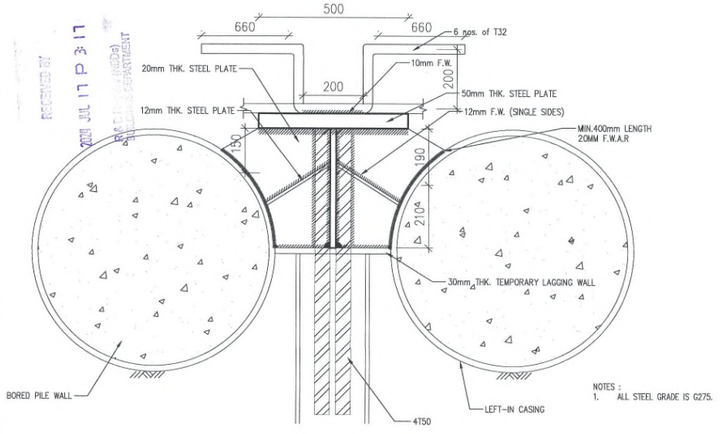
BD REF NO: 6/3008/22(HU)

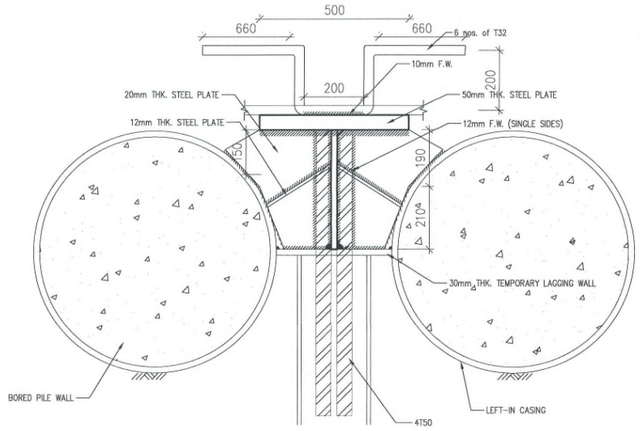
TIE BACK SCHEDULE

TYPE BACK TYPE	TIE BACK NO.	TIE BACK CUT OFF LEVEL (mPD)	DRILLHOLE SIZE (mm)	NUMBER OF BARS	BAR SIZE (mm)	HORIZONTAL SPACING (m)	INCLINATION FROM HORIZON (°)	FREE LENGTH (m)	DESIGN BOND LENGTH IN ROCK (m)	TOTAL BOND LENGTH IN ROCK (m)	TOTAL LEGTH (m)	DESIGN TIE BACK FORCE (kN)
A	TBA 1 - 1 - TBA 1 - 10	58.5	219	4	T50	2.4	45	18.2	5.0	5.3	23.5	276.0
A	TBA 2 - 1 - TBA 2 - 10	56.3	219	4	T50	2.4	45	15.9	5.0	5.3	21.2	331.2
A	TBA 3 - 1 - TBA 3 - 10	54.1	219	4	T50	2.4	45	14.0	5.0	5.3	19.3	391.2
A	TBA 4 - 1, 3, 10	51.9	219	4	T50	2.4	45	11.5	5.0	5.3	16.8	448.8
A	TBA 4 - 4 - TBA 4 - 9	51.7	219	4	T50	2.4	45	11.3	5.0	5.3	16.6	448.8
A	TBA 5 - 1, 3, 10	49.7	219	4	T50	2.4	45	9.6	5.0	5.3	14.9	492.0
A	TBA 5 - 4 - TBA 5 - 9	49.5	219	4	T50	2.4	45	9.5	5.0	5.3	14.8	492.0
A	TBA 6 - 1, 3, 10	47.5	219	4	T50	2.4	45	8.2	5.0	5.3	13.5	523.2
A	TBA 6 - 4 - TBA 6 - 9	47.1	219	4	T50	2.4	45	6.9	5.0	5.3	12.2	523.2
B	TBB 1 - 1 - TBB 1 - 4	61.0	219	4	T50	2.4	45	17.0	5.0	5.3	22.3	415.2
B	TBB 2 - 1 - TBB 2 - 4	58.0	219	4	T50	2.4	45	12.7	5.0	5.3	18.0	492.0
B	TBB 3 - 1 - TBB 3 - 4	55.0	219	4	T50	2.4	45	8.5	5.0	5.3	13.8	612.0
B	TBB 4 - 1 - TBB 4 - 4	52.0	219	4	T50	2.4	45	4.2	5.0	5.3	9.5	972.0
C	TBC 1 - 1 - TBC 1 - 7	61.0	219	4	T50	2.4	45	17.0	5.0	5.3	22.3	415.2
C	TBC 2 - 1 - TBC 2 - 7	58.0	219	4	T50	2.4	45	12.7	5.0	5.3	18.0	492.0
C	TBC 3 - 1 - TBC 3 - 7	55.0	219	4	T50	2.4	45	8.5	5.0	5.3	13.8	612.0
C	TBC 4 - 1 - TBC 4 - 5	52.0	219	4	T50	2.4	45	4.2	5.0	5.3	9.5	972.0
C	TBC 4 - 6 - TBC 4 - 7	52.5	219	4	T50	2.4	45	4.6	5.0	5.3	9.9	972.0
D	TBD 1 - 1	61.0	219	4	T50	2.4	45	17.0	5.0	5.3	22.3	415.2
D	TBD 1 - 2 - TBD 1 - 5	60.7	219	4	T50	2.4	45	16.8	5.0	5.3	22.1	415.2
D	TBD 1 - 6 - TBD 1 - 10	61.5	219	4	T50	2.4	45	17.3	5.0	5.3	22.6	415.2
D	TBD 1 - 11	60.5	219	4	T50	2.4	45	16.6	5.0	5.3	21.9	415.2
D	TBD 2 - 1, 6, 7, 8	58.0	219	4	T50	2.4	45	12.7	5.0	5.3	18.0	492.0
D	TBD 2 - 2	58.3	219	4	T50	2.4	45	12.9	5.0	5.3	18.2	492.0
D	TBD 2 - 3 - TBD 2 - 5	58.5	219	4	T50	2.4	45	13.1	5.0	5.3	18.4	492.0
D	TBD 2 - 9 - TBD 2 - 11	57.5	219	4	T50	2.4	45	12.4	5.0	5.3	17.7	492.0
D	TBD 3 - 1, 2, 3, 6, 10, 11	55.0	219	4	T50	2.4	45	8.5	5.0	5.3	13.8	612.0
D	TBD 3 - 4	54.3	219	4	T50	2.4	45	8.0	5.0	5.3	13.3	612.0
D	TBD 3 - 5, 7	55.5	219	4	T50	2.4	45	8.8	5.0	5.3	14.1	612.0
D	TBD 3 - 8	54.9	219	4	T50	2.4	45	8.4	5.0	5.3	13.7	612.0
D	TBD 3 - 9	54.5	219	4	T50	2.4	45	8.1	5.0	5.3	13.4	612.0
D	TBD 4 - 1, 10	52.5	219	4	T50	2.4	45	4.6	5.0	5.3	9.9	972.0
D	TBD 4 - 2, 11	51.3	219	4	T50	2.4	45	3.8	5.0	5.3	9.1	972.0
D	TBD 4 - 3 - TBD 4 - 6	52.0	219	4	T50	2.4	45	4.2	5.0	5.3	9.5	972.0
D	TBD 4 - 7 - TBD 4 - 8	51.5	219	4	T50	2.4	45	3.9	5.0	5.3	9.2	972.0
D	TBD 4 - 9	51.7	219	4	T50	2.4	45	4.0	5.0	5.3	9.3	972.0
E	TBE 1 - 1 - TBE 1 - 13	62.5	219	4	T50	2.4	45	18.0	7.0	7.3	25.3	264.0
E	TBE 2 - 1 - TBE 2 - 11	59.5	219	4	T50	2.4	45	14.6	7.0	7.3	21.9	482.4
E	TBE 3 - 1 - TBE 3 - 10	56.5	219	4	T50	2.4	45	11.2	7.0	7.3	18.5	496.8
E	TBE 4 - 1 - TBE 4 - 7	53.5	219	4	T50	2.4	45	7.8	7.0	7.3	15.1	228.0
F	TBF 1 - 1 - TBF 1 - 8	51.0	219	4	T50	2.4	45	17.2	5.0	5.3	22.5	758.4
F	TBF 2 - 1 - TBF 2 - 8	47.0	219	4	T50	2.4	45	12.6	5.0	5.3	17.9	1123.2
F	TBF 3 - 1 - TBF 3 - 8	43.0	219	4	T50	2.4	45	8.3	5.0	5.3	13.6	1048.8
G	TBG 1 - 1 - TBG 1 - 6	61.1	219	4	T50	2.4	45	19.7	5.0	5.3	25.0	292.8
G	TBG 2 - 1 - TBG 2 - 6	57.7	219	4	T50	2.4	45	16.3	5.0	5.3	21.6	331.2
H	TBH 1 - 1 - TBH 1 - 3	61.7	219	4	T50	2.4	45	21.4	5.0	5.3	26.7	223.2
H	TBH 1 - 4 - TBH 1 - 11	61.5	219	4	T50	2.4	45	21.2	5.0	5.3	26.5	223.2
H	TBH 2 - 1 - TBH 2 - 2	59.5	219	4	T50	2.4	45	19.1	5.0	5.3	24.4	242.4
H	TBH 2 - 3 - TBH 2 - 6	59.3	219	4	T50	2.4	45	19.0	5.0	5.3	24.3	242.4
H	TBH 2 - 7 - TBH 2 - 11	59.3	219	4	T50	2.4	45	19.0	5.0	5.3	24.3	242.4
H	TBH 3 - 1 - TBH 3 - 6	57.1	219	4	T50	2.4	45	16.8	5.0	5.3	22.1	261.6
H	TBH 3 - 7 - TBH 3 - 11	57.5	219	4	T50	2.4	45	17.1	5.0	5.3	22.4	261.6

NOTE: DESIGN ALLOWABLE BOND STRESS OF CAT 1(C) ROCK IS 0.35 MPa.







Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(1)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

PAUL K. F. NG
D.A.(A.S.) M.ARCH
HKIA
Registered Architect (HK)
Authorized Person (Architect)

REVISION	DATE	DESCRIPTION	BY	CHK
		GOVERNMENT APPROVAL		

Plan Approved
WAN Chi-wai
Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

SIGNATURE OF AP/RSE/RGE

TAU LAP YAN TERENCE
Registered Geotechnical Engineer

LEUNG CHI HUNG BEN
Registered Structural Engineer

PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE: 1:200 IN A1
	DATE: JAN 2022
	DESIGNED: CCH
	DRAWN: KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED: CCH
	APPROVED: TY
DRG. TITLE: TIE BACK SCHEDULE	DRG. NO: BPW-10

C M WONG & ASSOCIATES LTD
TEL: (852) 2522 1068
E-mail: cmwai@cmwal.com

BD REF NO: 6/3008/22(HQ)

NOTES FOR TCP T5 SITE SUPERVISION

1. TYPICAL CONTENTS OF THE REGULAR REPORTS PREPARED BY THE TCP T5 SITE SUPERVISION PERSONNEL AND THE DSS SHOULD INCLUDE THE FOLLOWING:
   (1) PROGRESS OF THE WORKS.
   (2) INTERPRETATION OF OF MONITORING RESULTS TAKEN DURING CONSTRUCTION
   (3) SITE OBSERVATIONS
   (4) INSPECTION RECORDS
   (5) REVIEW OF DESIGN ASSUMPTION, GROUND MODEL, METHOD OF CONSTRUCTION SEQUENCE.
   (6) COMPLIANCE WITH APPROVED PLANS CUMULATIVE MONITORING RESULTS WITH THE AAA AND THE DESIGN LEVELS (ONLY IN GRAPHICAL FORM) SHOULD NOTE:BE PROVIDED IN THE APPENDIX.
2. UPON INSTALLATION/ RE-PROVISION OF MONITORING STATIONS, THE TCP T5 SITE SUPERVISION PERSONNEL SHALL CHECK THE LOCATIONS OF ALL MONITORING POINTS AND CONFIRM THAT THEY ARE IN PROPER WORKING CONDITIONS. RECORDS OF SUCH CHECKING SHOULD BE PROVIDED IN THE REGULAR REPORTS PREPARED BY THE TCP T5 SITE SUPERVISION PERSONNEL/DSS.

EACH REPORT SHALL COVER ONE CALENDAR MONTH OF SITE ACTIVITIES AND BE COMPLETED WITHIN 2 WEEKS AFTER EACH REPORTING PERIOD. THE REPORT SHALL BE KEPT AT SITE OFFICE FOR INSPECTION OF TH BD/GEO.

THE PROTECTION OF EARTHWORKS AGAINST HEAVY RAINFALL

1. SURFACE WATER FLOWING INTO THE SITE SHALL BE INTERCEPTED AND CONDUCTED FROM THE SITE TO AN AGREED DISCHARGE POINT. AT EACH INTERSECTION AND ABRUPT CHANGE IN DIRECTION OF SURFACE CHANNELS AN ACCESSIBLE CATCHPIT WITH SILT TRAPS SHALL BE PROVIDED. ALL DRAINAGE WORKS SHALL BE KEPT CLEAR OF DEBRIS.
2. WHERE PARTIALLY COMPLETED DRAINAGE WORKS DISCHARGE WITHIN THE SITE A TEMPORARY CONDUIT SHALL BE PROVIDED TO THE DISCHARGE POINT.
3. EARTHWORKS TO FORM THE FINAL FACE SHALL BE FOLLOWED IMMEDIATELY WITH SURFACE PROTECTION AND DRAINAGE WORKS.
4. WHERE TEMPORARY BARE EARTH SLOPE FACES ARE UNAVOIDABLE, THEY SHALL BE PROTECTED WITH SHEETING WELL-SECURED AGAINST THE WIND. WHERE SLOPE FACES ARE TO BE TEMPORARILY EXPOSED FOR MORE THAN TWO WEEKS, TEMPORARY HARD SURFACING SHALL BE PROVIDED AND TEMPORARY DRAINS SHALL BE INSTALLED. THE TEMPORARY HARD SURFACING MATERIAL SHALL BE APPROVED BY THE ENGINEER PRIOR TO THE PROVISION.

PRECAUTIONARY MESAURE OF UTILITIES

1. CONTRACTOR SHALL MAKE USE OF CABLE LOCATOR AND TRIAL PIT TO LOCATE THE ALIGNMENT AND THE DEPTH OF BURIED UTILIES BEFORE ANY EXCAVATION OR ANY KIND OF CONSTURCTION WORKS COMMNCES AND MARK THE ALIGNMENT OF THE UTILITIES ON THE SURFACE.
2. CONTRACTOR SHALL ENSURE THAT NO EXCAVATION OR CONSTRUCTION WORK WILL CAUSE THE DAMAGE OF ANY UNDERGROUND UTILITES.
3. IN CASE OF ANY UNDERGROUND UTILITES BEING DAMAGED, AS A RESULT OF CONSTRUCTION OR EXCAVATION WORKS, THE CONTRACTOR SHALL BE FULLY RESPONSIBLE AND LIABLE FOR ALL COSTS INCURRED AND FOR ANY CLAIMS FROM THIRD PARTIES.

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NOTES ON TIE BACK WORKS

1. INCLINATION AND SPACING OF PROPOSED TIE BACKS TO BE AS SHOWN ON TIE BACK SCHEDULE.
2. ALL TIE BACKS SHALL BE DIAMETER GALVANISED HIGH TENSILE STEEL BARS COMPLYING WITH CS2: 2012. DIAMETER OF BAR REFER TO TIE BACK SCHEDULE.
3. CEMENT GROUT SHALL HAVE A MINIMUM CRUSHING STRENGTH OF 30MPa AT 28 DAYS.
4. ALL MILD STEEL PLATE SHALL BE GRADE S275 AND GALVANISED COMPLYING WITH BS4360. TIE BACK BARS, HEAD PLATES AND COUPLERS SHALL BE HOT DIP GALVANIZED TO BS729 AS A PROTECTIVE TREATMENT AND IN COMPLIANCE WITH CS2:1995. TIE BACKS SHALL BE WITH CHARACTERISIC STRENGTH OF 500MPa THE SACRIFICIAL THICKNESS OF TIE BACKS SHALL BE 2mm.
5. TESTING FOR GROUT SHALL INCLUDE BLEEDING, FLOW CONE AND CRUSHING STRENGTH TESTS.
6. CEMENT GROUT USED TO FIX TIE BACKS SHALL HAVE WATER-CEMENT RATIO NOT EXCEEDING 0.45. ANY ADDITIVE ADMIXTURE SHALL COMPLY WITH BS5075 AND SHALL NOT BE USED WITHOUT PRIOR AGREEMENT FROM THE ENGINEER.
7. THE PERMITTED DEVIATION OF DRILLHOLES SHALL BE SUCH THAT A MINIMUM 20mm GROUT COVER TO THE TIE BACK IS ACHIEVED.
8. CEMENT USED FOR GROUTING SHALL COMPLY WITH BS12.
9. THE CONTRACTOR SHALL FURNISH THE ENGINEER WITH ALL NECESSARY EQUIPMENT AND ASSISTANCE TO CHECK THE INCLINATION, BEARING, AND CLEANINESS OF THE FULL LENGTH OF ALL TIE BACK DRILL HOLES.
10. TESTING OF STEEL BARS AND GROUT ARE TO BE IN ACCORDANCE WITH HONG KONG BUILDING (CONSTRUCTION) REGULATIONS. SAMPLES OF ALL MATERIALS USED SHALL BE TESTED TO THE APPROVAL OF THE ENGINEER.
11. INSTALLATION AND GROUTING FOR THE TIE BACKS SHALL BE CARRIED OUT IN THE SAME DAY.
12. NO DRILLHOLES SHALL BE LEFT EMPTY FOR MORE THAN TWO DAYS.
13. ANY DAMAGES IN THE COURSE OF THE WORK SHALL BE MADE GOOD. THE SLOPE SURFACE BEING DISTURBED SHALL BE REINSTATED TO THE SAME CONDITION AS PRIOR TO THE COMMENCEMENT OF WORKS.
14. IF TWO DRILLHOLES ARE LESS THAN 3m APART, THEY SHOULD NOT BE DRILLED OR LEFT EMPTY AT THE SAME TIME.
15. FINAL LOCATIONS FOR TEST TIE BACKS AND WORKING TIE BACKS SHALL BE AGREED WITH THE ENGINEER ON SITE. THE CONTRACTOR SHALL VERIFY ALL SETTING OUT DIMENSIONS BEFORE WORKS COMMENCE AND INFORM THE ENGINEER IMMEDIATELY IF ANY DISCREPANCY IS DISCOVERED.
16. THE PERMITTED DEVIATION OF TIE BACK ORIENTATION SHALL BE ± 1° IN HORIZONTAL AND VERTICAL DIRECTION.
17. IF ANY UNDUE CONDITION OCCUR, ALL WORKS FOR SUBJECT FEATURE SHALL BE CEASED IMMEDIATELY AND THE RGE / AP SHALL BE INFORMED. THE WORKS SHALL NOT BE RECOMMENCED UNTIL REMEDIAL PROPOSAL TO THE SATISFACTION OF AP/RGE HAS BEEN IMPLEMENTED.

NOTES FOR QUALITY SUPERVISION OF TIE BACK WORKS

1. THE QUALITY SUPERVISION REQUIREMENT SHALL BE IN ACCORDANCE WITH PNAP284.
2. TEST TIE BACKS ARE SELECTED AS CALIBRATION PURPOSE FOR THE TIME DOMAIN REFLECTOMETERY (TDR) TEST AS NONDESTRUCTIVE TEST (NDT).
3. BD/GEO SHALL BE NOTIFIED FOR INSPECTION TO THE INSTALLATION OF TEST TIE BACK.
4. THE NDT TEST PROCEDURE SHALL BE IN ACCORDANCE WITH GEO REPORT NO.133.

NOTES ON PULL OUT TEST FOR TIE BACKS

1. PULL OUT TEST ON ALL THE TEST TIE BACKS SHALL BE CARRIED OUT AT LOCATIONS AS SPECIFIED IN THE DRAWINGS OR AS DIRECTED BY THE ENGINEER ON SITE AND SHALL BE CARRIED OUT BY THE CONTRACTOR PRIOR TO INSTALLATION OF THE WORKING TIE BACKS.
2. THE TIE BACK FOR PULL OUT TEST SHALL ONLY BE GROUTED TO THE SPECIFIED BOND LENGTH IN ACCORDANCE WITH THE SCHEDULE OR AS DIRECTED BY THE ENGINEER.
3. THE PULL OUT TEST SHALL NOT BE CARRIED OUT UNTIL THE GROUT HAS REACHED A MINIMUM CUBE STRENGTH OF 25MPa.
4. THE APPARATUS FOR MEASURING LOADS AND DEFORMATION SHALL HAVE AN ACCURACY OF 2kN AND 0.05mm RESPECTIVELY, AND A CALIBRATION CERTIFICATE SHALL BE SUBMITTED TO THE ENGINEER PRIOR TO THE TESTS.
5. ALL DIAL GAUGES FOR PULL OUT TESTS SHALL BE SUPPORTED INDEPENDENTLY FROM THE PULL OUT TEST EQUIPMENT.
6. THE TEST LOADS FOR TEST NAILS SHALL INCLUDE 3 INTERMEDIATE TEST LOADS, TDL1 – WORKING LOAD, TDL2 – TDL1 x FOS AGAINST PULL-OUT FAILURE AT SOIL-GROUT INTERFACE, TP:2 x WORKING LOAD (TDL1) OR 90% OF YIELD LOAD OF TEST NAIL WHICHEVER IS LESSER.
7. THE INITIAL LOAD (TA) EQUAL TO 5% OF TP SHALL BE APPLIED. THE RANGE BETWEEN TA AND TP SHALL BE DIVIDED INTO THREE EQUAL STEPS OF MAGNITUDE T.
8. A PROGRAMME OF THREE LOADING AND UNLOADING CYCLES SHALL BE CARRIED OUT. THE LOAD SHALL BE INCREASED FROM TA IN SUCCESSIVE CYCLES BY T, 2T UP TO TP. AFTER THE PEAK LOADING IN EACH CYCLE IS REACHED, MEASUREMENTS OF THE DEFORMATION INCREASE WITH THE LOAD HELD CONSTANT SHALL BE TAKEN FOR 60 MINUTES. WHEN REQUIRED THE LOAD SHALL BE HELD LONGER AS DIRECTED BY THE ENGINEER. AFTER THE ABOVE MEASUREMENTS HAVE BEEN TAKEN FOR EACH CYCLE, THE LOAD SHALL BE REDUCED TO TA AND THE EXTENSION SHALL BE RECORDED.
9. THROUGHOUT THE TEST, THE TIE BACK MOVEMENT AGAINST THE APPLIED LOAD SHALL BE MEASURED AND PLOTTED ON A GRAPH. ALL THE RESULTS SHALL BE SUBMITTED TO THE ENGINEER WITHIN 3 DAYS AFTER COMPLETION OF THE TESTS. THE RESULTS SHALL BE THEN SUBMITTED TO THE BUILDING AUTHORITY PRIOR TO THE INSTALLATION OF THE WORKING NAILS.
10. THE WHOLE TEST TIE BACK SHALL BE PULLED OUT FROM THE DRILLHOLE FOR THE ENGINEER'S INSPECTION. UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, THE DRILLHOLE SHALL BE FILLED BY GROUTING.
11. IF THE TIE BACK CANNOT BE PULLED OUT WITHOUT EXCEEDING THE MAXIMUM ALLOWABLE TEST LOAD AS SPECIFIED IN (6), THEN THE BAR SHALL BE CUT OFF AND THE REMAINING PART OF THE DRILLHOLE SHALL BE GROUTED.
12. THE MAXIMUM ALLOWABLE TEST LOAD SHALL NOT EXCEED 90% OF THE ULTIMATE TENSILE STRENGTH OF THE STEEL BAR FORMING THE TIE BACK. UNLESS OTHERWISE INSTRUCTED BY THE ENGINEER, ANY PROTRUSIONS FROM THE DRILLHOLE SHALL BE CUT OFF AND DRILLHOLE SHALL THEN BE FILLED BY GROUTING.
13. THE ACCEPTANCE CRITERIA FOR THE PULL-OUT TEST SHALL BE THE DIFFERENCE OF THE MOVEMENT OF THE TEST NAIL AT 6 MIN AND 60 MIN DOES NOT EXCEED 2mm OR 1% OF THE BOND LENGTH OF THE TEST NAIL.
14. INTERPRETATION REPORT TOGETHER WITH PULL-OUT TEST RESULTS SHALL BE SUBMITTED TOGETHER WITH FORM BA14 UPON COMPLETION OF WORKS TO THE SATISFACTION OF B.D.

TEST PROCEDURE OF NON-DESTRUCTIVE TEST FOR TIE BACK

1. SELECT THE TIE BACKS OF KNOWN LENGTHS (TEST TIE BACKS) FOR CALIBRATION OF PULSE PROPAGATION VELOCITY.
2. THE HEAD OF THE STEEL TIE BACK SHALL ELECTRICALLY ACCESSIBLE. ALL LOOSE MATERIALS SHALL BE REMOVED FROM THE BAR HEAD.
3. CONNECT THE TDR INSTRUMENT TO THE STEEL TIE BACK HEAD AND THE ELECTRIC WIRE.
4. SEND A SHORT PULSE INTO THE STEEL TIE BACK AND RECORD THE TIME OF REFLECTION (IF THE WIRE IS ELECTRICALLY IN CONTACT WITH THE STEEL TIE BACK END, THE RETURN SIGNAL FROM THE TIE BACK END SHOULD GO DOWN AND VICE VERSA).
5. SEND A LONG PULSE INTO THE STEEL TIE BACK AND RECORD THE TIME OF REFLECTION (IF THE WIRE IS ELECTRICALLY IN CONTACT WITH THE STEEL TIE BACK END, THE RETURN SIGNAL FROM THE TIE BACK END SHOULD GO DOWN AND VICE VERSA).
6. DETERNMINE THE AVERAGE PROPAGATION VELOCITY OF TH PULSE FROM THE RESULTS OBTAINED IN STEP (4) AND (5).
7. REPEAT STEPS (2) TO (5) FOR STEEL TIE BACK TO BE TESTED AND ESTIMATE ITS LENGTH BY USING THE CALIBRATED PROPAGTION VELOCITY.

CONSTRUCTION PROCEDURE FOR TIE BACKS

1. SET OUT THE TIE BACKS AND CHECK BY THE ENGINEER ON SITE.
2. DRILL 219mm DIAMETER HOLE AT THE REQUIRED INCLINATION AND TO THE REQUIRED DEPTH.
3. FILL THE DRILLHOLE WITH CEMENT GROUT IMMEDIATELY AFTER INSTALLATION OF THE REINFORCEMENT BAR. THE GROUTING IS PERFORMED BY INSERTING A GROUTING TUBE TO THE BOTTOM OF THE HOLE AND PUMPING THE CEMENT GROUT DOWN THE HOLE. THE GROUTING SHALL BE CARRIED OUT IN RISES FROM THE BOTTOM TO THE TOP OF THE GROUT TUBE IN SUCCESSIVE PHASES. EACH RISE SHALL BE 500 mm. THE INSTALLED STEEL BAR SHALL NOT BE DISTURBED FOR THE NEXT 24 HOURS AFTER COMPLETION OF GROUTING.
4. INSTALL THE TIE BACK HEAD (REFER TO TYPICAL DETAIL OF TIE BACK HEAD)
5. CONSTRUCT THE CONCRETE SKIN WALL.

NOTE OF TIME DOMAIN REFLCTOMETRY (TDR) TEST FOR TIE BACK

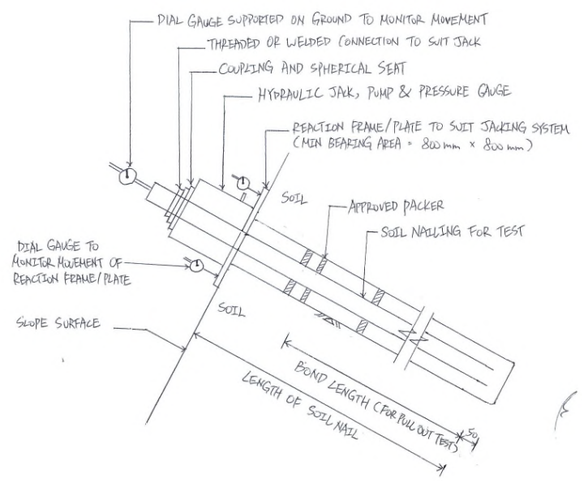
1. TDR TEST SHALL BE CARRIED OUT FOR INSTALLED TIE BACK TO VERIFY THE TIE BACK LENGTH, THE MINIMUM TESTING FREQUENCY AND ALERT CRITERION FOR TRIGGERING FOLLOW-UP ACTIONS SHOULD BE AS FOLLOWS:

SAMPLE LOT SIZE	TESTING FREQUENCY (MINIMUM NO. OF TIE BACK TO BE TESTED BY TDR)	ALERT CRITERION NO. OF TIE BACKS WITH ANOMALOUS TDR RESULT)
⩽ 25	5	⩾1
26–50	8	⩾1
51–90	13	⩾1
91–150	20	⩾2
151–280	32	⩾4
281–500	50	⩾6
501–1200	80	⩾11

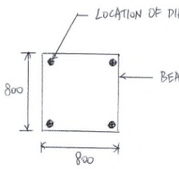
2. TDR TEST SHALL FOLLOW TEST PROCEDURE OF NON-DESTRUCTIVE TEST FOR TIE BACK
3. TDR TEST ASSESSMENT REPORT SHALL BE SUBMITTED TO BD FOR ACCPEATANCE.
4. TIE BACKS SHALL BE DIVIDED INTO SAMPLE LOTS WITH THE SAME TYPE OF PRE-INSTALLED COPPER WIRE AND GROUT MIX. DIVISION OF THE SAMPLE LOTS SHOULD CONSIDER FACTORS SUCH AS PROGRAMME OF TIE BACK INSTALLATION, AVAILABILITY OF ACCESS FOR CONDUCTING TESTS, AND SUBSEQUENT WORKS, IF FOUND NECESSARY, ETC. THE SIZE OF SAMPLE LOTS SHALL GENERALLY BE GREATER THAN 50 TIE BACKS WHERE POSSIBLE. CALIBRATION TIE BACKS SHALL NOT BE COUNTED AS TEST TIE BACKS WHEN DETERMINING THE TESTING FREQUENCY.
5. ANOMALOUS TDR RESULT MEANS THAT THE TDR-DEDUCED LENGTH IS LESS THAN 85% OF THE DESIGNED LENGTH.
6. IF NUMBER OF TEST TIE BACKS WITH ANOMALOUS RESULT HAVE NOT EXCEEDED THE "ALERT CRITERION", THE ENGINEER MAY CARRY OUT DESIGN REVIEW SUBMIT AMENDMENT FOR REPLACEMENT OF TESTED TIE BACK WITH ANOMALOUS TDR RESULT, WHERE ANY TIE BACK ADDED SHALL BE SUBJECT TO TDR TEST.
7. IF NUMBER OF TEST TIE BACKS WITH ANOMALOUS RESULT HAVE NOT EXCEEDED THE "ALERT CRITERION" FOR THE NEXT SAMPLE LOT SIZE. THE ENGINEER MAY REQUEST FOR ADDITIONAL TIE BACK TO BE TESTED BY TDR BASED ON THE TESTING FREQUENCY AND "ALERT CRITERION" FOR THE NEXT SAMPLE LOT SIZE.
8. IF NUMBER OF TEST TIE BACKS WITH ANOMALOUS RESULT HAVE EXCEEDED THE "ALERT CRITERION", INVESTIGATION REPORT SHALL BE SUBMITTED TO PROPOSE REMEDIAL MEASURES OR ALTERNATIVE INVESTIGATION TECHNIQUES TO TEST TIE BACKS. IF NECESSARY, AN AMENDMENT INCLUDING REMEDIAL MEASURES SHALL BE SUBMITTED TO SATISFACTION OF BD/GEO BEFORE SUBMISSION OF FORM BA14 TO CERTIFY THE COMPLETION OF TIE BACK WORKS.

TEST TIE BACK SCHEDULE

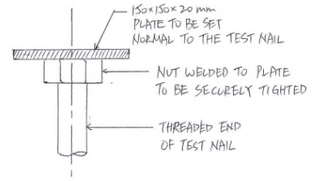
TEST TIE BACK MARK	DRILLHOLE SIZE (mm)	NUMBER OF BARS	BAR SIZE (mm)	HORIZONTAL SPACING (m)	INCLINATION FROM HORIZON (°)	FREE LENGTH (m)	DESIGN BOND LENGTH IN ROCK (m)	TOTAL BOND LENGTH IN ROCK (m)	TOTAL LEGTH (m)
TTB1	219	4	T50	2.4	45	17.0	5	5.3	22.3
TTB2	219	4	T50	2.4	45	15.9	5	5.3	21.2
TTB3	219	4	T50	2.4	45	8.5	5	5.3	13.8
TTB4	219	4	T50	2.4	45	8.3	5	5.3	13.6
TTB5	219	4	T50	2.4	45	17.1	5	5.3	22.4
TTB6	219	4	T50	2.4	45	19.7	5	5.3	25.0



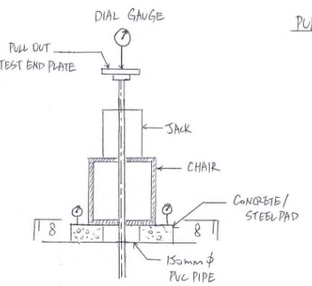
PULL-OUT TEST DETAILS
(N.T.S.)



SECTION 8-8
(N.T.S.)



PULL OUT TEST END PLATE
(N.T.S.)



TYPICAL ARRANGMENT OF PULL OUT TEST
(N.T.S.)

Note: This plan has been processed on a curtailed check basis under the centralized processing system as promulgated in PNAP ADM-19. The duties of the authorized person, registered structural engineer and/or registered geotechnical engineer concerned as specified under section 4(3)(b) and the provision of section 14(2)(c) of the Buildings Ordinance are of particular relevance in this regard.

REVISION	DATE	DESCRIPTION	BY	CHK

GOVERNMENT APPROVAL

Plan Approved
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Senior Building Surveyor
for BUILDING AUTHORITY
26 JUL 2024

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PROJECT: PROPOSED DEVELOPMENT FOR MARYKNOLL BUILDING AT 44 STANLEY VILLAGE ROAD, STANLEY	SCALE: 1:200 IN A1
	DATE: JAN 2022
	DESIGNED: CCH
	DRAWN: KUEN
DRG. TYPE: SITE FORMATION WORKS	CHECKED: CCH
	APPROVED: TY
DRG. TITLE: GENERAL NOTES	DRG. NO: BPW-11

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