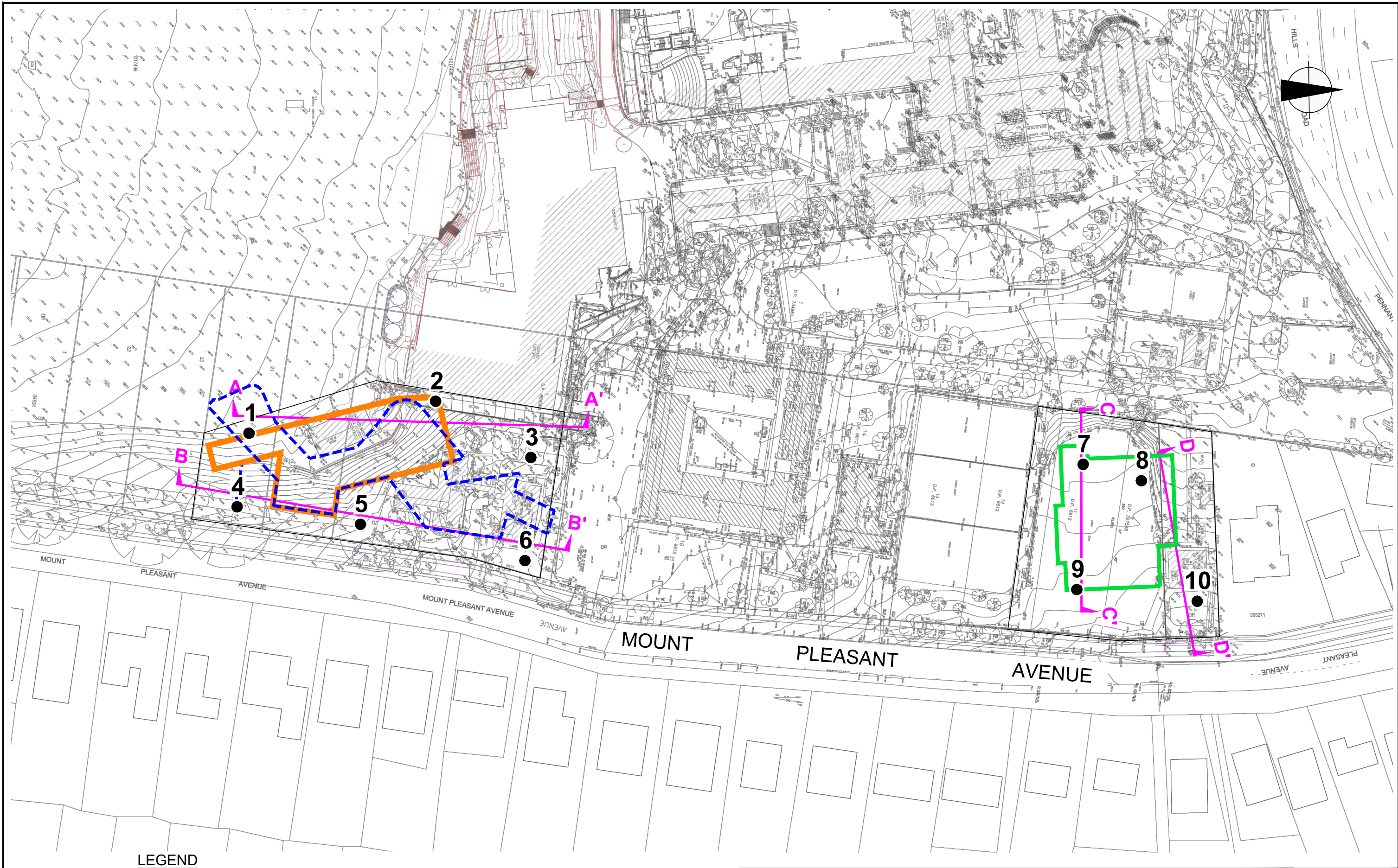
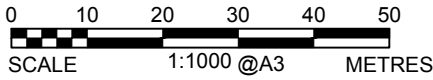


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LEGEND

-  BOREHOLE
-  APPROXIMATE OUTLINE OF OF BOARDING HOUSE LOWER GROUND FLOOR LEVEL
-  APPROXIMATE OUTLINE OF OF BOARDING HOUSE BASEMENT 2 AND 3 LEVELS
-  APPROXIMATE OUTLINE OF EARLY LEARNING CENTRE



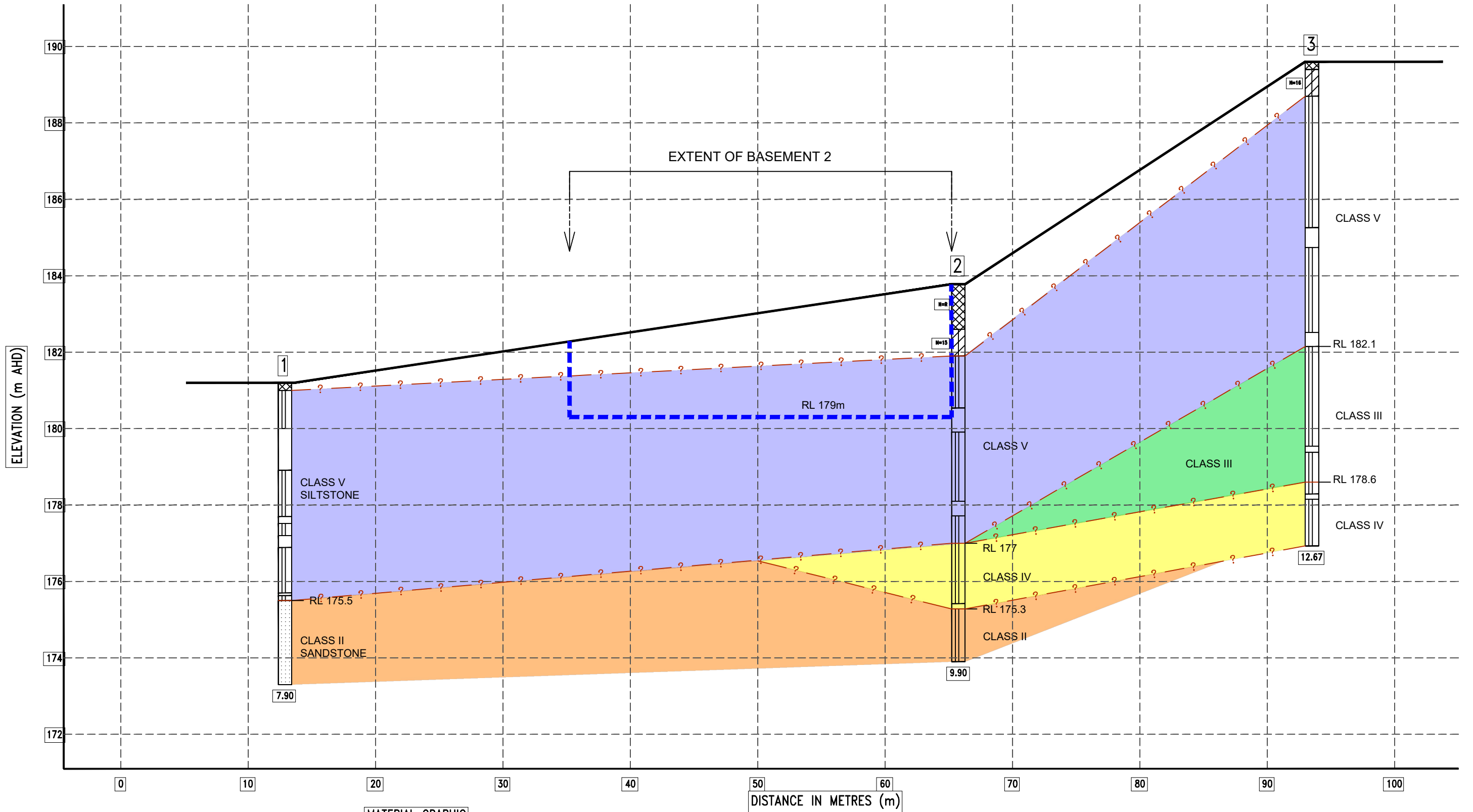
This plan should be read in conjunction with the JK Geotechnics report.

Title: <b>BOREHOLE LOCATION PLAN</b>		
Location: LORETO NORMANHURST, 91-93 PENNANT HILLS ROAD NORMANHURST, NSW		
Report No:	31772L	Figure No: 2
<b>JK Geotechnics</b>		




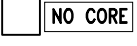

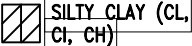






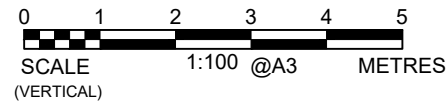


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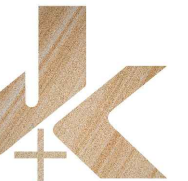
NOTE: LINES BETWEEN BOREHOLES  
HAVE BEEN INTERPOLATED FROM  
KNOWN BOREHOLE LOCATIONS.

MATERIAL GRAPHIC		
	CLASS V	 ASPHALTIC CONCRETE
	CLASS IV	 NO CORE
	CLASS II	 SILTY CLAY (CL, CI, CH)
	CLASS III	 SILTSTONE
		 FILL
		 SANDSTONE



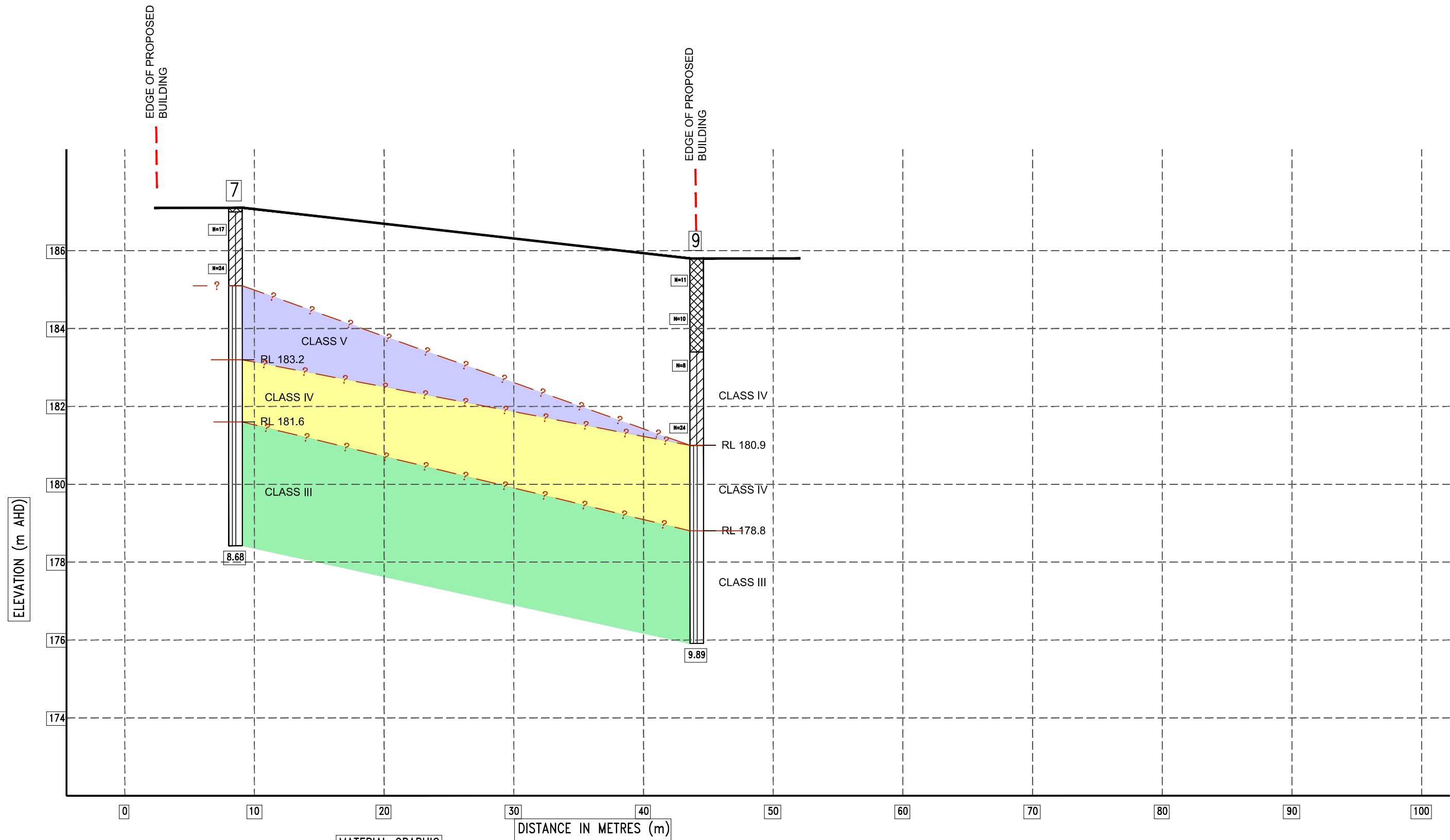
This plan should be read in conjunction with the JK Geotechnics report.

Title:		<b>SECTION A-A</b>	
Location: LORETO NORMANHURST, 91-93 PENNANT HILLS ROAD NORMANHURST, NSW			
Report No:		31772L	Figure No: 3-Rev2
<b>JK Geotechnics</b>			

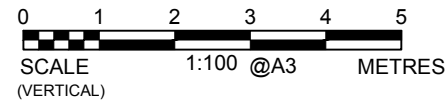
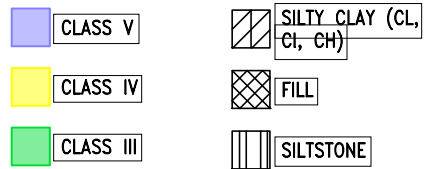




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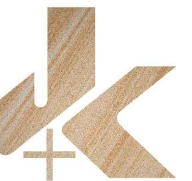


NOTE: LINES BETWEEN BOREHOLES HAVE BEEN INTERPOLATED FROM KNOWN BOREHOLE LOCATIONS.

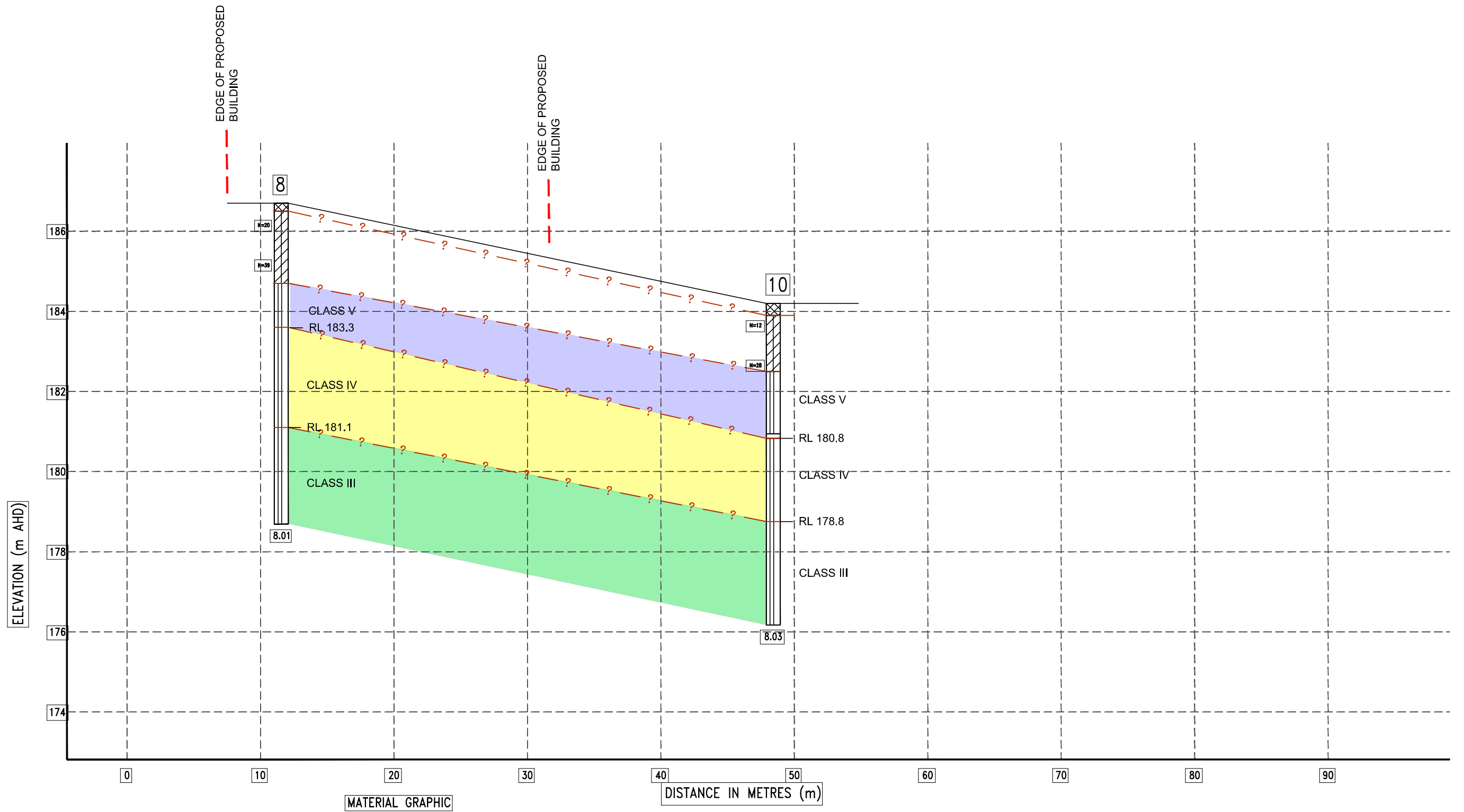


This plan should be read in conjunction with the JK Geotechnics report.

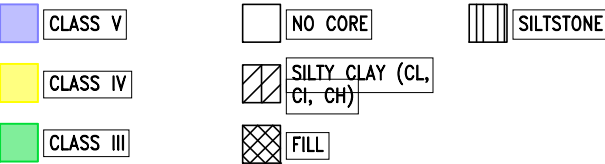
Title: <b>SECTION C-C</b>	
Location: LORETO NORMANHURST, 91-93 PENNANT HILLS ROAD NORMANHURST, NSW	
Report No: <b>31772L</b>	Figure No: <b>5-Re1</b>
<b>JK Geotechnics</b>	



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NOTE: LINES BETWEEN BOREHOLES  
HAVE BEEN INTERPOLATED FROM  
KNOWN BOREHOLE LOCATIONS.



0 1 2 3 4 5

SCALE 1:100 @A3 METRES

(VERTICAL)

Title: **SECTION D-D**

Location: LORETO NORMANHURST, 91-93 PENNANT HILLS ROAD  
NORMANHURST, NSW

Report No: 31772L Figure No: 6-Re1

**JK Geotechnics**

# APPENDIX A

## State Significant Development Application (Concept Masterplan and Detailed Stage 1 works)

### 1.0 Introduction

This report supports a State Significant Development Application (SSDA) submitted to the Department of Planning and Environment (DPE) pursuant to Part 4 of the *Environmental Planning and Assessment Act 1979* (EP&A Act). This application is SSD by way of clause 8 and schedule 1 under *State Environmental Planning Policy (State and Regional Development) 2011* on the basis that the development is for the purpose of an existing school and has a Capital Investment Value of more than \$20 million.

Specifically, this application relates to a staged SSDA within the meaning of Section 4.12 of the EP&A Act, with this application being the Concept Proposal for a new site wide masterplan for the existing Loreto Normanhurst School at 91 – 93 Pennant Hills Road, Normanhurst. In addition, consent is also sought for the Stage 1 detailed design works for a new on campus student boarding facility, landscaping works, and some demolition works to the buildings between Mary Ward and existing dining room building and associated works to make good existing.

This report has been prepared having regard to the Secretary's Environmental Assessment Requirements issued for the project by DPE, ref no SEAR 8996 issued on 12 January 2018.

### 2.0 Background

#### Need for a Campus Masterplan

Loreto Normanhurst is an independent, Catholic day and boarding school for girls from Years 5 to 12. The existing school campus was established in 1897 and has evolved in an organic and ad-hoc manner across the span of a 120 years.

A new campus wide planning approach offers the opportunity to strategically review and plan for the campus' future in a sustainable and efficient manner such that the campus' unique aesthetic and ecological values are best preserved. The preparation of a campus wide masterplan is also consistent with the School's 'Loreto Normanhurst 2016 - 2020 Strategic Plan' which identified the need for a broader strategic plan to coordinate renewal and orderly development in a feasible and staged manner.

#### Early Learning Centre

A separate DA (D/1227/2018) has been submitted to Hornsby Shire Council on 23 November 2018 for an 80 place Early Learning Centre (ELC) building and the DA is currently under assessment. The ELC building is consistent with the overall concept masterplan, and was prepared concurrently with the final preferred campus masterplan. However, to meet the School's operational timeframe requirements for the ELC, a separate application was seen to be best pathway to allow the building to be built, fitout and operational by 2021.

### 3.0 The Site

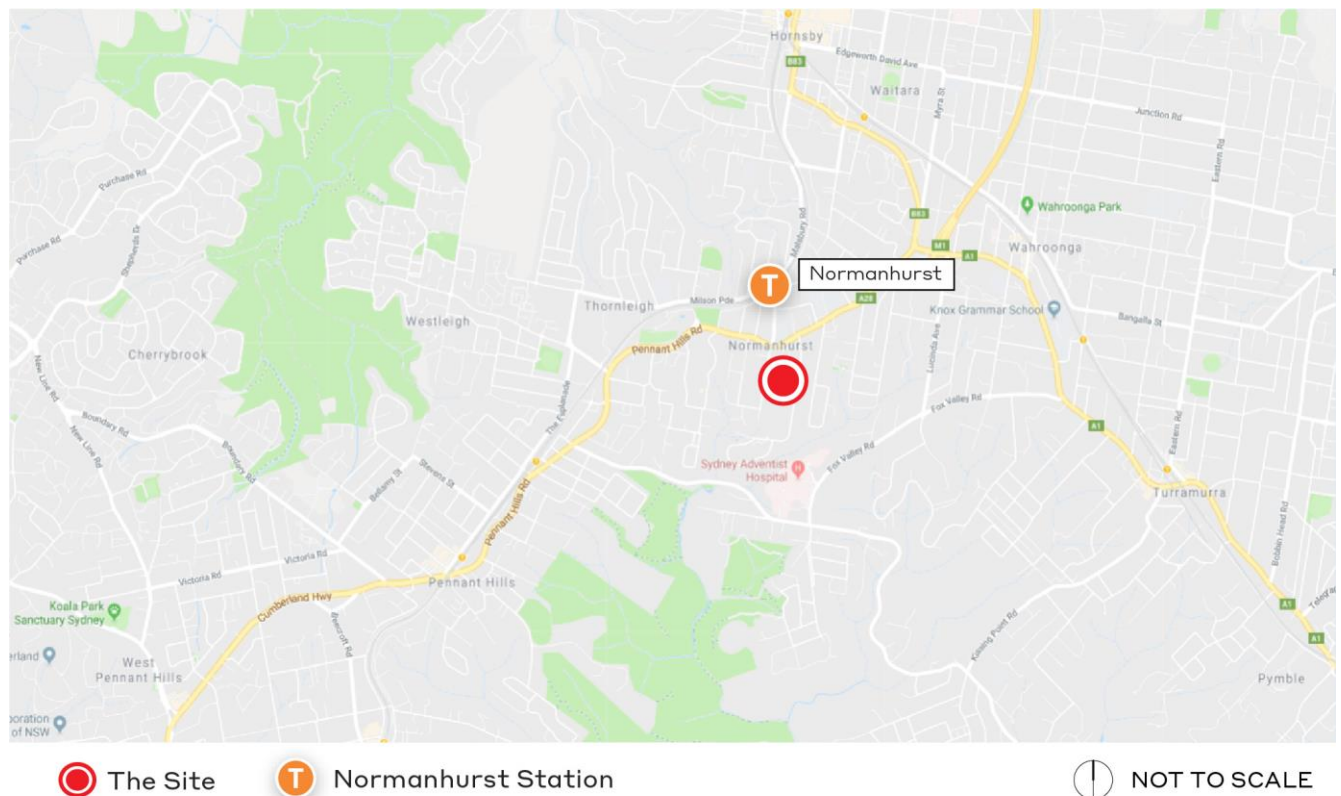
Loreto Normanhurst is located within the suburb of Normanhurst on Sydney's Upper North Shore approximately 3km south of Hornsby and 25km north of Sydney CBD. The school is located in the local government area of Hornsby Shire Council, approximately 750m south of the Normanhurst Railway Station. The locational context of the site is illustrated at **Figure 1**.

The site comprises the existing campus grounds of the Loreto Normanhurst school at 91 – 93 Pennant Hills Road, Normanhurst. The northern part of the site accommodates much of the school's existing built form, while the rear

extent consists of the school's sporting fields, and a portion of largely undeveloped land covered in remnant vegetation.

The campus itself is bound by Pennant Hills Road (to the north), Osborn Road (to the west) and Mount Pleasant Avenue (to the east). Detached dwellings on individual residential lots abut the southern boundary of the site. An aerial photograph of the site is provided at **Figure 2** below.

**Figure 2** provides an aerial map of the site and its immediate surrounds.



**Figure 1 – Loreto Normanhurst Campus Location Context Plan**  
Source: Ethos Urban





**Figure 2 – Aerial Map of the Loreto Normanhurst Campus**

Source: AJ+C Architects

### 3.1.1 Legal Description and Ownership

The campus comprises several allotments, the legal descriptions of which are provided in **Table 1** below. The existing campus has a site area of approximately 13.02ha. The site in its entirety is owned by the Trustees of the Loreto Property Association.

**Table 1 Legal Description**

Address	Lot	Plan
16 Mount Pleasant Avenue	Lot 5	DP 1218765
	Lot 16	DP 6612
30 – 62 Mount Pleasant Avenue	Lots 20 – 23 and 25 – 36	DP 6612
	Lot 1	DP 34834
91 – 93 Pennant Hills Road	Lot 1	DP 114580
	Lot 3	DP 1217496
	Lot 1 – Lot 3	DP 1218765
	Lot B	DP327538
24 – 28 Mount Pleasant Avenue	Lot 1	DP 809066
6 Mount Pleasant Avenue	Lot C	DP 366271
14 Mount Pleasant Avenue	Lot 4	DP1218765
89 Pennant Hills Road	Lot 1	DP136156

## 4.0 Overview of Proposed Development

This application sets out a new campus masterplan for the existing school campus that will guide and shape the development of the school campus for the next 30 years. This SSDA also includes detailed plans for the first stage of the concept proposal (Stage 1 works). Accordingly, consent is sought for the following:

- The concept masterplan, including:
  - Establishment of 10 new building envelopes across the site for education and ancillary uses including student accommodation;
  - Increase of the student number cap by 850 students from 1150 to 2000 students;
  - The open space and landscape design;
  - Pedestrian and circulation arrangements, and
  - Associated car parking provision.
- Detailed consent for Stage 1 works, being:
  - Construction of a new 3 to 6-storey boarding house to accommodate up to 216 boarders.
  - Excavation works to accommodate partially underground carpark and dock facilities within the proposed footprint of the new boarding house facility;
  - Demolition works to buildings between Mary Ward and existing dining room building and associated works to make good existing;
  - Landscaping works and removal and replacement of approximately 50 trees of varying significance; and
  - Augmentation of connection of services and utilities infrastructure.

## APPENDIX B

## BOREHOLE LOG

Client:

Project: *ADDITIONS TO LORETO CONVENT.*

Location: *PENNANT HILLS ROAD, NORMANHURST.*

Job No. *7975 K*

Method: *SPIRAL ALIGER*

R.L. Surface: *184.5m.*

Date: *23 - 1 - 91*

*JACRO*

Datum: *A.H.D.*

Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer Readings kPa.	Remarks
DRY ON COMPLETION						ASPHALTIC CONCRETE 20mm layer FILL: Road base gravel and sand mixtures grey. as above but with some clay. as above but silty clay, low to medium plasticity, grey, with roots, wood and brick fragments.	M MC > PL			POORLY COMPACTED.
SEEPAGE ON SPT SPOON.	DS	N = 4 1, 2, 2	1							
			2		CL-CH	SILTY CLAY: medium to high plasticity, yellowish brown. as above but light grey red brown with zones of ironstone.	MC > PL	Vst.	250 370 380 360	
	DS	N = 19 4, 9, 10	3		CL	SHALY CLAY: low to medium plasticity, light grey brown with extremely to highly weathered, extremely weak shale.	MC = PL	(H)		
	DS		4			SHALE: brown, highly weathered, very weak with clay seams. as above but grey brown, very weak to weak.	MC < PL	(H)		LOW TC BIT RESISTANCE
	DS		5							LOW RESISTANCE WITH MODERATE BANDS.
	DS		6			END OF BOREHOLE AT 5.7m.				





Borehole No.

2

## BOREHOLE LOG

Client:

Project: *ADDITIONS TO LORETO CONVENT.*

Location: *PENNANT HILLS ROAD, NORMANHLURST.*

Job No. *7975 K*

Method: *SPIRAL ALIGER*

R.L. Surface: *185.4m*

Date: *23 - 1 - 91*

*JACRO*

Datum: *A.H.D.*

Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer Readings kPa.	Remarks
DRY ON COMPLETION.						ASPHALTIC CONCRETE: 20mm t. over FILL: Roadbase gravel, sand mixtures, grey. as above	M			APPEARS POORLY COMPACTED.
			1			but silty clay, low to medium plasticity, grey with some sand shale and sandstone fragments.	MC > PL			
	USO				CH.	SILTY CLAY: high plasticity, yellow brown.	MC > PL	Vst.		
	DS	N = 31 5, 13, 18	2					H	220 350 600	
					CL	SHALY CLAY: low to medium plasticity, light grey brown, with zones of extremely to highly weathered, extremely weak shale.	MC < PL			
	DS	N > 18 11, 18	3						> 600 > 600	MODERATE 'TC' BIT RESISTANCE.
		BOLUNCING				SHALE: brown, highly weathered, very weak with clay seams.				
			4			END OF BOREHOLE AT 3.8m.				
			5							
			6							

## BOREHOLE LOG

Client:

Project: *ADDITIONS TO LORETO CONVENT.*

Location: *PENNANT HILLS ROAD, NORMANHLIRST.*

Job No. *7975 K*

Method: *SPIRAL ALIGER*

R.L. Surface:  $\approx 187.8m$

Date: *1-2-91*

*GCH RIG.*

Datum: *A.H.D.*

Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/Rel. Density	Hand Penetrometer Readings kPa.	Remarks
DRY ON COMPLETION						CONCRETE: 100mm thick with mesh reinforcing bar 6mm dia.	MC > PL			WATER ADDED.
						FILL: Sandy clay, low plasticity, yellow brown with brick, shale and ironstone fragments and steel plate pieces.				APPEARS MODERATELY COMPACTED.
	DS	N = 15 5, 5, 10	1			as above				WELL COMPACTED.
					CH.	but with sandstone fragments and ashes.	MC = PL	(Vst to H)		
	DS		2			SILTY CLAY: high plasticity, yellow red brown with ironstone zones				
						SHALE: grey brown, extremely weathered, extremely weak containing frequent shaly clay bands and occasionally highly weathered very weak bands.				VERY LOW 'TC' BIT RESISTANCE.
	DS	N > 15 15, 15/80mm BOUNCING.	3						> 600 > 600	
			4							
	DS					SHALE: grey brown, highly weathered, weak with medium strong bands and iron cemented zones.				LOW RESISTANCE.
			6			as above but grey to dark grey and brown, weak to medium strong.				LOW RESISTANCE WITH MODERATE BANDS.



Borehole No.

3  
2/2

## BOREHOLE LOG

Client:

Project: *ADDITIONS TO LORETO CONVENT.*

Location: *PENNANT HILLS ROAD, NORMANHURST.*

Job No. *7975 K*

Method: *SPIRAL AUGER*

R.L. Surface: *± 187.8m.*

Date: *1 - 2 - 91*

*G.C.H. RIG.*

Datum: *A.H.D.*

Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer Readings	Remarks
						SHALE: <i>as above.</i>				<i>LOW RESISTANCE WITH MOD. BANDS.</i>
	<i>DS</i>					<i>as above but dark grey, medium strong.</i>				<i>MODERATE RESISTANCE.</i>
			<i>8</i>			<i>END OF BOREHOLE AT 7.6m.</i>				
			<i>9</i>							
			<i>10</i>							
			<i>11</i>							
			<i>12</i>							
			<i>13</i>							



Borehole No.

1

## BOREHOLE LOG

Client:

Project: *PROPOSED ROAD, LORETO COLLEGE*

Location: *PENNANT HILLS ROAD, NORMANHURST. N. S. W.*

Job No. *BD42KV*

Method: *SPIRAL AUGER*

Date: *4-3-91*

*JACRO RIG*

Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer $\frac{1}{2}$ in. Readings	Remarks
DRY ON COMPLETION						<i>BITUMINOUS PAVEMENT: 20 mm. t. over FILL: Roadbase gravel &amp; sand mixture, brown.</i>	<i>D</i>			
	<i>DS</i>	<i>N &gt; 22</i>	<i>0.5</i>		<i>CH</i>	<i>SILTY CLAY: high plasticity, red brown, some ironstone gravel.</i>	<i>MC&lt;PL</i>		<i>550 &gt; 600 &gt; 600</i>	<i>ESTIMATED "V" BIT REFUSAL</i>
	<i>DS</i>	<i>8, 12, 10/50 mm.</i>				<i>SHALE: grey, highly to moderately weathered weak to medium strong.</i>				<i>MODERATE "TL" BIT RESISTANCE</i>
	<i>DS</i>		<i>1.0</i>							
			<i>1.5</i>			<i>END OF BOREHOLE AT 1.5m.</i>				
			<i>2.0</i>							
			<i>2.5</i>							
			<i>3.0</i>							





Borehole No.

2

## BOREHOLE LOG

Client:

Project: *PROPOSED ROAD, LORETO COLLEGE*

Location: *PENNANT HILLS ROAD, NORMANHURST. N. S. W.*

Job No. *BD42KV*

Method: *SPIRAL AUGER*

Date: *4-3-91*

*JACRO RIG*

Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer Readings kPa.	Remarks
DRY ON COMPLETION	DB					BITUMINOUS PAVEMENT 30 mm. t. over				APPEARS POORLY COMPACTED
						FILL: silty clay, medium plasticity, brown, with fine to coarse igneous, sandstone & ironstone gravel.	MC > PL		110	
	DB	N = 11 1, 5, 6	0.5		CH	SILTY CLAY: high plasticity, red brown, with some ironstone gravel.	MC > PL	V. St. H	145 410 400 7600	
			1.0							
	DS	N = 16 3, 5, 11	1.5			as above, but with some grey mottling.			280 310 340 310	
						END OF BOREHOLE AT 1.55 m.				
			2.0							
			2.5							
			3.0							



Borehole No.

3

## BOREHOLE LOG

Client: Project: <i>PROPOSED ROAD, LORETO COLLEGE</i> Location: <i>PENNANT HILLS ROAD, NORMANHURST. N.S.W.</i>										
Job No. <i>8042KV</i> Method: <i>SPIRAL AUGER</i> Date: <i>4-3-91</i> <i>JACRO RIG</i>										
Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer Readings kPa.	Remarks
DRY ON COMPLETION						BITUMINOUS PAVEMENT: 50 mm. t. over	D			
	DB	N = 21 7, 10, 11	0.5		CH	FILL: Roadbase gravel & sand mixture, grey. SILTY CLAY: high plasticity, red brown, some ironstone gravel.	MC < PL	H	> 600 > 600 > 600	
	DS		1.0			as above, but with some grey mottling. SHALE: grey & brown, highly weathered, very weak to weak, with some medium strong bands.				ESTIMATED "V" BIT REFUSAL  LOW "TC" BIT RESISTANCE WITH SOME MODERATE BANDS
			1.5			END OF BOREHOLE AT 1.5m.				
			2.0							
			2.5							
			3.0							

## BOREHOLE LOG

Client: Project: <i>PROPOSED ROAD, LORETO COLLEGE</i> Location: <i>PENNANT HILLS ROAD, NORMANHURST. N.S.W.</i>										
Job No. <i>8042KV</i> Method: <i>SPIRAL AUGER</i> Date: <i>4-3-91</i> <i>JACRO RIG</i>										
Groundwater record	Samples	Field Tests	Depth (m.)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition	Consistency/ Rel. Density	Hand Penetrometer Readings kPa.	Remarks
DRY ON COMPLETION						<i>BITUMINOUS PAVEMENT: 30 mm. t. over</i>	<i>D</i>			
	<i>DB</i>	<i>N = 11</i>	<i>0.5</i>		<i>CH</i>	<i>FILL: Sand, fine to medium grained, brown; some roadbase gravel &amp; brick fragments.</i>	<i>MC &lt; PL</i>	<i>V. St.</i>	<i>285</i> <i>330</i> <i>310</i> <i>360</i>	
		<i>4, 5, 6</i>	<i>1.0</i>			<i>SILTY CLAY: high plasticity red brown, some ironstone gravel.</i>				
	<i>DS</i>		<i>1.5</i>			<i>as above, but red brown &amp; grey mottled.</i>	<i>MC &lt; PL</i>	<i>(H)</i>		
			<i>2.0</i>			<i>END OF BOREHOLE AT 1.5 m.</i>				
			<i>2.5</i>							
			<i>3.0</i>							



