APPENDIX B

Initia – Clive Subdivision Geotechnical Report

INITIA

GEOTECHNICAL SPECIALISTS

TOMORROW CAPITAL LTD

CLIVE SUBDIVISION

GEOTECHNICAL REPORT – FOR RESOURCE CONSENT

INITIA REF P-001403 REV 2

JULY 2022

Contents

1. Introduction

This report outlines the findings of a preliminary geotechnical assessment carried out for the proposed subdivision development at School Road, Clive. This report is intended to provide geotechnical recommendations for the subdivision design phase, including earthworks, and to support the Resource Consent Application.

This assessment is based on recent geotechnical investigations across the 2 sites comprising 2 No. Machine Boreholes and 16 No. Cone Penetration Tests (CPT's).

1.1 Site Description

The site is located on the eastern edge of Clive village, crossed, and accessed by School Road. Legally described as PT SUB SEC 24 CLIVE LOTS 1-5 10-16 PTS 6-9 DP 345 & CLOSED RD, the area is relatively flat, with a total area of approximately 12.6 ha. The site is currently used as a maize crop, extensively planted across the site.

The site is surrounded by residential developments of the northern and western edges of the site. A small stream (Muddy Creek) is present along the eastern and southern edges of the site. The stream comprises clayey silt with sand lenses up to 1.0m height bank.

Figure 1.1: School Road, Clive

1.2 Proposed Development

We have not been provided with any development plans for the site, but we understand that residential dwellings are proposed.

Due to the relatively flat nature of the site, it is anticipated that bulk earthworks will be limited to removal of topsoil/material with tree roots and replacement with engineered fill. It is understood that, due to the risk of flooding, the site might need to be raised and fill up to 1.0m might be required across the site.

1.3 Published Geology

The published geological map for the area[1] indicates that the site is underlain by Holocene River deposits comprising poorly consolidate alluvial gravel, sand and mud.

The nearest active fault (Awanui Fault) is mapped[2] approximately 5 km to the north of the site.

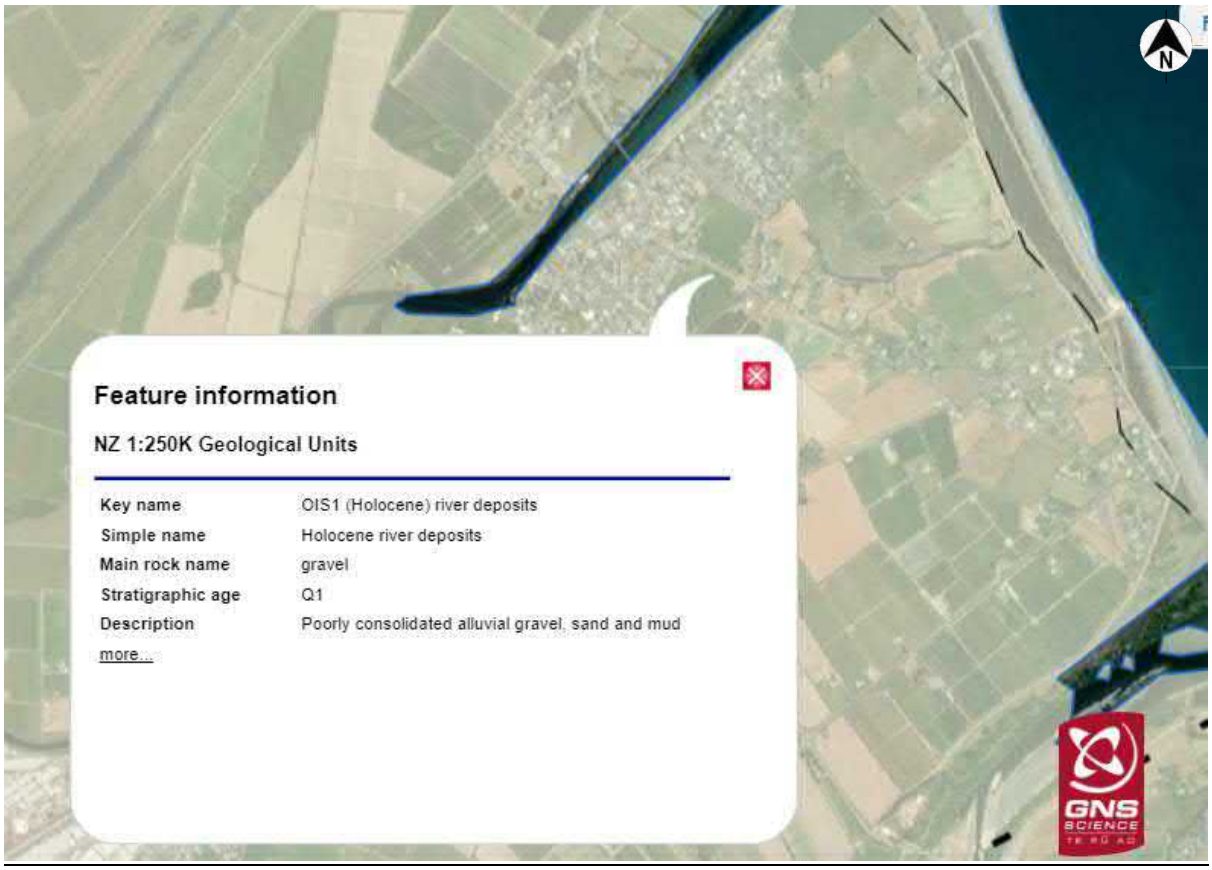

Figure 1-2: Published geology (sourced by GNS)

[1] Lee, J.M.; Townsend, D.; Bland, K.; Kamp, P.J.J. (compilers) 2011: Geology of the Hawke's Bay area: scale 1:250,000. Lower Hutt: Insititute of Geological & Nuclear Sciences Limited: Institute of Geological & Nuclear Sciences 1:250,000 geological map 8. 86 p. 1 folded map.
[2] GNS Science: New Zealand Active Faults Database (http://data.gns.cri.nz/af/, as accessed 23 May 2022).

2. Geotechnical Investigations

The geotechnical site investigations comprised, 2 No. Machine Boreholes and 16 No. Cone Penetration Tests (CPT's) between 05 and 10 May 2022, details of the respective investigation techniques are outlined below. The locations of all investigations were obtained using a hand-held GPS and are presented on Figure 1403-001 (Appendix A).

A large portion of the site was being used to grow maize. Investigations were undertaken where access was possible. Supplementary investigations are scheduled once the maize has been cropped. These investigations will confirm consistency of the ground conditions.

2.1 Machine Boreholes

Machine Boreholes were undertaken using a Sonic Rig, under the supervision of an Initia engineering geologist with recovered core was logged in accordance with NZGS guidelines[3]. The Borehole logs are presented in Appendix B.

In situ testing comprising Standard Penetration Tests (SPTs) were undertaken at approximately 150 mm intervals within the boreholes. In addition, undrained shear strengths were undertaken at the end of the core barrel when cohesive material was encountered.

Standpipe piezometers were installed in both boreholes to allow ongoing measurement of groundwater levels.

Table 2-1: Borehole Investigations

Investigation ID	Coordinates (NZTM)[1]		Ground Surface Elevation[2] (m RL)	Termination Depth (m BGL)
	Easting (mE)	Northing (mN)		
BH01	1936780	5610989	1.3	10.95
BH02	1936645	5610746	0.9	10.95

2.2 Cone Penetration Tests

16 No. CPT's were undertaken by Geotech Drilling Ltd using a truck mounted rig (with 20 tonne reaction force) to a target depth of 15 m or refusal. CPT results are provided in Appendix C.

Table 2-2: Summary of CPT Investigations

Investigation ID	Coordinates (NZTM)[1]		Ground Surface Elevation[2] (m RL)	Termination Depth (m BGL)
	Easting (mE)	Northing (mN)		
CPT01	1936551	5611033	0.7	15
CPT05	1936610	5611058	0.7	15
CPT06	1936580	5611008	1.1	15
CPT07	1936681	5610947	0.9	15
CPT10	1936519	5610651	0.8	15
CPT11	1936810	5611027	1.6	15
CPT12	1936778	5610968	1.4	15
CPT13	1936770	5610899	1.6	15

[3] New Zealand Geotechnical Society Inc, December 2005: Field Description of Soil and Rock, Guideline for the field classification and description of soil and rock for engineering purposes.

Investigation ID	Coordinates (NZTM)[1]		Ground Surface Elevation[2] (m RL)	Termination Depth (m BGL)
	Easting (mE)	Northing (mN)		
CPT14	1936746	5610858	1.5	15
CPT15	1936705	5610897	1.1	15
CPT16	1936622	5610954	0.7	15
CPT19	1936694	5610777	0.5	15
CPT20	1936631	5610731	0.8	15
CPT21	1936588	5610693	0.4	15
CPT24	1936422	5610720	1.3	15
CPT25	1936519	5610651	0.8	15

Note 1: Co-ordinate system – NZTM 2000. Test location coordinates are determined via hand-held GPS Survey and/or measured distance from existing structures.
Note 2: Datum – NZVD2016. Ground surface elevations are based on interpretation from LINZ LiDAR Contours and are expected to be accurate + or – 0.5m.

2.3 Test Pits

In June 2022, 10 additional trets pits were excavated to obtain samples for geotechnical laboratory testing. The investigations were located in the vicinity of the area set aside for a proposed stormwater detention pond.

The test pits were extended to a maximum depth of 3m and samples were obtained for compaction and solid density testing. Copies of these test results are presented in Appendix B and discussed in the Earthworks section 4.4 later in this report.

3. Subsurface Conditions

3.1 Stratigraphy

The geotechnical model presented in this report is based on available information obtained from geotechnical investigations at point locations completed by Initia. The nature and continuity of the subsoil conditions away from investigation locations is inferred and it must be appreciated that the actual soil conditions may vary from the assumed model. While the succession of deposits encountered by the investigations, was broadly consistent, the due to their alluvial deposition, the deposits are typically thinly bedded with significant spatial variability.

Generally, the site is underlain by the following sequence of materials:

- A layer of topsoil up to 0.1m,
- Upper unit comprising firm to stiff clayey silts with loose silty sands lenses to depths of typically in the order of 4.5 and 6 m; and
- A lower unit comprising interbedded sands, silty sands and sandy silts to end depth of investigation (15 m).

The units vary spatially across the site.

A summary of the geological units underlying the site is description is presented is summarised in Table 3-1 below.

Table 3-1: Summary of site stratigraphy and in situ testing.

Geological Unit	Soil/Rock type	Depth to Top of Unit (m, bgl)	Typical layer Thickness (m) [Typical Value]	In Situ Strength Parameters Range [Typical value]	
				Su (kPa)[2]	CPT qc (MPa)[1]
Topsoil	Topsoil with roots.	0	0.1	NA	NA
Holocene Alluvial Deposits	Unit 1 firm to stiff clayey silts loose silty sands lenses.	0.1	4.5 – 6.0	35 - 49	0 – 1 [1]
	Unit 2 Loose silty Sand	4.5	1.5	-	0 – 3 [2]
	Unit 3 – Interbedded loose to medium dense SAND/Silty SAND and very stiff sandy SILT.	4.5 – 6.0	Base of unit >15 depth	-	16 – 34 [18]

3.2 Groundwater

Groundwater within the Boreholes and CPTs ranged between 0.8m to 2.3m. For the purposes of geotechnical analyses, we have adopted a groundwater level of 1 m below existing ground level.

4. Geotechnical Considerations

4.1 General

Based on the encountered ground conditions, the key geotechnical considerations for the proposed subdivision, outlined in further detail in subsequent sections are as follows:

1- Site Seismicity;
2- Liquefaction potential and lateral spread;
3- Consolidation Settlement;
4- Foundation options; and
5- Earthworks considerations.

4.2 Seismic Considerations

4.2.1 Seismic Subsoil Class and Seismicity

In accordance with NZS 1170.5:2004 and the depth to inferred rock level (greater than 40m below existing ground level), it is recommended that the site subsoil **Class D (Deep Soil)** be utilised for the structural design of the proposed buildings. We have assessed this on the basis that:

- Rock is expected to be a significant depth below existing ground level, i.e. the depths of soil are likely to exceed the allowable levels for Class C – Shallow Soil; and
- The strengths of material exceed those required for Class E – Very Soft Soil.

The peak ground accelerations for geotechnical analyses have been derived using the MBIE Geotechnical Earthquake Engineering Guidelines, Module 1[4], we have assumed the following in deriving the seismic design loading:

- 50 years design life for the proposed building;
- Important level 2 - IL2;
- SLS return period – 1 in 25 years return period events; and
- ULS return period – 1 in 500 years return period events.

The geotechnical peak ground accelerations calculated for the site and the associated effective magnitudes are assumed in Table 4-1 below.

Table 4-1: Design Peak Ground Accelerations

Limit State Design Condition	Annual Probability of Exceedance	Effective Magnitude, M_{eff}	Peak Ground Acceleration, (g)
Serviceability Limit State (SLS)	1 in 25	6.4	0.12
Ultimate Limit State (ULS)	1 in 500	7.1	0.58

[4] MBIE, Earthquake Geotechnical Engineering Practice, Module 1: Overview of the Guidelines, Appendix A, dated November 2021

4.2.2 Liquefaction Potential and Effects on the Development

A CPT-based liquefaction analysis has been carried out using the software CLiq v.3.0[5] on the recent Initia CPTs. The adopted analysis method is based on the study by Boulanger and Idriss (2014). A transition layer correction to allow for the highly stratified nature of the soil.

For these analyses, we separate the liquefaction assessment in two different areas on both sides of School Road (area North and area South – Refer to Fig. 1-1).

Our analyses indicate the following:

- Under SLS levels of shaking, liquefaction is unlikely to be triggered;
- Under ULS levels of shaking, bands of material within the subsoil profile are potentially liquefiable. Layer thickness is generally between 0.2m and 0.5m.

There are no site-specific records of site performance in the 1931 earthquake[6].

Area North

LSN values range between 4 and 16 (on average 7) under ULS levels of shaking which suggests expected damage is likely to be minor[7]. These LSN numbers will reduce if fill is placed to raise site levels.

Our analyses indicate that liquefaction triggers at about 0.15g (above SLS levels of shaking), and full liquefaction over the depths investigated is likely to be triggered at about 0.25g. This equivalent to about a 1 in 200-year event.

The nearest free face (Muddy Creek) runs at the eastern part of the site boundary. The northern site shows a buffer of 20m and the southern site shows buffer between 0m to 1m.. Analyses indicate the depth of potentially layers are at a significant depth below the creek bed. Accordingly, we consider this material to be confined laterally and, accordingly, lateral spreading is not considered a risk to the development.

Under ULS levels of shaking calculated index settlements assessed using the procedure by Zhang, Robertson and Brachman (2002) over the top 10 m are range between 20mm – 70mm.

Area South

LSN values range between 1 and 14 (on average 6) under ULS levels of shaking which suggests expected damage is likely to be minor[8]. These LSN numbers will reduce if fill is placed to raise site levels.

Our analyses indicate that liquefaction triggers at about 0.15 g (above SLS levels of shaking), and full liquefaction over the depths investigated is likely to be triggered at about 0.25g. This equivalent to about a 1 in 200-year event.

The nearest free face (Muddy Creek) runs at the eastern part of the site boundary, 5 – 10m. Analyses indicate the depth of potentially layers are at a significant depth below the of the creek. We consider this material to be confined laterally and, accordingly, lateral spreading is not considered a risk to the development.

Under ULS levels of shaking calculated index settlements assessed using the procedure by Zhang, Robertson and Brachman (2002) over the top 10 m are range between 10mm – 90mm.

[5] Geologismiki (2020), CLiq - Cone Penetration Test based soil liquefaction software.
[6] El Kortbawi (2017)., Insights into the liquefaction hazards in Napier and Hastings based on assessment of data from the 1931 Hawke's Bay, New Zealand Earthquake.
[7] MBIE (2016). Earthquake Engineering Module 3
[8] MBIE (2016). Earthquake Engineering Module 3

Based on the calculated parameters site performance is expected to be comparable to a TC2 type the effects of liquefaction can be mitigated (over both areas) through the adoption of appropriate foundations and detailing of services as outlined in Sections 4.5 and 4.6.

4.3 Consolidation Settlement

Preliminary analyses have been undertaken to estimate the likely consolidation settlement from the proposed ground raising across the site (due to potential flooding) and future building loads. The investigations encountered firm silts/loose sands. Accordingly, it is anticipated that any settlement arising from this unit would be within the tolerable limits for typical residential dwellings. Based on assumed a load of 20kPa for 1m of clayey Silt fill across the site and 10 kPa for typical single storey dwellings. Estimated consolidation settlements are expected to be less than 25 mm based on the expected loads.

Nonetheless, on completion of bulk filling, it is recommended that survey monitoring be undertaken and construction of structures only commence once settlement has been assessed to have ceased.

Our assumptions and analyses should be reviewed and amended once layouts are confirmed.

4.4 Earthworks

Prior to any cut and fill operation, the site should be cleared of vegetation and any topsoil present stripped from the work area. Given the historic site use as a maise crop there are likely to be voids (root pockets) below the topsoil.

Many of these voids will be removed as part of the cut operation across the majority of the site. However, we recommend that the following process is carried out when the site has been cut to subgrade level:

- Site walkover by experienced geotechnical engineer to highlight obvious root pockets and/or voids.
- Root pockets and voids to sub excavated and backfilled with engineered fill.
- Proof roll using a full laden dump truck or motorscraper
- Strength testing (Scala or Shear vanes) across the subgrade

Material should be placed and compacted in accordance with an engineering specification, the typical requirements of NZS 4404:2010 and be subject to testing during construction.

We have recently carried out test pits and obtained near surface samples for the material that is to be potentially used as fill. As expected, the natural moisture content of the material is between 8% and 16% above the optimum moisture content of this soil type. This will require ‘drying back’ to achieved compaction to an engineered fill standard. We would recommend that these earthworks are undertaken in summer to enable drying to take place.

4.5 Foundations

To accommodate the anticipated levels of deformation outlined in Sections 4.2, raft foundations should be designed to accommodate the settlement outlined in Section 4.2.2.

The raft foundations can be constructed directly on the proposed engineered fill. Bearing capacities suitable for use in design will be confirmed following earthworks however will likely be in the order of the following:

- Geotechnical Ultimate Capacity – 300 kPa;
- ULS bearing pressure – 150 kPa; and
- Allowable bearing pressure – 100 kPa for footings widths up to 1 m.
-

4.6 Services

Given the possibility for both vertical deformations because of liquefaction under seismic loading, it is recommended that:

- Flexible materials and connections to accommodate vertical deformations if liquefaction was to occur; or
- Pipes grades be steepened to allow for deformation from seismic events.

4.7 Further Work

The following further work is recommended during subdivision design and construction of the proposed development.

Investigations

- In areas that were not initially accessible, further investigations comprising machine boreholes to ensure continuity of the ground conditions and calibration of liquefaction analyses for detailed design purposes.

Detailed Design

- Review of consolidation settlement estimates on confirmation of final loads and layouts;
- Assessment of suitable deformations for site services;
- Development of an earthwork specification and construction observations.

Construction

- Observation of the site subgrade following removal of topsoil;
- Compaction testing and review of results for any fill;
- Observations of ground improvement work that may be required.

The observations will be required to certify the site suitable for construction of foundations.

5. Conclusions

Based on the preliminary geotechnical investigations of the site and analysis, we consider that the site is suitable for residential subdivision in accordance with the proposed scheme noting that:

- Prior to filling the site should be cleared of vegetation and any topsoil present stripped from the work area.
- To accommodate the anticipated levels of deformation during a design seismic event, raft (TC2 type) foundations are recommended for the proposed dwellings.
- Further geotechnical investigation of the site should be undertaken at subdivision design stage to confirm the assumptions made in this report.

6. Applicability

This report has been prepared for our client, Tomorrow Capital Ltd, with respect to the brief provided to us. The advice and recommendations presented in this report should not be applied to any other project or used in any other context without prior written approval from Initia Limited.

The liquefaction analyses outlined in this report are based on empirical methods derived from databased of various earthquakes. Earthquakes are unique and impose variable levels of shaking on different sites. Accordingly, it is important to understand that the actual performance may vary from that calculated.

During detailed design a review of the geotechnical aspects of the civil and structural design to ensure the considerations in this report have been adequately addressed.

During excavation and construction observations should be undertaken a suitably qualified geotechnical engineer to confirm the exposed subsoils are compatible with the conditions on which this report has been based.

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Document control record

Report Title		Clive Subdivision Geotechnical Report – For Resource Consent			
Initia Project Reference		P-001403			
Client		Tomorrow Capital Ltd			
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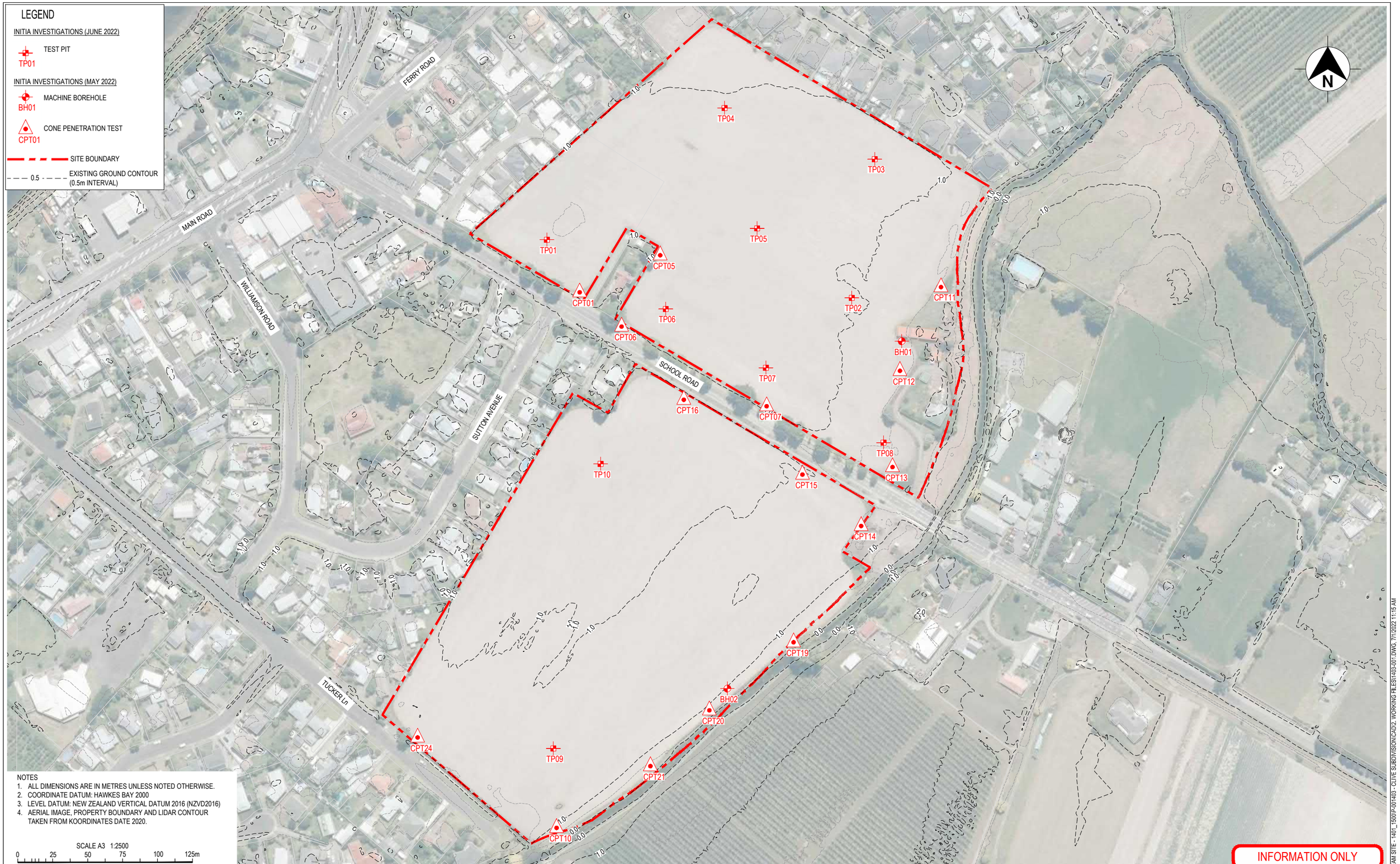
1	26-05-22	First Issue	Bruno Souza	N. Hickman	A. Pomfret
2	21-07-22	Final Issue	Bruno Souza	N. Hickman	A. Pomfret
Current Revision		2			

Appendix A Figures



NOTES
1. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
2. COORDINATE DATUM: HAWKES BAY 2000
3. LEVEL DATUM: NEW ZEALAND VERTICAL DATUM 2016 (NZVD2016)
4. AERIAL IMAGE, PROPERTY BOUNDARY AND LIDAR CONTOUR TAKEN FROM KOORDINATES DATE 2020.

SCALE A3 1:2500
0 25 50 75 100 125m

INFORMATION ONLY

Rev	Revision Description	Designed	Drawn	Checked
A	INVESTIGATION LOCATION (01/07/2022)	BS	GG	BS

NOT FOR CONSTRUCTION
THIS DRAWING IS NOT TO BE USED FOR CONSTRUCTION UNLESS SIGNED AS APPROVED
APPROVED:
DATE:
Scale AS SHOWN
Original Size A3

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TOMORROW CAPITAL LIMITED

RESIDENTIAL SUBDIVISION, SCHOOL RD, CLIVE

GEOTECHNICAL INVESTIGATION LOCATION PLAN

Initia Project ref: P001403
Figure Number 1403-001
Revision A

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Appendix B Boreholes and Test Pit Logs

DRILLHOLE LOG

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GEOTECHNICAL SPECIALISTS

HOLE NO.: BH01		
CLIENT: Tomorrow Capital Limited	**SITE LOCATION:** School Road, Clive	**Project Ref.:** P-001403
PROJECT: School Road, Clive		
CO-ORDINATES: 1936780.0mE, 5610989.0mN	**ELEVATION:** 1.3m	**CONTRACTOR:** Geotech Drilling
Co-ordinate system: NZTM	**Datum:** HBRC VD	**RIG:** Sonic Rig
Location method: GPSH	**Level method:** CONTOUR	**DRILLER:** Troy + Richard
ORIENTATION (°): Vertical	**INCLINATION (°):** 90	**START DATE:** 10/05/2022
		END DATE: 10/05/2022
		LOGGED BY: BSS
		CHECKED BY: APK

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	GRAPHIC	WEATHERING (UW SW MW HW CW)	STRENGTH (EW VW W MS S VS ES)	DEPTH	RL	SAMPLES	METHOD	TCR (%)	RQD (%)	INSITU TESTING (SPT 'N' Vane shear strength)	DISCONTINUITIES DESCRIPTION	WATER	INSTALLATION	CORE BOXES
Holocene River Deposits	SILT, with trace rootlets; dark brown. Firm; non-plastic; moist.				0	1.0		SNC	100						
	Clayey SILT, with minor organics, with trace sand; greyish brown with orange brown speckles. Firm; high plasticity; moist; sand, fine.														
	Clayey SILT, with trace sand; light orange with orange brown speckles. Stiff; high plasticity; moist; sand, fine.				1	0.0									
	Clayey SILT, with minor sand; grey. Firm; low plasticity; moist; sand, fine.				2	-1.0		SPT	100		46 / 18 kPa 0, 0 / 0, 0, 0, 0 N=0				
	Silty SAND; grey. Very loose; low plasticity; moist; sand, fine to medium.							SNC	100				10/05/2022	Bentonite	Box 1, 0.0-2.6m
	2.60m - 2.80m: dilatant														
	2.8m - 3.0m: Core loss				3	-2.0								3m	
	Clayey SILT, with minor sand; grey with brownish grey speckles. Firm; high plasticity; moist; sand, fine.							SPT	100		49 / 21 kPa 1, 1 / 1, 0, 0, 0 N=1				
								SNC	100					Sand	
					4	-3.0									
								SPT	100		39 / 15 kPa 0, 0 / 0, 0, 0, 0 N=0				
								SNC	100						Box 2, 2.6-5.7m
	SAND, with some silt; grey. Medium dense; non-plastic; moist; sand, fine to medium.				5	-4.0									
								SPT	100		1, 1 / 2, 5, 5, 6 N=18			6m	
								SNC	100						
					6	-5.0									
								SPT	100		2, 2 / 1, 2, 7, 8 N=18			Bentonite	Box 3, 5.7-8.5m
								SNC	100						
	Clayey sandy SILT; grey. Stiff; high plasticity; moist; sand, fine to medium.				7	-6.0									
								SPT	100		0, 1 / 1, 3, 6, 6 N=16				
	SAND, with minor silt; grey. Medium dense; non-plastic; moist; sand, fine to medium.				8	-7.0									
								SNC	100						Box 4, 8.5-11.0m
					9	-8.0									

REMARKS:

DRILLHOLE LOG

INITIA
GEOTECHNICAL SPECIALISTS

HOLE NO.: BH01

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936780.0mE, 5610989.0mN
Co-ordinate system: NZTM
Location method: GPSH
ORIENTATION (°): Vertical
ELEVATION: 1.3m
Datum: HBRC VD
Level method: CONTOUR
INCLINATION (°): 90
CONTRACTOR: Geotech Driiling
RIG: Sonic Rig
DRILLER: Troy + Richard
START DATE: 10/05/2022
END DATE: 10/05/2022
LOGGED BY: BSS
CHECKED BY: APK

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	GRAPHIC	WEATHERING (UW SW MW HW CW)	STRENGTH (EW VW W MS S VS ES)	DEPTH	RL	SAMPLES	METHOD	TCR (%) (25 50 75)	RQD (%) (25 50 75)	INSITU TESTING (SPT 'N' Vane shear strength)	DISCONTINUITIES DESCRIPTION	WATER	INSTALLATION	CORE BOXES
Holocene River Deposits	[Cont...] SAND, with minor silt; grey. Medium dense; non-plastic; moist; sand, fine to medium. 10.50m: grades to dense. EOH: 10.95m					9.0		SNC SPT	100 100		2, 4 / 5, 9, 9, 11 N=34			Bentonite 10.95m	Box 4, 8.5-11.0m

10.0
11.0
12.0
13.0
14.0
15.0
16.0
17.0
18.0

REMARKS:

CORE PHOTOS

HOLE NO.: BH01
JOB NO.: P-001403

Box 1, 0.0-2.6m

Box 2, 2.6-5.7m

Box 3, 5.7-8.5m

CORE PHOTOS

HOLE NO.: BH01

JOB NO.: P-001403

Box 4, 8.5-11.0m

DRILLHOLE LOG

INITIA
GEOTECHNICAL SPECIALISTS

HOLE NO.: BH02

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936645.0mE, 5610745.7mN
Co-ordinate system: NZTM
Location method: GPSH
ORIENTATION (°): Vertical
ELEVATION: 0.9m
Datum: HBRC VD
Level method: CONTOUR
INCLINATION (°): 90
CONTRACTOR: Geotech Drilling
RIG: Sonic Rig
DRILLER: Troy + Richard
START DATE: 11/05/2022
END DATE: 11/05/2022
LOGGED BY: BSS
CHECKED BY: APK

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	GRAPHIC	WEATHERING (UW SW MW HW CW EW VW W)	STRENGTH (MS S VS ES)	DEPTH	RL	SAMPLES	METHOD	TCR (%) (25 50 75)	RQD (%) (25 50 75)	INSITU TESTING (SPT 'N' Vane shear strength)	DISCONTINUITIES DESCRIPTION	WATER	INSTALLATION	CORE BOXES
Holocene River Deposits	SILT, with minor sand, with trace rootlets; brown. Firm; low plasticity; moist; sand, fine.	TS			0	0.0		SNC	73				11/05/2022	Bentonite	
	SILT, with some clay, with trace sand; brown with orange brown speckles. Firm; high plasticity; moist; sand, fine.														
	Clayey SILT, with trace sand; brown with grey and orange brown speckles. Stiff; high plasticity; moist; sand, fine. 1.1m - 1.5m: Core loss	C/L			1										
	Sandy SILT, with minor clay; grey. Firm; low plasticity; moist; sand, fine.				2	-1.0		SPT	100		39 / 18 kPa 0, 0 / 0, 0, 0, 0 N=0				
	Clayey SILT, with minor sand; grey. Firm; low plasticity; moist; sand, fine.				3	-2.0		SNC	100						Box 1, 0.0-2.8m
								SPT	100		46 / 24 kPa 0, 0 / 0, 0, 0, 0 N=0			3m	
	Silty SAND, with minor clay; grey. Very loose; low plasticity; moist; sand, fine.				4	-3.0		SNC	100					Sand	
					5	-4.0		SPT	100		49 / 21 kPa 0, 0 / 0, 0, 1, 2 N=3				Box 2, 2.8-5.7m
	Clayey SILT, with trace sand; grey. Firm; high plasticity; moist; sand, fine.				6	-5.0		SNC	100					6m	
						-6.0		SPT	100		43 / 18 kPa 0, 0 / 0, 0, 0, 0 N=0				
					7			SNC	100					Bentonite	
					8	-7.0		SPT	100		43 / 15 kPa 0, 0 / 0, 0, 0, 0 N=0				Box 3, 5.7-8.6m
						-8.0		SNC	100						
	9.80m: Grades to with trace organics and black speckles.				9	-9.0		SPT	100		36 / 15 kPa 0, 0 / 0, 0, 0, 0 N=0				Box 4, 8.6-11.0m
								SNC	100						

REMARKS:

DRILLHOLE LOG

INITIA
GEOTECHNICAL SPECIALISTS

HOLE NO.: BH02

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936645.0mE, 5610745.7mN
Co-ordinate system: NZTM
Location method: GPSH
ORIENTATION (°): Vertical
ELEVATION: 0.9m
Datum: HBRC VD
Level method: CONTOUR
INCLINATION (°): 90
CONTRACTOR: Geotech Drilling
RIG: Sonic Rig
DRILLER: Troy + Richard
START DATE: 11/05/2022
END DATE: 11/05/2022
LOGGED BY: BSS
CHECKED BY: APK

UNIT	MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	GRAPHIC	WEATHERING (UW SW MW HW CW EW)	STRENGTH (VW W MS S VS ES)	DEPTH	RL	SAMPLES	METHOD	TCR (%) (25 50 75)	RQD (%) (25 50 75)	INSITU TESTING (SPT 'N' Vane shear strength)	DISCONTINUITIES DESCRIPTION	WATER	INSTALLATION	CORE BOXES
Holocene River Deposits	Clayey SILT, with trace organics and sand; grey with black speckles. Firm; moist; sand, fine. 10.20m - 10.25m: Shell fragments 10.50m - 10.60m: grades to stiff. EOH: 10.95m					10.0		SNC SPT	100 100		73 / 24 kPa 0, 1 / 0, 1, 2, 1 N=4			Bentonite 10.95m	Box 4, 8.6-11.0m

REMARKS:

CORE PHOTOS

HOLE NO.: BH02
JOB NO.: P-001403

Box 1, 0.0-2.8m

Box 2, 2.8-5.7m

Box 3, 5.7-8.6m

CORE PHOTOS

HOLE NO.: BH02
JOB NO.: P-001403

Box 4, 8.6-11.0m

INITIA
GEOTECHNICAL SPECIALISTS

TEST PIT LOG

HOLE NO.: TP04

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936660.0mE, 5611161.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0 – 0.4	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4 – 2.0				81 29 62 26 62 26	
Sandy SILT, with minor clay; blueish grey. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0 – 2.4				53 17	16/06/2022
EOH: 3.00m							

Scala penetrometer scale: 2, 4, 6, 8, 10, 12, 14, 16, 18
Vane shear strength scale: 50, 100, 150, 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

TEST PIT LOG

HOLE NO.: TP10

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936560.9mE, 5610910.1mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

INITIA
GEOTECHNICAL SPECIALISTS

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0–0.4	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4–2.0				84, 29, 78, 26, 78, 26	
Sandy SILT; greyish blue. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0–2.4				66, 17	16/06/2022
EOH: 3.00m							

Scala penetrometer: 2, 4, 6, 8, 10, 12, 14, 16, 18 (Blows / 0mm)
Vane shear strength (kPa): 50, 100, 150, 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

TEST PIT LOG

HOLE NO.: TP08

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936764.0mE, 5610917.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0 – 0.2	TS	2 4 6 8 10 12 14 16 18	50 100 150 200		
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.2 – 2.0				69 26 53 20 53 20	
Sandy SILT, with minor clay; blueish grey. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0 – 2.6				50 17	16/06/2022
EOH: 3.00m		2.6 – 4.8					

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- Hand Auger
- Test Pit

TEST PIT LOG

HOLE NO.: TP03

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936766.0mE, 5611120.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

INITIA
GEOTECHNICAL SPECIALISTS

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0–0.2	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.2–2.0				90 29 66 26 59 26 56 17	16/06/2022
EOH: 3.00m		2.0–3.0					

Scala penetrometer scale: 2 4 6 8 10 12 14 16 18
Vane shear strength scale (kPa): 50 100 150 200
Depth scale (m): 0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 3.8 4.0 4.2 4.4 4.6 4.8

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

TEST PIT LOG

HOLE NO.: TP07

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936682.0mE, 5610974.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

INITIA
GEOTECHNICAL SPECIALISTS

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0–0.4	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4–2.0				78, 26, 59, 23, 53, 20	
Sandy SILT, with minor clay; blueish grey. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0–2.2				50, 14	16/06/2022
EOH: 3.00m		2.2–3.0					

Scala penetrometer scale: 2, 4, 6, 8, 10, 12, 14, 16, 18
Vane shear strength scale: 50, 100, 150, 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

TEST PIT LOG

HOLE NO.: TP06

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936612.0mE, 5611019.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

INITIA
GEOTECHNICAL SPECIALISTS

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0–0.4	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4–2.0				75 29 66 26 62 20	
Sandy SILT, with minor clay; blueish grey. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0–2.6				62 17	16/06/2022
EOH: 3.00m							

Scala Penetrometer (Blows / 0mm): 2, 4, 6, 8, 10, 12, 14, 16, 18
Vane Shear Strength (kPa): 50, 100, 150, 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

TEST PIT LOG

HOLE NO.: TP09

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936518.7mE, 5610708.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0 – 0.2	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.2 – 2.0				78 26 78 23 69 26 62 17	
Sandy SILT, with minor clay; blueish grey. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0 – 2.8					16/06/2022
EOH: 3.00m		2.8					

Scala penetrometer: 2, 4, 6, 8, 10, 12, 14, 16, 18 (Blows / 0mm)
Vane shear strength (kPa): 50, 100, 150, 200
Depth (m): 0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0, 2.2, 2.4, 2.6, 2.8, 3.0, 3.2, 3.4, 3.6, 3.8, 4.0, 4.2, 4.4, 4.6, 4.8

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

TEST PIT LOG

HOLE NO.: TP05

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936679.8mE, 5611074.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4				81	
		0.6				32	
SAND, with trace gravel; grey. Loose; moist; sand, fine to coarse, pumice; gravel, coarse.		0.8					
		1.0				66	
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		1.2				23	
		1.4				69	
		1.6				26	
		1.8					16/06/2022
EOH: 3.00m		2.0				53	
		2.2				20	
		2.4					
		2.6					
		2.8					
		3.0					
		3.2					
		3.4					
		3.6					
		3.8					
		4.0					
		4.2					
		4.4					
		4.6					
		4.8					

SCALA PENETROMETER (Blows / 0mm): 2 4 6 8 10 12 14 16 18

VANE SHEAR STRENGTH (kPa): 50 100 150 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

INITIA
GEOTECHNICAL SPECIALISTS

TEST PIT LOG

HOLE NO.: TP02

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936745.5mE, 5611021.5mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0 – 0.4	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4 – 2.0				81 29 69 26 62 26	
Sandy SILT, with minor clay; blueish grey. Stiff; low plasticity; moist to wet; sand, fine to medium.		2.0 – 2.4				56 17	16/06/2022
EOH: 3.00m		2.4					

Scala penetrometer: 2, 4, 6, 8, 10, 12, 14, 16, 18 (Blows / 0mm)
Vane shear strength (kPa): 50, 100, 150, 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

INITIA
GEOTECHNICAL SPECIALISTS

TEST PIT LOG

HOLE NO.: TP01

CLIENT: Tomorrow Capital Limited
PROJECT: School Road, Clive
SITE LOCATION: School Road, Clive
Project Ref.: P-001403

CO-ORDINATES: 1936529.0mE, 5611072.0mN
Co-ordinate system: NZTM
Location method: GPSH
ELEVATION: Ground
Datum: HBRC VD
Level method: CONTOUR
CONTRACTOR: Galbraith Earthmover
MACHINE: Yanmar VI020
OPERATOR: John
START DATE: 15/06/2022
END DATE: 15/06/2022
LOGGED BY: BSS
CHECKED BY: ADP

MATERIAL DESCRIPTION (See Classification & Symbology sheet for details)	SAMPLES	DEPTH (m)	LEGEND	SCALA PENETROMETER (Blows / 0mm)	VANE SHEAR STRENGTH (kPa) Vane: 2689	Values	WATER
SILT, with some rootlets; dark grey. Firm; non-plastic; moist.		0.0 – 0.4	TS				
Clayey SILT, with trace sand; grey with orange brown speckles. Stiff; high plasticity; moist; sand, fine.		0.4 – 2.0				87 29 75 26 72 26	16/06/2022
EOH: 3.00m		2.0					

Scala Penetrometer (Blows / 0mm): 2, 4, 6, 8, 10, 12, 14, 16, 18
Vane Shear Strength (kPa): 50, 100, 150, 200

REMARKS

WATER
- Standing Water Level
- Out flow
- In flow

INVESTIGATION TYPE
- ☐ Hand Auger
- ☑ Test Pit

DRY DENSITY / WATER CONTENT RELATIONSHIP
STANDARD COMPACTION

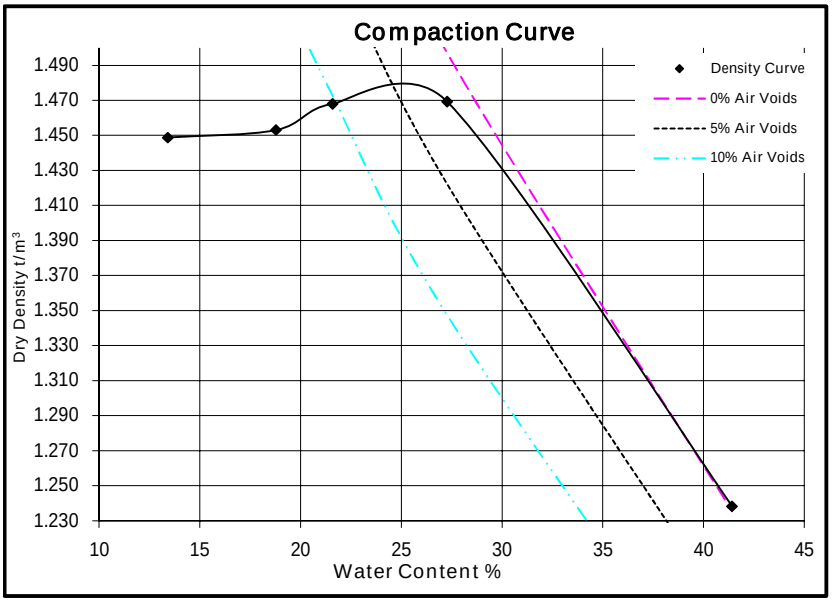
Project :	**School Rd Subdivision**
Location :	**Clive - Hawkes Bay**
Client :	**Bruno Souza**
Contractor :	**Initia Limited**
Sampled by :	**Bruno Souza**
Date sampled :	**16/06/22**
Sampling method :	**Test Pits**
Sample description :	**Grey Clay**
Sample condition :	**Moist**
Solid density :	**2.53 t/m³ (Tested)**
Source:	**TP03 - (0.0 to 2.0 m)**

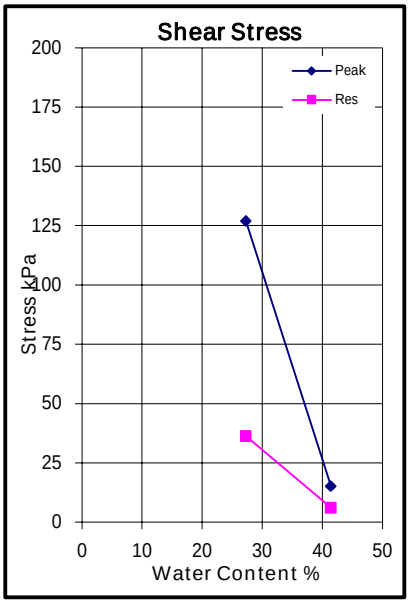
Project No :	**2-L0591.20**
Lab Ref No :	**NA5687 / C**
Client Ref No :	

Test Results

Maximum dry density	**1.47**	t/m³	Natural water content	41.4 %
Optimum water content	**25**	%	Fraction tested	Whole soil

Sample ID	0	0	0	0	Nat		
Bulk density t/m³	1.643	1.726	1.785	1.870	1.751		
Water content %	13.4	18.8	21.6	27.3	41.4		
Dry density t/m³	1.449	1.453	1.468	1.469	1.238		
Sample condition	Hard Dry	Firm Dry	Stiff Moist	Hard Moist	Very Soft Wet		
Peak stress kPa	-	-	-	127	15		
Remoulded stress kPa	-	-	-	36	6		





Test Methods	Notes
Compaction NZS 4402 : 1986 Test 4.1.1 (Standard)	
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001	

Date tested : 12/07/22
Date reported : 18/07/22

Approved

Designation : Laboratory Manager
Date : 18/07/22

WSP
Napier (Cadbury Rd)
Quality Management Systems Certified to ISO 9001

10 Cadbury Rd
Private Bag 6019 , Hawkes Bay Mail Centre, 4142, Napier, New Zealand

Telephone +64 6 833 5100
Website www.wsp.com/nz

DRY DENSITY / WATER CONTENT RELATIONSHIP
STANDARD COMPACTION

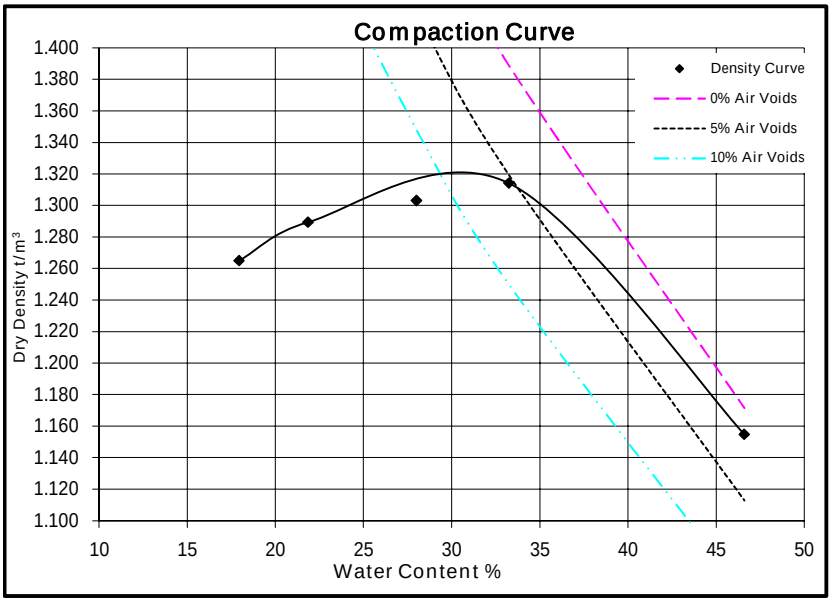
Project :	**School Rd Subdivision**
Location :	**Clive - Hawkes Bay**
Client :	**Bruno Souza**
Contractor :	**Initia Limited**
Sampled by :	**Bruno Souza**
Date sampled :	**16/06/22**
Sampling method :	**Test Pits**
Sample description :	**Grey Clay**
Sample condition :	**Moist**
Solid density :	**2.58 t/m³ (Tested)**
Source:	**TP05 - (0.5 to 1.5m)**

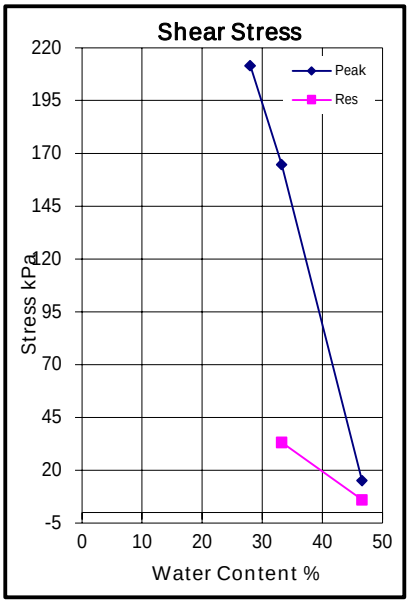
Project No :	**2-L0591.20**
Lab Ref No :	**NA5687 / D**
Client Ref No :	

Test Results

Maximum dry density	1.31	t/m³	Natural water content	46.6 %
Optimum water content	33	%	Fraction tested	Whole soil

Sample ID	0	0	0	0	Nat		
Bulk density t/m³	1.492	1.571	1.668	1.751	1.693		
Water content %	17.9	21.8	28.0	33.2	46.6		
Dry density t/m³	1.265	1.289	1.303	1.314	1.155		
Sample condition	Brittle Dry	Stiff S/Moist	Stiff Moist	Hard Moist	Very Soft Wet		
Peak stress kPa	-	-	212	165	15		
Remoulded stress kPa	-	-	-	33	6		





Test Methods	Notes
Compaction NZS 4402 : 1986 Test 4.1.1 (Standard)	
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001	

Date tested : 12/07/22
Date reported : 18/07/22

Approved

Designation : Laboratory Manager
Date : 18/07/22

WSP
Napier (Cadbury Rd)
Quality Management Systems Certified to ISO 9001

10 Cadbury Rd
Private Bag 6019 , Hawkes Bay Mail Centre, 4142, Napier, New Zealand

Telephone +64 6 833 5100
Website www.wsp.com/nz

DRY DENSITY / WATER CONTENT RELATIONSHIP
STANDARD COMPACTION

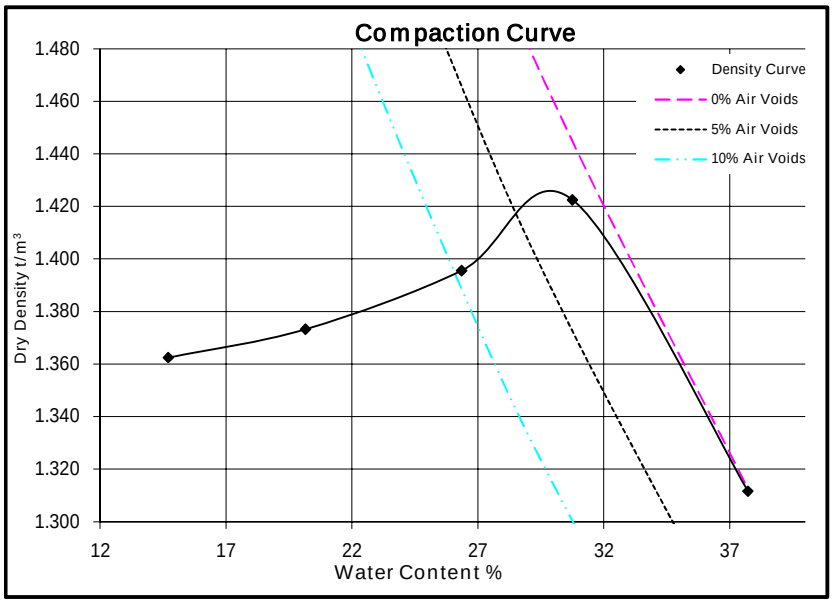
Project :	**School Rd Subdivision**
Location :	**Clive - Hawkes Bay**
Client :	**Bruno Souza**
Contractor :	**Initia Limited**
Sampled by :	**Bruno Souza**
Date sampled :	**16/06/22**
Sampling method :	**Test Pits**
Sample description :	**Grey Clay**
Sample condition :	**Moist**
Solid density :	**2.60 t/m³ (Tested)**
Source:	**TP01 - (0.5 to 2.0m)**

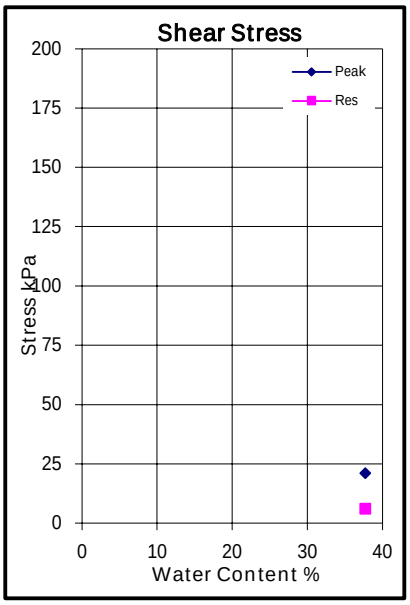
Project No :	**2-L0591.20**
Lab Ref No :	**NA5687 / A**
Client Ref No :	

Test Results

Maximum dry density	1.42	t/m³		Natural water content	37.7	%	
Optimum water content	31	%		Fraction tested	Whole soil		

Sample ID	0	0	0	0	Nat		
Bulk density t/m³	1.563	1.650	1.763	1.860	1.806		
Water content %	14.7	20.2	26.4	30.8	37.7		
Dry density t/m³	1.362	1.373	1.396	1.422	1.312		
Sample condition							
Peak stress kPa	-	-	-	-	21		
Remoulded stress kPa	-	-	-	-	6		





Test Methods	Notes
Compaction NZS 4402 : 1986 Test 4.1.1 (Standard)	
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001	

Date tested : 12/07/22
Date reported : 18/07/22

Approved

Designation : Laboratory Manager
Date : 18/07/22

WSP
Napier (Cadbury Rd)
Quality Management Systems Certified to ISO 9001

10 Cadbury Rd
Private Bag 6019 , Hawkes Bay Mail Centre, 4142, Napier, New Zealand

Telephone +64 6 833 5100
Website www.wsp.com/nz

DRY DENSITY / WATER CONTENT RELATIONSHIP
STANDARD COMPACTION

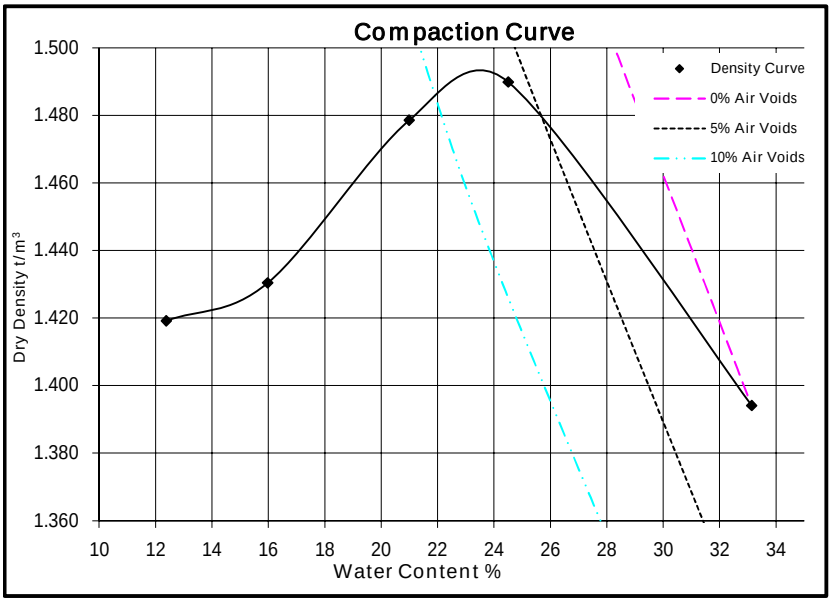
Project :	**School Rd Subdivision**
Location :	**Clive - Hawkes Bay**
Client :	**Bruno Souza**
Contractor :	**Initia Limited**
Sampled by :	**Bruno Souza**
Date sampled :	**16/06/22**
Sampling method :	**Test Pits**
Sample description :	**Grey Clay**
Sample condition :	**Moist**
Solid density :	**2.59 t/m³ (Tested)**
Source:	**TP02 - (1.0 to 2.0m)**

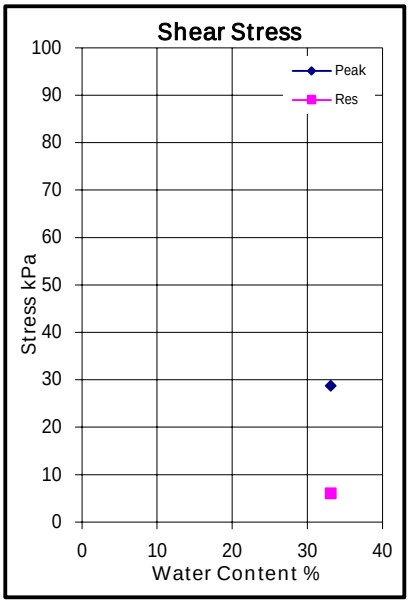
Project No :	**2-L0591.20**
Lab Ref No :	**NA5687 / B**
Client Ref No :	

Test Results

Maximum dry density	**1.49**	t/m³	Natural water content	33.1	%
Optimum water content	**24**	%	Fraction tested	Whole soil	

Sample ID	0	0	0	0	Nat		
Bulk density t/m³	1.595	1.659	1.789	1.855	1.856		
Water content %	12.4	16.0	21.0	24.5	33.1		
Dry density t/m³	1.419	1.430	1.479	1.490	1.394		
Sample condition	Hard Dry	Firm Dry	Stiff Moist	Hard Moist	Very Soft Wet		
Peak stress kPa	-	-	-	-	29		
Remoulded stress kPa	-	-	-	-	6		





Test Methods	Notes
Compaction NZS 4402 : 1986 Test 4.1.1 (Standard)	
Shear Strength using a Hand Held Shear Vane, NZ Geotechnical Soc Inc 8/2001	

Date tested : 12/07/22
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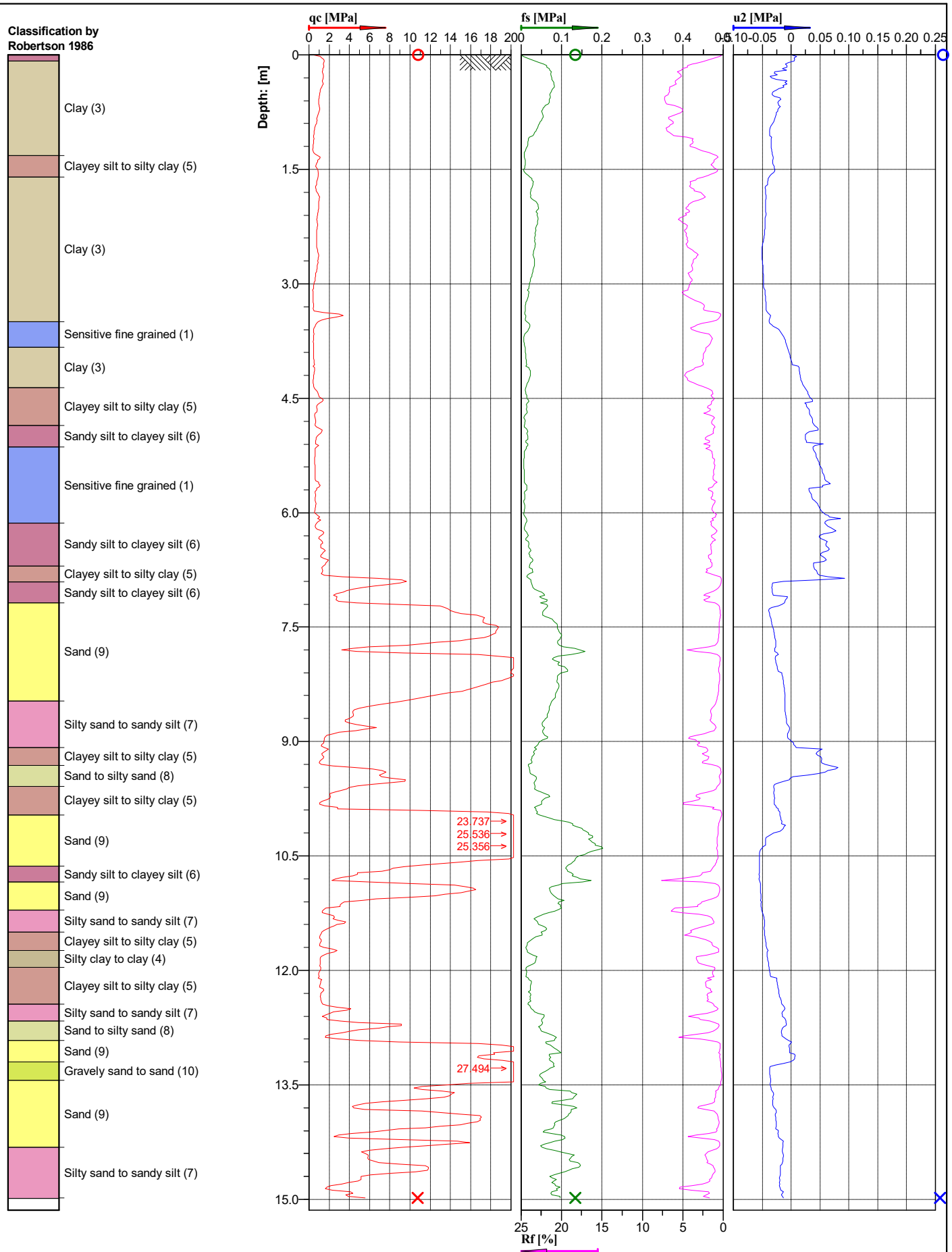
Appendix C Cone Penetration Tests

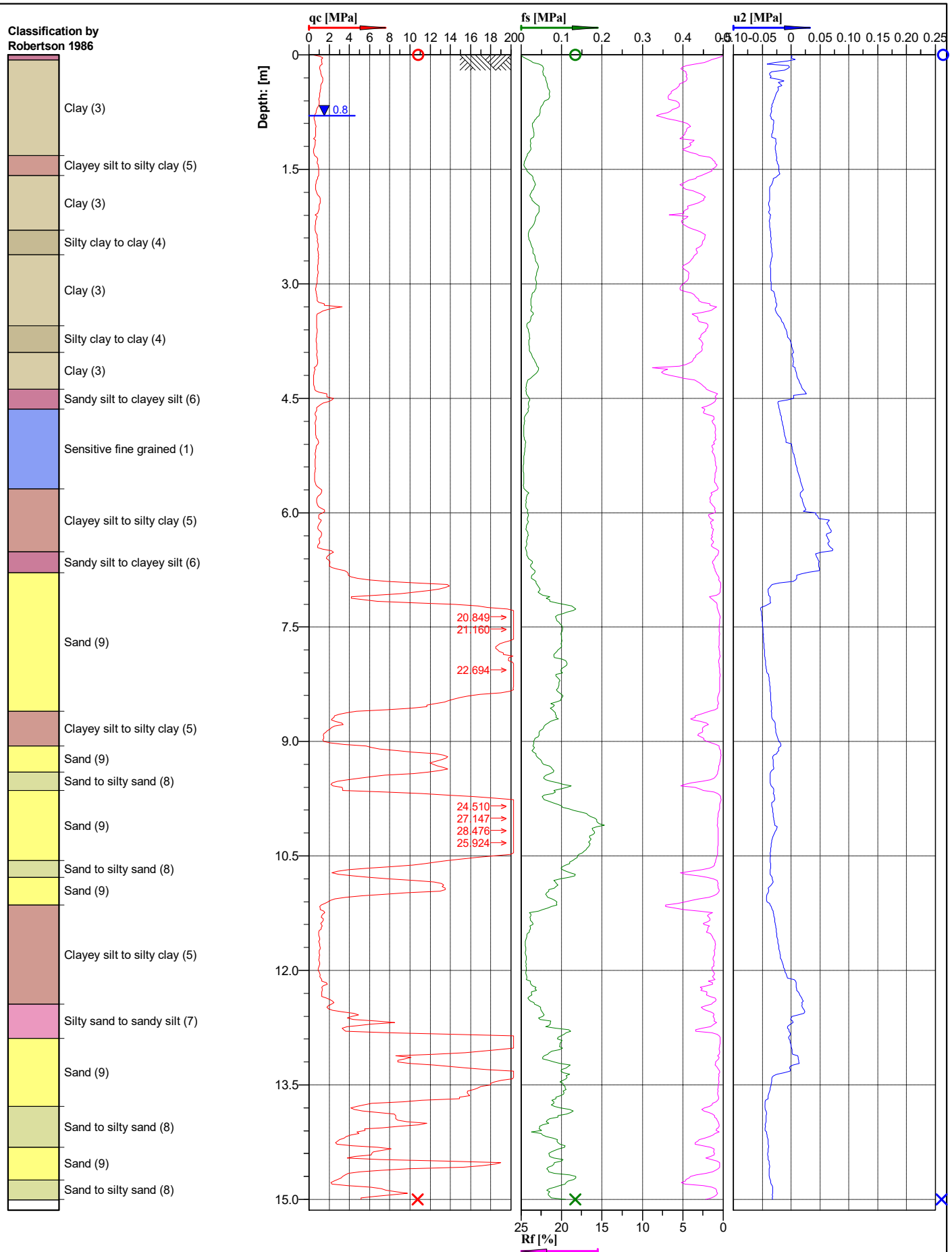


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT01
Project ID:	Client: INITIA	Date: 5/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58436 E 176.91850		File: CPT01.cpt	

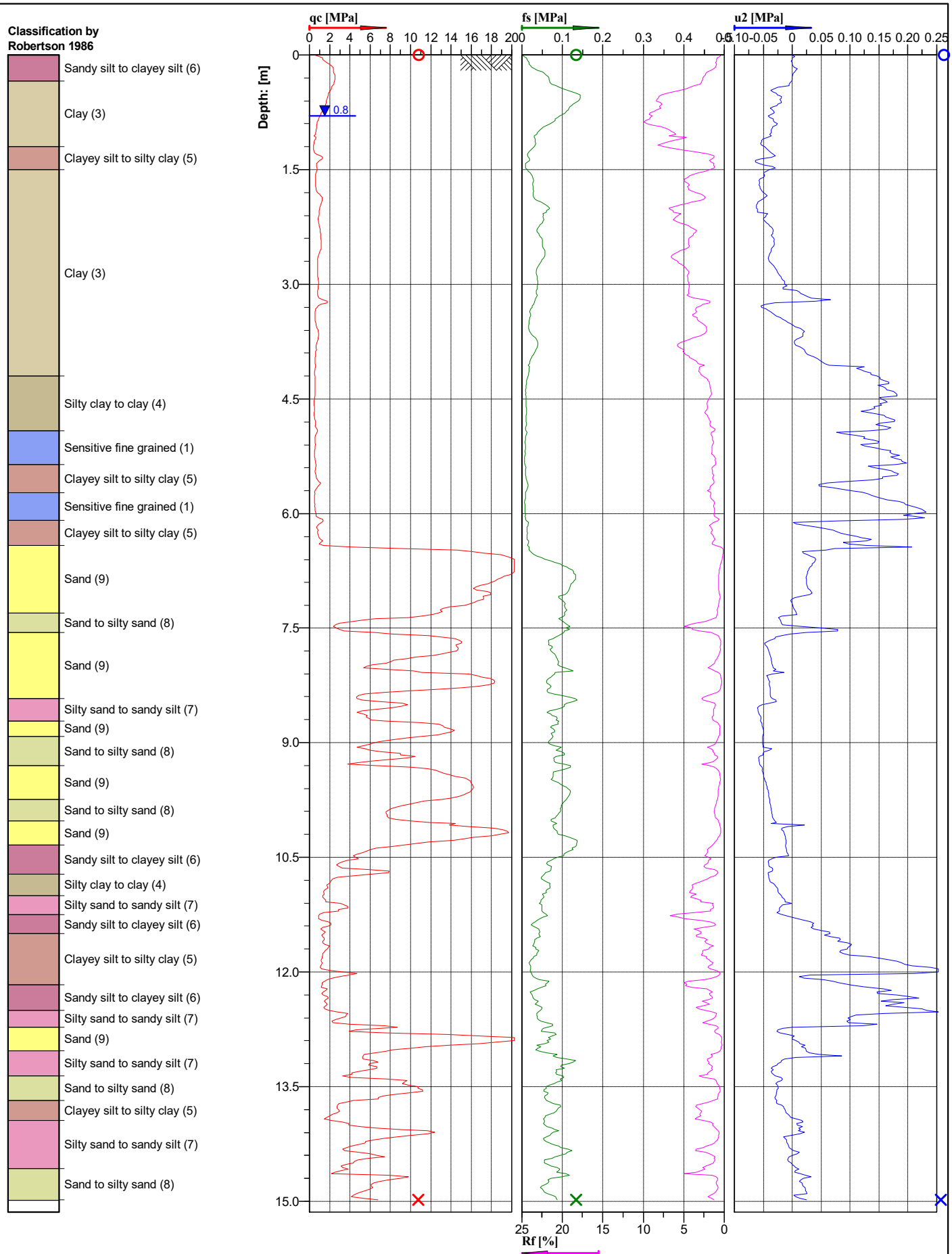


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT05
Project ID:	Client: INITIA	Date: 5/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58412 E 176.91917		File: CPT05.cpt	

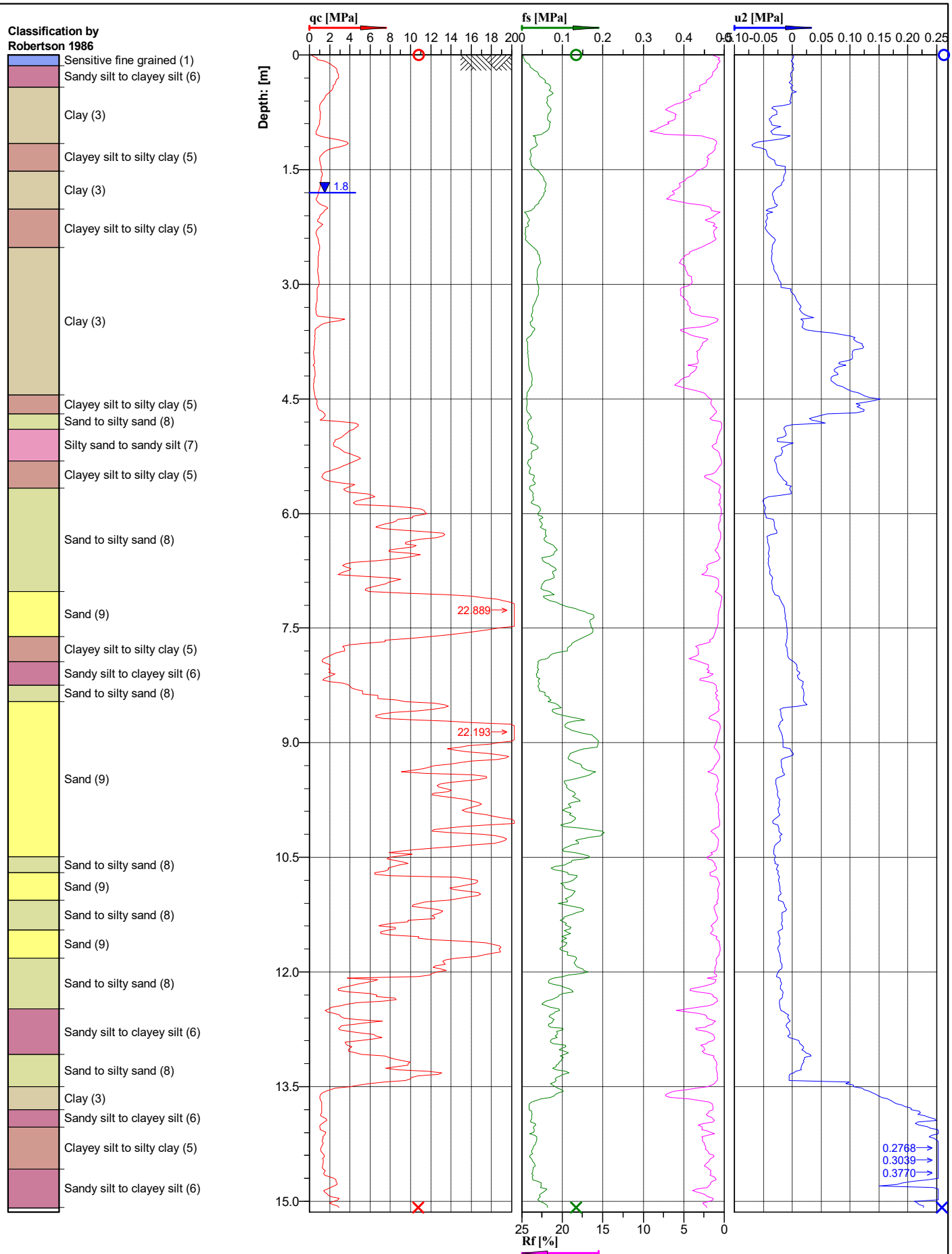


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT06
Project ID:	Client: INITIA	Date: 5/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58458 E 176.91885		File: CPT06.cpt	

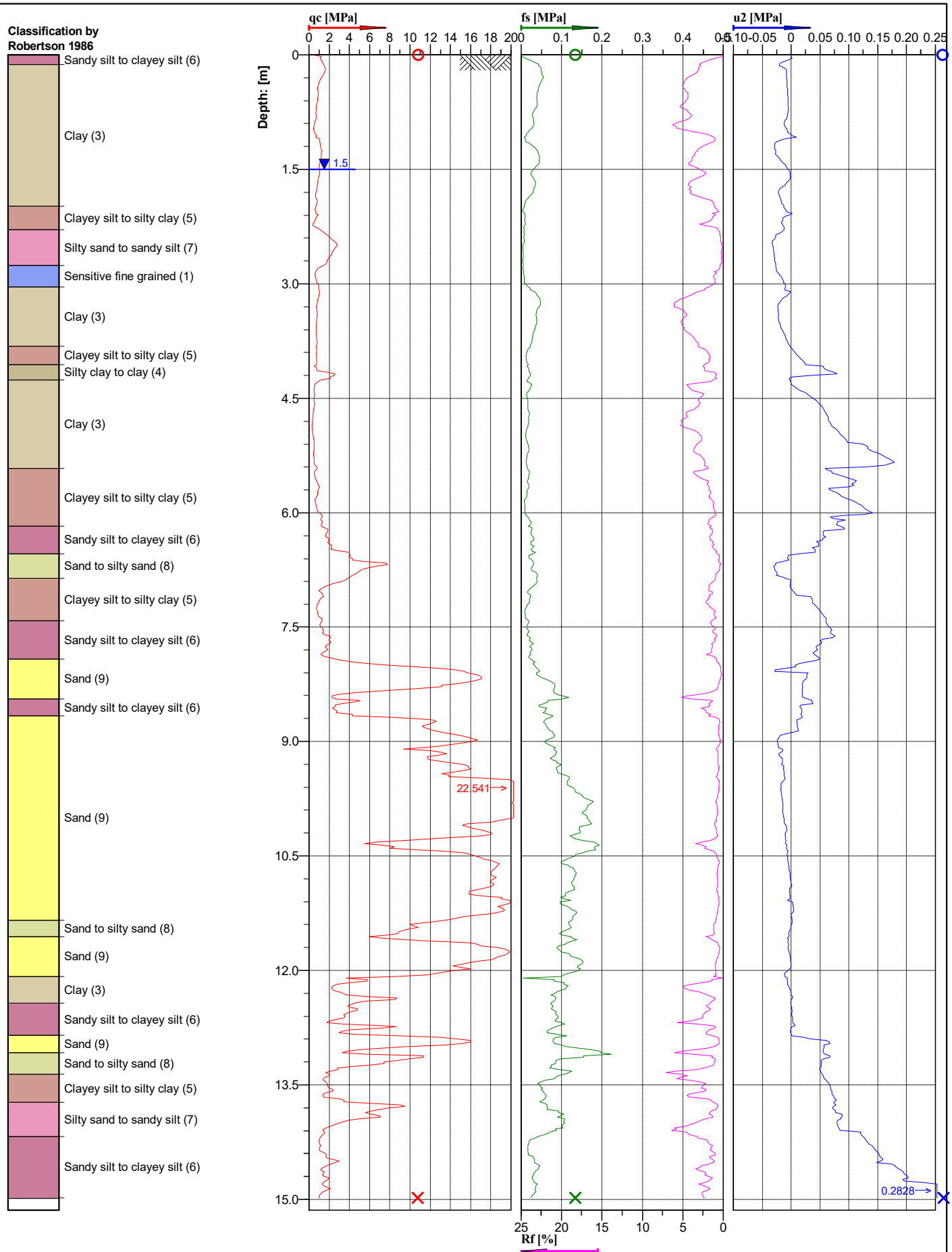


Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT07
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58509 E 176.92006		File: CPT07.cpt	

GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

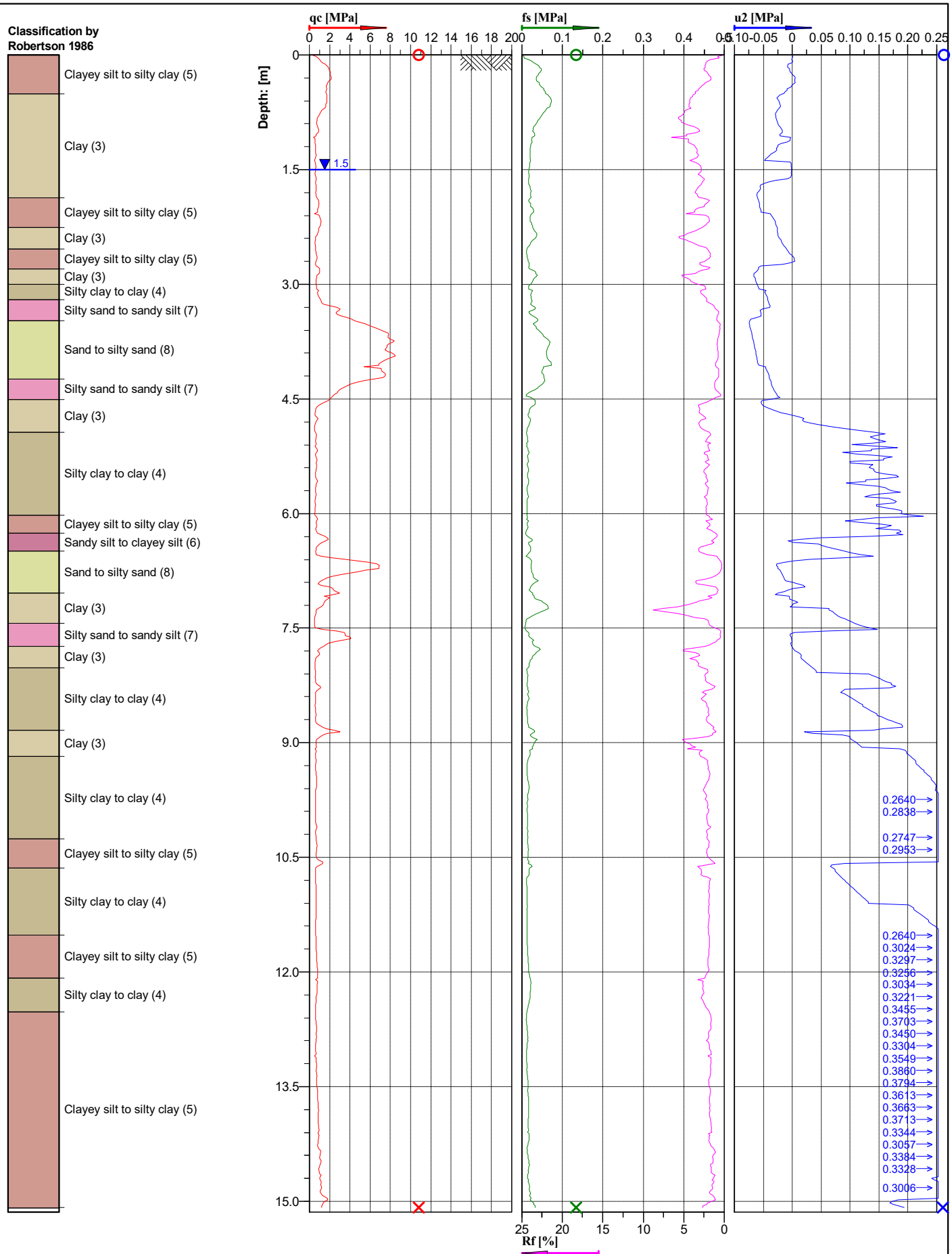


Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT10
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58371 E 176.92181		File: CPT10.cpt	

GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

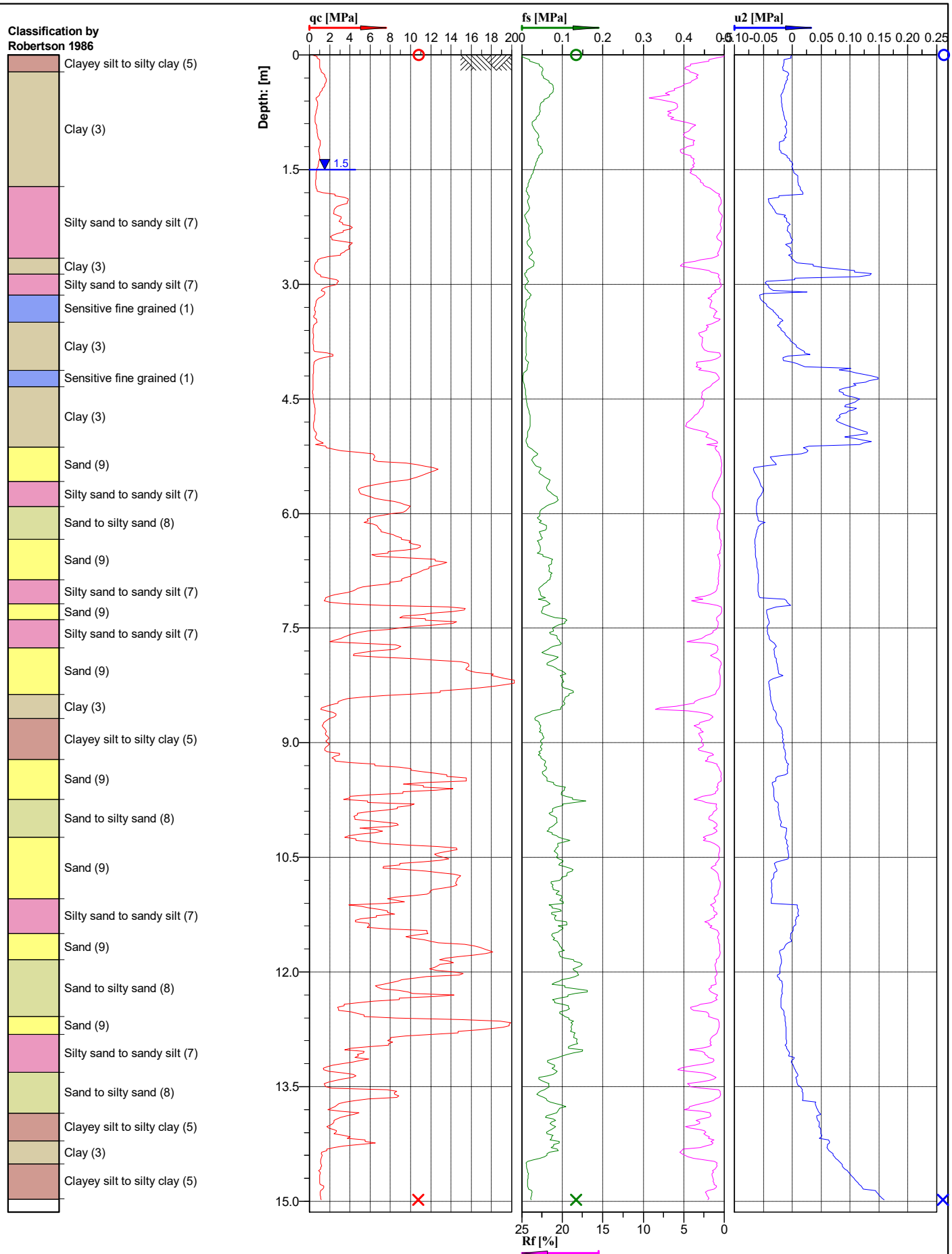


Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT11
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58432 E 176.92151		File: CPT11.cpt	

GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150



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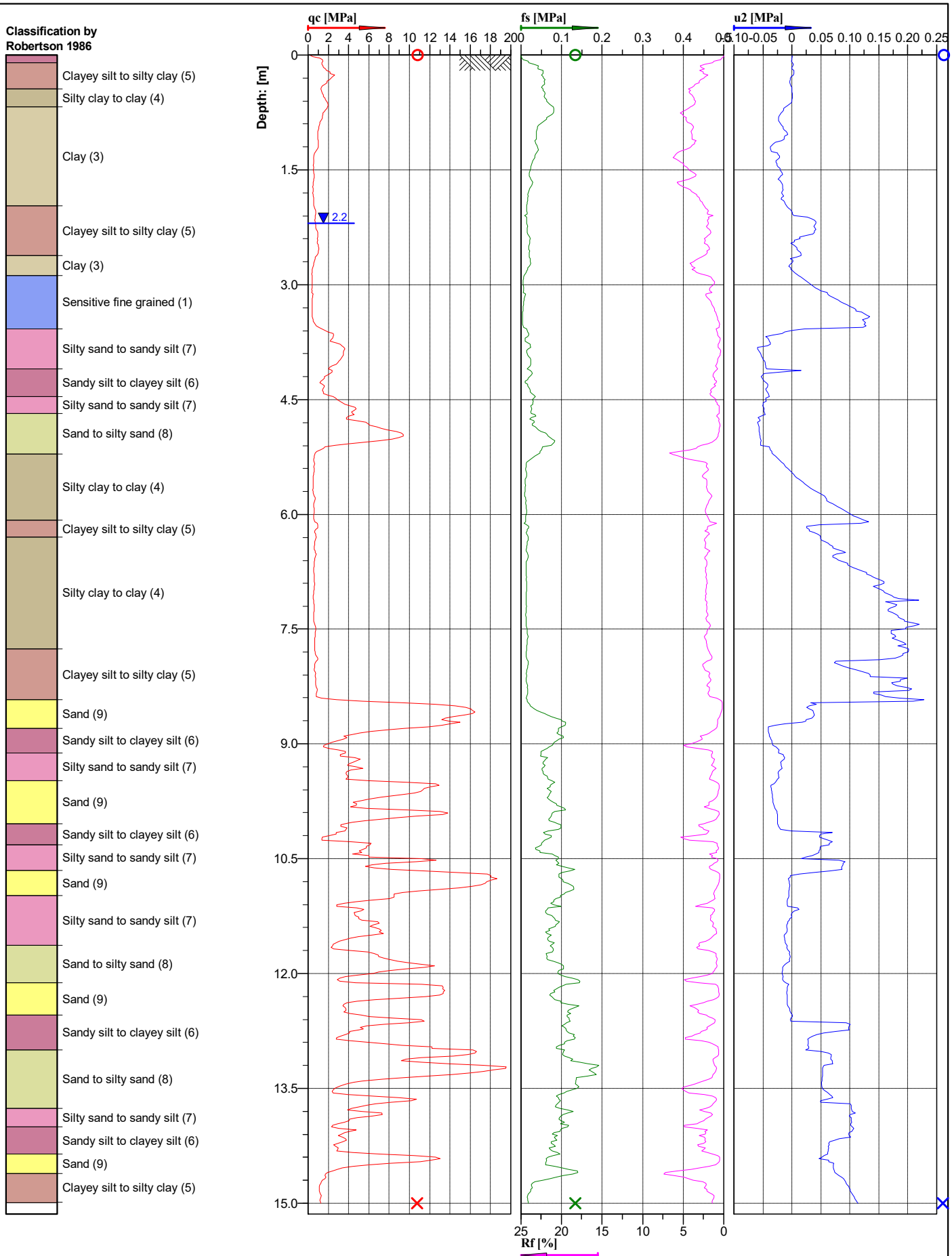
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58486 E 176.92117		File: CPT12.cpt	

GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

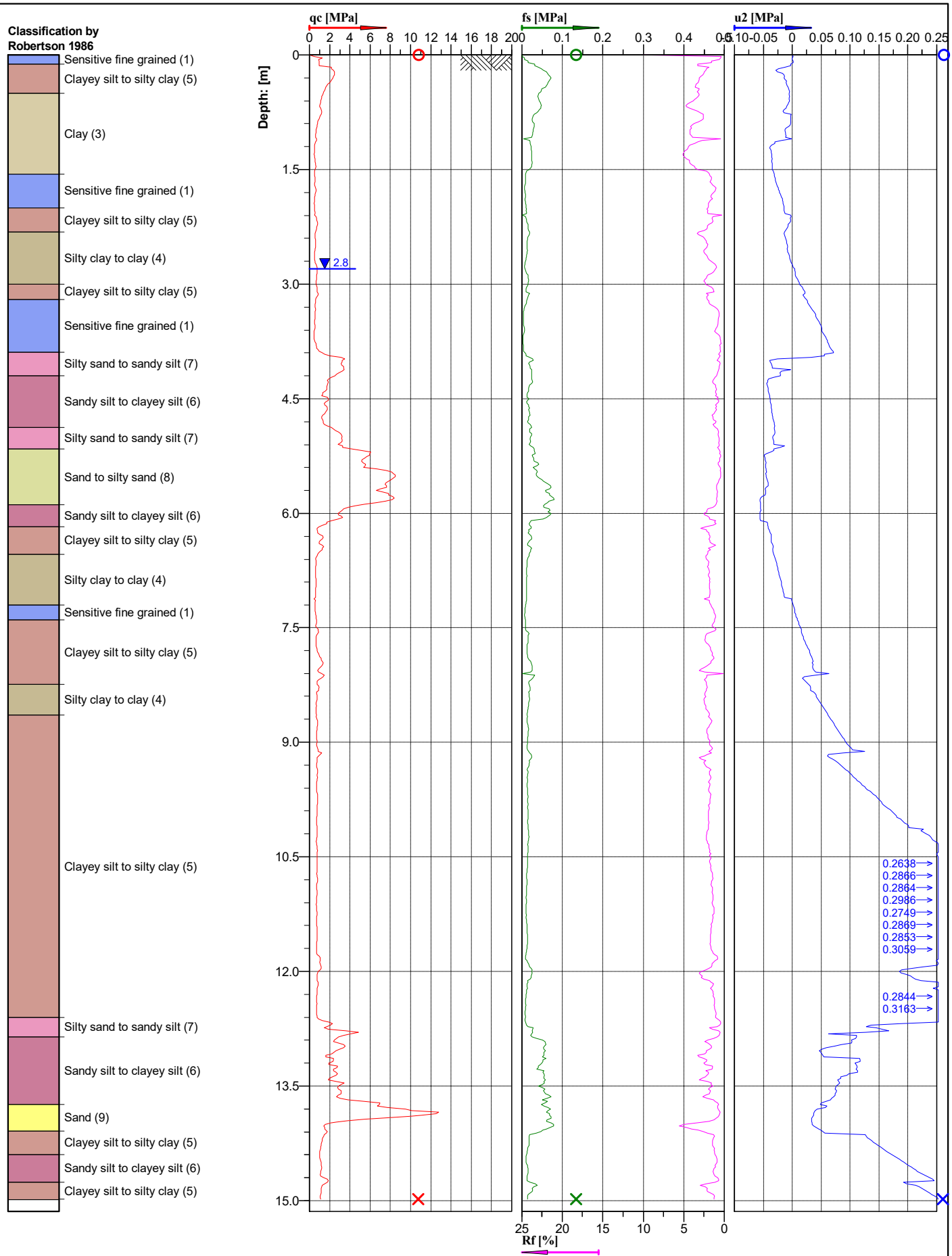


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT13
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58548 E 176.92111		File: CPT13.cpt	

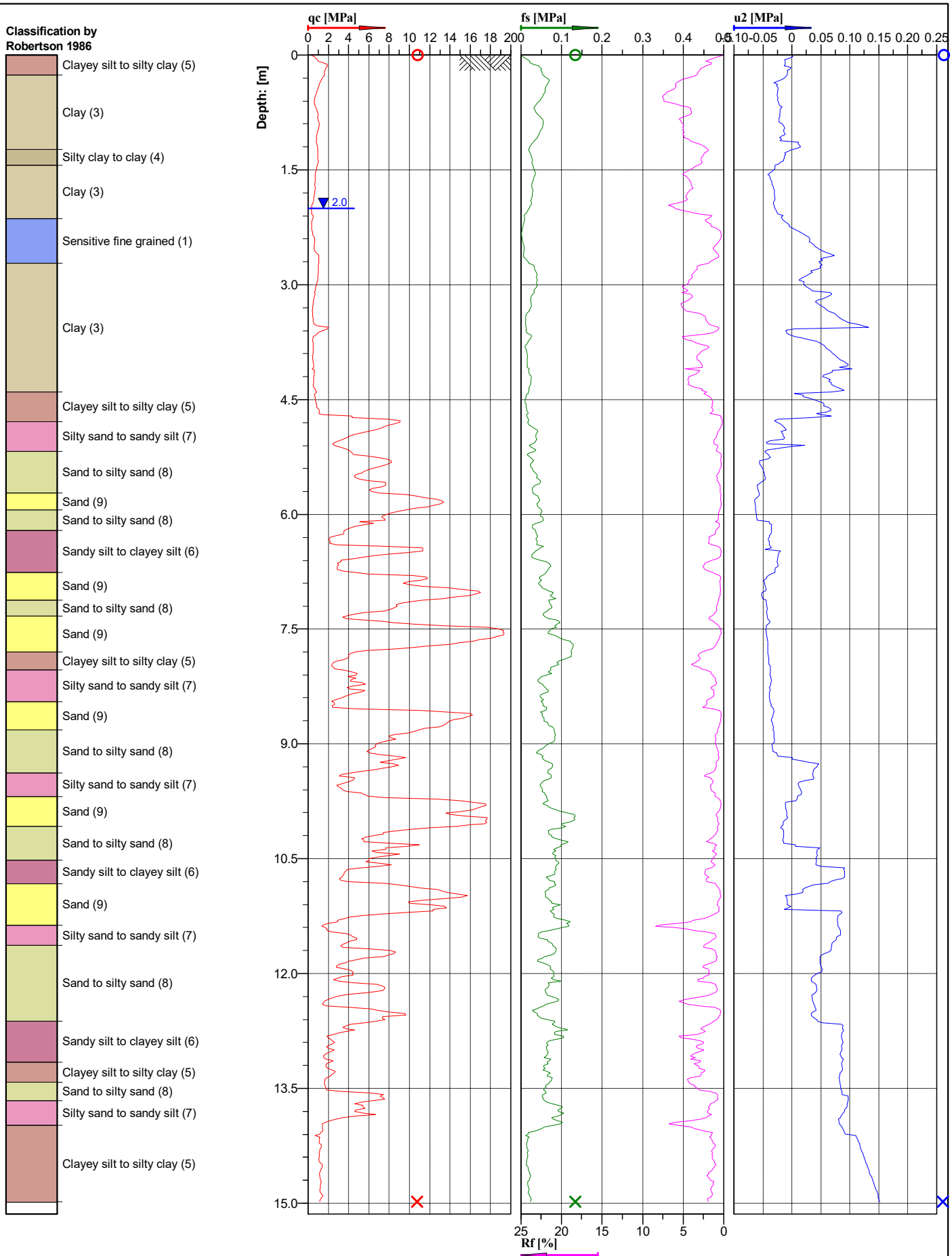


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT14
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58586 E 176.92085		File: CPT14.cpt	

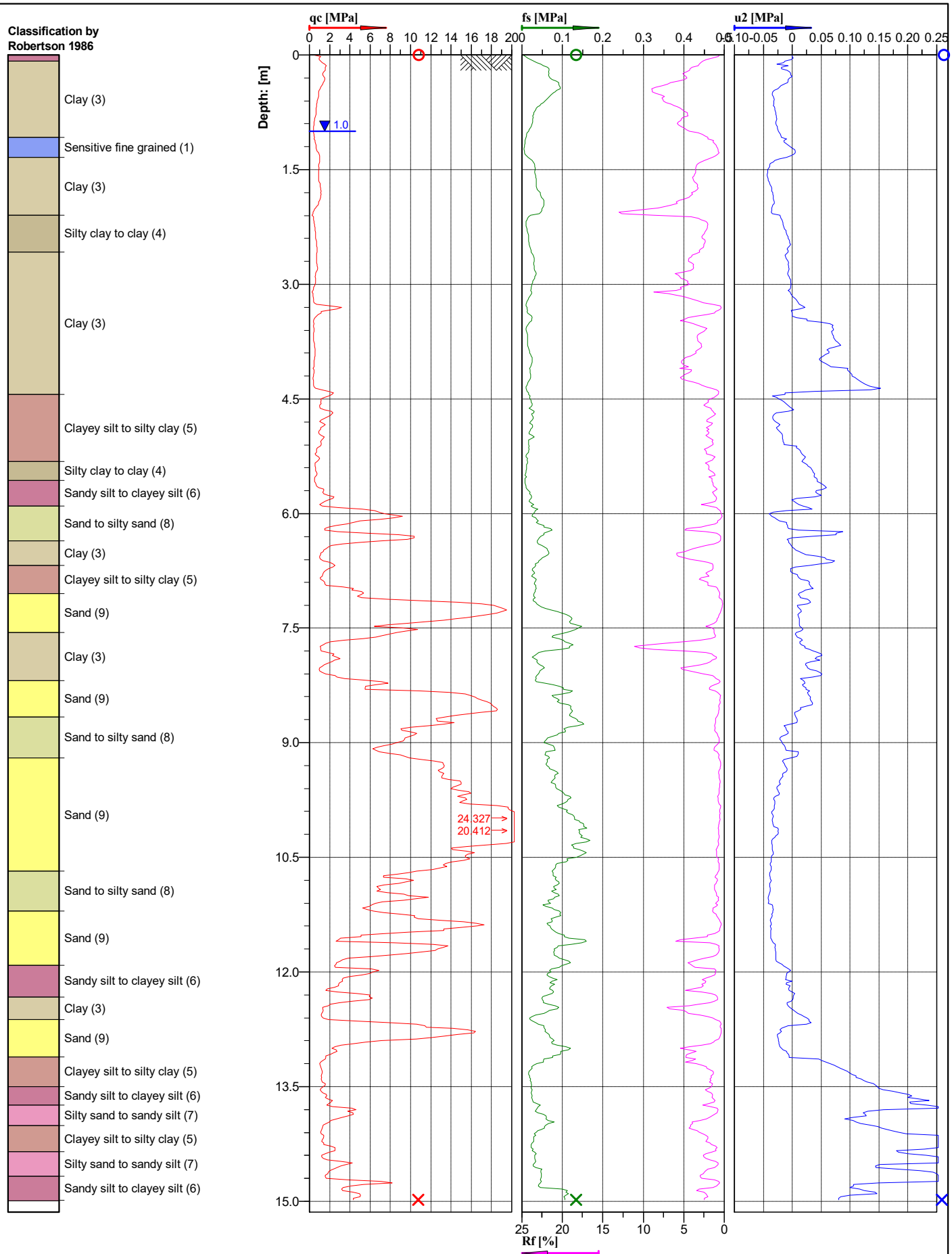


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT15
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58553 E 176.92036		File: CPT15.cpt	

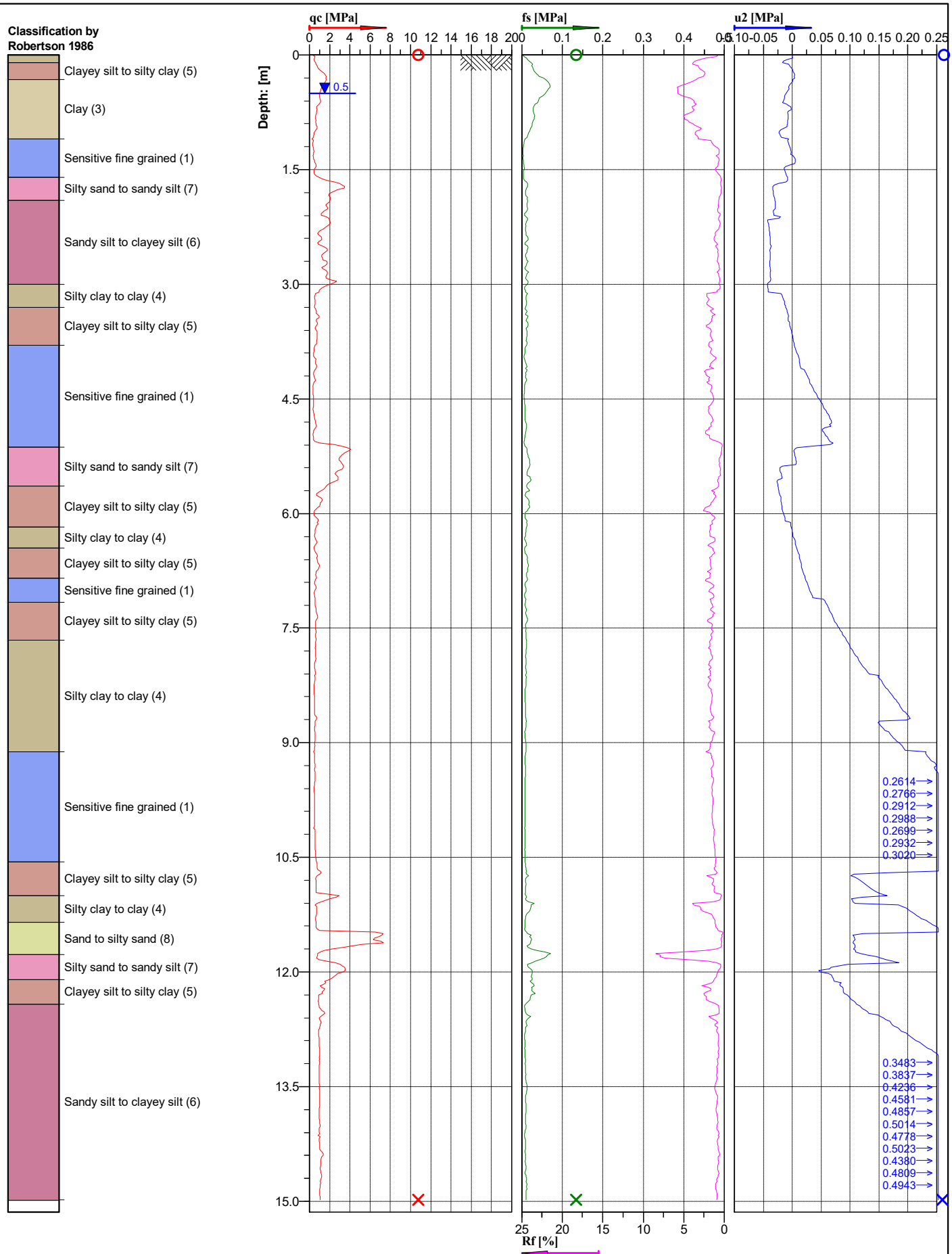


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT16
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58505 E 176.91937		File: CPT16.cpt	

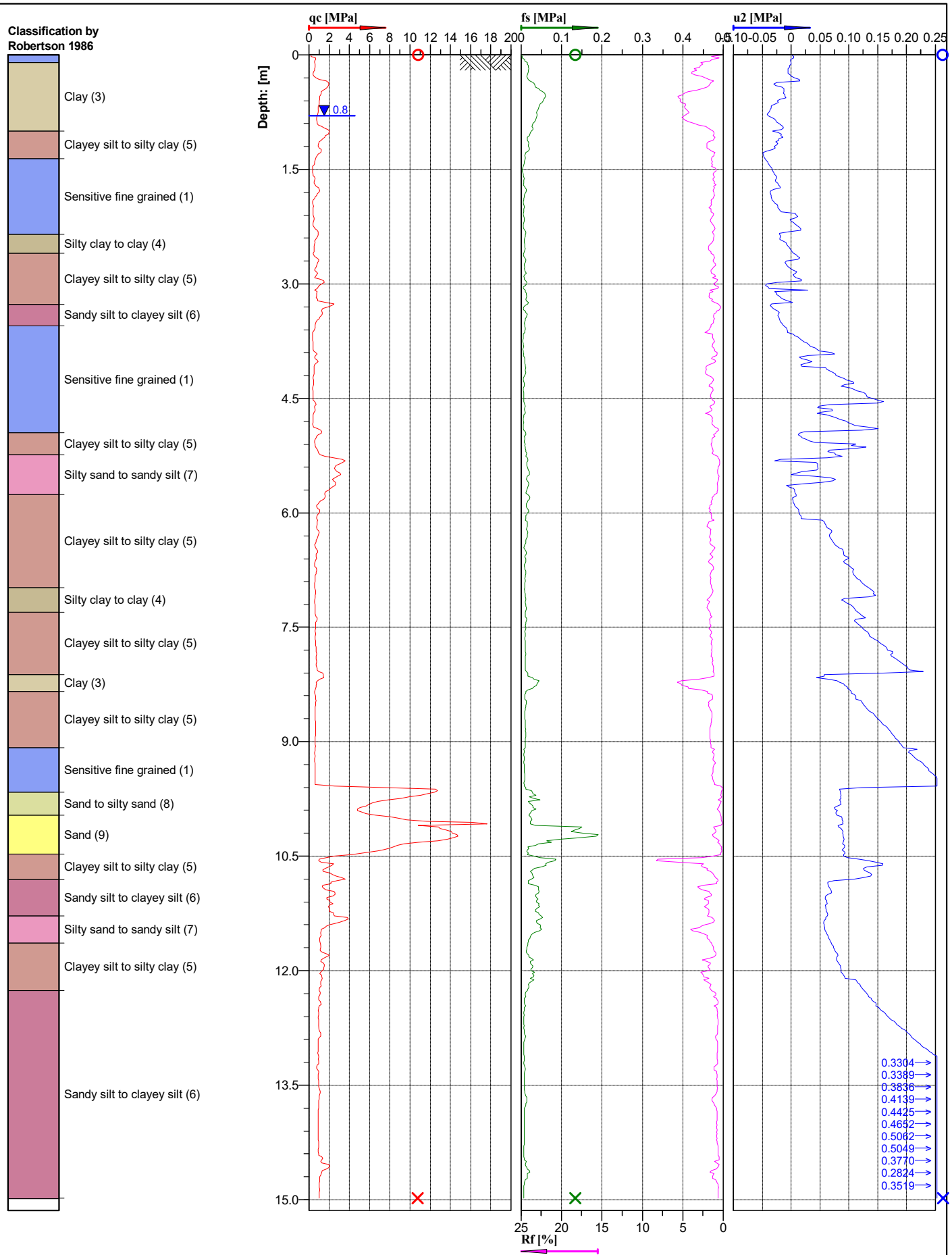


Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT19
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58661 E 176.92029		File: CPT19.cpt	

GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150



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Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
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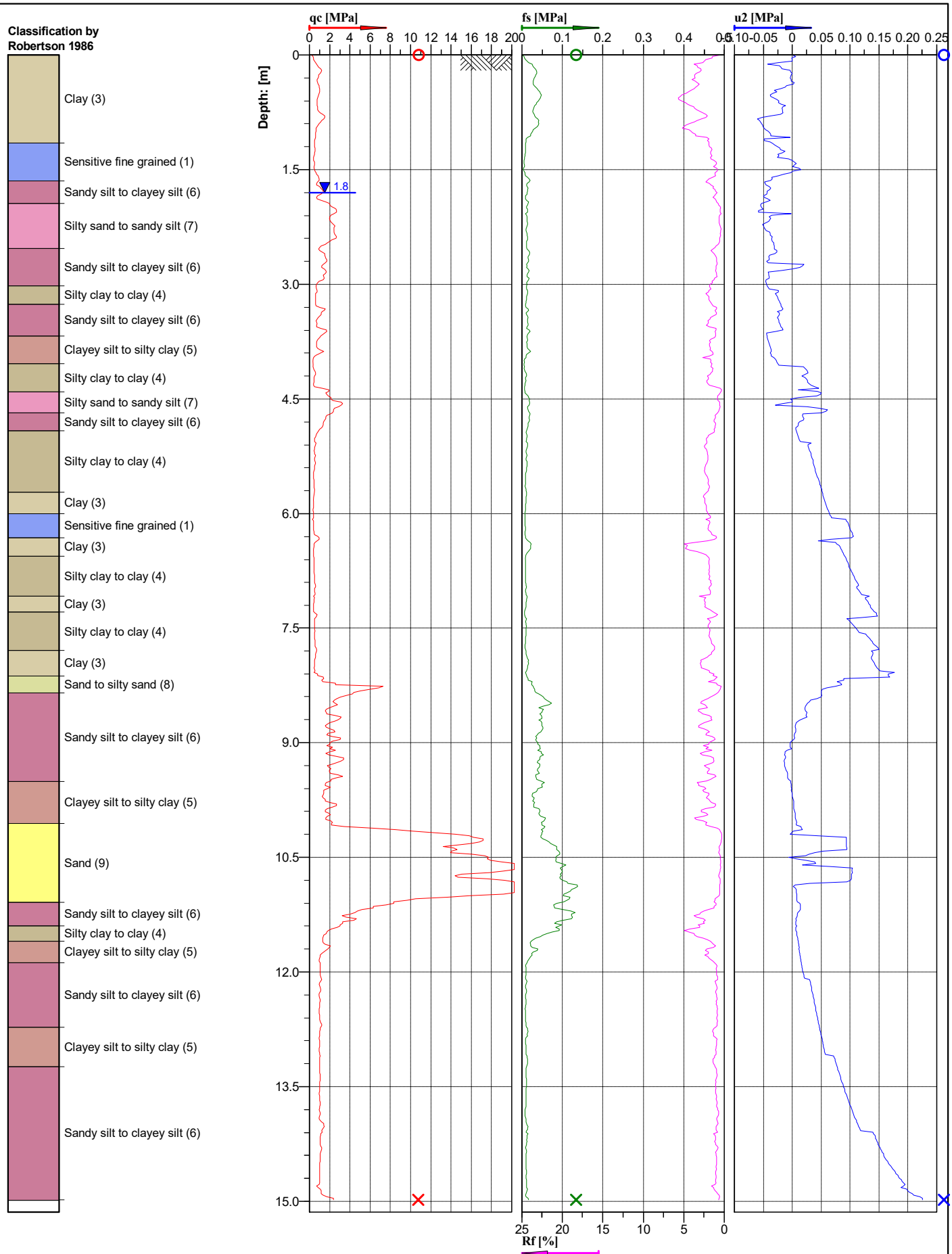
GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

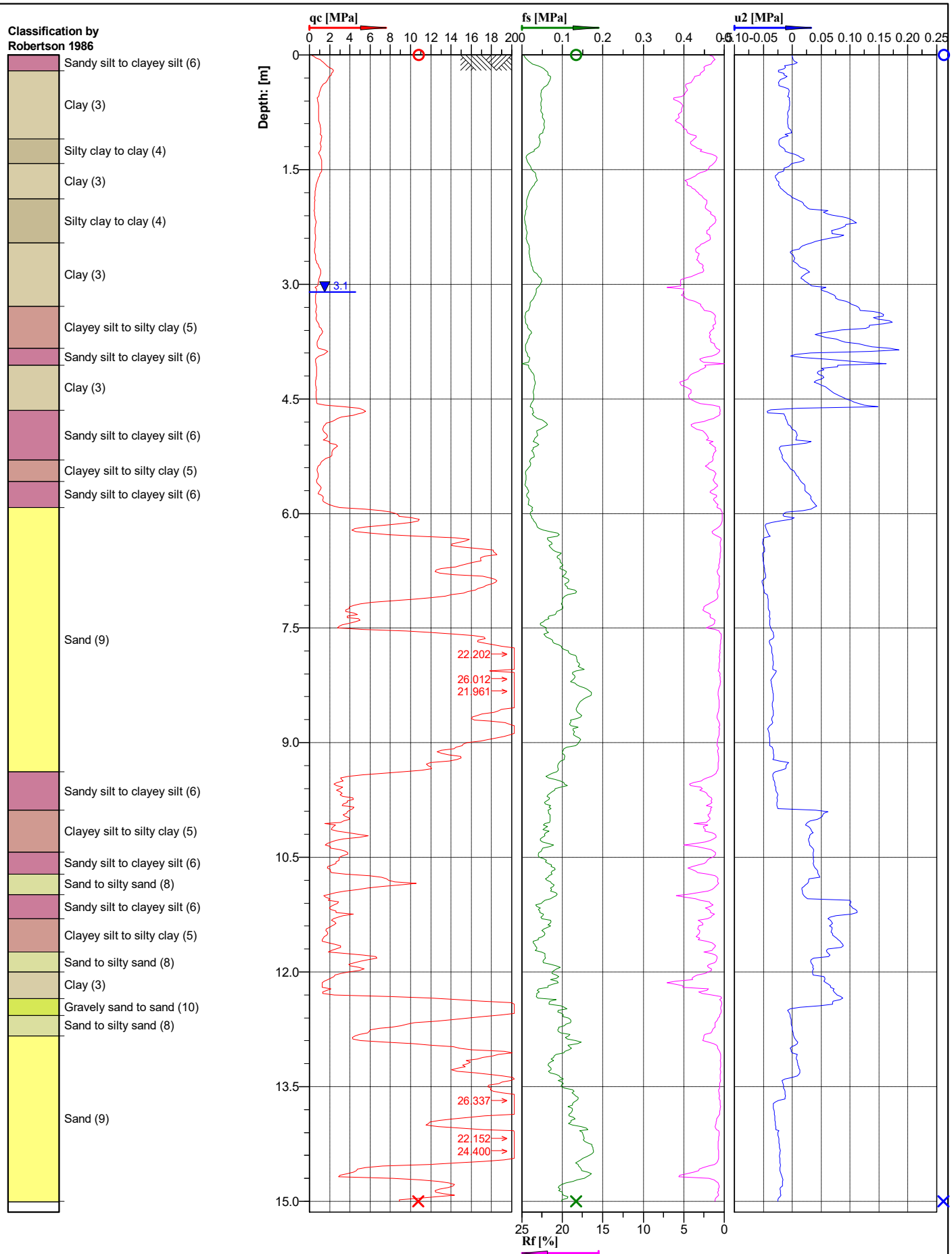


GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT21
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58741 E 176.91910		File: CPT21.cpt	

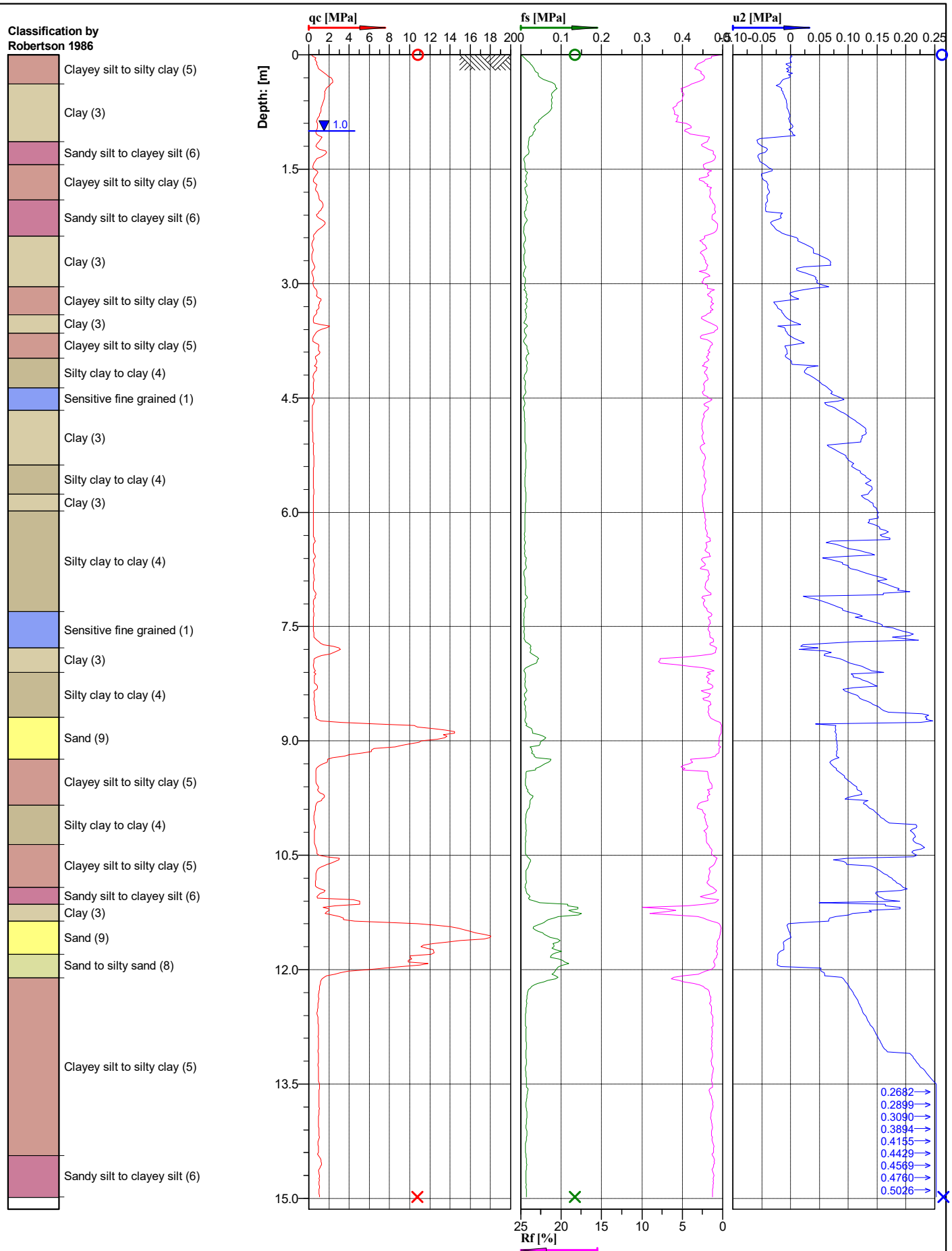


Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT24
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58723 E 176.91716		File: CPT24.cpt	

GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150



Location: CLIVE	Position: X: 0.00 m, Y: 0.00 m	Ground level: 0.00	Test No.: CPT25
Project ID:	Client: INITIA	Date: 4/05/2022	Scale: 1 : 67
Project: SCHOOL RD		Page: 1/1	Fig.:
S 39.58781 E 176.91832		File: CPT25.cpt	

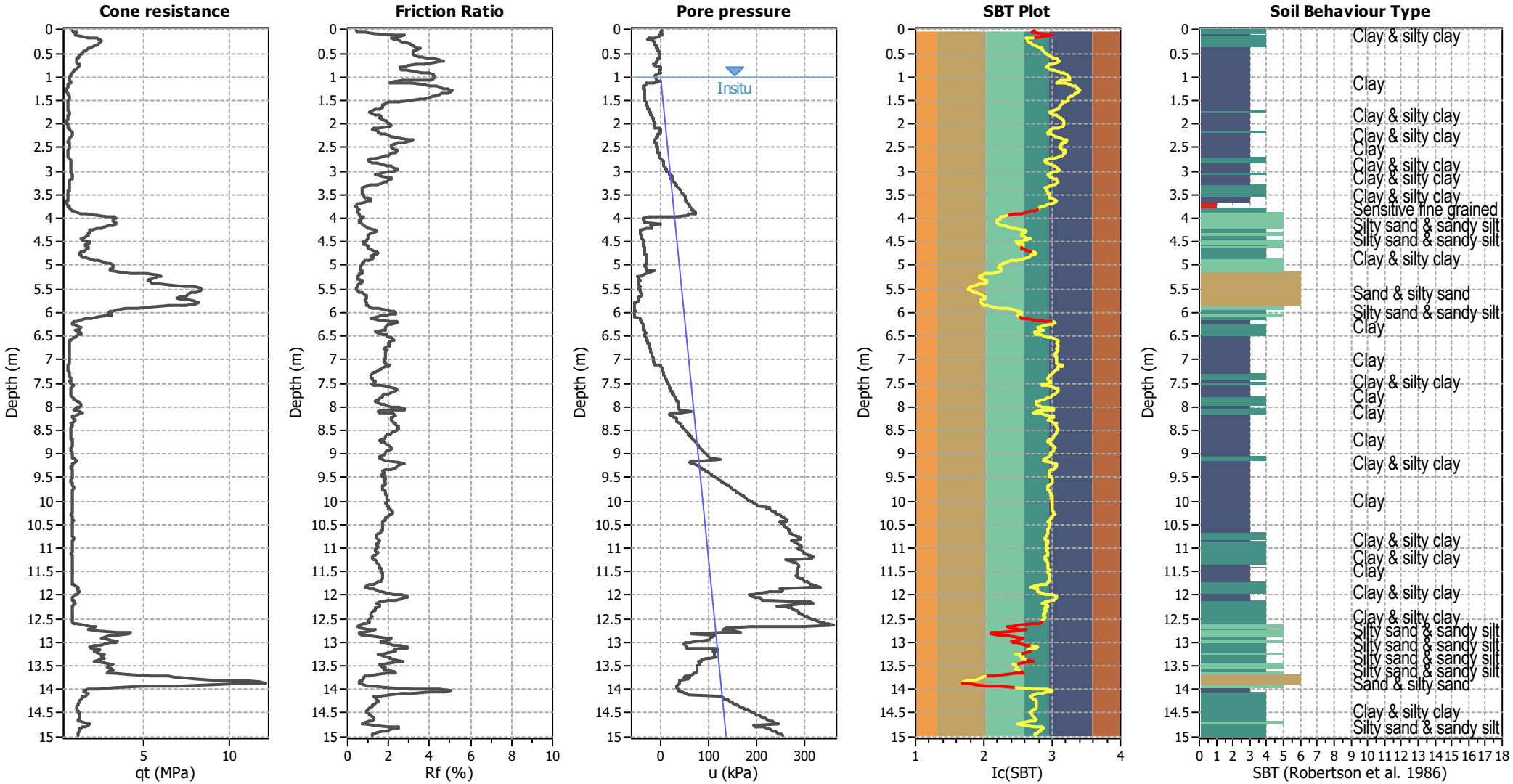
GEOTECH DRILLING

u2

Cone No: 5557
Tip area [cm2]: 10
Sleeve area [cm2]: 150

Appendix D CPT Analysis

CPT basic interpretation plots



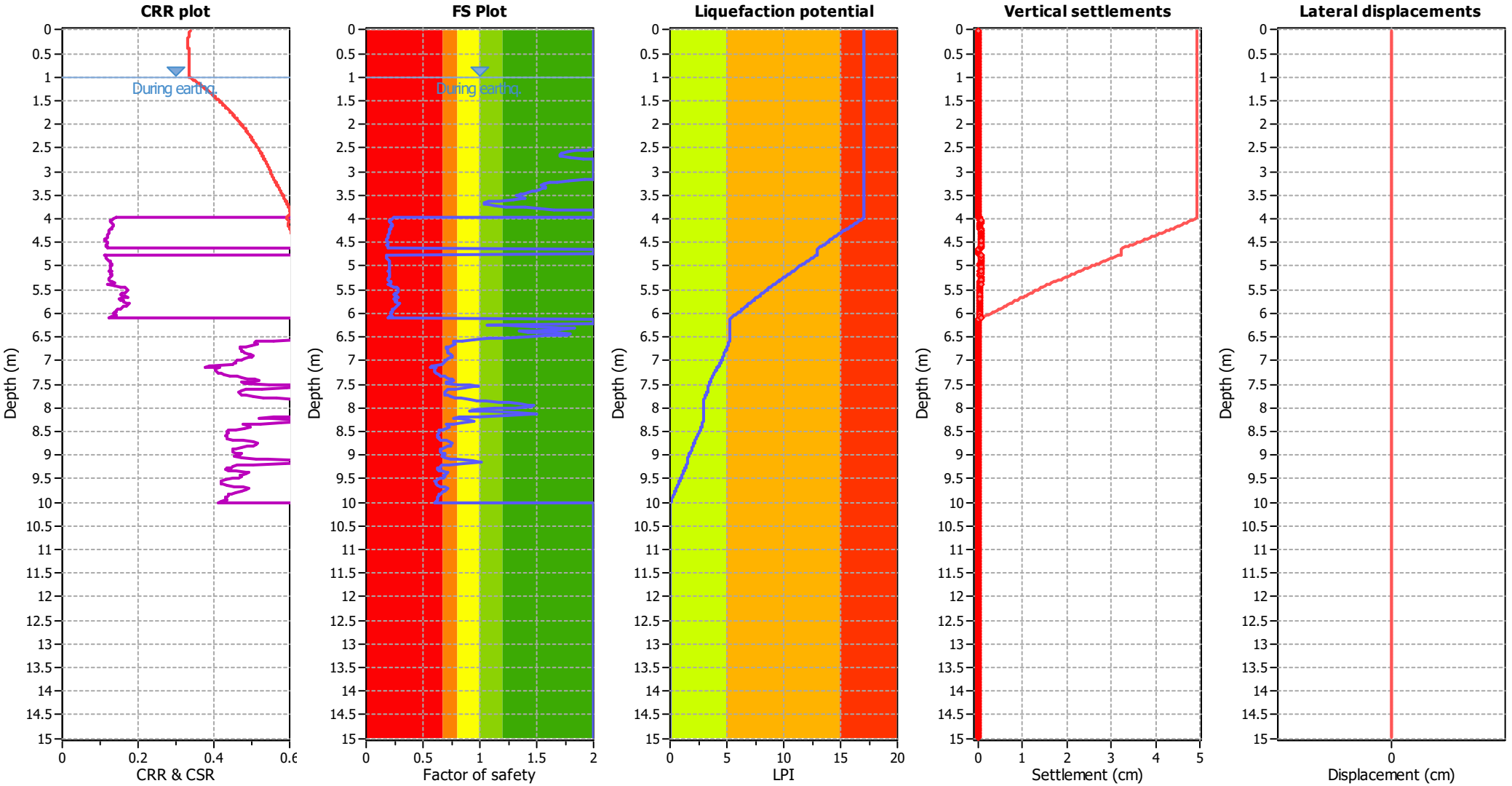
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_g applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

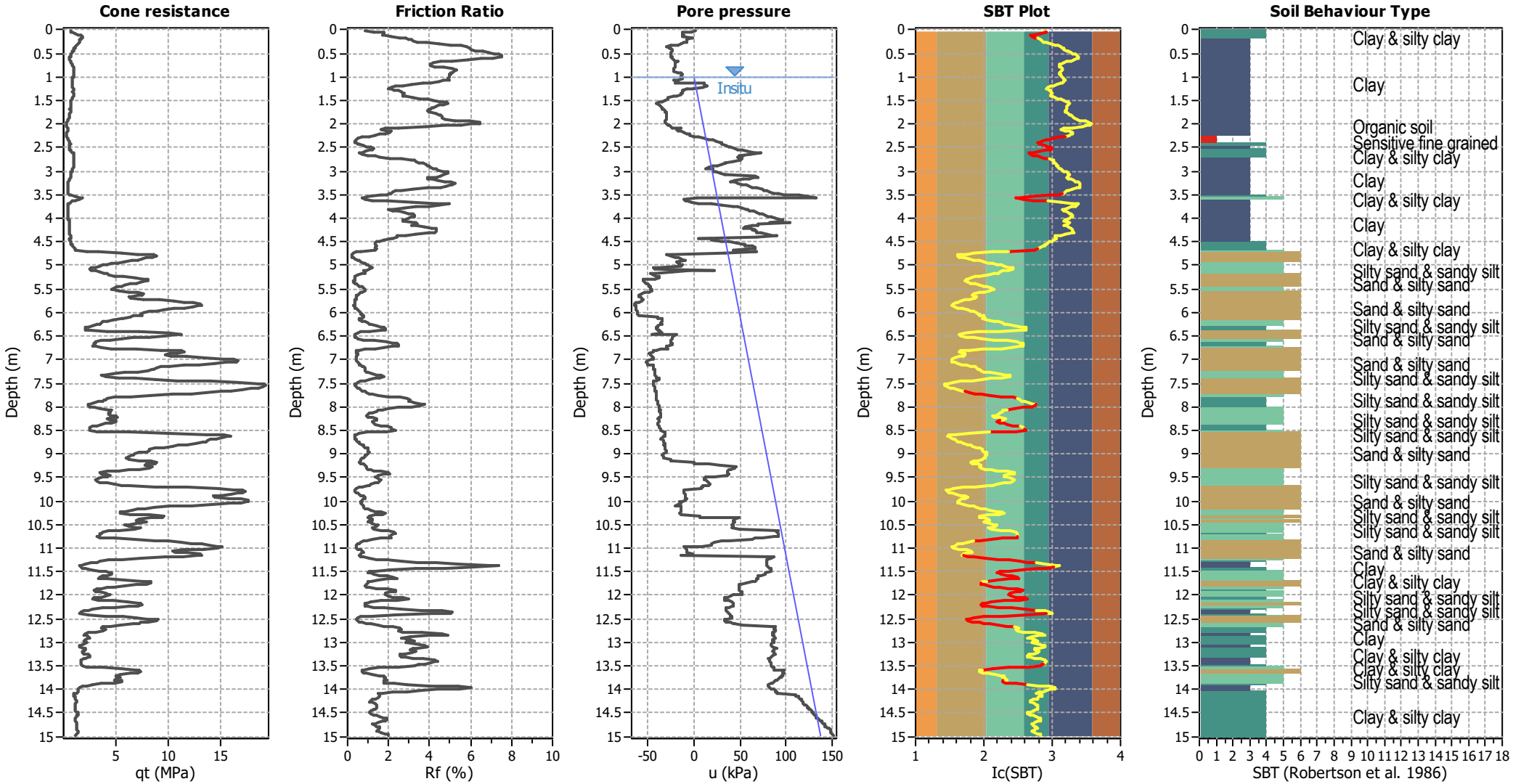
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

CPT basic interpretation plots



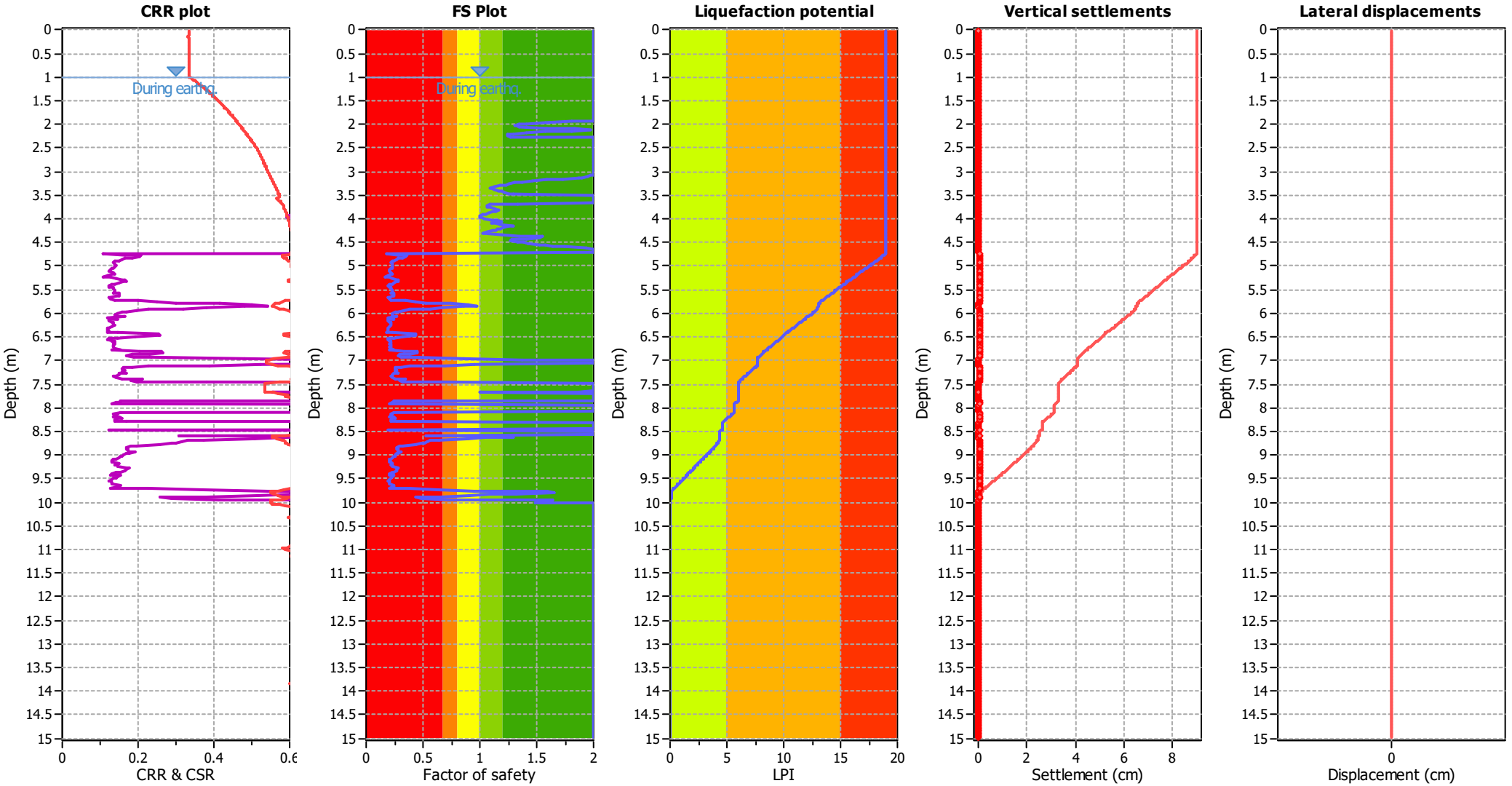
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_g applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

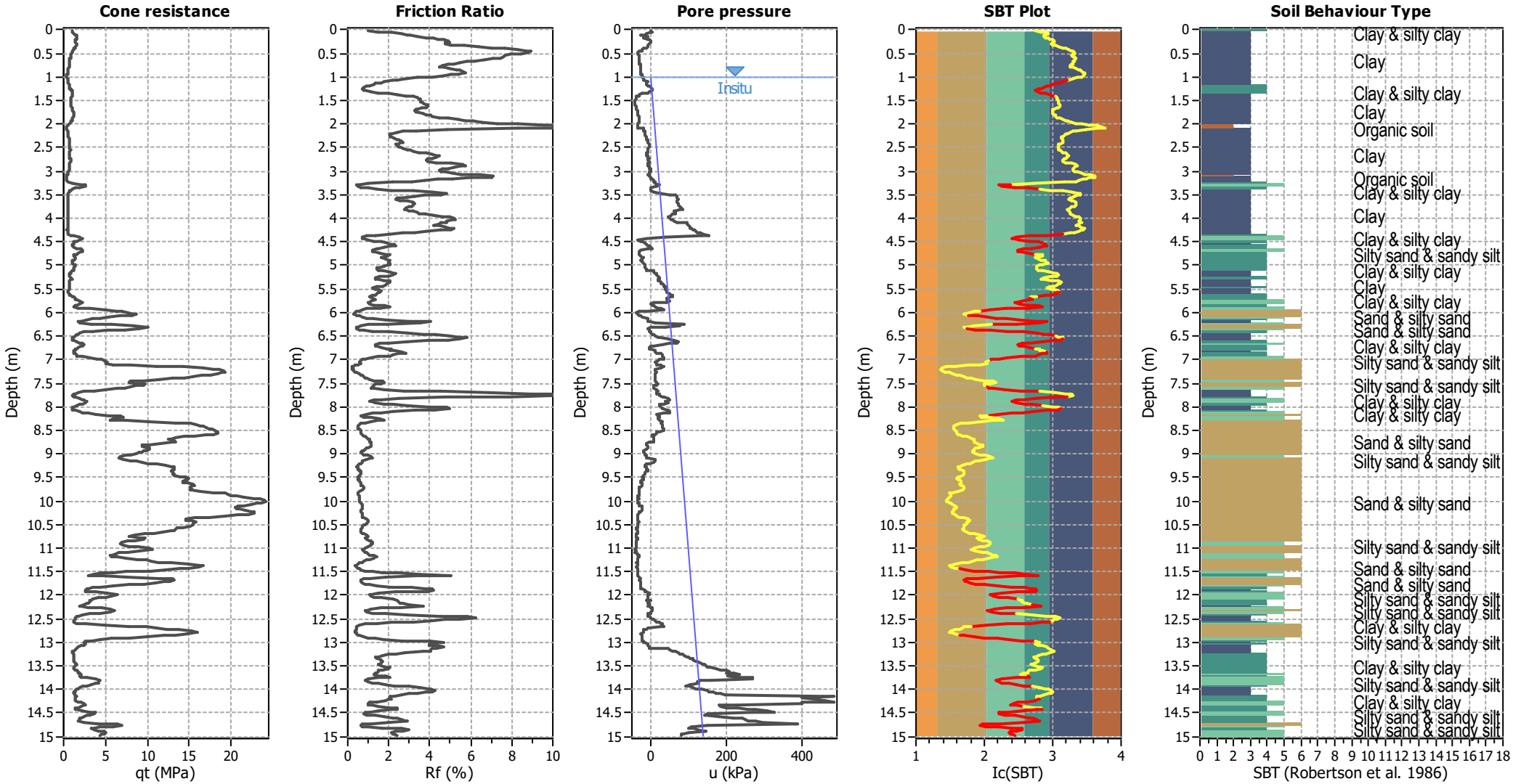
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

CPT basic interpretation plots



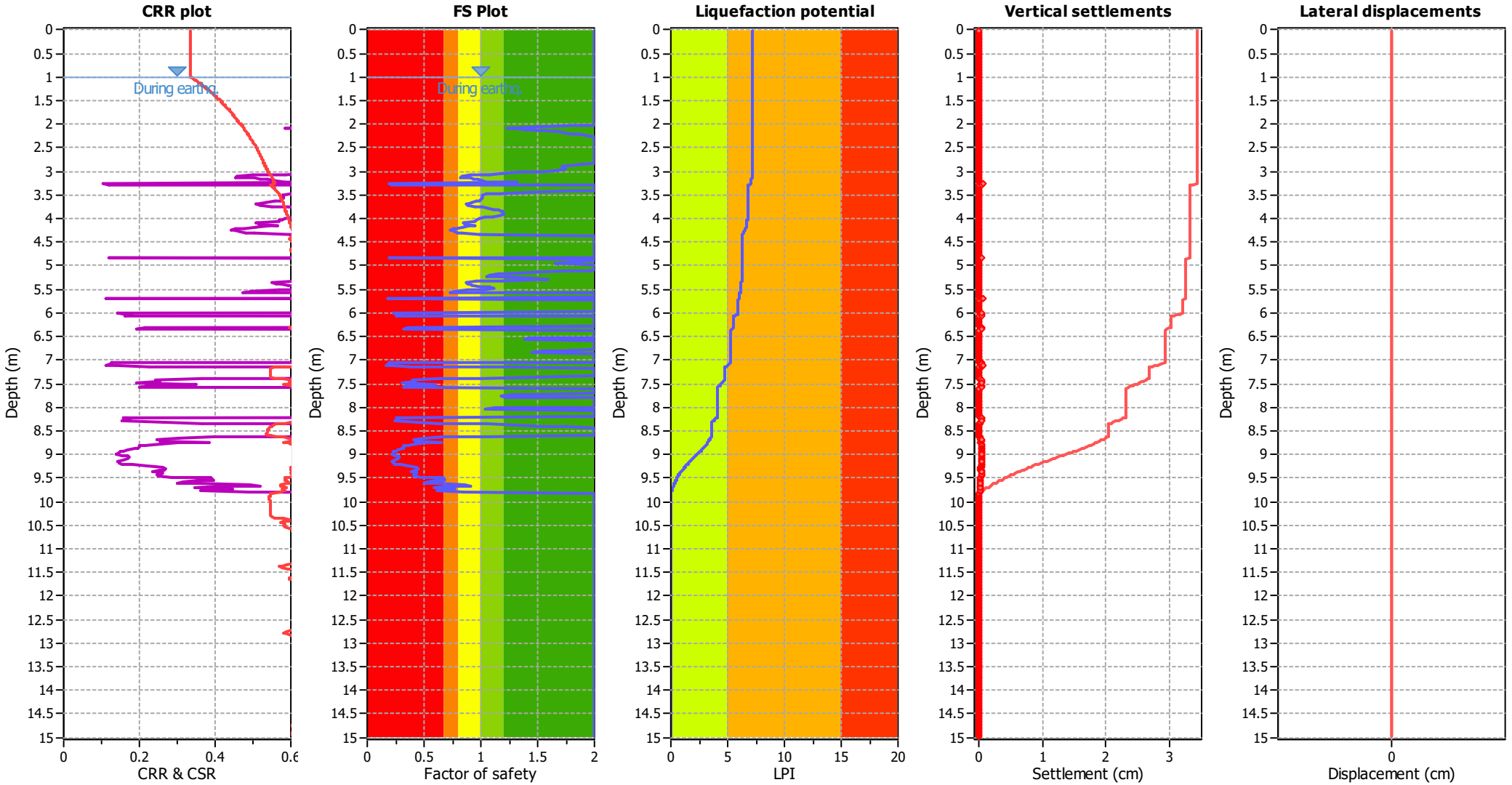
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

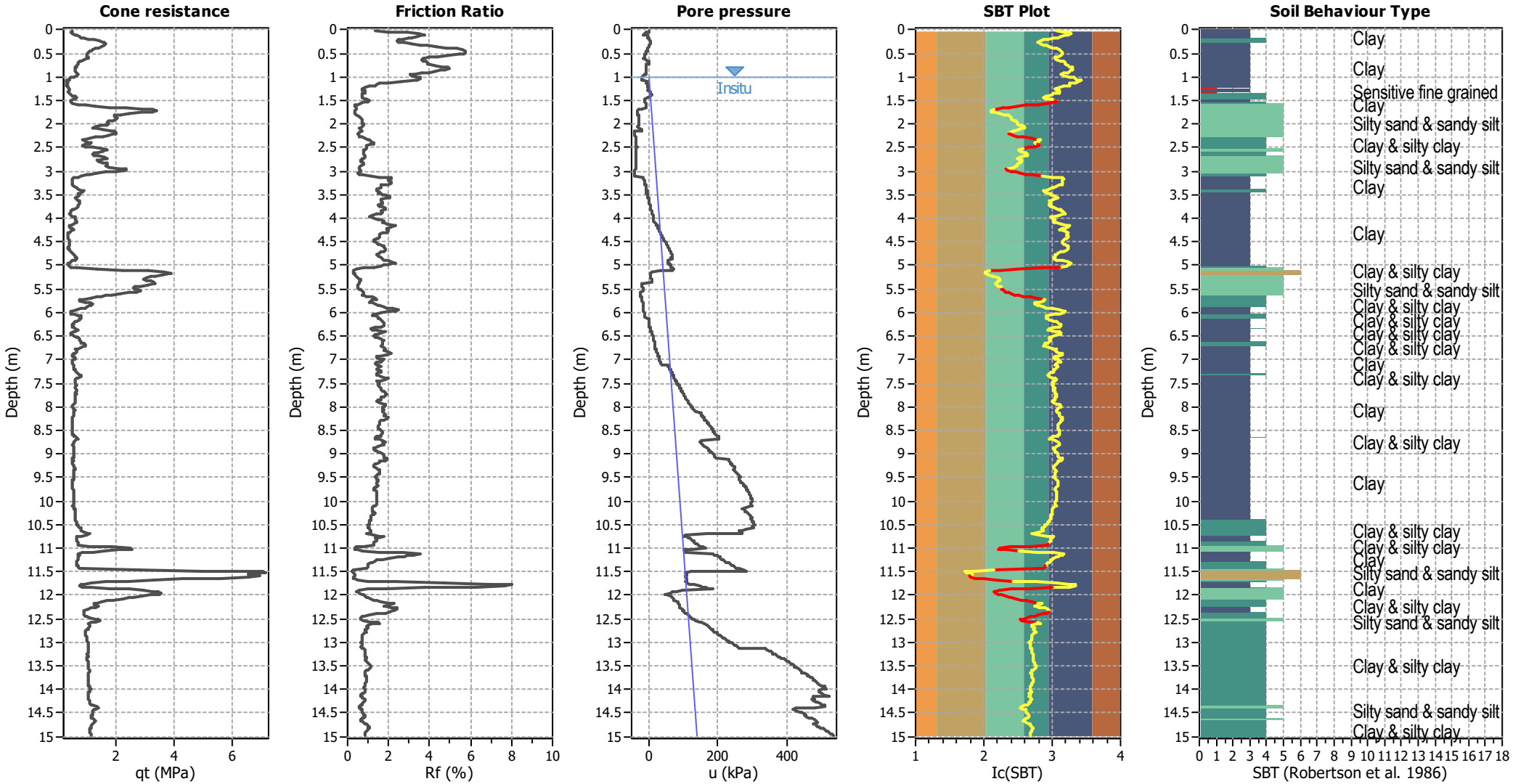
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

CPT basic interpretation plots



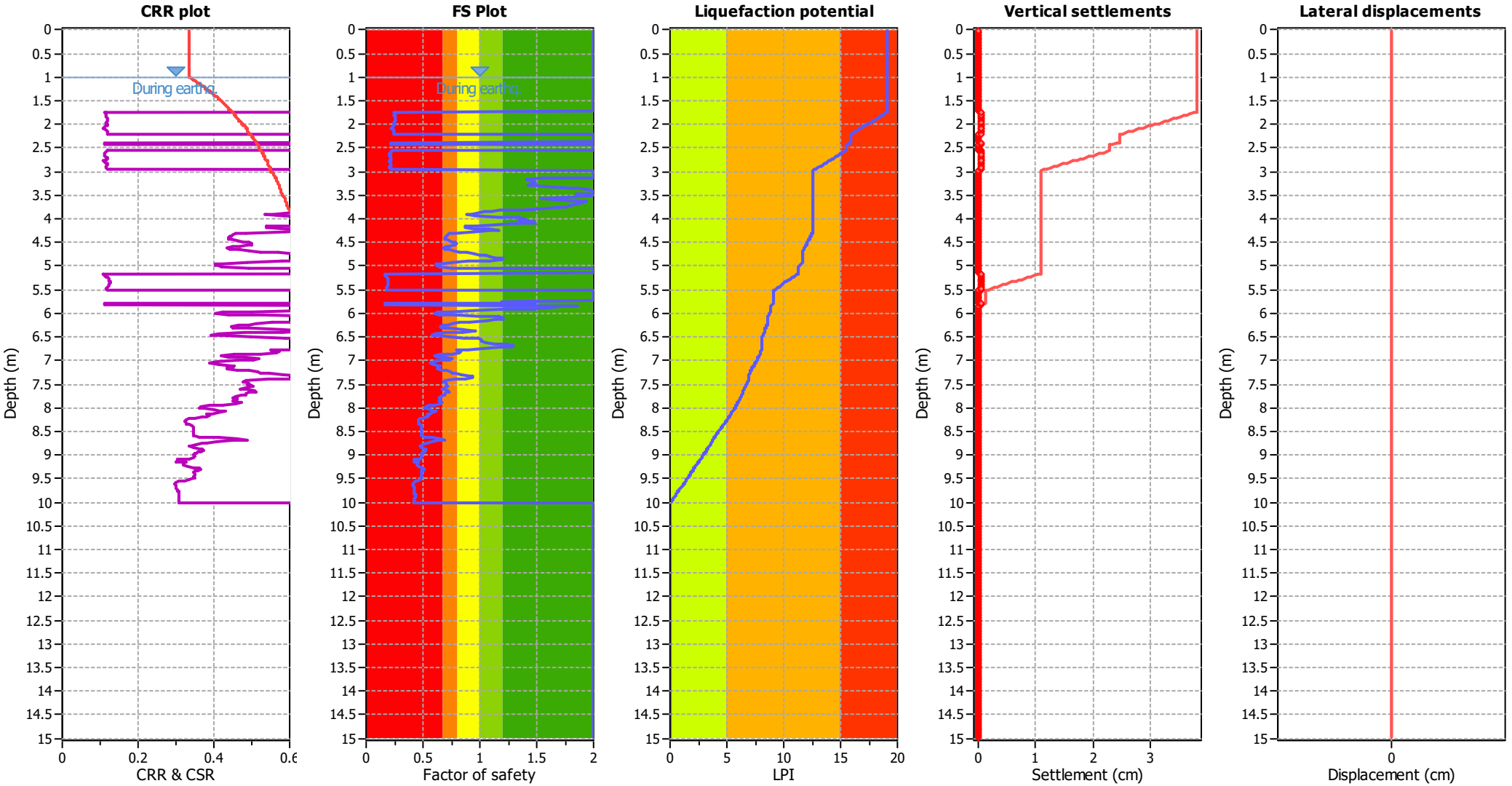
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sand & Clay
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

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Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
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LPI color scheme

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- High risk
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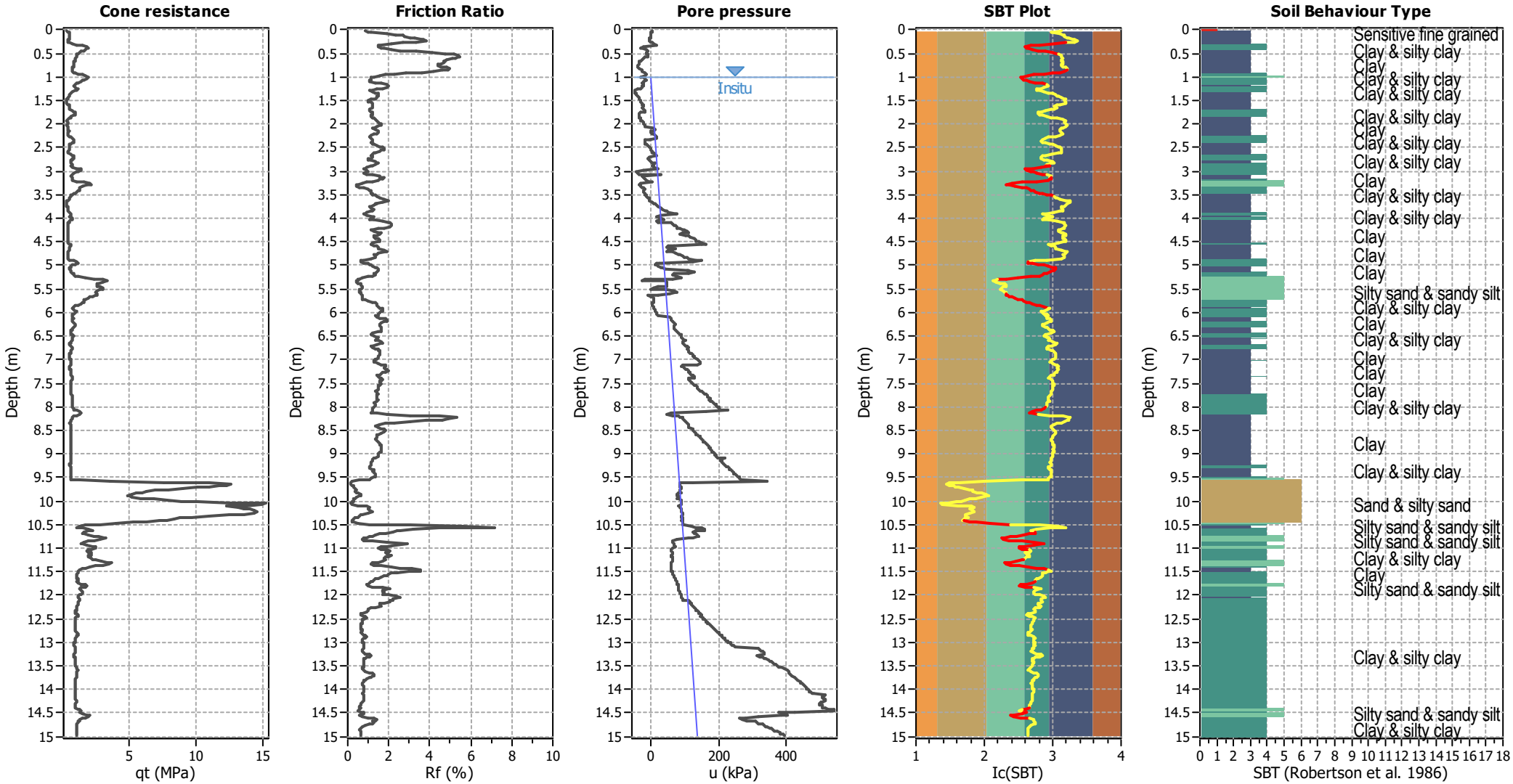
CPT basic interpretation plots



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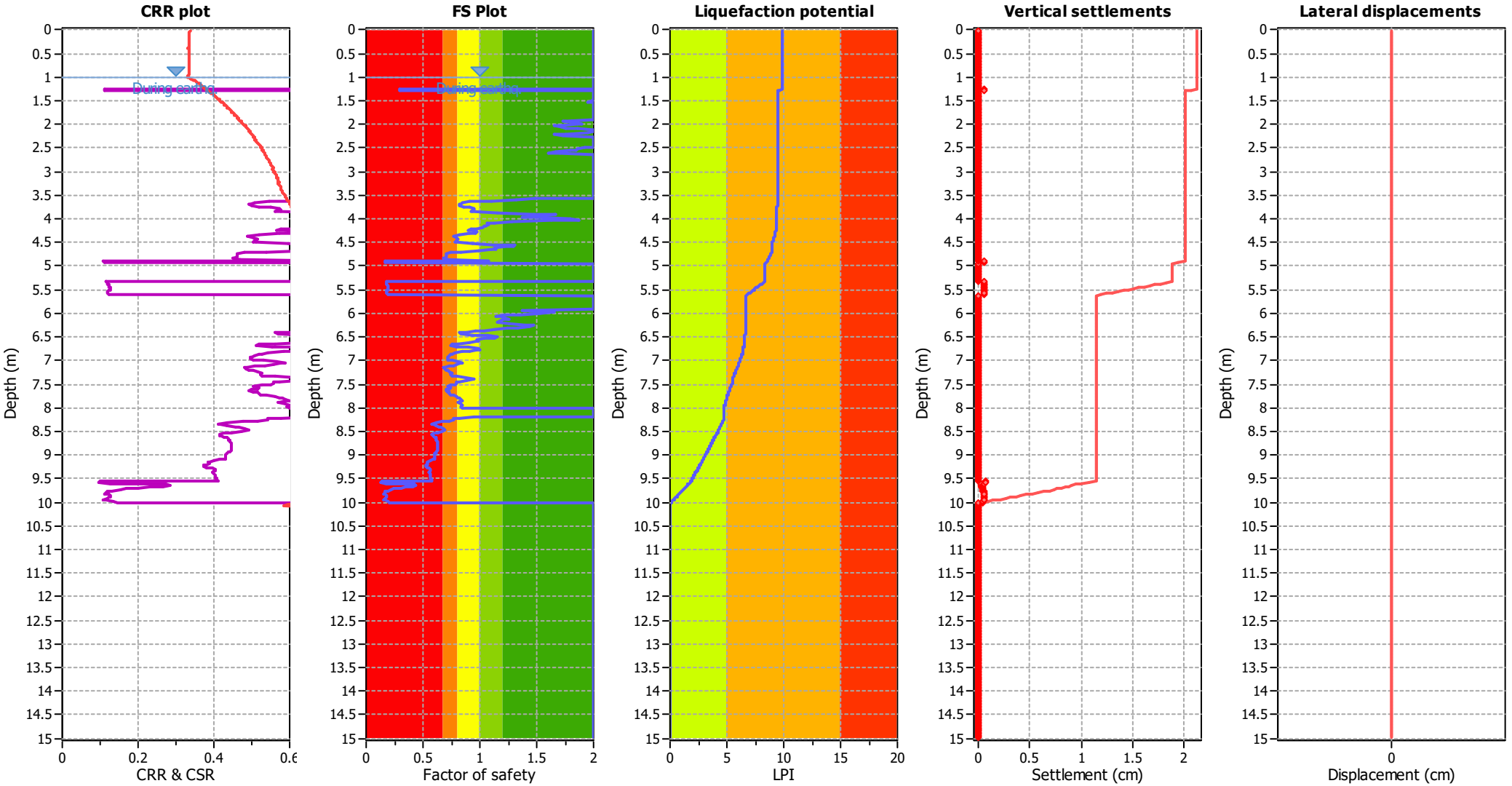
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



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Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
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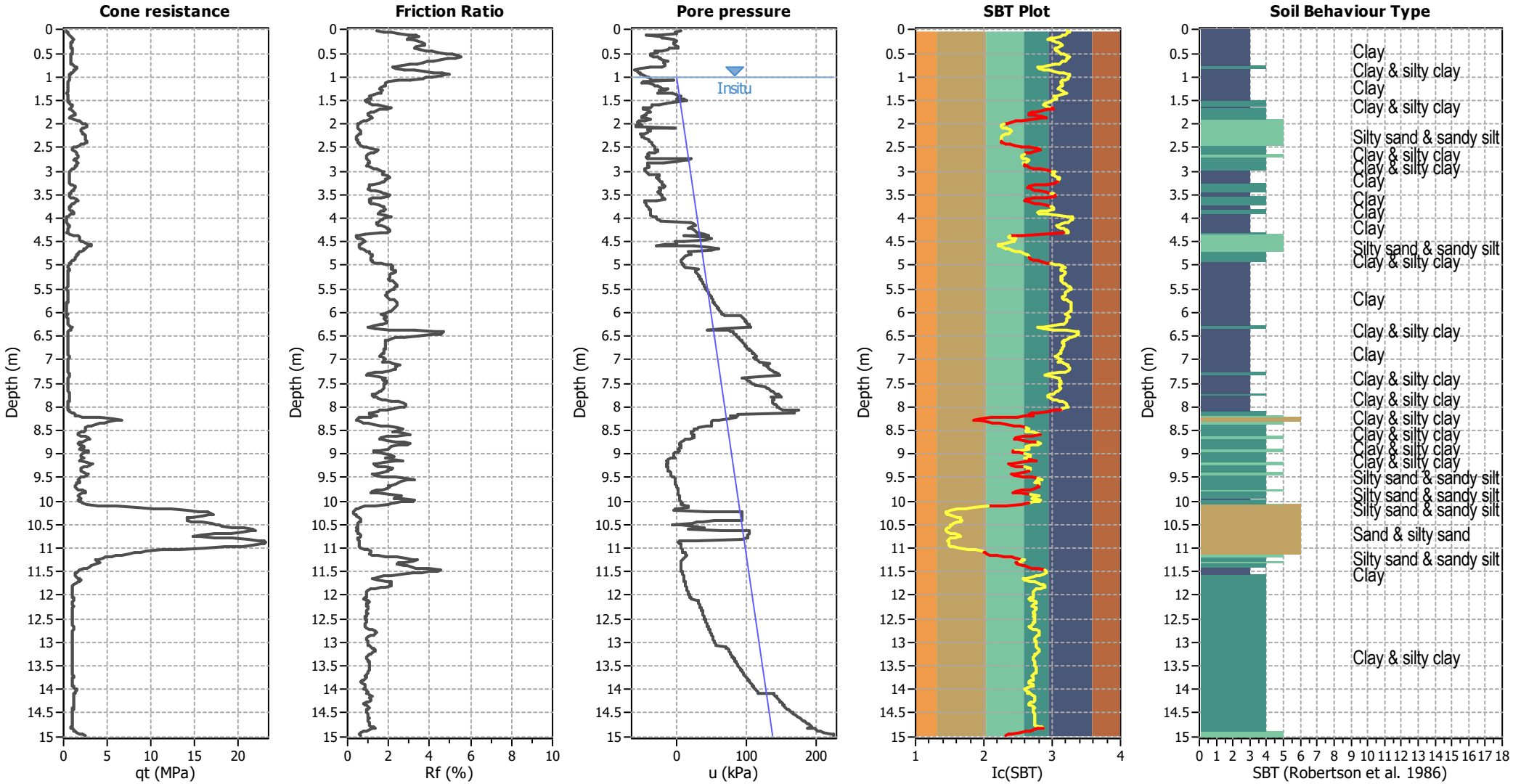
CPT basic interpretation plots



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7. Gravely sand to sand
8. Very stiff sand to
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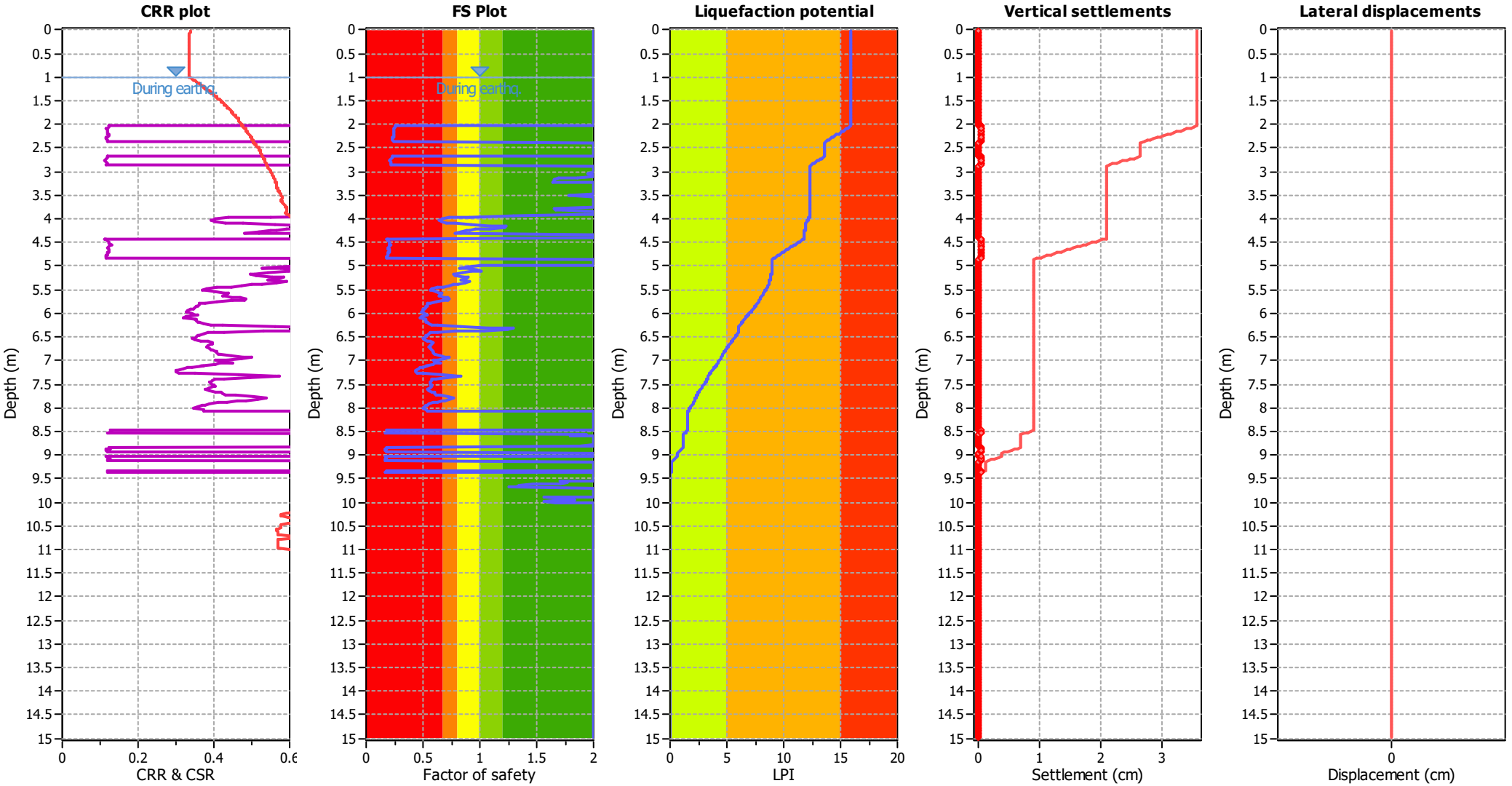
Liquefaction analysis overall plots



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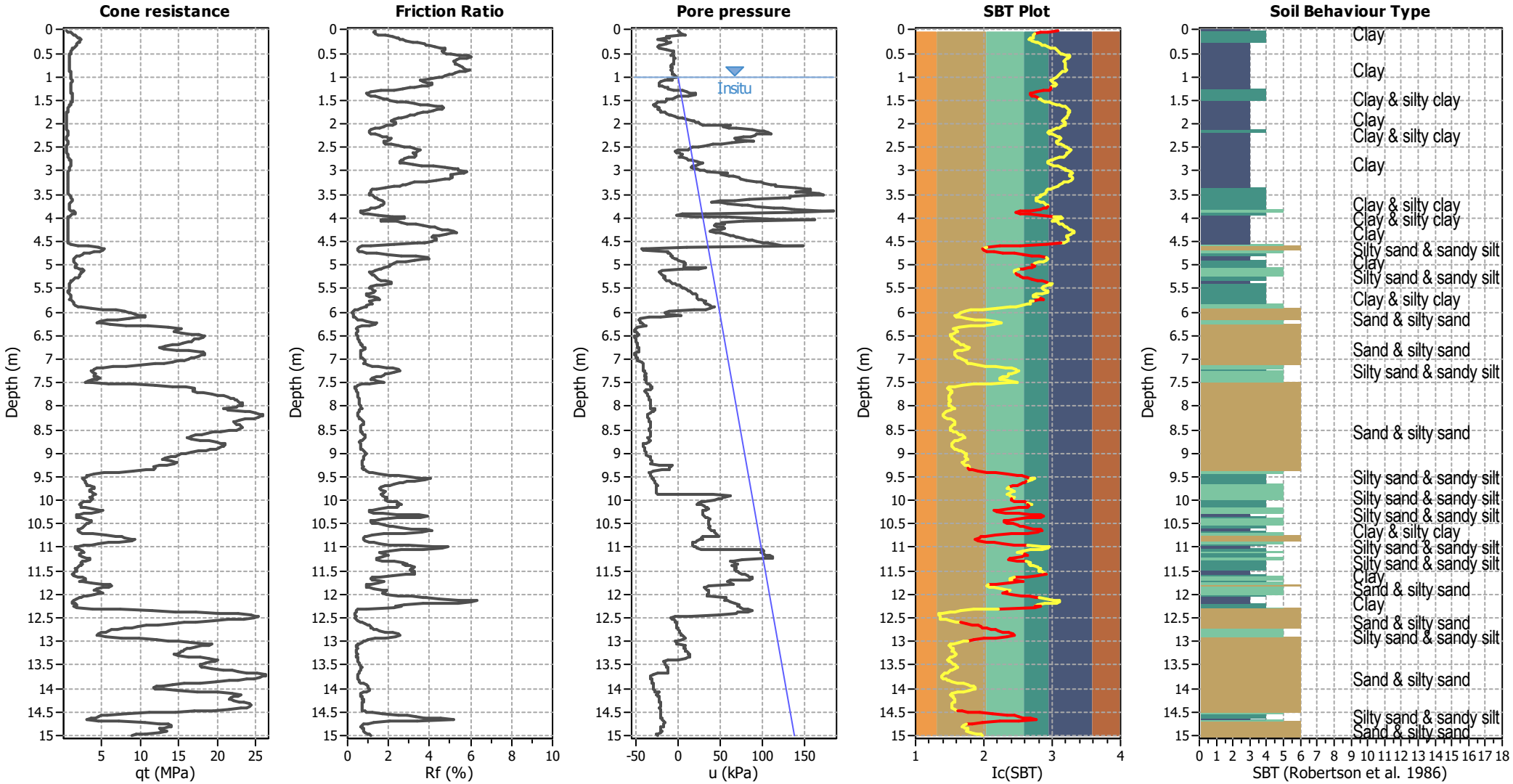
CPT basic interpretation plots



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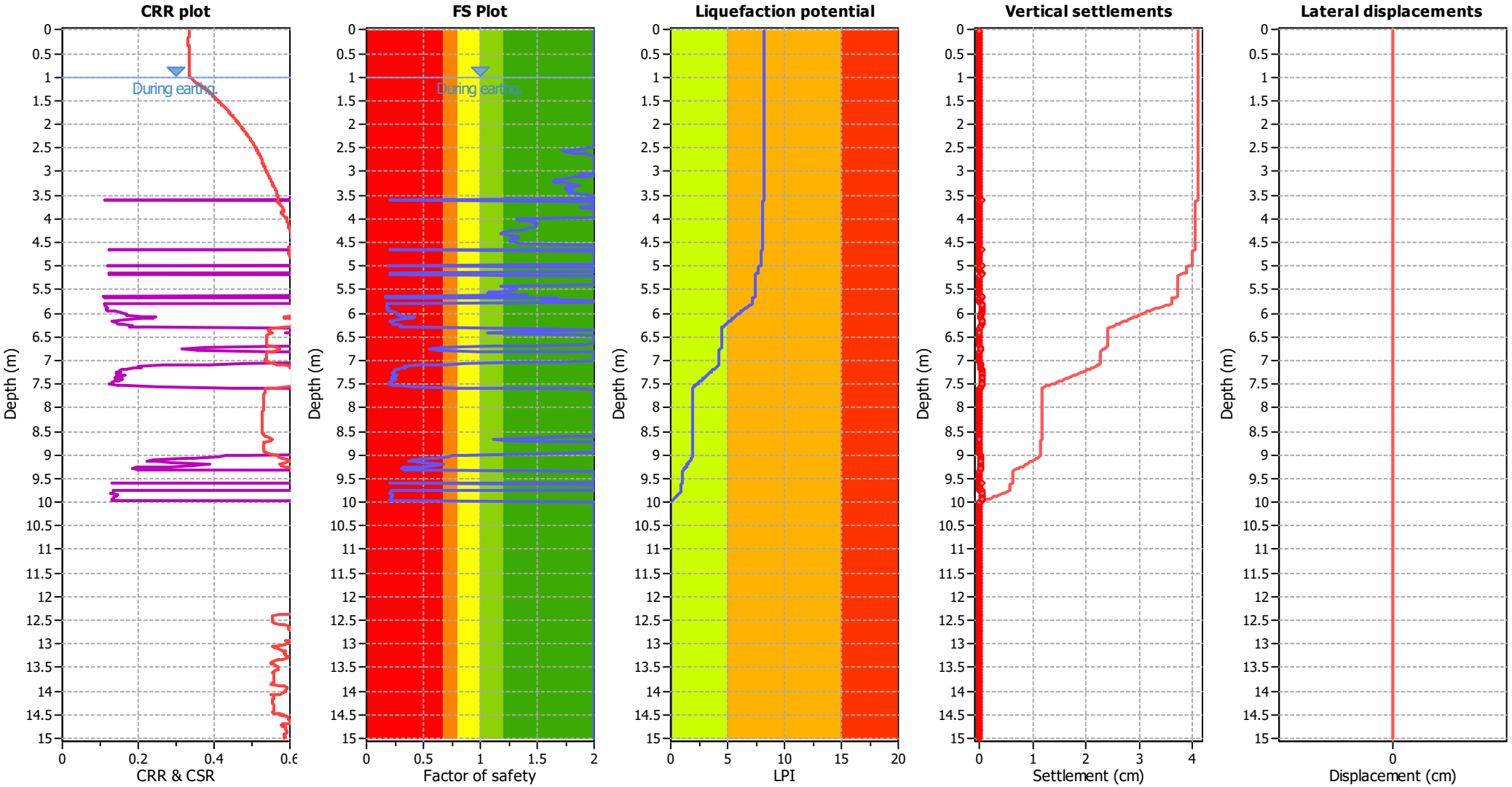
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

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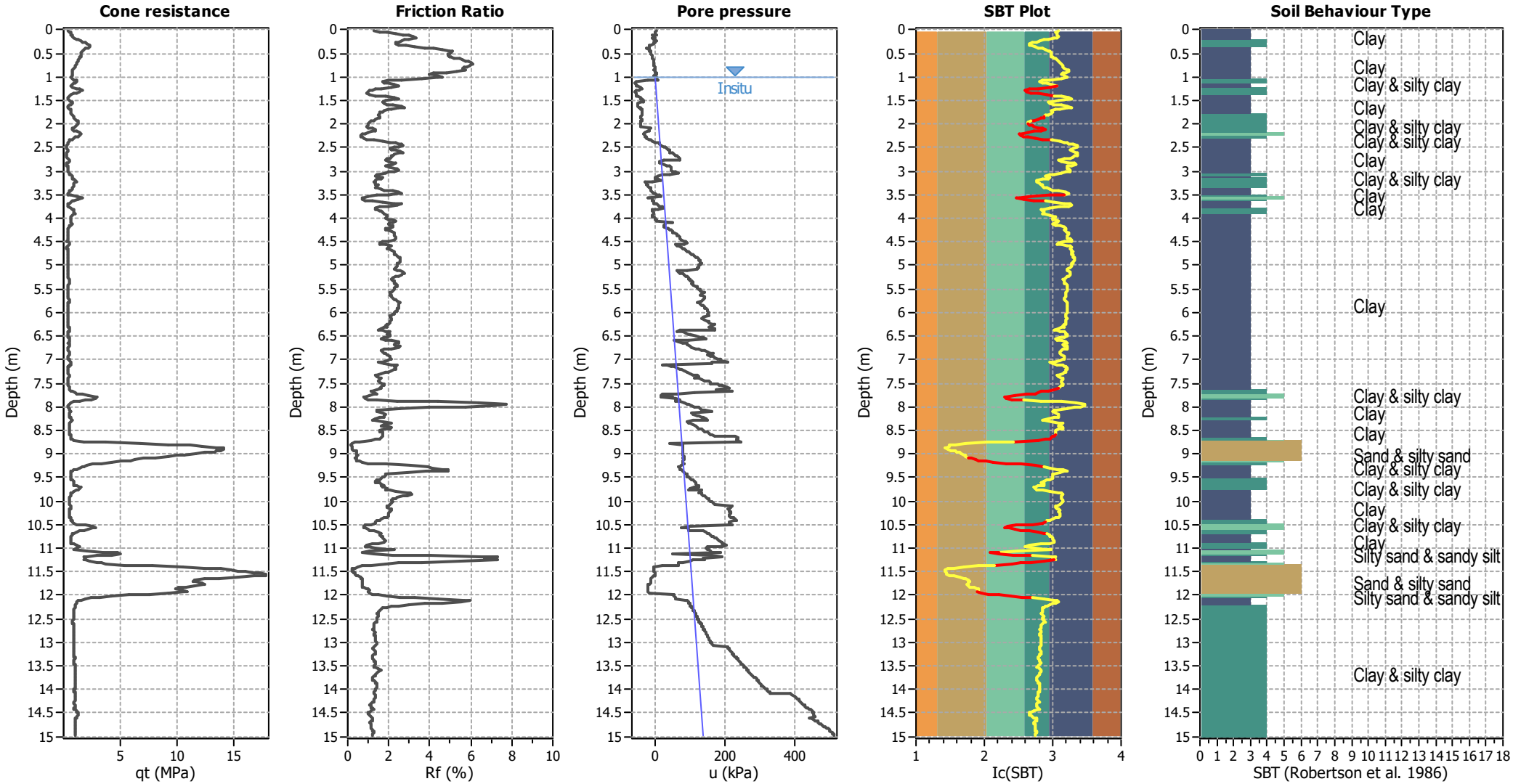
CPT basic interpretation plots



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SBT legend

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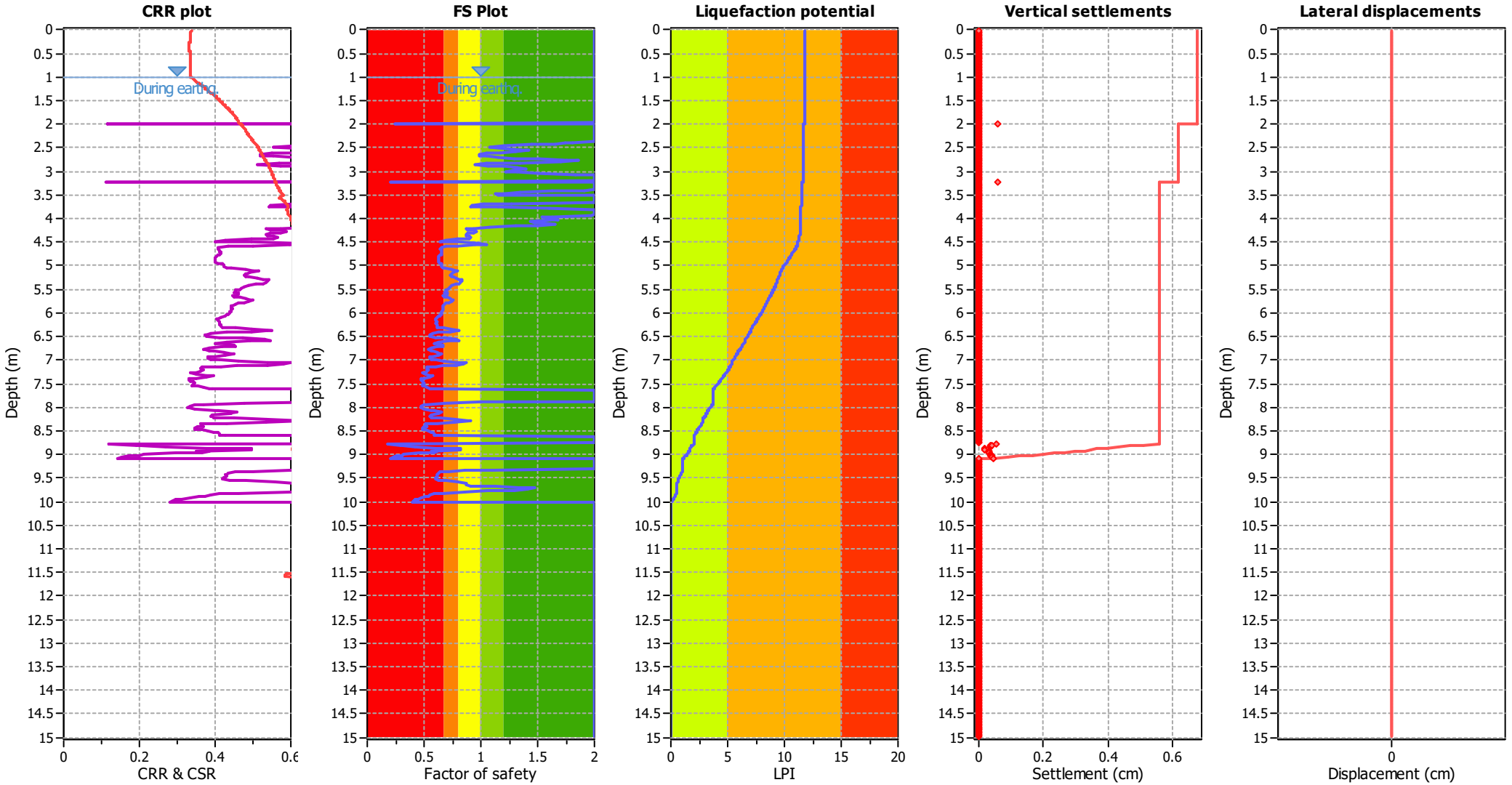
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



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LPI color scheme

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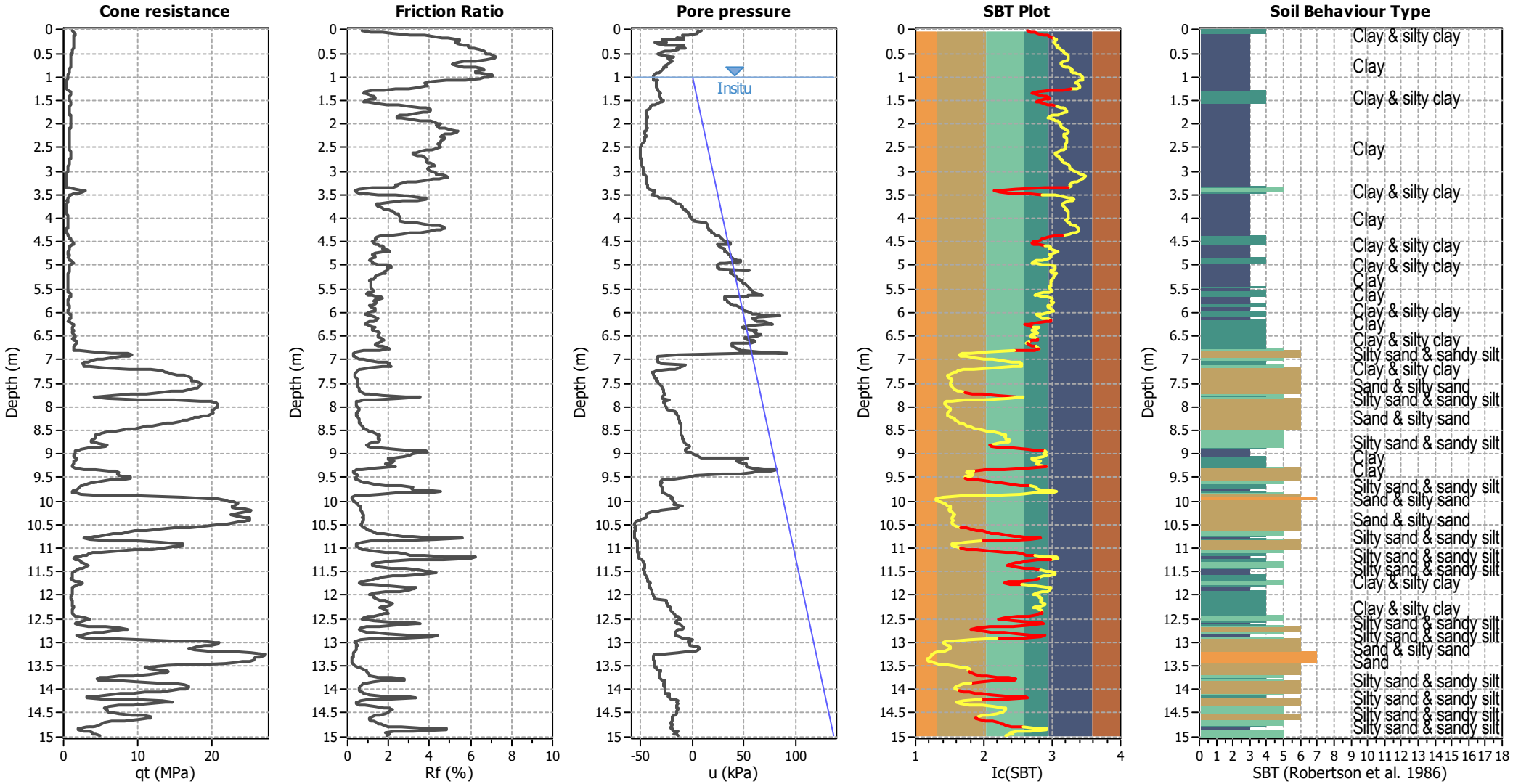
CPT basic interpretation plots



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Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
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SBT legend

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8. Very stiff sand to
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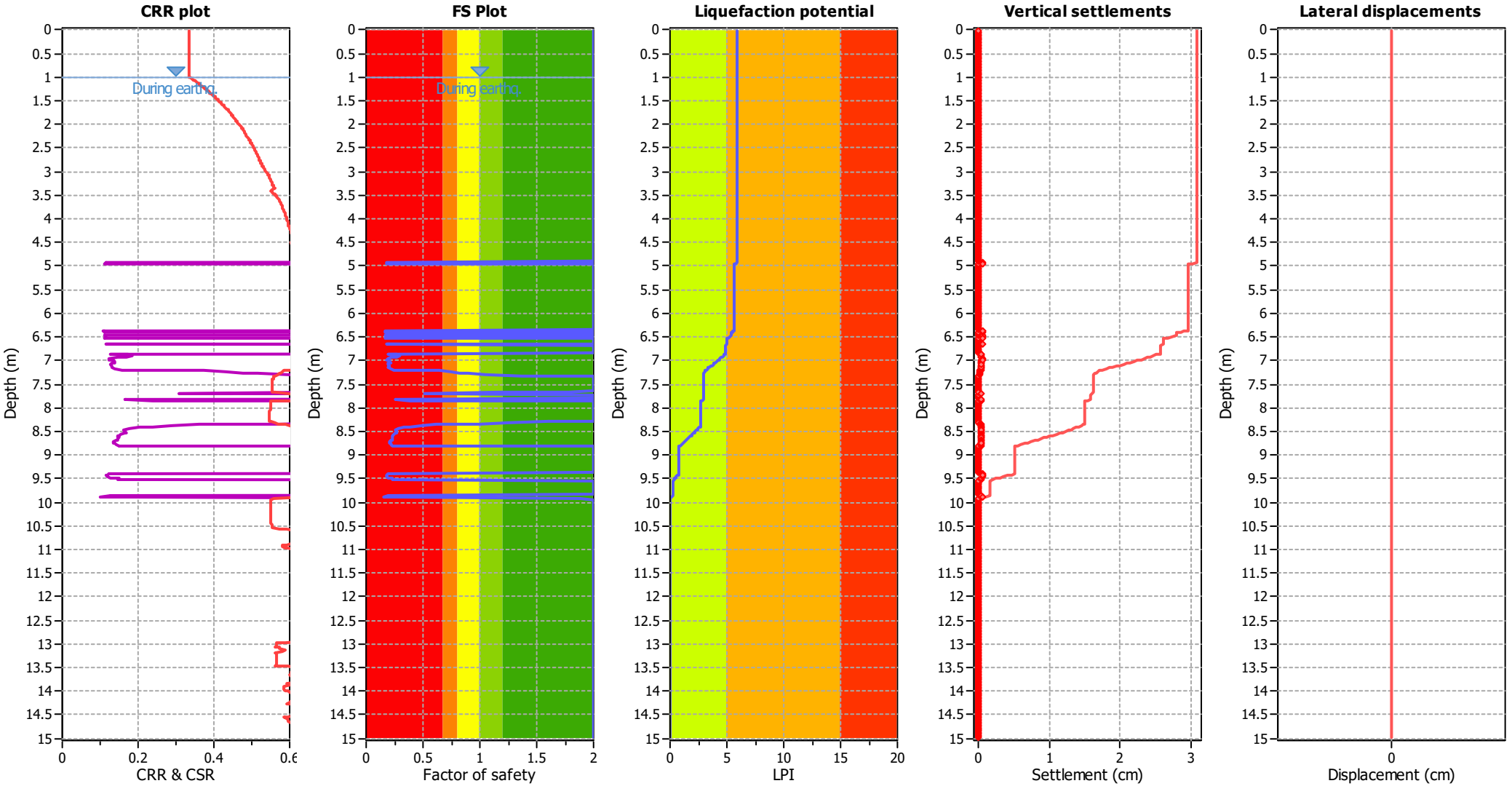
Liquefaction analysis overall plots



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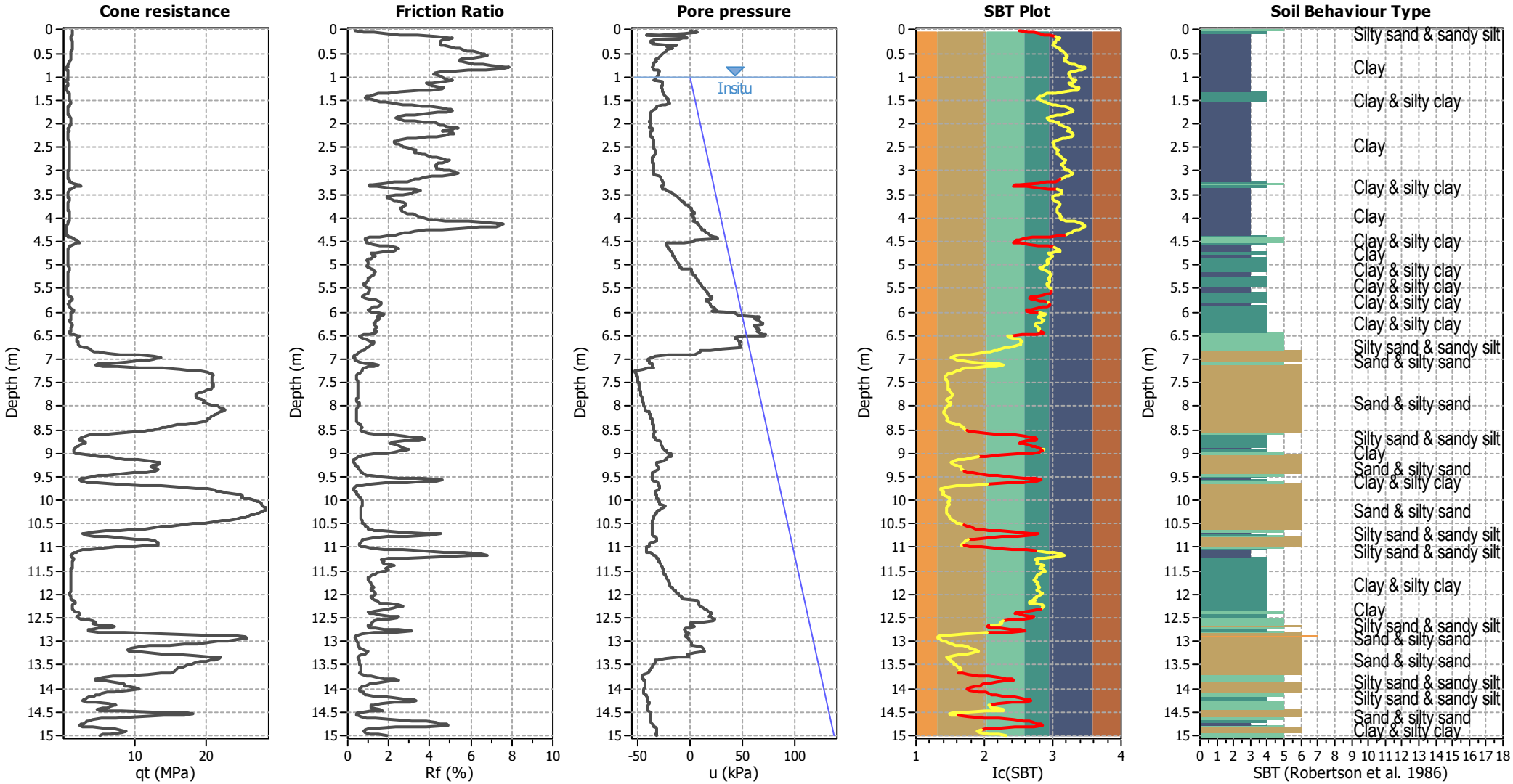
CPT basic interpretation plots



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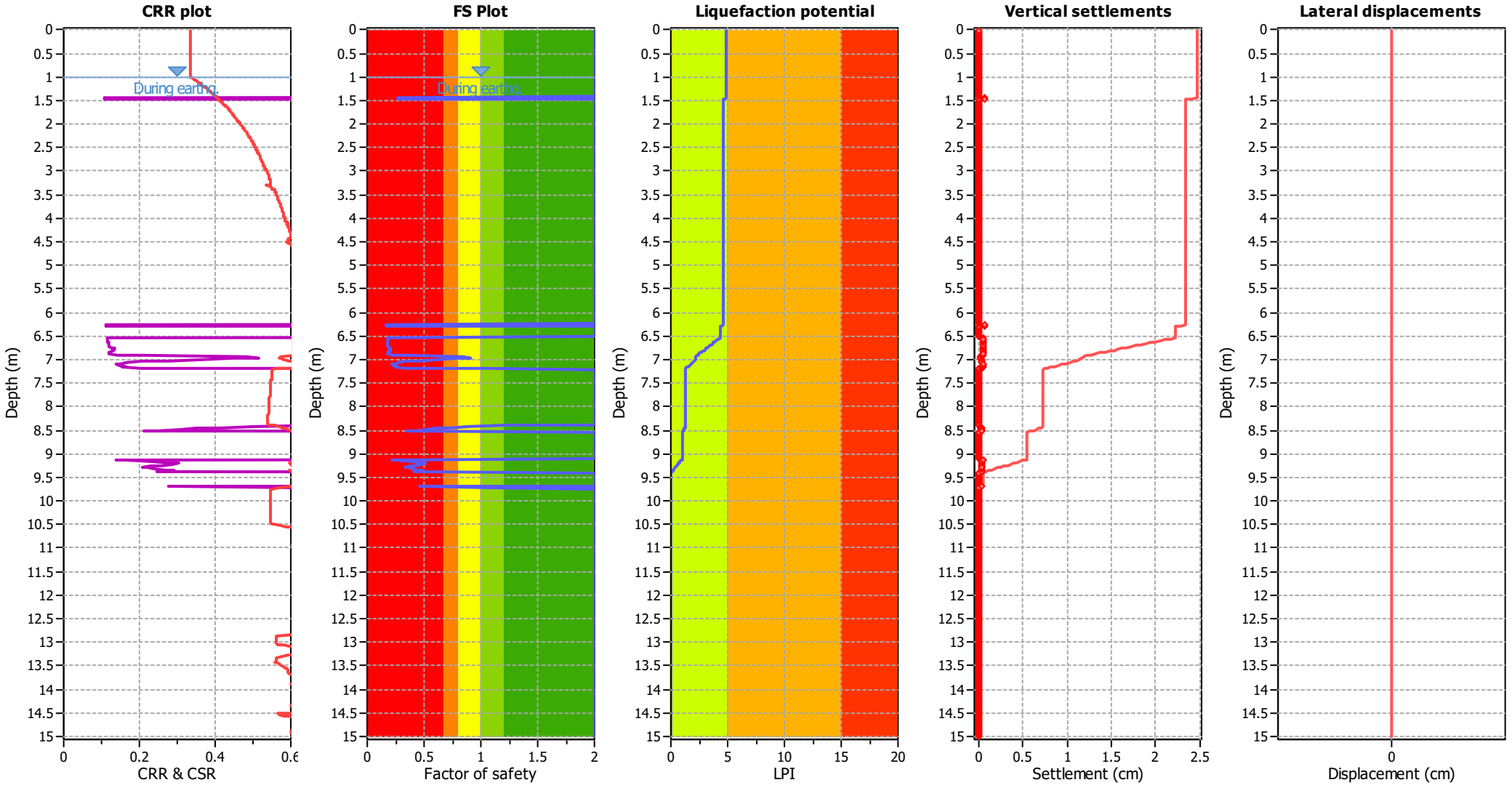
Liquefaction analysis overall plots



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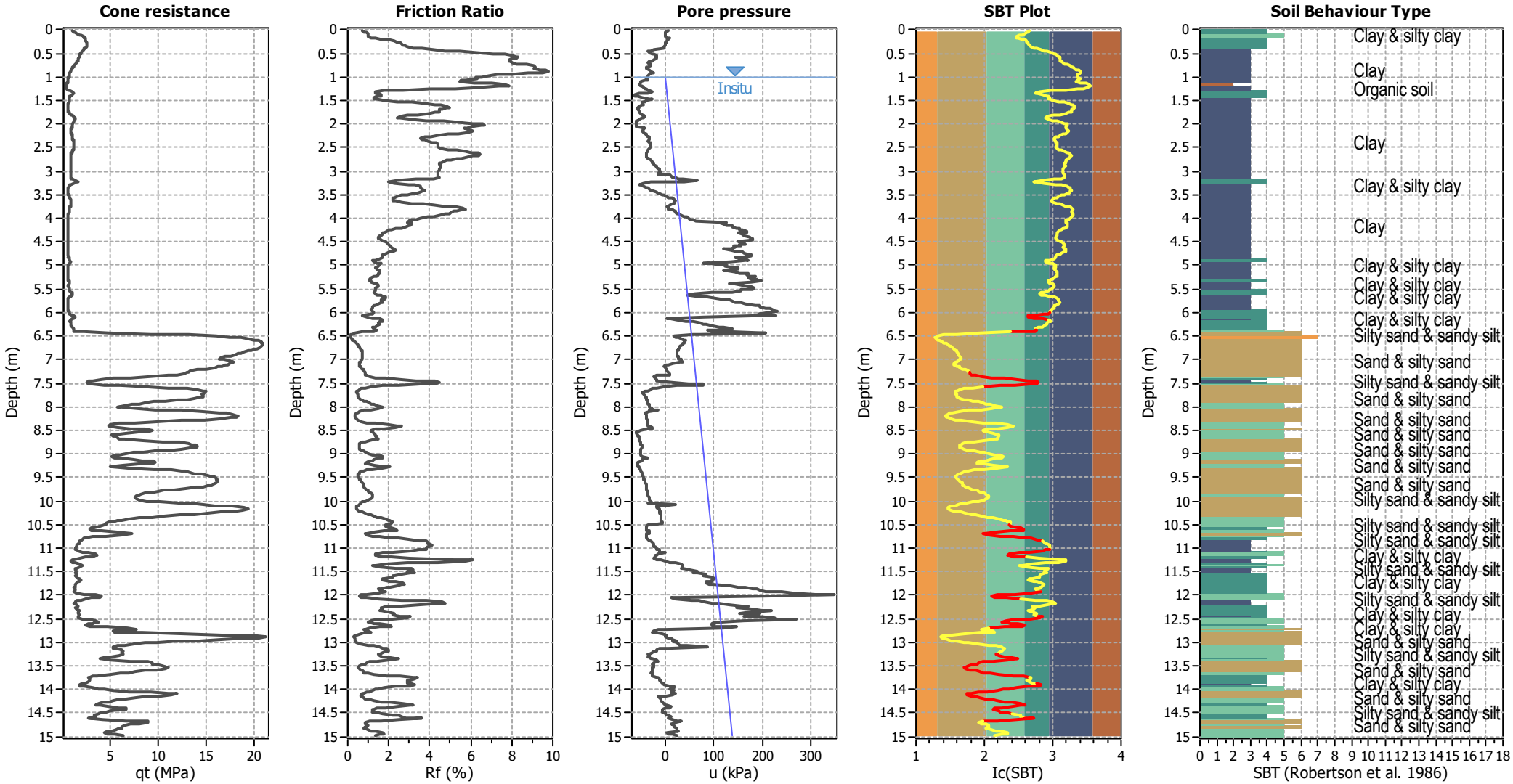
CPT basic interpretation plots



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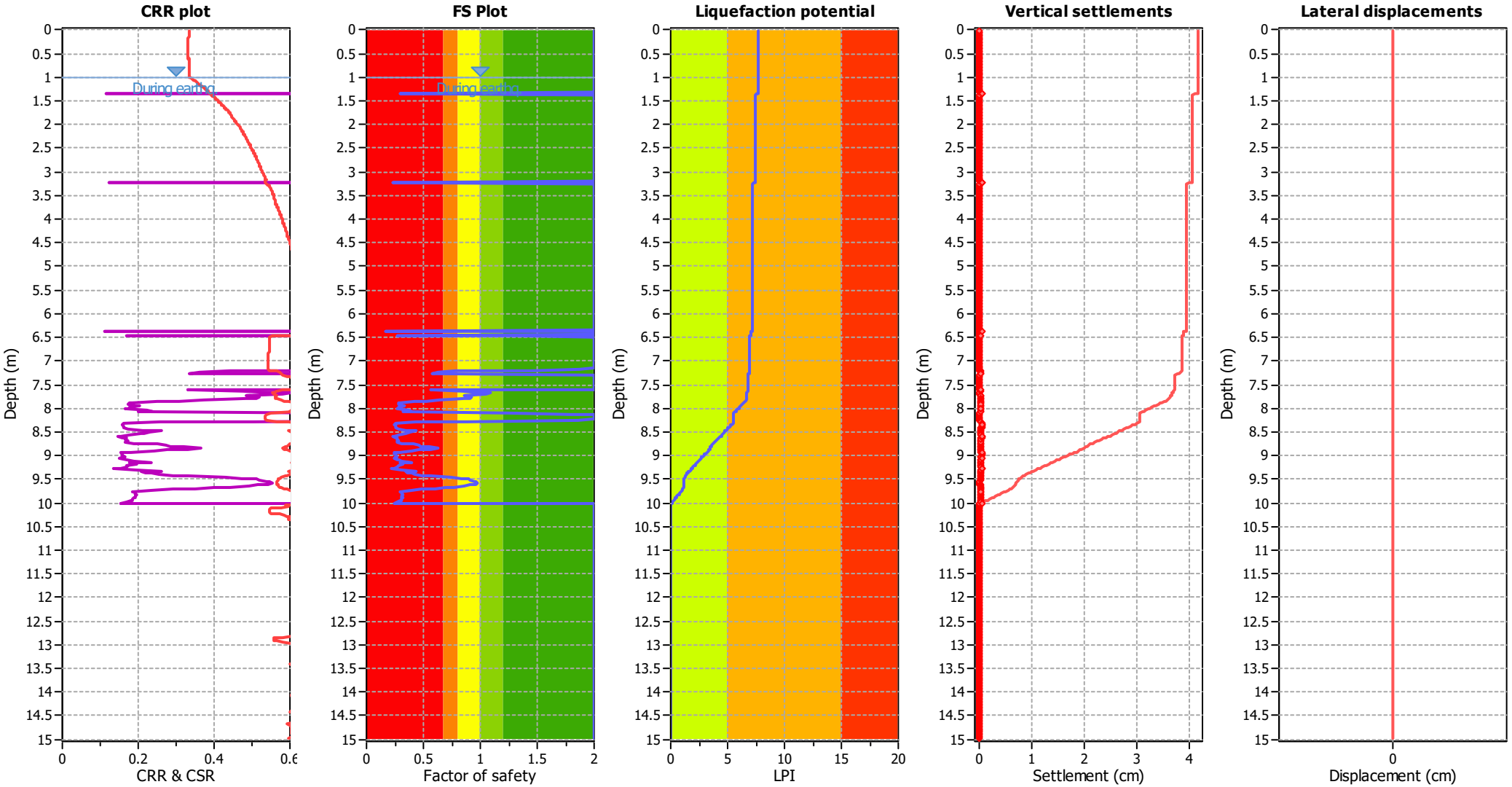
Liquefaction analysis overall plots



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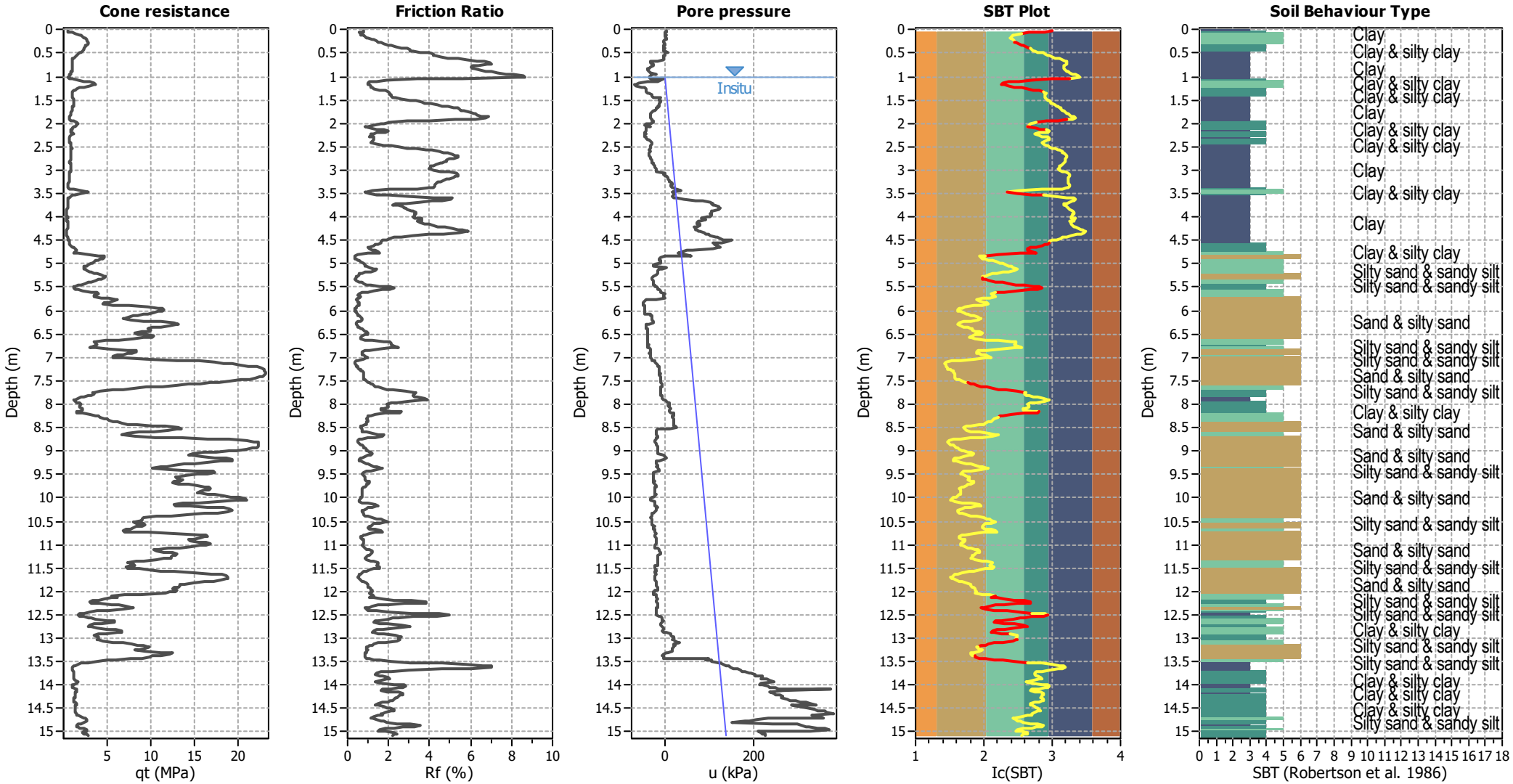
CPT basic interpretation plots



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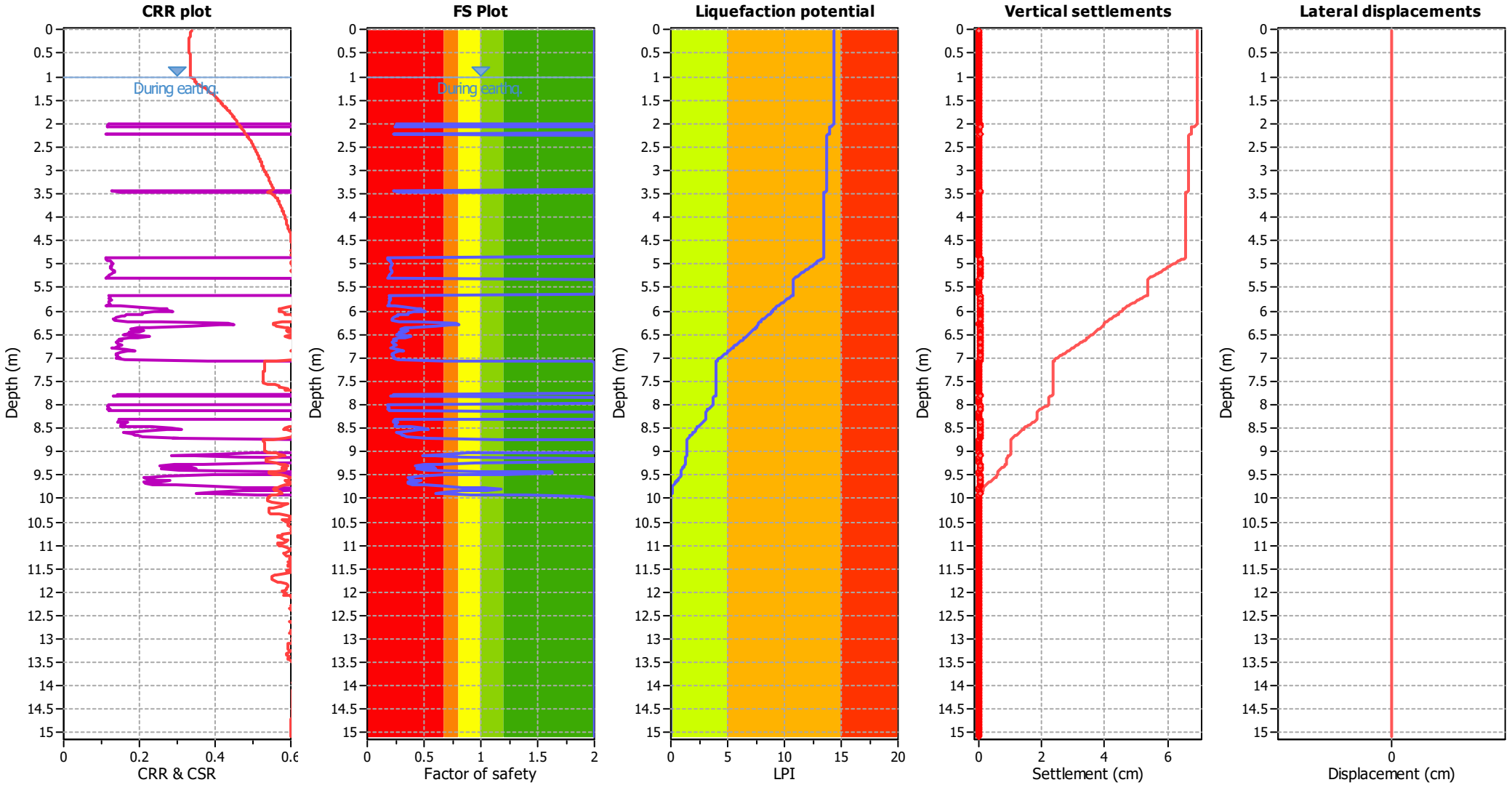
Liquefaction analysis overall plots



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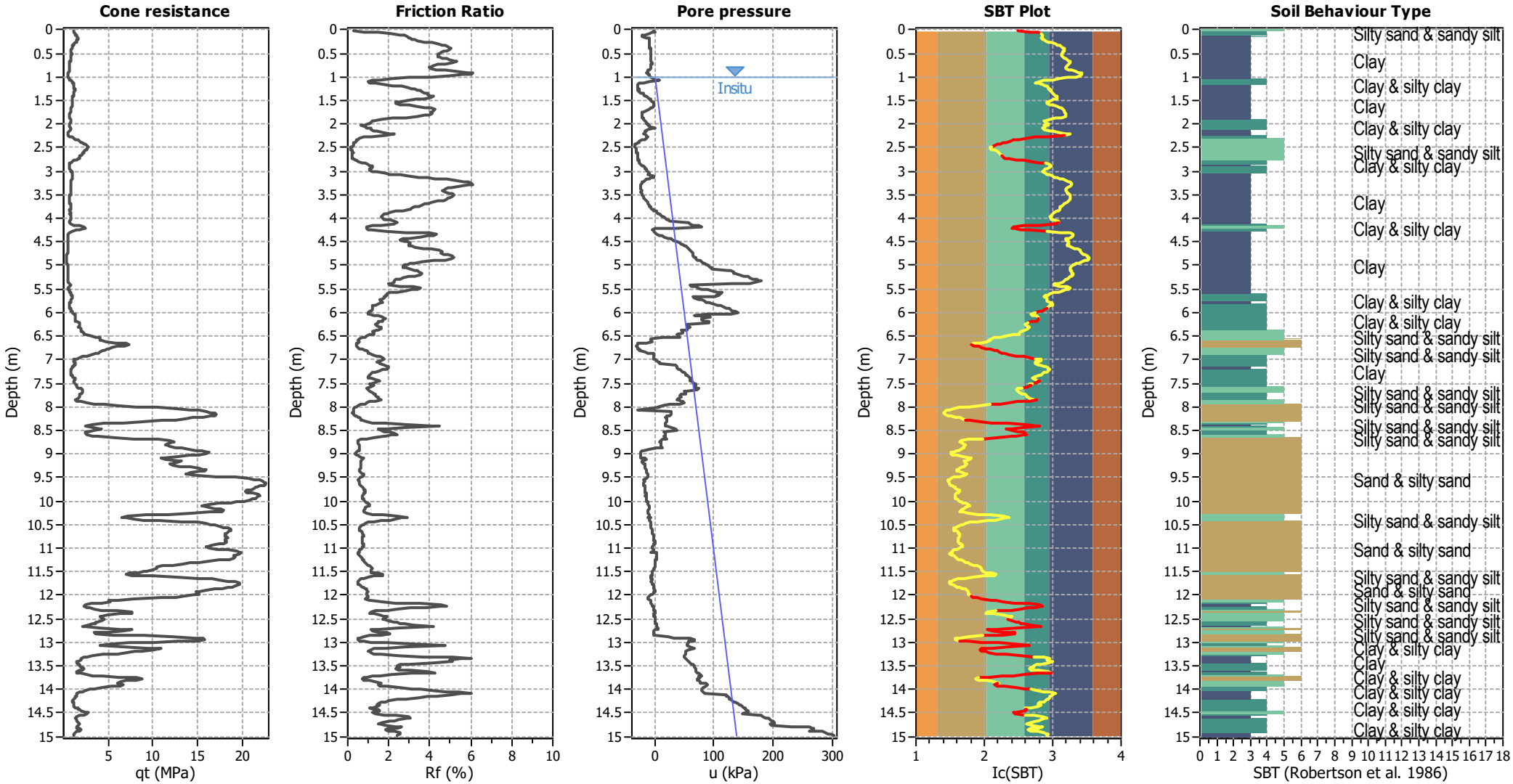

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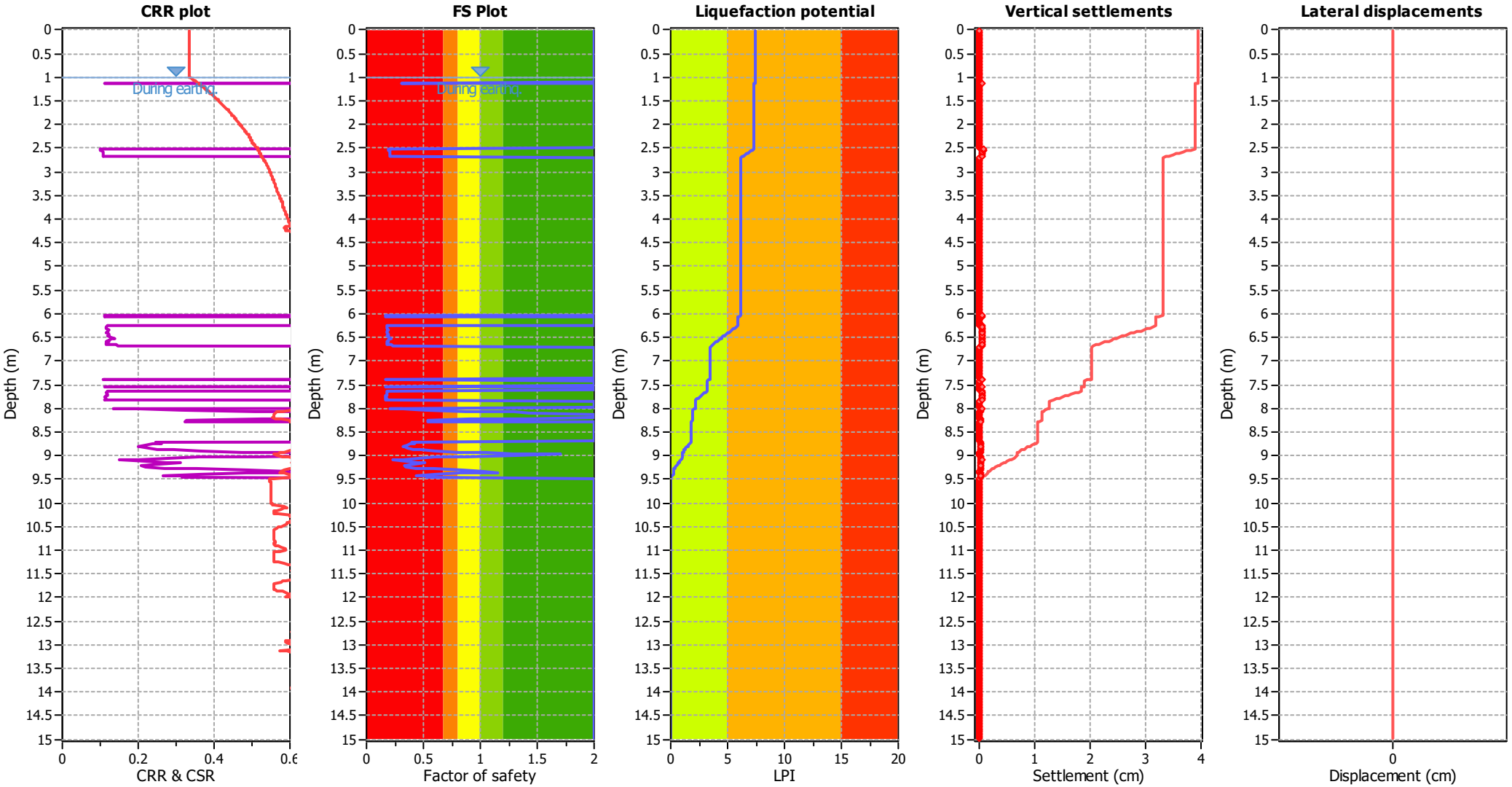
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

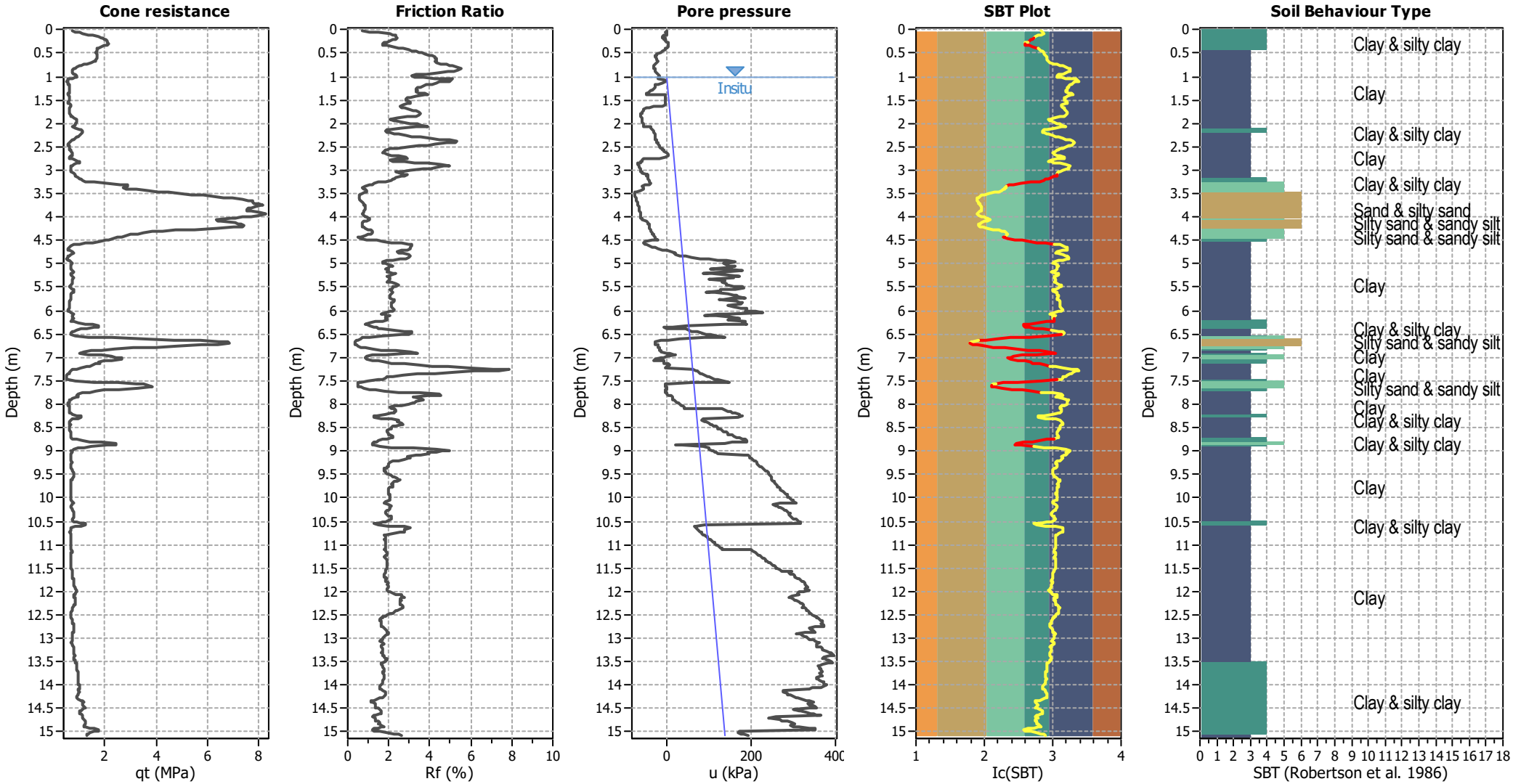
F.S. color scheme

- Almost certain it will liquefy
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

CPT basic interpretation plots



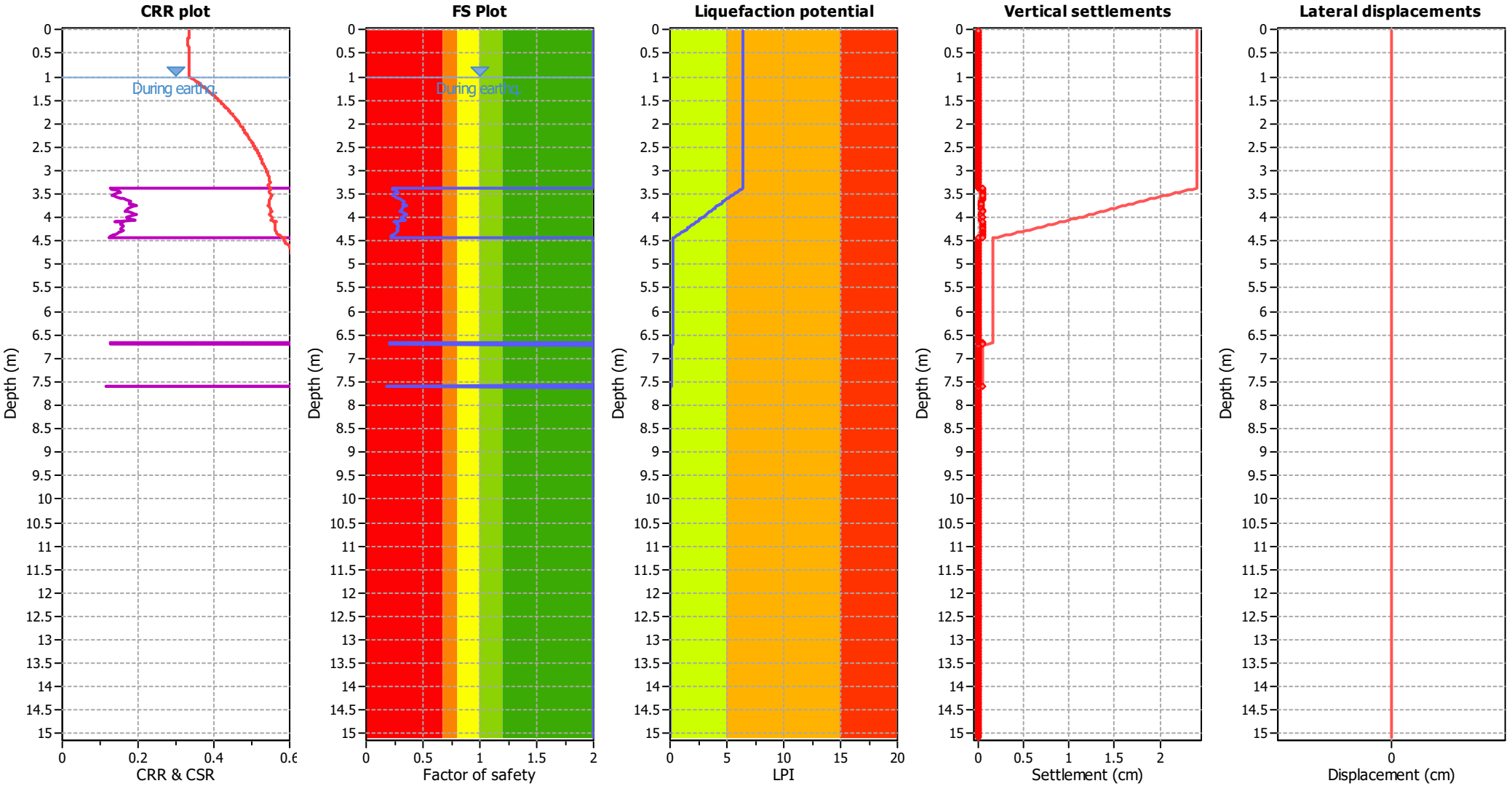
Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
Fines correction method:	B&I (2014)	Average results interval:	3	Transition detect. applied:	Yes
Points to test:	Based on Ic value	Ic cut-off value:	2.60	K_σ applied:	Yes
Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

F.S. color scheme

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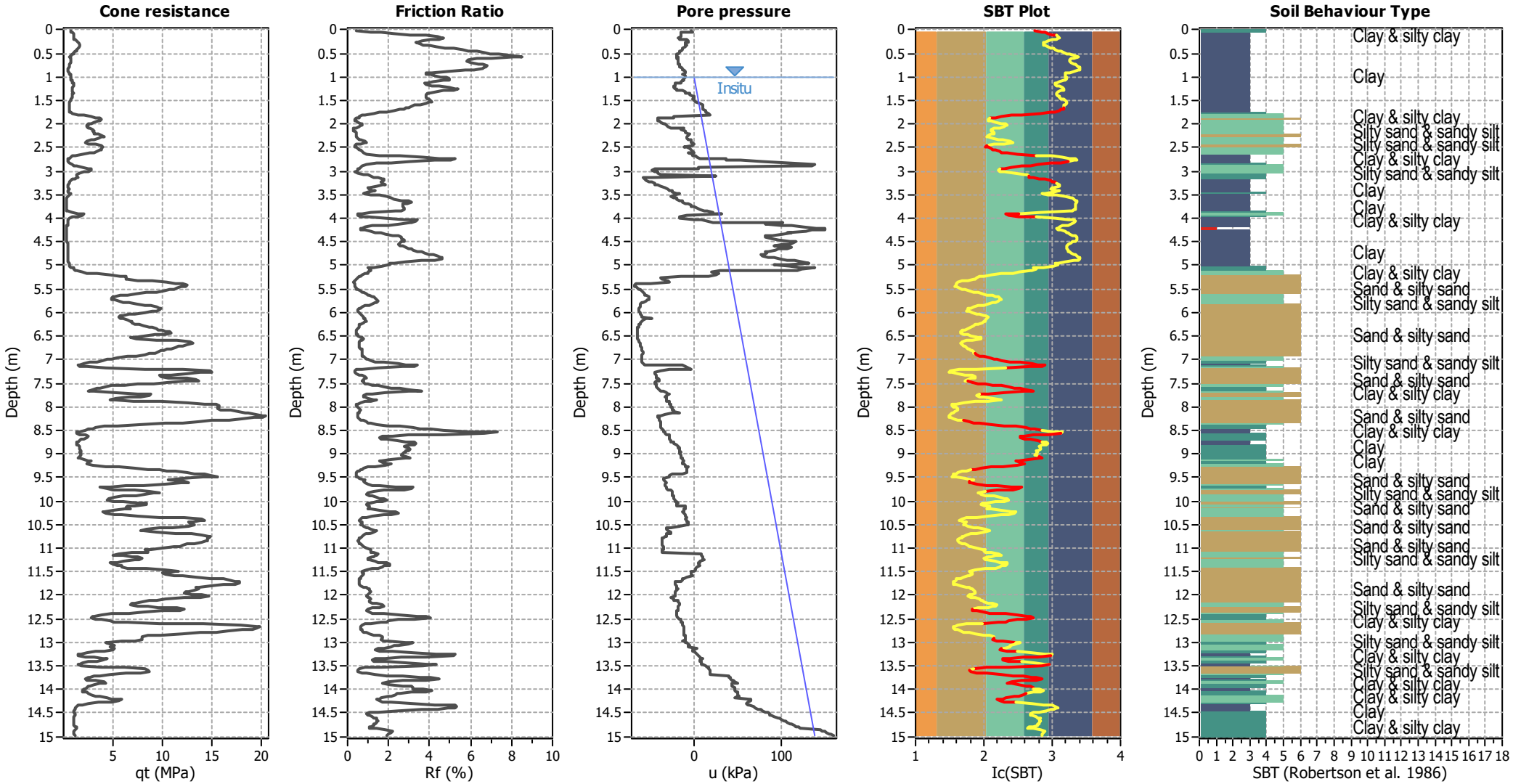
- Very likely to liquefy
- Liquefaction and no liq. are equally likely
- Unlike to liquefy
- Almost certain it will not liquefy

LPI color scheme

- Very high risk
- High risk
- Low risk

CPT basic interpretation plots



Input parameters and analysis data

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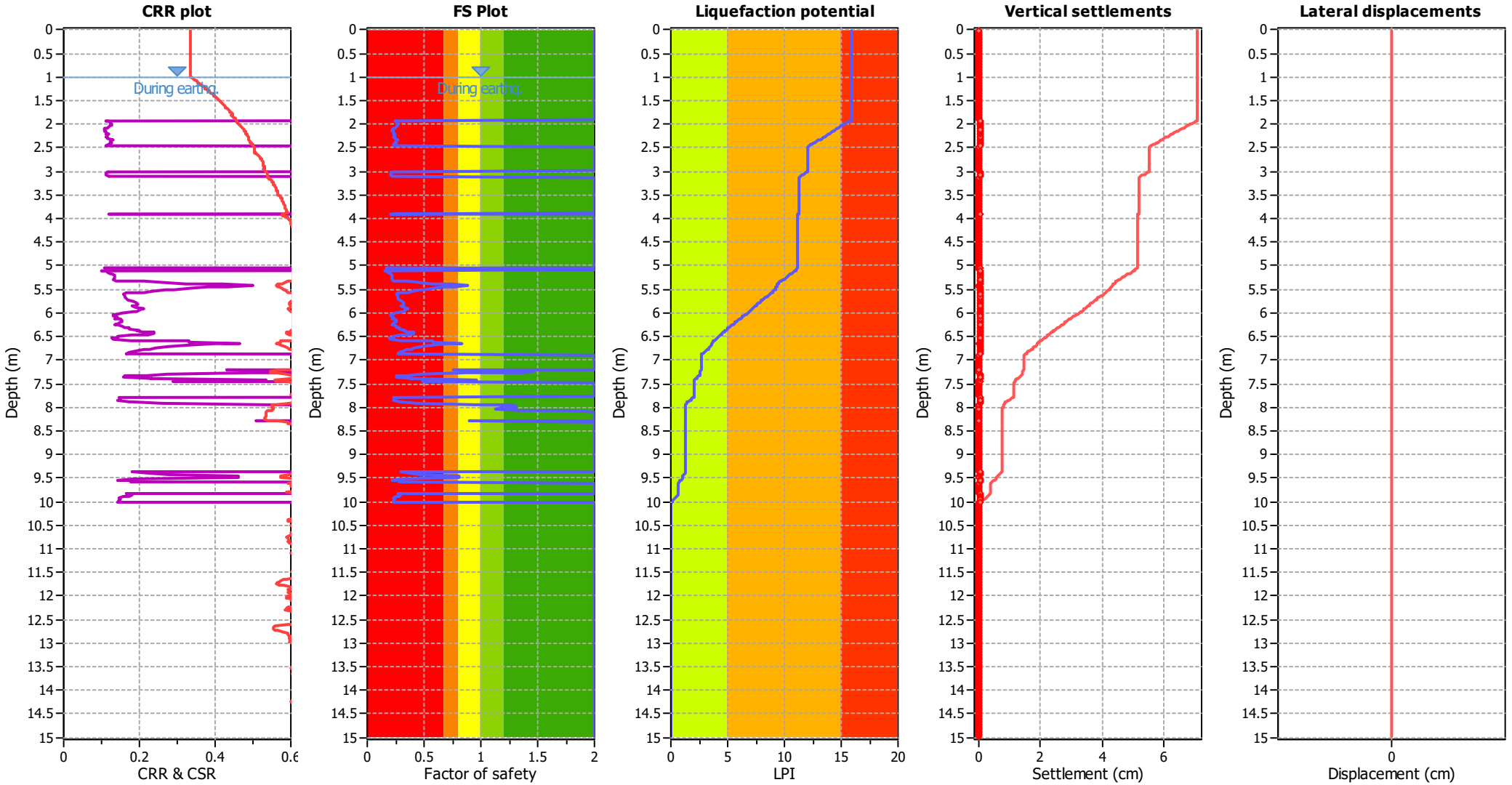
SBT legend

1. Sensitive fine grained
2. Organic material
3. Clay to silty clay
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



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Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
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LPI color scheme

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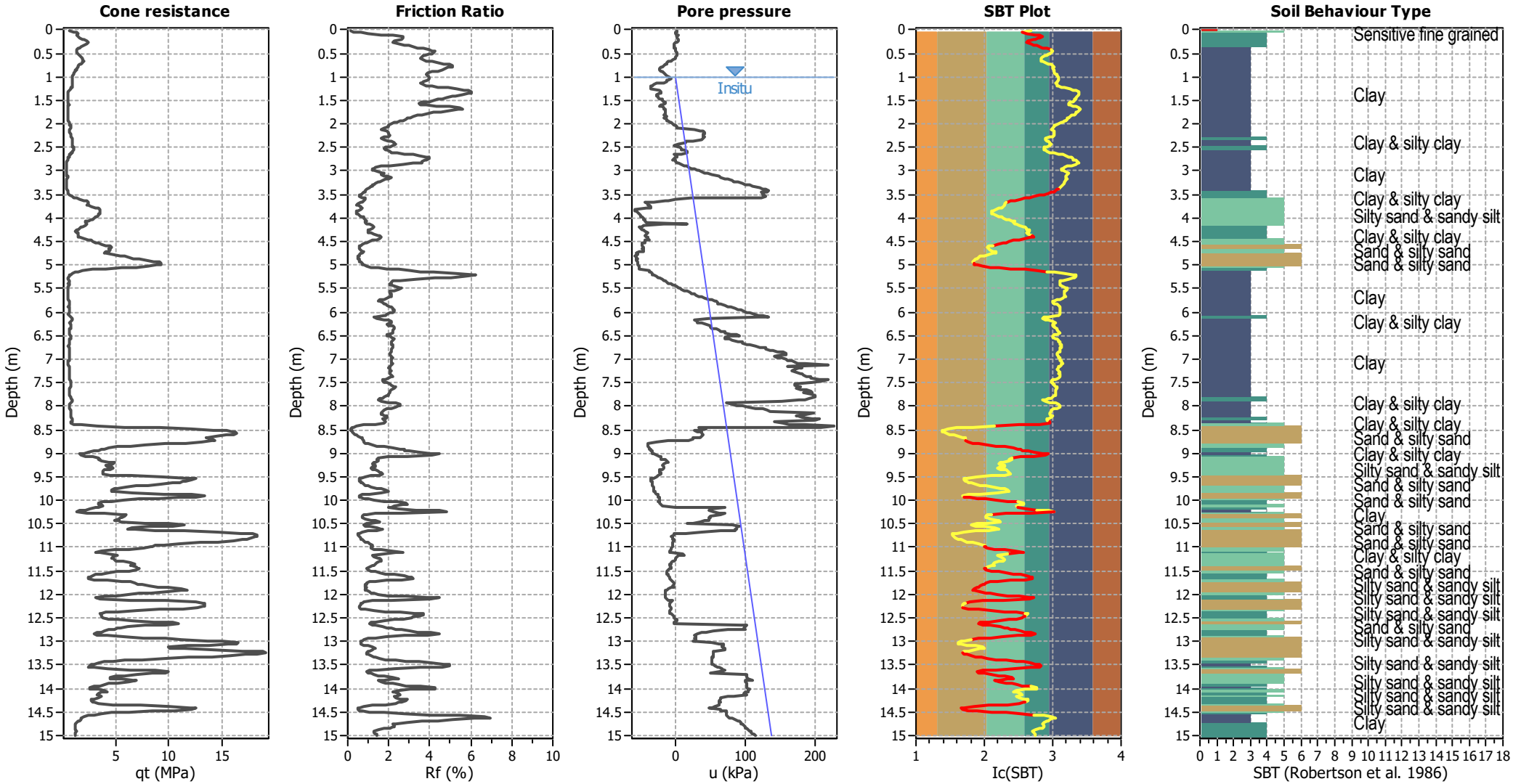
CPT basic interpretation plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
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Earthquake magnitude M_w:	7.10	Unit weight calculation:	Based on SBT	Clay like behavior applied:	Sands only
Peak ground acceleration:	0.58	Use fill:	No	Limit depth applied:	Yes
Depth to water table (insitu):	1.00 m	Fill height:	N/A	Limit depth:	10.00 m

SBT legend

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2. Organic material
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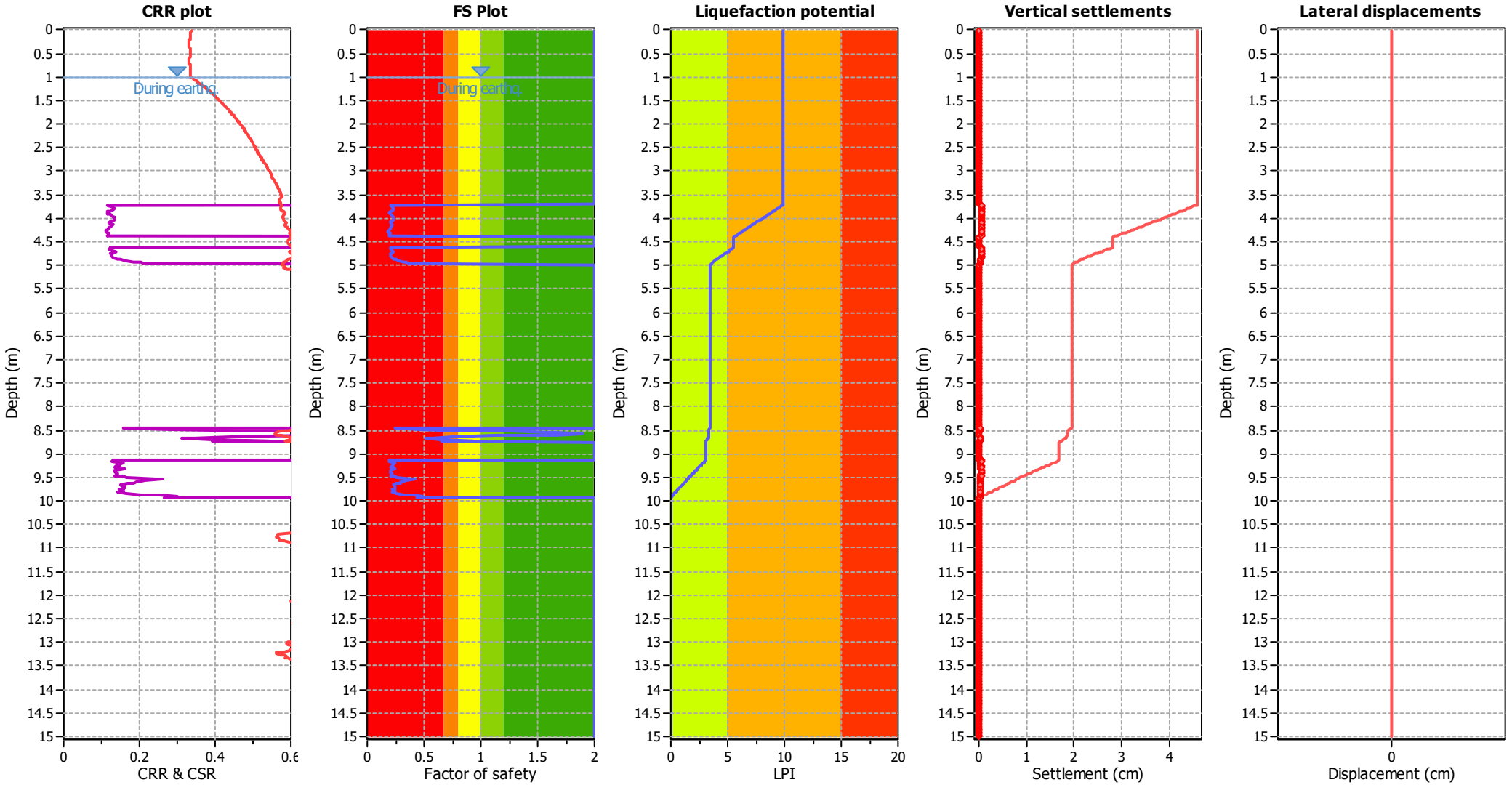
4. Clayey silt to silty
5. Silty sand to sandy silt
6. Clean sand to silty sand
7. Gravely sand to sand
8. Very stiff sand to
9. Very stiff fine grained

Liquefaction analysis overall plots



Input parameters and analysis data

Analysis method:	B&I (2014)	Depth to GWT (erthq.):	1.00 m	Fill weight:	N/A
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LPI color scheme

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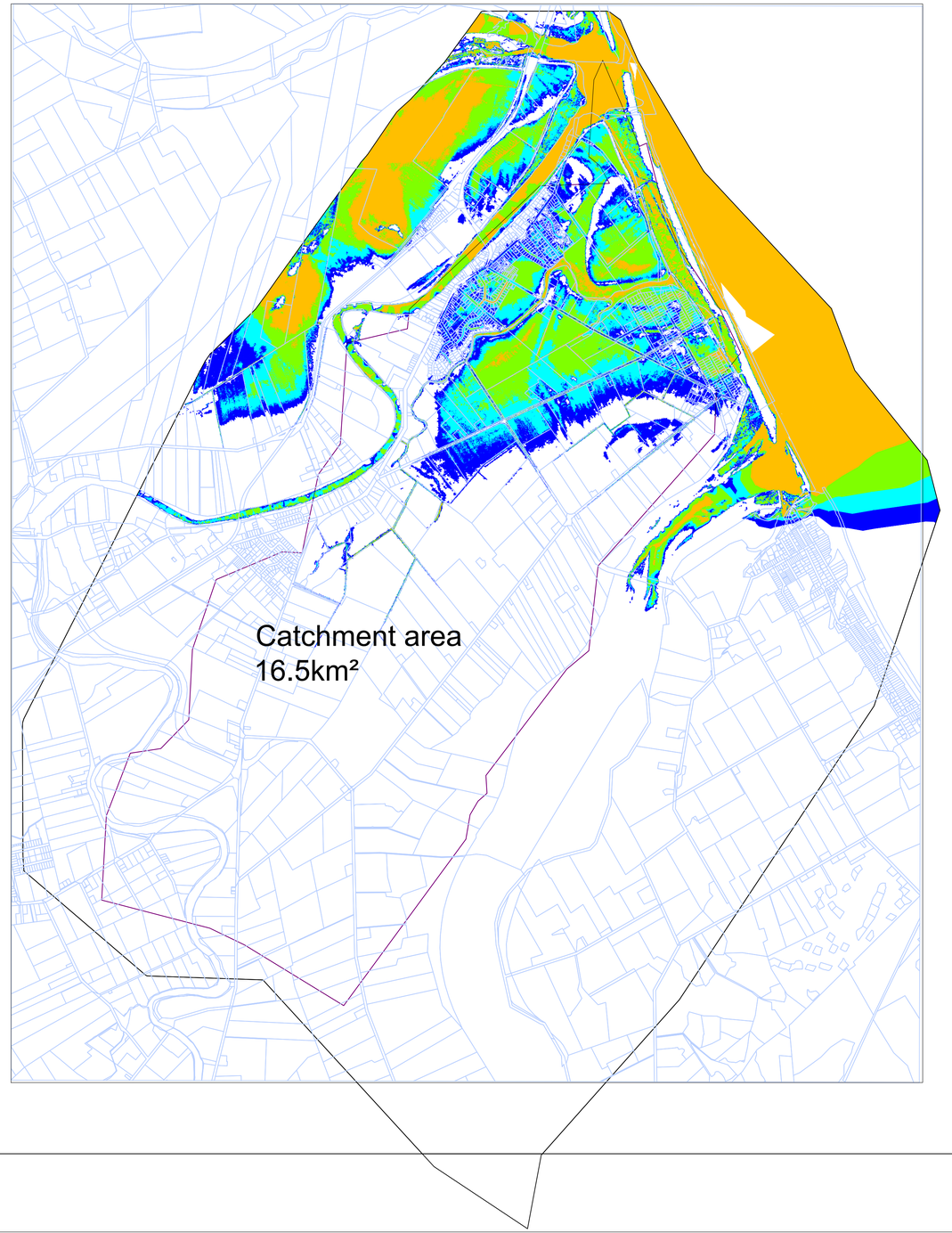


Flood depths (m)			
Number	Minimum Elevation	Maximum Elevation	Color
1	0.000	0.250	
2	0.250	0.500	
3	0.500	1.000	
4	1.000	2.500	

Flood level at RL11.70 local authority datum 1972 and RL1.48 NZVD2016

Flood pond volume inside catchment: 1,818,994m³

FOR RESOURCE CONSENT

REV	DESCRIPTION TO REVISION	REV BY	DATE
0	Original	JPE	11.04.2022

NOTES :

1% AEP Flood level: RL11.7 (to be confirmed)

Groundwater table level: RL 10.6

0m 25m 50m

ORIGINAL SCALE (A1) = 1 : 1,250

CLIENT: TOMORROW CAPITAL LIMITED

PROJECT: STORMWATER ATTENUATION ASSESSMENT
SCHOOL ROAD,
CLIVE

DRAWING TITLE: FLOOD EXTENT
FLOOD LEVEL AT LAD 1972: RL11.70

INFRASTRUCTURE SOLUTIONS ‖ PROJECT MANAGEMENT
PO Box 7335, Taradale 4141
Phone : 06 650 5565 Email : admin@infir.nz
www.infir.nz

PROPOSAL CHECKED :	JPE	CAD CHECKED :	JPE	PROPOSAL APPROVED :	JPE	CLIENT APPROVED :	-	ENGINEER APPROVED :	JPE
DRAWN BY :	JPE	A1 DWG SCALE :	SCALE	PROJ / DWG / SHEET :	J21152 / 111			REVISION :	0

APPENDIX C

Preliminary Design Drawings

DATE PLOTTED: 19 July 2022 4:46 PM BY: - HAMISH SANDILANDS

NOTES

1. ALL PROPOSED WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH HASTINGS DISTRICT COUNCIL CODE OF PRACTICE (2020) AND ASSOCIATED DRAWINGS OR WHERE DEFERRED BY THAT CODE NZS4404:2010 (NEW ZEALAND STANDARD FOR AND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURES)
2. COORDINATES ARE IN TERMS OF NZGD2000 HAWKES BAY CIRCUIT
3. LEVELS ARE IN TERMS OF HDC MSL = 10m
4. NEW ALLOTMENTS ARE SUBJECT TO LAND TRANSFER SURVEY;
5. EXISTING SERVICES HAVE BEEN SOURCED FROM HDC GIS DATABASE
6. CONTRACTORS TO LOCATE ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION WORK.
7. ALL PROPOSED WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH HAWKES BAY WATERWAY GUIDELINES FOR EROSION AND SEDIMENT CONTROL(HBWG 2009).
8. THESE PLANS HAVE BEEN PRODUCED FOR THE EARTHWORKS CONSENT ONLY. FURTHER DETAILS OF THE PROPOSED LAYOUT WILL BE PROVIDED AT THE NEXT PHASE.

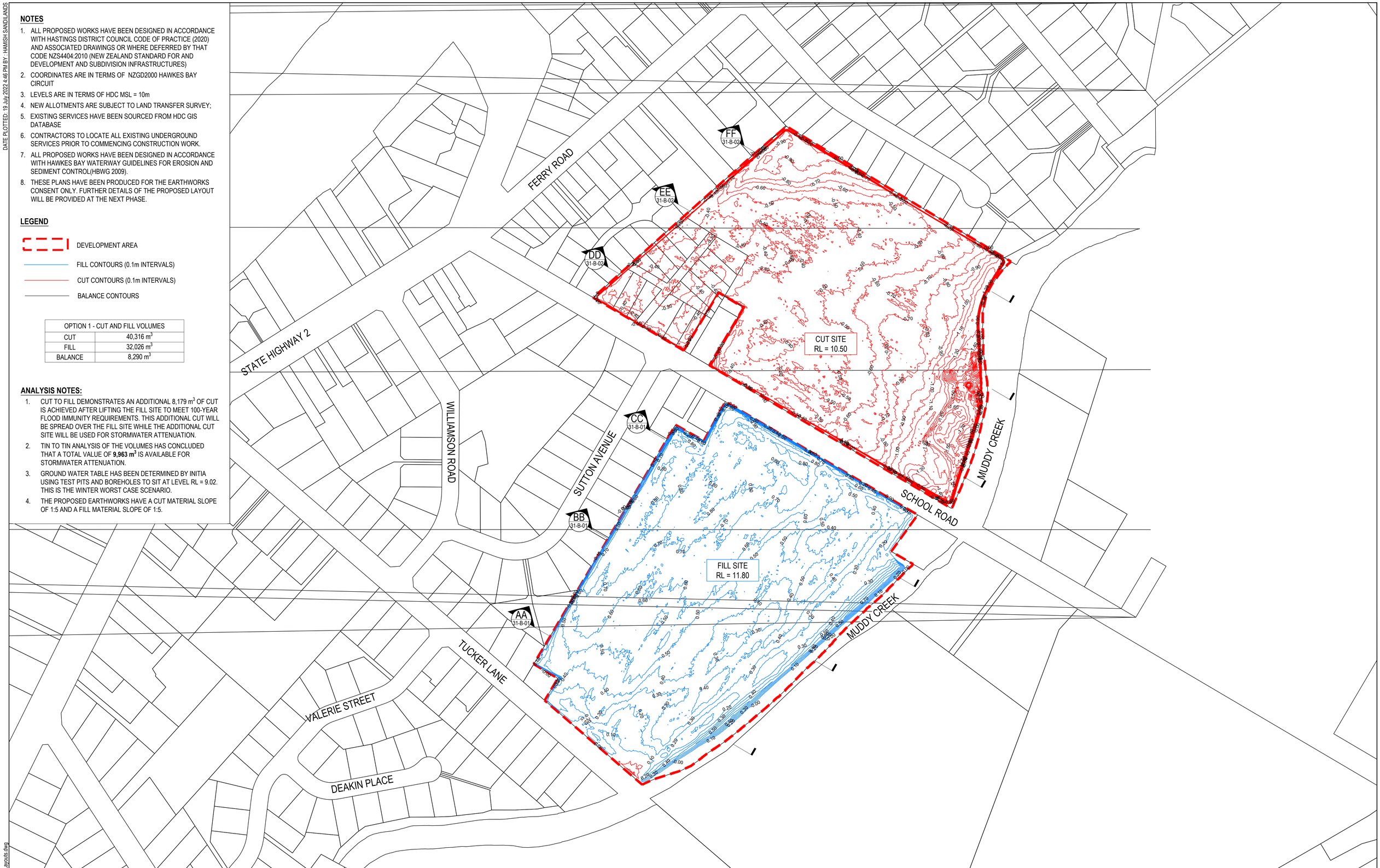
LEGEND

- DEVELOPMENT AREA
- FILL CONTOURS (0.1m INTERVALS)
- CUT CONTOURS (0.1m INTERVALS)
- BALANCE CONTOURS

OPTION 1 - CUT AND FILL VOLUMES	
CUT	40,316 m^3
FILL	32,026 m^3
BALANCE	8,290 m^3

ANALYSIS NOTES:

1. CUT TO FILL DEMONSTRATES AN ADDITIONAL 8,179 m^3 OF CUT IS ACHIEVED AFTER LIFTING THE FILL SITE TO MEET 100-YEAR FLOOD IMMUNITY REQUIREMENTS. THIS ADDITIONAL CUT WILL BE SPREAD OVER THE FILL SITE WHILE THE ADDITIONAL CUT SITE WILL BE USED FOR STORMWATER ATTENUATION.
2. TIN TO TIN ANALYSIS OF THE VOLUMES HAS CONCLUDED THAT A TOTAL VALUE OF **9,963 m^3** IS AVAILABLE FOR STORMWATER ATTENUATION.
3. GROUND WATER TABLE HAS BEEN DETERMINED BY INITIA USING TEST PITS AND BOREHOLES TO SIT AT LEVEL RL = 9.02. THIS IS THE WINTER WORST CASE SCENARIO.
4. THE PROPOSED EARTHWORKS HAVE A CUT MATERIAL SLOPE OF 1:5 AND A FILL MATERIAL SLOPE OF 1:5.



CAD File: H20210092-30-A_Earthworks_Layouts.dwg

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 50 100 150m

SCALE 1:1500 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

Fieldworked	Date	
Drawn	Date	
HKS	29/09/2021	
Checked	Date	
MP	21/10/2021	
Designed	Date	
Approved	Date	
MP	21/10/2021	

Client: TOMORROW CAPITAL LIMITED

Project: SCHOOL ROAD CLIVE

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Title: OPTION 1 - SOUTHERN SITE DEVELOPMENT
CUT AND FILL SHEET LAYOUT PLAN

Datum	Council Ref.	Scale	Size
HB2000	TBA	1:1500	A1

Drawing Number: H20210092-31-A-01

Revision: 1

DATE PLOTTED: 19 July 2022 4:46 PM BY: HAMISH SANDILANDS

NOTES

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2. COORDINATES ARE IN TERMS OF NZGD2000 HAWKES BAY CIRCUIT
3. LEVELS ARE IN TERMS OF HDC MSL = 10m
4. NEW ALLOTMENTS ARE SUBJECT TO LAND TRANSFER SURVEY;
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6. CONTRACTORS TO LOCATE ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION WORK.
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8. THESE PLANS HAVE BEEN PRODUCED FOR THE EARTHWORKS CONSENT ONLY. FURTHER DETAILS OF THE PROPOSED LAYOUT WILL BE PROVIDED AT THE NEXT PHASE.

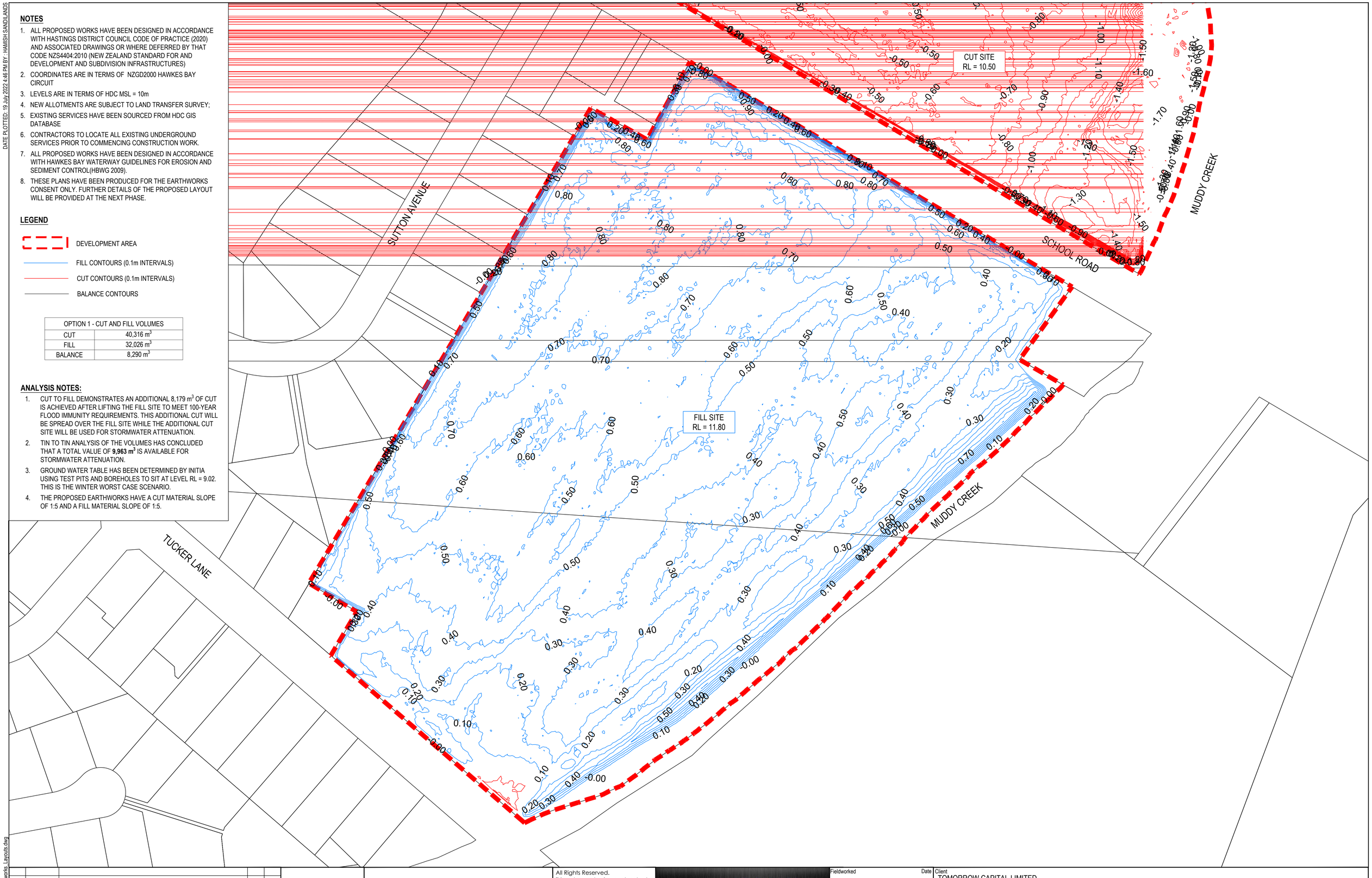
LEGEND

- DEVELOPMENT AREA
- FILL CONTOURS (0.1m INTERVALS)
- CUT CONTOURS (0.1m INTERVALS)
- BALANCE CONTOURS

OPTION 1 - CUT AND FILL VOLUMES	
CUT	40,316 m^3
FILL	32,026 m^3
BALANCE	8,290 m^3

ANALYSIS NOTES:

1. CUT TO FILL DEMONSTRATES AN ADDITIONAL 8,179 m^3 OF CUT IS ACHIEVED AFTER LIFTING THE FILL SITE TO MEET 100-YEAR FLOOD IMMUNITY REQUIREMENTS. THIS ADDITIONAL CUT WILL BE SPREAD OVER THE FILL SITE WHILE THE ADDITIONAL CUT SITE WILL BE USED FOR STORMWATER ATTENUATION.
2. TIN TO TIN ANALYSIS OF THE VOLUMES HAS CONCLUDED THAT A TOTAL VALUE OF **9,963 m^3** IS AVAILABLE FOR STORMWATER ATTENUATION.
3. GROUND WATER TABLE HAS BEEN DETERMINED BY INITIA USING TEST PITS AND BOREHOLES TO SIT AT LEVEL RL = 9.02. THIS IS THE WINTER WORST CASE SCENARIO.
4. THE PROPOSED EARTHWORKS HAVE A CUT MATERIAL SLOPE OF 1:5 AND A FILL MATERIAL SLOPE OF 1:5.



Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m

SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

Fieldworked	Date	
Drawn	Date	HKS 29/09/2021
Checked	Date	MP 21/10/2021
Designed	Date	
Approved	Date	MP 21/10/2021

Client: TOMORROW CAPITAL LIMITED

Project: SCHOOL ROAD CLIVE

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Title: OPTION 1 - SOUTHERN SITE DEVELOPMENT
CUT AND FILL LAYOUT PLAN
SHEET 1 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	1:1500	A1

Drawing Number: H20210092-31-A-02

Revision: 1

CAD File: H20210092-30-A_Earthworks_Layouts.dwg

DATE PLOTTED: 19 July 2022 4:46 PM BY: HAMISH SANDILANDS

NOTES

1. ALL PROPOSED WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH HASTINGS DISTRICT COUNCIL CODE OF PRACTICE (2020) AND ASSOCIATED DRAWINGS OR WHERE DEFERRED BY THAT CODE NZS4404:2010 (NEW ZEALAND STANDARD FOR AND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURES)
2. COORDINATES ARE IN TERMS OF NZGD2000 HAWKES BAY CIRCUIT
3. LEVELS ARE IN TERMS OF HDC MSL = 10m
4. NEW ALLOTMENTS ARE SUBJECT TO LAND TRANSFER SURVEY;
5. EXISTING SERVICES HAVE BEEN SOURCED FROM HDC GIS DATABASE
6. CONTRACTORS TO LOCATE ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION WORK.
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8. THESE PLANS HAVE BEEN PRODUCED FOR THE EARTHWORKS CONSENT ONLY. FURTHER DETAILS OF THE PROPOSED LAYOUT WILL BE PROVIDED AT THE NEXT PHASE.

LEGEND

- DEVELOPMENT AREA
- FILL CONTOURS (0.1m INTERVALS)
- CUT CONTOURS (0.1m INTERVALS)
- BALANCE CONTOURS

OPTION 1 - CUT AND FILL VOLUMES	
CUT	40,316 m^3
FILL	32,026 m^3
BALANCE	8,290 m^3

ANALYSIS NOTES:

1. CUT TO FILL DEMONSTRATES AN ADDITIONAL 8,179 m^3 OF CUT IS ACHIEVED AFTER LIFTING THE FILL SITE TO MEET 100-YEAR FLOOD IMMUNITY REQUIREMENTS. THIS ADDITIONAL CUT WILL BE SPREAD OVER THE FILL SITE WHILE THE ADDITIONAL CUT SITE WILL BE USED FOR STORMWATER ATTENUATION.
2. TIN TO TIN ANALYSIS OF THE VOLUMES HAS CONCLUDED THAT A TOTAL VALUE OF **9,963 m^3** IS AVAILABLE FOR STORMWATER ATTENUATION.
3. GROUND WATER TABLE HAS BEEN DETERMINED BY INITIA USING TEST PITS AND BOREHOLES TO SIT AT LEVEL RL = 9.02. THIS IS THE WINTER WORST CASE SCENARIO.
4. THE PROPOSED EARTHWORKS HAVE A CUT MATERIAL SLOPE OF 1:5 AND A FILL MATERIAL SLOPE OF 1:5.

CUT SITE
RL = 10.50

SUTTON AVENUE

SCHOOL ROAD

MUDDY CREEK

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m

SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

Fieldworked	Date
Drawn HKS	Date 29/09/2021
Checked MP	Date 21/10/2021
Designed	Date
Approved MP	Date 21/10/2021

Client: TOMORROW CAPITAL LIMITED

Project: SCHOOL ROAD CLIVE

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Title: OPTION 1 - SOUTHERN SITE DEVELOPMENT
CUT AND FILL LAYOUT PLAN
SHEET 2 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	1:1500	A1

Drawing Number: H20210092-31-A-03

Revision: 1

CAD File: H20210092-30-A_Earthworks_Layouts.dwg

DATE PLOTTED: 19 July 2022 4:46 PM BY: - HAMISH SANDILANDS

NOTES

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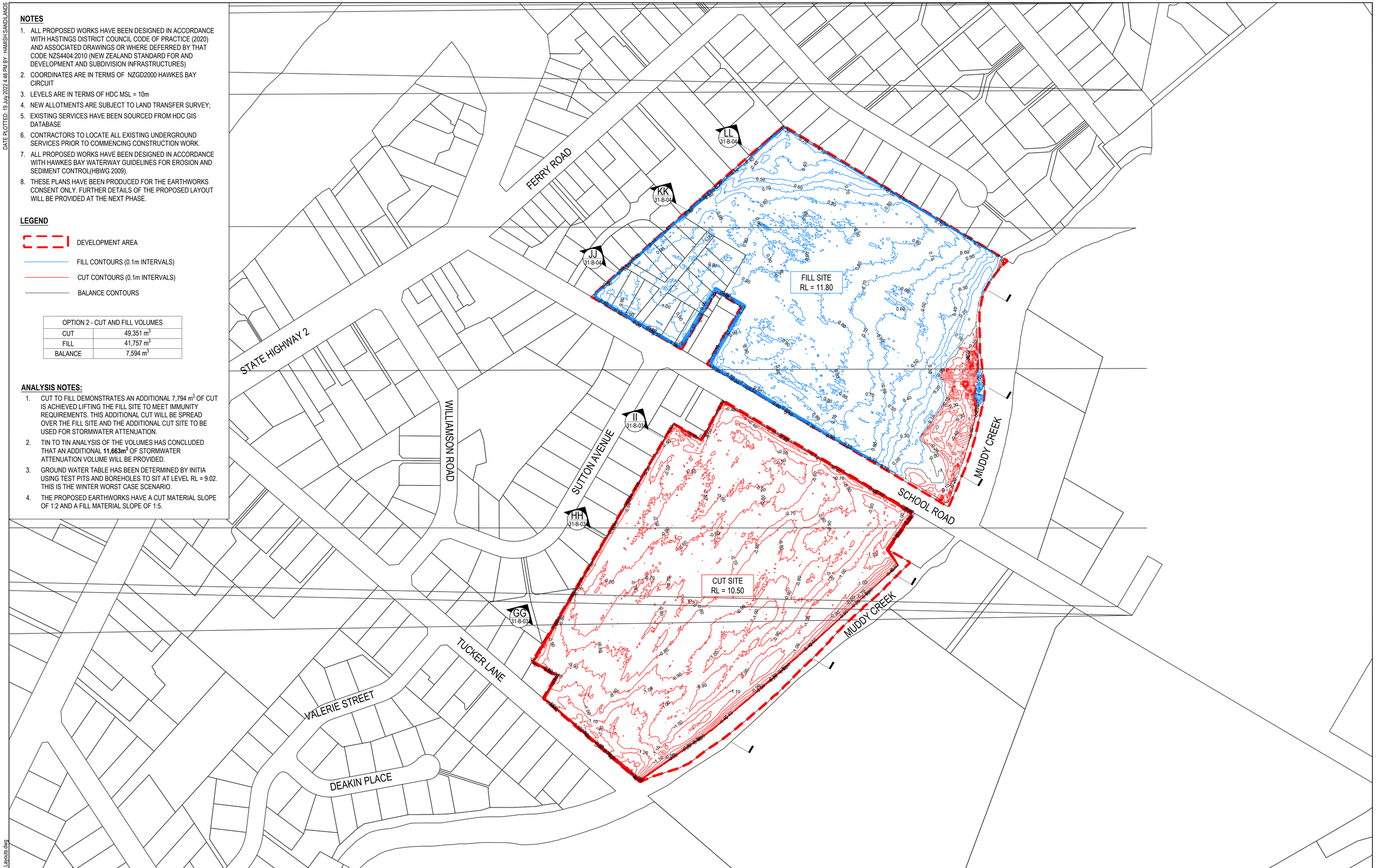
LEGEND

- DEVELOPMENT AREA
- FILL CONTOURS (0.1m INTERVALS)
- CUT CONTOURS (0.1m INTERVALS)
- BALANCE CONTOURS

OPTION 2 - CUT AND FILL VOLUMES	
CUT	49,351 m^3
FILL	41,757 m^3
BALANCE	7,594 m^3

ANALYSIS NOTES:

1. CUT TO FILL DEMONSTRATES AN ADDITIONAL 7,794 m^3 OF CUT IS ACHIEVED LIFTING THE FILL SITE TO MEET IMMUNITY REQUIREMENTS. THIS ADDITIONAL CUT WILL BE SPREAD OVER THE FILL SITE AND THE ADDITIONAL CUT SITE TO BE USED FOR STORMWATER ATTENUATION.
2. TIN TO TIN ANALYSIS OF THE VOLUMES HAS CONCLUDED THAT AN ADDITIONAL **11,663m^3** OF STORMWATER ATTENUATION VOLUME WILL BE PROVIDED.
3. GROUND WATER TABLE HAS BEEN DETERMINED BY INITIA USING TEST PITS AND BOREHOLES TO SIT AT LEVEL RL = 9.02. THIS IS THE WINTER WORST CASE SCENARIO.
4. THE PROPOSED EARTHWORKS HAVE A CUT MATERIAL SLOPE OF 1:2 AND A FILL MATERIAL SLOPE OF 1:5.



Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 50 100 150m

SCALE 1:1500 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

Fieldworked	Date
Drawn HKS	Date 29/09/2021
Checked MP	Date 21/10/2021
Designed	Date
Approved MP	Date 21/10/2021

Client: TOMORROW CAPITAL LIMITED

Project: SCHOOL ROAD CLIVE

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Title: OPTION 2 - NORTHERN SITE DEVELOPMENT
CUT AND FILL SHEET LAYOUT PLAN

Datum	Council Ref.	Scale	Size
HB2000	TBA	1:1500	A1

Drawing Number: H20210092-31-A-05

Revision: 1

CAD File: H20210092-30-A_Earthworks_Layouts.dwg

DATE PLOTTED: 19 July 2022 4:46 PM BY: HAMISH SANDILANDS

NOTES

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4. NEW ALLOTMENTS ARE SUBJECT TO LAND TRANSFER SURVEY;
5. EXISTING SERVICES HAVE BEEN SOURCED FROM HDC GIS DATABASE
6. CONTRACTORS TO LOCATE ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION WORK.
7. ALL PROPOSED WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH HAWKES BAY WATERWAY GUIDELINES FOR EROSION AND SEDIMENT CONTROL(HBWG 2009).
8. THESE PLANS HAVE BEEN PRODUCED FOR THE EARTHWORKS CONSENT ONLY. FURTHER DETAILS OF THE PROPOSED LAYOUT WILL BE PROVIDED AT THE NEXT PHASE.

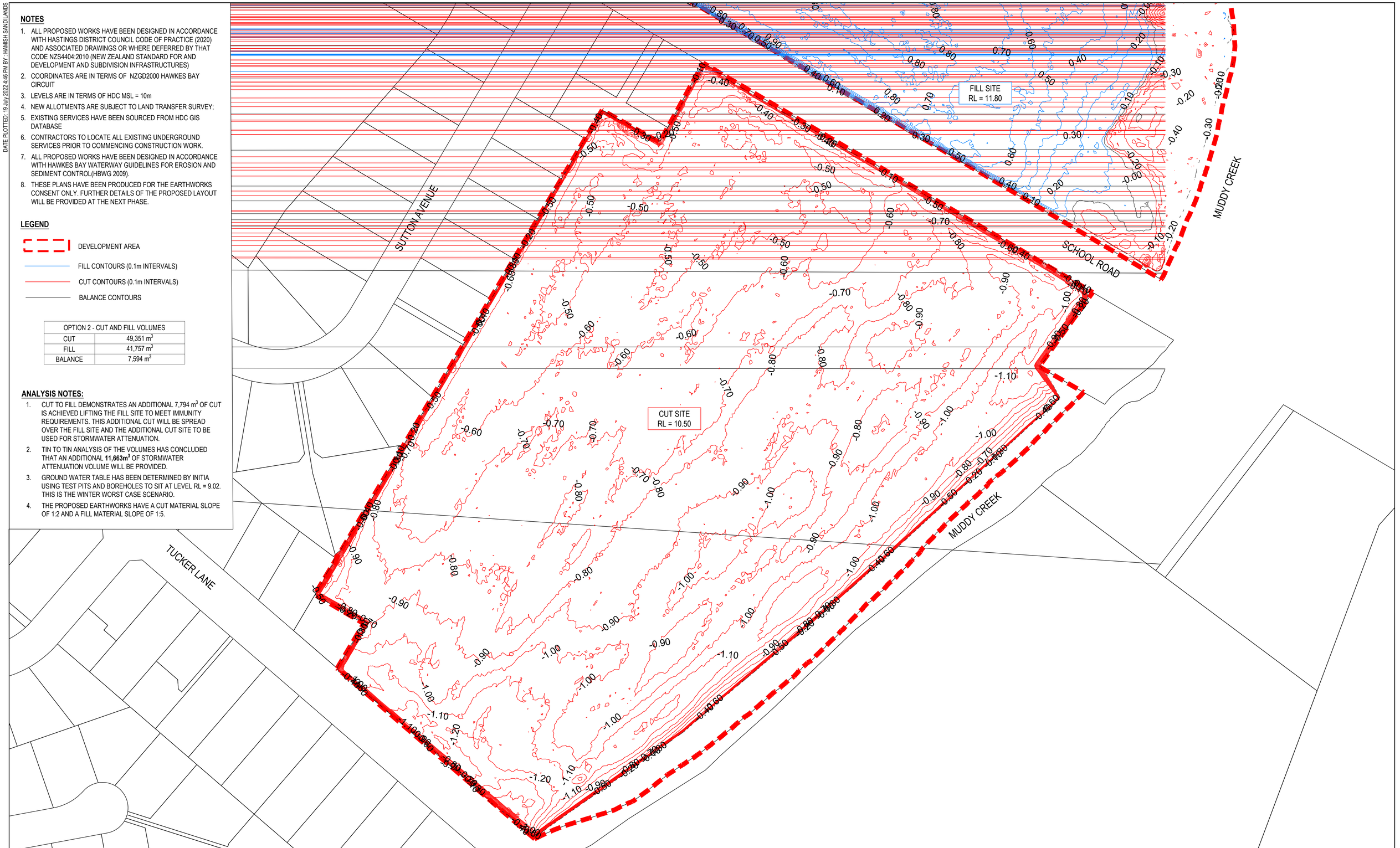
LEGEND

- DEVELOPMENT AREA
- FILL CONTOURS (0.1m INTERVALS)
- CUT CONTOURS (0.1m INTERVALS)
- BALANCE CONTOURS

OPTION 2 - CUT AND FILL VOLUMES	
CUT	49,351 m^3
FILL	41,757 m^3
BALANCE	7,594 m^3

ANALYSIS NOTES:

1. CUT TO FILL DEMONSTRATES AN ADDITIONAL 7,794 m^3 OF CUT IS ACHIEVED LIFTING THE FILL SITE TO MEET IMMUNITY REQUIREMENTS. THIS ADDITIONAL CUT WILL BE SPREAD OVER THE FILL SITE AND THE ADDITIONAL CUT SITE TO BE USED FOR STORMWATER ATTENUATION.
2. TIN TO TIN ANALYSIS OF THE VOLUMES HAS CONCLUDED THAT AN ADDITIONAL **11,663m^3** OF STORMWATER ATTENUATION VOLUME WILL BE PROVIDED.
3. GROUND WATER TABLE HAS BEEN DETERMINED BY INITIA USING TEST PITS AND BOREHOLES TO SIT AT LEVEL RL = 9.02. THIS IS THE WINTER WORST CASE SCENARIO.
4. THE PROPOSED EARTHWORKS HAVE A CUT MATERIAL SLOPE OF 1:2 AND A FILL MATERIAL SLOPE OF 1:5.



Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m

SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

Fieldworked	Date
Drawn HKS	Date 29/09/2021
Checked MP	Date 21/10/2021
Designed	Date
Approved MP	Date 21/10/2021

Client: TOMORROW CAPITAL LIMITED

Project: SCHOOL ROAD CLIVE

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Title: OPTION 2 - NORTHERN SITE DEVELOPMENT
CUT AND FILL LAYOUT PLAN
SHEET 1 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	1:1500	A1

Drawing Number: H20210092-31-A-06

Revision: 1

CAD File: H20210092-30-A_Earthworks_Layouts.dwg

DATE PLOTTED: 19 July 2022 4:46 PM BY: - HAMISH SANDILANDS

NOTES

1. ALL PROPOSED WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH HASTINGS DISTRICT COUNCIL CODE OF PRACTICE (2020) AND ASSOCIATED DRAWINGS OR WHERE DEFERRED BY THAT CODE NZS4404:2010 (NEW ZEALAND STANDARD FOR AND DEVELOPMENT AND SUBDIVISION INFRASTRUCTURES)
2. COORDINATES ARE IN TERMS OF NZGD2000 HAWKES BAY CIRCUIT
3. LEVELS ARE IN TERMS OF HDC MSL = 10m
4. NEW ALLOTMENTS ARE SUBJECT TO LAND TRANSFER SURVEY;
5. EXISTING SERVICES HAVE BEEN SOURCED FROM HDC GIS DATABASE
6. CONTRACTORS TO LOCATE ALL EXISTING UNDERGROUND SERVICES PRIOR TO COMMENCING CONSTRUCTION WORK.
7. ALL PROPOSED WORKS HAVE BEEN DESIGNED IN ACCORDANCE WITH HAWKES BAY WATERWAY GUIDELINES FOR EROSION AND SEDIMENT CONTROL(HBWG 2009).
8. THESE PLANS HAVE BEEN PRODUCED FOR THE EARTHWORKS CONSENT ONLY. FURTHER DETAILS OF THE PROPOSED LAYOUT WILL BE PROVIDED AT THE NEXT PHASE.

LEGEND

- DEVELOPMENT AREA
- FILL CONTOURS (0.1m INTERVALS)
- CUT CONTOURS (0.1m INTERVALS)
- BALANCE CONTOURS

OPTION 2 - CUT AND FILL VOLUMES	
CUT	49,351 m^3
FILL	41,757 m^3
BALANCE	7,594 m^3

ANALYSIS NOTES:

1. CUT TO FILL DEMONSTRATES AN ADDITIONAL 7,794 m^3 OF CUT IS ACHIEVED LIFTING THE FILL SITE TO MEET IMMUNITY REQUIREMENTS. THIS ADDITIONAL CUT WILL BE SPREAD OVER THE FILL SITE AND THE ADDITIONAL CUT SITE TO BE USED FOR STORMWATER ATTENUATION.
2. TIN TO TIN ANALYSIS OF THE VOLUMES HAS CONCLUDED THAT AN ADDITIONAL **11,663m^3** OF STORMWATER ATTENUATION VOLUME WILL BE PROVIDED.
3. GROUND WATER TABLE HAS BEEN DETERMINED BY INITIA USING TEST PITS AND BOREHOLES TO SIT AT LEVEL RL = 9.02. THIS IS THE WINTER WORST CASE SCENARIO.
4. THE PROPOSED EARTHWORKS HAVE A CUT MATERIAL SLOPE OF 1:2 AND A FILL MATERIAL SLOPE OF 1:5.

FILL SITE
RL = 11.80

CUT SITE
RL = 10.50

SUTTON AVENUE

SCHOOL ROAD

MUDDY CREEK

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m

SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

	Date
Fieldworked	
Drawn HKS	29/09/2021
Checked MP	21/10/2021
Designed	
Approved MP	21/10/2021

Client: TOMORROW CAPITAL LIMITED

Project: OPTION 2 - NORTHERN SITE DEVELOPMENT
SCHOOL ROAD CLIVE

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Title: OPTION 2 - SOUTHERN SITE DEVELOPMENT
CUT AND FILL LAYOUT PLAN
SHEET 2 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	1:1500	A1

Drawing Number: H20210092-31-A-07

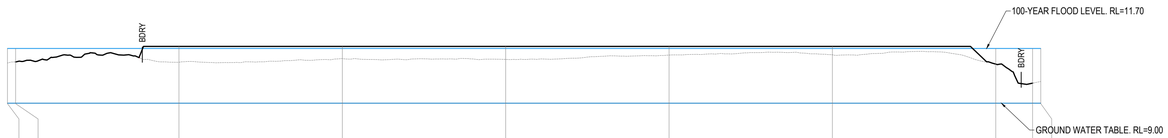
Revision: 1

CAD File: H20210092-30-A_Earthworks_Layouts.dwg

DATE PLOTTED: 22 July 2022 8:15 AM BY: HAMISH SANDILANDS

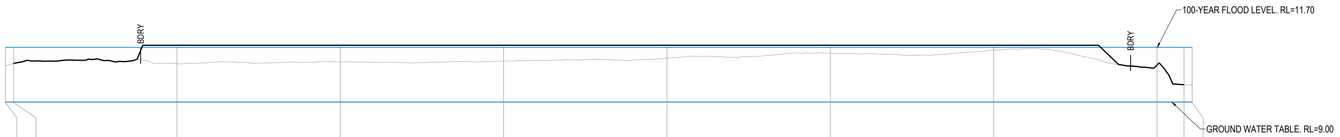
DATUM RL6.000									
DESIGNED SURFACE LEVEL		11.77	11.80	11.80	11.80	11.80	11.61	10.19	
CUT & FILL		0.00	-0.48	-0.45	-0.40	-0.34	-0.52	0.00	
EXISTING GROUND LEVEL	11.73	11.77	11.32	11.35	11.40	11.46	11.09	10.19	10.29
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	217.48	219.48

AA EARTHWORKS CROSS SECTION
31-A-01 SCALE H-1:750 V-1:150



DATUM RL6.000										
DESIGNED SURFACE LEVEL		11.04	11.80	11.80	11.80	11.80	11.80	10.93	10.00	
CUT & FILL		0.00	-0.77	-0.60	-0.64	-0.42	-0.41	0.00	0.00	
EXISTING GROUND LEVEL	10.99	11.04	11.03	11.20	11.16	11.38	11.39	10.93	10.00	10.08
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	249.02	251.02

BB EARTHWORKS CROSS SECTION
31-A-01 SCALE H-1:750 V-1:150



DATUM RL6.000											
DESIGNED SURFACE LEVEL		10.91	11.80	11.80	11.80	11.80	11.80	11.80	10.83	9.87	
CUT & FILL		0.00	-0.90	-0.83	-0.78	-0.63	-0.39	-0.24	0.00	0.00	
EXISTING GROUND LEVEL	10.80	10.91	10.90	10.97	11.02	11.17	11.41	11.56	10.83	9.87	9.95
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	286.60	288.60

CC EARTHWORKS CROSS SECTION
31-A-01 SCALE H-1:750 V-1:150

CAD File: H20210092-30-B_Earthworks_Sections.dwg

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m
SCALE 1:750 @A1

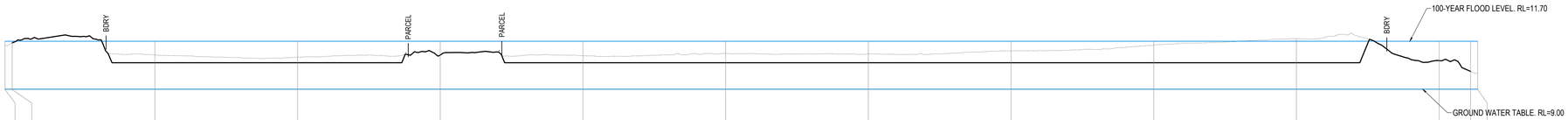
DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

Fieldworked	Date	
Drawn	Date	HKS 29/09/2021
Checked	Date	MP 21/10/2021
Designed	Date	
Approved	Date	MP 21/10/2021

Client: TOMORROW CAPITAL LIMITED
Project: SCHOOL ROAD CLIVE
Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Title: OPTION 1 - SOUTHERN SITE DEVELOPMENT
CROSS SECTIONS
SHEET 1 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	AS SHOWN	A1

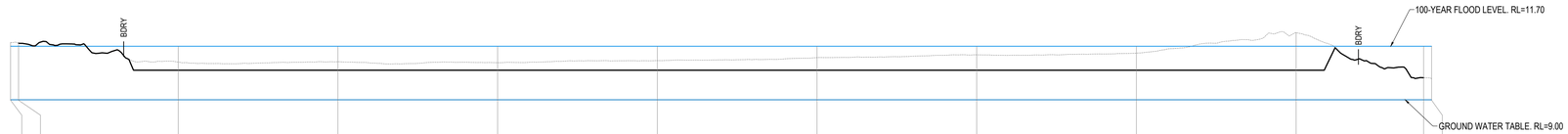
Drawing Number: H20210092-31-B-01
Revision: 1



DATUM RL6.000

DESIGNED SURFACE LEVEL		11.61	10.50	10.50	10.93	10.50	10.50	10.50	10.50	10.50	10.50	10.62	10.02	
CUT & FILL		0.00	0.44	0.31	0.00	0.39	0.53	0.50	0.66	0.98	1.35	0.00	0.00	
EXISTING GROUND LEVEL	11.44	11.61	10.94	10.81	10.93	10.89	11.03	11.00	11.16	11.48	11.85	10.62	10.02	9.93
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	320.00	360.00	400.00	408.79	410.79

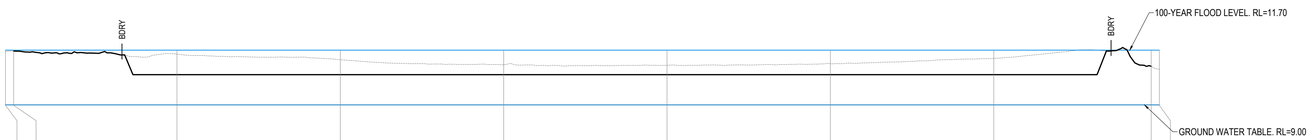
DD EARTHWORKS CROSS SECTION
31-A-01 SCALE H-1:750 V-1:150



DATUM RL6.000

DESIGNED SURFACE LEVEL		11.86	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.50	10.13
CUT & FILL		0.00	0.41	0.43	0.38	0.48	0.63	0.77	0.85	1.88	0.00
EXISTING GROUND LEVEL	11.90	11.86	10.91	10.93	10.88	10.98	11.13	11.27	11.35	12.38	10.13	10.06
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	320.00	351.94	353.94

EE EARTHWORKS CROSS SECTION
31-A-01 SCALE H-1:750 V-1:150



DATUM RL6.000

DESIGNED SURFACE LEVEL		11.65	10.50	10.50	10.50	10.50	10.50	10.50	10.91	
CUT & FILL		0.00	1.00	0.73	0.49	0.46	0.54	0.80	0.00	
EXISTING GROUND LEVEL	11.64	11.65	11.50	11.23	10.99	10.96	11.04	11.30	10.91	10.76
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	276.55	280.55

FF EARTHWORKS CROSS SECTION
31-A-01 SCALE H-1:750 V-1:150

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m
SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

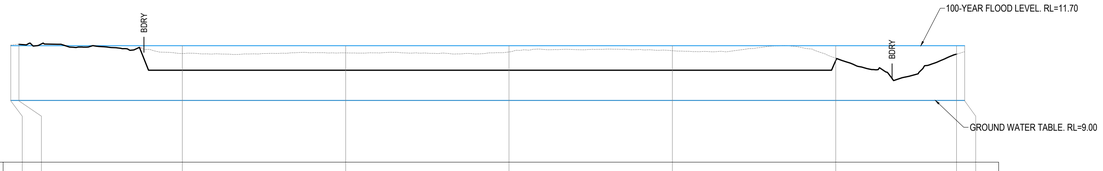
Fieldworked		Date
Drawn	HKS	Date 29/09/2021
Checked	MP	Date 21/10/2021
Designed		Date
Approved	MP	Date 21/10/2021

Client: TOMORROW CAPITAL LIMITED
Project: SCHOOL ROAD CLIVE
Title: OPTION 1 - SOUTHERN SITE DEVELOPMENT
CROSS SECTIONS
SHEET 2 OF 2

Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES

Datum	Council Ref.	Scale	Size
HB2000	TBA	AS SHOWN	A1

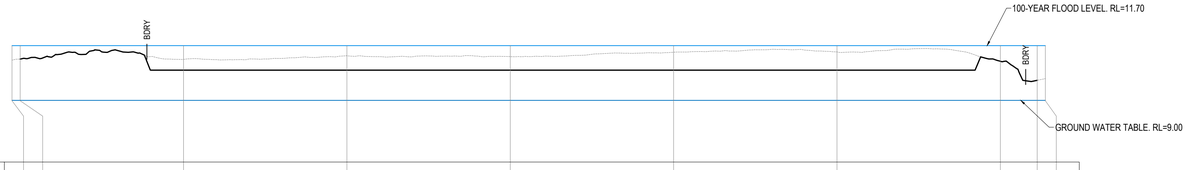
Drawing Number: H20210092-31-B-02
Revision: 1



DATUM RL6.000

DESIGNED SURFACE LEVEL		11.77	10.50	10.50	10.50	10.50	10.97	11.29		
CUT & FILL		0.00	0.82	0.85	0.90	0.96	0.12	0.00		
EXISTING GROUND LEVEL	11.73	11.77	11.32	11.35	11.40	11.46	11.09	11.29	11.40	
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	229.58	231.58	

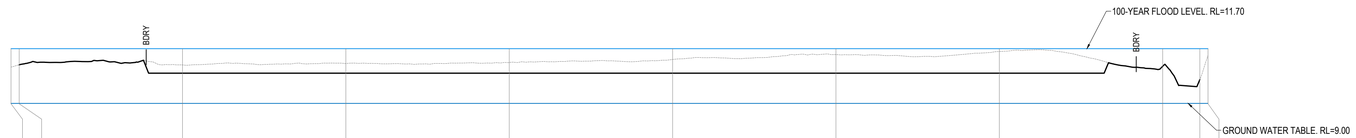
GG EARTHWORKS CROSS SECTION
31-A-05 SCALE H-1:750 V-1:150



DATUM RL6.000

DESIGNED SURFACE LEVEL		11.04	10.50	10.50	10.50	10.50	10.50	10.93	10.00	
CUT & FILL		0.00	0.53	0.70	0.66	0.88	0.89	0.00	0.00	
EXISTING GROUND LEVEL	10.99	11.04	11.03	11.20	11.16	11.38	11.39	10.93	10.00	10.08
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	249.02	251.02

HH EARTHWORKS CROSS SECTION
31-A-05 SCALE H-1:750 V-1:150



DATUM RL6.000

DESIGNED SURFACE LEVEL		10.91	10.50	10.50	10.50	10.50	10.50	10.50	10.83	10.18
CUT & FILL		0.00	0.40	0.47	0.52	0.67	0.91	1.06	0.00	0.00
EXISTING GROUND LEVEL	10.80	10.91	10.90	10.97	11.02	11.17	11.41	11.56	10.83	10.18	11.37
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	289.09	291.09

II EARTHWORKS CROSS SECTION
31-A-05 SCALE H-1:750 V-1:150

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m
SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

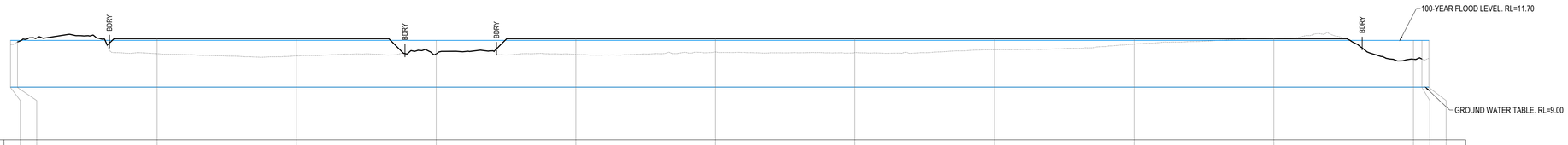
Fieldworked		Date
Drawn	HKS	Date 29/09/2021
Checked	MP	Date 21/10/2021
Designed		Date
Approved	MP	Date 21/10/2021

Client: TOMORROW CAPITAL LIMITED
Project: SCHOOL ROAD CLIVE
Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Title: OPTION 2 - NORTHERN SITE DEVELOPMENT
CROSS SECTIONS
SHEET 1 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	AS SHOWN	A1

Drawing Number: H20210092-31-B-03
Revision: 1

DATE PLOTTED: 22 July 2022 8:15 AM BY: HAMISH SANDILANDS



DATUM RL6.000

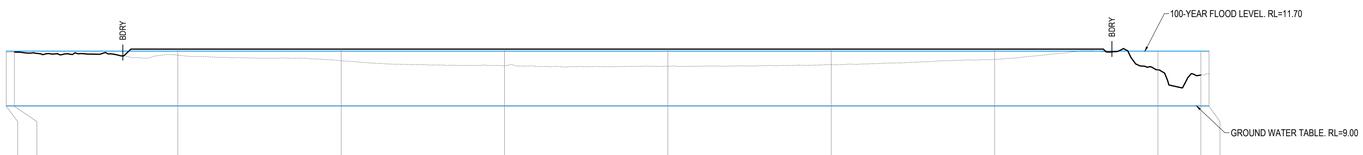
DESIGNED SURFACE LEVEL		11.61	11.80	11.80	10.93	11.80	11.80	11.80	11.80	11.80	11.80	10.62	10.63	
CUT & FILL		0.00	-0.86	-0.99	0.00	-0.91	-0.77	-0.80	-0.64	-0.32	0.05	0.00	0.00	
EXISTING GROUND LEVEL	11.44	11.61	10.94	10.81	10.93	10.89	11.03	11.00	11.16	11.48	11.85	10.62	10.63	10.65
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	320.00	360.00	400.00	402.44	404.44

JJ 31-A-05 EARTHWORKS CROSS SECTION
SCALE H-1:750 V-1:150

DATUM RL6.000

DESIGNED SURFACE LEVEL		11.86	11.80	11.80	11.80	11.80	11.80	11.80	11.80	10.84	
CUT & FILL		0.00	-0.89	-0.87	-0.92	-0.82	-0.67	-0.53	-0.45	0.00	
EXISTING GROUND LEVEL	11.90	11.86	10.91	10.93	10.88	10.98	11.13	11.27	11.35	10.84	11.04
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	359.16	361.16

KK 31-A-05 EARTHWORKS CROSS SECTION
SCALE H-1:750 V-1:150



DATUM RL6.000

DESIGNED SURFACE LEVEL		11.65	11.80	11.80	11.80	11.80	11.80	11.80	10.78	10.54	
CUT & FILL		0.00	-0.30	-0.57	-0.81	-0.84	-0.76	-0.50	0.00	0.00	
EXISTING GROUND LEVEL	11.64	11.65	11.50	11.23	10.99	10.96	11.04	11.30	10.78	10.54	10.59
OFFSET	-2.00	0.00	40.00	80.00	120.00	160.00	200.00	240.00	280.00	290.50	292.50

LL 31-A-05 EARTHWORKS CROSS SECTION
SCALE H-1:750 V-1:150

CAD File: H20210092-30-B_Earthworks_Sections.dwg

Rev.	Date	Description	Appd.	Issued
1	29/7/2022	FOR RESOURCE CONSENT	MP	HS

NORTH

0 15 30 45 60 75m
SCALE 1:750 @A1

DEVELOPMENT NOUS
SURVEYING • URBAN DESIGN • ENGINEERING • TOWN PLANNING
ENVIRONMENTAL • LANDSCAPE ARCHITECTURE

	Date
Fieldworked	
Drawn HKS	29/09/2021
Checked MP	21/10/2021
Designed	
Approved MP	21/10/2021

Client: TOMORROW CAPITAL LIMITED
Project: SCHOOL ROAD CLIVE
Status: FOR RESOURCE CONSENT
NOT TO BE USED FOR CONSTRUCTION PURPOSES
Title: OPTION 1 - SOUTHERN SITE DEVELOPMENT
CROSS SECTIONS
SHEET 2 OF 2

Datum	Council Ref.	Scale	Size
HB2000	TBA	AS SHOWN	A1

Drawing Number: H20210092-31-B-04
Revision: 1

Tom Hosford

From: Tom Hosford s 9(2)(a)
Sent: Wednesday, 30 September 2020 4:00 p.m.
To: 'Grey Wilson'
Cc: Steve Cave
Subject: RMA20200398 - Decision - Water reservoir and treatment plant (Network Utility)
Attachments: 58031#0029 RMA20200398 - Decision - Water reservoir and treatment plant (Network Utility).pdf; 58031#0028 RMA20200398 - Report - Water reservoir and treatment plant (....pdf; RMA20200398 - Letter advising that Consent has been granted.pdf

Hi Grey/Steve,

Please find attached a copy of the decision documents for your recently approved resource consent application.

An invoice for any outstanding charges will follow in a separate email.

Regards,

TOM HOSFORD - BRP (Hons) Grad.NZPI
ENVIRONMENTAL PLANNER - CONSENTS

HASTINGS DISTRICT COUNCIL
HASTINGS HEART OF HAWKE'S BAY

Phone (06) 871 5000
s 9(2)(a) z **Web** hastingsdc.govt.nz
Hastings District Council, Private Bag 9002, Hastings 4156, New Zealand

HASTINGS DISTRICT COUNCIL

Decision:

Pursuant to Rule NU13 of the Hastings District Plan (As Amended by Decisions 12 September 2015 and Sections 104 & 104B of the Resource Management Act 1991, consent as a Discretionary Activity is GRANTED to Hastings District Council to establish and operate a water treatment plant and reservoir for the Clive public water supply at Tucker Lane (with a site address of 49 School Road) CLIVE 4102, legally described as Part Suburban Section 23 West Clive and Part Suburban Section 24 WEST CLIVE (RT HB84/297).

Subject to the Following Conditions:

1. That the development proceeds in accordance with the plans and information submitted in the application (HDC Ref: PID 58031#0024 & #0027), Resource Consent: RMA20200398, application received **24th August 2020**, unless otherwise altered by the consent conditions, and in particular:
    a. A 1.9m high solid timber fence with steel posts or a 1.9m high coloursteel fence coloured 'ironsand' shall be erected around the perimeter of the site.

2. That a suitably sealed vehicle crossing shall be constructed with a layout in accordance with drawing C19 of the HDC Engineering Code of Practice prior to the operation of the proposed activity.

    The position, size, geometry and compaction of the vehicle crossing shall be approved during construction, and prior to permanent surfacing by the Transportation Compliance Engineer, Hastings District Council.

    All works within the boundaries of the legal road shall be undertaken by a contractor being pre-approved by Hastings District Council to do so.

3. Any gate on the vehicle access shall be positioned such that a vehicle entering or exiting the site is able to stop clear of the road.

Exterior colour

4. That the proposed container and reservoir shall be painted 'Ironsand' or a similar colour approved by the Environmental Consents Manager, Hastings District Council.

Monitoring

5. A monitoring deposit of $195 (including GST) shall be payable to cover the reasonable costs of monitoring compliance with the consent conditions in accordance with Council's schedule of charges.

    In the event of non-compliance being detected by monitoring or justified complaint and/or the costs of monitoring the consent exceeding the deposit, the costs to Council of any additional monitoring shall be paid by the consent holder in accordance with the Council's advertised schedule of fees.

With the Reasons for this Decision Being:

1. There are no affected persons in terms of Section 95E of the Resource Management Act 1991.

2. The adverse effects of this proposal are less than minor, in that:

   - The visual/amenity effects of the proposed containerised water treatment plant and reservoir are of a scale which are not unusual in the Plains Production environment.
   - No overshadowing effects are expected to arise on the residential sites located at 32, 34 or 36 Tucker Lane as the reservoir will be sufficiently separated from these sites due to the wide carriageway and road reserve of Tucker Lane.
   - The provision of a 1.9m timber fence along the boundaries of the network utility site will screen the bulk of the structures when viewed at eye level and painting the container and reservoir 'Ironsand' will reduce the visual impact of these pieces of infrastructure.
   - The provision of internal noise insulation within the containerised water treatment plant will mitigate any potential noise effects associated with the operation of this public work, and the plant will be operated in accordance with the Noise standards of the District Plan.
   - The discharge of stormwater and surplus water will be managed in way that does not cause flooding onto other properties.

3. The proposal is consistent with the Objectives, Policies and other provisions of the Hastings District Plan.

4. The application meets the requirements of the Resource Management Act 1991.

Advice Notes:

1. To avoid doubt, except as otherwise allowed by this resource consent, all landuses must comply with all remaining standards and terms of the relevant Hastings District Plan. The proposal must also comply with the Building Act 2004, Engineering Code of Practice and Hawke's Bay Regional Plans. All necessary consents and permits shall be obtained prior to development.

2. Under Section 125 of the Resource Management Act 1991 a resource consent will lapse if not given effect to within 5 years of the date the consent was granted, unless an extension is authorised under Section 125(1A)(b).

Recommended by:

Tom Hosford
ENVIRONMENTAL PLANNER (CONSENTS)

Decision issued under Delegated Authority by:

Murray Arnold
ENVIRONMENTAL CONSENTS MANAGER
PLANNING AND REGULATORY SERVICES

Date: **22 September 2020**

APPROVED PLAN - HDC FILE REF: 58031#0024

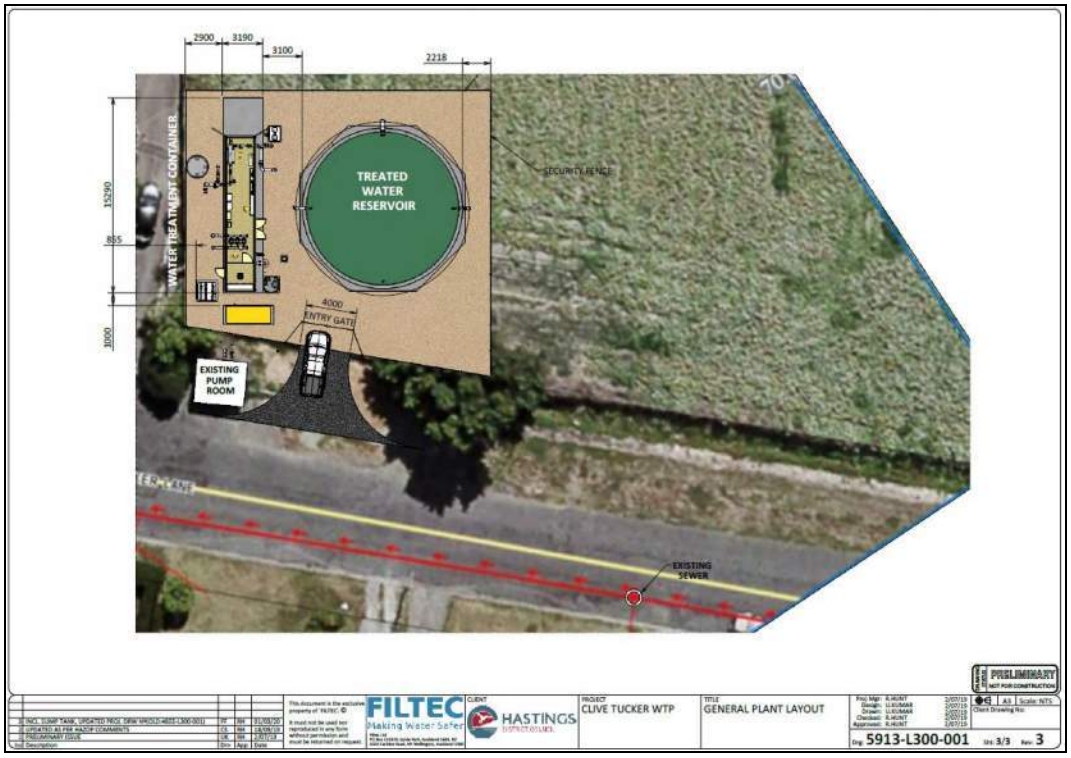


Figure one: site development layout

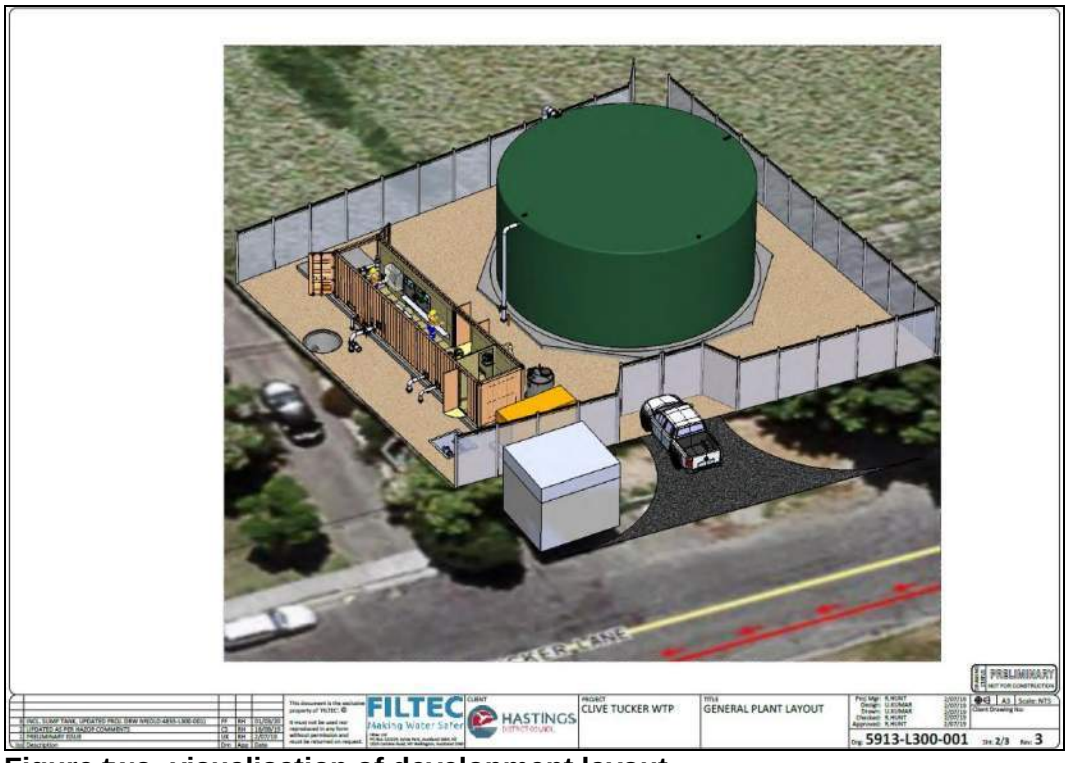


Figure two: visualisation of development layout

Figure three: land to be acquired for network utility

SECTION 95A AND 95B NOTIFICATION REPORT & SECTION 104 ASSESSMENT REPORT

Application Received: 24th August 2020	PID: 58031	RMA20200398
Applicant:	**Hastings District Council** **Private Bag 9002** **Hastings 4156**	
Address of Site:	49 School Road CLIVE 4102	
Legal Description:	**Part Suburban Section 23 West Clive and Part Suburban Section 24 WEST CLIVE**	
Area:	12.0141 Hectares	
Zoning:	Plains Production Zone - Hastings District Plan (Operative in Part, March 2020)	
Proposal:	Establish and operate a water treatment plant and reservoir for the Clive public water supply	
District Plan Provisions:	Rule NU13 of the Hastings District Plan	
Assessment of Status:	Discretionary Activity	
Report Prepared By:	Tom Hosford – Environmental Planner (Consents)	

1.0 THE PROPOSAL

The Hastings District Council (as a consenting authority) has received an application from the Hastings District Council to establish and operate a water treatment plant and water reservoir for the purposes of supplying the township of Clive with safe drinking water. This application forms part of the wider HDC Drinking Water Strategy to achieve a greater level of compliance with the New Zealand Drinking-Water Standards administered by the Ministry of Health.

In summary, the proposal includes the following:

- Site establishment works involving levelling the site to prepare the foundations and construct a new access way/parking area.
- Establishment and ongoing operation of a containerised water treatment plant measuring 12.19m x 2.44m in area and 2.59m in height. The exterior of the container which houses the treatment plant equipment will be painted 'Ironsand'.
- Establishment and ongoing operation of a prefabricated reservoir measuring 12.125m in diameter and 4.155m in height, and providing 300m^3 in water storage capacity. The reservoir will be painted 'Ironsand'.
- Construction of a 1.9m height security fence around the perimeter of the site.

The applicant advises that a variation to the existing water permit for the Clive public water supply will be sought from the Hawkes Bay Regional Council.

The land required for this public network utility will be subdivided and acquired under the Public Works Act 1981 as part of a separate process.

RMA20200398

Figure one: site development layout

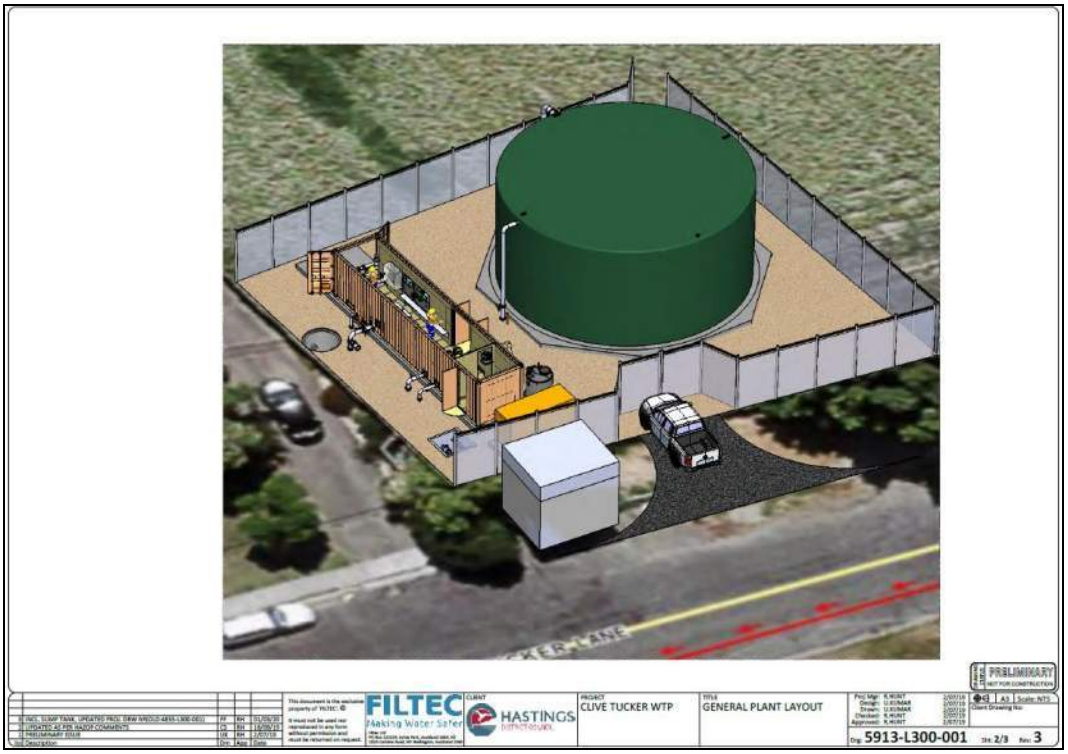


Figure two: visualisation of development layout

Figure three: land to be acquired for network utility

2.0 THE SITE AND SURROUNDING ENVIRONMENT

The site is located near the south eastern end of Tucker Lane, Clive and comprises of a cropping block. While the subject site is zoned Plains Production Zone under the Hastings District Plan, the site adjoins residential development to the northeast and the south. The proposed water treatment plant and reservoir site is located adjacent to an existing water source and booster pump station within the Tucker Lane road reserve.

Figure four: aerial image of the site (2019)

Figure five: site visit image of proposed network utility site

3.0 REASONS FOR CONSENT AND ACTIVITY STATUS

3.1 National Environmental Standards

3.1.1 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 (NESCS)

This NES requires consideration at the time of change in landuse, subdivision or earthworks on a piece of land upon which an activity on the Hazardous Activities and Industrial List (HAIL) has/is or is more likely than not been undertaken.

The National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health 2011 (NES) is triggered as the proposal involves earthworks and a change of use.

After reviewing the available historic aerial imagery and historic property file information it appears the subject site has been historically used for grazing and cropping activities, and has not been used

for orcharding related activities where the persistent use of pesticides may have occurred. Therefore, there is no evidence to support the possibility that any of the lots has or is being used by an activity identified on the Hazardous Activities and Industries List (HAIL).

Accordingly the NES does not apply to this application.

Figure six: historic aerial image (1949)

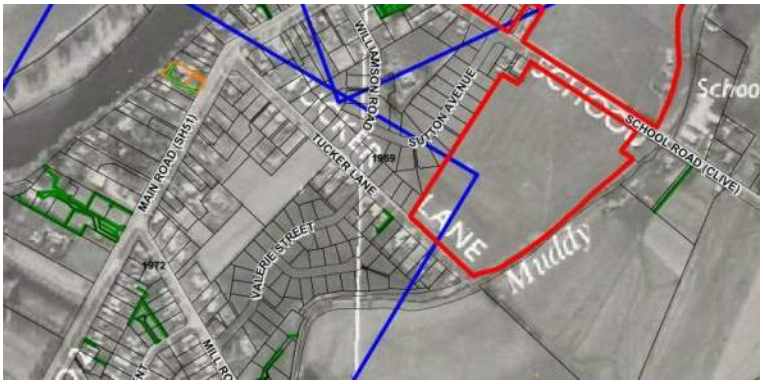


Figure seven: historic aerial image (1969)

Figure eight: Historical aerial image (1977)

3.1.2 National Environmental Standard for Sources of Human Drinking Water

The proposed activity will be located immediately adjacent to a registered source of drinking water. The source is managed by the Hastings District Council. Given the nature of the activity being storage and treatment of water, the proposed activities will be unlikely to adversely affect the drinking water source.

For the reasons identified above, it is concluded that the NES: Sources of Human Drinking Water is not relevant for this application.

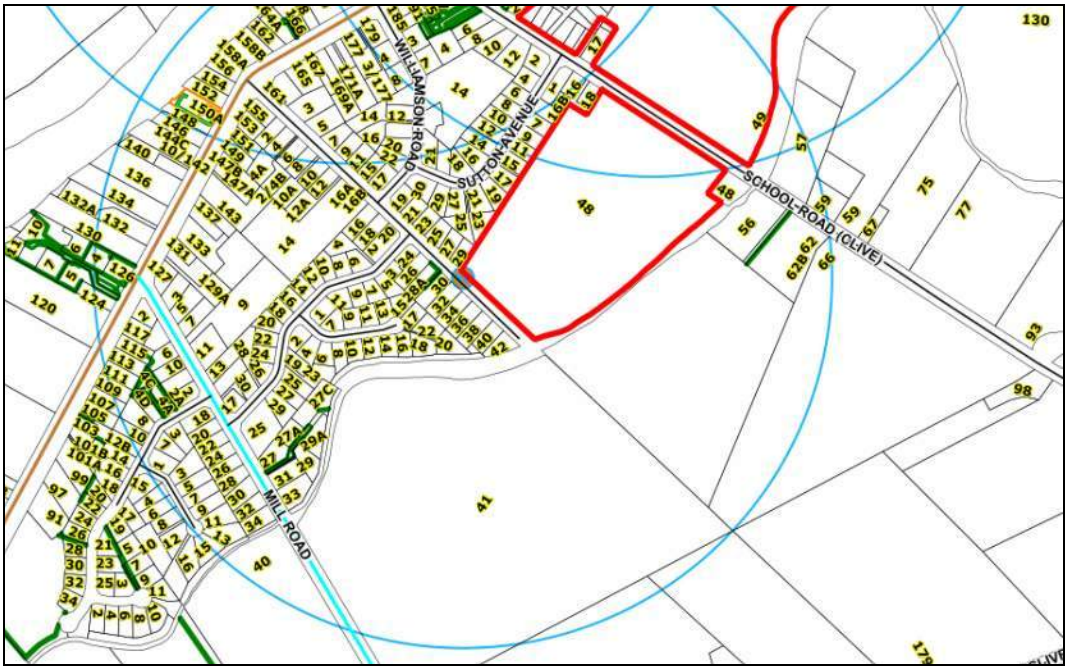


Figure nine: location of public water supply and 500m buffer

3.2 Operative Hastings District Plan

The site is zoned **Plains Production Zone.**

Figure ten: zoning map

The entire property is located within a 5m and 10m inundation zone. Rule NH10 requires certain activities within the inundation zones to be Restricted Discretionary activities. The proposed activity does not fall under any of the categories.

Therefore, these overlays are not relevant to this application.

3.2.1 District Wide Activity

Earthworks

Rule 27.1.5 (c) specifically excludes all earthworks associated with network utility operations and are excluded from further consideration under the Earthwork rules. The proposed activity is entirely related to the operation of the potable water reticulation network. As such, this assessment will not consider earthworks as a separate matter.

3.2.2 Network Utilities District Wide Activity

The proposal involves two components – the water treatment plant and water reservoir.

- In terms of the water treatment plant:

Rule NU2(iii) provides for above-ground network utility structures located outside of legal roads, road reserves and service lanes where the gross floor area of the structure shall not exceed 30m^2.

In this instance, as the container which will house the treatment plant equipment has a total gross floor area of 29.74m^2, this component of the activity complies with Rule NU2(iii) and will be assessed as a Permitted Activity.

- In terms of the water reservoir:

Rule NU10 The construction of new water reservoirs, or the upgrading of existing water reservoirs, up to 100m^2 in plan area and 8m in height as a Controlled Activity. The proposed reservoir exceeds the maximum plan area requirement by 13m^2. Non-compliance to this requirement is not provided elsewhere in the plan.

The proposal as a whole therefore falls under the "catchall clause" and is considered a **Discretionary Activity** in accordance with **Rule NU13**.

Note: The future subdivision of the site as a special purpose reserve is not covered by this consent.

3.3 Overall Status

Overall the proposal will be considered as a **Discretionary Activity** being the most stringent status for all the activities being bundled above.

4.0 NOTIFICATION ASSESSMENT (SECTIONS 95A and 95B)

4.1 Public Notification

Step 1: mandatory public notification in certain circumstances

The applicant has not requested the application be publicly notified (S95A(3)(a)); nor has any further information been requested that the applicant has refused to provide to the Council (S95A(3)(b)).

The application stands alone i.e. it has not been made jointly with an application to exchange reserve land (S95A(3)(c)).

In terms of the above statements, therefore, mandatory public notification is not required (S95A(2)(b)).

Step 2: if not required by step 1, public notification precluded in certain circumstances

In respect of section 95A(5)(a) the proposal is not subject to a rule or a National Environmental Standard that precludes notification.

In terms of Section 95A(5)(b) the application is for a land use resource consent that has a discretionary activity status, but is not for subdivision of land or a residential activity, nor is it a boundary activity or a prescribed activity.

Therefore, public notification is not precluded under S95A(5)(a) or S95A(5)(b).

Step 3: if not precluded by step 2, public notification required in certain circumstances

In terms of S95A(8)(a) the proposal is not subject to a rule or national environmental standard that requires public notification.

In terms of S95A(8)(b) an assessment of whether the effects of the proposal are more than minor is discussed below.

As provided in S95D, a consent authority that is deciding, for the purpose of section 95A(8)(b), whether an activity will have or is likely to have adverse effects on the environment that are more than minor—

(a) must disregard any effects on persons who own or occupy—
(i) the land in, on, or over which the activity will occur; or
(ii) any land adjacent to that land; and
(b) may disregard an adverse effect of the activity if a rule or national environmental standard permits an activity with that effect; and
(c) in the case of a restricted discretionary activity, must disregard an adverse effect of the activity that does not relate to a matter for which a rule or national environmental standard restricts discretion; and
(d) must disregard trade competition and the effects of trade competition; and
(e) must disregard any effect on a person who has given written approval to the relevant application.

In accordance with Section 95D(a), I have disregarded effects on persons who own or occupy the properties identified by star symbols in the following plan (being the adjacent land):

Figure eleven: map of adjacent properties (white stars) and location of written approval (green star)

I have not disregarded any effects on the basis that a rule permits an activity with that effect, except to the extent that where the activity complies with District Plan rules, I have taken that into account in my assessment of effects below.

I have disregarded the effects on the following persons who have provided their written approval:

Affected Persons	Address / Legal Description	Council PID
Alan & Christine Leslie	29 Tucker Lane, Clive – Lot 20 DP 15889	68986

The location of the provided written approval is shown in figure eleven by a green star.

As the activity is a Discretionary Activity there is no restriction on the effects that can be assessed. My assessment of whether there are adverse effects on the environment that are more than minor is as follows:

- Amenity effects

Section 4.1 of the Applicant's AEE has provided an assessment on any potential amenity related environmental effects. The relevant discussion is reproduced below:

> *"Plains Production Zone of the District Plan provides for buildings accessory to 'Land Based Primary Production' (the existing land use of the site) that are up to 10m high and have a gross floor area of up to 1,500m^2 as a Permitted activity under Rule PP1, provided that it is 7.5 m from the road boundary, 5 m from any other boundary and does not project beyond a building envelope constructed from recession planes from points 2.75m above the boundary. A building that is significantly larger than the proposed reservoir and WTP could be erected on the site as of right, and it is considered that the potential visual effects of the proposed activities are well within this 'permitted envelope' as outlined below.*
>
> *The amenity effects associated with the proposal are not unexpected in a small community in order to ensure it is appropriately serviced.*
>
> *The proposed facilities have been designed as to not be overly intrusive with the existing environment.*
>
> *Lighting will be provided in a manner, to avoid any significant visual or safety effects and to be compliant with the District Plan. The site is not proposed to be lit under normal circumstances as night time access is not normally required. However, security/access lighting is proposed for the container access/parking and generator area to be activated during non-daylight areas if operators are required to attend for any urgent / emergency matters.*
>
> *The site will be reinstated once works are complete and the final appearance of the site will be tidy. For the above reasons, it is considered that the proposal will have minor or less than minor adverse effects on the visual amenity values of the area.*

The applicant also advises that the treatment plant and water reservoir will be painted 'Ironsand' as to be compatible and fit within the backdrop of the surrounding residential environment.

The applicant has provided an argument in relation to what could be established as part of the Section 92 response:

> *Additionally, Rule NU10 allows reservoirs up to 8m high and 100m^2 in plan area as a Controlled activity (ie consent must be granted) and without the need for notification under RMA Section 95 provided it complies with the setback in Rule NU10, Condition (ii), which in regards to 32, 34 and 36 Tucker Lane, the reservoir does. The proposed reservoir will be well below the maximum height allowed, approximately 4.2m high and will only breach the plan area limit by 15m^2.*

I concur and adopt the above assessment for the purposes of this report. It is useful to consider the potential development scenarios which could eventuate as of right for this site, such as the construction of a grain silo for stock feed. Furthermore, it is not unusual to find containers of similar size, or water tanks in the rural environment for storage or other rural production purposes.

- Traffic

The site benefits from good lines of sight in both directions and the proposed access will not experience a high level of use. The applicant advises that it is expected that there will generally one vehicle visiting the site, once a day, three days a week once the proposed activity is commissioned. HDC's Transportation Compliance Engineer has advised the applicant that this new crossing will be required to be constructed to HDC's standards as set out in the Engineering Code of Practice 2011 in accordance with drawing C19.

There will be additional traffic to and from the site during the construction and commissioning stage of the project but this will be temporary in nature. The applicant advises that traffic management measures will be implemented by the contractor undertaking the works in a similar manner to the other consented projects which form part of the HDC Drinking Water investment programme.

On the basis of the above, it is considered that the traffic related environmental effects of the proposal are likely to be less than minor.

- Earthworks

The scheme of earthworks required to create a suitable building platform will be of a short duration and the effects are unlikely to spill onto any adjacent sites. The site will be reinstated to a tidy standard at the completion of earthworks. Additionally, earthworks for network utilities are specifically excluded.

Overall, the effects associated with the proposed earthworks are likely to be less than minor.

Conclusion

On the basis of the assessment above, I do not consider that the activity will have or is likely to have adverse effects on the environment that are more than minor.

Step 4: public notification in special circumstances

I have considered whether there are special circumstances which exist in relation to the application which would warrant the application being publicly notified. I do not consider there are any such special circumstances for the following reasons:

- As stated above, the effects on the environment are likely to be no more than minor;
- The scale and the nature of the proposed buildings are not unusual in the Plains Production environment.
- The proposed activity does not contain any feature or character that is unusual or special that would warrant public notification by special circumstances.

Decision:
I am satisfied that the application can be considered without full notification to the public in accordance with S95A(9)(b).

4.2 Limited Notification Assessment Section 95B

Step 1: certain affected groups and affected persons must be notified

No protected customary rights groups or affected customary marine title groups are involved in this proposal nor is the proposed activity on or adjacent to, or may affect, land that is the subject of a statutory acknowledgement. Therefore, limited notification is not required to any such groups under S95B(4).

Step 2: if not required by step 1, limited notification precluded in certain circumstances

Section 95B(5) requires determination as to whether any of the criteria in subsection (6) is met.

In terms of section 95B(6)(a) the proposal is not subject to a rule or a National Environmental Standard that precludes limited notification.

In terms of section 95B(6)(b) the application is for a land use resource consent that has a discretionary activity status, and is not for a controlled activity or a prescribed activity.

As the criteria is not met under 95B(6)(b), the application is not precluded from limited notification under section 95B(6).

Step 3: if not precluded by step 2, certain other affected persons must be notified

Under Section 95E, a consent authority must decide that a person is an affected person if the activity's effects on them are minor or more than minor (but are not less than minor), subject to the limitations in Section 95E(2). Where written consent is obtained Council must disregard any effect on a person who has given written approval to the relevant application (Section 95D(3)).

Under Section 95E(2), I note:

- I have not disregarded effects on the environment on the basis that a rule permits an activity with that effect.
- The activity is not for a controlled or a restricted discretionary activity. All relevant effects may be considered as part of this assessment.
- The owners of the immediately adjacent property (29 Tucker Lane) has provided their written approval of the consent. Any effects on the owners of this property must be disregarded.

Further to the assessment contained in section 4.1 of this report, my assessment is as follows:

- No overshadowing effects are expected to arise on the residential sites located at 32, 34 or 36 Tucker Lane as the reservoir will be sufficiently separated from these sites due to the wide carriageway and road reserve of Tucker Lane.
- The provision of a 1.9m timber fence along the boundaries of the network utility site will screen the bulk of the structures when viewed at eye level and painting the container and reservoir 'Ironsand' will reduce the visual impact of these pieces of infrastructure.
- Additional screening adjacent to the residential site located at 29 Tucker Lane has been offered by the applicant to provide further mitigation. This has will be arranged on an 'as-needed' basis prior to any works commencing on site, should consent be granted.
- The provision of internal noise insulation within the containerised water treatment plant will mitigate any potential noise effects associated with the operation of this public work. Additionally, the applicant advises that the operation of the treatment plant infrastructure will comply with the noise limits contained in section 25.1 of the Hastings District Plan.
- The discharge of stormwater and surplus water will be managed in way that does not cause flooding onto other properties.

I am satisfied that no persons in terms of Section 95E will be adversely affected as a result of this proposal under Section 95B(8).

Step 4: further notification in special circumstances

It is considered that there are no special circumstances that exist in relation to the application that would warrant notification of the application to any other persons not considered earlier in this report.

All relevant matters and parties are sufficiently addressed above in this report. Thus, no limited notification to any other affected persons is deemed necessary in accordance with Section 95B(10).

Decision:
I am satisfied the application can be considered without notification on a limited basis to any person.

4.3 Notification Decision

It has been determined that the application does not need to be notified under section 95A and does not need to be limited notified under section 95B, and there are no special circumstances to warrant public or limited notification, therefore the application can be processed on a non-notified basis.

Notification Decision made under delegated authority by:

Tom Hosford
Environmental Planner (Consents)
Hastings District Council
16 September 2020

5.0 STATUTORY CONSIDERATIONS

In considering any application for resource consent, the council must have regard to the following requirements under s104(1) - which are subject to Part II (the purpose and principles):

(a) any actual and potential effects on the environment of allowing the activity; and

(ab) any measure proposed or agreed to by the applicant for the purpose of ensuring positive effects on the environment to offset or compensate for any adverse effects on the environment that will or may result from allowing the activity; and

(b) any relevant provisions of—
(i) a national environmental standard:
(ii) other regulations:
(iii) a national policy statement:
(iv) a New Zealand coastal policy statement:
(v) a regional policy statement or proposed regional policy statement:
(vi) a plan or proposed plan; and

(c) any other matter the consent authority considers relevant and reasonably necessary to determine the application.

As a Discretionary Activity Section 104B of the Resource Management Act 1991 states that Council may grant or refuse the application. If it grants the application, it may impose conditions under s108.

Section 108 provides for consent to be granted subject to conditions and sets out the kind of conditions that may be imposed.

6.0 ACTUAL AND POTENTIAL EFFECTS ON THE ENVIRONMENT - s104(1)(a)

6.1 Effects that must be disregarded

6.1.1 Any effect on a person who has given written approval to the application - s104(3)(a)(ii)

The following written approvals have been received by the Council:

Affected Persons	Address / Legal Description	Council PID
Alan & Christine Leslie	29 Tucker Lane, Clive – Lot 20 DP 15889	68986

6.1.2 Effects that may be disregarded - Permitted baseline assessment - s104(2)

When considering any actual or potential effects, the council (as consent authority) may disregard an adverse effect on the environment if a national environment standard or the plan permits an activity with that effect (the permitted baseline). The Council has discretion whether to apply this permitted baseline.

Given that the subject site is zoned Plains Production under the Partially Operative Hastings District Plan, a building which is accessory to land based primary production could be established as of right (i.e. without resource consent) on the site which could generate greater visual effects than the proposal. In this instance, the applicant has used the example of a building of up to 10m in height with a gross floor area of up to 1,500m^2, provided it is 7.5m from the road boundary and 5m from any other boundary. In this instance, it is considered that this situation could eventuate and that the effects of the proposed activities could fit within this permitted baseline.

Furthermore, the construction of reservoirs up to 8m in height and 100m^2 in area are provided for by Rule NU10 as a Controlled Activity (i.e. consent must be granted without the need for notification). The proposed reservoir will comply with this height limit but exceeds the floor area limit by 15m^2. Therefore, it is considered that the visual/amenity effects associated with the proposed reservoir are

only slightly above what is envisioned by the District Plan in terms of Network Utilities, but significantly lesser than what is anticipated by other aspects of the District Plan.

6.2 Assessment of Effects

Section 4 of this report has considered a number of effects that may result from the proposed activities. It was considered that for the purpose of notification assessment, these effects will be less than minor. I adopt this section for this assessment of effects.

In addition to the issues discussed previously, I have also considered the following matters:

- The proposal will result in approximately 500m^2 of land being removed from the parent lot which has potential to be used for primary production purposes. However, it considered such loss is acceptable as the proposed treatment facility has a functional need to be located close to the water source and settlement area.

  No subdivision is proposed as part of this application, however, the applicant mentions that the land will be subdivided in the future based on the proposed layout, under the provisions of the Public Works Act 1984.

Accordingly it is considered that the proposal will have no more than minor effects on the environment.

A further assessment of effects is provided for under the Proposed District Plan's Assessment Criteria below.

7.0 ANY MEASURE PROPOSED OR AGREED TO BY THE APPLICANT FOR THE PURPOSE OF ENSURING POSITIVE EFFECTS ON THE ENVIRONMENT - S104(1)(ab)

No specific measures are proposed or have been agreed to by the applicant.

8.0 RELEVANT STATUTORY DOCUMENTS - s104(1)(b)

8.1 National Environmental Standards - s104(1)(b)(i)

8.1.1 National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health (NESCS)

As outlined above the proposal is not subject to the requirements of the NESCS as no HAIL site has been identified on the subject site.

8.1.2 National Environmental Standard for Sources of Human Drinking Water

As outlined prior, the proposed activity will be located immediately adjacent to a registered source of drinking water. The source is managed by the Hastings District Council. Given the nature of the activity being storage and treatment of water, the proposed activities will unlikely to adversely affect the drinking water source.

For the reasons identified above, it is concluded that the NES: Sources of Human Drinking Water is not relevant for this application.

8.2 National Policy Statements - s104(1)(b)(iii)

There are no National Policy Statements relevant to this proposal.

8.3 New Zealand Coastal Policy Statement - s104(1)(b)(iv)

The purpose of the New Zealand Coastal Policy Statement (NZCPS) is to state policies in order to achieve the purpose of the RMA in relation to the coastal environment of New Zealand. In this instance, the site does not directly connect to the coast, therefore the NZCPS is not relevant.

8.4 Hawke's Bay Regional Policy Statement – s104(1)(b)(v)

The Hawke's Bay Regional Resource Management Plan 2006 (RRMP) includes the regional policy statement (RPS) for the Hawke's Bay Region, which contains the following relevant objectives and policies:

OBJ 14 The avoidance of loss in the productive capability of land, as a result of reduced soil health.

OBJ 16 For future activities, the avoidance or mitigation of off site impacts or nuisance effects arising from the location of conflicting land use activities.

OBJ 17 For existing activities (including their expansion), the remedy or mitigation of the extent of off site impacts or nuisance effects arising from the present location of conflicting land use activities.

OBJ 18 For the expansion of existing activities which are tied operationally to a specific location, the mitigation of off site impacts or nuisance effects arising from the location of conflicting land activities adjacent to, or in the vicinity of, areas required for current or future operational needs.

OBJ 19 The avoidance of any significant adverse effects on human health, property or the environment from agrichemical use.

OBJ 20 The management and use of organic material derived from industries processing primary products in a manner that does not result in any adverse effects on humans or the environment.

OBJ 21 No degradation of existing groundwater quality in the Heretaunga Plains and Ruataniwha Plains aquifer systems.

OBJ 22 The maintenance or enhancement of groundwater quality in unconfined or semi-confined productive aquifers in order that it is suitable for human consumption and irrigation without treatment, or after treatment where this is necessary because of the natural water quality.

OBJ 31 The avoidance or mitigation of the adverse effects of natural hazards on people's safety, property, and economic livelihood.

OBJ 32 The ongoing operation, maintenance and development of physical infrastructure that supports the economic, social and/or cultural wellbeing of the region's people and communities and provides for their health and safety.

OBJ 33 Recognition that some infrastructure which is regionally significant has specific locational requirements.

OBJ 33A Adverse effects on existing physical infrastructure arising from the location and proximity of sensitive land use activities are avoided or mitigated.

OBJ 33B Adverse effects on existing landuse activities arising from the development of physical infrastructure are avoided or mitigated in a manner consistent with Objectives 16, 17, 18, 32 and 33.

It is considered that the proposal is generally consistent with, and is not contrary to the relevant objectives and policies of the Hawkes Bay Regional Policy Statement and in particular Objective 16 in relation to conflicting land use activities.

8.5 Hastings District Plan (Operative in Part, March 2020) - s104(1)(b)(vi)

8.5.1 Assessment Criteria

The proposed activity is overall considered a discretionary activity. In assessing the application, the Council is not limited to any assessment criteria and can consider the full range of effects associated with the proposed activity.

These matters have been discussed in Section 4 and 6 of this report. It has been concluded that the overall effects will likely be less than minor. No other matters under the Hastings District Plan are considered relevant.

8.5.2 Hastings District Plan: Relevant Objectives and Policies

The following objectives and policies are considered relevant to the proposal:

- Network Utilities – Section 22.1

OBJECTIVE NUO1 To provide for the safe, effective and efficient construction, operation, maintenance, replacement, refurbishment and upgrading of Network Utilities, for the social and economic wellbeing of the community, and whilst recognising the technical and operational requirements and constraints of Network Utilities.

POLICY NUP2 To enable the establishment and upgrading of network utilities while ensuring that any adverse effects on the environment and adjoining land use are avoided, remedied or mitigated.

POLICY NUP3 Recognise the need for Network Utilities to be reliable in operation, and for Network Utility Operators to be able to act promptly in an emergency, or following any sudden event or circumstance which puts people, property or places at risk, or which requires action without delay to maintain the safe, effective and efficient operation of the Network Utility.

POLICY NUP4 Recognise special technical and operational requirements and constraints of Network Utilities including those associated with their scale, location, design and operation.

POLICY NUP5 New transmission infrastructure or Network utility infrastructure should avoid outstanding and significant landscapes, or areas of significant historical, cultural and recreational value unless the infrastructure is subject to a significant functional constraint, or where there is no practicable alternative route and/that significant adverse effects can be outweighed by the overall benefits of the proposal.

Comment:

The proposed water treatment plant and reservoir has a functional need to be located close to the water source and settlement area. It will benefit the social wellbeing of the community as it will assist the Applicant in providing safe drinking water to the community, therefore, benefiting the health and safety of the community. The proposal has also provided capacity to ensure continuous operation of the facility during emergencies.

The adverse effects associated with the proposal is considered to be less than minor. Due to the small scale of the development, noise, lighting and traffic effects are considered to be consistent with the rural environment the facility is situated within. The level of visual effects will be less than minor and further mitigated by choosing colours that are consistent with the surrounding physical environment.

The proposal is therefore considered consistent with relevant objectives and policies for Network utilities.

- Noise – 25.1

OBJECTIVE NSO1 To manage the emission and mitigate the adverse effects of noise so as to maintain or enhance the acoustic environment

OBJECTIVE NSO2 To ensure the adverse effects of noise do not unreasonably affect people's health.

POLICY NSP1 Control the emission levels of noise throughout the District, based on existing ambient noise and accepted standards for noise generation and receipt.

Comment:

Based on the information provided by the applicant and the assessment of this report, it was considered that the proposed activity will be unlikely to generate any noise that exceeds the levels permitted by the District Plan. There are also no noise sensitive activities that are located within immediate vicinity of site.

- Plains Production zone

OBJECTIVE PPO1 To ensure that the versatile land across the Plains Production Zone is not fragmented or compromised by building and development.

POLICY PPP3 Limit the number and scale of buildings (other than those covered by Policy PPP4) impacting on the versatile soils of the District.

OBJECTIVE PPO2 To provide for flexibility in options for the use of versatile land.

OBJECTIVE PPO3 To retain the rural character and amenity values of the Plains Production Zone.

POLICY PPP13 Require that any new development or activity is consistent with the open and low scale nature that comprises the rural character and amenity of the Plains Production Zone.

POLICY PPP14 Require that any new activity locating within the Plains Production Zone shall have a level of adverse effects on existing lawfully established land uses that are no more than minor.

POLICY PPP15 Noise levels for activities should not be inconsistent with the character and amenity of the Plains Production Zone.

Comment:

The proposal will result in approximately 500m^2 of rural productive land being lost. However, it considered such loss being acceptable as the proposed treatment facility has a functional need to be located close to the water source and settlement area. The proposal will be consistent with the open nature of the Plains Production zone. The scale of the development is similar to other complying activities anticipated in the zone. The assessment has also demonstrated that the proposal will not adversely affect any of the adjoining activities, including noise sensitive activities.

9.0 SECTION 104(1)(C) ANY OTHER RELEVANT MATTERS

9.1 Precedent Effects

Precedent effects are ‘other matters’ that may be considered under section 104(1)(c). A precedent effect is created where the granting of a consent could lead to similar applications for which Council, being consistent in its approach, would need to consider granting.

Therefore not only is it considered that the proposal will not create an 'adverse' precedent of itself, it is considered that the proposal will not create any precedent as this form of development can only be undertaken by a requiring authority.

Given the assessment of environmental effects above, and that it is considered that the proposal is not contrary to the objectives and policies of the Plan, it is considered that this application will not set an **adverse** precedent.

10.0 PART II OF THE RESOURCE MANAGEMENT ACT 1991

The Act seeks to promote the sustainable management of natural and physical resources. Part II of the Act deals with the purposes and the principles of the Act.

In Section 5 of the Act, "sustainable management" is defined as:

managing the use, development, and protection of natural and physical resources in a way, or at a rate, which enables people and communities to provide for their social, economic, and cultural wellbeing and for their health and safety while -

(a) Sustaining the potential of natural and physical resources (excluding minerals) to meet the reasonably foreseeable needs of future generations; and
(b) Safeguarding the life-supporting capacity of air, water, soil, and ecosystems; and
(c) Avoiding, remedying, or mitigating any adverse effects of activities on the environment.

As stated in Sections 4, 6 and 8 of this report, given the existing environment, it is considered that the proposal is consistent with Section 5 of the Act.

Section 6 of Part II of the Act sets out matters of national importance. No matters outlined in Section 6 are considered to be relevant to this proposal.

Section 7 of the Act sets out matters that Council shall have particular regard to in administering the Act. Of particular relevance are:

(b) the efficient use and development of natural and physical resources:
(c) the maintenance and enhancement of amenity values:
***(f) maintenance and enhancement of the quality of the environment*:**

In regard to Section 7(b) given the assessment above, it is considered that the proposal is an efficient use of a natural resource to meet the servicing needs of the local community.

In regard to Section 7(c) the issue of amenity values has been discussed in previous sections. It has been concluded that amenity in the surrounding environment will not be adversely affected.

In regard to Section 7(f), given the assessment made above under Sections 95A, 95B and 104 of the RMA 1991 it is considered that the proposal will have a less than minor effect on the environment and therefore will ensure that the quality of the environment will largely remain unchanged.

Section 6(e), 7(a) and 8 state that Council should recognise the relationship of Maori and their culture and traditions with their ancestral lands, water, sites, waāhi tapu, and other taonga, have regard to kaitiakitanga, and take into account the Principles of the Treaty of Waitangi. This proposal **does not** affect any known archaeological sites or waāhi tapu.

Considering the points raised above, it is considered that this application is consistent with Part II of the Resource Management Act 1991.

10.0 CONCLUSION

The proposal is generally consistent with the relevant provisions of the Hastings District Plan and is likely to have no significant adverse effects on the environment. It is recommended that consent to this application be granted, subject to conditions.

RMA20200398

If calling ask for Tom Hosford
TRIM/File Ref Record Number

30 September 2020

Good Earth Matters Consulting Limited
23 Tiniroto Road
RD5
Wairoa 4195

Dear Grey

Resource Consent Application: 49 School Road CLIVE 4102, RMA20200398

I am pleased to advise that your application to Establish and operate a water treatment plant and reservoir for the Clive public water supply has been granted. A copy of the decision is enclosed.

This approval was granted under delegated authority from Council. If you are not happy with any condition of this consent, or with any additional charges associated with this consent you may lodge an objection. The objection needs to be made in writing within fifteen working days of you receiving this letter. The lodgement fee is $800.00 (including GST).

You should note that under section 125 of the Resource Management Act 1991 this consent will lapse if not given effect to within 5 years of the above date.

If you have any queries about this matter please contact me.

Yours sincerely

THosford

Tom Hosford
Environmental Planner (Consents)
s 9(2)(a)

HASTINGS DISTRICT COUNCIL
207 Lyndon Road East
Hastings 4122
Private Bag 9002
Hastings 4156

Phone 06 871 5000
Fax 06 871 5100

Hastingsdc.govt.nz
customerservice@hdc.govt.nz

TE KAUNIHERA O HERETAUNGA

Gemma Guilford

From: Kelly Nikora s 9(2)(a)
Sent: Wednesday, August 10, 2022 4:20 PM
To: Olli Boaler
Cc: David Mackenzie; Matt Kersel
Subject: RE: Capacity in the Clive wastewater and water networks

Hi Olli,

Apologies mate the information I provided on the waste water network is not correct.

Unfortunately the waste water model is not up to date with recent capital works projects that have occurred in the area recently.

In 2020 HDC installed a new 250mm rising main that replaced the 200mm rising man installed in 1968. The new rising main was installed to meet existing demand and will not be able to accommodate the circa 200 homes anticipated with your proposed development.

In terms of your suggestion, we do have capacity at out treatment plant to receive additional flow from the development. It may be possible to use the old decommissioned 200mm rising main subject to a condition report etc as it is just currently sitting there. If it can be used or not is subject to further investigations and design considerations that you guys will need to look into.

Key to servicing this development will be the requirement to update or even potentially replace the PS behind the old church as this definitely does not have the capacity for what you are proposing.

Regards,

KELLY NIKORA
3 WATERS SENIOR ENGINEER (Growth and Development)

HASTINGS DISTRICT COUNCIL
Te Kaunihera ā-Rohe o Heretaunga
HASTINGS HEART OF HAWKE'S BAY

Phone (06) 871 5000 Mob s 9(2)(a)
Email s 9(2)(a) **Web** hastingsdc.govt.nz
Hastings District Council, Private Bag 9002, Hastings 4156, New Zealand

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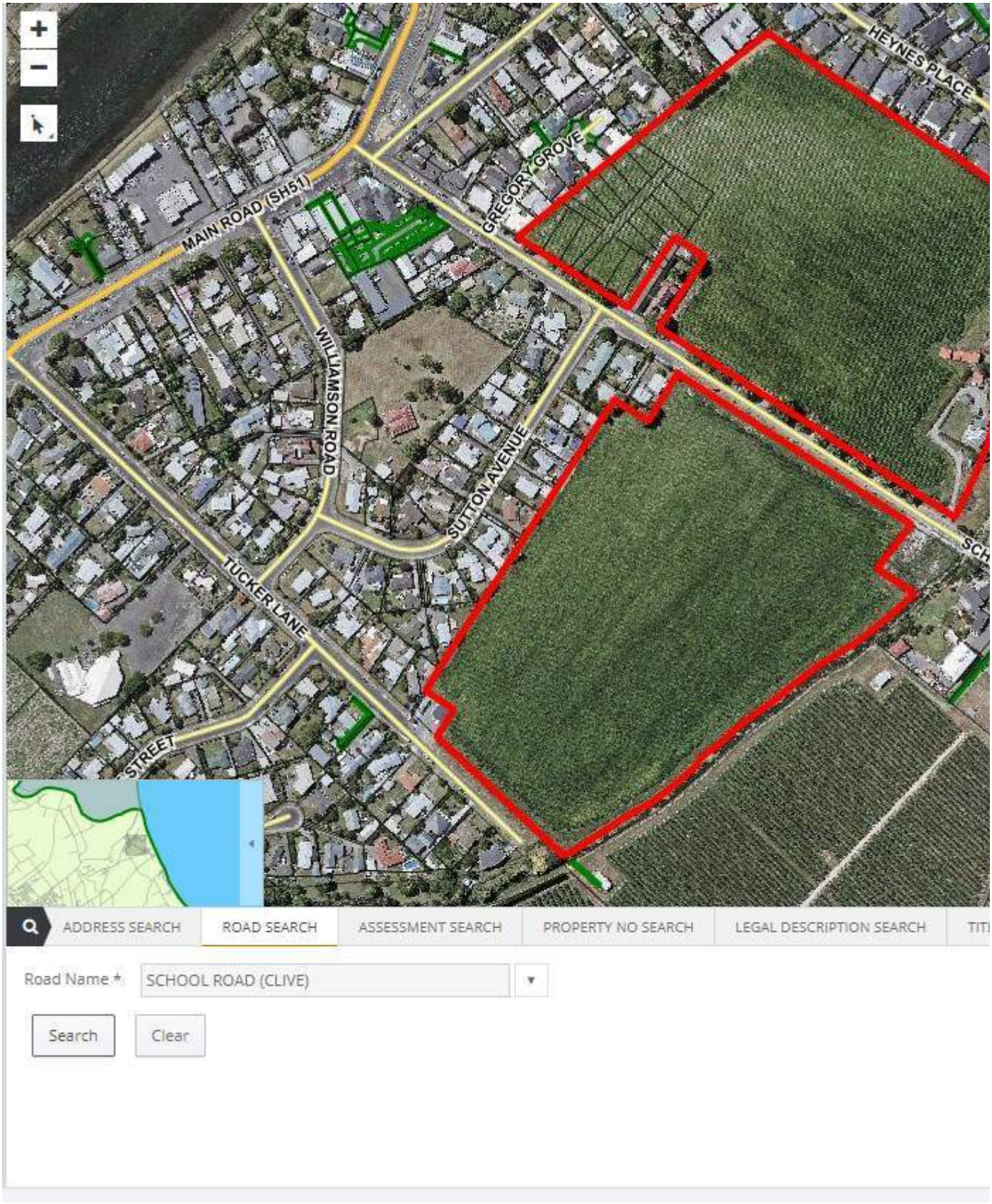
From: Olli Boaler [mailto s 9(2)(a)
Sent: Wednesday, 3 August 2022 4:31 PM
To: Kelly Nikora s 9(2)(a)
Cc: David Mackenzie s 9(2)(a) >; Matt Kersel s 9(2)(a)
Subject: RE: Capacity in the Clive wastewater and water networks

Thanks Kelly all very helpful feedback.

The yield we are looking at is 200.

The address is the two blocks shown below, it will essentially be one side of the road with the other side used as SW mitigation.

Follow up question on the wastewater is it fair to assume there is capacity at the treatment plant in Grey street if we were to run an additional raising main there?



Regards

Olli Boaler
Senior Project Engineer
Development Nous Limited

From: Kelly Nikora s 9(2)(a)
Sent: Wednesday, 3 August 2022 4:22 pm
To: Olli Boaler s 9(2)(a)
Cc: David Mackenzie s 9(2)(a) Matt Kersel s 9(2)(a)
Subject: RE: Capacity in the Clive wastewater and water networks

Hi Olli,

Is it possible to get the address and confirmation if the anticipated yield is 80 dwellings or 200 dwellings. I think it's 200 from the below?

In any case, the wastewater network upstream of the pump station in school road is shown in our model in a surcharged state. This can only mean that the pump station is at capacity and is acting as a choke point for the network.

Unfortunately we don't have eyes in the model of the rising main but having looked at the install date for the pump station and rising main, it is evident that the rising main was constructed to accommodate the demand all the way back in 1968. This would indicate that like the gravity network upstream of the pump station and the pump station itself, there is no capacity in the rising main.

In terms of water, we have only recently commissioned the new plant and given the nature and sheer scale of the proposal, it will take a bit of time to determine what the capacity is and where capacity is allocated in terms of existing customers, potential existing customers who are currently serviced by private bores and forecasted growth – i.e. there is a lot to consider.

To keep expectations in check, HDC will not be looking to allocate residual capacity or compromise on the design standards such as a reduction in our emergency storage to accommodate this development.

Matt will look into this in a bit more detail and get back to you in a couple weeks but this should be enough for now.

Regards,

KELLY NIKORA
3 WATERS SENIOR ENGINEER (Growth and Development)

HASTINGS DISTRICT COUNCIL
Te Kaunihera ā-Rohe o Heretaunga
HASTINGS HEART OF HAWKE'S BAY

Phone (06) 871 5000 Mob s 9(2)(a)
Email s 9(2)(a) **Web** hastingsdc.govt.nz
Hastings District Council, Private Bag 9002, Hastings 4156, New Zealand

From: Olli Boaler [mailto:s 9(2)(a)
Sent: Thursday, 28 July 2022 2:49 PM
To: Kelly Nikora s 9(2)(a)
Subject: FW: Capacity in the Clive wastewater and water networks

Hi Kelly,

Just wondering if you may be able to help with some of the leg work on the below request that I have sent to Dave and Matt? Is this something you can assist with or do we need to wait for a reply direct from them?

I've had a quick phone call to Matt about the below and he indicated there was some capacity in the water network but some more digging would be needed to find out exactly how much.

The sewer is somewhat less of an issue due the site's proximity to the wastewater treatment plant but it would be good to know existing capacities as well.

Regards

Olli Boaler
Senior Project Engineer
Development Nous Limited

From: Olli Boaler
Sent: Thursday, 28 July 2022 10:36 am
To: s 9(2)(a) David Mackenzie s 9(2)(a)
Cc: Mitchell Pal s 9(2)(a)
Subject: RE: Capacity in the Clive wastewater and water networks

Hi Matt,

Thanks for your time on the phone confirming the update from below to a need to service a possible 200 dwellings.

Regards

Olli Boaler
Senior Project Engineer
Development Nous Limited

From: Olli Boaler <s 9(2)(a)
Sent: Friday, 15 July 2022 1:32 pm
To: s 9(2)(a) ; David Mackenzie s 9(2)(a)
Cc: Mitchell Pal <s 9(2)(a)
Subject: Capacity in the Clive wastewater and water networks

Hi Matt & Dave,

I have a query witch I hope will be quick and relatively easy for you both to answer.

We have a client that is looking at a development that could potentially be 80 houses in School Road. As part of the scoping work, it is important we understand the serviceability of the site.

To that effect we would like to know:

- Is there current capacity in the existing sewer pumpstation on School Road. If the pumpstation in its current configuration has no capacity is there still extra capacity in the rising main leaving the pump station?
- Is there extra supply capacity in the water pumps on Tucker Lane to support and additional (200) houses.

Regards

Olli Boaler
Project Engineer
Development Nous Limited

Phone +64 6 876 2159
Mobile s 9(2)(a)

Physical 502 Karamu Road North, Hastings, 4122, New Zealand
Postal P.O. Box 385 Hastings 4156
Email s 9(2)(a)

www.developmentnous.nz

SCHOOL ROAD, CLIVE

ENCLOSURE F

ECONOMIC ASSESSMENT REPORT

SCHOOL ROAD, CLIVE

ENCLOSURE G

PRELIMINARY SOILS FEASIBILITY ASSESSMENT

Tomorrow Development Limited

49 School Road, Site Assessment

August 2022

Summary

One title totalling 5.6ha at 49 School Road was assessed for suitability for horticultural production

- ID: 4194436
- Part Suburban Section 24 West Clive
- Total Area: 5.6 ha

Soils

Landcare's on-line soil mapping service, S-maps, was used for an initial desktop survey.

The main soil present is:

- Farn *(1a.2)*: A loam over sand textured soil.

Topsoil depth varied between 10cm and 20cm, below which is a subsoil of sandy texture which is varied in depth between 80cm and 90cm. The soil on the property is **suited** for horticultural production.

Water

There are no water consents allocated to the properties and supplementary irrigation is considered essential for successful commercial horticultural production. Without water this property is **not suitable** for horticultural production.

Prepared by Angus Bews

Fruition Horticulture HB Ltd
94 Anderson Road, Whakatu
P O Box 966, Hastings

s 9(2)(a)

s 9(2)(a)

Soil Analysis

Landcare Research NZ soil information indicates there is one soil type present on the property.

Sibling	Area	Proportion
Far_1a.2	5 ha	94.4%

Farn *(1a.2)* soil is of the recent fluvial soil order. The soil profile texture is a loam over sand. The topsoil horizon is a weakly consolidated loam that extends 10-20cm deep. The subsoil horizon is a loosely consolidated sand that extends 80-90cm deep. Both horizons are stoneless and have rapid permeability. The potential rooting depth extends below 100cm.

The soil is imperfectly drained indicated by the mottling present in the profile. Alongside the rapid permeability, this soil has a moderate water logging vulnerability, drainage should be installed before any perennial crop is planted to ensure good health and productivity.

Without the use of irrigation there is a moderate level of drought risk, this will create a negative impact on the health and production of perennial crops. Profile available water is moderate through the 100cm profile (119mm). Aeration in rootzone is moderately limited as indicated by the mottling within the horizon. Inadequate aeration will have adverse results on crop health and productivity. The soil has a moderate clay percentage and a high cation exchange capacity.

Without an onsite assessment the water table of this property is unknown.

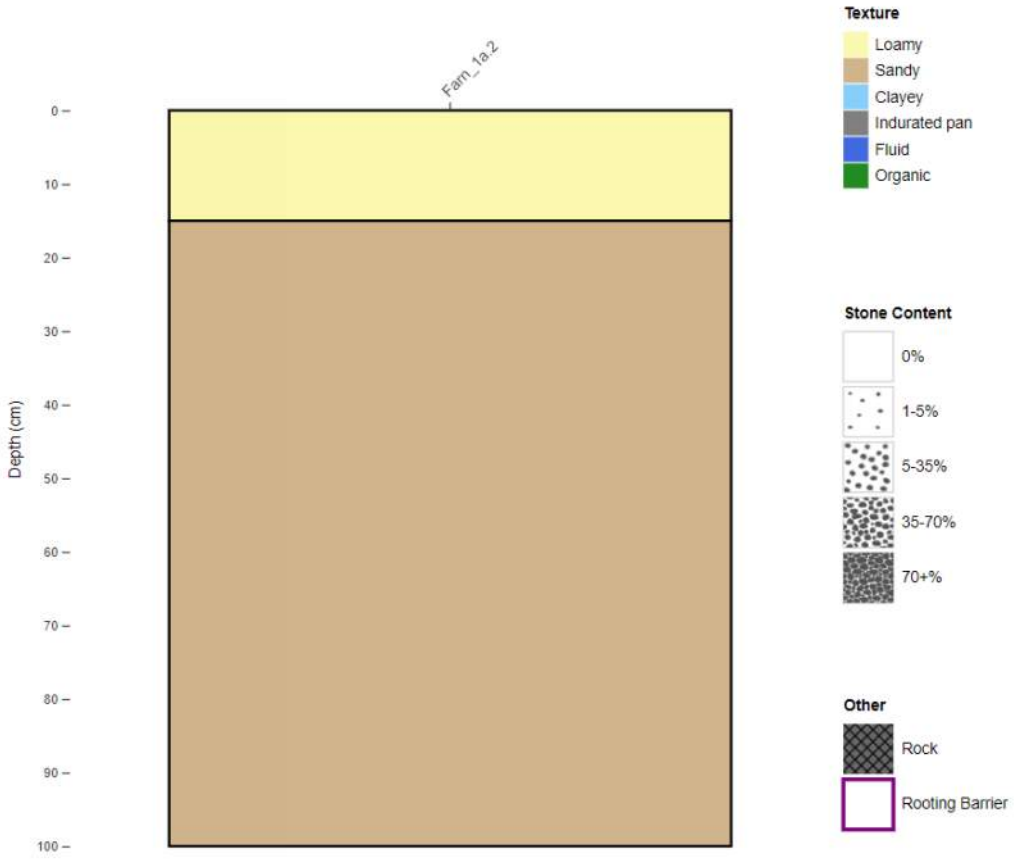
This soil is **suitable** for horticultural production with management practices.

Visual Survey

A visual soil survey is recommended to verify the information gathered from Landcare Research.

Resource Consent

There are no resource consents regarding water availability allocated to this property.



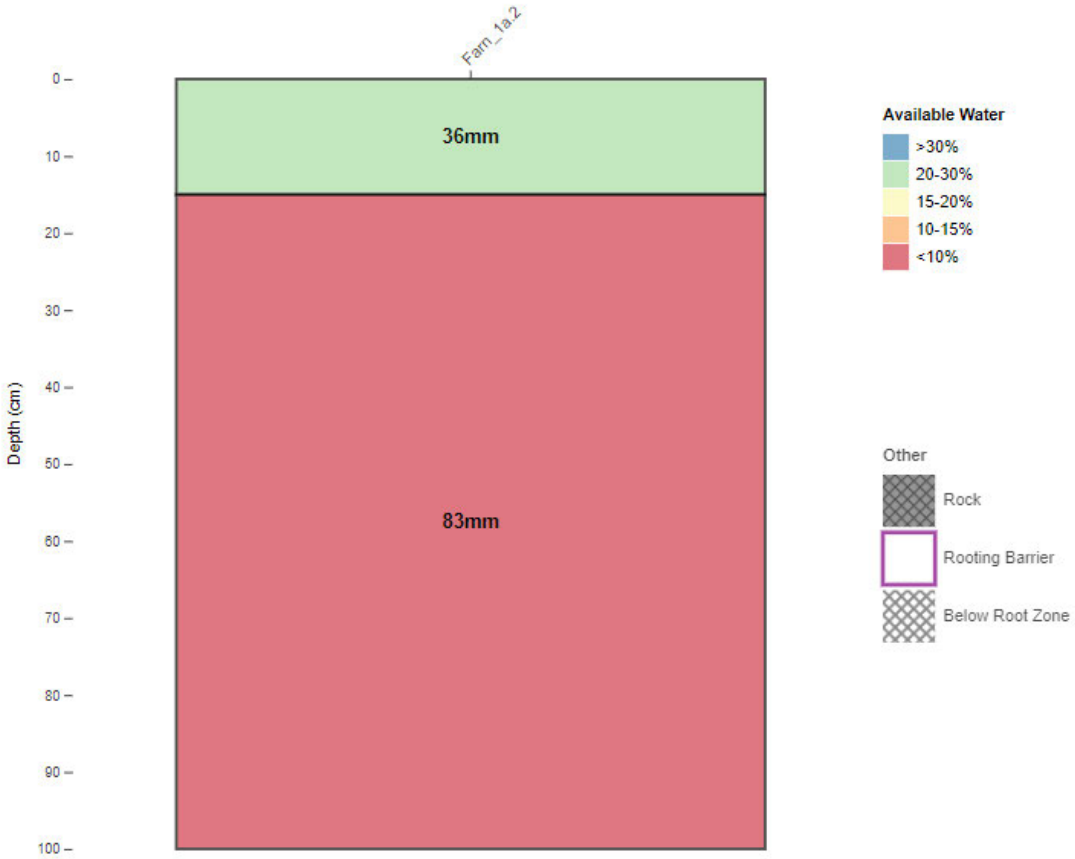
Texture Graph - Landcare Research

Prepared by Angus Bews

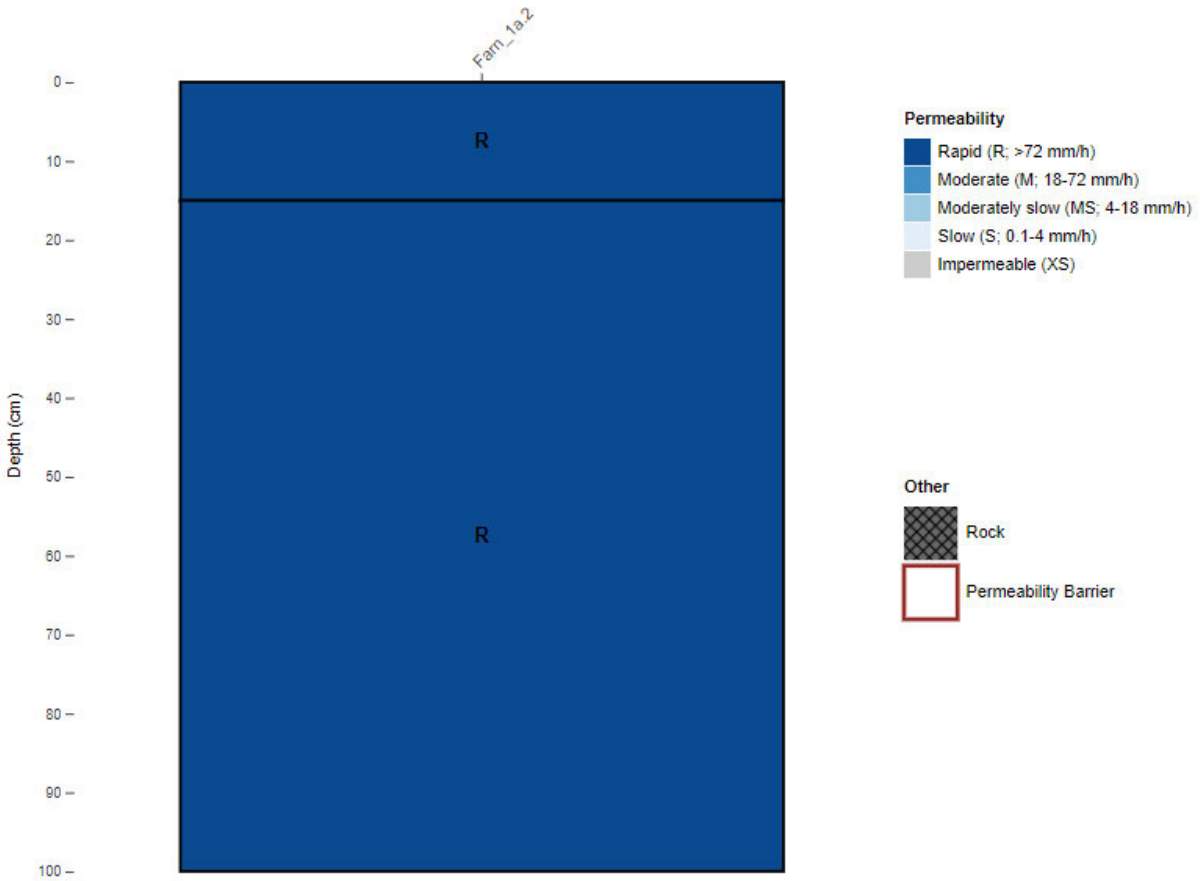
Fruition Horticulture HB Ltd
94 Anderson Road, Whakatu
P O Box 966, Hastings

s 9(2)(a)

s 9(2)(a)



Available Moisture Graph - Landcare Research



Permeability Graph - Landcare Research

Prepared by Angus Bews

Fruition Horticulture HB Ltd
94 Anderson Road, Whakatu
P O Box 966, Hastings

s 9(2)(a)

s 9(2)(a)

Manaaki Whenua
Landcare Research

S O I L R E P O R T

Farn_1a.2

Report generated: 24-Aug-2022 from https://smap.landcareresearch.co.nz

Far_1a.2

This information sheet describes the typical average properties of the specified soil to a depth of 1 metre, and should not be the primary source of data when making land use decisions on individual farms and paddocks. S-map correlates soils across New Zealand. Both the old soil name and the new correlated (soil family) name are listed below.

Soil Classification

Soil Classification:
Mottled-saline Fluvial Recent Soils (RFMQ)

Family Name:
Farn (Far)

Sibling Name:
Farn_1a.2 (Far_1a.2)

Soil profile material
Stoneless soil

Depth class (diggability)
Deep (> 1 m)

Profile texture
loam over sand

Parent Material

Stones/rocks
not applicable

Soil material
hard sandstone rock

Origin
Lacustrine

Soil Sibling Concept

This soil belongs to the Recent soil order of the New Zealand soil classification. Recent Soils are weakly developed, showing limited signs of soil-forming processes although a distinct topsoil is present, a B horizon is either absent or only weakly expressed. It is formed in lake sediments, from hard sandstone parent material.

The topsoil typically has loam texture and is stoneless. The subsoil has dominantly sand textures, with gravel content of less than 3%. The plant rooting depth extends beyond 1m.

Generally the soil is imperfectly drained with low vulnerability of water logging in non-irrigated conditions, and has moderate soil water holding capacity. Inherently these soils have a high structural vulnerability and a moderate N leaching potential, which should be accounted for when making land management decisions.

About this publication

- This information sheet describes the *typical average properties* of the specified soil.
- For further information on individual soils, contact Landcare Research New Zealand Ltd: www.landcareresearch.co.nz
- Advice should be sought from soil and land use experts before making decisions on individual farms and paddocks.
- The information has been derived from numerous sources. It may not be complete, correct or up to date.
- This information sheet is licensed by Landcare Research on an "as is" and "as available" basis and without any warranty of any kind, either express or implied.
- Landcare Research shall not be liable on any legal basis (including without limitation negligence) and expressly excludes all liability for loss or damage howsoever and whenever caused to a user of this factsheet.

Manaaki Whenua
Landcare Research

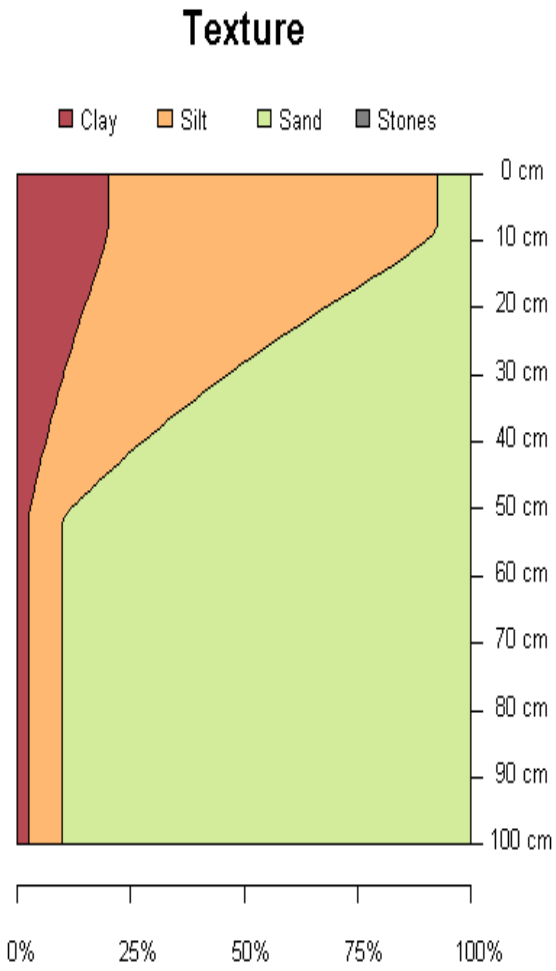
Farn_1a.2

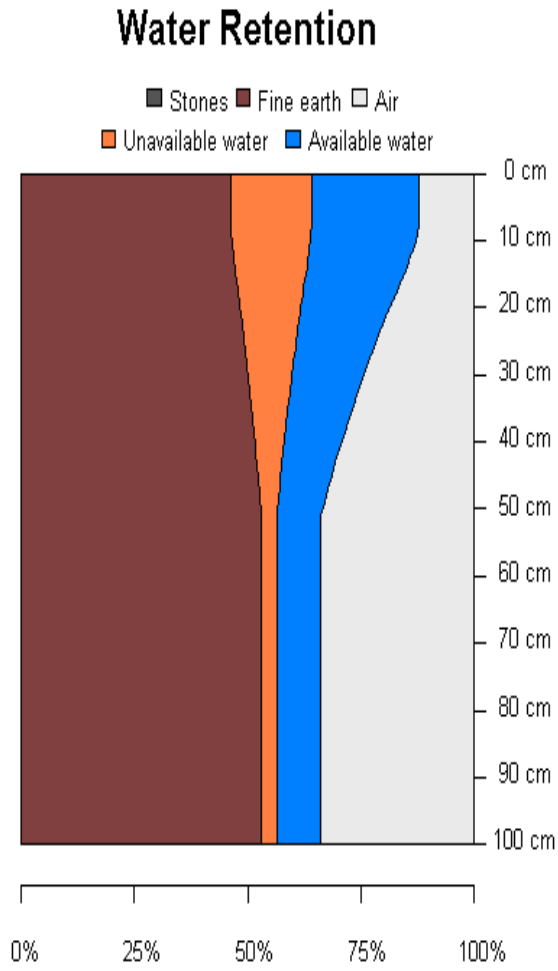
Soil horizons

Characteristics of functional horizons in order from top to base of profile:

Functional Horizon	Thickness	Stones	Clay*	Sand*	Permeability
Loamy Weak	10 - 20 cm	0 %	19 - 21 %	5 - 10 %	rapid
Sandy Loose	80 - 90 cm	0 %	1 - 4 %	85 - 95 %	rapid

* clay and sand percent values are for the mineral fines (excludes stones). Silt = 100 - (clay + sand)





The values for the graphs above have been generated from horizon and pedotransfer data. These values have then been splined to create continuous estimates of soil water holding capacity and particle size distribution the soil profile. These curves express the particle size distribution and water retention of the soil however there may be barriers to rooting depth that are not necessarily represented in these properties directly. It is advisable to check the potential rooting depth and rooting barrier fields in the soil physical properties section on page three of this factsheet.

Farn_1a.2

Soil physical properties

Depth class (diggability)
Deep (> 1 m)

Potential rooting depth
Unlimited

Rooting barrier
No significant barrier within 1 m

Depth to hard rock
No hard rock within 1 m

Depth to soft rock
No soft rock within 1 m

Depth to stony layer class
No significant stony layer within

Texture profile
Loam over sand

Topsoil stoniness
Stoneless

Topsoil clay range
19 - 21 %

Drainage class
Imperfectly drained

Permeability profile
Moderate

Depth to slowly permeable horizon
No slowly permeable horizon

Permeability of slowest horizon
Moderate (4 - 72 mm/h)

Aeration in root zone
Moderately limited

Profile available water

(0 - 30cm or root barrier)	(0 - 60cm or root barrier)	(0 - 100cm or root barrier)
High (50 mm)	Moderate (80 mm)	Moderate (119 mm)

Dry bulk density

topsoil	subsoil
1.09 g/cm³	1.38 g/cm³

Soil chemical properties

Topsoil P retention
Medium (33%)

Soil management factors

Vulnerability classes relate to soil properties only and do not take into account climate or management

Soil structure integrity

Structural vulnerability
High (0.66)

Contaminant management

N leaching vulnerability
Medium

P leaching vulnerability
not available yet

Water management

Water logging vulnerability
Moderate

Drought vulnerability - if not irrigated
Moderate

Bypass flow
Medium

SINDI - Soil quality Indicators

SINDI - Soil Quality Indicators

A suite of soil quality indicators is available from http://sindi.landcareresearch.co.nz/

- Compare your soil with information from our soils databases.
- Assess the intrinsic resources and biological, chemical and physical quality of your soil
- See how your soil measures up against current understanding of optimal values.
- Learn about the effect each indicator has on soil quality and some general management practices that could be implemented to improve soil quality.

Farn_1a.2

Soil information for OVERSEER

The following information can be entered in the OVERSEER® Nutrient Budget model. This information is derived from the S-map soil properties which are matched to the most appropriate OVERSEER categories. Please read the notes below for further information.

Soil description page

1. Select **Link to S-map**
2. Under S-map sibling data enter the S-map name/ref: **Far_1a.2**

Considerations when using Smap soil properties in OVERSEER

- The soil water values are estimated using a regression model based on soil order, parent rock, soil functional horizon information (stone content, soil density class), as well as texture (field estimates of sand, silt and clay percentages). The model is based on laboratory - measured water content data held in the National Soils Database and other Manaaki Whenua datasets. Most of this data comes from soils under long-term pasture and may vary from land under arable use, irrigation, etc.

- Each value is an estimate of the water content of the whole soil within the target depth range or to the depth of the root barrier (if this occurs above the base of the target depth). Where soil layers contain stones, the soil water content has been decreased according to the stone content.

- S-map only contains information on soils to a depth of 100 cm. The soil water estimates in the > 60 cm depth category assume that the bottom functional horizon that extends to 100 cm, continues down to a depth of 150cm. Where it is known by the user that there is an impermeable layer or non-fractured bedrock between 100 and 150 cm, this depth should be entered into OVERSEER. Where there is a change in the soil profile characteristics below 100 cm, the user should be aware that the values provided on this factsheet for the > 60 cm depth category will not reflect this change. For example, the presence of gravels at 120 cm would usually result in lower soil water estimates in the > 60 cm depth category. Note though that this assumption only impacts on a cropping block, as OVERSEER uses soil data from just the top 60 cm in pastoral blocks.

- OVERSEER requires the soil water values to be non-zero integers (even though zero is a valid value below a root barrier), and the wilting point value must be less than the field capacity value which must be less than the saturation value. The S-map water content estimates supplied by the S-map web service have been rounded to integers and may be assigned minimal values to meet these OVERSEER requirements. These modifications will result in a slightly less accurate estimate of Available Water to 60 cm (labelled PAW in OVERSEER) than that provided on the first page of this factsheet, but this is not expected to lead to any significant difference in outputs from OVERSEER .

SCHOOL ROAD, CLIVE

ENCLOSURE H

POLICY UD4 HAWKES BAY REGIONAL RESOURCE MANAGEMENT PLAN

Any provision for new business land should be focussed around existing infrastructure to minimise public costs and in particular to achieve integration with transport networks. Any new infrastructure should be planned in a manner which recognises the importance of the links to and from the Heretaunga Plains sub region and the role these links serve for the efficient distribution of goods throughout the region. Phasing or sequencing of business land for development is not necessary provided that a ready supply is available, as it is expected that the market will dictate its rate of development.

RURAL RESIDENTIAL AND LIFESTYLE DEVELOPMENT (HERETAUNGA PLAINS SUB-REGION)

POL UD3 In the Heretaunga Plains sub-region, district plans shall include policies and methods discouraging or avoiding ad hoc residential development and further rezoning for rural residential purposes or lifestyle development outside existing rural residential zones.

Principal reasons and explanation

Similar to urban development, rural residential or lifestyle development can also act to remove valuable land from agricultural production and can also impact on the productivity of other land (i.e. rural or industrial), in particular through reverse sensitivity. These forms of development should not be confused with residential development (eg: farm houses) that is ancillary to primary production activities or to boundary adjustments that may effectively create a lifestyle site by reducing the land area surrounding a dwelling to create a larger more productive balance title. Provision for rural residential and lifestyle development should be carefully managed to minimise fragmentation of the versatile land of the Heretaunga Plains. There is currently an excess supply of rural residential zoned areas within the Heretaunga Plains sub-region, considered sufficient to cater for projected demand for rural residential lots in the sub-region through to 2045, and further rezoning for this purpose is considered unnecessary for the foreseeable future.

ACHIEVING CONTAINMENT OF URBAN ACTIVITIES

ESTABLISHING URBAN LIMITS (HERETAUNGA PLAINS SUB-REGION)

POL UD4.1 Within the Heretaunga Plains sub-region, district plans shall identify urban limits for those urban areas and settlements within which urban activities can occur, sufficient to cater for anticipated population and household growth to 2045.

NEW RESIDENTIAL GREENFIELD GROWTH AREA CRITERIA (HERETAUNGA PLAINS SUB-REGION)

POL UD4.2 In determining future Residential Greenfield Growth Areas, not already identified within Policy UD4.3, for inclusion within urban limits in the Heretaunga Plains sub-region, the following general criteria shall apply:

a) Must form an extension contiguous with existing urban areas and settlements.
b) Land is identified as having low versatility, and/or productive capacity has been compromised by:
    i. Size and shape of land parcels that mitigates against productive use;
    ii. Surrounding land uses and reverse sensitivity;
    iii. Lack of water and/or poor drainage.
c) Clear natural boundaries exist, or logical greenbelts could be created to establish a defined urban edge.
d) Supports compact urban form.
e) Can be serviced at reasonable cost.
f) Can be integrated with existing development.
g) Can be integrated with the provision of strategic and other infrastructure (particularly strategic transport networks in order to limit network congestion, reduce dependency on private motor vehicles and promote the use of active transport modes).
h) An appropriate separation distance from electricity transmission infrastructure should be maintained in order to ensure the continued safe and efficient operation and development of the electricity transmission network.
i) Promotes, and does not compromise, social infrastructure including community, education, sport and recreation facilities and public open space.
j) Avoids or mitigates the following locational constraints:
    i. projected sea level rise as a result of climatic changes
    ii. active coastal erosion and inundation
    iii. stormwater infrastructure that is unable to mitigate identified flooding risk
    iv. flood control and drainage schemes that are at or over capacity
    v. active earthquake faults
    vi. high liquefaction potential
    vii. nearby sensitive waterbodies that are susceptible to potential contamination from on-site wastewater systems or stormwater discharges
    viii. no current wastewater reticulation and the land is poor draining

ix. identified water short areas with the potential to affect the provision of an adequate water supply.

APPROPRIATE RESIDENTIAL GREENFIELD GROWTH AREAS (HERETAUNGA PLAINS SUB-REGION)

POL UD4.3 Within the Heretaunga Plains sub-region, areas where future residential greenfield growth for the 2015-2045 period has been identified as appropriate and providing choice in location, subject to further assessment referred to in POL UD10.1, POL UD10.3, POL UD10.4 and POL UD12, are:

a) Bay View
b) Park Island / Parklands
c) Taradale Hills
d) Te Awa / The Loop
e) Arataki Extension
f) Haumoana (south of East Road) / Te Awanga
g) Havelock North Hills (lower extension)
h) Howard Street
i) Irongate Road / York
j) Kaiapo Road
k) Lyndhurst
l) Lyndhurst Road extension
m) Maraekakaho rural settlement
n) Middle Road / Iona / Hills
o) Murdoch Road / Copeland
p) Omahu / Bridge Pa (marae-based)
q) Waimarama

All indicative areas are shown in Schedule XIVa.[1b]

INAPPROPRIATE RESIDENTIAL GREENFIELD GROWTH AREAS (HERETAUNGA PLAINS SUB-REGION)

POL UD4.4 Within the Heretaunga Plains sub-region, areas where future[1c] residential greenfield growth has been determined as inappropriate, beyond existing settlements are:

a) Waipatiki Beach
b) Tangoio
c) Whirinaki
d) Puketapu
e) Jervoistown and Meeanee
f) Clive
g) East Clive
h) Clifton
i) Ocean Beach – apart from the potential for appropriate growth of the existing Waipuka bach settlement[1d] on Maori land inland of areas at risk of coastal hazards
j) Natural detention areas (50 year flood ponding areas).
k) Haumoana (north of East Road)

[1b] All spatial areas are indicative only until formalised via a plan change; and reference should be made to the Heretaunga Plains Urban Development Strategy for more information on these future greenfield growth areas.

[1c] 'Future' greenfield growth refers to areas not already zoned for some form of residential development in existing district plans.

[1d] This area is defined as being Areas A to D in the Ocean Beach Structure Plan (2007).

SCHOOL ROAD, CLIVE

ENCLOSURE I

MINISTRY OF SOCIAL DEVELOPMENT- HOUSING REGISTER

MINISTRY OF SOCIAL DEVELOPMENT
TE MANATŪ WHAKAHIATO ORA

Housing Register

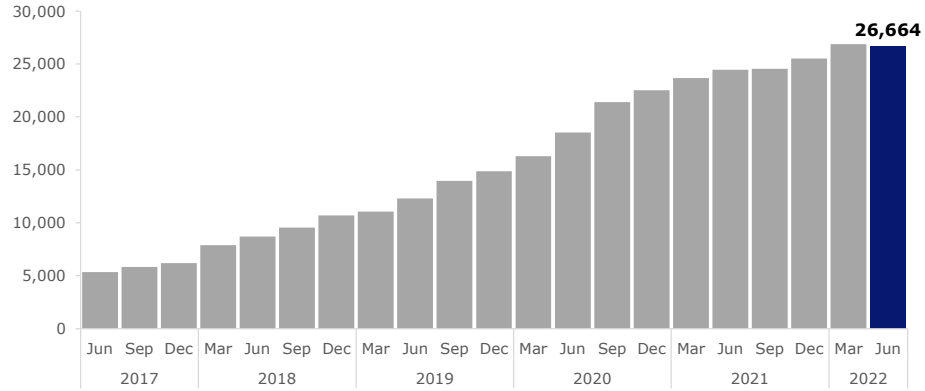
June 2022

Contents

Explanatory notes	
Housing Register	The Housing Register provides the number of applicants assessed as eligible for social housing who are ready to be matched to a suitable property.
Priority A	Refers to applicants who are considered at risk and includes households with a severe and persistent housing need that must be addressed immediately.
Priority B	Refers to applicants who have a serious housing need and includes households with a significant and persistent need.
Household composition	The people who will be living in the same house as the applicant. This may include extended family or boarders who are permanent members of the household and provide or receive financial, physical and emotional support.
Ethnicity	From December 2021, we have introduced a new reporting approach called 'total response'. Making this change means that we recognise all aspects of someone's ethnicity and allows us to represent the full diversity of communities, whānau, and people in Aotearoa. This reflects our clients more accurately, aligns our approach with Statistics NZ's reporting, and reflects best practice. The total response ethnicity percentages are calculated by dividing the number of people who identify with each ethnic group by the total unique number of people with a reported ethnicity (this excludes people who have not specified an ethnicity). Total response ethnicity means that people can appear more than once in our reporting, so ethnic group totals will add to more than 100 percent. The number of people receiving a benefit each quarter has not changed, but the way we represent them has. Ethnicity is about people's identity and sense of belonging. Ethnicity measures cultural affiliation rather than race, ancestry, nationality, or citizenship. Ethnicity is self-perceived and people can identify with more than one ethnic group. Previously, we reported ethnicity using an approach called 'prioritised ethnicity'. Prioritised ethnicity meant that we allocated people to a single ethnic group in an order of priority. The priority previously used by MSD was Māori, Pacific Peoples, Other, and NZ European. For more information, please see: www.msd.govt.nz/about-msd-and-our-work/tools/how-we-report-ethnicity.html
Number of bedrooms required	The number of bedrooms that the applicant requires is based on the assessment of their housing application. It includes the needs of the people that will be living in the same house as the applicant.
Territorial Authorities (TAs)	New Zealand has 67 Territorial Authorities, which are made up by city and district councils. This information includes unitary authorities (Gisborne, Marlborough, Tasman, Nelson City and the Chatham Islands) which combine regional and local councils into one organisation. The Chatham Islands are not reported separately due to having very low numbers, but are included in the "Other/Unknown" category, along with any areas outside TAs and those classified as having an unknown TA. Each applicant is included in the relevant TA based on where the applicant lives, and not where the applicant wants to be housed.
Auckland City Boards	Auckland City is made up of 21 local government boards. Auckland City Board boundaries differ from the former Auckland Regional Council boundary and the boundaries of the territorial local authorities which previously existed in the Auckland area. Data in the relevant sheet should therefore not be compared with Auckland Regional Councils or territorial local authorities previously existing in the Auckland area.
Confidentiality	All information in this data file has been randomly rounded to a base of 3. Data in this file has been rounded independently from other products produced by MSD. From 12 February 2021, MSD started applying a range of new confidentiality procedures to public data releases. These procedures will continue to protect client information while making more data available. To find out how we have changed the way we work with client information, please visit: www.msd.govt.nz/about-msd-and-our-work/tools/how-we-keep-data-private.html In a limited number of circumstances, low numbers may potentially lead to individuals being identified, regardless of random rounding. Due to these privacy concerns, numbers for some groups of people may be suppressed or aggregated. Secondary suppression rules have also been applied when required. Suppressed numbers have been replaced by an "S".
Revision of data	Over time, the Ministry of Social Development has refined its processes and methods around data collection. This has allowed us to develop better ways of allocating addresses to Territorial Authorities and Auckland Boards. As a result, a revision to Territorial Authority and Auckland Board figures from September 2015 to September 2017 has been made. This revision has allowed for previously unallocated applications to be allocated to a Territorial Authority or an Auckland City Board. As a result, comparing data from after September 2015 to prior quarters should be undertaken with caution as previous reports have not been backdated.

Housing Register summary - last 5 years

2017			2018				2019				2020				2021				2022	
Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun	Sep	Dec	Mar	Jun
5,352	5,844	6,180	7,890	8,703	9,537	10,713	11,067	12,309	13,965	14,868	16,308	18,522	21,414	22,521	23,688	24,474	24,546	25,524	26,868	26,664



Housing Register, by priority - last 5 years

Number of applicants

	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19	Jun-19	Sep-19	Dec-19	Mar-20	Jun-20	Sep-20	Dec-20	Mar-21	Jun-21	Sep-21	Dec-21	Mar-22	Jun-22
Priority A	3,690	4,053	4,530	6,084	6,435	7,239	8,322	8,937	10,299	12,036	12,870	14,358	16,653	19,296	20,340	21,552	22,812	22,635	23,523	24,813	24,633
Priority B	1,662	1,791	1,656	1,806	2,268	2,298	2,388	2,130	2,010	1,932	2,001	1,950	1,869	2,121	2,181	2,133	1,665	1,911	2,004	2,055	2,031
Total	**5,352**	**5,844**	**6,180**	**7,890**	**8,703**	**9,537**	**10,713**	**11,067**	**12,309**	**13,965**	**14,868**	**16,308**	**18,522**	**21,414**	**22,521**	**23,688**	**24,474**	**24,546**	**25,524**	**26,868**	**26,664**

Housing Register by applicant demographics - last 5 years

Assessed number of bedrooms required

	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19
1 bedroom	2,409	2,646	2,796	3,435	3,813	4,245	4,797	4,803
2 bedrooms	1,857	2,013	2,091	2,715	3,018	3,306	3,726	3,924
3 bedrooms	669	753	837	1,143	1,236	1,329	1,464	1,626
4 bedrooms	303	318	351	459	498	501	555	549
5 or more bedrooms	114	111	108	135	135	150	171	165
Unknown	0	0	0	0	6	3	3	0
Total	**5,352**	**5,844**	**6,180**	**7,890**	**8,703**	**9,537**	**10,713**	**11,067**

Household composition

	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19
2+ adults	369	405	393	519	525	606	705	750
2+ adults with child(ren)	576	612	642	798	891	1,020	1,143	1,167
Single aged 24 years or younger	150	198	207	282	297	333	402	396
Single aged 25 years +	2,376	2,568	2,754	3,315	3,723	4,152	4,674	4,746
Single with child(ren)	1,878	2,058	2,184	2,976	3,270	3,429	3,795	4,008
Unknown	0	0	0	0	0	0	0	0
Total	**5,352**	**5,844**	**6,180**	**7,890**	**8,703**	**9,537**	**10,713**	**11,067**

Housing Register by applicant demographics - last 5 years

Age of main applicant

	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19
24 years and under	630	741	750	1,062	1,197	1,341	1,503	1,503
25–39 years	1,929	2,139	2,247	2,946	3,309	3,579	3,972	4,200
40–54 years	1,590	1,695	1,809	2,196	2,424	2,622	2,928	2,994
55–64 years	717	741	822	1,014	1,083	1,191	1,407	1,428
65 years and over	486	528	555	672	693	804	900	942
Unknown	0	0	0	0	0	3	0	0
Total	**5,352**	**5,844**	**6,180**	**7,890**	**8,703**	**9,537**	**10,713**	**11,067**

Total response ethnicity of main applicant

	Jun-17	Sep-17	Dec-17	Mar-18	Jun-18	Sep-18	Dec-18	Mar-19
European	1,965	2,103	2,244	2,844	3,147	3,465	3,903	4,101
Māori	2,358	2,622	2,775	3,543	3,927	4,380	4,956	5,073
Pacific Peoples	834	948	1,059	1,410	1,596	1,716	1,884	1,959
Asian	342	345	348	435	423	459	528	546
Middle Eastern/Latin American/African	216	249	228	264	291	315	333	321
Other ethnicity	117	117	114	165	171	198	228	243
Total recipients with recorded ethnicity	**5,247**	**5,733**	**6,051**	**7,704**	**8,481**	**9,315**	**10,440**	**10,791**
Ethnicity not specified	105	114	132	183	222	222	270	276
Total applicants	**5,352**	**5,844**	**6,180**	**7,890**	**8,703**	**9,537**	**10,713**	**11,067**

Jun-19	Sep-19	Dec-19
5,385	6,225	6,720
4,347	4,839	5,022
1,821	2,049	2,187
570	660	726
183	192	216
3	0	0
12,309	**13,965**	**14,868**

Jun-19	Sep-19	Dec-19
819	939	954
1,233	1,422	1,458
462	531	561
5,337	6,141	6,609
4,455	4,935	5,289
3	0	0
12,309	**13,965**	**14,868**

Jun-19	Sep-19	Dec-19
1,626	1,818	1,914
4,668	5,340	5,700
3,348	3,768	4,056
1,641	1,854	1,932
1,029	1,182	1,272
0	0	0
12,309	**13,965**	**14,868**

Jun-19	Sep-19	Dec-19
4,485	4,959	5,256
5,691	6,615	7,164
2,193	2,415	2,466
579	636	672
357	390	423
309	360	369
11,982	**13,539**	**14,379**
327	429	492
12,309	**13,965**	**14,868**

Housing Register by Territorial Authority (TA) - last 5 years

TA
Ashburton District
Auckland City
Buller District
Carterton District
Central Hawke's Bay District
Central Otago District
Christchurch City
Clutha District
Dunedin City
Far North District
Gisborne District
Gore District
Grey District
Hamilton City
Hastings District
Hauraki District
Horowhenua District
Hurunui District
Invercargill City
Kaikōura District
Kaipara District
Kāpiti Coast District
Kawerau District
Lower Hutt City
Mackenzie District
Manawatū District
Marlborough District
Masterton District
Matamata-Piako District
Napier City
Nelson City
New Plymouth District
Ōpōtiki District
Ōtorohanga District
Palmerston North City

TA
Porirua City
Queenstown-Lakes District
Rangitikei District
Rotorua District
Ruapehu District
Selwyn District
South Taranaki District
South Waikato District
South Wairarapa District
Southland District
Stratford District
Tararua District
Tasman District
Taupō District
Tauranga District/Tauranga City
Thames-Coromandel District
Timaru District
Upper Hutt City
Waikato District
Waimakariri District
Waimate District
Waipā District
Wairoa District
Waitaki District
Waitomo District
Wellington City
Western Bay Of Plenty District
Westland District
Whakatāne District
Whanganui District
Whangārei District
Aggregated total of suppressed values[1]
Unknown[2]
Total

Housing Register, by Territorial Authority (TA) and priority - June 2022

TA	Housing Priority		Total
	A	B	
Ashburton District	51	6	57
Auckland City	7,389	1,161	8,550
Buller District	54	6	60
Carterton District	18	3	18
Central Hawke's Bay District	81	3	81
Central Otago District	18	3	18
Christchurch City	1,902	138	2,040
Clutha District	30	3	33
Dunedin City	369	27	393
Far North District	465	24	489
Gisborne District	585	21	606
Gore District	24	0	21
Grey District	81	6	87
Hamilton City	1,689	117	1,806
Hastings District	756	9	762
Hauraki District	60	6	63
Horowhenua District	228	6	237
Hurunui District	21	3	24
Invercargill City	171	12	183
Kaikōura District	S	0	S
Kaipara District	93	6	99
Kāpiti Coast District	192	6	195
Kawerau District	96	3	99
Lower Hutt City	591	54	642
Mackenzie District	S	0	S
Manawatū District	138	3	138
Marlborough District	222	27	252
Masterton District	156	3	156
Matamata-Piako District	102	6	111
Napier City	756	18	774
Nelson City	258	33	288
New Plymouth District	396	9	405
Ōpōtiki District	99	0	102
Ōtorohanga District	39	3	39
Palmerston North City	750	15	762
Porirua City	375	18	396

TA	Housing Priority		Total
	A	B	
Queenstown-Lakes District	21	0	21
Rangitikei District	72	0	72
Rotorua District	1,083	24	1,104
Ruapehu District	84	3	84
Selwyn District	48	6	54
South Taranaki District	144	0	147
South Waikato District	126	6	129
South Wairarapa District	24	3	24
Southland District	24	3	21
Stratford District	42	3	45
Tararua District	54	3	57
Tasman District	129	15	147
Taupō District	246	3	249
Tauranga District/Tauranga City	801	24	825
Thames-Coromandel District	96	9	108
Timaru District	102	6	105
Upper Hutt City	213	15	225
Waikato District	252	30	282
Waimakariri District	90	6	96
Waimate District	6	0	9
Waipā District	93	9	102
Wairoa District	78	3	81
Waitaki District	30	3	33
Waitomo District	66	3	69
Wellington City	816	45	858
Western Bay Of Plenty District	210	12	222
Westland District	30	0	30
Whakatāne District	327	12	339
Whanganui District	375	9	384
Whangārei District	648	30	678
Aggregated total of suppressed values[1]	9	0	9
Unknown[2]	48	0	51
Total	**24,633**	**2,031**	**26,664**

Please click here for more information on the confidentiality procedures (random rounding and data suppression) we have applied to this table.

Housing Register, by Territorial Authority (TA) and bedrooms required - June 2022

TA	Bedrooms required						Total
	1	2	3	4	5+	Unknown	
Ashburton District	27	18	9	S	0	S	57
Auckland City	4,029	2,508	1,266	534	192	24	8,550
Buller District	39	12	6	3	0	0	60
Carterton District	15	6	0	0	0	0	18
Central Hawke's Bay District	33	30	12	0	0	0	81
Central Otago District	12	3	3	0	0	0	18
Christchurch City	1,233	549	198	48	15	3	2,040
Clutha District	21	9	3	3	0	0	33
Dunedin City	243	111	30	6	6	0	393
Far North District	210	165	78	27	9	0	489
Gisborne District	216	255	102	27	3	0	606
Gore District	9	9	0	0	0	0	21
Grey District	51	24	12	3	0	0	87
Hamilton City	846	579	258	87	27	3	1,806
Hastings District	285	288	126	48	15	3	762
Hauraki District	30	27	6	0	0	0	63
Horowhenua District	126	69	24	12	3	0	237
Hurunui District	18	6	0	3	0	0	24
Invercargill City	84	66	27	3	0	0	183
Kaikōura District	S	S	S	0	0	0	S
Kaipara District	39	39	9	6	0	0	99
Kāpiti Coast District	117	54	21	S	3	S	195
Kawerau District	45	36	12	6	0	0	99
Lower Hutt City	321	219	75	18	9	3	642
Mackenzie District	0	0	S	0	0	0	S
Manawatū District	69	48	18	0	3	0	138
Marlborough District	141	72	33	6	3	0	252
Masterton District	96	45	12	3	0	0	156
Matamata-Piako District	48	42	18	3	0	0	111
Napier City	339	282	108	39	6	0	774
Nelson City	180	72	33	3	0	0	288
New Plymouth District	195	147	54	9	0	0	405
Ōpōtiki District	36	36	24	3	3	0	102
Ōtorohanga District	15	18	9	0	0	0	39
Palmerston North City	384	246	96	24	6	0	762
Porirua City	183	141	48	18	3	0	396

TA	Bedrooms required						Total
	1	2	3	4	5+	Unknown	
Queenstown-Lakes District	15	6	0	0	0	0	21
Rangitikei District	42	15	12	3	0	0	72
Rotorua District	537	363	147	45	3	6	1,104
Ruapehu District	36	30	12	3	0	0	84
Selwyn District	36	15	6	0	0	0	54
South Taranaki District	69	51	27	0	0	0	147
South Waikato District	60	36	27	6	3	0	129
South Wairarapa District	12	9	3	0	0	0	24
Southland District	12	6	3	0	0	0	21
Stratford District	18	15	6	3	0	0	45
Tararua District	21	24	9	3	0	0	57
Tasman District	81	51	15	3	3	0	147
Taupō District	102	93	42	6	3	3	249
Tauranga District/Tauranga City	414	246	123	33	3	6	825
Thames-Coromandel District	57	27	15	3	0	0	108
Timaru District	57	36	12	3	0	0	105
Upper Hutt City	129	66	21	12	0	0	225
Waikato District	123	105	39	15	3	0	282
Waimakariri District	51	30	12	0	0	0	96
Waimate District	S	S	S	S	0	0	9
Waipā District	48	33	15	6	0	0	102
Wairoa District	21	33	21	3	6	0	81
Waitaki District	15	12	6	0	0	0	33
Waitomo District	24	27	15	3	0	0	69
Wellington City	528	195	93	24	6	9	858
Western Bay Of Plenty District	111	84	18	6	0	0	222
Westland District	18	12	3	0	3	0	30
Whakatāne District	126	120	69	18	6	0	339
Whanganui District	198	120	45	15	3	3	384
Whangārei District	285	234	111	36	9	3	678
Aggregated total of suppressed values[1]	6	3	6	6	0	3	6
Unknown[2]	24	21	6	0	0	0	51
Total	**13,011**	**8,352**	**3,675**	**1,197**	**354**	**72**	**26,664**

Please click here for more information on the confidentiality procedures (random rounding and data suppression) we have applied to this table.

Housing Register, by Auckland City Board - last 5 years

Auckland City Board
Albert - Eden
Devonport - Takapuna
Franklin
Great Barrier
Henderson - Massey
Hibiscus and Bays
Howick
Kaipatiki
Mangere - Ōtāhuhu
Manurewa
Maungakiekie - Tāmaki
Orakei
Ōtara - Papatoetoe
Papakura
Puketāpapa
Rodney
Upper Harbour
Waiheke
Waitākere Ranges
Waitematā
Whau
Aggregated total of suppressed values[1]
Unknown[2]
Total

Please click here for more information on the confidentiality procedures (random rounding and data suppression) we have applied to this table.

Auckland City Board

Note 1: We have calculated the total of the suppressed values independently for each column.

Housing Register, by Auckland City Board and priority - June 2022

Auckland City Board	Housing Priority		Total
	A	B	
Albert - Eden	366	60	426
Devonport - Takapuna	81	18	99
Franklin	171	30	201
Great Barrier	S	0	S
Henderson - Massey	552	144	696
Hibiscus and Bays	138	30	165
Howick	240	57	300
Kaipatiki	192	48	237
Mangere - Ōtāhuhu	783	120	903
Manurewa	687	111	801
Maungakiekie - Tāmaki	402	57	459
Orakei	111	30	141
Ōtara - Papatoetoe	648	114	762
Papakura	420	66	483
Puketāpapa	231	45	276
Rodney	93	15	105
Upper Harbour	93	21	111
Waiheke	S	0	S
Waitākere Ranges	126	33	159
Waitematā	402	54	459
Whau	408	69	477
Aggregated total of suppressed values[1]	18	0	21
Unknown[2]	1,230	39	1,272
Total	**7,389**	**1,161**	**8,550**

Please click here for more information on the confidentiality procedures (random rounding and data suppression) we have applied to this table.

Note 1: We have calculated the total of the suppressed values independently for each column.

Enclosure I- Ministry of Social Development housing-register-june-2022.xlsx

Housing Register, by Auckland City Board and bedrooms required - June 2022

Auckland City Board	Bedrooms required						Total
	1	2	3	4	5+	Unknown	
Albert - Eden	297	75	39	15	3	0	426
Devonport - Takapuna	54	33	S	S	0	0	99
Franklin	96	54	30	12	6	0	201
Great Barrier	S	0	0	0	0	0	S
Henderson - Massey	345	198	93	45	15	3	696
Hibiscus and Bays	117	33	9	3	0	0	165
Howick	141	87	42	24	9	0	300
Kaipatiki	132	63	24	15	6	3	237
Mangere - Ōtāhuhu	327	291	189	60	33	0	903
Manurewa	261	258	186	66	27	0	801
Maungakiekie - Tāmaki	180	156	69	39	9	0	459
Orakei	93	S	18	S	0	0	141
Ōtara - Papatoetoe	255	267	153	63	27	0	762
Papakura	174	192	66	39	S	S	483
Puketāpapa	135	72	39	24	6	0	276
Rodney	57	33	9	3	0	0	105
Upper Harbour	75	27	S	0	S	0	111
Waiheke	S	S	0	0	0	0	S
Waitākere Ranges	93	36	18	9	3	0	159
Waitematā	351	81	12	9	S	S	459
Whau	243	135	66	24	12	0	477
Aggregated total of suppressed values[1]	15	27	12	12	15	3	21
Unknown[2]	591	393	186	75	24	6	1,272
Total	**4,029**	**2,508**	**1,266**	**534**	**192**	**24**	**8,550**

Please click here for more information on the confidentiality procedures (random rounding and data suppression) we have applied to this table.

Note 1: We have calculated the total of the suppressed values independently for each column.

SCHOOL ROAD, CLIVE

ENCLOSURE J

HASTINGS DISTRICT COUNCIL FUTURE GROWTH MANAGEMENT REPORT - HOUSING SHORTAGE

Te Rārangi Take

Report to Strategy and Policy Committee

Nā: From:	**Ross McLeod, Director: Future Growth Unit**
Te Take: Subject:	**Future Growth Management**

1.0 Executive Summary – *Te Kaupapa Me Te Whakarāpopototanga*

1.1 Hastings is experiencing rapid and significant growth. This growth has contributed to a severe housing shortage and strong uptake of residential and industrial development capacity. The Council has been taking steps to manage that growth.

1.2 Alongside this, Government legal and policy changes have placed new requirements on Council with respect to providing for growth. Further legislative changes are signalled. Requirements include development of a Future Development Strategy (FDS) jointly with the Hawke's Bay Regional Council and the Napier City Council, and ensuring sufficient development capacity within the Napier Hastings urban environment. The councils of the region have also decided to develop a regional spatial strategy ahead of the signalled future legal requirement to do so.

1.3 In responding to this context, the Chief Executive has established a Future Growth Unit to lead and coordinate future growth planning, infrastructure and funding activity across the Council. The Council has previously allocated resourcing to this work. The Unit has developed a draft work programme to address the requirements on Council and to put Council in a position to effectively manage growth and provide adequate future development capacity.

1.4 This report discusses key elements of the work programme, including the FDS, Essential Services Development Plans, a review of the Development Contributions Policy and the proposed Regional Spatial Strategy (RSS). It also discusses partner engagement and the Council's approach to growth management, including the need for a thorough and robust analysis methodology. While noting that some interests are calling on Council for short-term action with respect to rezoning or further land protection measures, the report notes the need for a legally robust and defensible methodology and process to underpin planning decision-making. This is because eventually all Council Planning decisions can be subject to appeal to the Environment Court.

1.5 The report recommends that the Committee note the work programme and endorse the management approach set out.

2.0 Recommendations - *Ngā Tūtohunga*

A) That the Strategy and Policy Committee receive the report titled Future Growth Management dated 22 March 2022.

B) That the Committee notes the work programme for the Future Growth Management programme as outlined in the report and attached (in draft as at 1 March 2022) **Attachment 1** (ref CG-16-3-00118) and endorses the management approach set out.

3.0 Background – *Te Horopaki*

3.1 Hastings District is currently experiencing significant and rapid growth. Statistics New Zealand's latest population estimate (2021) for Hastings District is 90,100; an increase of 5,400 since the 2018 estimate (84,700). Building consent volumes have grown significantly: excluding consents for solid fuel heaters, residential building consents granted have risen from 685 in calendar year 2015 to 1021 in 2021 – an increase of 49%; commercial building consents are similar in volume to 2015, however the estimated value of the works consented has increased by in excess of 150% (from $95M to more than $250M). Resource consent volumes have increased from 428 in 2015 to 673 in 2021. Uptake of development land in both the residential and industrial sectors has been at a rate above both projected rates and historic trends.

3.2 The Council has been taking action to respond to this growth pressure. Beginning in 2015, the Council initiated a number of structure planning and planning processes to make available a number of areas of land for residential and industrial development. Infrastructure investments were programmed and subsequently made alongside these planning changes, with appropriate revisions made to the Council's Development Contributions Policy. Through this work, the Lyndhurst Stage 2, Howard St, Brookvale and Iona residential development areas were initiated, as was the rezoning and infrastructure servicing of the Irongate and Ōmāhu Industrial areas.

3.3 These initiatives and investments by Council have helped enable the significant residential and industrial development and investment Hastings has seen since 2015. However, even that unprecedented rate of development has not been enough to keep up with growth demand. The rate of growth being experienced is rapidly using up available development land (both residential and business land) and network infrastructure capacity (particularly with respect to the Hastings urban wastewater network and consented water supply volumes). And the population driven housing shortage has continued to worsen, with 723 households on the MSD social housing register as at 30 September 2021 (there were 69 households on the register as at 30 September 2016). Based on the 2021 Housing Capacity Assessment and the recent Statistics New Zealand population estimates, there is a current shortage of between 1,300 and 1,600 houses in Hastings, with demand expected to grow by another 1,600 – 1,800 households by the end of 2023.

3.4 Council is acting to make new development areas available in the short to medium-term, including in Flaxmere and with structure planning work on the Lyndhurst Extension area, Kaiapo Road and the Heretaunga Tamatea Settlement Trust owned land at York Road. However, Council has also understood that action is required now to ensure the availability of development land and infrastructure capacity over the medium to longer-term.

3.5 Alongside this high-growth context, statutory requirements on Council to provide development capacity have also increased. The National Policy Statement on Urban Development 2020 (NPS-UD) requires councils to "*provide at least sufficient development capacity in its region or district to meet*

expected demand for housing". It also requires councils to provide sufficient development capacity for business land. Councils in tier 1 or 2 urban environments are required to adopt housing bottom lines in their District Plans or Regional Policy Statements clearly stating the development capacity that is sufficient to meet expected housing demand plus an appropriate competitiveness margin. The NPS-UD also requires councils in tier 1 and 2 urban environments to work together to prepare and adopt a FDS for that environment. Further comment on the FDS is set out below.

3.6 These increased requirements come amidst wider proposed changes to the legal framework for planning and growth management. The Government has signalled that the Resource Management Act 1991 (RMA) will be replaced by three pieces of legislation. The proposed Natural and Built Environment Act (NBEA) will replace the RMA and provide the legal framework for statutory planning instruments and consents. The proposed Strategic Planning Act will introduce a requirement for regional spatial strategies to guide high-level strategic planning on a regional basis. In addition, a proposed Climate Change Adaptation Act is likely to address issues relating to managed retreat and funding and financing adaptation.

3.7 Collectively, these current and prospective legal requirements signal a more collaborative and regionalised approach to planning and growth management. Councils will need to work together regionally, and with mana whenua and central government agencies, in the development of both spatial plans and statutory plans under NBEA.

3.8 The wider regional context will therefore affect the work to be carried out and impact on the Hastings District. The constraints on Napier City in terms of additional development capacity generally, and industrial capacity in particular, are likely to create further demand pressures on Hastings. Both Napier and Central Hawke's Bay are also experiencing relative significant growth in the residential sector which will also influence the regional development capacity picture. Efforts to address housing shortage, such as Kāinga Ora's investment programme, will also continue to affect how available development capacity is utilised in Hastings and beyond, creating flow on effects in the development market. These are just some of the broader contextual issues to be considered.

3.9 The Chief Executive has responded to this context by establishing a Future Growth Unit to lead and coordinate future growth planning, infrastructure and funding activity across the Council. This brings focused resource to bear on medium to longer-term growth management work, including the FDS, growth infrastructure planning and funding and the proposed RSS. The Chief Executive has also moved to augment, where possible in the extant employment and consultant markets, resourcing being applied to immediate-term building and resource consenting activity and short to medium-term structure planning work.

3.10 The Future Growth Unit commenced operation in January 2022. Initial work has been done on scoping the work required and assembling resourcing to carry out that work. This work continues. The discussion below describes major components of the work, as well as outlining risks and principal elements of the Council's proposed approach.

4.0 Discussion – *Te Matapakitanga*

Elements of Council's Future Growth Management Programme

4.1 There are a number of components to the Council's medium to long-term growth management approach. These include:

- Council's contribution to a Future Development Strategy for the Napier-Hastings urban environment, required under the NPS-UD
- Growth infrastructure planning, including an Essential Services Development Report and Essential Services Development Plans
- Growth infrastructure funding work, including a substantive review of Council's Development Contributions Policy

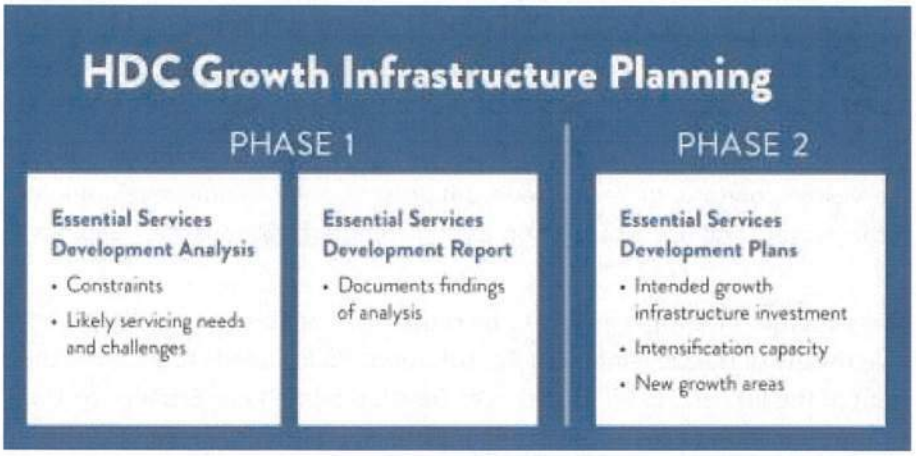
- Council's contribution to a Regional Spatial Strategy, which will incorporate or 'umbrella' the Future Development Strategy and other regional planning strategies
- Partner and stakeholder engagement, including with other councils in the region and with mana whenua
- Review of the Medium Density Housing Strategy, and implementation of changes and recommended actions
- Other actions required under the NPS-UD, including Housing and Business Capacity Assessments (for the Hawke's Bay Regional, Napier City and Hastings District Councils collectively).

4.2 These are being addressed in a cross-Council programme of work led or assisted by the Future Growth Unit with vital input or leadership from the Asset Management, Environmental Policy, Strategy and Development, Māori Relationships and Finance Groups. The approach is to integrate cross-Council efforts in this work rather than create a new organisational silo separated from the expertise and experience in existing Council Groups.

4.3 ***Future Development Strategy*** – The FDS is the key element of growth planning to be undertaken over the next two (2) to three (3) years (with regular reviews beyond that time). It is a legally required replacement for the Heretaunga Plains Urban Development Strategy (HPUDS) and will address development planning over a 30 year timeframe. The initial FDS is required to be completed by 30 June 2024. The NPS-UD sets out requirements for the FDS: these include the Strategy being a collective undertaking of the Hawke's Bay Regional, Napier City and Hastings District Councils, and the need to incorporate significant engagement with/involvement from mana whenua. The FDS will consider and address predicted growth, hazards, constraints and opportunities, and infrastructure (including social infrastructure) servicing considerations to provide a plan as to where development capacity can be accommodated. The Strategy is likely to provide development capacity via a mix of intensification in existing urban areas and new growth areas, with intensification becoming increasingly important. It will address both residential and business development capacity as well as servicing needs.

4.4 ***Growth Infrastructure*** – A key part of planning for development capacity is providing infrastructure to service that capacity, and equitably and efficiently funding that infrastructure. While identifying suitable land areas free from hazards and other constraints is fundamental to the growth planning process, being able to service those land areas in a practical and environmentally acceptable way is also vital.

4.5 In order to address these requirements, the Council will undertake an Essential Services Development analysis to assess in detail both infrastructure capacity constraints and development capacity servicing needs. This will relate to current urban areas and prospective development areas. Based on the analysis, a report will be produced identifying issues and constraints in infrastructure servicing of growth. Following this stage, Essential Services Development Plans will then be developed to set out the growth infrastructure investment to be carried out, including the capacity to be provided for urban intensification and the new growth areas to be serviced. This work will be aligned with development capacity identified in the FDS. The sequence of work is illustrated in the figure below:



4.6 In assessing Hastings' overall infrastructure situation as it relates to growth, the picture that emerges is that the older, core three waters networks have almost reached their full or 'natural' capacity as 'growth-responsive' additions have been made to them over time. Investment in additional arterial infrastructure is required to enable new development capacity.

4.7 In terms of wastewater, while there is ample capacity in the main interceptor sewer pipes connecting the urban areas to the treatment plant at East Clive, the internal networks within Hastings (which help service Hastings and Flaxmere) are reaching capacity. Further 'arterial capacity' is required to enable wider uptake of medium density development and urban intensification and to provide for future new growth areas. Adding to this picture, Hastings is located on a 'hump' that runs along Heretaunga Street. This means potential growth areas on relatively poorer soils around the south and west of Hastings are on the 'wrong' side of the hump relative to the main trunk infrastructure connecting Hastings to the East Clive treatment plant.

4.8 In terms of water supply, abstraction limits in the Council's municipal water supply resource consent provide a constraint to development capacity. Improved network distribution infrastructure is required to improve network efficiency and reduce network pressure and water loss, thereby improving efficiency of use and providing capacity for growth.

4.9 Stormwater, Transport and Community infrastructure will also need to be examined relative to proposals to create new development capacity.

4.10 ***Growth Infrastructure Funding*** – Funding the infrastructure associated with new development capacity will also need to be a major element of Council's future growth programme. While Council is seeking a central Government contribution to the cost of funding growth infrastructure for housing through the Infrastructure Acceleration Fund, it will need to ensure appropriate funding arrangements are in place to fund required 'local' infrastructure investment.

4.11 Council's funding approach should be based on principles of economic efficiency and relevant statutory provisions. Economic efficiency principles hold that the beneficiaries of public activity or investment, or those that cause or 'exacerbate' the need for that investment, should meet the costs of that activity or investment equal to the benefit they receive or the expenditure they cause. This is known as the 'beneficiary' or 'exacerbator' pays principle. In the context of growth infrastructure, that means that the growth or development community should meet the costs of infrastructure required to service new growth (less any appropriate contribution from other beneficiaries – e.g., for any renewal costs offset or any resulting increased levels of service to existing communities).

4.12 This economic principle is expressed in law through the Local Government Act 2002. Section 101 (3) of the Act requires councils, when making funding decisions, to consider, *inter alia*, how benefits from activities it undertakes are distributed between the community as a whole, identifiable parts of the community, and individuals, and the extent to which the actions or inaction of particular individuals or groups contribute to the need to undertake the activity. In addition to this, Part 8,

subpart 5 of the Act sets out specific provisions to *"enoble territorial authorities to recover from those persons undertaking development a fair, equitable, and proportionate portion of the total cost of copitol expenditure necessary to service growth over the long term"* (Section 197AA, LGA 2002).

4.13 These provisions of the Act provide the basis for Council's Development Contributions Policy. They enable the costs of servicing growth to be recovered from persons undertaking development, and, through them, from the owners and users of the homes and commercial/industrial buildings that are developed.

4.14 Given the scale of infrastructure investment likely to be required to enable new development capacity, a substantive review of the Development Contributions Policy needs to be undertaken alongside development of the FDS and Essential Services Development Plans. Broadly, this will examine the appropriate allocation of costs, the economic principles underpinning cost allocation, policy options and objectives and legal provisions. Policy review work is likely to occur in two to three stages through until June 2024 and reflect, to an extent that is legally permissible, the desire to protect resources and encourage intensification in preference to greenfield development on versatile soils.

4.15 ***Envisaged Three Waters Transition*** – Council's focus on growth planning and infrastructure provision is occurring at the same time the Government is advancing with its proposals for reform of the Three Waters sector. The transition arrangements envisaged in the establishment of water services entities are likely to add complexity to the decision-making frameworks Council normally operates under.

4.16 There is a clause in the exposure draft of the *Woter Services Entity Bill*, which could have significant impacts on Council infrastructure decision-making ahead of the establishment of the proposed water services entities. The clause currently reads as follows:

> ***"22 Decision making during establishment period***
>
> *(1) The chief executive of o local government orgonisotion must ensure thot, before implementing o decision to which this clouse applies, the deportment has confirmed the decision in writing.*
>
> *(2) A decision to which this clause opplies is void ond of no effect until it is confirmed by the chief executive of the deportment.*
>
> *(3) This clouse opplies to o decision of o local government orgonisation thot is made during the establishment period ond thot moy, directly or becouse of its consequences,—*
>
> *(o) significantly prejudice the woter services reform; or*
> *(b) significantly constrain the powers or copocity of the water services entities following the woter services reform; or*
> *(c) hove a significont negotive impact on the ossets or liobilities thot ore transferred to the woter services entities as a result of the woter services reform.*
>
> *Definitions:*
> ***establishment date*** *means the eorlier of— (o) a date oppointed by the Governor-Generol by Order in Council; ond (b) 1 July 2024*
> ***establishment period*** *meons the period— (o) commencing on the doy after the dote on which the Act receives the Royol assent; ond (b) ending on the estoblishment dote*
> ***water services reform*** *meons— (a) the establishment of woter services entities to deliver water services in accordance with this Act; and (b) the tronsfer of interests in, ond the ownership of, infrastructure assets from locol government organisations to the woter services entities."*

4.17 While not law as yet, this clause (22) is signalling that councils are likely to have to gain approval from the Chief Executive of the Department of Internal Affairs for any investment decisions that would impact the assets or liabilities that are transferred to the entity. If approval is not given then the Council's decision would be void and of no effect. This would apply to decisions not already contained within the Council's LTP and Infrastructure Strategy at the commencement of the Establishment Period.

4.18 Under the current wording of the Bill, such a clause would come into effect at the beginning of the Establishment Period – that is the day after the Act receives Royal assent. This could occur as soon as the period between July and September 2022.

4.19 While Council has made significant advances over the last nine months in understanding the infrastructure investment necessary to provide the development capacity required under the NPS-UD, significant planning work is still required and Council is not yet in a position to amend its LTP and Infrastructure Strategy. However, Council is in a position to clearly signal its 'direction of travel' with respect to growth infrastructure investment and the related Development Contributions Policy review. Accordingly, the draft Annual Plan 2022/23 will contain a section outlining the obligation on Council under the NPS-UD to provide sufficient development capacity to meet expected demand for housing and business land, and signalling the Council's proposed growth infrastructure investments, Development Contributions Policy review and the related LTP amendment that enable the provision of that development capacity.

4.20 ***Regional Spatial Strategy*** – There is no requirement for a Regional Spatial Strategy (RSS) pending passage into law of the proposed Strategic Planning Act. However, the Regional Leaders Group (Mayors and HBRC Chair) have asked their councils to initiate the development of a RSS. Based on previous spatial planning exercises elsewhere around New Zealand and guidance from the Ministry for the Environment and the Government's independent Resource Management Review Panel, spatial strategies will be developed at a regional level, encompass land and coastal marine areas, and help guide the delivery of outcomes through the resource management system. They will be intended, as part of the Strategic Planning Act framework, to set long-term strategic goals and facilitate the integration of legislative functions across the proposed Natural and Built Environments Act, the Local Government Act 2002, the Land Transport Management Act 2003 and the Climate Change Response Act 2002 to enable land and resource planning to be better integrated with the provision of infrastructure as well as associated funding and investment. The FDS is envisaged as a core subset of the RSS, dealing with development capacity and how to accommodate and service growth.

4.21 A proposed Hawke's Bay Regional Spatial Strategy (RSS) was discussed at a Regional Collaboration Day forum held on Monday 7 March 2022. The presentation that was delivered to the forum has been circulated separately to Councillors. The next step is the development of a scoping report on the RSS which draws on lessons from other spatial planning exercises around the country and addresses the context and issues for Hawke's Bay. It will also incorporate feedback from mana whenua on engagement and governance arrangements. This work will be prepared over the three months to end June 2022.

4.22 ***Partner engagement*** – Both the NPS-UD requirements regarding the FDS and discussion documents in relation to regional spatial strategies signal the importance of regional collaboration and engagement with mana whenua. The Hawke's Bay Regional Council, Napier City Council and Hastings District Council are jointly required to develop the FDS for the Napier-Hastings urban environment. In developing the FDS, councils must engage with relevant iwi and hapū, and the strategy must be informed by the values and development aspirations of Māori (particularly tangata whenua) for urban development. Similarly, it has been signalled that there will be a requirement for regional spatial strategies to be developed through a joint committee of all of the councils in each

region. It has also been signalled that there will be regionally appropriate iwi and hapū membership on the joint committees.

4.23 Engagement with council and mana whenua partners in relation to both the FDS and the RSS has commenced. Staff level meetings are being held to draw together regional programmes of work. Discussions are also being held with iwi representatives to gain feedback on their preferences for engagement. These involve representatives of iwi organisations, Council staff and independent advisors with experience of iwi engagement spatial planning work. These matters are likely to be advanced over the next two to three months. Council staff have formed the view that input from iwi and hapū at both technical and executive levels, in addition to the governance level, will be essential in ensuring robust planning and cultural outcomes from the strategy development processes.

4.24 There are also requirements for engagement with a range of other partners within the FDS process: government agencies; infrastructure providers; and the development sector. Engagement with these partners will be factored into the strategy development processes. The process for the RSS will also incorporate wider engagement processes.

4.25 ***Urban intensification/Medium Density Strategy*** – Urban intensification will be an important component in providing development capacity over the life of the FDS. The rapid use of future development areas previously identified combined with constraints (such as soil quality) on many greenfield areas means that **greenfield expansion on the urban edge is unlikely to be a viable or acceptable dominant growth mode into the future**.

4.26 In this context, and at the request of Council, the Medium Density Strategy is being reviewed in the first half of 2022. Led by the Strategic Projects team, this review will update the Strategy in the context of the rapid growth currently being experienced, look at the experience and lessons to be learned since the Strategy was adopted and address the actions required to enable medium density development and broader urban intensification to make a greater contribution toward development capacity. Market acceptability and design and quality considerations will be important facets of the review. Examples of successful medium density in other local authority areas, particularly in the provincial context, will also be examined.

4.27 ***Other NPS-UD issues*** – The Housing Capacity Assessment (HCA) for the Napier-Hastings tier 2 urban environment was completed in late 2021. The Business Capacity Assessment (BCA) was commissioned in February 2022 and is due to be completed and reported to Council in June 2022. These pieces of work provide guidance on the development capacity available in terms of housing and business land respectively, and provide inputs into the FDS and the 'housing bottom line'. The housing bottom line is required under the NPS-UD, and is a statement of the development capacity sufficient to meet expected housing demand plus the appropriate competitiveness margin. The housing bottom line for the District is required to be inserted into the District Plan.

4.28 Alongside the BCA, Council is also undertaking work on identifying areas of land suitable for industrial development in addition to land currently zoned and available. This work is focused on land that can be made available, if needed, ahead of the timeframes that will be provided for in the FDS. Given the rapid rate of industrial land uptake, there is considered a risk that there may be insufficient development capacity for industrial growth over the next three to seven years. This work is designed to enable Council to address any medium-term shortfall in industrial development capacity that emerges via the BCA.

4.29 ***Programme*** – A draft programme for the above work has been developed. A copy is attached at **Attachment 1**. This programme is being further developed as discussions with programme partners occur and will be updated as required at future meetings.

4.30 A wider programme relating to the Regional Spatial Strategy is also being developed with partner agencies and will be presented to the Committee when a draft has been completed.

Hastings' Growth Management Approach

4.31 The methodological approach Council (together with its partner councils) takes to future growth planning is important. While there is significant energy in the development sector and among other parts of the community (such as horticultural production and soils preservation interests) to see short-term action taken on rezoning various areas of land for development or conversely protecting land from development, planning law demands rigorous and deliberative process. ***It is critical that Council's planning decision-making complies with the law and is underpinned by robust analysis.*** Zoning decisions are subject to public submission processes and are appealable to the Environment Court on both matters of merit and law. Efficient analysis and decision-making processes are helpful, however rushed, short-cut processes are not and usually result in longer timeframes, legal challenge and more costly processes.

4.32 Council and its partners, assisted by their Geographic Information System (GIS) teams and expert consultants as necessary, are embarking on a thorough and robust analysis process to find preferred future development areas. Central to this will be analysis using GIS layers to assess various land areas as to their suitability for future development. GIS layers will include, among others, those showing hazards such as liquefaction risk, coastal inundation and erosion, flood risk and contaminated sites, constraints such as soil quality (versatile soils) and high value land uses, infrastructure servicing capacity and limitations, and matters of cultural and community value such as wāhi tapu and archaeological sites. This analysis approach will be used to identify areas of land that are unsuitable or should be avoided in future development planning and, by elimination, areas where there are fewer constraints that should be considered for future development.

4.33 This approach will allow a strong evidential basis to be constructed to underpin decision-making and help withstand any contesting of decisions. It will apply to the formulation of the FDS and Regional Spatial Strategy as well as short to medium term exercises such as the industrial land options study referred to in 4.28 above.

5.0 Options – *Ngā Kōwhiringa*

Option One - Recommended Option - Te Kōwhiringa Tuatahi – Te Kōwhiringa Tūtohunga

5.1 ***Note the work programme for future growth management and endorse the management approach set out*** – The Chief Executive has enacted a programme of work and resourcing to help Council meet its existing and prospective statutory requirements with respect to urban development and to effectively manage the growth pressures facing it. This report formally presents to the Committee key aspects of the work required (as previously canvassed in an informal setting) and enables the Committee to endorse the proposed (good practice) management approach. Council has approved resources to undertake this work within its work programme and budget.

Advantages

- Council receives regular updates on its approach to future growth management
- Council endorses a robust, good practice approach to managing growth and identifying future development capacity.

Disadvantages

- There are no apparent disadvantages to this approach.

Council may wish to provide preliminary programme or policy guidance within the framework set out.

Option Two – Status Quo - Te Kōwhiringa Tuarua – Te Āhuatanga o nāianei

5.2 ***Take no action*** – The Committee could opt to take no action at this time. However, there are time critical, statutory obligations on it that officers need to make progress on.

- There appear to be no advantages to taking this option.

6.0 Next steps – *Te Anga Whakamua*

6.1 Work has commenced on implementing the above programme of work. For the remainder of this term, the Strategy and Policy Committee will be the main governance vehicle for policy direction and work programme monitoring in respect of future growth management. Progress reports will be made to this Committee. Direction and policy guidance reports will be made either to Council, the District Planning and Bylaws Subcommittee or this Committee as appropriate depending on the nature of the matter under consideration.

Attachments:

1⇨	Future Growth Programme - Gantt	CG-16-3-00118	Under Separate Cover

Summary of Considerations - *He Whakarāpopoto Whakaarohanga*

Fit with purpose of Local Government - *E noho hāngai pū ai ki te Rangatōpū-ā-Rohe*

The Council is required to give effect to the purpose of local government as set out in section 10 of the Local Government Act 2002. That purpose is to enable democratic local decision-making and action by (and on behalf of) communities, and to promote the social, economic, environmental, and cultural wellbeing of communities in the present and for the future. This report outlines the Council's programme for managing and planning for future growth, including the provision and funding of growth infrastructure. Effectively planning for and managing growth is a central function of local government that contributes to the social, economic, environmental, and cultural wellbeing of the communities of Hastings District.

Link to the Council's Community Outcomes – *Ngā Hononga ki Ngā Putanga ā-Hapori*

The work incorporated in this proposal promotes the environmental, social, economic and cultural wellbeing of communities in the present and for the future. It contributes to the following outcome areas:

- *Economic Powerhouse* – providing development capacity for continuing growth and economic development in Hastings District, including industrial and commercial development. It also works to protect the fertile soils and productive capacity of the District's highly productive land areas.
- *Homes for our People* – providing development capacity for new housing development, both via urban intensification and new growth areas, to cater for the needs of the District's growing population.
- *Getting around* – linking new development capacity with transport planning and infrastructure.
- *Our Natural Treasures* – planning for development capacity in a way that recognises and protects our natural treasures including our waterways and water resources, soils, landscapes and biodiversity.
- *Pathways for our people* – people centre-planning and strong engagement with mana whenua.
- *Enhancing where we live* – planning for high amenity communities with good jobs and vibrant centres.

Māori Impact Statement - *Te Tauākī Kaupapa Māori*

The impacts of growth potentially affect interests of, and values expressed by, Māori. Involvement by mana whenua in growth planning processes adds value and is essential, as well as being a legal requirement. The work programme set out allows for extensive engagement with mana whenua, including on their preferences for input and engagement. It is noted that in developing the FDS, the Council must engage with relevant iwi and hapū, and the Strategy must be informed by the values and development aspirations of Māori (particularly tangata whenua) for urban development.

Sustainability - *Te Toitūtanga*

Future growth planning is a key plank in any sustainable development agenda. Spatial planning and planning for future development capacity provide key opportunities for Council to shape the urban form of Hastings District and protect the natural environment and the area's productive capacity. In the current high-growth context, the opportunity to channel the energy provided by growth creates a greater chance to effect positive change. The design of new growth areas, the chance to provide for greater urban intensification, and planning for associated infrastructure all allow for improvements to be made to the District's ecological and energy footprints through less energy intensive urban form, greater water efficiency and less intensive resource use.

Financial considerations - *Ngā Whakaarohanga Ahumoni*

In order to effectively plan for and manage growth, the Council deploys resources in resource consenting, building consenting and development engineering, environmental policy development and structure planning, and in infrastructure planning and development. Given the rapid growth the District is experiencing, Council has established a Future Growth Unit to coordinate the planning, management and enablement of growth over the medium to long-term. This represents a substantive investment in growth management by Council over the next 2-3 years.

The work programme will involve investment in staff time and specialist consultant advice in areas such as planning, engineering, ecology and soils, Māori cultural values and development aspirations, law, and economics. This work will be budgeted for through the LTP and Annual Plan process. Contingent costs will include the costs related to the extent of legal challenge to some of the planning decisions made through and subsequent to this work. The extent of legal and witness costs in this area can be influenced through the strength of engagement processes and the rigour and robustness of the Council's strategy development work and underpinning analysis.

Significance and Engagement - *Te Hiranga me te Tūhonotanga*

The work programme set out in this report has been assessed under the Council's Significance and Engagement Policy as being of moderate to high levels of significance. This is due to the long-term and wide-ranging planning exercises that are part of the work programme. The programme will incorporate an extensive engagement programme, including a Special Consultative Procedure.

Consultation – internal and/or external - *Whakawhiti Whakaaro-ā-roto / ā-waho*

As noted above, there will be significant engagement and consultation through these planning processes with other councils, mana whenua, government agencies, the development sector and various other organisations. There will also be public engagement and consultation, including via a Special Consultative Procedure process.

Risks

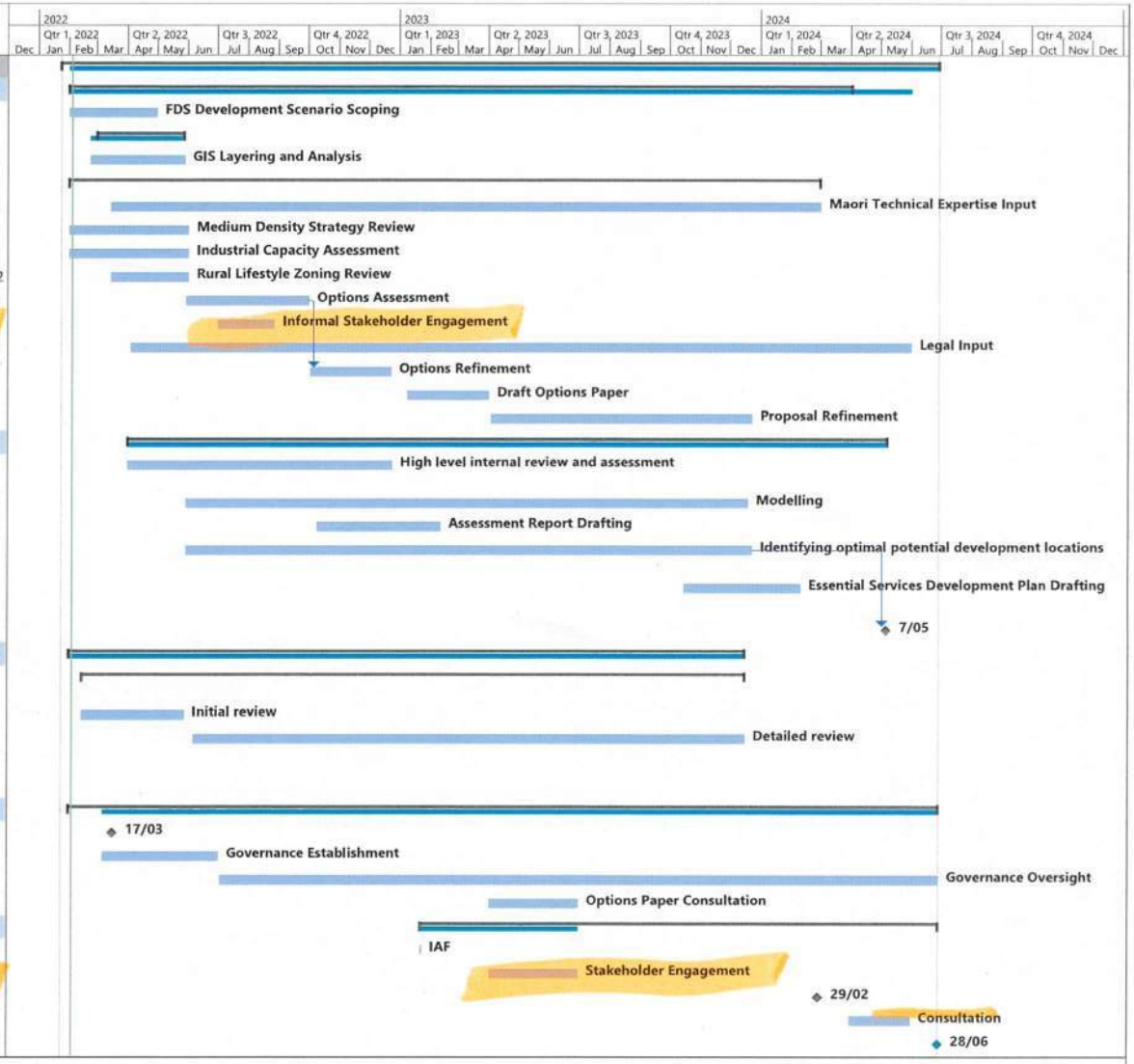
Opportunity: An integrated set of future planning arrangements for Hastings District and the Hawke's Bay Region that enshrine a sustainable development approach and provide sufficient development capacity.

REWARD – *Te Utu*	RISK – *Te Tūraru*
An integrated set of future planning arrangements for Hastings District and the Hawke's Bay Region that enshrine a sustainable development approach and provide sufficient development capacity.	• Failure to meet statutory requirements with the possibility of Government intervention in the case of non-compliance – ***managed by*** sufficient resource allocation and strong programme management and partner engagement • Failure to get regional alignment on processes or outcomes – ***managed by*** strong partner engagement at governance, executive and staff/technical levels • Strategies and ensuing actions do not have broad support from mana whenua – ***managed by*** strong engagement processes with mana whenua, including setting in place governance and engagement arrangements that have mana whenua acceptance • Significant legal challenge and overturning of Council/regional decisions and plan provisions – ***managed by*** strong analysis and planning methodologies, timely legal input, clear and robust staff advice, and rigorous and disciplined political/governance decision-making and leadership • Cost overruns due to legal challenge or contingent costs – ***managed by*** strong programme management and scoping, and through strong analysis and planning methodologies, timely legal input, clear and robust staff advice, and rigorous and disciplined political/governance decision-making and leadership • Political change that leads to changed legal requirements – Central Government change outside Council/regional control. To the extent possible, ***managed by*** responsive management and engagement.

Rural Community Board – *Te Poari Tuawhenua-ā-Hapori*

Much of the work involved in this project will be urban centred. However, the Hastings District Rural Community Board will be engaged in the Regional Spatial Strategy and on other work elements with implications for rural communities.

ID	% Comp	Task Name	Duration	Start	Finish
1	0%	**Future Growth Programme**	**635 days**	**Mon 24/01/22**	**Fri 28/06/24**
2	0%	**1. Future Growth Planning**	**565 days**	**Tue 1/02/22**	**Mon 1/04/24**
3	0%	FDS Development Scenario Scoping	64 days	Tue 1/02/22	Fri 29/04/22
4	0%	**Gap Analysis**	**64 days**	**Tue 1/03/22**	**Fri 27/05/22**
5	0%	GIS Layering and Analysis	69 days	Tue 22/02/22	Fri 27/05/22
6	0%	**Research and Analysis**	**543 days**	**Tue 1/02/22**	**Thu 29/02/24**
7	0%	Maori Technical Expertise Input	513 days	Tue 15/03/22	Thu 29/02/24
8	0%	Medium Density Strategy Review	86 days	Tue 1/02/22	Tue 31/05/22
9	0%	Industrial Capacity Assessment	86 days	Tue 1/02/22	Tue 31/05/22
10	0%	Rural Lifestyle Zoning Review	56 days	Tue 15/03/22	Tue 31/05/22
11	0%	Options Assessment	90 days	Mon 30/05/22	Fri 30/09/22
12	0%	Informal Stakeholder Engagement	41 days	Fri 1/07/22	Fri 26/08/22
13	0%	Legal Input	565 days	Mon 4/04/22	Fri 31/05/24
14	0%	Options Refinement	59 days	Mon 3/10/22	Thu 22/12/22
15	0%	Draft Options Paper	60 days	Mon 9/01/23	Fri 31/03/23
16	0%	Proposal Refinement	189 days?	Tue 4/04/23	Fri 22/12/23
17	0%	**2. Essential Services Review and Plan**	**548 days**	**Fri 1/04/22**	**Tue 7/05/24**
18	0%	High level internal review and assessment	191 days	Fri 1/04/22	Fri 23/12/22
19	0%	Modelling	406 days	Mon 30/05/22	Mon 18/12/23
20	0%	Assessment Report Drafting	90 days	Mon 10/10/22	Fri 10/02/23
21	0%	Identifying optimal potential development locations	410 days?	Mon 30/05/22	Fri 22/12/23
22	0%	Essential Services Development Plan Drafting	85 days	Mon 16/10/23	Fri 9/02/24
23	0%	Design Concepts	0 days	Tue 7/05/24	Tue 7/05/24
24	0%	**3.Growth Infrastructure Funding**	**489 days**	**Tue 1/02/22**	**Fri 15/12/23**
25	0%	**Review of HDC Development Contributions**	**480 days**	**Mon 14/02/22**	**Fri 15/12/23**
26	0%	Initial review	75 days	Mon 14/02/22	Fri 27/05/22
27	0%	Detailed review	399 days	Tue 7/06/22	Fri 15/12/23
28	0%	<New Task>			
29	0%	<New Task>			
30	0%	**4. Governance**	**629 days**	**Tue 1/02/22**	**Fri 28/06/24**
31	0%	Committee Report	0 days	Thu 17/03/22	Thu 17/03/22
32	0%	Governance Establishment	85 days	Mon 7/03/22	Fri 1/07/22
33	0%	Governance Oversight	520 days	Mon 4/07/22	Fri 28/06/24
34	0%	Options Paper Consultation	65 days	Mon 3/04/23	Fri 30/06/23
35	0%	**5. FDS Development**	**375 days**	**Mon 23/01/23**	**Fri 28/06/24**
36	0%	IAF	1 day?	Mon 23/01/23	Mon 23/01/23
37	0%	Stakeholder Engagement	65 days	Mon 3/04/23	Fri 30/06/23
38	0%	**Adopt Draft FDS**	0 days	Thu 29/02/24	Thu 29/02/24
39	0%	**Consultation**	45 days?	Mon 1/04/24	Fri 31/05/24
40	0%	**Adopt FDS (final)**	0 days	Fri 28/06/24	Fri 28/06/24



Project: Future Growth Program
Date: Fri 4/02/22

Task | Split | Milestone | Summary | Project Summary | Inactive Task | Inactive Milestone | Inactive Summary | Manual Task | Duration-only | Manual Summary Rollup | Manual Summary | Start-only | Finish-only | External Tasks | External Milestone | Deadline | Progress | Manual Progress

Page 1

Item 5

SCHOOL ROAD, CLIVE

ENCLOSURE K

HASTINGS CEO'S PRESS RELEASE - HOUSING SHORTAGE

RNZ

NEW ZEALAND (/NEWS/NATIONAL) / HOUSING (/TAGS/HOUSING)

Hastings housing plan nearly a year behind

6:54 am on 14 May 2022

Tom Kitchin (/authors/tom-kitchin), Hawke's Bay / Tairāwhiti Reporter
@inkitchnz (https://twitter.com/@inkitchnz) tom.kitchin@rnz.co.nz (mailto:tom.kitchin@rnz.co.nz?subject=Hastings%20housing%20plan%20nearly%20a%20year%20behind)

A specially tailored housing project for Hastings is almost a year behind target.

Kāinga Ora homes under construction in Mahora, Hastings. Photo: RNZ / Tom Kitchin

The government promised to build 200 homes in the city by July 2021.

But nearly a year on, the project is about 80 houses short.

The government's state housing arm - Kāinga Ora - is responsible for most of these new builds, and it has not been going quickly.

The original target was set in December 2019.

By December 2020, a year on, just 24 had been finished. As of the end of last month, 122 have been completed.

In a statement, Kāinga Ora regional director for East North Island Naomi Whitewood explained the reasons for the delays.

"Many of the developments have faced delays from Covid and supply chain pressure," she said.

"Our build partners have worked hard to minimise the effect of these delays."

Te Taiwhenua o Heretaunga help whānau, in their words, move up the poutama, or staircase, of housing in Hastings - going from emergency housing, to rentals, to ownership.

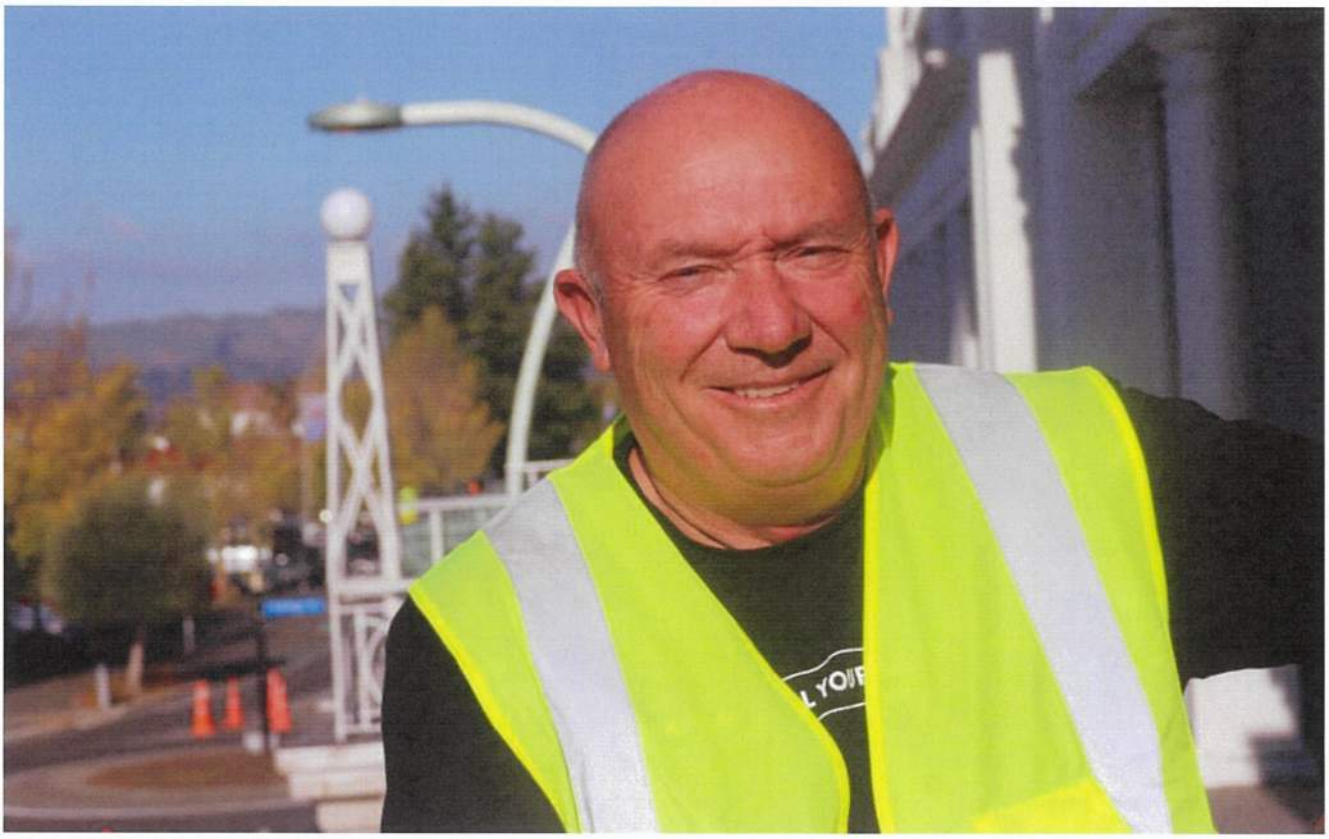
Te Taiwhenua o Heretaunga board chairperson Mike Paku says it sometimes feels like they're "treading water" because of the growing demand. Photo: RNZ / Tom Kitchin

Its chairman Mike Paku said it had been difficult to keeping on top of the problem of whānau not being able to get into a suitable home.

"It just feels as though sometimes we're treading water and struggling to keep up with the demand - the ever increasing demand."

He thought the construction would never be fast enough to meet the demand, but said there was certainly work being done.

"We've just got to keep on building, building more and more social housing. It's taken us 30-40 years to get into this position, it's going to take us a decade or two to get ourselves out of this position."



Hastings District Council chief executive Nigel Bickle says despite the delays, 180 social housing homes are under construction. Photo: RNZ / Tom Kitchin

Hastings District Council chief executive Nigel Bickle agreed, saying it was tough to beat the growing demand.

"Very hard to get ahead of it - but you know, if you look at the fact that we've already delivered since we've been going, over 100 new social homes, a bunch of papākainga housing, we currently have something like 180 social homes under construction."

And it was not predicted to get easier - he said under central Government policy statements, Hastings would have to build 7,000 homes in the next ten years to keep up with projected population growth.

"All of that's putting the pressure onto how are we going to manage that growth, 'cause we know we can't keep consuming greenfield space, and particularly as it relates to our fertile soils."

This could lead to more medium-density housing around the Hastings CBD.

Kāinga Ora signs are up their build sites across Hastings Photo: RNZ / Tom Kitchin

Housing Minister Megan Woods said December 2019, when the target was set, felt like a "lifetime ago".

"I think you'd have to be particularly naive or have been not looking at what's happening around the world if you thought that there wouldn't be some

disruption to those targets," she said.

But she said this had not stopped the drive of the Government - or those doing the mahi.

"Nonetheless, the commitment by local people in Hastings, and tradies and businesses has meant that we are getting those houses on the ground."

Many of the homes under construction, around 116 of them, are due to be finished by August.

- House price growth slowing, but not yet buyers' market - real estate firm (/news/business/467003/house-price-growth-slowing-but-not-yet-buyers-market-real-estate-firm)
- Rotorua's 10 reserves sites for housing scales next hurdle (/news/national/466977/rotorua-s-10-reserves-sites-for-housing-scales-next-hurdle)
- Auckland Council rejects 35-year Pakiri sand mining bid (/news/national/466962/auckland-council-rejects-35-year-pakiri-sand-mining-bid)

SCHOOL ROAD, CLIVE

ENCLOSURE L

LETTER OF SUPPORT NGATI KAHUNGUNU IWI INCORPORATED - K3 PROPERTY

Ministry for the Environment
Fast Tracking Consent
fasttrackingconsenting@mfe.govt.nz

To Whom it may Concern,

RE: 49 School Road, Clive

K3 and RDMC have secured the opportunity to purchase the above site from Tomorrow Capital Limited the applicant. This represents an opportunity for a Kahungunu Iwi led housing development and construction opportunity.

This 49 School Road opportunity as a development site provides enhanced benefits of being directly accessible to both Napier and Hastings, has established infrastructure such as schooling and a commercial centre, and is close to traditional food sources such as the ocean, and rivers.

The wider kaupapa of K3 also includes our drive to resolve a growing problem of families living in cars, motels, and unsuitable housing environments that is stifling the prosperity of Kahungunu people and the community. This development would provide a key opportunity to bring to life housing outcomes and play a key role in this solution journey.

Additionally, the K3 model activates social impact outcomes relating to trade training apprenticeships and Maori business prosperity, but with limited land opportunities across Napier and Hastings these social outcomes are restricted from being achieved at scale. We wish to have this project as a key activator in this social impact space.

Nga mihi,

Aayden Clarke

Chief Executive

K3 Property