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1 Introduction

We are instructed by the Applicant, Yuba Company Limited to prepare this **Geotechnical Planning Review Report (GPRR)** in support of the Proposed Amendments to the Approved Wan Chai Outline Zoning Plan No. S/H5/31 from Comprehensive Development Area", "Residential (Group C)", "Open Space" and "Government, Institution or Community" zones and Areas shown as "Road" to "Other Specified Uses (Residential Development with Historic Building Conserved)" and "Other Specified Uses (Elevated Walkway)" at Nos. 1, 1A, 2 and 3 Hill Side Terrace, No. 55 Ship Street (a.k.a. Nam Koo Terrace), Nos. 1-5 Schooner Street, No. 53 Ship Street, No. 18 Sau Wa Fong, Inland Lot No. 9048 and adjoining Government Land, Wan Chai (collectively referred to as the "**Rezoning Site**" / the "**Site**").

The geotechnical feasibility of the Indicative Development Scheme in relation to the stability of man-made slopes/retaining walls and to address any potential natural terrain landslide hazards that may affect or be affected by the Site is assessed in the report. Please refer to **Appendix C** of supplementary planning statement for the architectural plans.

2 The Site

2.1 Site Description

The Rezoning Site is located at southwestern part of Wan Chai. It is bounded by Schooner Street and Greenland House to the north, Ship Street to the east, St. Francis' Canossian College to the south and St. Francis' Canossian School to the west.

The majority of the site is vacant for Nam Koo Terrace (NKT) and No. 18 Sau Wa Fong. NKT is a vacant two-storey historic building built between 1915 and 1921 as a residential house which is listed by the Antiquities Advisory Board ("AAB") as a Grade I Historic Building. The Rezoning Site also includes the adjoining Government Land at the southwest and northwest edges of the Site

comprising slopes and steps. The total site area of the Rezoning Site is 3157.6 m² in which the development site area is 3140.7 m² after excluding the elevated walkway above Ship Street staircase.

Areas surrounding the Rezoning Site are characterised by a mix of land uses including residential, education, open space, commercial and retail uses.

The location of the Site is presented in Figure 1.

2.2 Ground Condition

According to the Hong Kong Geological Map, Series HGM20, Sheet No. 11 (Scale 1: 20,000), Solid and Superficial Geology of Hong Kong & Kowloon published by the Geotechnical Control Office (GCO 1986), the area of the Site is underlain by Jurassic-cretaceous medium-grained granite.

According to the existing Ground Investigation (GI) reports retrieved from the Geotechnical Engineering Office (GEO), the previous GI works were carried out in the vicinity between 1981 and 2000. The existing and proposed GI records reveal that the Site generally **comprises a layer of various thickness of fill and decomposed granite.** The bedrock level varies between +11.4mPD and +45.08 mPD and is dipping in a direction of south to north across the Site.

The location of existing and proposed GI is presented in Figure 2. The geological section illustrating the typical ground condition of the Site is presented in Figure 3. The records of existing GI are attached in Appendix A.

2.3 Groundwater Condition

Groundwater monitoring has been carried out at piezometers P3a and P4 within the site since April 2014 for the proposed Hopewell Centre II development. The recent groundwater monitoring records around the Ship Street Stair site are presented as in **Table 1**, below.

Piezometer	Ground Level (mPD)	Piezometer Tip Level (mPD)	Lowest Groundwater Level (mPD)	Highest Groundwater Level (mPD)
P3a	+43.65	+26.99	+21.941	+35.998

Piezometer	Ground Level (mPD)	Piezometer Tip Level (mPD)	Lowest Groundwater Level (mPD)	Highest Groundwater Level (mPD)
P4	+12.335	+5.235	+7.448	+12.308

Table 1: Summary Table of Measured Groundwater Levels (updated to 31 August 2021)

The groundwater contour plan approved under Site Formation Design submission for Main Site based on the groundwater monitoring readings showed that the groundwater level across the Ship Street Stair site dipping from +42 mPD in the south to +12 mPD in the north.

The layout out of the P3a and P4 indicates in Appendix D.

In borehole B1 installed in 1981, the highest measured groundwater level was at +9.47mPD.

2.4 Existing Geotechnical Features

There are **11** numbers of GEO registered features in the vicinity of the Site. **7** of the registered features are situated within the Site. The locations of these features are shown in Figure 4.

Desk study on previous stability assessment on these **8 out of 11** registered features has been carried out. The results revealed that among the 11 registered features, **6** of which have been served with Dangerous Hillside Orders. A summary of the status of the registered features is presented below:

Feature No.	Maintenance Responsibility party	Pervious Study	DH Order	Status of DH Order
11SW-B/CR252	IL1940 (sub-division 1), IL2140 (subdivision 2), Lands D (sub-division 3)	GEO Stage 2 Study carried out in 2004. Advisory letter was issued to lot owner in 2004.	DH1/HK/84 DH1A/HK/84 DH2/HK/84	1987 discharged. Sub-division 1: requested retaining wall portion stability.
11SW-B/CR253	IL8102(sub-division 1), IL1669(sub-division 2), IL1564(sub-division 3), IL2272 & EXT (sub-division 4), LandsD (sub-division 5)	No previous study.	Nil	Nil

Feature No.	Existing Conditions	Anticipated Affected Extent of Features
11SW-B/CR252	Slope: 9m height & 21m long with 60° angle of slope. 10% Bare, 70% vegetated and 20% shotcrete Wall: 5m Height & 21m long with 90° angle of Concrete Wall	The feature would need to be demolished to facilitate the construction of the proposed residential building. Adequate soldier pile and tie back soil nail, shoring in front of it if found necessary and inverted L shape wall composited with the soldier pile wall and rested on pile foundation will be provided for the excavation that it requested monitoring to control the ground settlement, thus the effect on the features will be minimal.
11SW-B/CR253	Slope: 8.5m height & 18m long with 70° angle of slope. 100% vegetated. Wall: 2m Height & 10m long with 88° angle of Masonry Wall	The slope and retaining wall (CR253 (1)) (outside the site boundary) will be modified and CR253 (2-5) (inside the site boundary) will be removed based on Indicative Development Scheme. Adequate soldier pile and tie back soil nail, shoring in front of it if found necessary and inverted L shape wall composited with the soldier pile wall and rested on pile foundation will be provided for the excavation that it requested monitoring to control the ground settlement, thus the effect on the features will be minimal.
11SW-B/CR349	Slope: 4m height & 15m long with 30° angle of slope. 60% Bare and 40% vegetated. Wall: 8m Height & 15m long with 80° angle of Masonry Wall	The slope and retaining wall (CR349 (3) (outside the site boundary) will be modified and CR349 (1-2) (inside the site boundary) will be removed based on Indicative Development Scheme Adequate soldier pile and tie back soil nail, shoring in front of it if found necessary and inverted L shape wall composited with the soldier pile wall and rested on pile foundation will be provided for the excavation that it requested monitoring to control the ground settlement, thus the effect on the features will be minimal.
11SW-B/C353	Slope: 4m height & 5m long with 80° angle of slope. 100% Chunam.	The feature would need to be demolished to facilitate the construction of the proposed residential building.
11SW-B/R629	Wall: 10m Height & 45m long with 85° angle of Masonry Wall with soil nail.	The feature is to be maintained. Since the Indicative Development Scheme will be proposed the pipe pile and ELS for the lateral support for excavation.
11SW-B/R617	Wall: 11.8m Height & 25m long with 85° angle of Masonry Wall.	The feature would need to be demolished to facilitate the construction of the proposed residential building.

2.5 Existing Structures

There are several existing buildings within and in vicinity of the sit. Please refer to figure 2.

2.5.1 St. Francis' Canossian College comprise of a 3-storey low-rise building structure which was built in 1957 and a new 6-storey low-rise building structure which was built in 2012 at No. 9-13 Kennedy Road. The new 6-storey building, founded on socket H-pile, is located adjacent to the proposed external staircase. The platform level of the building is generally +52.20mPD. The level difference between the platform and existing staircase is retained by a mass concrete retaining wall. Record plans are retrieved from BD and attached in [Appendix E](#) for reference.

2.5.2 Nam Koo Terrace is located at Lot No. I.L. 2140, No. 55 Ship Street. The property comprises two independent buildings, the main building and an annex. The main building and the annex are 2 storeys high, located at 7m from the proposed Park. The rear of the main building is a courtyard. [DH order no. DH161/HK/98/C](#) regarding the feature 11SW-B/R629 was issued by BD on 10 August 1998. And [DH0035/HK/11/C](#) was issued by BD on 30 March 2011. The [acknowledgement of the DH Order was approved on 29 January 2019](#). The Indicative Development Scheme is located along the west to northeast side of the building. In addition, the historical building will be preserved and revitalised as part of the Indicative Development Scheme. Record plans and latest remedial works approval drawings were attached in [Appendix E](#) for reference. [Comprehensive monitoring plan will be provided to avoid adverse effect to it.](#)

2.5.3 [Hill Side Terrace](#) and Miu Keng Terrace are demolished. [Hill Side Terrace and Miu Keng Terrace are founded on pad footing. There is an existing 4m height soil slope \(11SW-B/C353\) located between the Hill Side Terrace and I.L.9048 and the existing slope \(11SW-B/C353\) will be demolished.](#) Record plans are retrieved from BD and attached in Appendix E. Miu Keng Terrace was a 6-storey building is situated at Lot No. I.L. 2903 RP, No. 53 Ship Street, was located at the southeast of the Site. According to the as-built foundation record plans (BD ref. 3/3196/72), the building structure is founded on pad footings with founding levels of +17.5mPD or 1.5m below the Ship Street step levels.

2.5.4 I.L. 199 RP (No. 18 Sau Wa Fong) was occupied by a 6 storeys residential building. An open space will be constructed in this lot after the demolished of No. 18 Sau Wa Fong. The demolition works are work-in-progress in 2024.

2.5.6 Dragon Villa located 8 Sik On Street

Dragon Villa is located at No. 2-8 Sik On Street. The captioned building was founded on 13 no. of caisson piles rested on bedrock. The Indicative Development Scheme is located at the southeast of the captioned building. Since the site is located 10m from the Site, effect on the existing foundation due to the proposed socket H-pile foundation works for the Indicative Development Scheme should be minimal. Record plans are retrieved from BD and attached in Appendix E for reference. Comprehensive monitoring plan will be provided to avoid adverse effect to it.

2.6 General Description of the Proposed Works

As the Indicative Development Scheme is designed to encroach into the existing slope, the following geotechnical works will be participated and should be considered extremely carefully so that no adverse impact will be induced on adjacent properties. The geotechnical works related to the Indicative Development Scheme within the lot boundary will be basically listed, considered and discussed as follows.

Foundation

In view of a total of 28-storeys reinforced concrete building, loadings such as dead load, wind load and live load from the proposed superstructure are expected to be not substantial. Therefore, rock socket H-piles should be appropriate and the effect on the adjacent properties should be minimal.

In accordance with available ground investigation works, the bedrock is about 12m to 18m below existing ground. In order to take lateral loads due to soils and wind on the proposed building, piles are required to be designed socketed into rock to provide a better friction capacity for vertical as well as lateral loadings. Inclined foundation piles may also be feasible to dissipate the lateral loadings to ground. Schematic foundations are presented in Appendix F.

Detailed design calculation with assessment should be carried out and submitted for approval in order to ensure no adverse impact induced on the adjacent slopes, foundation, etc.

Excavation for construction of pile caps and retaining wall

Since the building load is just catered for 28-storeys, pilecap is expected to be about 1 m thick. By taking into account of 0.5 m deep allowances for the proposed drainage system, maximum excavation height will be involved for about 1.5 m deep from the proposed ground floor level.

For the level difference between the Site and adjacent ground, retaining wall with maximum 18 m retaining height is feasible in terms of composite wall (soldier pile wall integrated and inverted L-shaped RC retaining structure on piles)

As considered the limitation of working space, sheet pile/pipe pile, with strutting or soil nail or temporary retractable prestressed ground anchor, if necessary, is considered necessary for construction of the pilecap and permanent retaining wall. The maximum retaining height is approximately 18 m. The method of dewatering will be considered in detail and designed so as to ensure no adverse impact on the adjacent properties. For the level difference between the Site and adjacent ground, permanent L-shaped retaining wall or inverted L-shape wall on soldier piles with maximum 18 m retaining height is proposed.

During excavation, close monitoring on the adjacent properties and groundwater level will be implemented. Detailed design with assessment will be carried out and submitted for approval in order to ensure no adverse impact induced on the adjacent properties, etc.

Schematic drawings for the captioned site formation works are attached Appendix F. All existing features affecting or being affected by the development will be investigated and, if necessary, upgrading works will be proposed and carried out. Relevant details will be designed and submitted to the Buildings Department for approval. For easy reference, layout with indicative existing features modification works are presented in Appendix F.

2.7 Construction Methods and Sequence of Works

Staged construction will be carried out. Portion of building at the lower platform will be constructed by open cut with tie back or pile wall with tie back. After that portion of building is constructed, the upper platform will be formed by excavation by pile wall (pipe pile etc.) with tie back or propping to the partial completed building at the lower platform or open cut with temporary soil nails. Permanent structural screen wall connected to permanent building and/or composite wall, which is composed of inverted L-shape retaining wall on pile with buttress and soldier pile wall, will be used to retain the soil of upslope. All the temporary soil nails and tie back will be abandoned and removed in permanent case. The permanent load to the structural screen wall will be transferred from the structural screen wall will be transferred to the permanent foundation system for proposed building via the framing of the building.

Tie back system into adjacent lot needs the mutual agreement between the owners. In order to avoid any disturbance to the soil and the foundation system supporting existing building (i.e. socket H-pile to support existing schools), tie back will be installed into the rock mass. Propping to the partial completed building will be used instead of tie back should the lands matter regarding tie back into the adjacent private lot cannot be mutually agreed.

Excavation will be generally feasible by adopting soldier pile with inverted L shape wall on pile around the Site. The stability of the proposed shoring system will be checked. The Site will be flatted for construction of the socket H-pile. Platform will be considered if piling works are carried out prior to the excavation works. Upon completion of the ELS and piling works, the proposed pile caps and retaining wall will be constructed. Upon completion of the substructures, backfilling will be carried out up to the proposed finish level. Schematic sections of the proposed ELS works and superstructure works are attached at Appendix F.

3 Geotechnical Review on Proposed Works

Majority of the Rezoning Site is vacant except Nam Koo Terrace (a Grade 1 Historic Building) and No. 18 Sau Wa Fong (currently under demolition). The Indicative Development Scheme comprises of a 24 storey residential tower over a 3 storey podium with NKT preserved in-situ and 1 storey of covered open space. Layout and cross-sections of the Indicative Development Scheme are attached at Appendix C.

The geotechnical aspects of the proposed works are presented below.

3.1 Proposed Ground Investigation Works

Site-specific ground investigation works will be proposed at the Site in order to obtain information on the subsurface profile and material characteristics, groundwater regimes and foundations of the existing building. The proposed ground investigation works will comprise the following:-

- Vertical drillholes (with piezometer/standpipe);
- Trial pits;
- Horizontal/inclined coreholes;
- Field tests;
- Laboratory tests.

The proposed ground investigation works will be carried out in compliance with the current geotechnical standards and the site supervision requirements as stipulated in the “Code of Practice for Site Supervision 2009” published by the Buildings Department (BD).

3.2 Effect on Existing GEO Registered Features

Seven registered features, namely Feature Nos. 11SW-B/CR252, 11SW-B/CR253, 11SW-B/CR349, 11SW-B/R629, 11SW-B/R617, 11SW-B/C353, and 11SW-B/R1023 are located within the boundary of the Site.

Four other registered features, namely Feature Nos. 11SW-B/CR235, 11SW-B/R616, 11SW-B/R586 and 11SW-B/R963 are located outside the boundary of the Site.

The Indicative Development Scheme is at close proximity to the crest of Feature Nos. 11SW-B/CR235, 11SW-B/R629 and 11SW-B/R963 and hence the impact on these existing slopes due to the additional loading from the Indicative Development Scheme and its foundation system shall be investigated and stabilization works shall be proposed if found necessary.

11SW-B/R617 and 11SW-B/C353 will be removed during excavation works to facilitate the construction of the proposed residential building.

Whereas Feature Nos. 11SW-B/CR252, 11SW-B/CR253 and 11SW-B/CR349 are located along the southern uphill side of the Indicative Development Scheme, those slope features involved the modification based on development. Those features will be removed during excavation with temporary strutted/tied-backs pipe pile wall and with permanent L shape retaining wall for level difference between the Site and platform for St. Francis's Canossian College. 11SW-B/CR349(3) and 11SW-B/253(1) are outside the site boundary and they will be modified. And 11SW-B/CR253 (2-5), 11SW-B/CR349 (1-2) and 11SW-B/CR252 are inside the site boundary, and they will be removed based on Indicative Development Scheme.

11SW-B/R586, 11SW-B/R963 and 11SW-B/R616 were outside of the lot boundary, and the features are to be maintained.

And No. 11SW-B/R1023 was the new register feature for the level difference of Ship Street Staircase. Considering the founding levels of the foundation will be rationally well below the toe levels of these features, no adverse impact is likely to be induced to these features. These features will be modified to form the open space. A proposal for modifying or upgrading the features will be presented in the ELS plan or site formation plan to be submitted separately to the BD for approval.

Moreover, Dangerous Hillside Orders have been issued for Feature Nos. 11SW-B/CR349 (Sub-division 1) and 11SW-B/R629 by the Buildings

Department (BD). Remedial work proposals, which include buttressing at Feature No. 11SW-B/CR349 (Sub-division 1) and soil nailing at Feature No. 11SW-B/R629, were submitted and approved by the BD in June 2011. The completion of these remedial works was achieved in November 2017.

It is essential to investigate the impact of the proposed works on these two features, particularly the potential effects on Feature No. 11SW-B/R629 due to loading from the foundation of the Indicative Development Scheme. A thorough review will be conducted, and if necessary, further upgrading works will be proposed to mitigate any identified impacts.

For the Dangerous Hillside (DH) Order concerning Feature No. 11SW-B/R617, the proposed solution includes the construction of a mass concrete wall with a sloped face. Additionally, the upgrading works will involve the installation of a 300mm universal column (UC) with a cast iron grating at the toe of the wall. The Building Authority (BA) submission for the DH Order was made on 14 December 2022.

Design amendments to the remedial work proposals, which will incorporate an assessment of the impact on the features due to the development, shall be submitted to the BD for approval.

The upgrading works, which may include the installation of soil nails and the construction of reinforced concrete retaining walls or mass concrete walls, are considered feasible, subject to the actual site constraints associated with each individual feature.

3.3 Indicative Development Scheme

The Indicative Development Scheme within the Site consists of a 24 storeys over a 3 storey podium with NKT preserved in-situ and 1 storey of covered open space from +19.92 mPD to +118.80 mPD (at Main Roof Level). The residential tower will be built at the same level as Nam Koo Terrace at +33.6 mPD. Layout and cross-sections of the Indicative Development Scheme are attached at Appendix F.

prepared to support the weight and lateral forces exerted by the buildings, thereby enhancing the overall stability and safety of the development.

In addition, the permanent **composite wall composed of soldier pile and inverted L shape wall on pile or permanent structural screen of building**. The maximum retaining height is **18** m, accommodating the level difference between St. Francis' Canossian College and the platform at +33.6 m PD. The proposed schematic drawing is attached in **Appendix F**.

4 Conclusion

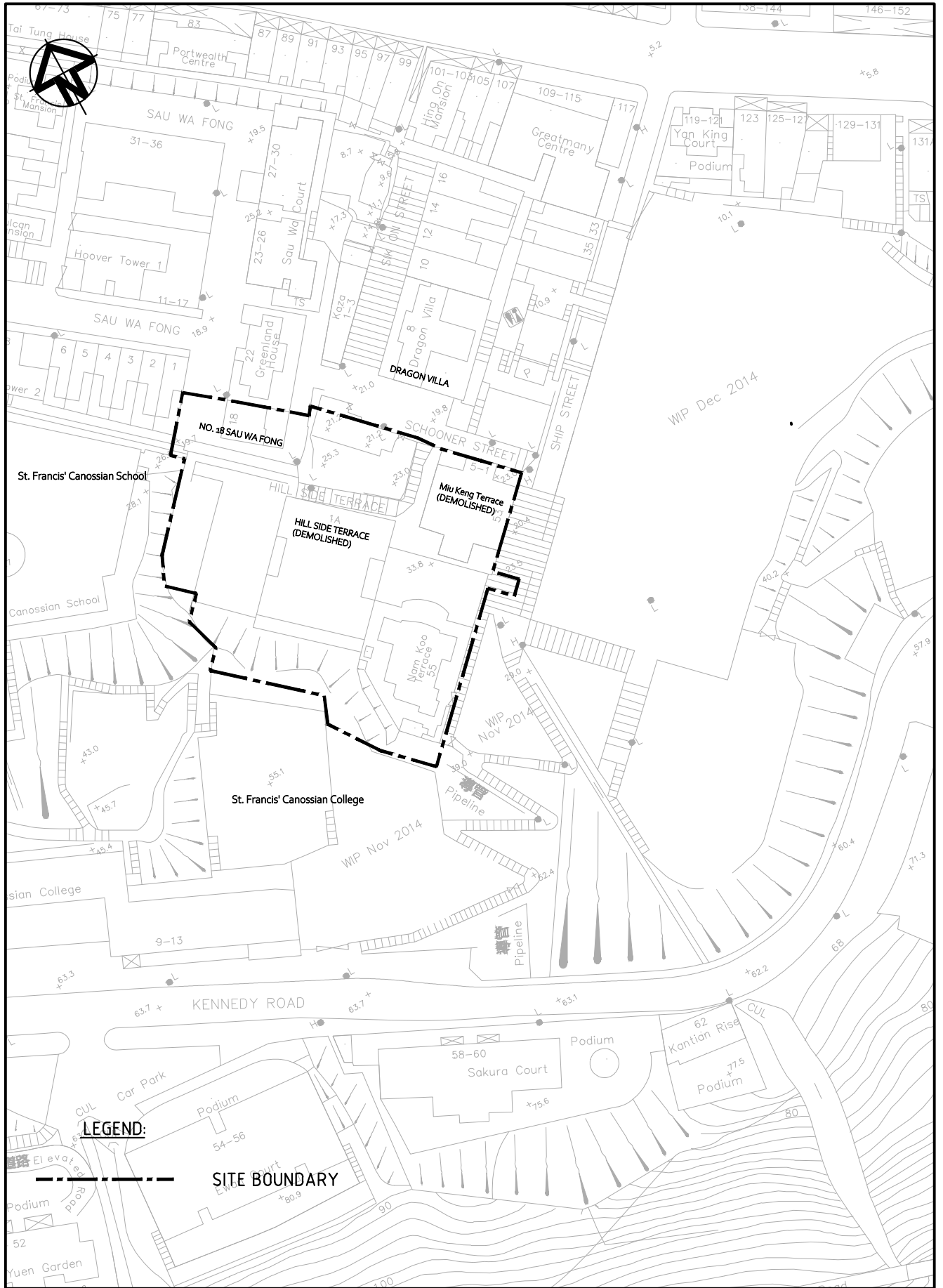
The purpose of this report is to present a Geotechnical Planning Review on the Indicative Development Scheme at Approved Wan Chai Outline Zoning Plan No. S/H5/31 from Comprehensive Development Area", "Residential (Group C)", "Open Space" and "Government, Institution or Community" zones and Areas shown as "Road" to "Other Specified Uses (Residential Development with Historic Building Conserved)" and "Other Specified Uses (Elevated Walkway)" at Nos. 1, 1A, 2 and 3 Hill Side Terrace, No. 55 Ship Street (a.k.a. Nam Koo Terrace), Nos. 1-5 Schooner Street, No. 53 Ship Street, No. 18 Sau Wa Fong, Inland Lot No. 9048 and adjoining Government Land, Wan Chai to illustrate how the proposed works may affect or be affected by the existing features within and in the vicinity of the Site.

As the proposed works may have impacts on some of the slopes and retaining walls, the overall stability will be examined during the detailed design stage, and if necessary, be modified to comply with the current geotechnical standards. A proposal for modifying and upgrading the features within the Site will be presented in the ELS plan or site formation plan (including Pipe Pile Work) to be submitted separately.

Additional ground investigation works will be carried out at within the Site area to obtain adequate geotechnical & geological for carrying out design of site formation, ELS and pipe foundation works of the Indicative Development Scheme.

Figures

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LEGEND:

--- SITE BOUNDARY

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Project
 PROPOSED AMENDMENT TO THE APPROVED WAN CHAI OUTLINE ZONING PLAN NO. S/H5/31 AT NOS. 1, 1A, 2 AND 3 HILL SIDE TERRACE, NO. 55 SHIP STREET (A.K.A. NAM KOO TERRACE), NOS 1-5 SCHOONER STREET, NO. 53 SHIP STREET, NO. 18 SAU WA FONG, INLAND LOT NO. 9048 AND ADJOINING GOVERNMENT LAND, WAN CHAI

Title
 LOCATION PLAN

asia infrastructure solutions

建業(亞細亞)工程顧問有限公司

Drawing No. FIGURE 1	Project No. EA01425	Issue D
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LEGEND:

- SITE BOUNDARY
- PD1 PRE-DRILL HOLE
- FGS/BH1P EXISTING BOREHOLE
- BSG/TR1 EXISTING TRENCH
- EXISTING TRIAL PIT
- BH1 PROPOSED DRILLHOLE (13 NOS.)
- P/S PIEZOMETERS / STANDPIPES (9 NOS.)

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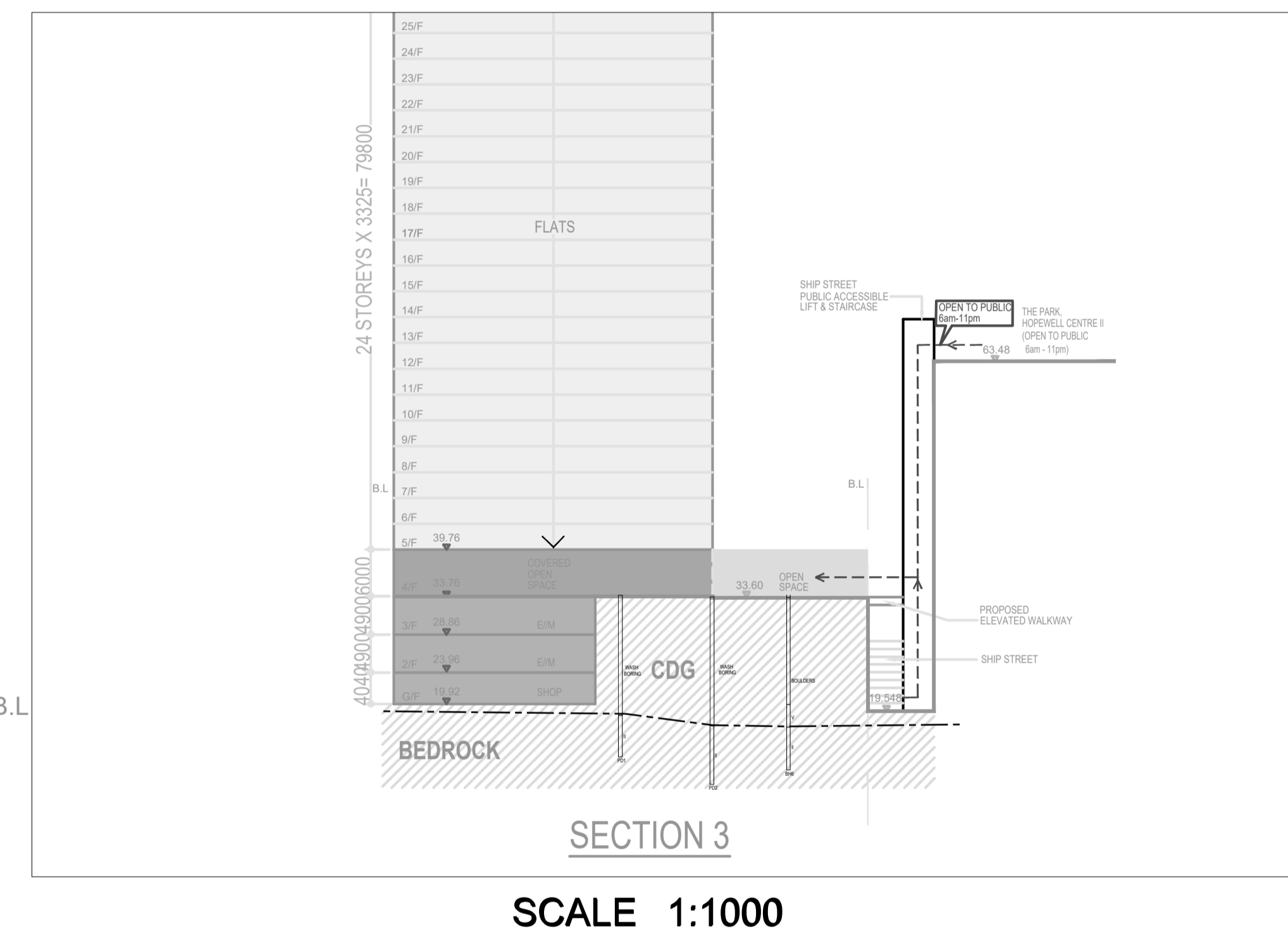
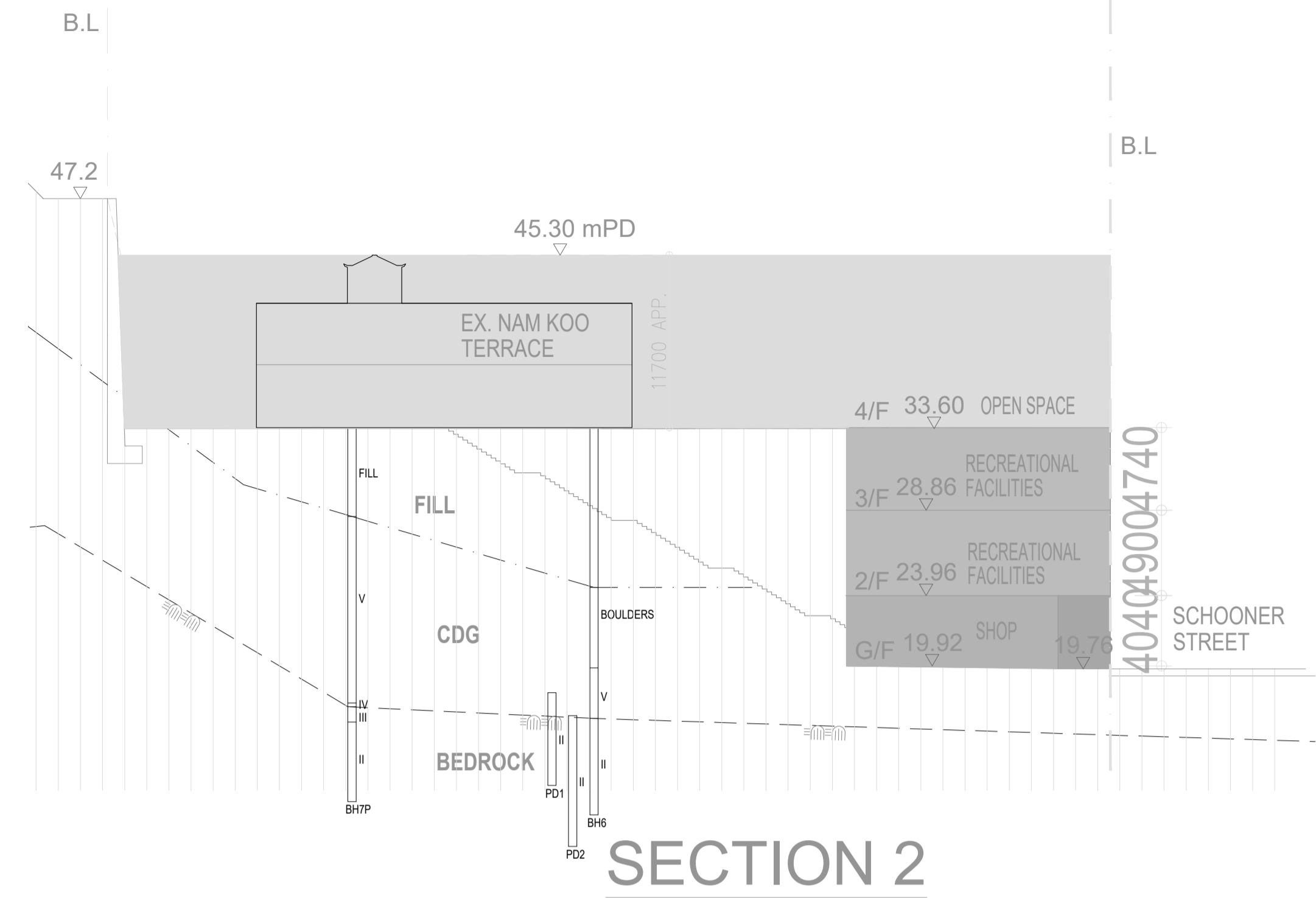
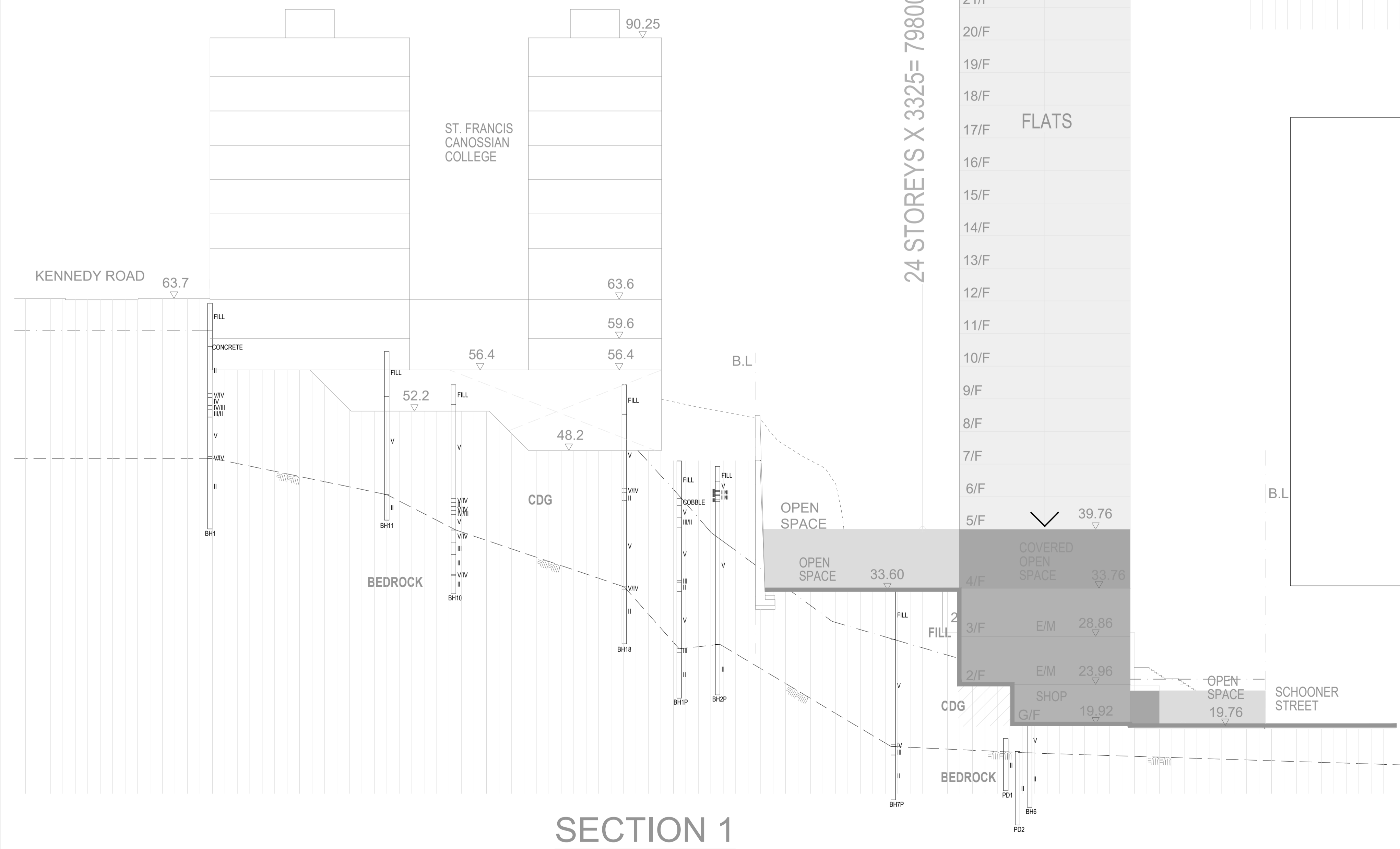
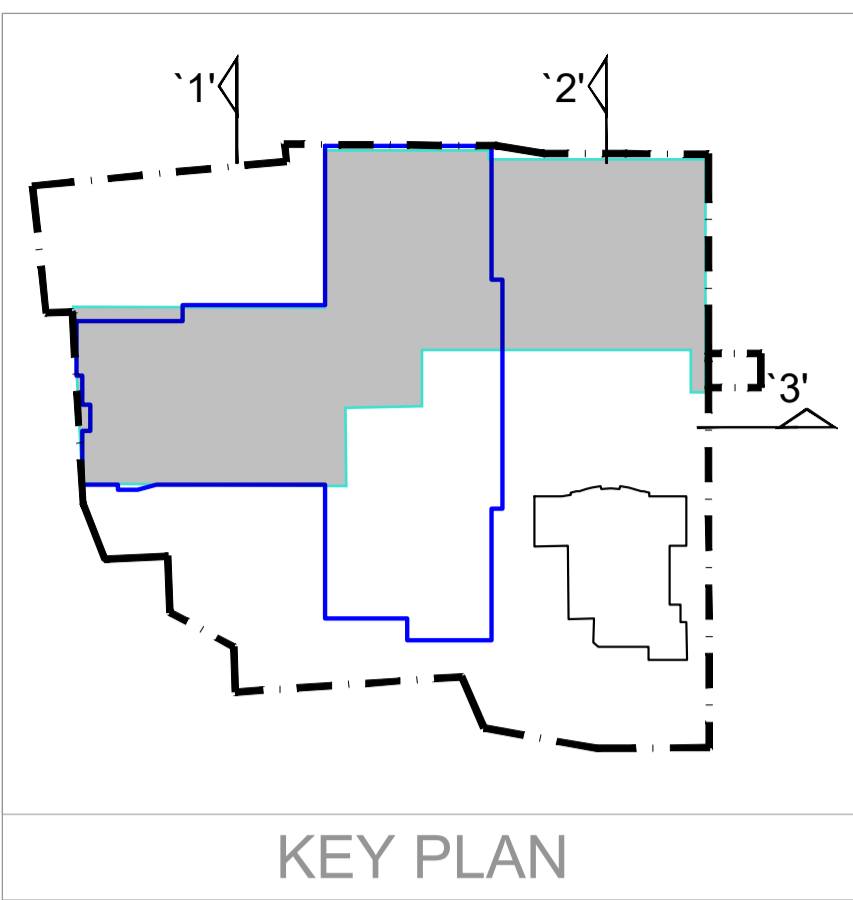
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 PROPOSED AMENDMENT TO THE APPROVED WAN CHAI OUTLINE ZONING PLAN NO. S/H5/31 AT NOS. 1, 1A, 2 AND 3 HILL SIDE TERRACE, NO. 55 SHIP STREET (AK.A. NAM KOO TERRACE), NOS 1-5 SCHOONER STREET, NO. 53 SHIP STREET, NO. 18 SAU WA FONG, INLAND LOT NO. 9048 AND ADJOINING GOVERNMENT LAND, WAN CHAI

Drawing No. FIGURE 2

Project No. EA01425

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PROJECT : PROPOSED AMENDMENT TO THE APPROVED WAN CHAI OUTLINE ZONING PLAN NO. S/H5/31 AT NOS. 1, 1A, 2 AND 3 HILL SIDE TERRACE, NO. 55 SHIP STREET (A.K.A. NAM KOO TERRACE), NOS 1-5 SCHOONER STREET, NO. 53 SHIP STREET, NO. 18 SAU WA FONG, INLAND LOT NO. 9048 AND ADJOINING GOVERNMENT LAND, WAN CHAI

TITLE : Geological Section

PROJECT NO : EA01425
DRAWING NO : FIGURE 3
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Appendix E

Record Plan of Adjacent Structure

Record Plan of St. Francis' Canossian College

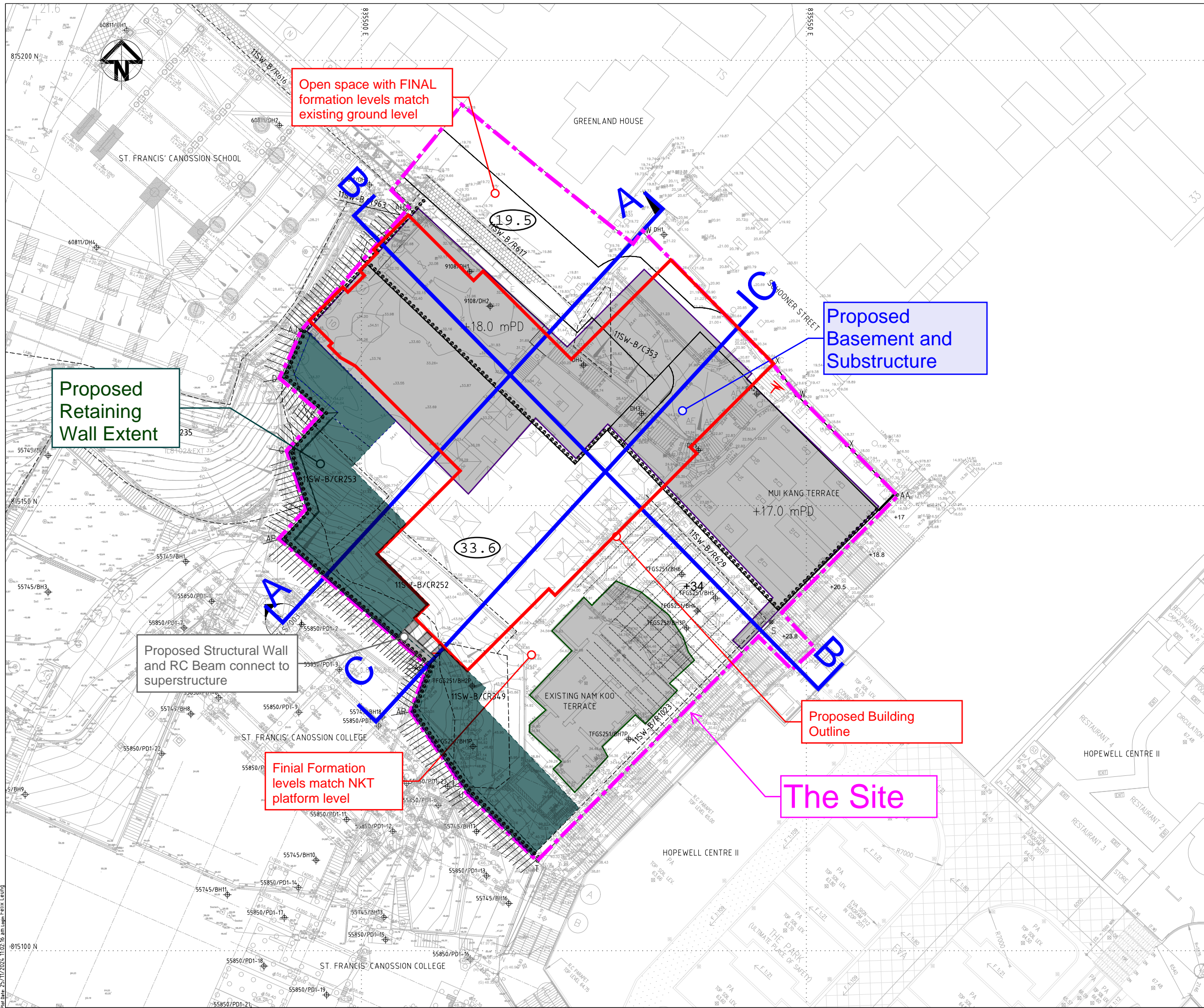
Record Plan of DH Order for 11SW-B/R629 and 11SW-B/CR349

Record Plan of Nam Koo Terrace

Record Plan of Dragon Villa

Appendix F

Schematic Foundation, ELS and Site Formation Works



- Legend:**
- PROPOSED SOIL NAIL
 - +18mPD PROPOSED FINAL EXCAVATION LEVEL
 - ⊗ PROPOSED 355 DIA. PIPE PILE
 - ⊙(33.6) PROPOSED FINAL FORMATION LEVEL

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DRAWN	T. KWAN	CHECKED	F. LEUNG	
APPROVED	A. LAI	© Copyright Reserved		
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CAD REF.	All dimensions are in mm unless shown otherwise. No measurement should be taken from drawing directly.			

PROJECT TITLE
NAM KOO TERRACE HONG KONG

CLIENT
HH HOPEWELL CONSTRUCTION COMPANY LIMITED

CIVIL, STRUCTURAL & GEOTECHNICAL CONSULTANT

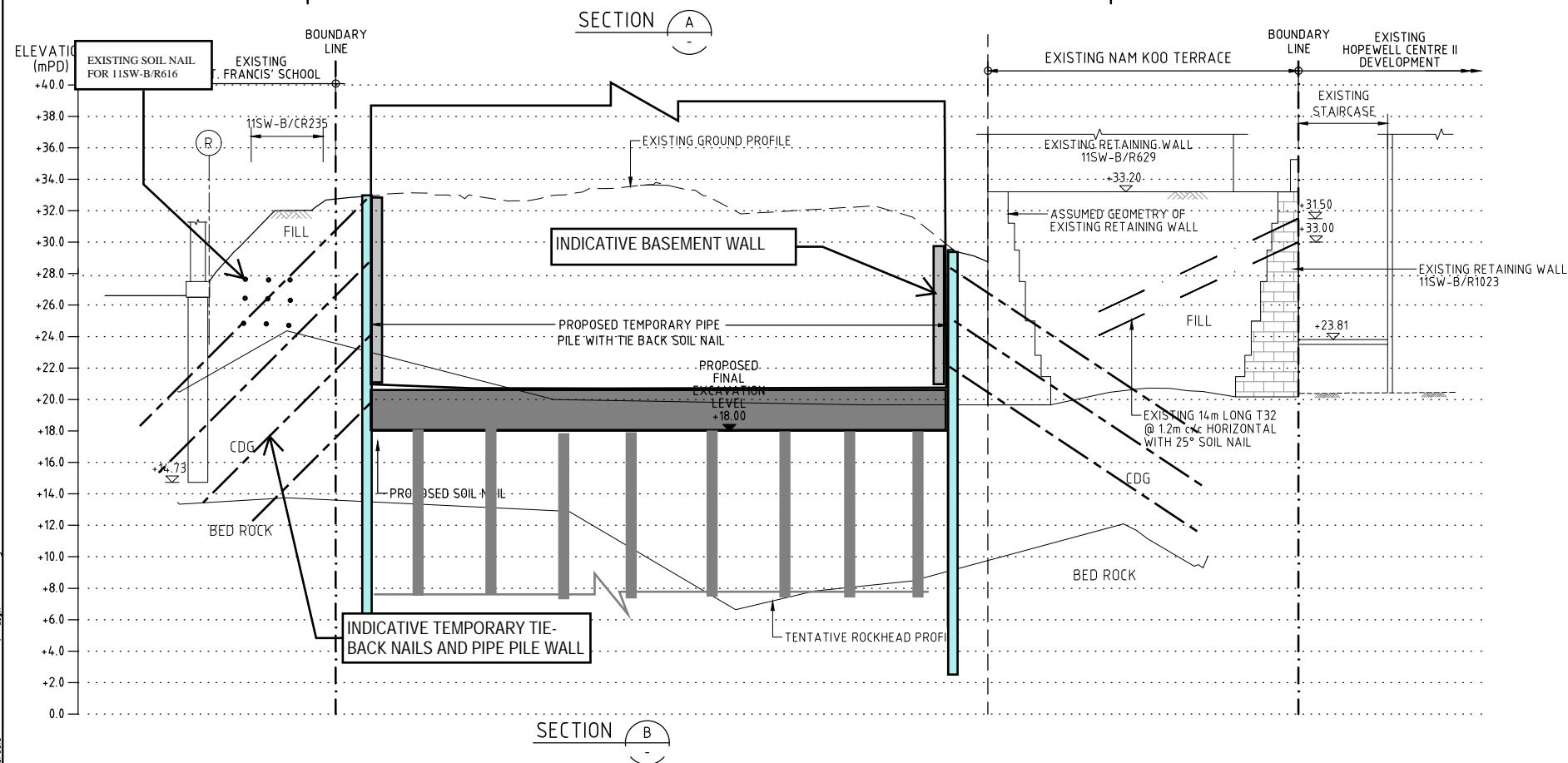
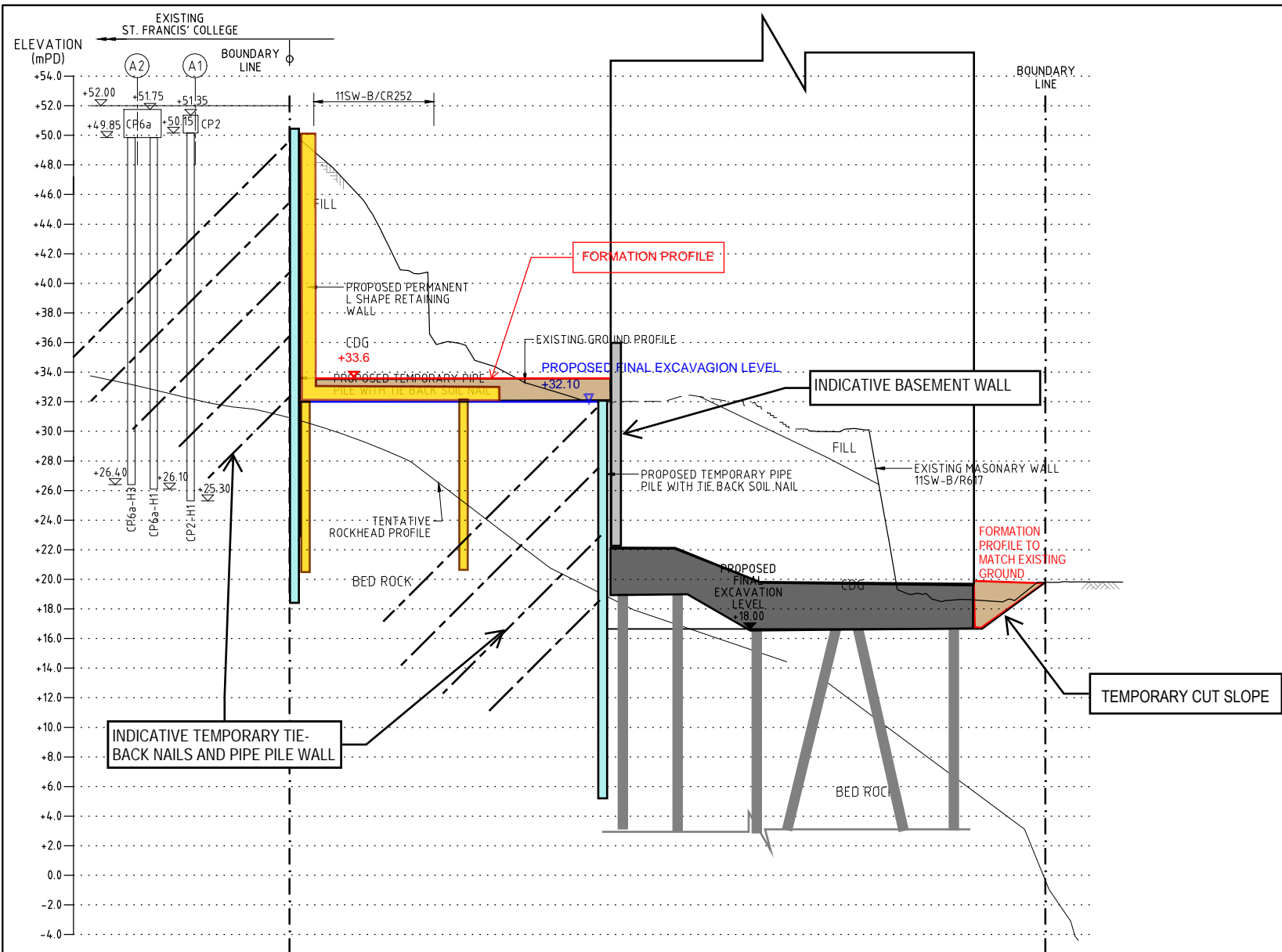
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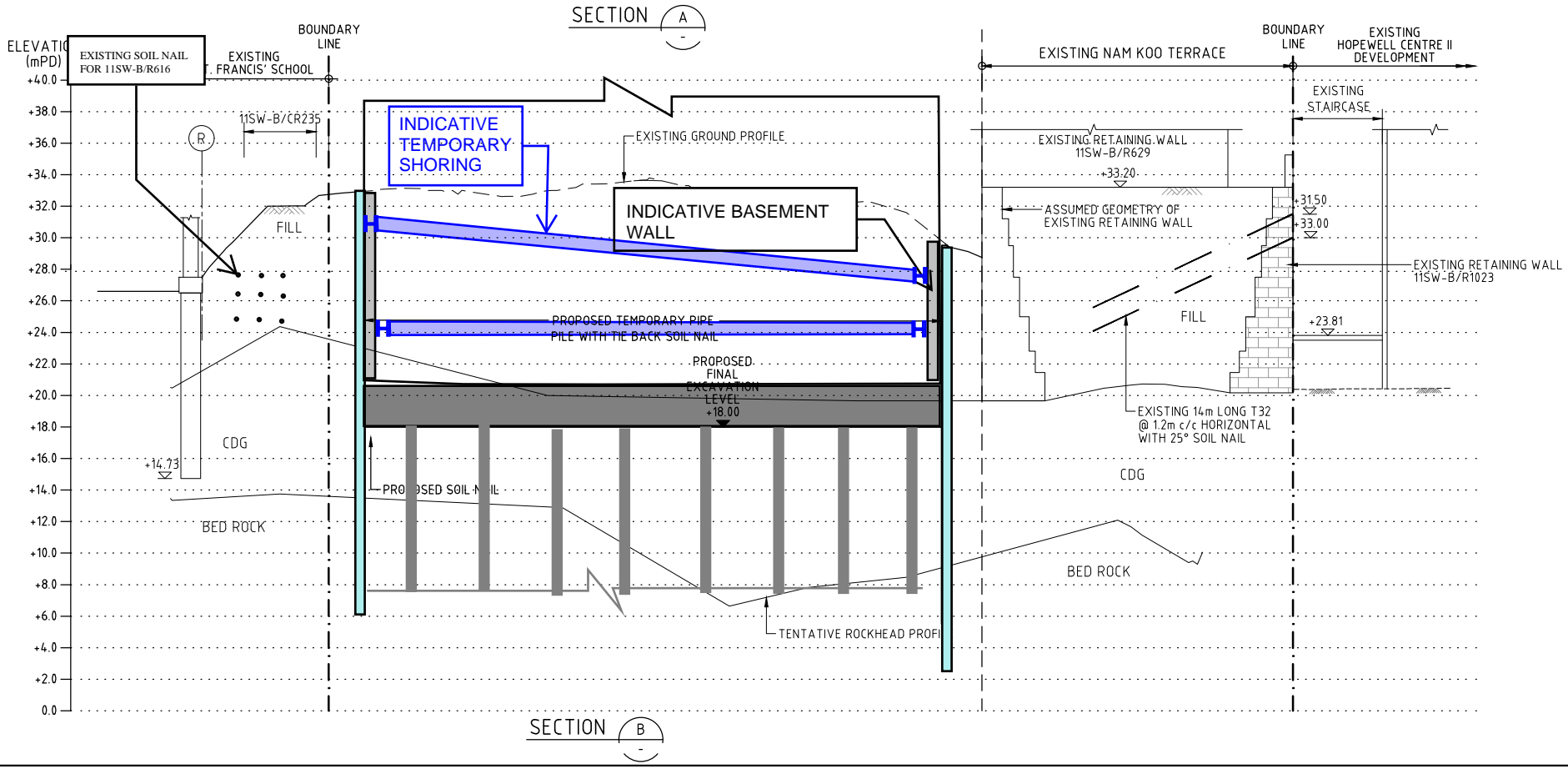
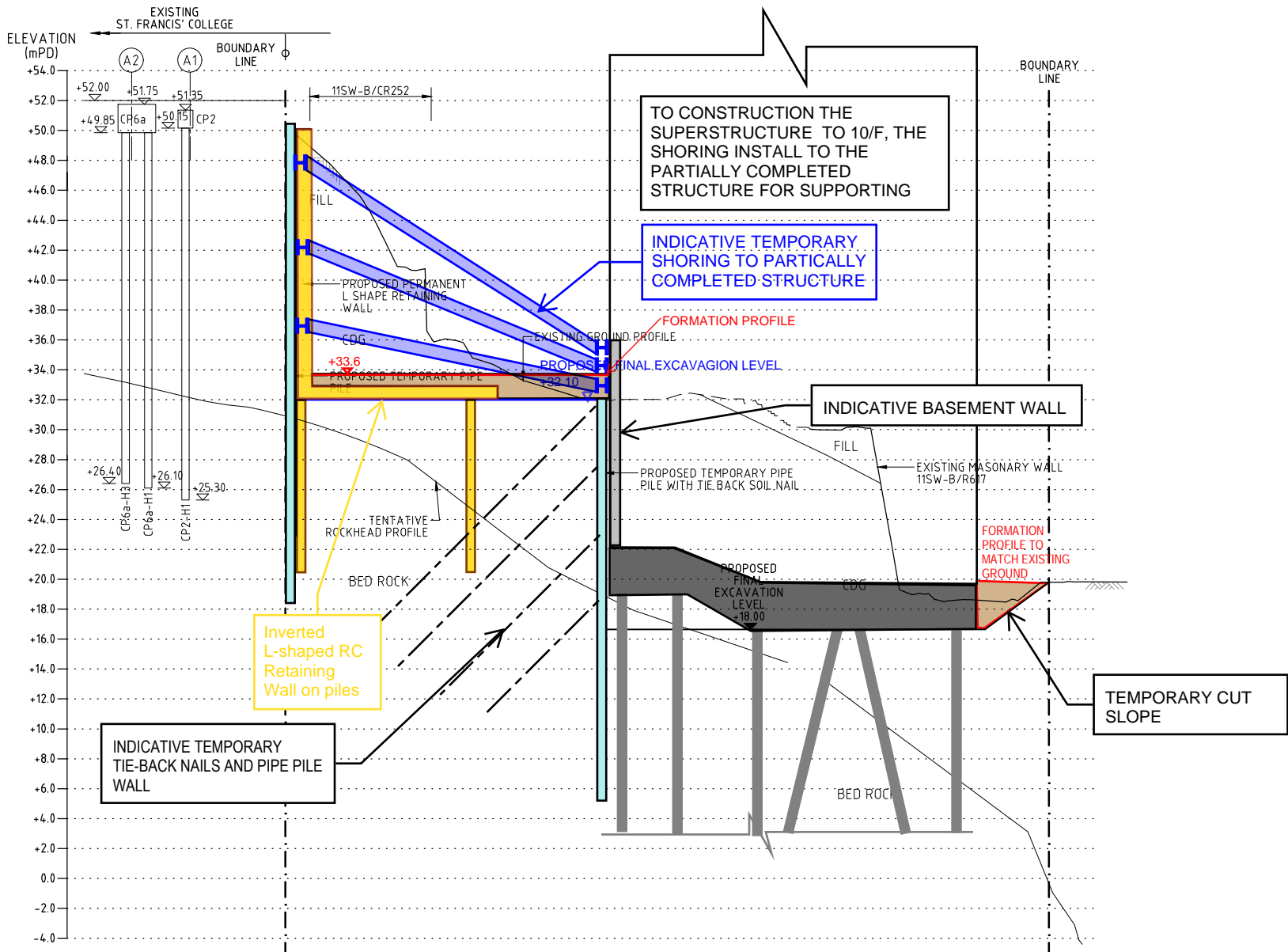


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-	NOV-2024	FIRST ISSUE	SC	AL
REVISION				
DESIGNED	F. LEUNG	CHECKED	S. CHAN	
DRAWN	T. KWAN	CHECKED	F. LEUNG	
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SCALE	1: 200 (A1)			
CAD REF.	All dimensions are in mm unless shown otherwise. No measurement should be taken from drawing directly.			
PROJECT TITLE				
NAM KOO TERRACE HONG KONG				
CLIENT				
HH HOPEWELL CONSTRUCTION COMPANY LIMITED				
CIVIL, STRUCTURAL & GEOTECHNICAL CONSULTANT				
 23/F, Two Harbour Square, 180 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong				
DRAWING TITLE				
Schematic SF/ ELS Works - Preliminary Sections (Tie Back Scheme)				
DRAWING NO.				REV.
ELS/001				-

File Date: 25/11/2024, 4:32:39 pm, User: Felix Leung

25mm ON ORIGINAL

Alternative Scheme for strut supporting



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PROJECT TITLE

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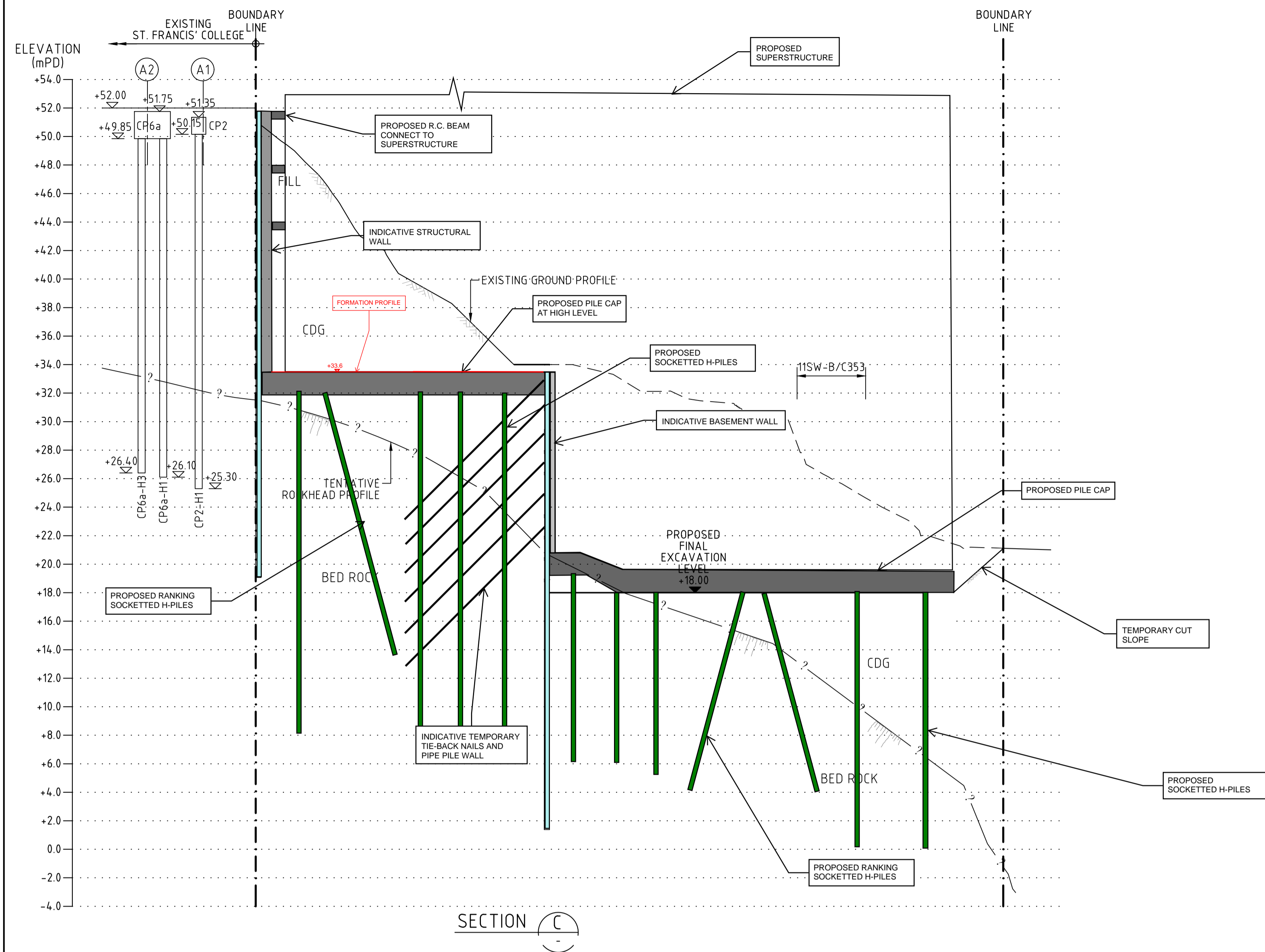
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DRAWING TITLE

Schematic SF/ ELS Works - Preliminary Sections (Shoring Scheme)

DRAWING NO.	EL5/001	REV.	-
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SECTION C-C

REV.	DATE	DESCRIPTION	CHKD.	APPD.
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CAD REF.			

PROJECT TITLE
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 COMPANY LIMITED**

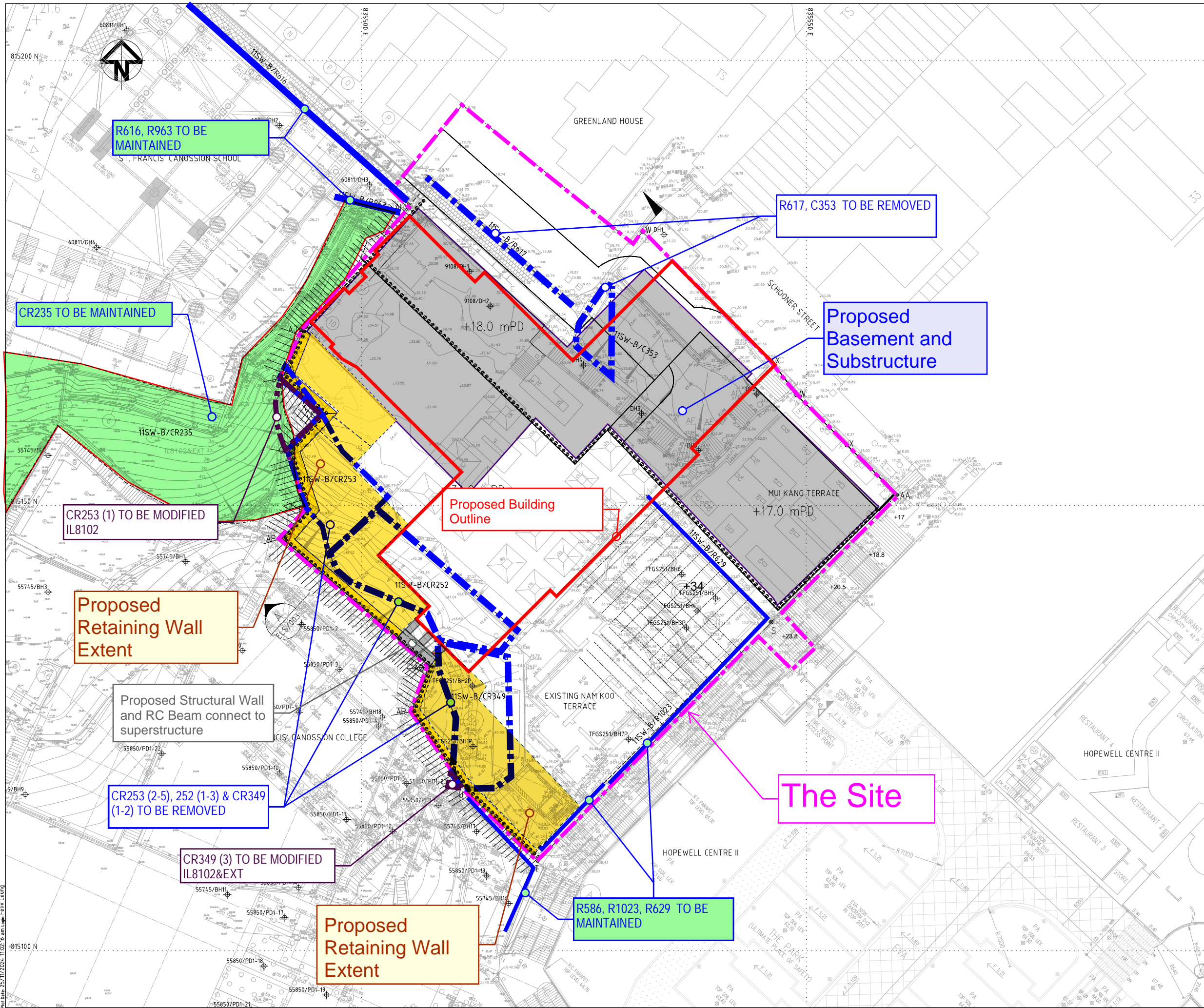
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 180 Wai Yip Street, Kwun Tong, Kowloon, Hong Kong

DRAWING TITLE
**TEMPORARY EXCAVATION
 AND LATERAL SUPPORT**
SECTION A1

DRAWING NO.
KEB002481/ELS/004

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Legend:

- PROPOSED SOIL NAIL
- +18mPD PROPOSED FINAL EXCAVATION LEVEL
- ⊗ PROPOSED 355 DIA. PIPE PILE

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SCALE	1: 200 (A1)			
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PROJECT TITLE
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DRAWING TITLE
Layout for Existing Features with Modificaiotn Works

DRAWING NO.
SF/002

25/11/2024 11:02:16 am Felix Leung