

Appendix F-1

Geotechnical Desk Study - Part 1

States of Jersey
Jersey Future Hospital:
Geotechnical Desk Study

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This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 237035

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1 Introduction

Ove Arup and Partners Ltd (Arup) have been appointed by the States of Jersey to undertake a detailed geotechnical desk study and present recommendations for ground investigation. The purpose of the geotechnical desk study is to support a planning application for the redevelopment and construction of new hospital buildings on part of the existing site and some adjacent buildings including provision of new/modified basement at Jersey General Hospital. The redevelopment at Westaway Court is also looked at during this report.

The proposals are to comprehensively redevelop both the Jersey General Hospital and Westaway Court sites to provide modernised health facilities.

The locations of the existing and proposed footprints of Jersey General Hospital and Westaway Court are shown on **Figure 1**.

Since the last issue of the Jersey Future Hospitals Geotechnical Desk Study the ground and groundwater conditions section has been updated to include additional information from a ground investigation undertaken for the adjacent Patriotic Street MSCP (undertaken in 1983). Ground investigation data from three other sites within 60m to the southwest of the Jersey Future Hospitals site (undertaken between 2007 and 2014) have also been considered. These additional records provide further information relating to the site stratigraphy and useful additional detail concerning groundwater strikes and groundwater monitoring which is of particular importance for assessment of basement design options and optimum construction sequencing.

2 Report Objective

The purpose of this detailed geotechnical desk study report is to gather and present all available relevant geotechnical information to inform the proposed redevelopment of the Jersey General Hospital and Westaway Court sites. A detailed review of all available information has been undertaken, including:-

- The latest development proposals
- Engineering records and drawings; including existing buildings, foundations and basement layouts
- Geology and hydrogeology
- Encountered ground conditions and existing ground investigation
- Hydrology
- Historical maps and aerial photographs
- Referenced historical documents
- Environmental issues, features and constraints

Identified features and constraints are highlighted on **Figure 11**, and identified ground risks are summarised in the Ground Risk Register in **Appendix F**. A preliminary assessment of the main geotechnical considerations for the sites is presented to help inform design development decisions. Recommendations are presented for additional ground investigations to better understand the ground risks, stratigraphy and groundwater conditions and to allow characteristic parameters for geotechnical designs to be derived.

3 Proposed Development

The hospital development proposals are currently being developed by Hassells. Available artistic illustration of demolition / construction schematic extracts from Hassell's report [28] for the General Hospital site and indicative drawing of currently considered options of redevelopment [29] for Westaway Court are provided in **Appendix J**. Indicative proposed footprints are provided on **Figure 2** and **Figure 3**.

A list of all relevant records and engineering drawings reviewed as part of the preparation of this report is presented in **Appendix A**, and available construction drawings provided in **Appendix E**.

3.1 Jersey General Hospital

The existing building layouts based upon the Ordnance Survey mapping and the proposed redevelopment footprints are indicated on **Figure 2**. Key proposed redevelopments of the existing General Hospital site and adjacent land is understood to currently comprise the following:

- Granite Block C and the Granite Gatehouse Grade I listed buildings are the only buildings to remain.
- Existing hospital buildings D, E and H and existing Stafford Hotel, Sutherland Court and Revere Hotel are to be demolished to allow for construction of the basement and new building. It is understood that demolition is proposed will be sequenced across the site.
- Existing hospital buildings A, B, F and G are outside of the development footprint and currently are not proposed for demolition works. Careful consideration will be required for removal and reinstatement of connections and building links between the existing hospital buildings to be demolished (between block E and Block F), those outside of the proposed hospital footprint that are to be retained and between block E and H to be demolished and block C to be retained

At the time of writing, the proposed New Build Hospital development layout (presented on **Figure 3**) can be summarised as follows:

- The New Build Hospital will comprise a large rectangular building spanning between Kensington Place in the north and Gloucester Street in the south. A smaller building is proposed in the west. The New Build Hospital is proposed to be some 8 storeys high. Two new access roads are proposed either side parallel with the lengths of the new rectangular building and parallel with existing Newgate Street.
- The construction of a large 'L' shaped basement is proposed to extend from Gloucester Street in the south to Kensington Place in the north, beneath the footprint of the new building. The western end of the basement north of Patriotic Street Multi Story Car Park is proposed to house one of the lift cores and service yard access. The basement is

anticipated to be constructed within at least a 10m perimeter of the proposed new building footprint boundary, see **Figure 3**.

- A new access link between Patriotic Street Multi Storey Car Park and the north-western part of the new hospital building is proposed at the western end of the scheme area.
- During the demolition and construction phase of the development a three storey temporary clinic block is to be constructed.

Further to the proposed development at the Jersey General Hospital there's a potential for an additional storey to be added to the existing Patriotic Street Multi-Storey Car Park situated south-west of the existing hospital buildings.

The Patriotic Street MSCP has had two preliminary feasibility reports prepared which consider the possibility of construction of an extra storey [26], [27]. Photographs and relevant images of the MSCP and the existing hospital buildings are presented in **Appendix B-1**.

The proposals at the Jersey General Hospital are currently being developed.

3.2 Westaway Court

The existing building layouts based upon the Ordnance Survey mapping and indicative development proposal footprints are provided on **Figure 3** and the latest hospital proposals provided in **Appendix J**.

At the time of writing proposals for Westaway Court comprised the following:

- Demolition of Blocks A, B, C and D and replacement with new building. Buildings to be primarily accommodation blocks for medical professionals who work in the Hospital. The tallest building is a 9 storey tower block (with a square footprint) and a 4 storey 'L-shaped' building around the southern and eastern sides of the tower block. Currently the two buildings aren't proposed to be linked and a small car park/courtyard space is proposed between the two buildings.
- Building to consist of up to four storeys above ground.
- Typical clinical zones have been identified by level on 1:500 scale drawings.
- Plant areas/plant rooms and locations are still under review
- The proposed building will require an interim state to accommodate an alternative internal layout

4 The Site

4.1 Site Location and Description

4.1.1 Jersey General Hospital

The Jersey General Hospital site is situated off Gloucester Street, to the northwest of the town centre of St Helier, and approximately 250m from the seashore of St Aubin's Bay. The site location for Jersey General Hospital is shown on **Figure 1**.

The existing Jersey General Hospital building layout is shown on **Figure 2**. Photographs taken during a recent site walkover undertaken by an Arup Structural Engineer on Thursday 18th August 2016 are included in **Appendix B-1**. The locations these photographs were taken are indicated on **Figure 4**.

The site is approximately 'z-shaped' measuring approximately 200m by 150m. The surface of the site appears relatively flat however it generally slopes from north to south. Based on Ordnance Survey levels (as indicated on **Figure 11**) the elevation at the northern corner of the site is 12.8mOD whereas the southern corner is at 7.6mOD. An approximate difference in ground elevation across the site of 5.2m. There is also a change in elevation over the length of the proposed new development (refer to **Figure 2**). From Gloucester Street to Kensington Place the site rises up by 3.3m. Careful consideration of this elevation change should be taken into account as part of the design.

The site is bounded to the northeast by 'The Parade', to the southeast by 'Gloucester Street', to the southwest by 'Newgate Street' and to the northwest by 'Kensington Place'.

The site is an active hospital with a congested building layout, with buildings constructed during the 1800's, 1960's and 1980's, see **Figure 2**. Some of the junctions between buildings are stepped, one example of this is a step down from the court yard in the south-western part of the site adjacent to Block E and adjacent to Block H.

Site walkover Photographs 15 to 18 show parking is mainly confined to the basements in the western and southern parts of the site. The known extent of the basements are indicated on **Figure 6**. There is peripheral parking in the southern part of the site in front of Granite Block C, see Photo 22.

The Jersey Planning Department report the 1860 Granite General Hospital building and Granite Gatehouse within the southern part of the site to be Grade I listed buildings [3], the 'Statement of Significance' is as follows:

"An important example of a substantial mid-19th century hospital typical of the period retaining most historic features, with outstanding masonry work. The entrance lodge is an unusual building of high quality, retaining fine feature in a muscular hybrid classical/neo-Norman style. Together a fine ensemble."

The history of the site is discussed further in the Site History section below.

4.1.2 Westaway Court

Westaway Court site is situated approximately 100m north of the Jersey General Hospital site on the north side of Parade Gardens and west of St Helier town centre. The site is bounded by Savile Street along the north-eastern boundary, Elizabeth Place along the north-western boundary and Parade Gardens to the south. The site location for Westaway Court is also shown on **Figure 1**.

There are two existing buildings on the Westaway Court site. The first is a square 9 storey tower block at the north of the site and the second is an 'L-shaped' 4 storey building to the south of the tower block, see photo 4 in **Appendix B-2**. There is a large car park adjacent to Savile Street which has an access road along the north-western edge of the site to an internal car park/courtyard area in the space between the two buildings. Site walkover photographs taken on Thursday 18th August 2016 by an Arup Structural Engineer are indicated in **Appendix B-2** and locations are indicated on **Figure 5**.

The buildings on the site are currently used as accommodation for medical professionals who work in the Jersey General Hospital.

4.2 Site History

The history of the Jersey General Hospital and the Westaway Court sites have been reviewed using historical plans, aerial photos obtained from Jersey Archives and supplemented with published information and historical documents on the hospital site [3] [7] [8] [13] [14] dating between 1741 and 2016.

The approximate proposed hospital building footprints are annotated on historical plan extracts and aerial photographs provided in **Appendix C**.

4.2.1 Jersey General Hospital

A report on the history of the Jersey General Hospital, after its centenary year in 1963 [13], details how the hospital first came to fruition in the 18th century. A summary of the key findings of this report is provided below as follows.

In 1741 a Mrs Bartlett “bequeathed to the public 50,000 francs of which 10,000 was to erect a poor house and 40,000 for its upkeep”[13]. The poor house was initially planned to be built in St. Aubin which, at that time, was the commercial capital of the Island. Eventually the States of Jersey decided on a site in St. Helier and in 1765 the foundation of the poor house was laid. A chronological history of Jersey General & Acute Hospital document shows that a building ‘for the destitute, aged and orphans’.

The Jersey Planning portal [3] indicates the first foundation stone laid for the first ‘poor house’ building in 1765 and the building (referred to as C18) was completed in 1768.

By 1772 the poor house is reported to have opened [14] for the destitute, aged and orphans. Designed to house 250 there were usually 350 accommodated.

Earliest historical plan dated 1781, shows the rectangular ‘poor house’ building (Block C) in place within the site.

The Centenary document and chronological history document both indicate the original building was burnt down in 1783.

In 1793 the hospital is reported to have reopened [14].

Richmond Map dated 1795 shows the Granite Block building footprint and an entrance track to the south-eastern side of the building. Beyond the south-eastern boundary buildings are shown to be present off the present day Parade Road, with open undeveloped areas to the north-east, north and south-west. A surface water feature flows in a westerly direction towards the southern corner of the site at which point it changes direction to flow in a south-westerly direction where it discharges at St Aubin’s Bay.

Map dated 1800 shows the same hospital building footprint, within a more defined rectangular site boundary. Garden areas are shown to the east and west of the building. The surface water feature is no longer shown. No mapping features are shown within the far south-western part of the proposed new hospital footprint.

The 1834 map shows that the infrastructure surrounding the site was established, comprising Gloucester Street, Parade Place, and George Street (the present day Kensington Place). The Granite Block hospital building footprint remains unchanged. Some ‘step-like’ features are annotated at the southern side of the building, possibly access to the basement (refer to basement layout provided on **Figure 6**). Gardens are marked out to the rear of the Granite Block within the central western part of the proposed development footprint. No buildings are annotated within the western part of the proposed footprint off George Street. A rectangular building marked ‘Prison’ is annotated within the south-western part of the site.

The Godfray Map of 1849 shows the Granite Block within the same footprint. The prison building remains present to the south-west of the site. A building is present within the location of the present day location of Patriotic Street MSCP. A row of development has been constructed within the south-western part of the site off George Street (present day Kensington Place).

The hospital is reported on the planning portal [3] to have been destroyed by fire in July 1859. The new hospital building is reported to have begun construction on the same foundation stone in 1860. The official opening ceremony of the hospital building took place on 10th March 1863. It is also reported that the hospital was designed by architect Thomas Gallichan and built by Messer Le Gros & Le Cras. The entrance lodge was added in 1877 [3].

A photograph taken around 1879 [7] from the high ground near Westmount Road, near Overdale Hospital, west of the site, shows the western side of the hospital building and the chimney in place. The prison building is shown to the right-hand side of the chimney (in the locale of the present day Patriotic Street MSCP).

Plans dated 1900 and 1907 show the infrastructure of St Helier is further established. George Street is renamed Kensington Place. Newgate Street is

annotated along the western boundary of the site. The prison buildings remain present within the south-western part of the site. No significant changes to the site and the surrounding area.

The Centenary document [13] also details several changes to the hospital in the early 20th century. In 1908 the Hospital Committee were involved in a legal case between themselves and a Mr Mirehouse who had complained about the conditions and the way the Hospital was run concerning the spread of certain diseases. After this case considerable improvements were made to the internal conditions of the hospital.

Following on from this the Centenary document [13] explains how the Hospital had electricity installed for the first time in 1923. In 1924 the General Hospital was recognised as a training hospital for nurses.

It also details how in 1930 a separate building was to be constructed to house the poor, aged and infirm meaning that the original building now purely dealt with medical cases.

In 1940 the Hospital was occupied by German Armed Forces.

Aerial photos taken in 1943 and 1944 show no significant changes. Historical documents indicated that the Hospital was occupied by German forces between the years of 1940-1945 [13] [14]. Jersey was liberated in 1945.

Peter Crill House was constructed in 1949 and opened in 1950 (initial nurses home at the time). Subsequently overclad / refurbished.

In 1962 the 1960's Wing opened housing Accident & Emergency, 2 theatres and private wing.

Ordnance survey plan dated 1968 shows the prison buildings in the western part of the site are shown as one building, annotated 'H M Prison'.

Aerial photo dated 1974 shows Block B had been constructed by this time. The prison buildings had been demolished and hospital buildings extended within the western part of the site. With the exception of the Granite Block C, other buildings on the site appear of a different layout compared to the present day.

The Chronological historical document indicates the Gwyneth Huelin Block (out patients) (Block E) was opened in 1979 (Phase 1) and the Engineering block (Block G) housing the boiler and oil tanks was opened in 1980 (Phase 1A) [14].

From review of the chronological history document and a Jersey group of Hospitals document it is clear that Block F, containing a pharmacy, mortuary and kitchens, was opened in 1983 (Phase 1B) [14] [15]. Construction of Blocks E, F and G was part of a multi-phase process that began in 1969 as indicated in the Jersey group of Hospitals document [15].

In 1983 Pathology, Pharmacy, Mortuary and Kitchens opened (Phase 1B).

The Granite bell tower from the original (demolished) hospital chapel was relocated alongside the lodge in 1984 [3].

Between 1984 and the present day modifications have occurred to the hospital building.

In 1987, in-patient seven story block opened (Phase 2).

In 1994 Peter Crill House opened (formerly the Nurses Home).

In 2015, a long-term temporary theatre was constructed within the narrow car park to the front of the Granite Block.

Summary

In summary the Jersey General Hospital site has been continuously developed since 1765 with more large scale construction developments occurring in the late 20th century. The constant development of the Jersey General Hospital site increases the likelihood that made ground will be encountered beneath the site.

4.2.2 Westaway Court

Earliest historical plan dated 1781 shows no mapped features within the site. Meadows' are mapped to the north-east of the site on within the outskirts of St Helier.

Richmond Map dated 1795 shows the Westaway site within the south-western corner of a field parcel to the north of 'rough pasture' land. Elizabeth Place is shown in place as a track / road to the west of the site. A small rectangular building is shown within the far south-western corner of the field parcel. '

Map dated 1800 shows the site within the south-western corner of an area of land annotated 'Prairies' (meadows). No buildings or features are annotated within the site or immediate vicinity of the site. The present day Elizabeth Place is annotated 'Le Rouge Bevilien' to the west of the site. The cemetery is annotated in the present day location within the eastern side of Parade Gardens.

The 1834 map shows that the infrastructure surrounding the site was becoming established. Within the site boundary, a rectangular building is present along much of the western boundary with gardens across the central and southern parts of the site. No mapped features are shown across the northern part of the site, which lies within the southern part of a larger field parcel. Immediately south of the site 'The Parade' (public open space / gardens) perimeter is lined with trees and layout established. The bounding road to the west is annotated 'Elizabeth Place'.

The Godfray Map of 1849 shows no significant change to the site. Further development has occurred to the surround site area.

Plans dated 1900 and 1907 show no significant changes to the site and the surrounding area. The infrastructure of St Helier is further established.

Ordnance survey plan dated 1968 and aerial photos show a north-west to south-east orientated building present within the site. No further significant change.

Construction drawings dated 1993 for Block D (linking Blocks A and C) are provided in **Appendix E**. As built drawings are not currently available.

No further significant changes have occurred up to the present day.

Summary

Historical mapping has shown that the Westaway Court site was green-field (meadows) up until 1843 when the first mapped building was constructed on the Westaway Court site. Construction drawings for Block C (1974) and Block D (1993) give an indication of the construction date for the current existing buildings.

4.3 Geology

The BGS hold no digital mapping for the Channel Islands. The geology of Jersey has been studied from 1:25,000 scale geological map. An extract of the map is provided within **Figure 7**.

Geological information has been reviewed from the following sources:

- Jersey Channel Islands Sheet 2 at 1:25,000 scale Geological map [9]
- Jersey Channel Islands geological memoir [10]

4.3.1 Made Ground

Jersey General Hospital

Made ground is anticipated to be present on the site relating to the construction platform to the historic and existing buildings and activities at the site. The site is surfaced with hard standings or buildings, as shown on the site walkover photos provided in **Appendix B-1**.

Westaway Court

Made ground is anticipated to be present on the Westaway Court site related to the construction and demolition of historic and the existing buildings on site. The site surface is covered with hard standings, masonry and tarmac as shown in the site walkover photos in **Appendix B-2**.

4.3.2 Superficial deposits

Jersey General Hospital

The geological map shows the site to be over Blown Sands superficial deposits typically comprising a structureless quartz-feldspar with low shell content due to aeolian deposition. The underlying Alluvium can comprise organic silts and muds with peat layers up to 2m thick, and often lenses and layers of coarser grained material, especially towards the base.

Westaway Court

The Westaway Court site is underlain by the same Alluvium superficial deposits which lie underneath the Blown Sand deposits found under the Jersey General Hospital site. Comprising of silts, muds and peat layers up to 2m thick. Coarser grained material especially towards the base.

4.3.3 Bedrock

Jersey General Hospital

The solid geology beneath the site comprises the Jersey Shale Formation (JSh) across much of the site, comprising mudstone, sandstone and grit. The St John's Road Andesite (JA) of the St Saviour's Andesitic Formation is shown to outcrop beneath the superficial deposits across the far north-western corner of the site.

The St John's Road Andesite forms the eastern outer limb of the north-east to south-west trending fold called the St Helier syncline, in the volcanic rocks. The dip of the eastern limb is indicated to be approximately 80° to the west [10].

The geological map extract provided in **Figure 7** shows three boreholes within the central and eastern parts of the site, within the Jersey Shale Formation. These could be the locations of the 1973 boreholes discussed in Section 5.1 below; however this is not confirmed.

Westaway Court

The Jersey Shale Formation (JSh) lies beneath the Westaway Court site.

4.3.4 Geological Paper dated 1989 on construction of basements in St Helier

There is a geological paper written by Littlejohn G.S et al. that details the difficulties of constructing basements within the St Helier blown sand deposits from a development at the TSB building in 1989 [30].

The TSB building lies approximately 500m east of the Jersey General Hospital Site but is also underlain by the same blown sand deposits with a high phreatic surface. This provides difficulty for constructing underground structures as the ground conditions are very unstable and prone to running sand conditions, as mentioned from the anecdotal evidence at the Jersey General Hospital site and the observed concrete infill / underpinning observed by a Rothwell engineer, at the corner of the Granite Block.

The paper details several methods for controlling groundwater for basement construction including:

- Secant piled walls
- Sheet pile cofferdams
- Jet grouting
- Ground freezing
- Grouting

- Dewatering

The paper details how the TSB development used a grout curtain to cut off the outside driving head of water from the base of the excavation. This was combined with dewatering to reduce the groundwater level by 2.5m under the basement footprint [30]. This technique was successful for the TSB small scale project however potentially a more substantial method of controlling groundwater and unstable ground conditions is anticipated to be required for the larger scale Jersey General Hospital basement development. Given its proposed extend indicated on **Figure 3**.

The most likely of these options to be suggested for the Jersey General Hospital basement developments are currently secant pile walls. Further investigation into the potential for running sand needs to be undertaken to better inform future development options.

5 Ground and Groundwater Conditions

Factual records from 11 No. historical ground investigations have been reviewed for the Jersey General Hospital and Westaway Court sites dated between 1973 and 2014. The records from which are provided in **Appendix D-1** and listed below.

The P02 issue of this desk study incorporates additional ground investigation information from the Patriotic Street MSCP, dating from 1983 (including 7 No. boreholes) and records from three other sites along Kensington Place and the Esplanade dating between 2007 and 2014 (including 12 No. boreholes). Details are presented in Table 1A.

The additional data have been reviewed and incorporated with the other available information.

The Patriotic Street boreholes are immediately adjacent to the site and of particular relevance. The soil and rock descriptions are considered relatively indicative in comparison to the other ground investigation information available. (BH1R, BH2 and BH4 include only limited descriptions regarding superficial deposit and made ground composition, and BH3, BH5, BH6 and BH7 have only allow very high level identification of strata). However, the GI also includes very useful information in relation to groundwater conditions, which is summarised in Section 5.1.1.

See **Appendix D** for further details.

Table 1A: Historical ground investigation records – Jersey General Hospital

GI Ref.	BH/TP Ref.	Depth (m)	Distance from site (m)	Comments
ON-SITE				
Foundations Engineering Ltd, Jersey General Hospital, Phase I (6 th /12 th March 1973)	BH1	10.8	Associated with Block E construction. Within proposed JFH site footprint.	Boreholes 1 & 2 located on Newgate Street. Borehole 3 located on central access road.
	BH2	11.0		
	BH3	12.3		
Geotechnical Engineering Ltd, Jersey General Hospital, Phase IB (12 th /14 th July 1979)	BH1	15.2	Associated with Block F construction. Within JGH site footprint.	Indicative borehole locations have been gained from the Patriotic Street MSCP section plans. These locations have been indicatively marked on Figure 8.
	BH2	15.0		
	BH3	13.5		
Geomarine Ltd, Main Theatres Upgrade SI, Jersey General Hospital (7 th /8 th March 2014)	BH1	12.7	Located within site footprint. Block C car park.	Boreholes associated with the construction of temporary theatre facilities.
	TP1	0.5		
	TP2	1.2		
OFF-SITE				
Amplus Ltd, 33 Gloucester Street, Raliegh House (4 th /5 th February 2000)	BH1	10.1	~100m S.E	The Amplus reports don't provide locations of boreholes. Locations

GI Ref.	BH/TP Ref.	Depth (m)	Distance from site (m)	Comments
Amplus Ltd, 15-16 The Parade (11 th September 2006)	BHP1	10.5	~50m S.W	estimated from associated drawings.
	BHP2	9.9		
	BHP3	9.7		
Gloucester Street surface water sewer outfall drawing (Drawing dated: 12 th January 1982)	BH1	8.0	~10m S.E (Gloucester Street)	No logs available. Indicative log summaries provided on the Gloucester Street surface water sewer outfall drawing in Appendix N.
	BH2	7.5		
	BH3	8.0		
	BH4	9.0		
Patriotic Street MSCP (Records dated: 1983)	BH1R	13.4	~10m S.W (Patriotic Street MSCP)	Boreholes associated with the construction of the Patriotic Street MSCP.
	BH2	11.3		Lack of detailed logs did not allow for differentiation between strata within the superficial deposits.
	BH4	10.8		
	BH3	11.2		
	BH5	11.1		
	BH6	15.8		
	BH7	15.2		
Amplus Ltd Kensington Gate Car Park (8 th /12 th January 2007)	BH4300	10.3	~40m S.W (Kensington Place)	Boreholes associated with the construction of Kensington Gate Car Park.
	BH4301	10.5		
	BH4302	11.0		
Geomarine Ltd Kensington Place (16 th /21 st July 2009)	BH4303	6.8	~60m S.W (Kensington Place)	
	BH4304	7.4		
	BH4305	7.3		
	BH4306	6.4		
	BH4307	8.4		
Amplus Ltd 66-72 Esplanade (21 st March/2 nd April 2014)	BH4802	7.0	~60m S.W (Esplanade)	Boreholes located on the site adjacent to the Patriotic Street MSCP.
	BH4803	11.6		
	BH4804	7.5		
	BH4805	11.7		

Table 1B: Historical ground investigation records – Westaway Court

GI Ref.	BH/TP Ref.	Depth (m)	Distance from site (m)	Comments
Westaway Court				
Westaway Court, Matthew F Warner & Associates Ltd (4 th /6 th January 1994)	BH1	15.0	Westaway Court (see Figure 8) ~200m N.E of the JFH site	Boreholes associated with the construction of a link building forming the 'L-shaped' building.
	TP3	2.7		
	TP4	2.5		

The approximate locations of all exploratory holes, at both sites, are shown on **Figure 8**.

5.1 Ground Conditions (Jersey General Hospital)

The ground investigation data from the investigation presented above in **Table 1A** have been reviewed and summarise in **Table 2** (provide towards the back of this report).

Since the previous issue of this Geotechnical Desk Study **Table 2** has been updated to include detailed ground investigation data from the Patriotic Street MSCP GI and 3No individual ground investigations located approximately 60m to the southwest of the Jersey General Hospital site. **Table 2** is now presented within the tables section towards the back of this report.

Ground Conditions Conclusions

A summary of the ground conditions encountered at the Jersey General Hospital site is provided in **Table 3** below.

Table 3: Summary of encountered ground conditions, **Jersey General Hospital**

Stratum	Description	Recorded Thicknesses (m)
Made Ground	Fill with inclusions of brick, tiles, concrete and gravel	0.1m to 3.8m
Blown Sand	Fine to coarse sand, with occasional silts, fine sand and gravel	0.0m to 5.5m
Alluvium	Interbedded layers: <ul style="list-style-type: none"> - Cohesive: firm to stiff CLAY / SILT - Granular: medium dense silty SAND / sandy GRAVEL 	3.0m to 8.3m
Head	<i>Encountered at the Kensington Place ground investigation (Geomarine, 2009). Composition similar to that of the alluvium. Not anticipated to be encountered beneath the JGH site. See Figure 8 for the Geomarine 2009 GI locations.</i>	
Bedrock	Jersey Shale Formation: Southern and eastern parts of site. <ul style="list-style-type: none"> - Highly weathered to moderately weathered fine grained mudstones and siltstones / slightly metamorphosed mudstone. - Evidence of mudstones containing pyrite crystals and veins. John's Road Andesite Formation: Western corner of site. <ul style="list-style-type: none"> - Dolerite - 'Amygdaloidal lava' (Basalt) 	0.3m to 4.5m proven <i>Rockhead between 9.0m bgl and 12.2m bgl</i>

Refer to the geological sections '2 – 2' and '9 – 9' in **Appendix H** for an indicative representation of the anticipated ground conditions beneath the Jersey General Hospital site, and in relation to the proposed basement development.

Made Ground

Made ground encountered up to a maximum extent of 2.8m bgl. The made ground strata generally comprised fill with inclusions of brick, tile, concrete and gravel.

No visual or olfactory evidence of contamination was recorded at any of the exploratory hole locations.

Blown Sand

Blown sand deposits were encountered universally across all ground investigation locations underlying made ground and to a maximum recorded depth of 6.5m bgl. The blown sand deposits were generally light in colour and comprised fine to medium grained sands with occasional bands of silts and gravels. SPTs were carried out during the ground investigations at the Jersey General Hospital site identified that the Blown Sand superficial deposits returned N values of between 5 and 20, representative of a loose to medium dense granular material. For a visual representation of the blown sand materials refer to the construction photographs from the temporary theatres block provided in **Appendix B-3**.

Alluvium

The alluvial deposits comprised a mixture of interbedded cohesive materials (clays, silts) and granular materials (sands, gravels). The alluvial deposits are relatively extensive and extend down to bedrock (9.0-12.2m bgl). SPTs within the alluvium returned N values of between 8 and 41 consistent with a medium dense to very dense granular material or firm to stiff cohesive material.

Head

*Head deposits were encountered underlying reworked blown sand made ground at the Kensington Place site during the 2009 ground investigation, see **Figure 8**. The head deposits were of a very similar description to the alluvial deposits stated above. However, the ground investigation records presented visual and olfactory evidence of hydrocarbon contamination. Consultation with the States of Jersey during the undertaking of the Environmental Statement has revealed that this evidence was a result of a past leakage/spillage and has since been remediated.*

Bedrock

Bedrock surface was encountered between 9.0m bgl and 12.2m bgl across all previously undertaken ground investigations. Both the Jersey Shale Formation (meta-siltstones and mudstones) and the St Johns Andesite Formation (volcanic rock) were encountered often described as meta-siltstone / lightly metamorphosed mudstone / dolerite. Upper weathered bedrock was recovered as 'grey rock fragments in grey clay matrix' from 8.97-9.05mbgl in BH1 (2000) and 'highly weathered rock fragments in a silty CLAY' from 10.8 to 11mbgl. SPT N values of between 45 and 50 were recorded within the weathered surface of bedrock, indicating very dense or stiff materials. Pyrite veins and crystals were noted within the mudstones encountered during the 1979 Phase IB ground investigation.

Summary

The ground conditions encountered across the historical ground investigation undertaken to date presents consistent findings. Made ground is anticipated to be encountered extensively across the GJH site to a potential depth of 2.8m bgl. Loose to medium dense blown sand was consistently recorded to be present underlying the made ground, to recorded depths of between 2 and 6.5m bgl. The

blown sand was found to be relatively loose, and anecdotal evidence suggests that running sand may be a potential issue during further works if adequate controls are not incorporated into the development proposals to prevent ground loss. The blown sand was underlain by alluvial deposits comprising clay, silt, sand and gravel. The alluvial deposits are relatively extensive and overlie the bedrock with recorded depths of between 9.0-12.2m bgl. The ground investigations encountered both Jersey Shale formation and St Johns Andesite Formation beneath the site. The Jersey Shale formation was predominantly encountered in the southern and eastern sections of the site whereas the St Johns Andesite was encountered predominantly in the western corner of the site.

The previously undertaken ground investigations allow for a preliminary characteristic ground model to be idealised for design purposes, based on a reasonable 'worst case scenario' e.g. with the loose blown sands assumed to be at maximum recorded extent across the site. See the geological section drawings in **Appendix H** for the preliminary ground model. Once the proposed site specific ground investigation has been completed, the ground model can be refined further which may allow for more efficient design solutions.

5.1.1 Groundwater Conditions (Jersey General Hospital)

Table 4 below provides the recorded groundwater levels from historical ground investigation reports from the Jersey General Hospital site.

Table 4: Historical recorded groundwater levels, Jersey General Hospital

Ground Investigation	BH Ref.	Groundwater Observations
ON-SITE		
Foundations Engineering Ltd Phase I (6th/12th March 1973)	BH1 (9.8mD)	GW strike at 1.3mD (8.5m bgl) within silty sand deposits. Subsequent GW monitoring recorded GW level at 1.5mD (8.3m bgl) within silty sand deposits. <i>Note 2</i>
	BH2 (8.5mD)	GW strike at 1.5mD (7.0m bgl) within silty sand deposits. Subsequent GW monitoring recorded GW level at 1.8m D (6.7m bgl) within silty sand deposits. <i>Note 2</i>
	BH3 (10.6mD)	No GW information. <i>Note 2</i>
Geotechnical Engineering Ltd Phase IB (12th/14th July 1979)	BH1 (10.3mD)	GW strike at 6.2mD (4.0m bgl) within orange brown silty sand deposits. Subsequent GW monitoring recorded GW level at 8.5mD (1.7m bgl) within fine white sand deposits.
	BH2 (11.6mD)	GW strike at 7.6mD (4.0m bgl) within fine sandy clayey silt deposits.
	BH3 (10.0mD)	GW strike at 2.0mD (8.0m bgl) within brown silty sand and gravel deposits.
Geomarine Ltd (7 th /8 th March 2014)	BH1 (13.0mD) ^{Note3}	GW strike at 4.05m bgl, rose to ground level after 30 minutes (<i>indicative of artesian conditions</i>)
OFF-SITE		
Amplus Ltd (4 th /5 th February 2000)	BH1 (9.9mD) ^{Note4}	GW strike at 2.95m bgl, rose to 2.82m bgl in 15 minutes
Amplus Ltd (11th September 2006)	BHP1 (9.7mD) ^{Note4}	No groundwater encountered.
	BHP2 (9.6mD) ^{Note4}	
	BHP3 (9.7mD) ^{Note4}	
Gloucester Street Surface sewer drawing (Drawing dated: 12 th January 1982)	BH1 (15.0mD) ^{Note1}	GW level at 2.8m bgl within sand deposits <i>Note 1</i>
	BH2 (14.4mD) ^{Note1}	GW level at 2.0m bgl within sand deposits <i>Note 1</i>
	BH3 (13.0mD) ^{Note1}	GW level at 2.1m bgl within sandy gravel deposits <i>Note 1</i>
	BH4 (13.2mD) ^{Note1}	GW level at 1.8m bgl within gravelly sand deposits <i>Note 1</i>
Patriotic Street MSCP (Records dated: 1983)	BH1R (8.4mD)	Primary GW strike at 2.0mD (6.4m bgl) within gravel deposits. Secondary GW strike at 2.4mD (10.8m bgl) within clayey silt deposits and at head of bedrock. Subsequent GW monitoring recorded GW level at 5.0mD (3.4m bgl) within silt deposits.
	BH2 (8.8mD)	GW strike at 2.0mD (6.8m bgl) within gravelly silt deposits. GW monitoring level at 6.2mD (2.6m bgl) within silt deposits.
	BH3 (9.6mD)	GW strike at 3.0mD (6.6m bgl) within superficial deposits. GW monitoring level at 6.6mD (3.0m bgl) within superficial deposits.

Ground Investigation	BH Ref.	Groundwater Observations
	BH4 (9.2mD)	GW strike at 2.3mD (6.9m bgl) within silt deposits. GW monitoring level at 6.2mD (3.0m bgl) within silty sand deposits.
	BH5 (8.8mD)	Primary GW strike at 1.9mD (6.9m bgl) within superficial deposits. Secondary GW strike at 1.1mD (9.9m bgl) within superficial deposits.
	BH6 (7.9mD)	Primary GW strike at 1.9mD (6.0m bgl) within superficial deposits. Secondary GW strike at 2.2mD (10.1m bgl) within superficial deposits. Subsequent GW monitoring recorded GW level at 5.7mD (2.2m bgl) within superficial deposits.
	BH7 (8.2mD)	Primary GW strike at 2.0mD (6.2m bgl) within superficial deposits. Secondary GW strike at 2.5mD (10.7m bgl) within superficial deposits and at head of bedrock. Subsequent GW monitoring recorded GW level at 5.0mD (3.2m bgl) within superficial deposits.
Amplus Ltd Kensington Gate Car Park (8 th /12 th January 2007)	BH4300	No GW strikes recorded on log, GW depth measured as shallow as 2.83m bgl
	BH4301	No GW strikes recorded on log, GW depth measured as shallow as 2.0m bgl
	BH4302	No GW strikes recorded on log, GW depth measured as shallow as 1.46m bgl
Geomarine Ltd Kensington Place (16 th /21 st July 2009)	BH4303	No GW strikes recorded on logs.
	BH4304	
	BH4305	
	BH4306	
	BH4307	
Amplus Ltd 66-72 Esplanade (21 st March/2 nd April 2014)	BH4802	No GW strikes recorded on log, GW depth measured at 3.75m bgl
	BH4803	No GW strikes recorded on log, GW depth measured at 1.95m bgl
	BH4804	No GW strikes recorded on log, GW depth measured at 4.57m bgl
	BH4805	No GW strikes recorded on log, GW depth measured at 5.47m bgl

Note 1 - Groundwater levels gathered from States of Jersey Resources Board Gloucester Street surface water outfall drawing and accompanying note states 'The information above is the best available, however its accuracy cannot be guaranteed'. Additionally the drawing doesn't state whether the groundwater level was recorded from a groundwater strike or from subsequent groundwater monitoring.

Note 2 - Water was added to the boreholes to assist in shelling and this may possibly have disguised any slight seepages.

Note 3 - Elevations provided from Geomarine Ltd records are arbitrary values.

Note 4 - Elevation data for boreholes unavailable in records. Indicative elevations gained from GPS Geoplaner website [16].

Groundwater Conclusions

The ground investigation at the Patriotic Street MSCP in 1983 presents relatively consistent groundwater information. Primary groundwater strikes were consistently recorded between 3.0mD and 1.9mD (all between 6.0m bgl and 6.9m bgl). A secondary groundwater strike was often recorded between 1.1mD and 2.5mD (all between 9.9m bgl and 10.8m bgl). The secondary groundwater strikes were often just above the level of the bedrock within the alluvial deposits. Groundwater monitoring was installed at a selection of the Patriotic Street MSCP boreholes. Where present groundwater monitoring installations recorded a groundwater level between 6.6mD and 5.0mD (all between 2.2m bgl and 3.4m bgl) which is significantly shallower than the strike levels recorded.

The ground investigation at the Patriotic Street MSCP in 1983 also presented an interpretation of the 1973 JGH Phase I and 1979 JGH Phase IB (shown as Phase II in **Appendix D**) ground investigations. The interpretation presented detailed groundwater information that had previously not been available for review. The 1973 Phase I ground investigation recorded GW strikes of 1.3mD and 1.5mD at BH1 and BH2 respectively. Groundwater monitoring at these two locations indicated a slight rise to 1.5mD (BH1) and 1.8mD (BH2) which is considerably less than what was reported during the 1983 ground investigation. Furthermore, the 1979 Phase IB ground investigation indicated GW strikes between 7.6mD and 2.0mD.

As discussed above, there is a high level of variation in groundwater strike depths. The inconsistency in groundwater levels may be a result of tidal variation as the site is approximately 200m from the sea shore. The potential for tidally induced groundwater movement is proposed to be investigated as part of the future ground investigation.

Artesian Conditions

Groundwater at BH1 (2014) was struck at 4.05m bgl (within the alluvium deposits). A subsequent rise in groundwater level to the surface after 30 minutes is indicative of potentially artesian conditions. It is recommended groundwater monitoring is undertaken as part of an additional ground investigation in order to better understand the groundwater conditions beneath the site.

Summary

The inconsistency in groundwater observations between the ground investigations does not allow for a definitive groundwater level to be determined. However, the information gathered to date does allow for a preliminary ('reasonable worst case') ground and groundwater model to be formed. See sections '2 – 2' and '9 – 9' in **Appendix H** for a visual representation of the groundwater strikes beneath the site. The proposed ground investigation will gather further information regarding the groundwater conditions beneath the JGH site. Once the ground investigation has been completed, it may be possible to define the groundwater level beneath the site and any possible tidal variations. The groundwater information will be useful during the detailed design stage of the Jersey General Hospital development.

5.2 Ground Conditions (Westaway Court)

Table 5 below provides details on the encountered ground conditions at Westaway Court site.

Table 5: Encountered ground conditions, **Westaway Court**

Westaway Court, Matthew F Warner & Associates Ltd (4 th /6 th January 1994)					
BH Ref. (Note 6)	Made Ground	Blown Sand	Alluvium	Bedrock	Total Depth
BH1 (13.3mOD)		Gravelly SAND with silt 0 – 3.0m	SILT, SAND and some CLAY 3.0 – 14.3m	Strong Igneous Rock 14.3 – 15.0m	15.0m
TP3 (13.1mOD)		Topsoil, Brown fine SAND 0 – 2.6m	SILT with some organics 2.6 – 2.7m		2.7m
TP4 (13.4mOD)	Brick, stone gravels. Slightly organic 0 – 1.4m	Off-white SAND 1.4 – 2.5m			2.5m

Note 6 – Elevation data for BH unavailable in records. Indicative elevation gained from GPS GeoPlaner website [16].

Table 6 below presents a summary of the data gathered from the aforementioned exploratory holes.

Table 6: Summary of encountered ground conditions, **Westaway Court**

Stratum	Description	Thickness
Made Ground	Fill with inclusion of brick, concrete and gravel	0.0 to 1.4m
Blown Sand	Fine to coarse sand, with occasional silts, fine sand and gravel	1.1m to 3.0m
Alluvium	SILT, SAND and some CLAY	11.3m
Bedrock	Strong Igneous Rock	0.7m proven Rockhead at 14.3mbgl

5.2.1 Groundwater Conditions (Westaway Court)

Groundwater was struck at 13.6mbgl within silts and sands underlying silty clays. The borehole record details fast inflow once groundwater was struck resulting in a rise to 7.5mbgl. A standpipe was installed to 5.0m bgl and subsequent groundwater monitoring recorded the groundwater level at 2.0mbgl.

6 Radon

Information for Radon on Jersey and the site area have been gathered from the Review of radon in the States of Jersey report for the environmental scrutiny panel [18], discussion with States of Jersey Department of the Environment, Environmental Protection and review of BRE211 [33].

Radon is a natural radioactive gas, which has no taste, smell or colour. It is produced by the radioactive decay of uranium and thorium, present in all soils and rocks in small quantities. There are a number of different isotopes of radon but the most important is radon-222 [18].

The geology on the Island of Jersey is similar to that found in areas of the South-West of England where the most recent mapping of Radon potential shows a high proportion of homes with a 30% or greater chance of a radon level that exceeds the Action Level [18].

Reports provided to the States of Jersey suggest that the granites in Jersey are similar to those in the South-West of England but older. The granites are also highly fractured which gives rise to pathways for the release of the gas to the surface which could give higher radon concentrations in buildings [18].

A three phase test of radon on the island of Jersey was carried out between 1987 and 1992. The first phase tested 30 homes across the island begun in 1987. The measurements were taken over 3 months and the results of the test revealed that 10% of the homes had radon levels in excess of the 200 Bq m⁻³ Action Level [18].

The second phase of testing focused on the homes that were close to the homes with higher measurements from the initial test and two underground workspaces were tested. These measurements were taken over a longer 9 month period and the results indicated 36% above the precautionary radon level of 200 Bq m⁻³ [18].

The third phase focused on testing of homes in St Helier. 24 homes and 5 schools were tested in 1992 with all of these dwellings testing below the Action Level of 200 Bq m⁻³ [18].

This last phase of the test is the most significant as it focuses on St Helier which is the town where the proposed sites are located. However, the States of Jersey state that ‘all new houses built in Jersey must now be protected against radon’ [3]. Therefore, full radon protective measures are required for the construction of the Jersey General Hospital new buildings.

Radon protective measures may comprise of gas tight membranes below all slabs and sealing of incoming services. A cost allowance should be made for gas protective measures including ground sumps. Regulatory communication in 2014 on Radon is provided in **Appendix L**. Regulatory requirements are to be confirmed [19].

7 Unexploded Ordnance (UXO)

There is no available published UXO mapping for Jersey General Hospital and Westaway Court.

Historical searches of Jersey and WWII suggest that Jersey was bombed by German aircrafts in June 1940 [2]. However it is widely known that no significant bombing took place on the island, rather occupation by the Germans. From further review of historical documents [13] [14], there is evidence that the Channel Islands were occupied by the German forces post 1940. This considerably lowers the risk of potential bombing by German aircraft and the risk of subsequent bombing from Allied aircraft is highly unlikely due to the islands British population majority. Their occupation ended in 1945 when Jersey was liberated.

Review of published historical sources at Jersey Archives has not revealed any evidence of bombing or identified UXOs at the two sites.

No evidence of building damages or surface depressions that could be associated with bombing was identified during the review of the aerial photos for the two sites (included in **Appendix C-2**). However, it must be noted that a limited number of aerial photos were available and no adjacent frames were available to allow a 3D view with a stereoscope.

The ground conditions at the two sites do not lend themselves to the risk of buried UXO (e.g. no soft ground).

Jersey General Hospital site has been continuously developed since the late 1700's, with substantial development within the entire site occurred in the second part of last century.

In light of the above, the risk of UXO at both sites is considered to be low.

8 Hydrogeology

Hydrogeological data has been gathered from the review of a Hydrogeological Map of Jersey from 1991 on the BGS website [17]. No digital data for Jersey is available and therefore the review of the hydrogeology is from a scanned map. An extract of this map is presented as **Figure 9**. The drift and solid data from the map has been analysed and is presented below:

8.1 Drift (Superficial Deposits)

The majority of the Jersey General Hospital site is underlain by a blown sand aquifer, see **Figure 9**. It forms as a shallow productive aquifer yielding between 1.9-6.3 l/s. Average daily abstraction is around 1500m³/d but an additional 600m³/d is available before imposing any stress on the saline interface.

Beneath the blown sand deposits and under the Westaway Court site is an Alluvium based aquifer. It is generally 8-10m thick with gravels occurring in the lower 3m of the sequence. The hydraulic conductivity of the silty alluvium is generally of the order of 10⁻³m/d whereas the gravel section has a much higher hydraulic conductivity of 10-20m/d.

8.2 Solid (Bedrock)

The Jersey General Hospital site lies on the boundary between the Volcanic Group and the Jersey Shale formation, with the Westaway site above the Jersey Shale formation see **Figure 9**.

The Volcanic Group is a thick rhyolite and andesite volcanoclastic sequence deformed by a number of fold structures, minor faults and locally developed cleavage. Sustainable borehole yields range from 0.1-0.6 l/s however higher sustainable yields have been achieved meaning the average value for borehole specific capacity is 1.2 l/s/m. Hydraulic conductivity in the Volcanic group ranges from 0.2m/d to 13m/d.

The Jersey Shale Formation consists of highly indurated very fine to medium-grained sandstone units with subordinate mudstones and conglomerates, metamorphosed to low green-schist facies. Secondary permeability is available in the uppermost 40m derived from faults and fractures. Mean sustainable yield of boreholes is 0.6 l/s with the mean borehole specific capacity is only 0.6 l/s/m. The hydraulic conductivity is of the order of 1-10m/d.

The interaction between the Drift and Solid formation under and around the two site areas can be seen on the extract from the Hydrogeological map of Jersey [17] **Figure 9**.

8.3 Data Extracts

The Hydrogeological Map of Jersey (1991) also provides useful data on pH, total dissolved solids and annual rainfall. This data is presented in this section, however

further ground investigation will provide more relevant data for pH and the total dissolved solids in the immediate site vicinity.

pH

The pH ranges from 4.5 to 8.0 across the whole of the Island however within the vicinity of the site the pH range is between 7.0 and 7.5, therefore neutral to slightly alkali.

Total Dissolved Solids (TDS)

The area of the Island which has the highest level of TDS is the south-eastern tip with 1300-1600 mg/l; this is associated with marine intrusion and sea water contamination in this area. However the TDS on site is considerably lower with levels ranging from 500-700 mg/l.

Average Annual Rainfall

The average annual rainfall in St Helier ranges from 800mm towards the southern end of the town and 875mm in the northern boundaries of the town near St Saviour. Focussing on the site area, the average rainfall ranges from 825-850mm for both the Jersey General Hospital site and Westaway Court site.

9 Hydrology

9.1 Surface Water Features

From review of aerial photography and the Jersey Water Stream Nitrate map [35] has revealed the following hydrological features relating to the Jersey General Hospital and Westaway Court sites.

St Aubins Bay is located approximately 200m to the southwest of the Jersey General Hospital site.

The confluence between the Grands Vaux and Vallee des Vaux streams is located approximately 1.1km to the northeast of the Jersey General Hospital site. The Jersey Water Stream Nitrate map [35] shows the streams ending at the confluence location. This suggests that the streams are then culverted beneath St Helier before discharging out into St Aubins Bay. See the sub-surface water features section below for greater detail on the below ground water features.

No other surface water features are present within proximity to either the Jersey General Hospital site or the Westaway Court site.

9.2 Sub-Surface Water Features

9.2.1 Jersey General Hospital

Information regarding all available data on current sub-surface water features has been gathered from States of Jersey DfI (Department for Infrastructure - formerly known as Transport and Technical Services T&TS) drawing showing the Jersey General Hospital Site which can be found in **Appendix G**. For details of the existing drainage features, reference should be made to the separate drainage drawing SK100 which is currently being prepared by Arup civils at the time of writing.

The drawing provides the routes of foul sewers, storm sewers, old brick sewers and the route of the town brook (Le Faux Bie). Presented below is a summary of the data gathered from the drawing:

Le Faux Bie (Town Brook)

Originally the 'Le Faux Bie' stream ran through the area of St Helier where the Jersey General Hospital site is located. At some point during the development of this sector of the town the stream was culverted. The known route of this culvert is shown in **Figure 10**. The culvert comes towards Gloucester Street in a north-westerly direction before turning ~90° to flow along the line of Gloucester Street in a south-westerly direction. Amendments were made to the route of the culvert in 2004, also shown on Figure 10, to straighten the route. From manhole cover and invert levels it is estimated that the culvert is between 2.3 – 2.5m bgl around the area of the Jersey General Hospital site. Drawing E1-7 (**Appendix E**) shows a culvert plan beneath 6-14 Gloucester Street to the west and a selection of culvert sections along the length shown on the plan. The drawing was produced and

provided by Rothwell & Partners Ltd and has no drawing title however it is dated Feb 2006 it is referred to as Culvert details in this report [30]. The culvert is a brick arched structure, however a smaller oval shaped culvert is evident within the old culvert. Rothwell have provide photographs from an investigation showing that the space between the oval culvert and the original brick arch culvert has been infilled with concrete.

Foul Sewers

The foul sewer network runs almost around the whole site. Running underneath The Parade is a 530mm ø concrete foul sewer at an average depth of 4m bgl. This foul sewer then joins into a 1000mm ø glass reinforced plastic (GRP) sewer at the cross-roads between The Parade and Gloucester Street before then running under Gloucester Street in a south-westerly direction. The sewer remains 1000mm ø GRP before downsizing to a 600mm ø GRP pipe which flows under Gloucester Street until it meet the culverted brook which it discharges into. The average depth of the sewer below Gloucester Street is 2.6m bgl. A smaller foul sewer network runs along Newgate Street in a south-easterly direction towards Gloucester Street where it also discharges into the culverted brook. The sewer starts out at 150mm ø then up-sizes to 230mm ø before finally up-sizing to 300mm ø with an average depth of 1.75m bgl. The routes of all foul sewers mentioned can be seen on the drawing in **Appendix G**.

Surface Sewers

There is a lined 1525mm ø diameter surface water sewer that runs underneath Gloucester Street which has an average cover of 5480mm (5.48m). The routes of the surface water sewer network can be seen on the States of Jersey drawing in **Appendix G**, drawing dated 11/02/2015. A detailed plan and section drawing of the surface water outfall can be found in Appendix N along with 4 borehole records from along Gloucester Street, as mentioned in the ground conditions section above. The Gloucester Street surface sewer outfall drawing in **Appendix N** was provided by DfI on the 8/11/2016. Both drawings in **Appendix G** and **Appendix N** have been reviewed and the drawings show the same alignments of the surface water sewer beneath Gloucester Street.

Old Brick Sewers

There are brick sewer networks around the Jersey General Hospital site. To the south-west of the site a brick sewer starts on Newgate Street before turning under Patriotic Street. The brick sewer flows underneath Patriotic Street until it reaches the turning on to Patriotic Place where it joins another brick sewer and flows down Patriotic place. The brick sewer then eventually discharges into the culverted brook just before it reaches Gloucester Street. The average depth of this sewer, according to the source drawing is 2438mm (~2.44m).

Under Kensington Place a brick sewer network flows from north-east to south-west. The average depth of this network is between 4.1 – 4.2m and the network has a series of road gullies and other drainage running into it along its length.

A small brick sewer runs underneath Gloucester Street collecting water from road gullies and other drainage sources before eventually feeding into the culverted

brook. An average depth for this sewer is not presented on the current drawing and therefore the depth of this sewer is currently unknown.

The route of all the sewers and other sub-surface water features can be seen on the States of Jersey drawing in **Appendix G**.

9.2.2 Westaway Court

States of Jersey drawings provided in **Appendix G**, show storm and foul drainage with the site associated with the downpipes from the buildings. Refer to Arup site development and civils team report on the existing drainage [32].

10 Contamination and Ground Gases

Made ground is anticipated at both sites associated with historical and existing land use.

Proposed foundations solution, anticipated to be required by the regulatory authorities include the following:

- Foundation works risk assessment
- Ground gas assessment
- Soil risk assessment
- Groundwater risk assessment

Regulatory requirements should be further understood as part of the planning process. It is anticipated the regulator will apply ground related conditions to planning associated with satisfying regulatory and legislative requirements of the above.

Soil arisings will be generated from piling works, excavations for the new basement, foundation excavations, utility trenches and other excavations on the sites. It is unlikely that made ground could be reused as selected fill on account of historical land uses including demolition and current land use activities. However there is a potential that natural ground or possibly demolition rubble may be suitable for reuse, subject to appropriate testing and compliance with the regulators. Reuse might include piling mats etc or localised infill materials. Due to the limited space on the site and the active hospital, any sorting and screening to render materials suitable for reuse is anticipated to be undertaken off site, possibly at a local off site compound. A large volume of natural superficial deposits are anticipated to be generated as part of the basement construction works. Reuse of this volume of material may be explored at a suitable potential off site receptor. Suitability of reuse will need to be confirmed by appropriate geotechnical and geo-environmental risk assessments accordingly to its proposed end use and setting. There is a requirement for targeted ground investigation to determine the nature and composition of the ground to be excavated. It is anticipated the States of Jersey (SoJ) will require a material management plan for such materials, such as potential for re-use (such as piling mat), off-site disposal to landfill, remediation and / or treatment. For natural materials in particular, its anticipated diversion from landfill will be sought, particularly for natural materials, which is likely to attract both cost savings and carbon reduction efficiencies.

Jersey General Hospital Specific

The historical ground investigations identified no evidence of contamination. However, there is a potential for contamination sources associated with the historical and current use of the site (e.g. tanks, storage of chemicals, etc.).

Further consideration with regards to potential contamination will be addressed as part of the detailed ground investigation.

The Engineering block (Block G) contains two large oil tanks and four boilers within the block. Currently the development doesn't include Block G, as of the latest plans, however care must be taken during demolition as the demolition boundary currently runs along Block G's south-western edge. See **Figure 11** features and constraints plan.

The service road that runs along the north-western edge of Blocks E and F is currently being used as medical oxygen storage, see site photos 6 and 7 in **Appendix B-1**, so this must be taken into account during any future ground investigation. Other medical gases are stored in a dedicated store adjacent to the existing site entrance gates.

Westaway Court

Historical mapping review of Westaway Court site indicates the site has been occupied by buildings since earliest plan date 1795. Made ground is anticipated to be encountered associated with demolition and construction works. The present day land use comprises residential hospital staff accommodation.

Based on available information, potential for contamination is anticipated to be low, however a potential risk remains. It is recommended that the chemical characterisation of the ground and groundwater conditions is undertaken as part of the scope of the ground investigation works.

11 Review of Existing Foundations

11.1 Jersey General Hospital

The approximate extents and locations of the existing piled foundations and basements have been determined by analysing all available record drawings, see **Appendix E**. Generally basements exist under the whole of Block B and Block C (Granite Block) with basements under parts of Block E and Block H.

11.1.1 Existing Foundations

Existing Buildings

A summary of foundation information available for the existing buildings on the site is provided in **Table 7** below and the existing building layout is shown on **Figure 2**.

Table 7: Existing Building Foundation Information – Jersey General Hospital

Building	Foundation type	Foundation Drawings / Info	Drawing dates
Block A (Phase 2)	Piled foundations	No foundation records available.	Proposed construction drawings dated 1983, 1984, 1985.
Block B (1960s wing)	Pad foundations	No foundation records available.	Proposed construction drawings dated 1958 to 1960.
Block C (Granite Block)	The Granite building was constructed in 1768, pad foundations are anticipated.	No foundation records available. Basement under part of building (see Figure 5). Listed Building.	Not available.
Block D (Peter Crill House)	Assumed piled based on column layout, refer to Appendix E1	Column layout drawings, see Appendix E1	2007 - 2016
Block E (Gwyneth Huelin Block Phase 1)	Piled foundations and basement	Drawings available dated 1975/76, see Appendix E1	Proposed construction drawings dated 1973 to 1977
Block F (Lab Block – Phase 1B)	Piled foundations	Pile layout drawings dated 1980, see Appendix E1	Proposed construction drawings dated 1979 to 1980
Block G - Engineering Block (Phase 1A)	Assumed piled based on column layout, refer to Appendix E1	Pile layout drawings dated 1978, see Appendix E1	Proposed construction drawings dated 1978
Block H - Daycare	Piled Foundations and basement.	General arrangement drawings, see Appendix E1	2007

11.1.2 Review of construction drawings

All relevant available construction drawings have been reviewed and the findings are presented below. A list of construction drawings can be found in **Appendix A**

Key Supporting Documents, with the relevant construction drawings themselves found in **Appendix E**.

Block H - Daycare

From review of documents E1-1 to E1-4 the locations of piles and pile caps for southern section of Block E and Block H have been identified. Drawings E1-1 to E1-3 are for the construction of Block H. E1-1 shows the existing pile cap locations, also shown in E1-4, and shows the location of a new pile cap with 2No. 300Ø piles located adjacent to the large central pile cap shown on E1-4. This pile cap supports a 203 UC 71 which is used to support the western most wing of the Block H development [20][21][22][23].

Drawing E1-1 also shows the edge of a ground beam between Block H and the Granite block (Block C) [20].

Block E – Gwyneth Huelin Block

Documents E1-5 and E1-6 are pile layout drawings provided by Edwards & Blackie. They provide the pile locations for the Gwyneth Huelin Block (Block E) which finished construction and was opened in 1979. Drawing E1-6 states that the max pile capacity for the piles for this wing is 50 tonnes [25].

Block D – Peter Crill House

Unfortunately no pile layout drawings have been provided for this building, an indication of the pile locations have been assumed based upon the column layouts shown on drawings E1-1, E1-2 and E1-10. This may impact the construction of the new development as one of the proposal options is for Block D to be demolished along with Blocks E, H and parts of Block F. The existing piles may present obstructions to new piling and construction works.

11.1.3 Existing Basements

The extent of the existing known basements at the Jersey General Hospital site is shown on **Figure 6**. There is a known basement underneath Block C which is most likely the first basement constructed on site. There is a basement under Block B, the 1960's wing, but this area of the site isn't part of the initial development. Block C's basement was then most likely knocked through during the Phase 1 development, constructed in the 1980's, to form the basement under Block E. Connected to the Block E basement is a basement car parking area as seen in site photos 14, 15, 16 and 17 in **Appendix B-1**. There is also a small basement area under the north-western edge of Block E. The exact construction date of Block H is currently unknown but construction drawings from 2007 indicate the construction happened around this time. The basement extent also extends under Block H as indicated on **Figure 6**. The main areas of basement that will constrain the development are those under Blocks C, E and H as this is the main area where development is taking place as shown on **Figure 3**. This is discussed further in the engineering considerations section below.

There is also the possibility that basements exist under the hotel buildings that are along Kensington Place which are planned to be demolished along with Blocks D,

E and H as part of the development. Although from site walkover this is considered unlikely, this should not be totally ruled out as construction drawings for the properties off Kensington Place are not currently available to confirm otherwise.

11.2 Westaway Court

Limited record drawings are available for the Westaway Court site, however an Arup calculations and sketches document dated 1992, provides relevant information on the proposed piled foundations for the extension structure between the original existing Blocks A and C.

Table 8: Existing Building Foundation Information – Westaway Court

Building	Foundation type	Foundation Drawings / Info	Drawing dates
Block D	Piled	Pile layout drawings dated 1993, see Appendix E2	Proposed construction drawings 1993
Block C	Piled	Pile layout drawings dated 1974, see Appendix E2	Proposed construction drawings dated 1974

The relevant information is presented below and extracts of the Arup calculations and drawings document are provided within **Appendix I**.

11.2.1 Existing Foundations

An Arup calculations and drawings document makes reference to the Westaway Court foundations, see **Appendix I**. A technical note was written by Colin Roberts who gathered the information from Bill Grose (London Geotechnical Group – Arup). Bill Grose’s recollection was that the foundations were piled and comprise of 450mm ø to 600mm ø CFA piles bored into bedrock. There are concerns over the end-bearing of the piles and the capacities of each pile are ‘limited to 500kN or 700kN’.

As part of the Westaway Court calculations and drawings document there is a preliminary pile layout sketch showing the pile locations and pile caps for the extension between the original Blocks A and C. The piles are 600mm ø CFA bored with a depth taken as 15m based on information from nearby sites. However the depths could be different, as the depths were subject to a past proposed site investigation. The pile caps are 600mm square and 500mm deep with 500mm deep by 300mm wide ground beams spanning between them.

12 Preliminary Geotechnical Considerations

12.1 General Considerations

Geological Summary

Historical ground investigations indicate made ground up to around 1.5m deep, Blown Sand (comprising fine and medium silty sand) up to 4m deep and Alluvium (comprising sand and gravel with laminated silt) up to 10m deep. The north-western of the site is underlain by John's Road Andesite Formation and the south-eastern part of the site is underlain by Jersey Shale Formation (comprising mudstone and siltstone). Groundwater strikes typically at 4mbgl, although one historic borehole struck groundwater at 4mbgl which then rose to surface. The potential for artesian groundwater conditions cannot be ruled out at this stage, and further investigation of this is recommended as part of the scope of ground investigation works.

Preliminary Assessment of Characteristic Parameters

A preliminary assessment of the characteristic parameters for design has been undertaken, based on limited ground investigation information available. The superficial materials, including made ground and blown sand have been assumed to be predominantly granular. The preliminary parameters presented in **Table 9** below have been derived using guidance from BS8002:1994 for granular soils. Parameters will need to be confirmed as part of the scope of the ground investigation works.

Table 9: Preliminary Assessment of Characteristic Soil Parameters

Stratigraphy	Characteristic parameters
Made ground	$\Phi = 35^\circ$ $\gamma = 18 \text{ kN/m}^2$ $C' = 0$
Blown Sand	$\Phi = 35^\circ$ $\gamma = 18 \text{ kN/m}^2$ $C' = 0$
Alluvium	$\Phi = 35^\circ$ $\gamma = 19 \text{ kN/m}^2$ $C' = 0$
Weathered John's Road Andesite Formation	$\Phi = 35^\circ$ $\gamma = 22 \text{ kN/m}^2$
Weathered Jersey Shale Formation	$C' = 5 \text{ kPa}$

Structural Assumptions & Assessment

A summary of the structural assumptions and assessment section from a technical note document issued 06/07/2016 is provided below [19]:

Typical column working loads are anticipated to be approximately 7500kN. Based on this and available geotechnical information it is assumed that 750mm diameter CFA piles will be used. A typical column is therefore likely to needed to be supported on a 4 pile group of around 18-20m in depth with a 7-9m deep rock socket. This means that there will be approximately 1 pile per 10-15m² [19].

It is known that some of the existing buildings on the site are piled and as such these will present a constraint to the foundation design of the new buildings such that new piles may not be able to be placed in the most advantageous positions with a subsequent requirement for a more complex substructure. There is the potential to consider re-use of the existing piles, but this would require detailed investigations after demolition of the buildings. Given the programme requirements, it may not be possible to assess this and incorporate into the new build design in any case [19].

The extent and depth of the new basement is still to be confirmed. However, it is assumed that an excavation of between 5-6m will be required typically where basement is required with lift pits locally around 1.5m-2m deeper. It is recommended that the basement retaining wall be kept a minimum of 10m away from existing site perimeter and structures, and ideally as far from the site perimeter as practical. This will minimise the risk of undermining or the effects on existing structures/highway [19].

It should be noted, however, that given the ground conditions, excavation, even in an open cut, could potentially be difficult due to the presence of running sands, as mentioned below, and shallow groundwater that may be confined and under pressure. These conditions would increase the need for enhanced temporary works and dewatering during construction and should be noted. It may also be necessary to install movement monitoring on surrounding buildings and highway during the basement excavation and construction [19].

The opportunity to re-use demolition materials as fill on the site could be investigated further presuming a suitable location for crushing/stockpiling is identified [19].

Running Sand

Anecdotal evidence indicates during the construction of the existing basement to the north-west of the Granite Block there was a loss of material described as 'running sand' from the corner of the Granite Block resulting in movement and cracks forming in the Granite Block. The Granite Block was underpinned with concrete. No further details are currently available on these works.

The risk of running sand is therefore high in this area of the site, marked on **Figure 11** features and constraints plan, but as well as this there are large known deposits of blown sand across the Jersey General Hospital site. Because of this and the fact that previous running sand has been encountered leads to an increased risk of running sand being found elsewhere across the Jersey General Hospital site, in particular associated with the existing Pathology functions, which are adjacent to the Granite Block.

Further ground investigation will confirm the extent of blown sand under the site and therefore inform regarding the most likely locations for other areas of running sand.

Patriotic Street Car Park Retaining wall

The western boundary corner of the Jersey General Hospital site is quite complex and will require thorough consideration before the appropriate development

solution is decided. Currently there is a difference in ground levels between the Patriotic Street multi-storey car park and the existing hotel buildings scheduled to be demolished. The hotel buildings are at a higher ground level and a retaining wall structure lies between the hotel buildings and the MSCP, with the MSCP at a lower ground level; see site photos 9, 11 and 12 in **Appendix B-1**. The retaining wall structure is currently being supported by the MSCP (from visual evidence) with a series of concrete props in the tapering gap between the two structures; see photo 9 in **Appendix B-1**.

The proposed development will have a service yard in an under-croft part of the new development, this area will have large trucks manoeuvring and driving in and out. The current retaining wall structure will most likely be inadequate for the trucks and new columns and piles will need to be built in the vicinity of the retaining wall to support the new structure. Because of this the retaining wall will most likely also be demolished during the demolition phase and a more appropriate structure will be built as part of the new development. This area may also be demolished to the level of the MSCP for the construction of a basement structure to hold plant facilities.

However due to the difference in ground levels in this part of the site and the presence of the existing hotel buildings, development in this corner of the site must be carefully considered as mentioned earlier.

Reuse of Existing Piles

The reuse of existing piles is considered to be potentially advantageous given the highly developed and compact layout of the current site buildings. The redevelopment of the site is anticipated to be undertaken in a phase approach.

Indicative existing pile locations based upon available proposed engineering drawing records showing either proposed pile locations or proposed column layout is provided on **Figure 11**. Review of this figure shows a dense pile layout across the proposed hospital footprint, including proposed basement. In addition, depths and diameters of existing piles are not available.

The potential feasibility of reuse of existing piles should be considered in greater detail when the redevelopment proposals are firmed up and more detailed overlays of the existing building footprints and proposed basement extents can be undertaken.

Potential Piling Issues

Issues associated with piling are likely to include the following:

- Selection of appropriate piling methods to control vibration and noise.
 - Potential issue for existing sensitive clinical services and equipment at the hospital (assuming a phased approach)
 - Potential impact on site neighbours, adjacent utilities, foundations, structures, basements and adjacent buildings, in particular the existing Granite Block (which has been underpinned at the north-western corner when the existing block was constructed).

- Potential obstructions, which may require the pile layout to be designed around existing foundations that cannot be easily removed

Basements

The known basement extents for the Jersey General Hospital are shown on **Figure 6**. The demolition of Blocks D and E will interact with the basement structures. Other buried obstructions are anticipated to exist which may present issues during demolition and construction; such as old foundations, utilities, tanks and storage facilities associated with hospital services and acquired buildings off Kensington Place.

Ground and Groundwater Conditions

Bedrock was encountered between 8.75m and 12m below ground level in the boreholes excavated within the southern and eastern parts of the site. No ground investigation information is known to be available in the north-eastern part of the site.

Groundwater was encountered at shallow depth in BH1 sunk in 2014. During drilling groundwater was struck at 4m and rose to the surface after 30 minutes. No groundwater observations are recorded in the three other boreholes excavated at the site. No groundwater installations are known to exist at the site.

Existing crane pad / base and associated piles within Gloucester Street Car Park:

The approximate location of existing base and associated piles are indicated on Figure 11. A piled crane base was constructed for a tower crane during the Day Surgery extension (Block H) project, indicated on **Figure 2**.

13 Recommendations for Further Investigation

13.1 Jersey General Hospital

General Site Area

The Jersey General Hospital site is an active health care facility that is densely packed with existing buildings constructed at differing periods of time. Review of the historical borehole records (discussed in Section 5) confirms the geology beneath the south-eastern and western parts of the site, however further investigation and testing of bedrock at depth will be required when the building proposals are firmed up.

The groundwater regime beneath the site requires further understanding. It is understood the site may be impacted by saline intrusion, however it is unknown whether the groundwater beneath the site is tidally induced. It is recommended this is investigated during intrusive investigations through installation of tidal inducer monitoring.

Further investigation should be undertaken to understand the possible extent of running sand across the Jersey General Hospital site. Records of running sand have been reported during the Phase 1 construction in the 1970's when running sand caused the western wing of the Granite block to be displaced resulting in cracks. This was remedied with concrete to underpin the structure however, due to the deep deposits of blown sand under the Jersey General Hospital site, investigation must be undertaken to determine if running sand exist anywhere else beneath the site. It is recommended that investigation techniques are discussed with the GI contractor to ensure the most suitable methods are used to investigate running sand.

It is anticipated that when the proposed building details such as dimensions and loads, etc are confirmed, and the demolition and construction programme is known, ground investigation, pile geometry and integrity testing of the existing piles may be undertaken. Only then can the potential reuse of the existing foundations be fully investigated.

The log of BH1 sunk in 1979 reported the Jersey Shale Formation, described as a dark grey lightly metamorphosed mudstone to include bands of pyrite crystals. The potential for expansive properties associated with the presence of pyrite should be further investigated as part of any ground investigations.

In addition there is a need for assessment of characteristic parameters for design, using SPTs in boreholes, index tests including PSDs, Atterbergs of any cohesive material encountered and descriptions from logs.

13.2 Westaway Court

Demolition and new build is proposed at Westaway Court. Review of available record drawings indicate the residential hospital staff accommodation Blocks A to D are piled.

It is envisaged that any new construction will require a piled foundation solution. Ground investigation is required to inform the foundation design, geotechnical and geo-environmental considerations.

13.3 Indicative scope of investigations

It is understood that the hospital will remain active throughout the demolition and construction phases of the project. Given the densely developed proposed new hospital footprint, there is limited space and opportunity to undertake GI.

A phased intrusive investigation approach is recommended as follows:

- **Phase 1:** undertake GI in accessible areas of the existing active hospital sites
- **Phase 2:** anticipated to be undertaken during the early phase of demolition at the Jersey General Hospital site. In particular, there is no ground investigation information available for the existing sites off Kensington Place. Although review of historical borehole records south-west of the site indicate ground conditions to be relatively consistent
- As a minimum ground investigation works are proposed to determine the following:
 - Ground and groundwater conditions, including allowance for tidal monitoring
 - Geotechnical properties of the superficial deposits and the rock
 - Geo-environmental characterisation of the made ground and natural deposits anticipated to be excavated as part of the basement excavations
 - Buried concrete design

The ground investigation is specified in a separated document [34], issued on 20/12/2016 and is / has been tendered to two GI contractors.

The proposed ground investigation locations are annotated on **Figure 11** features and constraints.

Phase 1 ground investigation is proposed to include 5No. boreholes at Jersey General Hospital (possibly a 6th subject to land access arrangements) and 3No. boreholes at Westaway Court.

Phase 2 ground investigation proposes 4No. boreholes at Jersey General Hospital, in the locale of the existing hotel buildings off Kensington Place, across the northern part of the proposed new hospital building footprint.

Proposed boreholes are recommended to include excavation by methods of cable percussive with rotary coring follow-on, including groundwater and ground gas monitoring installations, with sampling and in-situ testing.

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Tables

Tables

Table 2 Previously Encountered Ground Conditions. Jeresey General Hospital

Table 2

Encountered Ground Conditions, Jersey General Hospital

237035

GI Ref.	BH ID	GL (mD)	Depth (m)	Made Ground (m bgl)	Superficial Deposits		Bedrock (m bgl)	Additionl Observations	SPT
					Blown Sand (m bgl)	Alluvium / Head (m bgl)			
ON-SITE									
Foundations Engineering Ltd ^{Note 1} Jersey General Hospital Phase I (6-12 March 1973)	BH1	9.8	10.9	GL-0.4: Tarmac overlying compacted sandstone gravel	0.4-2.8: Medium dense light brown fine sand with pebbles 2.8-3.7: Loose light brown silty sand	3.7-4.5: Firm light brown sandy very silty clay 4.5-5.5: Medium dense brown silty clayey sand 5.5-6.1: Firm to stiff silty grey clay 6.1-7.6: Medium dense sandy gravel 7.6-8.1: Firm grey silty clay 8.1-8.5: Medium dense sand 8.5-9.0: Firm grey clayey laminated silt 9.0-10.2: Stiff grey slightly silty clay with fine gravel	10.2-10.9: Hard dark grey fractured and weathered fine grained mudstone		<u>Blown Sand</u> N = 5 to 20 <u>Alluvium</u> N = 22 to 24 <u>Bedrock</u> N = 45 to 50
	BH2	8.5	11.0	GL-0.8: Tarmac overlying roadbase material and crushed granite	0.8-3.9: Medium dense light brown silghly silty fine to medium sand	3.9-5.6: Soft to firm brown sandy silty clay 5.6-6.4: Soft to firm brown grey sandy silt 6.4-7.0: Medium dense light brown fine to medium sand 7.0-7.9: Firm green/brown/grey clay 7.9-8.5: Medium dense sandy gravel 8.5-9.4: Soft to firm grey clay 9.4-10.4: Stiff brown silty clay with traces of gravel	10.4-11.0:Hard grey slightly weathered dolerite broken with clay smears		
	BH3	10.6	13.9	GL-1.4: Concrete ducting overlying brown sand with gravels and brick	1.4-2.7: Dense light brown silty fine to medium sand 2.7-4.1: Medium dense dark brown clayey silty sand with some organic matter	4.1-5.0: Firm brown yellow sandy clay 5.0-6.8: Medium dense brown grey silty sand 6.8-8.5: Firm to stiff light grey sandy silty clay 8.5-9.8: Medium dense sandy gravel 9.8-11.3: Firm grey very silty laminated clay 11.3-12.0: Stiff grey/green/brown clay 12.0-12.4: Dense gravel and cobbles	12.4-13.9: Dolerite <i>Refer to Appendix O</i>		
Geotechnical Engineering Ltd Jersey General Hospital Phase IB (12-14 July 1979)	BH1	10.3	15.2	GL-1.0: Made ground with some brick and gravel	1.0-4.0: Medium dense becoming looser white fine sand 4.0-6.5: Medium dense orange brown silty fine sand with occasional band of gravels and silts.	6.5-8.0: Medium dense orange mottled grey fine sandy silt with iron stained patches 8.0-8.3: Medium dense grey green mottled orange silty fine sand and fine gravel 8.3-9.6: Dense grey silty fine sand and fine gravel 9.6-11.0: Firm grey laminated fine sandy silt with pale grey fine sand laminations, dark grey clayey silt bands and some black organic incluisions. Occasional rounded fine gravel. 11.0-12.2: Completely weathered rock. Very stiff grey mottled yellow grey clayey sandy silt with strong iron stained fragments of meta-siltstones.	12.2-12.75: Highly weathered iron stained fragments of meta-siltstones 12.75-14.2: Completely weathered very weak pale grey fine grained gravel meta-siltstone fragments in a silty clay matrix 14.2-15.2: Moderately weathered very strong pale greenish grey lightly metamorphosed chloride rich mudstone with calcite crystals, occasional pyrite and numerous calcite veins.	Indication of pyrite within mudstone bedrock stratum (14.2-15.2m bgl)	<u>Made Ground</u> N = 17 <u>Blown Sand</u> N = 5 to 17 <u>Alluvium</u> N = 8 to 41
	BH2	11.6	15.0	GL-1.2: Sand with some gravel and brick fragments 1.2-1.8: Yellow brown very silty fine sand with some poorly cemented patches 1.8-2.8: Pale yellow grey and brown mottled fine and medium sand (Reworked blown sand).	2.8-3.3: Loose pal yellow fine sand 3.3-4.5: Medium dense to loose yellow and brown medium and fine sand	4.5-8.5: Medium dense greenish grey in places mottled orange poorly laminated fine sandy silt with dark grey laminations and bands of clayey silt 8.5-10.2: Dense yellow silty fine sand and fine to medium sub-angular gravel. 10.2-11.15: Firm pale grey silty fine sand with grey fine sandy silt. Some sandy laminations and occasionla organic patches. 11.15-12.2: Firm grey laminated very silty fine sandy clay with occasional gravel patches.	12.2-15.0: Strong moderately weathered grey to greenish grey meta-siltstone with iron stained discontinuities. Numerous calcite veins.		

Table 2

Encountered Ground Conditions, Jersey General Hospital

237035

GI Ref.	BH ID	GL (mD)	Depth (m)	Made Ground (m bgl)	Superficial Deposits		Bedrock (m bgl)	Additional Observations	SPT
					Blown Sand (m bgl)	Alluvium / Head (m bgl)			
Geotechnical Engineering Ltd Jersey General Hospital Phase IB (12-14 July 1979)	BH3	10.0	13.5	GL-1.25: Sand with some gravel	1.25-3.0: Medium dense pale yellow grey fine sand 3.0-3.2: Loose white fine and medium sand 3.2-4.8: Loose brown to grey fine to medium sand with occasional silty patches	4.8-7.8: Fine blue grey mottled yellow laminated fine sadny silt with some iron staining. Occasional bands of yellow silty fine sand 7.8-9.0: Dense to medium dense grey becoming brown silty sand with medium iron stained gravels 9.0-10.4: Firm orange brown silty fine sand becoming blue grey clayey sandy silt with black organic inclusions 10.4-10.8: Stiff blue grey laminated very silty clay with occasional gravel 10.8-11.0: Highly weathered rock fragments in a silty clay	11.0-13.5: Highly weathered strong dark grey metamorphosed mudstone. Becoming grey iron stained meta-siltstone. Laminated in places with occasional bands of pyrite crystals.	Indiaction of pyrite bands within meta-siltstone bedrock (11.0-13.5m bgl)	
Geomarine Ltd Jersey General Hospital Main Theatres Upgrade (7-8 March 2014)	BH1	13.0 ^{Note2}	12.7	GL-0.1: Tarmac surfacing 0.1-0.3: Backfill 0.3-0.5: Fill comprising bricks and concrete	0.5-0.8: Orange coarse sand 0.8-1.45: Orange brown gravelly silt 1.45-2.4: Grey white fine sand	2.4-2.8: Grey brown laminated sandy silt 2.8-3.25: Grey mottled brown silty sand 3.25-3.55: Green grey sandy silt 3.55-8.75: Green grey laminated silt 8.75-10.2: Grey silty cobbly gravel. Gravel is medium to coarse sub-rounded, cobbles are rounded. Gravel is of mixed lithologies becoming Jersey Shale with depth	10.2-12.7: Grey blue rock, recovered as medium to coarse angular gravel.		<u>Blown Sand</u> N = 6 <u>Alluvium</u> N = 9 to 22 <u>Bedrock</u> N = 47
	TP1	13.0 ^{Note2}	0.5	GL-0.1: Tarmac surfacing 0.1-0.25: Backfill 0.25-0.5: Concrete footing	Not encountered.	Not encountered.	Not encountered.		
	TP2	13.0 ^{Note2}	1.2	GL-0.1: Tarmac surfacing 0.1-0.95: Backfill 0.95-1.2: Concrete footing	Not encountered.	Not encountered.	Not encountered.		
OFF-SITE									
Amplus Ltd 33 Gloucester Street Raleigh House (4-5 February 2000)	BH1	9.9 ^{Note3}	10.1	GL-0.8: Loose soil and rubble fill	0.8-4.0: Medium dense dark to light brown fine to coarse sand with rounded fine to medium gravel	4.0-6.25: Soft light blue grey to dark brown occasionally organic silt 6.25-6.9: Firm to stiff light blue grey gravelly clayey silt 6.9-7.8: Medium dense brown and grey sandy fine to medium gravel 7.8-8.3: Soft to firm dark blue grey slightly sandy clayey silt 8.3-8.9: Soft to firm dark grey silty clay with rare gravel 8.9-9.05: Grey rock fragments in a grey clay matrix	9.05-10.1: Dark grey slightly weathered fine grained igneous moderately weak to moderately strong very closely jointed sub-vertical discontinuities, iron staining on planar surfaces		<u>Blown Sand</u> N = 20 to 24 <u>Alluvium</u> N = 5 to 24
Amplus Ltd 15-16 The Parade (11 September 2006)	P1	9.7 ^{Note3}	10.5	GL-0.5: No description	0.5-3.0: Loose medium dense light brown sand	3.0-7.0: Soft to firm brown and grey sandy clay/silt 7.0-9.0: Firm to stiff brown gravelly clay 9.0-10.5: Firm to stiff brown and grey slightly sandy clay	Not encountered.		
	P2	9.6 ^{Note3}	9.9	GL-0.5: No description	0.5-3.0: Loose medium dense light brown sand	3.0-7.0: Soft to firm brown and grey sandy clay/silt 7.0-8.5: Firm to stiff brown gravelly clay 8.5-9.9: Firm to stiff brown and grey slightly sandy clay	Not encountered.		
	P3	9.7 ^{Note3}	9.7	GL-0.5: No description	0.5-3.0: Loose medium dense light brown sand	3.0-7.0: Soft to firm brown and grey sandy elay/silt 7.0-8.0: Firm to stiff brown gravelly clay 8.0-9.7: Firm to stiff brown and grey slightly sandy clay	Not encountered.		

Table 2

Encountered Ground Conditions, Jersey General Hospital

237035

GI Ref.	BH ID	GL (mD)	Depth (m)	Made Ground (m bgl)	Superficial Deposits		Bedrock (m bgl)	Additional Observations	SPT
					Blown Sand (m bgl)	Alluvium / Head (m bgl)			
Gloucester Street Surface Water Sewer Drawing ^{Note 5} (12 January 1982)	BH1	15.0 ^{Noted}	8.0	GL-0.9: Asphalt surfacing over sand and gravel sub-base	0.9-2.9: Loose to medium dense pale brown fine medium sand	2.9-4.0: Firm to stiff mottled pale brown and orange brown slightly clayey silt with traces of roots 4.0-6.7: Soft to firm grey silt 6.7-7.8: Firm pale brown mottled orange brown very silty clay 7.8-8.0: Firm pale brown slightly clayey silt	Not encountered.		
	BH2	14.4 ^{Noted}	7.5	GL-1.0: Asphalt surfacing over sand and gravel sub-base	1.0-2.8: Medium dense pale brown fine medium sand	2.8-4.5: Soft pale brown becoming grey silt 4.5-5.9: Soft to firm grey very silty clay with zones of brown silt 5.9-6.1: Grey slightly sandy silt 6.1-6.3: Fine medium gravel 6.3-7.5: Medium dense grey silty fine medium sand with some medium gravel	Not encountered.		
	BH3	13.0 ^{Noted}	8.0	GL-1.2: Asphalt surfacing over sand and crushed rock fill	1.2-3.4: Loose coarse medium gravel with some pale brown medium sand	3.4-5.8: Soft to firm grey silt 5.8-6.9: Firm grey silt with a little fine medium gravel 6.9-8.0: Firm black laminated brown silt with a slightly organic odour	Not encountered.		
	BH4	13.2 ^{Noted}	9.0	GL-0.9: Asphalt surfacing over sand and gravel fill	0.9-4.3: Medium dense pale brown medium sand and medium coarse gravel	4.3-6.5: Soft grey and brown silt 6.5-7.6: Medium dense medium fine gravel with a little coarse sand 7.6-8.6: Firm grey silt with some dark grey zones and organic odour 8.6-9.0: Firm dark grey silt	Not encountered.		
Patriotic Street MSCP (Records dated: 1983)	BH1R	8.4	13.4	GL-0.5: No description	0.5-1.9: Fine Sand 1.9-2.6: Sand and Gravel	2.6-4.9: Silt 4.9-6.2: Clayey Silt 6.2-7.5: Gravel 7.5-9.5: Clayey Silt 9.5-10.0: Silt 10.0-10.8: Clayey Silt	10.8-13.4: Amygdaloidal lava with basalt boulders 'Boulders with gravel in a clay matrix'		
	BH2	8.8	11.3	GL-0.6: No description	0.6-2.2: Sand	2.2-6.3: Silt 6.3-7.0: Gravelly Silt 7.0-8.8: Sand and Gravel 8.8-10.2: Clayey Silt	10.2-11.3: Siltstone 'Moderately strong grey fine Siltstone'		
	BH3	9.6	11.2	GL-1.8: No description	1.8-10.2: Mixture of clays silts sands and gravels <i>Refer to Appendix O</i>		10.2-11.2: Amygdaloidal lava 'Thinly bedded amygdaloidal moderately strong lava'		
	BH4	9.2	10.8	GL-0.4: No description	0.4-3.4: Silty Sand	3.4-7.3: Silt 7.3-8.2: Sandy Silty Clay 8.2-8.8: Silty Gravelly Sand 8.8-9.7: Clayey Silt	9.7-10.8: Siltstone 'Thinly bedded dark green moderately strong Siltstone'		
	BH5	8.8	11.1	GL-0.9: No description	1.0-10.8: Mixture of clays silts sands and gravels <i>Refer to Appendix O</i>		10.8-11.1: Siltstone 'Very thinly bedded dark green moderately strong Siltstone'		
	BH6	7.9	15.8	GL-1.1: No description	1.1-10.9: Mixture of clays silts sands and gravels <i>Refer to Appendix O</i> 10.9-15.8: Dense to very dense silty sand.		Not encountered.		
	BH7	8.2	15.2	GL-1.2: No description	1.2-10.7: Mixture of clays silts sands and gravels <i>Refer to Appendix O</i>		10.7-15.2: Amygdaloidal lava (Basalt) 'Closely jointed white veined dark grey fine basic volcanic (Basalt)'		

Table 2

Encountered Ground Conditions, Jersey General Hospital

237035

GI Ref.	BH ID	GL (mD)	Depth (m)	Made Ground (m bgl)	Superficial Deposits		Bedrock (m bgl)	Additional Observations	SPT
					Blown Sand (m bgl)	Alluvium / Head (m bgl)			
Amplus Ltd Kensington Gate Car Park (8-12 January 2007)	BH4300	-	10.3	GL-0.2: Concrete overlying hardcore fill	0.2-2.0: Very loose to loose brown fine to medium sand and occasional gravels.	2.0-3.0: Soft to firm brown sandy silt 3.0-6.3: Soft to firm blue grey slightly sandy clay/silt 6.3-7.8: Dense blue fine very clayey fine to coarse gravel 7.8-8.3: Very dense brown clayey sandy fine to medium gravel 8.3-9.1: Soft to firm brown sandy silt	9.1-10.3: Moderately strong grey slightly weathered andesite with iron staining		Blown Sand N = 4 Alluvium N = 5 to 52
	BH4301	-	10.5	GL-0.1: Concrete 0.1-1.0: Layers of concrete and sand 1.0-3.8: Concrete	Not encountered.	3.8-6.8: Very soft to firm grey brown slightly sandy clay with little fine gravel 6.8-9.2: Firm to stiff orange brown sandy clay with a little fine to medium gravel	9.2-10.5: Moderately weak grey slightly weathered andesite, very closely jointed		
	BH4302	-	11.0	GL-0.1: Concrete	0.1-1.5: Loose light brown to medium sand	1.5-7.0: Very soft red brown sandy silt becoming firm with depth 7.0-8.5: Dense grey and brown clayey very sandy fine to coarse gravel with occasional cobbles 8.5-9.6: Firm to stiff brown sandy silt with occasional grey fine to medium gravel	9.6-11.0: Moderately strong light grey slightly weathered andesite with iron staining		
Geomarine Ltd Kensington Place (16-21 July 2009)	BH4303	-	6.8	GL-0.55: Brown very gravelly fine to medium grained sand. Slight hydrocarbon smell 0.55-1.0: Brown soily gravelly fine to medium grained sand with layers of pale brown white sand 1.0-1.4: Light brown gravelly fine to medium grained sand. Coarse cobbles present	Not encountered. Made ground believed to be reworked blown sand material, see made ground strata.	1.4-2.9: Grey sand clay. Strong hydrocarbon smell with coarse gravel. (Head Deposits) 2.9-4.4: Grey clay. Strong hydrocarbon smell. (Head Deposits) 4.4-5.9: Grey slightly sandy clay with rare gravel fragments. Hydrocarbon smell. (Head Deposits) 5.9-6.8: Tan slightly sandy gravelly clay. Gravel is fine to coarse. (Head Deposits)	Not encountered.	Evidence of hydrocarbon contamination. (1.4-6.8m bgl)	
	BH4304	-	6.8	GL-1.4: Dark brown very gravelly clayey fine grained sand. Frequent cobbles. Brick fragments and rootlets present	Not encountered. Made ground believed to be reworked blown sand material, see made ground strata.	1.4-2.9: Grey slightly gravelly clay. Hydrocarbon odours. (Head Deposits) 2.9-6.8: Yellow tan slightly gravelly clay. Slight hydrocarbon staining. (Head Deposits)	Not encountered.	Evidence of hydrocarbon contamination. (1.4-6.8m bgl)	
	BH4305	-	7.3	GL-0.9: Brown very gravelly fine to medium grained sand. Gravel is fine to coarse. Containing tile fragments, granite and cobbles	Not encountered. Made ground believed to be reworked blown sand material, see made ground strata.	0.9-1.4: Brown very gravelly fine to medium clayey sand. Gravel is sub-angular fine to coarse. (Head Deposits / Blown Sand?) 1.4-2.8: Tan slightly sandy clay. Contains tiny calcareous shells and fine gravel. (Head Deposits) 2.8-6.45: Tan grey clay with occasional fine gravel. (Head Deposits) 6.45-7.3: Red brown very gravelly fine to medium grained sand. Gravel is fine to coarse. (Head Deposits)	Not encountered.		
	BH4306	-	6.4	GL-0.8: Brown soily very gravelly medium grained sand. Occasional rootlets and cobbles. 0.8-1.4: Brown very gravelly fine to medium grained sand, with evidence of concrete powder observed.	Not encountered. Made ground believed to be reworked blown sand material, see made ground strata.	1.4-2.9: Tan sandy clay. Hydrocarbon smell. (Head Deposits) 2.9-4.4: Brown grey slightly sandy clay. Rare coarse gravel. Strong hydrocarbon smell and dark grey lines running through. (Head Deposits) 4.4-5.9: Brown grey clay. Rare fine gravel and olfactory evidence of hydrocarbon contamination. (Head Deposits) 5.9-6.4: Brown gravelly clay. Gravel is fine to medium. (Head Deposits)	Not encountered.	Evidence of hydrocarbon contamination. (1.4-5.9m bgl)	

Table 2

Encountered Ground Conditions, Jersey General Hospital

237035

GI Ref.	BH ID	GL (mD)	Depth (m)	Made Ground (m bgl)	Superficial Deposits		Bedrock (m bgl)	Additional Observations	SPT
					Blown Sand (m bgl)	Alluvium / Head (m bgl)			
Geomarine Ltd Kensington Place (16-21 July 2009)	BH4307	-	8.4	GL-1.4: Dark brown gravelly clayey fine grained sand. Gravel is fine to oarse. Cobbles and brick fragments present	Not encountered. <i>Made ground believed to be reworked blown sand material, see made ground strata.</i>	1.4-2.9: Dark brown gravelly clayey fine grained sand. Gravel is fine to coarse. (Head Deposits) 2.9-3.1: Dark brown clayey fine gained sand. (Head Deposits) 3.1-4.6: Grey slightly gravelly clay. Faint hydrocarbon smell. (Head Deposits) 4.6-6.9: Grey brown slightly gravelly clay. (Head Deposits) 6.9-7.5: Brown grey very gravelly fine to medium grained sand. Faint hydrocarbon smell. (Head Deposits) 7.5-8.4: Grey brown slightly gravelly clay. Rare cobbles. Hydrocarbon smell. (Head Deposits)	Not encountered.	Evidence of hydrocarbon contamination. (3.1-4.6m bgl) (6.9-8.4m bgl)	
Amplus Ltd 66-72 Esplanade (21 March - 2 April 2014)	BH4802	-	7.0	GL-0.6: Concrete overlying silty sand and gravel	0.6-2.0: Silty brown clay with fine to medium gravel and light yellow sand 2.0-3.0: Light brown silty sand with fine to medium gravel 3.0-4.0: Light brown silty sand	4.0-5.0: Brown sandy silt 5.0-6.0: Yellow brown sandy silt 6.0-7.0: Light brown silty sandy clay with fine to medium gravels	Not encountered.		<u>Blown Sand</u> N = 34 <u>Alluvium</u> N = 2 to 68
	BH4803	-	11.6	GL-0.25: Concrete overlying gravel	0.25-1.2: Clayey gravelly sand with cobble sized stones 1.2-1.9: Loose yellow and brown sand with fine gravel 1.9-3.0: Loose brown fine sand	3.0-4.6: Very soft brown sandy silt 4.6-5.3: Soft brown and grey sandy silt 5.3-6.0: Soft brown sandy clay 6.0-7.8: Medium dense brown fine slightly clayey slightly sandy gravel 7.8-9.4: Firm brown sandy silty clay with little firm to medium gravel 9.4-10.2: Stiff grey sandy clay 10.2-10.5: Stiff grey clay with fragments of rock	10.5-11.6: Weak grey slightly weathered Jersey Shale Formation with iron stained close bedding		
	BH4804	-	7.5	GL-0.7: Concrete overlying dark grey gravelly silt with metal inclusions	0.7-0.9: Light grey silty clay 0.9-1.2: Light yellow sand 1.2-2.0: Stiff brown sandy clay with fine to medium gravels 2.0-3.45: Dense light brown sand with fine to medium gravels	3.45-4.0: Firm brown and grey sandy silt 4.0-5.0: Soft brown sandy clayey silt 5.0-6.0: Firm brown sandy silt 6.0-7.5: Medium dense to dense brown clayey sandy fine to coarse gravel	Not encountered.		
	BH4805	-	11.7	GL-0.4: Concrete overlying gravelly silt	0.8-2.4: Dense light yellow brown to off white fine to medium silty sand	0.4-0.8: Dark brown peaty silt overlying brown silty clay 2.4-3.25: Dense off white grey brown slightly silty sandy gravel 3.25-5.9: Firm brown sandy silt with a little fine to medium gravel 5.9-7.6: Medium dense brown clayey slightly sandy gravel 7.6-10.2: Stiff grey sandy clay with fine gravels 10.2-10.5: Stiff brown clay with fine gravels	10.5-11.7: Weak grey slightly weathered Jersey Shale Formations, iron stained close bedding		

Note 1 – Data in records regarding depths and elevations presented in imperial units so subject to online conversion tools to gather indicative metric values.

Note 2 – Elevations provided from Geomarine records are arbitrary levels.

Note 3 – Elevation data for BH unavailable in records. Indicative elevation gained from GPS GeoPlaner website [16].

Note 4 – Indicative elevations provided from Gloucester Street surface water outfall drawing in Appendix N.

Note 5 – Ground conditions information gathered from States of Jersey Resources Board Gloucester Street surface water outfall drawing and accompanying note states "The information above is the best available, however its accuracy cannot be guaranteed".

Figures

Figures

Figure 1 Site Location Plan

Figure 2 Site Plan

Figure 3 Indicative Proposals

Figure 4 Jersey General Hospital Site Walkover Photos

Figure 5 Westaway Court Site Walkover Photos

Figure 6 Jersey General Hospital Existing Basement Extents

Figure 7 Geological Map Extract

Figure 8 Historical Ground Investigation Locations

Figure 9 Hydrogeological Map Extract

Figure 10 Surface water and Culvert Plan

Figure 11 Features & Constraints

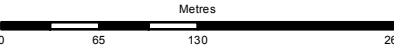


Legend

- Proposed new hospital footprint
- Existing Hospital Site
- Patriotic Street Car Park

Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus

P0	2016-08-26	MD	KI	PT
Issue	Date	By	Chkd	Appd



ARUP

4 Pierhead Street
Cardiff CF10 4QP
Tel +44 29 2047 3727 Fax +44 29 2047 2277
www.arup.com

Client

States of Jersey

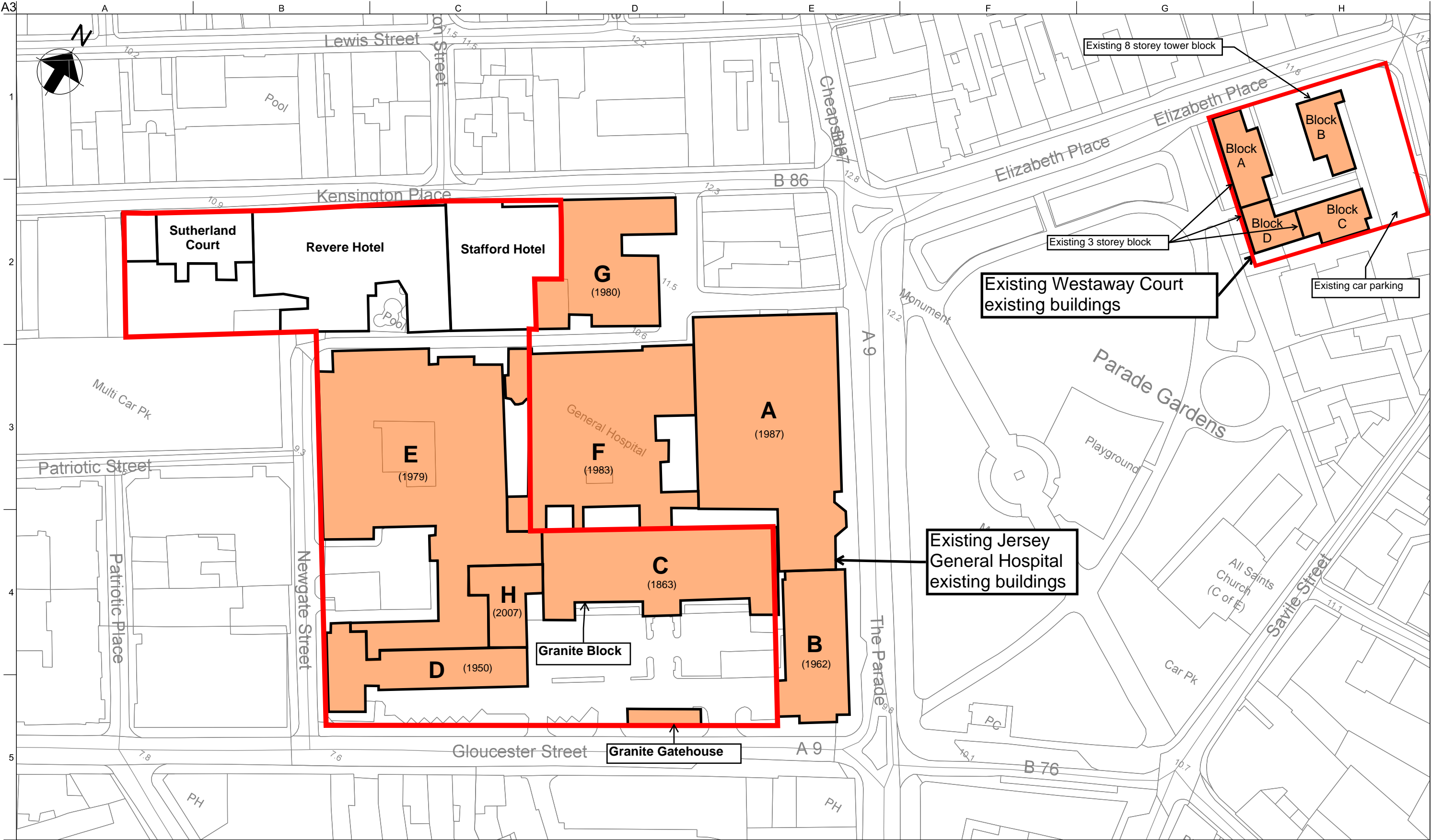
Job Title

Jersey Future Hospitals
- Westaway Court
- Jersey General Hospital

Figure 1 - Site Location Plan

Scale at A3
1:5,000

Job No 237035-00	Drawing Status Preliminary	Issue P3
Drawing No 001		



Legend
A - 1980's Block (7 Storey)
B - 1960's Wing
C - Granite Block (Listed Gr. II)
D - Peter Crill House
E - Gwyneth Heulin Wing
F - Lab Block
G - Engineering Block
H - Daycare

Proposed new hospital site boundary

Client States of Jersey					
Issue	Date	By	Chkd	Appd	

Job Title
Jersey Hospital

Scale at A3
1:1000

Discipline
General

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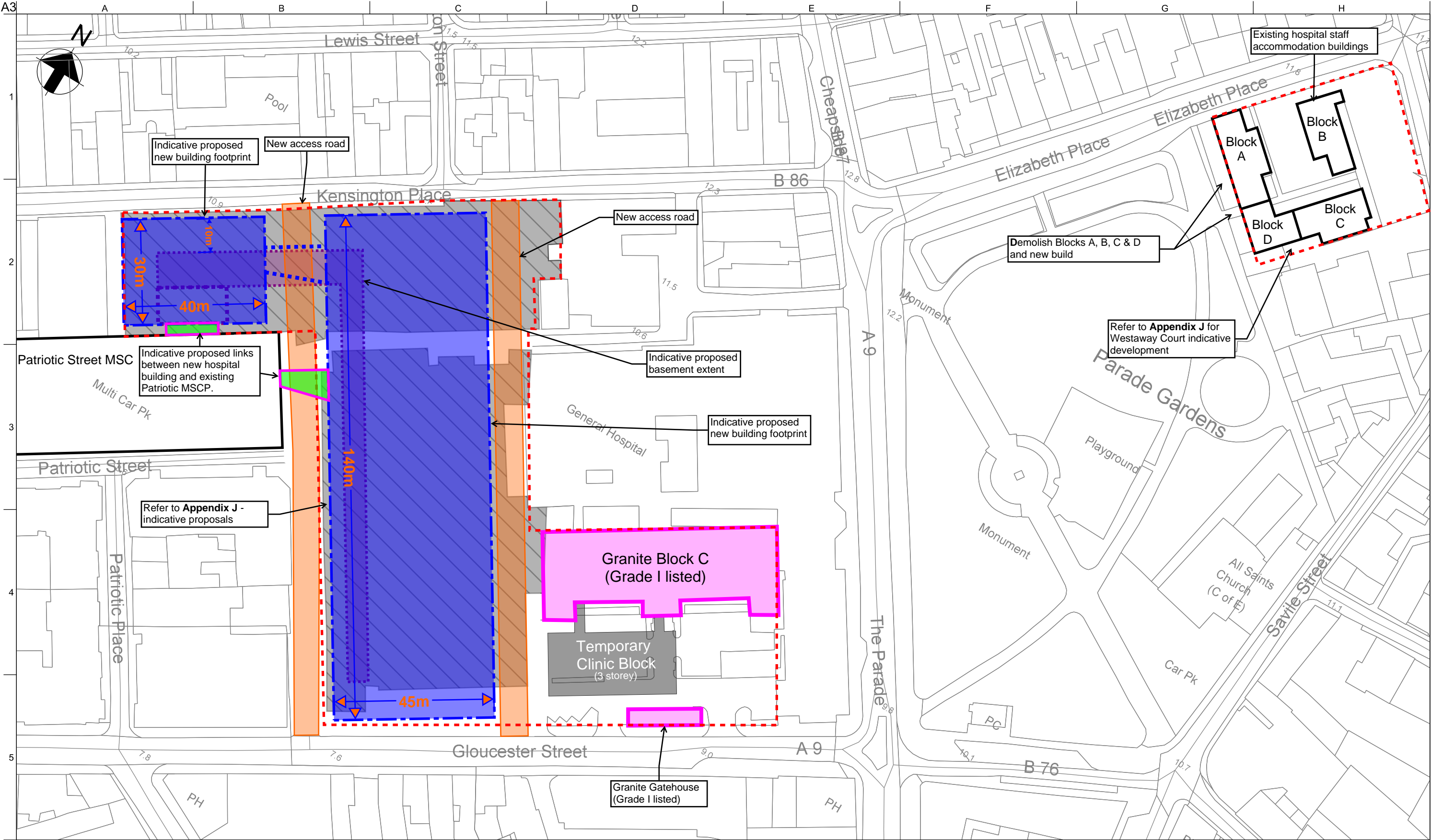
Drawing Title
Site Plan

Drawing Status
For Information

Job No
237035-00

Drawing No
Figure 2

Issue



Legend

- Proposed new hospital footprint
- Indicative proposed new building
- Indicative proposed extension
- Existing Granite buildings to remain

Issue	Date	By	Chkd	Appd

Client
States of Jersey

Job Title
Jersey Future Hospital
- Jersey General Hospital
- Westaway Court

Scale at A3
1:1000

Discipline
General

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Drawing Title
Indicative Proposed
Development

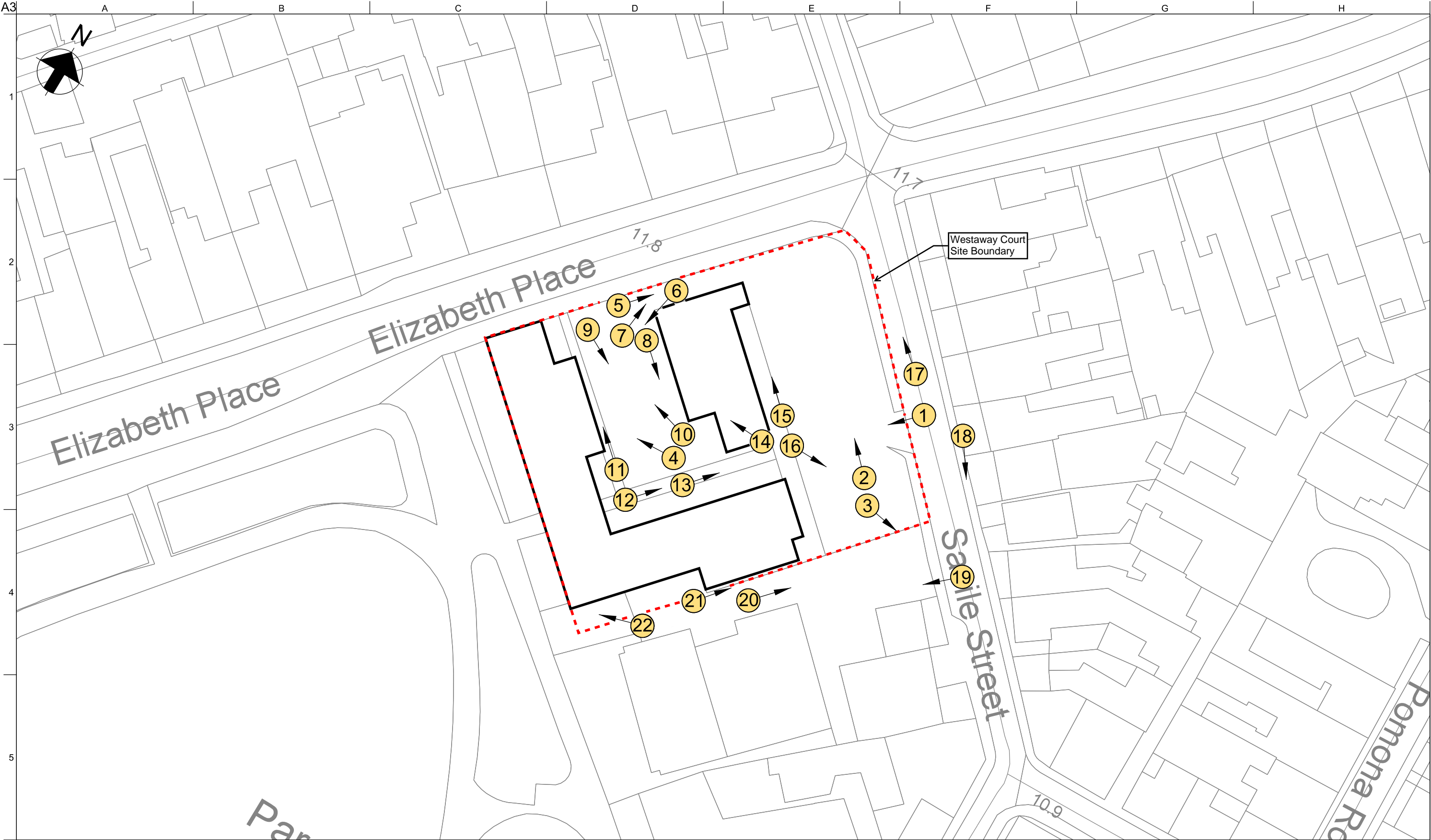
Drawing Status

For Information

Job No
237035-00

Drawing No
Figure 3

Issue



Legend

→ 1 Approximate location and direction of site walkover photos (Appendix B-2)*

*(Location of photo 23 shown on Figure 4)

Issue	Date	By	Chkd	Appd
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Client
States of Jersey

Job Title
Jersey Hospital

Scale at A3
1:500

Discipline
General

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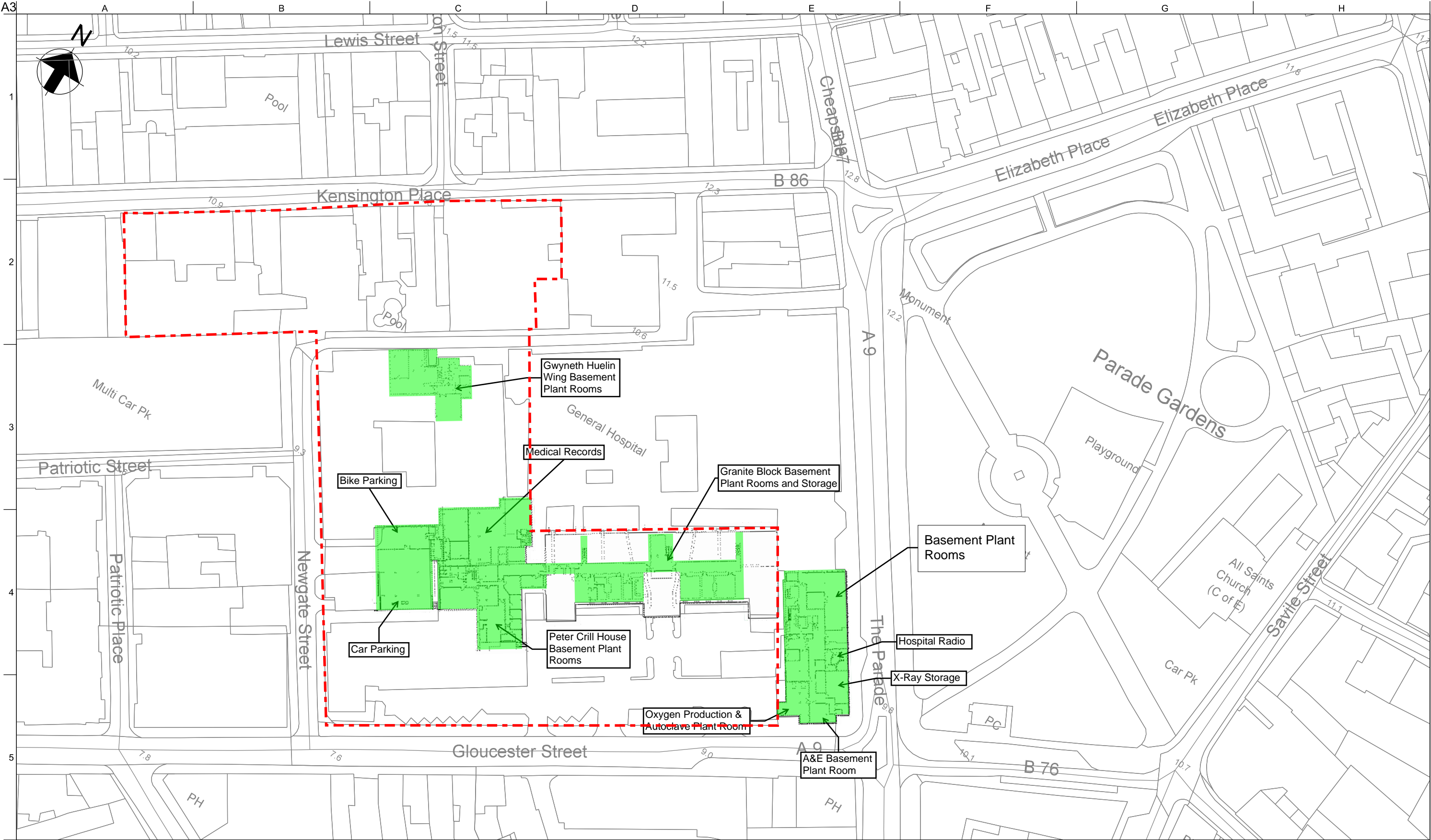
Drawing Title
Westway Court
Site Walkover Photos

Drawing Status
For Information

Job No
237035-00

Drawing No
Figure 5

Issue



- Legend**
- Proposed new hospital footprint
 - Indicative existing basement extent

Issue	Date	By	Chkd	Appd

Client
States of Jersey

Job Title
Jersey Hospital

Scale at A3
1:1000

Discipline
General

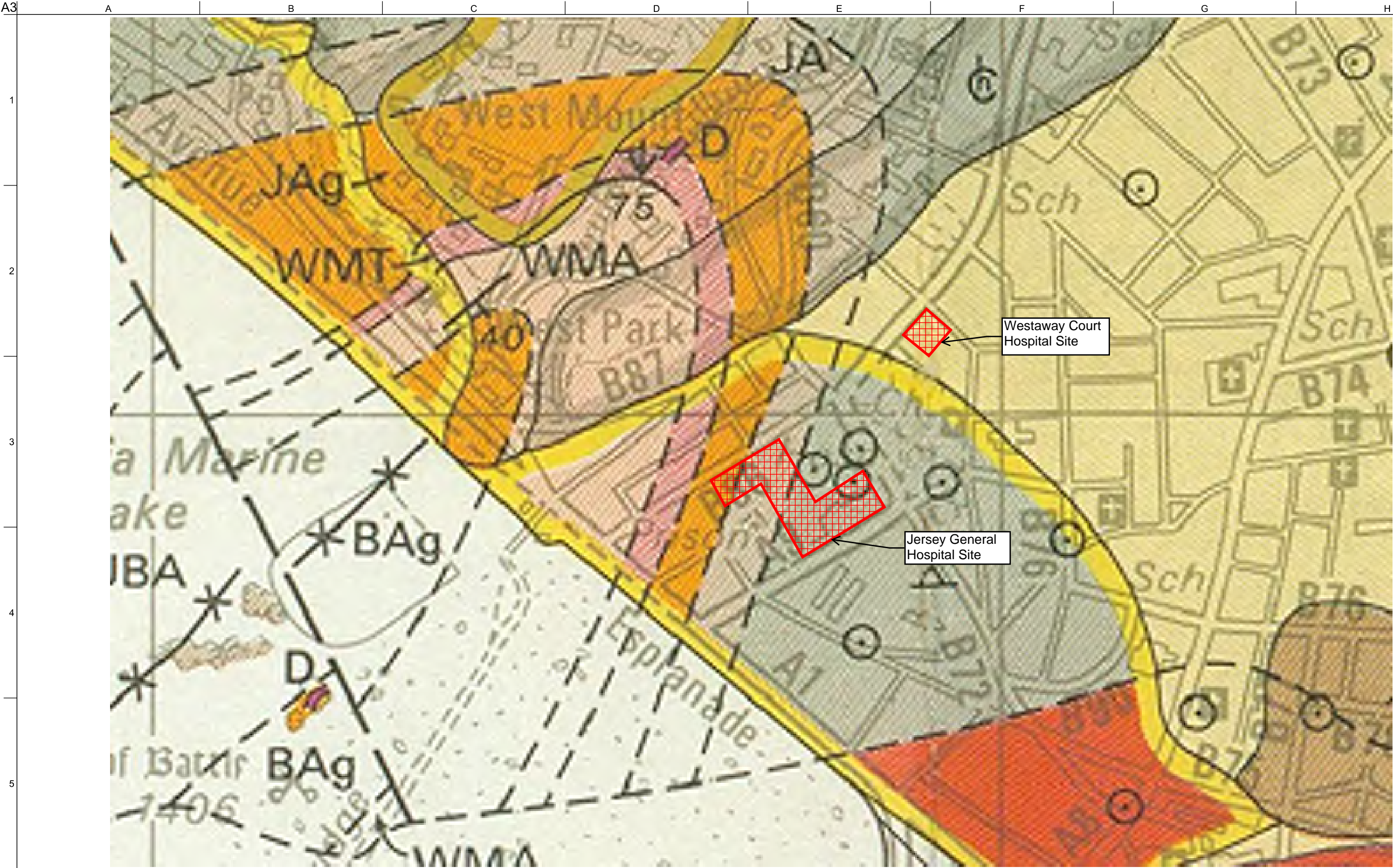
ARUP

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Drawing Title
Jersey General Hospital Existing
Basement Extent

Drawing Status
For Information

Job No 237035-00	Drawing No Figure 6	Issue
----------------------------	-------------------------------	-------



Legend

	Blown sand, present day
	Alkalem
	Agglomerate [Ag], including Bathing Pool Agglomerate [BAg], St John's Road Agglomerate [JAg] and Les Rousaux Agglomerate [RAg]
	Pyroxene-andesite [pA], including Lower and Upper Bathing Pool Andesites [LBA, UBA], St John's Road Andesite [JA] and Petit Port Andesite [PPA]
	Mudstone, siltstone, sandstone and grit

Issue	Date	By	Chkd	Appd

Client
States of Jersey

Notes:
Geological map extract from Institute of Geological Sciences. Channel Islands
Sheet 2 - Jersey. 1:25,000 scale, 1968

Job Title
Jersey Hospital

Scale at A3
1:1000

Discipline
General

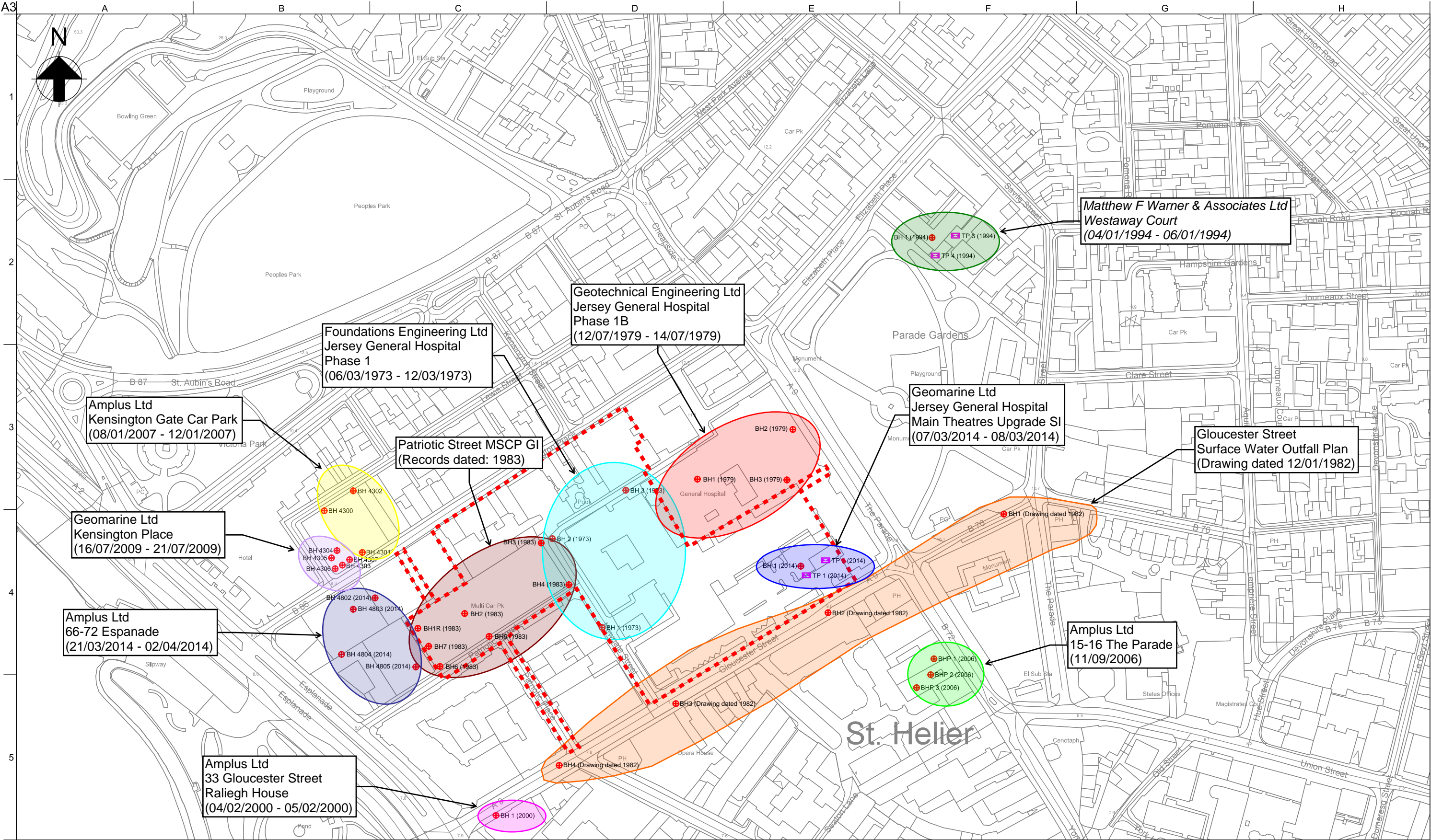
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Drawing Title
Geological Map Extract

Drawing Status
For Information

Job No 237035-00	Drawing No Figure 7	Issue
----------------------------	-------------------------------	-------



- Legend**
- Site Boundary
 - Borehole location
 - Trial pit location

Issue	Date	By	Chkd	Appd

Client
States of Jersey

Job Title
Jersey Hospital

Scale at A3
1:2000

Discipline
General

ARUP

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Drawing Title
Historical Ground Investigation
locations

Drawing Status

For Information


Job No
237035-00

Drawing No
Figure 8

Issue



Legend

 Proposed new hospital building footprints

Issue	Date	By	Chkd	Appd
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Client
States of Jersey

Notes:
Hydrogeological map extract from Institute of Geological Sciences. Jersey. 1:25,000 scale, 1982

Job Title
Jersey Hospital

Scale at A3
1:1000

Discipline
General

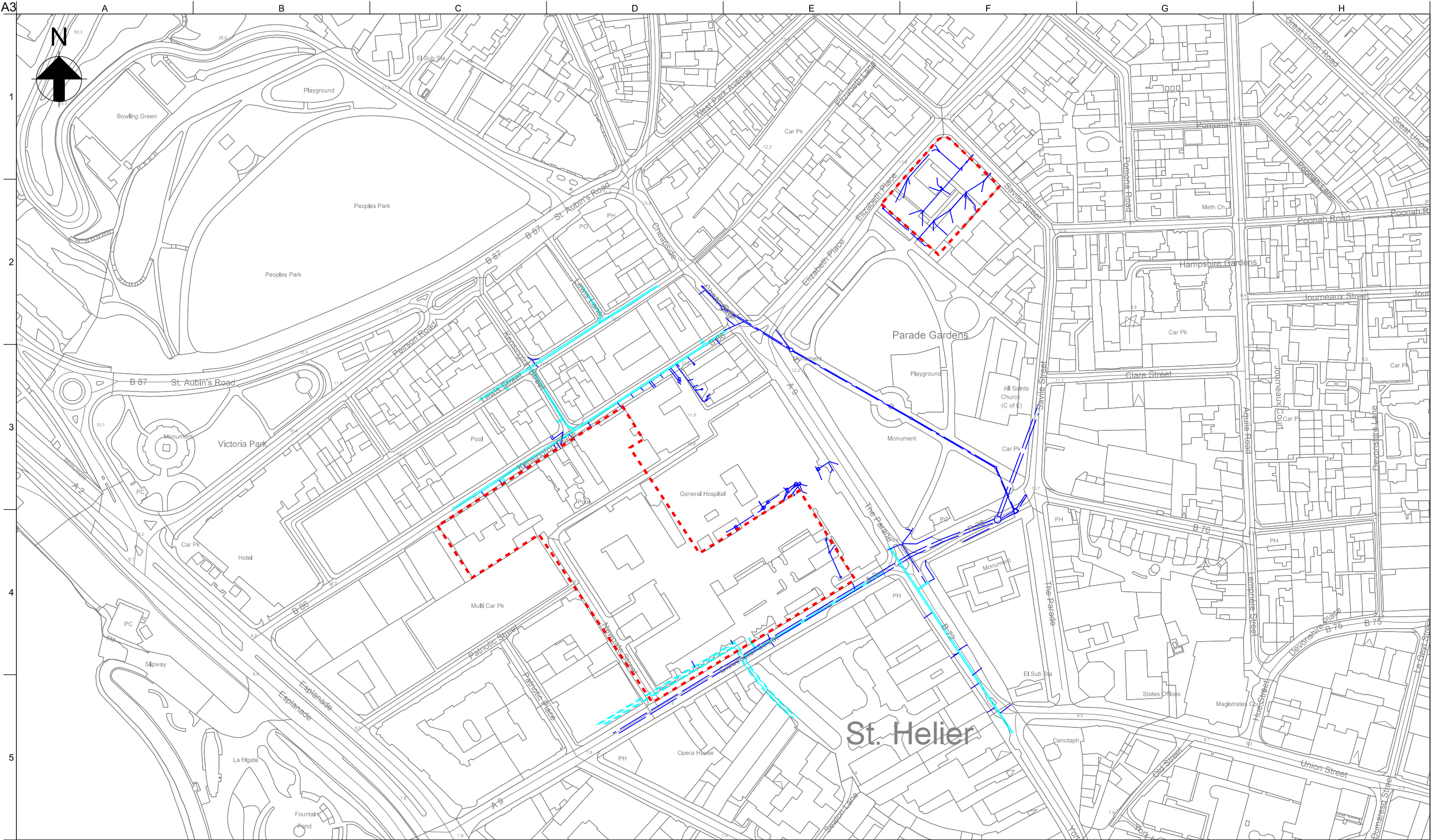
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Drawing Title
Hydrogeological Map Extract

Drawing Status
For Information

Job No	Drawing No	Issue
237035-00	Figure 9	



Legend

— Existing carrier drain

— Existing filter drain

Site Boundaries

*** (See Appendix G and Appendix L for further detail)

Issue	Date	By	Chkd	Appd

Client
States of Jersey

Job Title
Jersey Hospital

Scale at A3 1:2000

Discipline
General

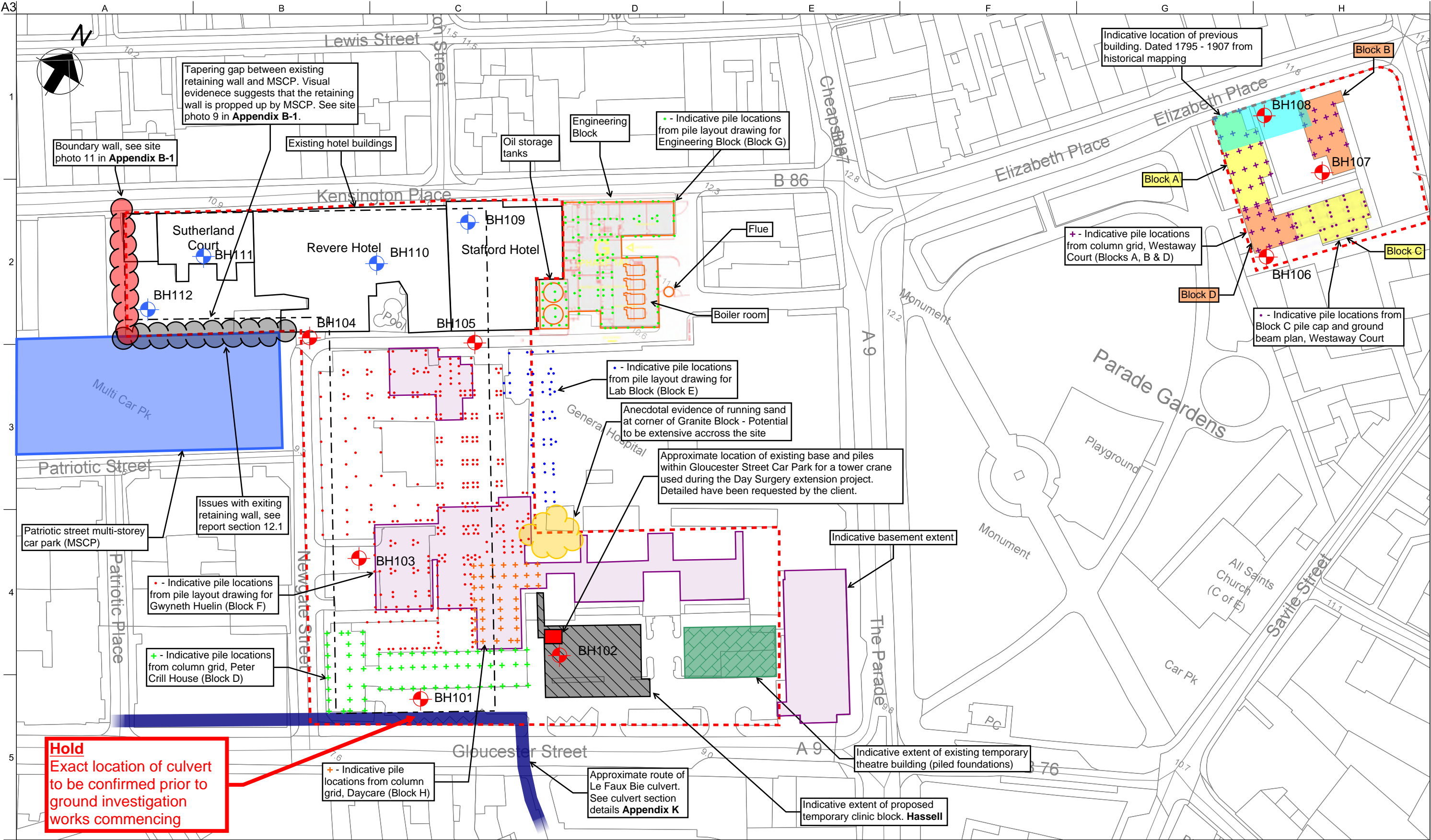
ARUP

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Drawing Title
Surface Water Culvert Plan ***

Drawing Status
For Information

Job No 237035-00	Drawing No Figure 10	Issue
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Legend

- Site Boundary
- Indicative Pile locations - Gwyneth Huelin
- Indicative Pile locations - Lab Block
- Indicative future development footprint

Indicative locations of proposed Phase 1 GI

Indicative locations of proposed Phase 2 GI

Issue	Date	By	Chkd	Appd

Client
States of Jersey

Job Title
Jersey Future Hospital

Scale at A3
1:1000

Discipline
General

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Drawing Title
Features & Constraints Plan

Drawing Status
For Information

Job No	Drawing No	Issue
237035-00	Figure 11	

Appendix A

Key Supporting Documents

A1 Key Supporting Documents

Doc Ref.	Drawing Reference Details	Drawing Date	Source (Provided by)	Existing Block
E1-1	Jersey General Hospital Daycare Extension, Proposed Basement Structural General Arrangement, Revision C1	03/04/2007	Rothwell & Partners Ltd	H - Daycare
E1-2	Jersey General Hospital Daycare Extension, Proposed Ground Floor Structural General Arrangement, Revision C1	03/04/2007	Rothwell & Partners Ltd	H - Daycare
E1-3	Jersey General Hospital Daycare Extension, Proposed Ground Floor Structural General Arrangement Sheet 2 – Theatre Corridor, Revision C3	03/04/2007	Rothwell & Partners Ltd	H - Daycare
E1-4	Department of Public Building and Works States Offices, General Hospital Phase 1, General Arrangement Pile Caps Sheet 2, Revision D	04/06/1976	Edwards & Blackie	E – Gwyneth Huelin Block
E1-5	Department of Public Building and Works States Offices, General Hospital, Jersey Phase One Redevelopment, Pile Layout Sheet 1	26/02/1975	Edwards & Blackie	E – Gwyneth Huelin Block
E1-6	Department of Public Building and Works States Offices, General Hospital, Jersey Phase One Redevelopment, Pile Layout Sheet 2 – Revision D	28/04/1976	Edwards & Blackie	E – Gwyneth Huelin Block
E1-7	Culvert Details, 6-14 Gloucester Street, St Helier, Jersey, Rothwell & Partners Ltd	Feb 2006	Rothwell & Partners Ltd	-
E1-8	Pile Layout, Jersey General Hospital, Phase 1B, Ove Arup & Partners – Revision A	May 1980	-	F – Lab Block
E1-9	Existing Basement Plan, Jersey General Hospital, Health & Social Services, Jersey Property Holdings Design & Building Services, Drawing 001	Aug 2016	States of Jersey	JGH
E1-10	Existing ground Floor Plan, Jersey General Hospital, Health & Social Services, Jersey Property Holdings Design & Building Services, Drawing 002	Aug 2016	States of Jersey	JGH
E2-1	Proposed Link (Block D), Westaway Court, Ove Arup & Partners, Sheet 1	Feb 1993	-	Westaway
E2-2	Layout plans of pile setting out, Pile caps and ground beams, Medical staff accommodation Block C Phase 2, Muir Wilson Associates,	Mar 1974	Rothwell & Partners Ltd	Westaway

Note: All available construction drawings located within **Appendix E**.

Appendix B

Site Walkover Photos

B1 Site Walkover Photos Jersey General Hosp.



Photo 1 – Facing northwest showing existing hospital buildings and small courtyard area between Blocks E and F. View along approximate demolition line.

Date taken: 17/08/2016



Photo 2 – View facing east looking at junction between Block C (Granite Block) and Block E.



Photo 3 – View facing west looking at existing extent of multi-storey car park.



Photo 4 – Facing northeast showing exit on to The Parade along the north-western edge of Block A.



Photo 5 – Looking northwest from an internal car park between Block A, Block F and Block G. Exits out on to Kensington Place.

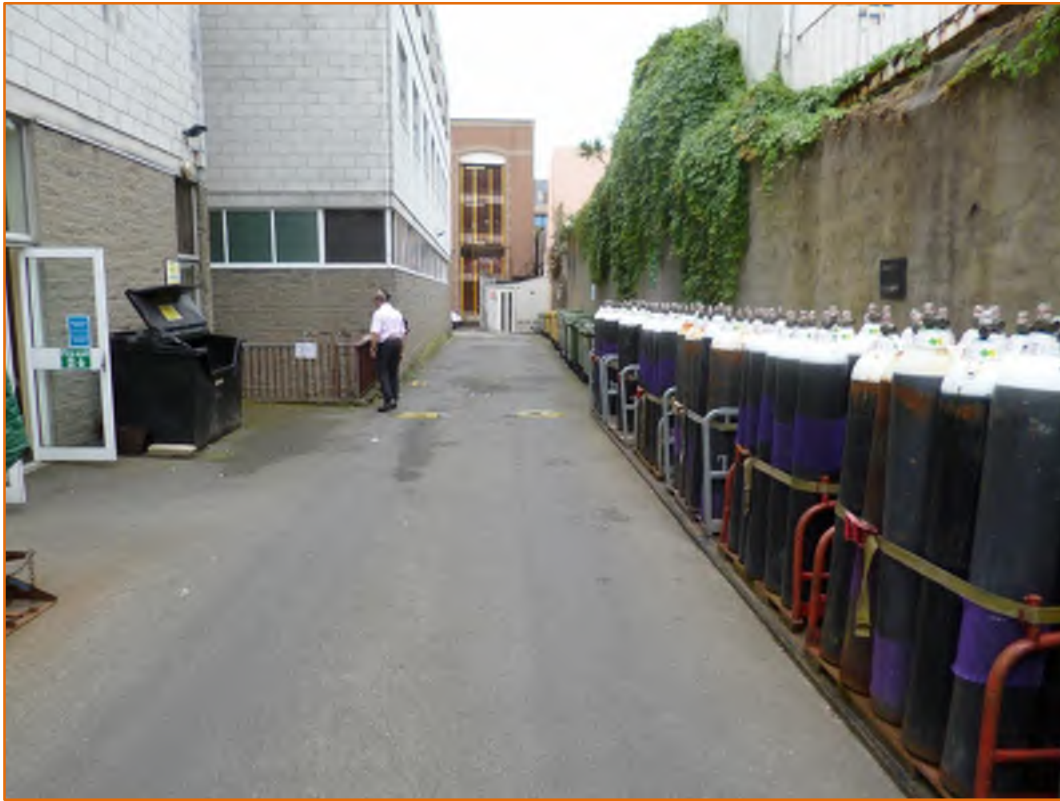


Photo 6 – Facing southwest along alley behind Blocks E and F.



Photo 7 – Facing northeast along alley behind Blocks E and F.



Photo 8 – View looking southeast along Newgate Street showing multi-storey car park entrance.

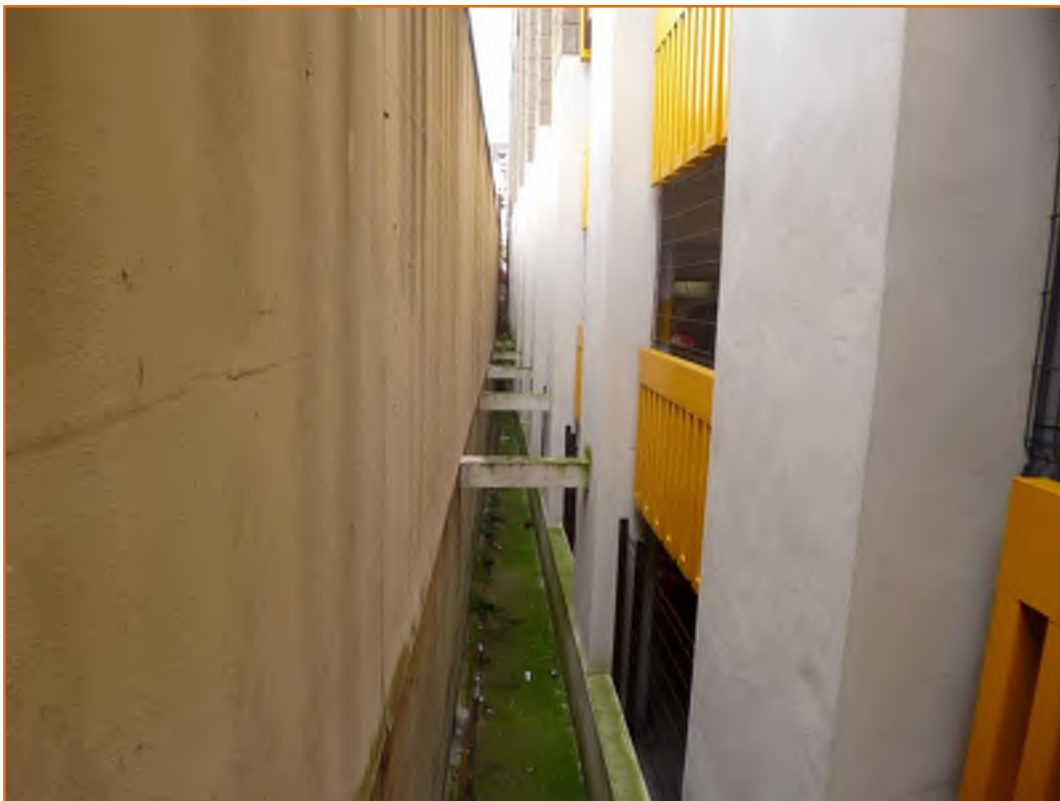


Photo 9 – View facing northeast showing props in tapering gap between Sutherland Court car park retaining wall and multi-storey car park.

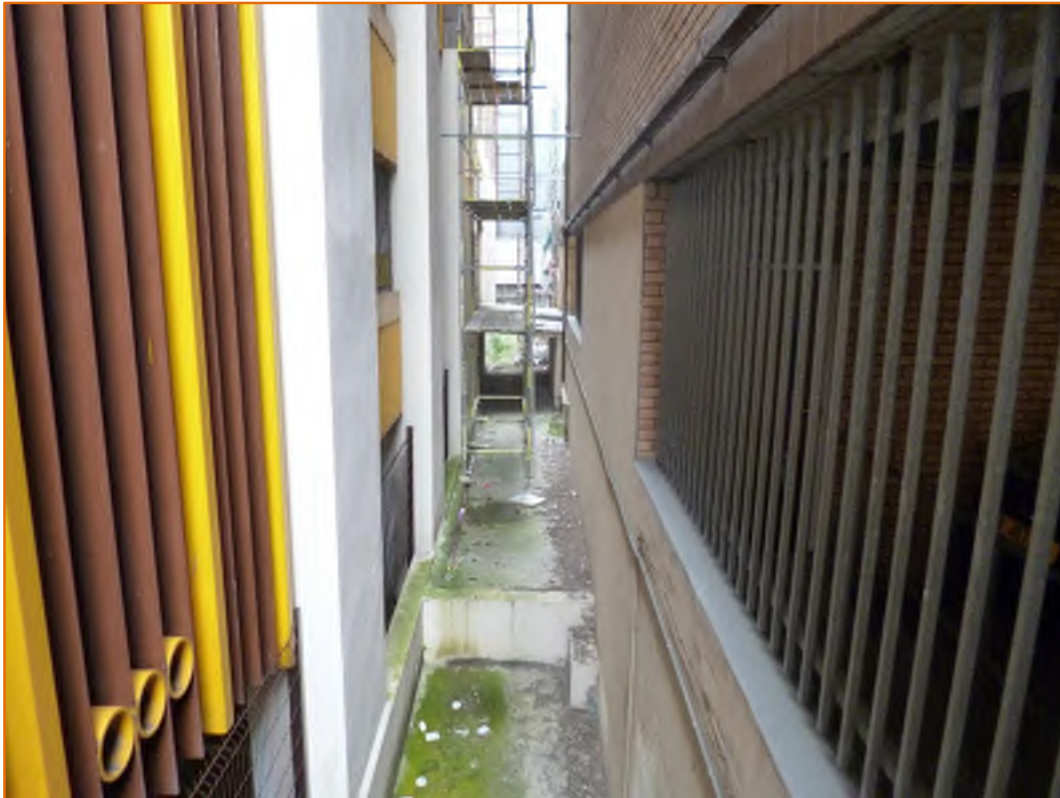


Photo 10 – Image showing gap between south-western edge of multi-storey car park and adjacent building.



Photo 11 – View from multi storey car park showing Sutherland Court car park and south-western boundary of site along exiting wall.



Photo 12 – View from multi-storey car park looking northeast showing Sutherland Court car park and tapering gap as mentioned in Photo 38.



Photo 13 – Facing southwest along Patriotic Street towards sea-front.



Photo 14 – Looking towards entrance to Gwyneth Huelin Wing (Block E) from Newgate Street.



Photo 15 – View into underground car park between Block E (ahead and left) and Block D (right).



Photo 16 – Image showing extent of underground car park mentioned in Photo 44.



Photo 17 – View out of underground car park mentioned in Photo 44.



Photo 18 – Showing drain access in car park by Block E.



Photo 19 – Facing northeast along Gloucester Street, Block D upper left.



Photo 20 – Facing southwest along Gloucester Street towards sea-front.



Photo 21 – View facing southwest along Gloucester Street towards seafront.



Photo 22 – Showing exit of hospital car park by Granite block. Block C right, Block H centre (glass) and Block D left.



Photo 23 – Showing props between retaining wall and MSCP and unidentified underground structure (highlighted in red) as part of building forming the retaining wall.

B2 Site Walkover Photos Westaway Court



Photo 1 – Looking southwest into entrance for Westaway Court main car park from Savile Street.



Photo 2 – Facing northwest looking at Westaway Court main car park adjacent to Savile Street.



Photo 3 – Facing southeast looking at Westaway Court main car park, showing exit on to Savile Street.



Photo 4 – Facing west looking at western end of Block A, location of proposed development.



Photo 5 – Facing northeast looking along the access road into the internal car park.



Photo 6 – Facing southwest looking into the internal car park from the access road down the side of the tower block.



Photo 7 – Facing north showing free standing wall site boundary and vehicle exit of internal car park down access road.



Photo 8 – Facing southeast looking into internal car park/courtyard and Block C.



Photo 9 – Facing east looking at internal car park with Block B on the left and Block C ahead.



Photo 10 – Facing west in internal car park/courtyard, proposed development between the two buildings on first or second floor.



Photo 11 – Facing northwest along Block A building external wall, showing car park drainage.



Photo 12 – Facing northeast in internal car park towards pedestrian exit into main car park.



Photo 13 – Facing northeast towards pedestrian exit of courtyard area.



Photo 14 – Looking at internal car park drainage by pedestrian exit to main car park.



Photo 15 – Facing northwest in main car park towards tower block entrance hall.



Photo 16 – Looking at ramp up on to raised paved area for building access.



Photo 17 – Facing northwest looking along Savile Street towards crossroads at northern point of site.



Photo 18 – Facing southeast along Savile Street.



Photo 19 – Facing southwest into SoJ Health & Social Services Department – *Maison Le Pape*.



Photo 20 – Facing northeast looking out of SoJ Health Department car park, south-eastern edge of Block C on left.



Photo 21 – Facing northeast showing additional parking along south-eastern edge of Block C.



Photo 22 – Showing drains and additional parking along south-eastern edge of Block C.



Photo 23 – Westaway Court existing buildings as viewed from Jersey General Hospital Block A facing northeast (not marked on **Figure 5**).

B3 Construction Photos



Photo 1



Photo 2



Photo 3

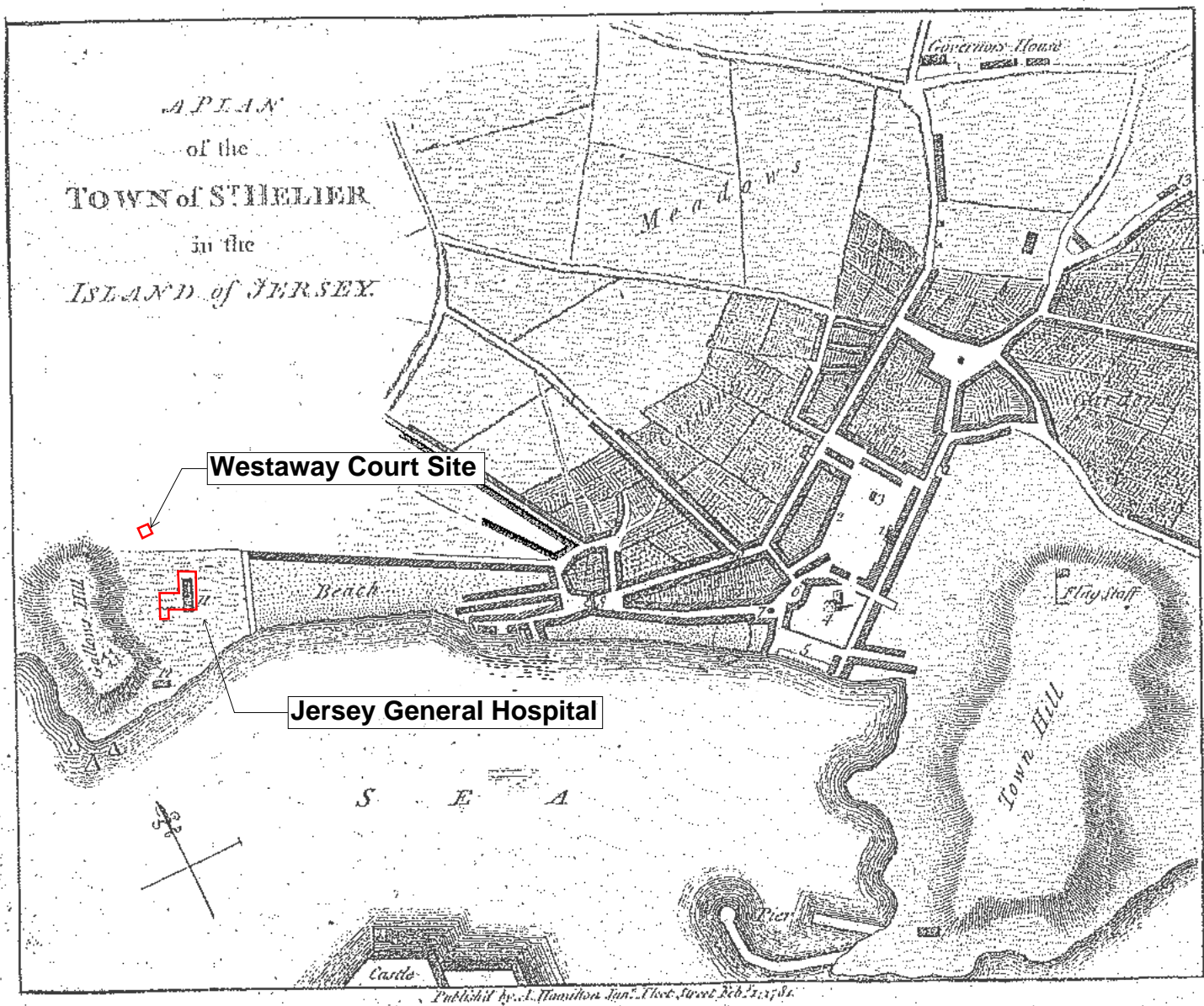
Appendix F-1

Geotechnical Desk Study - Part 2

Appendix C

Historical Plans & Aerial Photos

C1 Historical Plans



Approximate site boundary

Appendix C
Historical Map:

1781

Jersey General Hospital
& Westaway Court
237035



Gallons

Westaway Court

Black Rock

Jersey General Hospital

S^T HELLIER

ELIZABETH CASTLE

Appendix C

Historical:
1795 Richmond Map

Jersey General Hospital &
Westaway Court
237035

Approximate site boundary

EDIFICES AN	
Eglises.	1617
Mont-ès-Pendus	1687
Cahuc.	1688
Prison	1687
Quai du Sud.	1700
Chaussée.	1720
Quai Nord	1735
Bibliothèque.	1737
Piramide	1739
Hopital	1765
Fort du Mont.	1782
Nouve-Chaussée	1790

Major General Andre Gordon Esc. Lieutenant Gouverneur
 Messire Jean Dumarecq. Lieutenant Bailly.
 M. Elie Dorell. Connetable. Philippe Janvry. Surveillant
 Patriarche Patriarche Colonel Louis Poignand. Surveillant
 Edeuad Du Pré. Recteur David Mauger. Maître du Port.
 Louis Nallet. Lecteur. Abm. Bessin. Directeur de l'Hopital

En 1732. LH
 des Maisons de
 habitants à 5 cl
 En 1800. 56
 Navigation. 17.
 5300. Nombre a

ST-HELIER
 1800

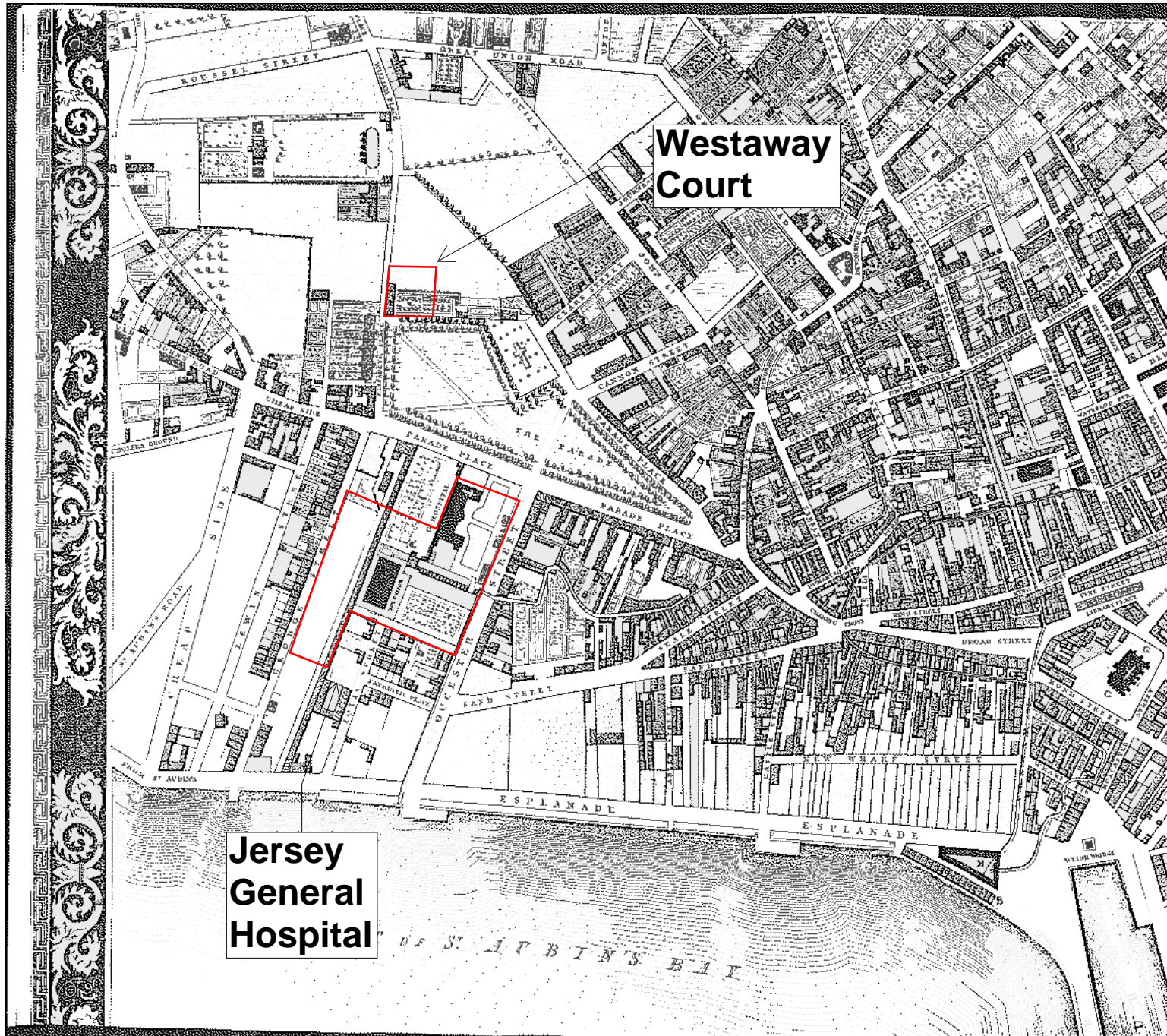
Westaway Court

Jersey General Hospital

Tout l'espace depuis la che-
 min de St Jean et la Prison.
 jusqu'au bord de Mer etait
 aussi taré que 1720. une ville
 semblable à celle que l'on voit
 encore aujourd'hui au pied de
 Mont-ès-Pendus

Appendix C
 Historical Map:
 1800
 Jersey General Hospital
 & Westaway Court
 237035

Approximate site boundary

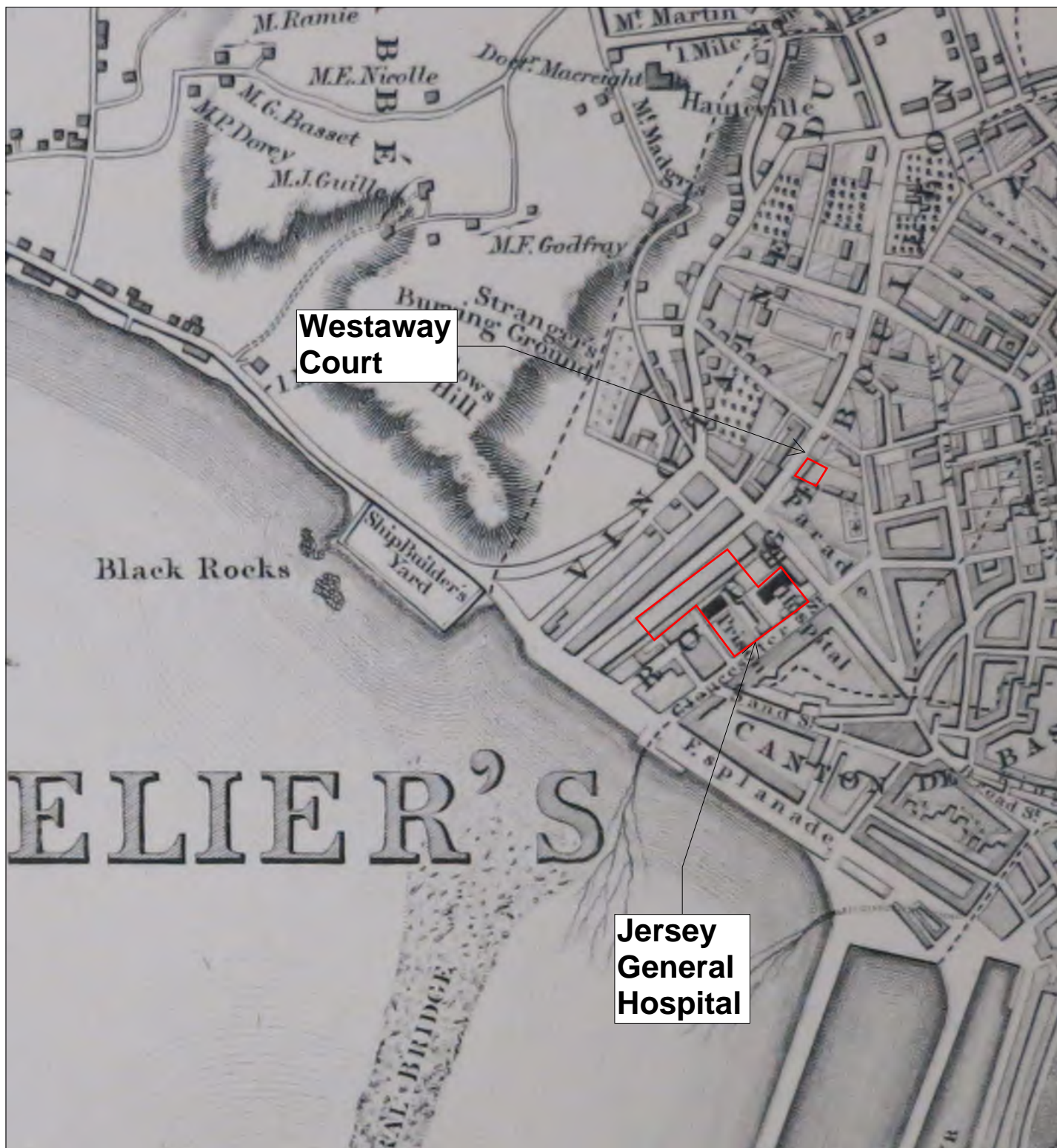


Approximate site boundary

Appendix C Historical Map:

1834

Jersey General Hospital
& Westaway Court
237035

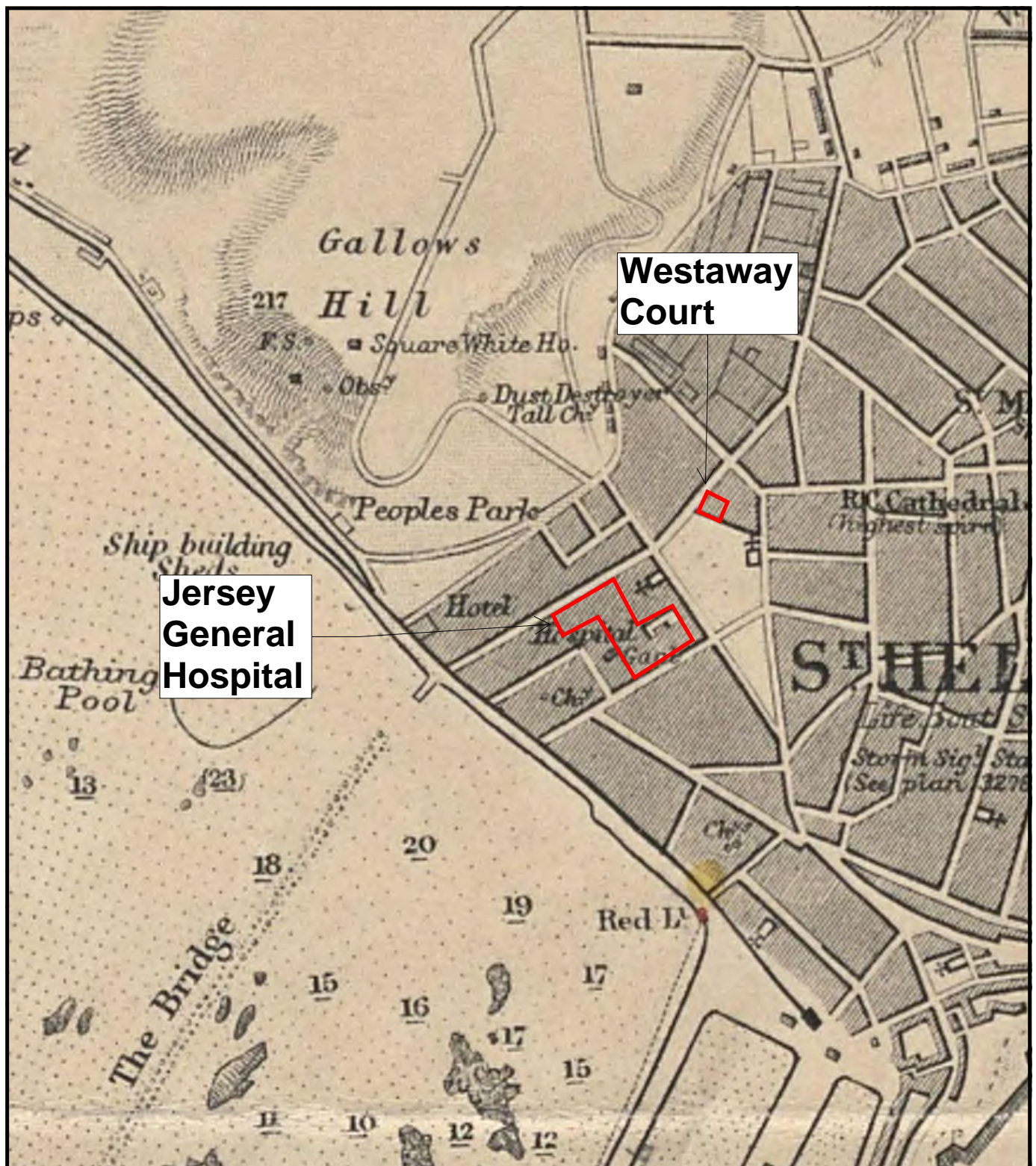


Approximate site boundary

Appendix C
Historical Map:

1849 Godfray Map

Jersey General Hospital
& Westaway Court
237035



London: Published at the Admiralty, 10th June, 1900, under the Superintendence of Captain G.H. Richards R.N. F.R.S. Hydrographer. Large corrections Jan. 1869, Jan. 1900. Sold by J.D. Potter, Agent for the Admiralty Charts, 145, Minster.

Approximate site boundary

Appendix C Historical Map:

1900

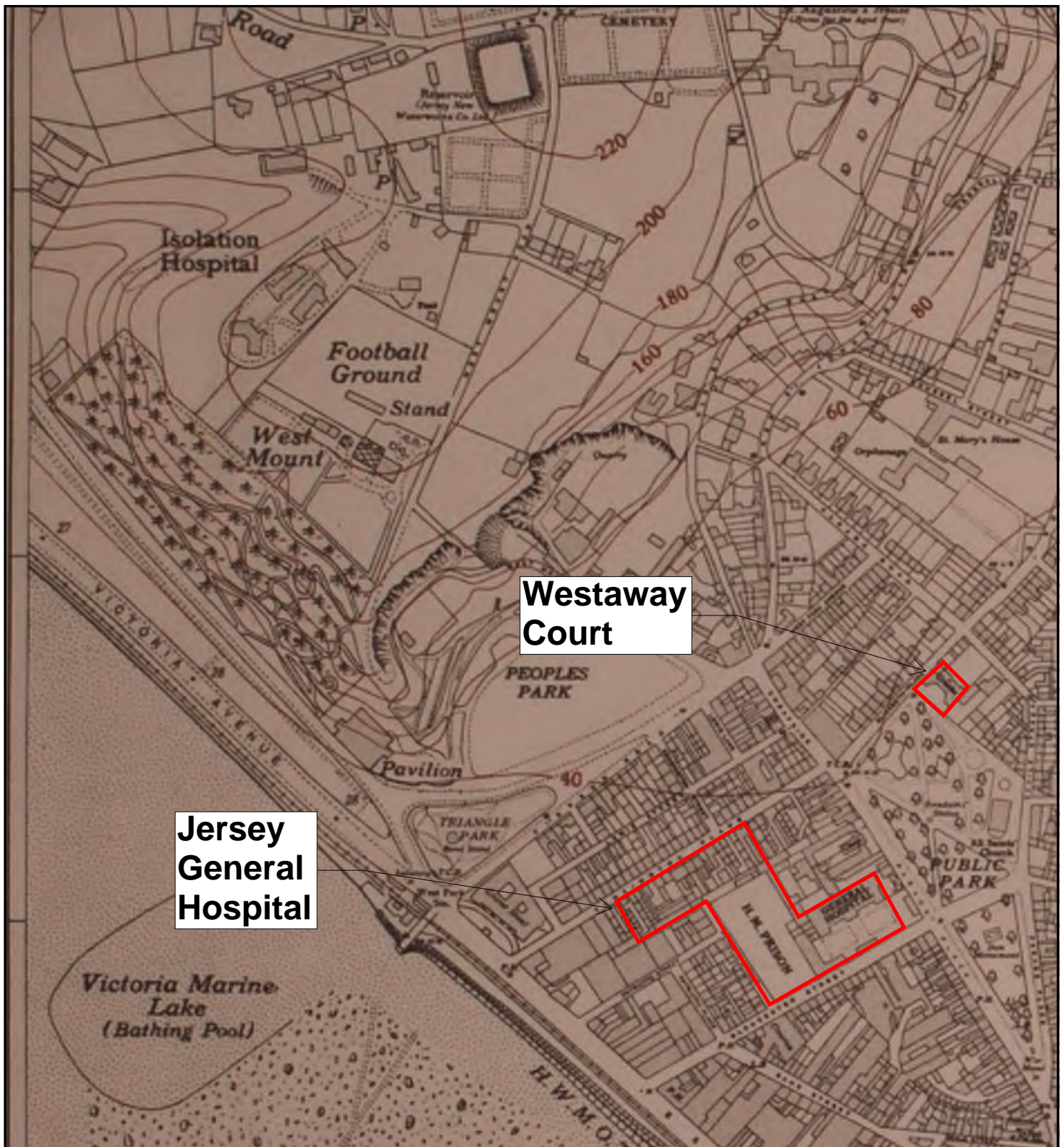
Jersey General Hospital
& Westaway Court
237035



Approximate site boundary

1907

Jersey General Hospital
& Westaway Court
237035



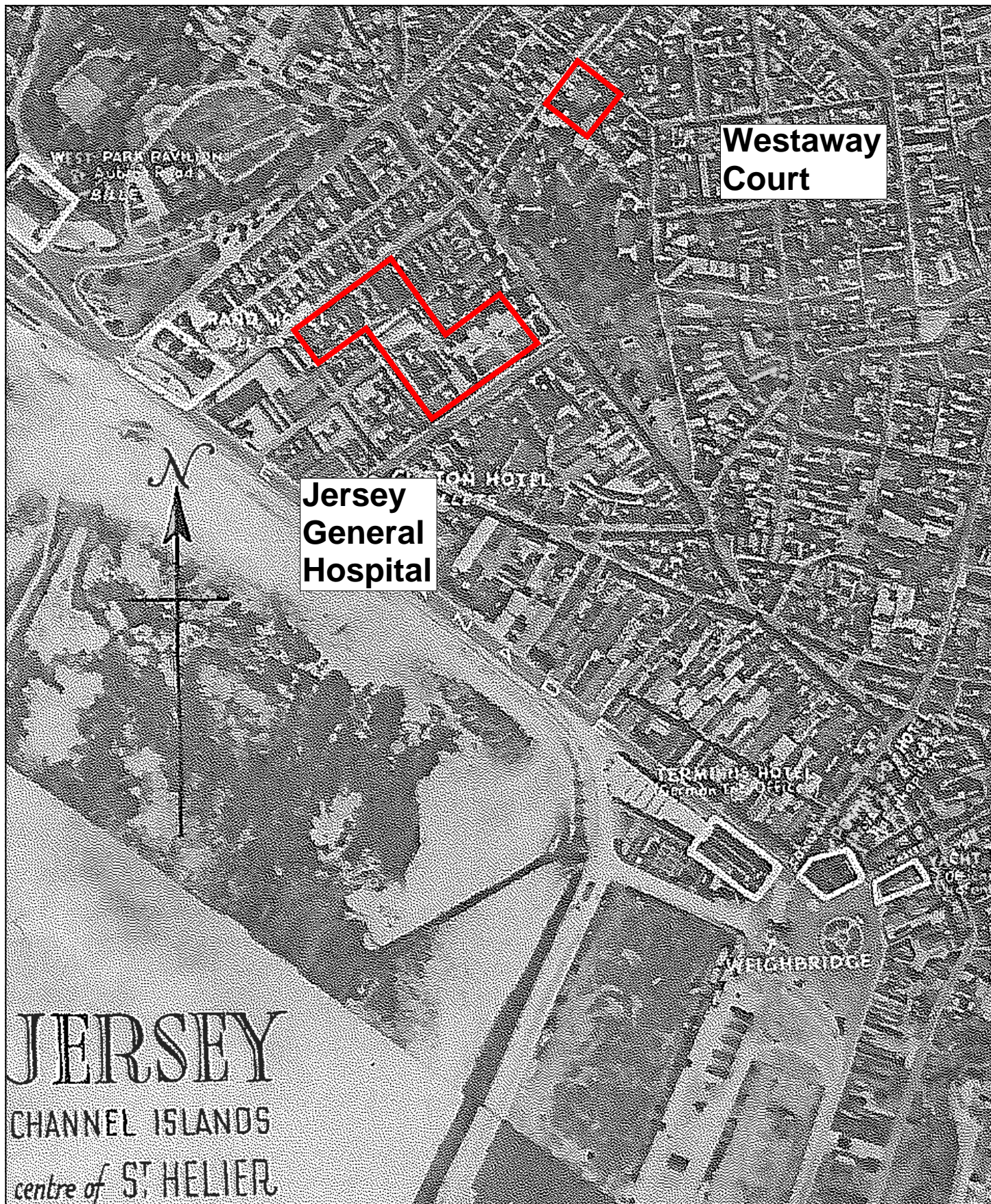
Approximate site boundary

Appendix C Historical Map:

1968

Jersey General Hospital
& Westaway Court
237035

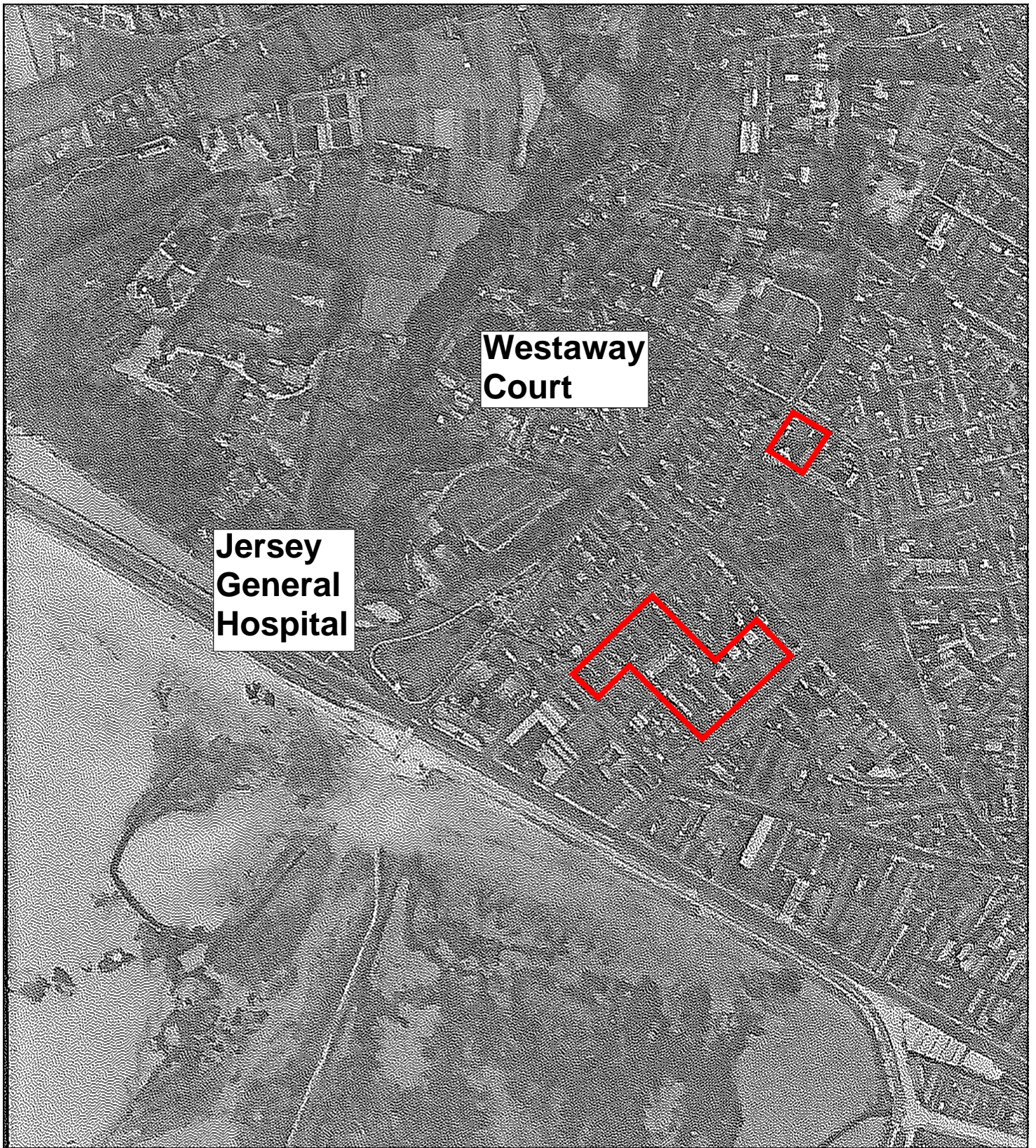
C2 Aerial Photos



Approximate site boundary

Appendix C
Historical:
 1943 Aerial Photo
 Jersey General Hospital &
 Westaway Court

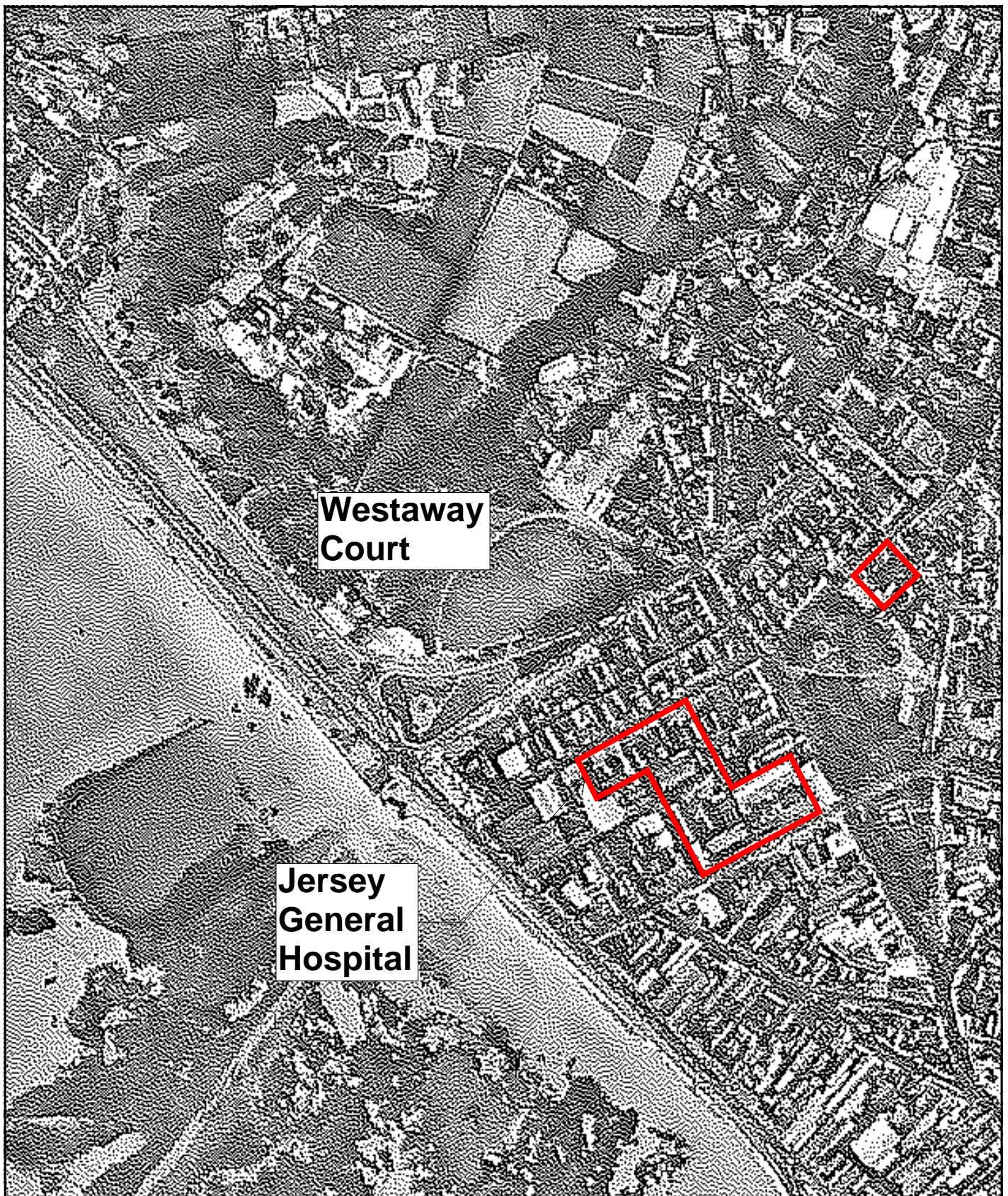
237035



Approximate site boundary

Appendix C
Historical:
1944 Aerial Photo
Jersey General Hospital &
Westaway Court

237035



Approximate site boundary

Appendix C
Historical:
1965 Aerial Photo
Jersey General Hospital &
Westaway Court

237035

Appendix D

Historical Ground Investigation Records

D1 Ground Investigation Records

Appendix D

Historical Ground Investigation Records

- Foundations Engineering Ltd, Jersey General Hospital, Phase 1 (6th/12th March 1973)
- Geotechnical Engineering Ltd, Jersey General Hospital, Phase 1B (12th/14th July 1979)
- Geomarine Ltd, Main Theatres Upgrade SI, Jersey General Hospital (7th/8th March 2014)
- Amplus Ltd, 33 Gloucester Street, Ralieggh House (4th/5th February 2000)
- Amplus Ltd, 15-16 The Parade (11th September 2006)
- Gloucester Street surface water sewer outfall drawing (Drawing dated 12th January 1982)
- Patriotic Street MSCP (Records dated 1983)
- Amplus Ltd, Kensington Gate Car Park, (8th/12th January 2007)
- Geomarine Ltd, Kensington Place, (16th/21st July 2009)
- Amplus Ltd, 66-72 Esplanade (21st March / 2nd April 2014)
- Matthew F Warner & Associates Ltd, Westaway Court (4th/6th January 1994)

RECORD OF BOREHOLE No: 1

Location : JERSEY
 Contract No. : ST. HELIER HOSPITAL
 Type of Boring : CF 669 /1121H
 Method of Boring : Shell and Auger
 Date (started) : 12.3.73

Borehole Dia : 8" 6"
 Casing : 8" to 25' 6"
 Ground Level : 32.1 ft OD.
 Sheet 1 of 1

Depth of casing	Water Level	SAMPLES			STRATA		DESCRIPTION OF STRATA
		Depth	Type	No.	Legend	Depth Thickness	
						G.L.	
		1' 3"	D	1		1' 3"	MADE GROUND: Tarmac to 2" overlying compacted sandstone.
		(N.20) 5' 0"	D	2		7' 3"	Medium dense light brown fine silty SAND with pebbles below 7' 6"
		7' 6"	D	3			
		8' 6"	D	4		8' 6"	Loose light brown/grey silty SAND.
		(N.5) 10' 0"	D	5		3' 6"	
		12' 0" - 13' 1"	U	6		12' 0"	Firm light brown sandy very silty CLAY.
		13' 6"	D	7		14' 0"	
		14' 0"	D	8			
		(N.23) 15' 0"	D	9		4' 0"	Medium dense brown silty clayey f.m. SAND.
		18' 0"	D	10		18' 0"	Firm to stiff grey silty CLAY.
		19' 0" - 20' 2"	U	11		20' 0"	
		20' 0"	D	12			
		(N.24) 22' 0"				5' 0"	Medium dense sandy GRAVEL. (f.m.c.)
		22' 6"	D	13			
		25' 0"	D	14		25' 0"	Firm grey silty CLAY.
		25' 6" - 26' 8"	U	15		26' 6"	
		26' 6"	D	16		1' 6"	Medium dense dark grey silty fine SAND.
3' 0"	5' 6"	28' 0"	D	17		28' 0"	Firm grey clayey laminated SILT.
3' 8"	5' 8"	29' 6"	D	18		29' 6"	
		30' 0" - 31' 0"	U	19		4' 0"	Stiff grey slightly silty CLAY with fine gravel - below 32' 6" brown and without gravel.
		32' 6"	D	20			
		33' 6"	D	21		33' 6"	Hard dark grey fractured and slightly weathered very fine grained MUDESTONE.
33' 6"	10' 3"	(N.45) 35' 6"	D	22		35' 6"	
3' 6"	8' 3"	(initial 2")	W				

Notes: Chisel used for 2 hours 33' 6" - 35' 6" to prove bedrock.
 Water added to assist in shelling and to prevent sand and gravel from blowing.

Location : JERSEY
ST. HELIER HOSPITAL
Contract No. : CF 669/1121H
Type of Boring : Shell and Auger
Date (started) : 10: 3: 73

Borehole Dia : 8" 6"
Casing : 8" to 20' 0"
6" to 34' 0"
Ground Level : 27.9 ft OD.
Sheet 1 of 1

Date and Time	Depth of Casing	Water Level	SAMPLES			STRATA		DESCRIPTION OF STRATA	
			Depth	Type	No.	Legend	Depth		Thickness
9:30							G.L.		MADE GROUND: 3" formwork over 3" roadstone overlying granite boulders and slabs.
			3' 0"	D	1	x	2' 6"		
			(N.17) 5' 0"	D	2	x	10' 0"		Medium dense light brown slightly silty f.m. SAND. Horizon is dark brown and very silty 7' 0" - 10' 0"
			7' 0"	D	3	x x			
			(N.22) 10' 0"	D	4	x	12' 6"		
			12' 6"	D	5	x			
			15' 0" - 16' 3"	U	6	x	6' 0"		Soft to firm brown sandy silty CLAY.
			16' 6"	D	7	x			
			18' 6"	D	8	x x	18' 6"		Soft to firm brown/grey sandy
18:00	20' 0"	5' 6"	20' 0" - 21' 2"	U	9	x	2' 6"		SILT. with some clay.
1:30			21' 0"	D	10	x x	21' 0"		Medium dense light grey/brown silty f.m. SAND.
8:00	20' 0"	6' 3"	23' 0"	D	11	x	23' 0"		
			25' 0" - 26' 4"	U	12		3' 0"		Firm green/brown/grey CLAY.
			26' 0"	D	13		26' 0"		Medium dense sandy GRAVEL with some green/grey clay bind
			28' 0"	D	14		28' 0"		
			30' 0" - 31' 3"	U	15		4' 6"		Soft to firm grey/brown silty CLAY.
			31' 0"	D	16				
			32' 6"	D	17		32' 6"		Stiff brown silty CLAY with traces of gravel.
			34' 0"	D	18		34' 0"		
			(N.59) 35' 0"				2' 0"		Hard grey slightly weathered porphyritic DOLERITE broken with clay smears.
			(initial 1/2")	W		E.O.B.	36' 0"		

REMARKS: Chisel used for 2 hours 1" 1/2 hr. in made ground and 1 1/2 hrs. 34' 0" 36' 0" to prove bedrock.
Water added to assist in shelling

Location : JERSEY
ST HELIER HOSPITAL
Contract No. : CF 669/1121H
Type of Boring : Shell and Auger and
Rotary Core
Date (started) : 6 : 3 : 73

Borehole Dia : 8" 6" HX
Casing : 8" to 20' 6" 6" to 40' 0"
HX to 40' 6"
Ground Level : 34' 8 ft O.D.
(10166 m OD)
Sheet 1 of 2

No.	Depth of Casing	Water Level	SAMPLES			STRATA		DESCRIPTION OF STRATA	
			Depth	Type	No.	Legend	Depth		Thickness
73							G.L.		
			1' 3"	D	1		1' 3"	1' 3"	MADE GROUND: concrete ducting.
								3' 3"	MADE GROUND: Brown sand with gravel and brick.
			4' 6"	D	2		4' 6"		
			(N.41) 5' 0"	D	3	X		4' 6"	Dense light brown slightly silty f.m. SAND.
						X			
			9' 0"	D	4		9' 0"		
			(N.19) 10' 0"	D	5	X		4' 6"	Medium dense dark brown clayey silty SAND with some organic matter.
						X			
			13' 6"	D	6	X	13' 6"		
			15' 0" - 16' 0"	U	7			3' 0"	Firm brown/yellow sandy CLAY.
			16' 6"	D	8	X	16' 6"		
						X			
			(N.22) 20' 0"	D	9	X		6' 0"	Medium dense brown/grey silty f.m. SAND.
						X			
			22' 6"	D	10	X	22' 6"		
						X			
			25' 0" - 26' 0"	U	11	X		5' 6"	Firm to stiff light grey sandy silty CLAY.
						X			
			28' 0"	D	12		28' 0"		
			(N.23) 30' 0"					4' 0"	Medium dense sandy GRAVEL (f.m.s.)
			32' 0"	D	13		32' 0"		
				W					
			35' 0" - 36' 1"	U	14	X		5' 0"	Firm grey very silty laminated CLAY.
						X			
			37' 0"	D	15		37' 0"		
								2' 6"	Stiff grey/green/brown CLAY.
			39' 6"	D	16		39' 6"	1' 0"	Dense GRAVEL and cobbles.

REMARKS: Water added to assist in chelling.
Three trial pits dug to locate services. Pipes found 4 ft down in two of them.

RITA LANE

PHASE 1A

BH3



trial hole 1
G.L. 10011
T.M. 7-411



BH2



PHASE 1

trial hole 3
G.L. 10,420
T.M. 7-570



PHASE 2

PHASE 3

NEWGATE

STREET

CLIENT STATES OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
SITE JERSEY GENERAL HOSPITAL
DATE 12-14 JULY 1979 GROUND LEVEL 10.3

SCALE 1:50

Progress and Casing Water Level Record		Description	SPT/ RPT	Core Sample	Depth	Level
12 JULY						
		MADE GROUND and with some gravel and brick.			1.00	9.30
	Nil	Medium dense becoming looser with increasing depth, white fine SAND	N = (17)		1.17	
	Nil	becoming pale grey fine and medium SAND. See Remarks 2.	N = (10)		2.00	
	Nil		N = (6)		2.17	
Struck water at 4.00m. level after striking 4.00	Nil				3.17	
Before water flush 4.00	Nil	Medium dense orange brown silty fine SAND	N = (6)		4.00	6.30
					4.17	
					4.50	
					4.80	
P.M. After flushing in casing - at surface	5.15 P.M. 5.61	5.80-5.85m. band of silty fine SAND with fine gravel.	N = (16)		5.31	
		6.25-6.30m. band of fine cemented silty fine SAND			6.30	4.00
	6.49	Medium dense orange mottled grey fine sandy SILT, with some iron-stained patches. Laminated from 6.30-6.50m. and 7.45-7.50m. A little clayey below 7.50m.	N = (12)		6.65	
	7.51		N = (8)		7.67	
		Medium dense grey green mottled orange silty fine SAND and fine GRAVEL.			8.00	2.30
	8.44	Dense grey silty fine SAND and fine and medium GRAVEL. See Remarks 2.	N = (4)		8.30	2.00
					8.60	
		Continued in different stratum on Sheet 2.			9.60	0.70

BOREHOLE LOG

STATE OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
JERSEY GENERAL HOSPITAL
12-14 JULY 1979 GROUND LEVEL 10.30m AOD.

BOREHOLE No 1 (Sheet 2 of 2)
SCALE 1:50

progress and casing		description	SPT/ RPT	core, sample	depth	level	
water level	record						
13 JULY	9.50	Firm grey laminated fine sandy SILT with pale grey fine sand laminations, dark grey clayey silt bands, some brown staining and black organic inclusions. Occasional rounded fine gravel around 9.60m. Becoming slightly clayey at increasing depth. Stiff and laminated below 10.95m.	N=(20)	Dry core drilling	9.60 9.67	0.70	
	10.55		N=(15)		10.71 11.00	0.70	
	11.29	Very stiff grey mottled yellow grey clayey sandy SILT with strong and highly weathered iron-stained fragments of meta-siltstones. (COMPLETELY WEATHERED ROCK)	N=(10)		11.45		
	12.24 12.24	Highly weathered iron-stained fragments of META-SILTSTONES, friable below approx. 12.65m.	I * N=(128)		12.20 12.36	-1.90	
	13.00	Completely weathered very weak pale grey fine grained gravel META-SILTSTONE fragments in a silty clay matrix.		Water-flush diamond core drilling	12.75	-2.45	
	13.35				14.20	-3.90	
	M 2.60 PM 13.35	Moderately weathered very strong pale greenish grey lightly metamorphosed chlorite rich MUDSTONE with calcite crystals, occasional pyrite and numerous calcite veins.			15.20	-4.90	
	14 JULY AM 4.55	End of borehole.					
	M. 1.45						
	Fore pulling						
	Casing 1.96 recovered						
	P.M. 1.45						
	16-19 JULY						
	1.45						
<u>Remarks</u>							
1. Starter pit excavated to 0.75m depth.							
2. No recovery from 2.00 - 4.00m. and 8.90 - 9.50m.							
3. SPT records.							
1.01 - (5), 4, 5, 4, 4 7.51 - (3), 1, 2, 2, 3							
2.01 - (3), 3, 2, 2, 3 8.44 - (5), 8, 10, 11, 12							
3.01 - (2), 1, 2, 2, 1 9.50 - (10), 7, 4, 4, 5							
4.00 - (2), 1, 2, 1, 2 10.55 - (5), 3, 3, 4, 5							
5.15 - (5), 4, 4, 4, 4 11.29 - (16), 7, 7, 8, 14							
6.49 - (4), 3, 3, 3, 3 12.20 - (24), 32							
4. Standpipe installed 3.00 - 5.00m.							
Undisturbed sample, open-drive or prepared from drill core							
GEL JOB No.				FIGURE			

BOREHOLE LOG

CLIENT STATES OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
SITE JERSEY GENERAL HOSPITAL
DATE 14-17 JULY 1979 GROUND LEVEL 11.60M. AOD.

BOREHOLE No 2 (Sheet 1 of 2)

SCALE 1:50

geology	progress and water level	casing record	description	SPT/ RPT	core sample	depth	level	
	14 JULY		MADE GROUND - sand with some gravel and brick fragments.					
						1.20	10.40	
			MADE GROUND - yellow brown very silty fine sand with some poorly cemented patches.			1.80	9.80	
						1.99		
		nil	MADE GROUND - pale yellow grey and brown mottled fine and medium sand.	N (17)	drilling	2.80	8.80	
	Drop below 3.30m.					3.04		
	Struck water at 3.97	nil	Loose pale yellow fine SAND.	N (7)		3.30	8.30	
	Level after striking 3.97		Medium dense yellow and brown medium and fine SAND.			3.97		
						4.00	7.60	
						4.13		
	P.M. 3.97	nil	Loose brown silty medium to fine SAND.	N (5)		4.50	7.10	
			TRANSITIONAL					
	16 JULY A.M. 3.94		Med dense greenish grey in places mottled orange poorly laminated fine sandy SILT with dark grey laminations and bands of clayey silt. Some iron nodules and staining.			5.02		
		nil				5.57		
		nil				6.00		
		5.86	Becoming less sandy with increasing depth.			6.56		
		5.86	TRANSITIONAL	N (15)	dry	6.70	4.90	
			Blue grey mottled yellow poorly laminated fine sandy SILT with some iron staining along laminations. Clayey between 7.40m. and 8.20m. Band of yellow cemented silty fine sand at 7.90m.			7.00		
		6.86				7.56		
		6.86		N (17)		8.04		
		7.86				8.50	3.10	
			Continued in different stratum on Sheet 2.					

undisturbed sample, open-drive or prepared from drill core

GEL JOB No.

FIGURE

BOREHOLE No 2 (Sheet 2 of 2)

SCALE 1:50

SCALE 1:50

Before water
Husk - Dry

P. M. 3-64
17 JULY
A. M. 3-80

Before pulling
COSTED 3-26

P. M. 5-78

18-21 JULY received	
B-17	

End of borehole.

Remarks

1. Starter pit excavated to 1.00m depth.
2. SPT records.
- | | |
|------------------------|---------------------------|
| 1-83 - (5), 5, 4, 4, 4 | 7-40 - (5), 4, 5, 4, 4 |
| 2-88 - (4), 2, 3, 2, 2 | 8-44 - (6), 9, 10, 10, 12 |
| 3-97 - (2), 1, 1, 2, 1 | 9-79 - (5), 9, 12, 8, 6 |
| 5-42 - (4), 3, 4, 4, 3 | 11-12 - (6), 3, 3, 4, 3 |
| 6-40 - (5), 4, 3, 4, 4 | 12-00 - (6), 24, 26 - |
3. Piezometer installed: tip at 8.60m.
response zone 8-10 - 9-10m.

GEL JOB No.

FIGURE

0000

6

BOREHOLE No 3 (Sheet 1 of 2)

SCALE 1:50

Geology	Progress and water level	Casing record	Description	SPT/ RPT	Core, sample	Depth	Level	
	18 JULY		MADE GROUND - Sand with some gravel.					
						1.25	6.75	
						1.47		
		nil	Medium dense pale yellow grey fine SAND becoming white below 1.60m.	N = (15)	drilling	2.49		
		nil		N = (7)		3.00	7.00	
			Loose white fine and medium SAND.			3.20	6.80	
			Loose brown fine and medium SAND with occasional dark brown silty patches.			3.49		
	Damp below 3.20m.	5.20	Orange brown silty medium to fine SAND.	N = (6)		4.00	6.00	
			TRANSITIONAL			4.25	5.75	
		4.28	Medium dense blue grey poorly laminated very silty fine SAND.		core	4.80	5.20	
			TRANSITIONAL			5.36		
		4.28	Firm blue grey mottled yellow laminated fine sandy SILT with some iron-staining along laminae.	N = (15)		6.00		
		6.00	5.60 - 5.80m. wet silt with extensive iron-staining.			6.56		
		6.00		N = (13)		7.36		
		7.36	Becoming more blue and clayey from 7.10 - 7.20m.		Dry	7.76	2.24	
						7.80	2.20	
		7.36	Dense yellow silty fine SAND with some fine gravel.	N = (35)		8.00		
	Struck water at 8.26 Level after striking 8.00		Dense to medium dense grey becoming brown silty SAND and fine and medium subrounded to subangular GRAVEL, strongly iron-stained at 8.60m. Occasionally subrounded coarse gravel.			8.25		
						8.65		
						9.00	1.00	
			Continued in different stratum on Sheet 2.					

OREHOLE LOG



STATE OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
JERSEY GENERAL HOSPITAL
18-20 JULY 1979 GROUND LEVEL 10' 00m AOD.

BOREHOLE No 3 (Sheet 2 of 2)

SCALE 1" = 50'

DATE	PROGRESS AND WATER LEVEL	CASING RECORD	DESCRIPTION	SPT/RPT	CORE SAMPLE	DEPTH	LEVEL
18 JULY	9:00 P.M. 3:26	P.M. 9:20	Firm orange brown silty fine SAND (100mm) becoming blue grey laminated slightly clayey fine sandy SILT with dark grey clay laminations and black organic inclusions.	N=25	drilling	9.00 9.16 9.55 9.75 10.00	1.00
19 JULY	A.M. 3:40		9.75 - 9.85m. very wet silty sand, becoming very silty fine SAND between 10.00 and 10.20m.		core	10.40 10.56	-0.40
			TRANSITIONAL	N=14	dry	10.80 11.00	-0.80 -1.00
			Stiff blue grey laminated very silty CLAY with occasional subrounded fine gravel.		drilling		
			Highly weathered rock fragments in a silty CLAY.		water-flush diamond core		
20 JULY	P.M. 3:60	P.M. 12:01	Highly weathered strong dark grey, in places laminated, lightly metamorphosed MUDSTONES with clay smearing on some joint faces. Becoming grey META-SILTSTONE, moderately weathered and massive below 11.70m. Iron-stained along most joint surfaces. Several sets of high angled joints. Average separation 200-300mm. Becoming dark grey and more fine grained below 13.00m. Laminated in places with occasional bands including pyrite crystals. Bedding approx. 10° dip.			13.50	-3.50
	Before pulling casing 3:60						
	P.M. 1:00						

End of borehole.

Remarks.

1. Starter pit excavated to 0.76m depth.
2. SPT records.
1.33 - (5), 4, 4, 4, 3 6.40 - (4), 3, 3, 3, 4
2.33 - (4), 2, 2, 3, 2 7.60 - (8), 9, 8, 8, 10
3.33 - (2), 1, 2, 1, 2 9.00 - (6), 8, 9, 4, 4
5.20 - (4), 3, 4, 4, 4 10.40 - (6), 3, 4, 4, 3
3. Piezometer installed: tip at 13.00m. response zone 12.50 - 13.50m.

undisturbed sample, open-drive or prepared from drill core

GEL JOB No.

FIGURE

STAFFORD
HOTEL.

PHASE 1A

SITE
ACCESS

No 2 Edward Place
No 1 Edward Place

La Preference

Margarella



THE PARADE


PHASE I
(NEW BUILDING)



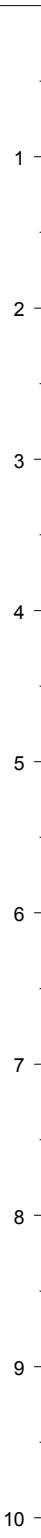











MAIN HOSPITAL BUILDING


SCALE 1:500




NIXEY


PHASE 1B - GENERAL HOSPITAL - JEFFERY C.I.




 Geomarine Les Ruettes, La Grande Route de St Jean, St John, Jersey, JE3 4FN Tel: 01534 856566 Email: enquiries@geomarine.je					<h1 style="text-align: center;">Borehole Log</h1>			Borehole No. BH1 Sheet 1 of 2		
Project Name: Jersey General Hospital, Main Theatres Upgrade SI					Project No. CN 1343		Co-ords: 564726.84 - 5448673.17		Hole Type BH	
Location: St Helier					Level: 13.00		Scale 1:50			
Client: Property Holdings					Dates: 07/03/2014 - 08/03/2014		Logged By KMS			

Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.10			0.10	12.90		TARMAC	
		0.30			0.30	12.70		DRILLERS DESCRIPTION: TYPE 1 (MADE GROUND)	
		0.50			0.50	12.50		DRILLERS DESCRIPTION: FILL comprising bricks, concrete, etc. (MADE GROUND)	
		0.80			0.80	12.20		DRILLERS DESCRIPTION: Orange coarse SAND. (BEACH DEPOSITS?)	
		1.20			1.20	11.55		Orange brown gravelly SILT. (BEACH DEPOSITS?)	
		1.20 - 1.65	SPTL S	N=6 (1,1/1,2,1,2)	1.45			Grey-white fine SAND. (BLOWN SAND)	
		2.40			2.40	10.60		Grey brown laminated sandy SILT. (ALLUVIUM)	
		2.70			2.80	10.20		Grey mottled brown silty SAND. (ALLUVIUM)	
		2.70 - 3.15	SPTL S	N=10 (2,2/2,3,3,2)	3.25	9.75		Green grey sandy SILT. (ALLUVIUM)	
		3.55			3.55	9.45		Green grey laminated SILT. (ALLUVIUM)	
			4.05				4		
			4.05 - 4.50	SPTL S	N=13 (3,3/4,2,3,4)			5	
			5.45					6	
			5.45 - 5.90	SPTL S	N=9 (2,1/2,2,3,2)			7	
			7.15					8	
			7.15 - 7.60	SPTL S	N=16 (3,4/4,4,4,4)			9	
			8.69					10	
			8.69 - 9.14	SPTL S	N=22 (4,6/6,5,4,7)	8.75	4.25	 Grey silty cobbly GRAVEL. Gravel is medium to coarse, sub-rounded. Cobbles are rounded. Gravel is of mixed lithology becoming a weathered Jersey Shale with depth. (ALLUVIUM)	


Remarks Ground level is arbitrary level. Water strike at 4.05m rising to ground level after 30 minutes. Borehole backfilled with grout on completion.		
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 Geomarine Les Ruettes, La Grande Route de St Jean, St John, Jersey, JE3 4FN Tel: 01534 856566 Email: enqueries@geomarine.je		<h1>Borehole Log</h1>			Borehole No. BH1 Sheet 2 of 2				
Project Name: Jersey General Hospital, Main Theatres Upgrade SI		Project No. CN 1343		Co-ords: 564726.84 - 5448673.17		Hole Type BH			
Location: St Helier		Level: 13.00		Scale 1:50					
Client: Property Holdings		Dates: 07/03/2014 - 08/03/2014		Logged By KMS					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.10	SPTL S	N=47 (6,9/8,9,11,19)	10.21	2.79		Grey blue rock recovered as medium to coarse angular gravel of rock.	11
		10.10 - 10.55							
					12.67	0.33		End of borehole at 12.67 m	13
									14
									15
									16
									17
									18
									19
									20
Remarks Ground level is arbitrary level. Water strike at 4.05m rising to ground level after 30 minutes. Borehole backfilled with grout on completion.									





 Geomarine Les Ruettes, La Grande Route de St Jean, St John, Jersey, JE3 4FN Tel: 01534 856566 Email: enquiries@geomarine.je				<h1 style="text-align: center;">Trial Pit Log</h1>				Trialpit No TP1 Sheet 1 of 1	
Project Name: Jersey General Hospital, Main Theatres Upgrade SI				Project No. CN 1343		Co-ords: 564730.80 - 5448668.93 Level: 13.00		Date 08/03/2014	
Location: St Helier						Dimensions (m): <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;">Depth 0.50</div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> 0.5 0.4 </div> </div> </div>		Scale 1:25 Logged GW	
Client: Property Holdings									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10	12.90		TARMAC	
				0.25	12.75		BACKFILL - TYPE 1	
				0.50	12.50		CONCRETE FOOTING <i>...@ 0.25m Concrete footing protrudes 250mm from the wall.</i>	
							End of pit at 0.50 m	

Remarks: Trial pit to identify foundation of retaining wall. Ground level is arbitrary level.



Stability: Good

 Geomarine Les Ruettes, La Grande Route de St Jean, St John, Jersey, JE3 4FN Tel: 01534 856566 Email: enqueries@geomarine.je				<h1 style="text-align: center;">Trial Pit Log</h1>				Trialpit No TP2 Sheet 1 of 1	
Project Name: Jersey General Hospital, Main Theatres Upgrade SI				Project No. CN 1343		Co-ords: 564743.02 - 5448676.87 Level: 13.00		Date 08/03/2014	
Location: St Helier						Dimensions (m): <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 2px;">0.5</div> <div style="margin: 0 10px;">0.4</div> <div style="border: 1px solid black; width: 100px; height: 40px; margin-left: 10px;"></div> </div>		Scale 1:25	
Client: Property Holdings						Depth 1.20		Logged GW	
Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description		
	Depth	Type	Results						
				0.10	12.90		TARMAC		
							BACKFILL - TYPE 1		
					0.95	12.05		CONCRETE FOOTING <i>...@ 0.95 Concrete footing protrudes 250mm from wall.</i>	
				1.20	11.80		End of pit at 1.20 m		
<div style="display: flex; justify-content: space-between;"> <div>1</div> <div>2</div> <div>3</div> <div>4</div> <div>5</div> </div>									
Remarks: Trial pit to identify foundation of retaining wall. Ground level is arbitrary level.									
Stability: Good									

1



A



JOB
Main Theatres Upgrade SI

SIZE A4	PROJECT CODE 1343	DWG NO 1343-01/Fig2	REV 1
SCALE	Scale NTS		BY R. Sutton

1

**Foundation & Geotechnical
Specialists**

Borehole Number	1
--------------------	---

Diameter
113mm. Cased to 8.94m

Ground Level (mOD)

Client: Raleigh House Ltd

Job Number	0139
---------------	------

location
as site plan

Dates:
04/02/00
05/02/00

Engineer
Rothwell and Partners

Sheet
1/2

104

Starter pit excavated from ground level to 1.20m bgl
Exploratory hole drilled using a Sitemaster Rig
Dry drilling from 1.20m - 9.00m
Rock core drilling with water flush from 9.00m - 10.06m
Ground water struck at 2.95m bgl and rose to 2.02m bgl in 15 minutes

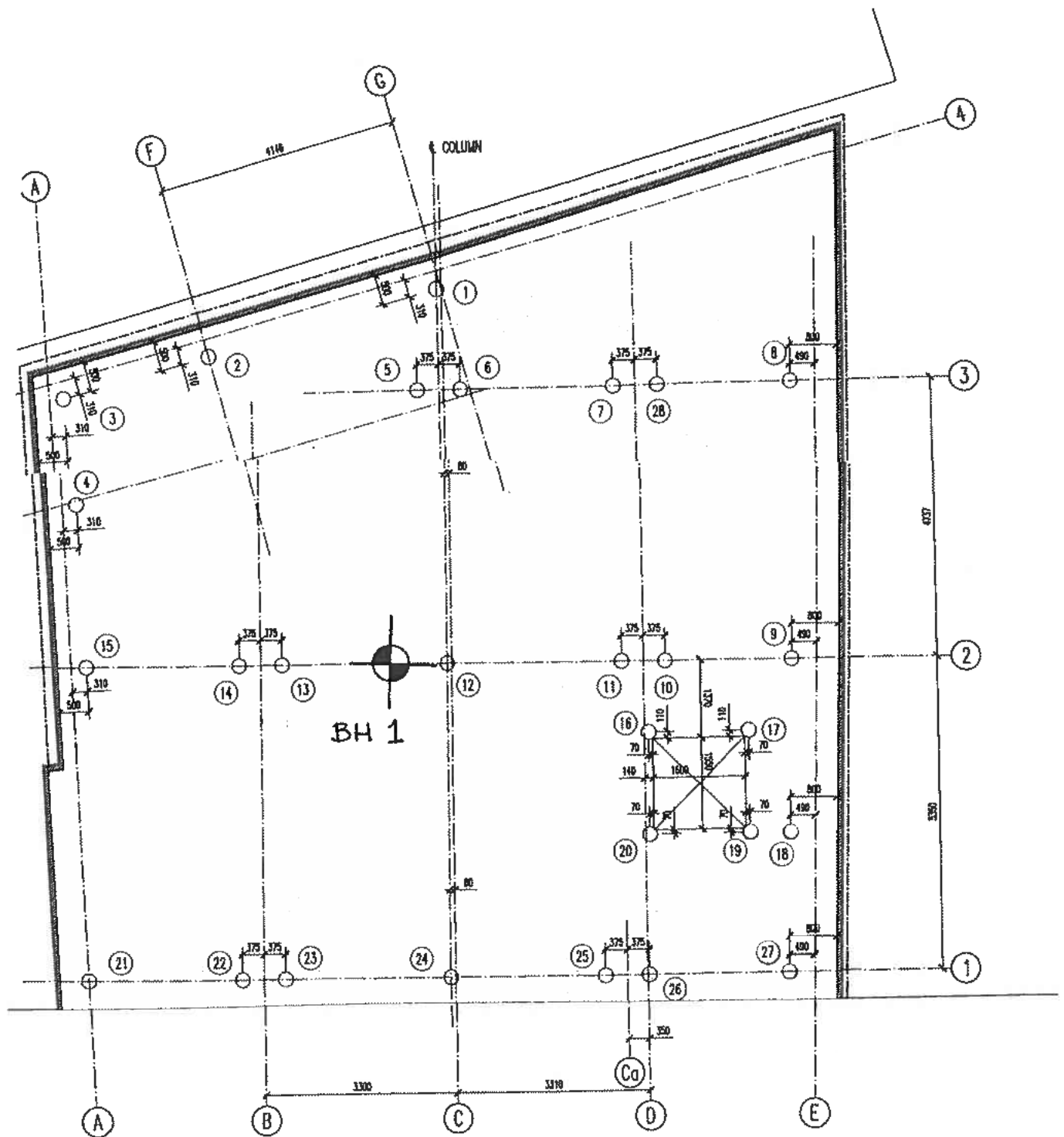
Scale (approx)	Logged By
1:50	MEW

Figure No.

0139.1a

AMPLUS LTD Foundation & Geotechnical Specialists						Site 33 Gloucester Street, St. Helier, Jersey		Borehole Number 1	
Boring Method Excavated using a Sitemaster Rig		Diameter 113mm Cased to 8.94m		Ground Level (mOD)		Client Raleigh House Ltd		Job Number 0139	
		Location as site plan		Dates 04/02/00 - 05/02/00		Engineer Rothwell and Partners		Sheet 2/2	
Depth m	Samples / Tests	Casing Depth m	Water Depth m	Field Records	Level (mOD)	Depth m (Thickness)	Description	Legend	Water
10.06				05/02/00: 2.73m		10.06	Borehole completed at 10.06m		
<div> <div>Remarks</div> <div> <p>Starter pit excavated from ground level to 1.20m bgl</p> <p>Exploratory hole drilled using a Sitemaster Rig</p> <p>Dry drilling from 1.20m - 9.00m</p> <p>Rock core drilling with water flush from 9.00m - 10.06m</p> <p>Ground water struck at 2.95m bgl and rose to 2.82m bgl in 15 minutes</p> </div> <div> <p>See key sheet for symbols and abbreviations</p> </div> </div>									
							Scale (approx)	logged By	
							1:50	MPW	
							Figure No.		
							0139.1a		

APPROXIMATE BOREHOLE POSITION



PILE LAYOUT.

AMPLUS LTD		Foundation & Geotechnical Specialists		Site 15-16 The Parade, St Helier, Jersey		Borehole Number P1			
Boring Method Twintech TD308		Casing Diameter 110mm cased to 10.46m		Ground Level (mOD)		Client Tillyard for 16 the Parade Limited			
		Location as site plan		Dates 11/09/2006		Engineer Beaumont Structural Consultants			
						Job Number 0948			
						Sheet 1/1			
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.50) 0.50	Made Ground		
						(2.50)	Loose medium dense light brown SAND		
						3.00	Soft to firm brown and grey sandy CLAY/SILT		
						(4.00)			
						7.00	Firm to stiff brown gravelly CLAY		
						(2.00)			
						9.00	Firm to stiff brown and grey slightly sandy CLAY		
						(1.46) 10.46			
							Complete at 10.46m		
Remarks Probe hole drilled using a Twintech 308 drilling rig Probe hole drilled using 110mm augers to refusal at 10.46m bgl 10.46m Refusal: presumed weathered rock head and end of probe hole No ground water strike using this method of boring.							Scale (approx) 1:100	Logged By GW	
							Figure No. 0948.P1		

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
15-16 The Parade, St Helier, Jersey

Borehole
Number
P2

Boring Method
Twintech TDS08

Casing Diameter
110mm cased to 9.90m

Ground Level (mOD)

Client
Tillyard for 16 the Parade Limited

Job
Number
0948

Location
as site plan

Dates
11/09/2006

Engineer
Beaumont Structural Consultants

Sheet
1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.50) 0.50	Made Ground		
						(2.50)	Loose medium dense light brown SAND		
						3.00	Soft to firm brown and grey sandy CLAY/SILT		
						(4.00)			
						7.00	Firm to stiff brown gravelly CLAY		
						(1.50)			
						8.50	Firm to stiff brown and grey slightly sandy CLAY		
						(1.40)			
						9.90	Complete at 9.90m		

Remarks

Probe hole drilled using a Twintech 308 drilling rig
Probe hole drilled using 110mm augers to refusal at 9.90m bgl
9.90m Refusal: presumed weathered rock head and end of probe hole
No ground water strike using this method of boring.

Scale
(approx)
1:100

Logged
By
GW

Figure No.
0948.P2

AMPLUS LTD						Foundation & Geotechnical Specialists		Site 15-16 The Parade, St Helier, Jersey		Borehole Number P3	
Boring Method Twintech TD308		Casing Diameter 110mm cased to 9.70m		Ground Level (mOD)		Client Tillyard for 16 the Parade Limited		Job Number 0948		Sheet 1/1	
		Location as site plan		Dates 11/09/2006		Engineer Beaumont Structural Consultants					
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
						(0.50) 0.50	Made Ground				
							Loose medium dense light brown SAND				
						(2.50)					
						3.00	Soft to firm brown and grey sandy CLAY/SILT				
						(4.00)					
						7.00	Firm to stiff brown gravelly CLAY				
						(1.00)					
						8.00	Firm to stiff brown and grey slightly sandy CLAY				
						(1.70)					
						9.70	Complete at 9.70m				
Remarks Probe hole drilled using a Twintech 308 drilling rig Probe hole drilled using 110mm augers to refusal at 9.70m bgl 9.70m Refusal: presumed weathered rock head and end of probe hole No ground water strike using this method of boring.								Scale (approx)		Logged By	
								1:100		GW	
								Figure No. 0948.P3			

07-SEP-2006 13:27 FROM

T-008 P.002/002 F-002

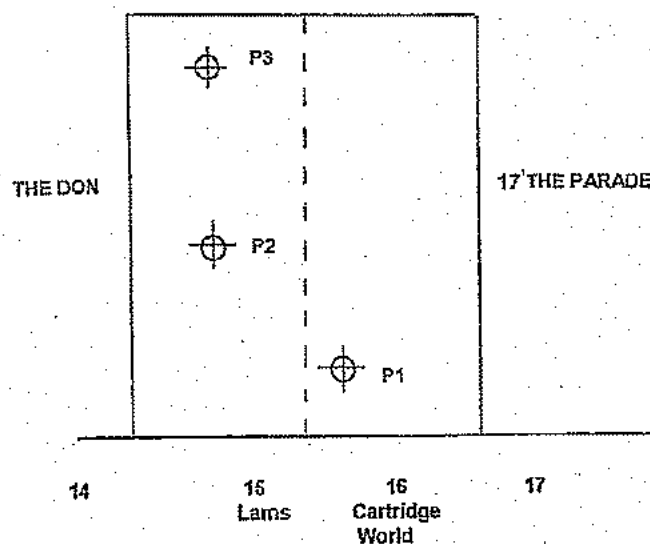


BEAUMONT
STRUCTURAL
CONSULTANTS

15/16 THE PARADE
SKETCH OF BUREAU
LOCATIONS

Drawn	Rev

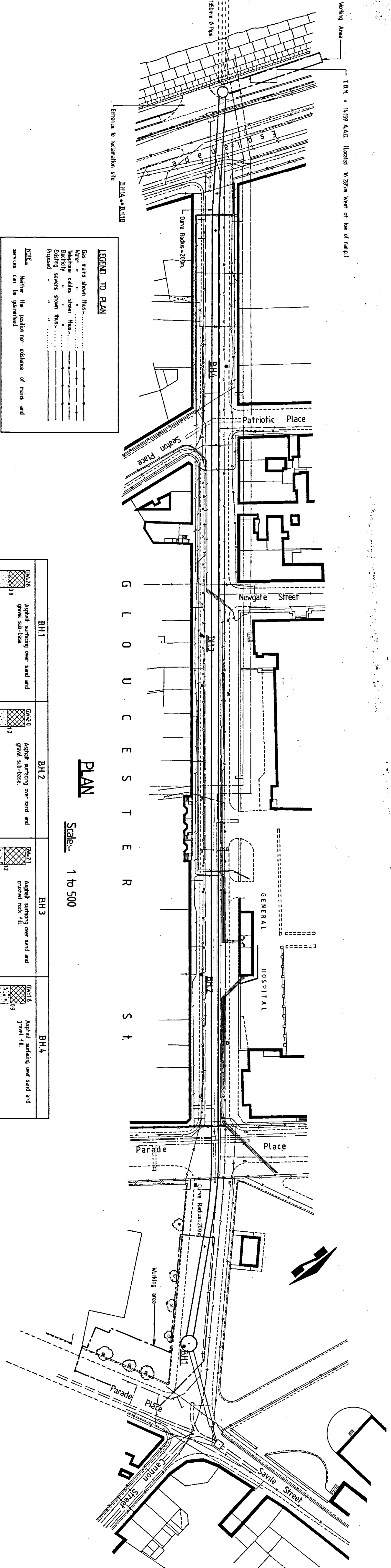
SPECTRUM



THE PARADE

NOTES

1. All levels are related to admiralty datum.
2. Boreholes 1A & 1B have recently been sunk and their positions marked.



LEGEND TO PLAN

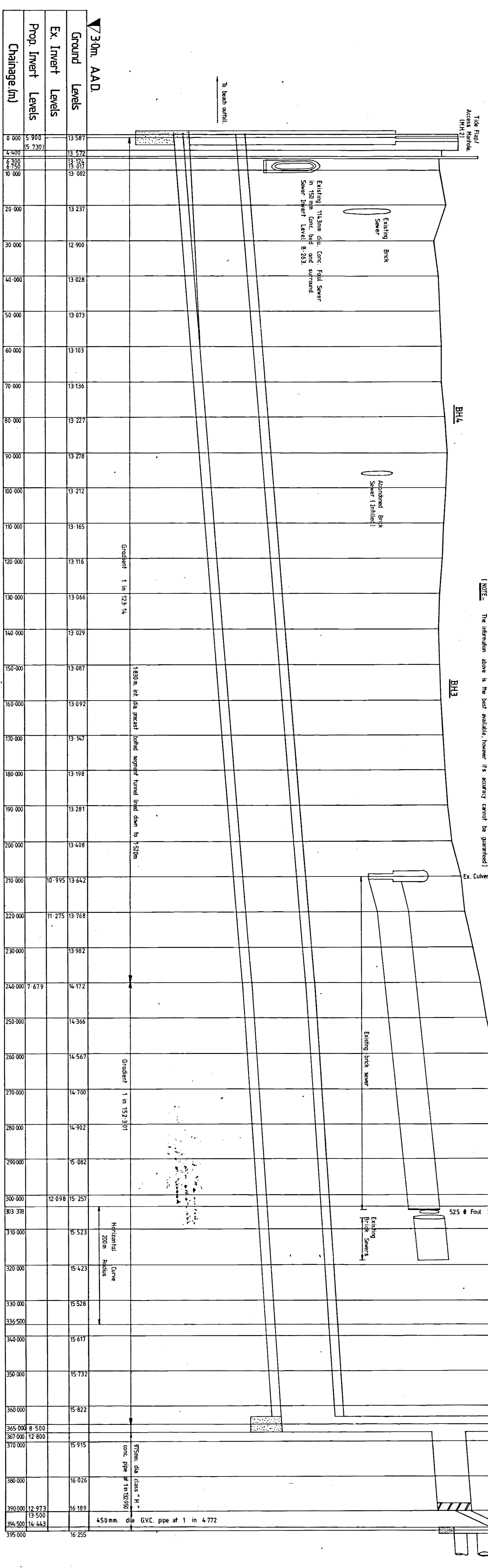
Use main shown thus:-
Water -
Telephone cables shown thus:-
Electricity cables shown thus:-
Existing sewers shown thus:-
Proposed

NOTE: Neither the position nor existence of man and services can be guaranteed.

BH1	BH2	BH3	BH4
GAZ48 Asphalt surfacing over sand and gravel sub-base Loose to medium dense pale brown fine medium sand Firm to stiff mottled pale brown and orange brown slightly clayey silt with traces of roots Soft to firm grey silt Firm pale brown mottled orange brown very silty clay Firm pale brown slightly clayey silt	GAZ40 Asphalt surfacing over sand and gravel sub-base Medium dense pale brown, fine medium sand Soft pale brown, becoming grey silt Soft to firm grey very silty clay with zones of brown silt Grey slightly sandy silt Medium dense, grey silty fine medium sand with some fine medium gravel Firm pale brown slightly clayey silt	GAZ41 Asphalt surfacing over sand and crushed rock fill Loose coarse medium gravel with some pale brown medium sand Soft to firm grey silt Firm grey silt with a little fine medium gravel Firm black mottled brown silt with slightly organic odour Firm grey silt with some dark grey brown and organic odour Firm dark grey silt	GAZ48 Asphalt surfacing over sand and gravel fill Medium dense, pale brown medium sand and medium coarse gravel Soft grey and brown silt Firm grey and brown silt Medium dense medium fine gravel with a little coarse sand Firm grey silt with some dark grey brown and organic odour Firm dark grey silt

BOREHOLE LOGS

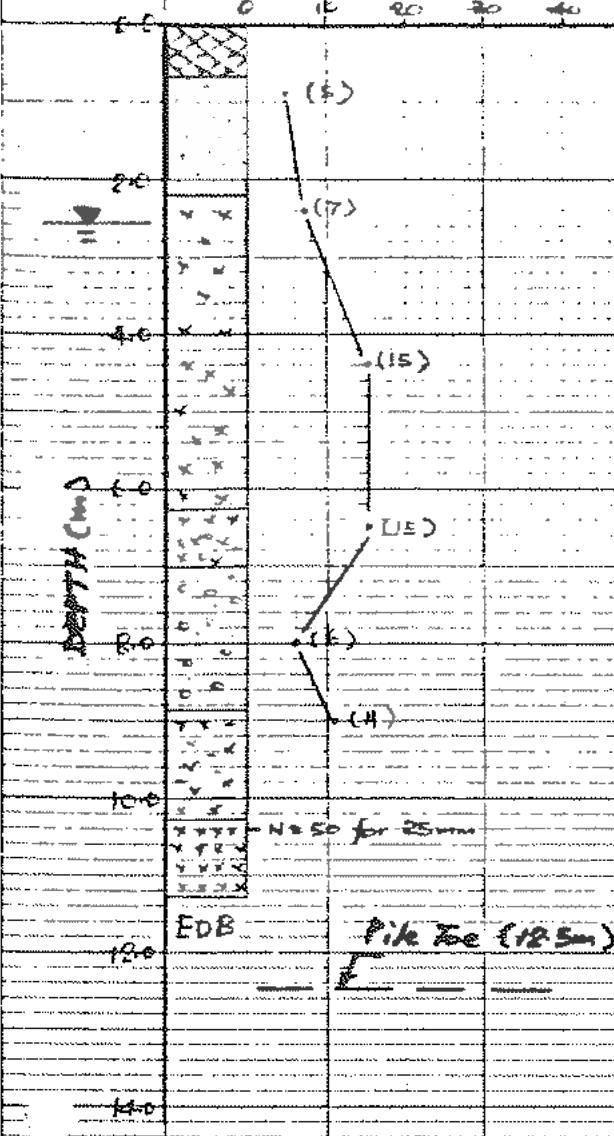
NOTE: The information shown is the best available, however its accuracy cannot be guaranteed.



Ground Levels	Ex. Invert Levels	Prop. Invert Levels	Chainage (m)
13.587	13.587	13.587	0
13.572	13.572	13.572	10
13.557	13.557	13.557	20
13.542	13.542	13.542	30
13.527	13.527	13.527	40
13.512	13.512	13.512	50
13.497	13.497	13.497	60
13.482	13.482	13.482	70
13.467	13.467	13.467	80
13.452	13.452	13.452	90
13.437	13.437	13.437	100
13.422	13.422	13.422	110
13.407	13.407	13.407	120
13.392	13.392	13.392	130
13.377	13.377	13.377	140
13.362	13.362	13.362	150
13.347	13.347	13.347	160
13.332	13.332	13.332	170
13.317	13.317	13.317	180
13.302	13.302	13.302	190
13.287	13.287	13.287	200
13.272	13.272	13.272	210
13.257	13.257	13.257	220
13.242	13.242	13.242	230
13.227	13.227	13.227	240
13.212	13.212	13.212	250
13.197	13.197	13.197	260
13.182	13.182	13.182	270
13.167	13.167	13.167	280
13.152	13.152	13.152	290
13.137	13.137	13.137	300
13.122	13.122	13.122	310
13.107	13.107	13.107	320
13.092	13.092	13.092	330
13.077	13.077	13.077	340
13.062	13.062	13.062	350
13.047	13.047	13.047	360
13.032	13.032	13.032	370
13.017	13.017	13.017	380
13.002	13.002	13.002	390
12.987	12.987	12.987	400
12.972	12.972	12.972	410
12.957	12.957	12.957	420
12.942	12.942	12.942	430
12.927	12.927	12.927	440
12.912	12.912	12.912	450
12.897	12.897	12.897	460
12.882	12.882	12.882	470
12.867	12.867	12.867	480
12.852	12.852	12.852	490
12.837	12.837	12.837	500
12.822	12.822	12.822	510
12.807	12.807	12.807	520
12.792	12.792	12.792	530
12.777	12.777	12.777	540
12.762	12.762	12.762	550
12.747	12.747	12.747	560
12.732	12.732	12.732	570
12.717	12.717	12.717	580
12.702	12.702	12.702	590
12.687	12.687	12.687	600
12.672	12.672	12.672	610
12.657	12.657	12.657	620
12.642	12.642	12.642	630
12.627	12.627	12.627	640
12.612	12.612	12.612	650
12.597	12.597	12.597	660
12.582	12.582	12.582	670
12.567	12.567	12.567	680
12.552	12.552	12.552	690
12.537	12.537	12.537	700
12.522	12.522	12.522	710
12.507	12.507	12.507	720
12.492	12.492	12.492	730
12.477	12.477	12.477	740
12.462	12.462	12.462	750
12.447	12.447	12.447	760
12.432	12.432	12.432	770
12.417	12.417	12.417	780
12.402	12.402	12.402	790
12.387	12.387	12.387	800
12.372	12.372	12.372	810
12.357	12.357	12.357	820
12.342	12.342	12.342	830
12.327	12.327	12.327	840
12.312	12.312	12.312	850
12.297	12.297	12.297	860
12.282	12.282	12.282	870
12.267	12.267	12.267	880
12.252	12.252	12.252	890
12.237	12.237	12.237	900
12.222	12.222	12.222	910
12.207	12.207	12.207	920
12.192	12.192	12.192	930
12.177	12.177	12.177	940
12.162	12.162	12.162	950
12.147	12.147	12.147	960
12.132	12.132	12.132	970
12.117	12.117	12.117	980
12.102	12.102	12.102	990
12.087	12.087	12.087	1000
12.072	12.072	12.072	1010
12.057	12.057	12.057	1020
12.042	12.042	12.042	1030
12.027	12.027	12.027	1040
12.012	12.012	12.012	1050
12.000	12.000	12.000	1060
11.988	11.988	11.988	1070
11.976	11.976	11.976	1080
11.964	11.964	11.964	1090
11.952	11.952	11.952	1100
11.940	11.940	11.940	1110
11.928	11.928	11.928	1120
11.916	11.916	11.916	1130
11.904	11.904	11.904	1140
11.892	11.892	11.892	1150
11.880	11.880	11.880	1160
11.868	11.868	11.868	1170
11.856	11.856	11.856	1180
11.844	11.844	11.844	1190
11.832	11.832	11.832	1200
11.820	11.820	11.820	1210
11.808	11.808	11.808	1220
11.796	11.796	11.796	1230
11.784	11.784	11.784	1240
11.772	11.772	11.772	1250
11.760	11.760	11.760	1260
11.748	11.748	11.748	1270
11.736	11.736	11.736	1280
11.724	11.724	11.724	1290
11.712	11.712	11.712	1300
11.700	11.700	11.700	1310
11.688	11.688	11.688	1320
11.676	11.676	11.676	1330
11.664	11.664	11.664	1340
11.652	11.652	11.652	1350
11.640	11.640	11.640	1360
11.628	11.628	11.628	1370
11.616	11.616	11.616	1380
11.604	11.604	11.604	1390
11.592	11.592	11.592	1400
11.580	11.580	11.580	1410
11.568	11.568	11.568	1420
11.556	11.556	11.556	1430
11.544	11.544	11.544	1440
11.532	11.532	11.532	1450
11.520	11.520	11.520	1460
11.508	11.508	11.508	1470
11.496	11.496	11.496	1480
11.484	11.484	11.484	1490
11.472	11.472	11.472	1500
11.460	11.460	11.460	1510
11.448	11.448	11.448	1520
11.436	11.436	11.436	1530
11.424	11.424	11.424	1540
11.412	11.412	11.412	1550
11.400	11.400	11.400	1560
11.388	11.388	11.388	1570
11.376	11.376	11.376	1580
11.364	11.364	11.364	1590
11.352	11.352	11.352	1600
11.340	11.340	11.340	1610
11.328	11.328	11.328	1620
11.316	11.316	11.316	1630
11.304	11.304	11.304	1640
11.292	11.292	11.292	1650
11.280	11.280	11.280	1660
11.268	11.268	11.268	1670
11.256	11.256	11.256	1680
11.244	11.244	11.244	1690
11.232	11.232	11.232	1700
11.220	11.220	11.220	1710
11.208	11.208	11.208	1720
11.196	11.196	11.196	1730
11.184	11.184	11.184	1740
11.172	11.172	11.172	1750
11.160	11.160	11.160	1760
11.148	11.148	11.148	1770
11.136	11.136	11.136	1780
11.124	11.124	11.124	1790
11.112	11.112	11.112	1800
11.100	11.100	11.100	1810
11.088	11.088	11.088	1820
11.076	11.076	11.076	1830
11.064	11.064	11.064	1840
11.052	11.052	11.052	1850
11.040	11.040	11.040	1860
11.028	11.028	11.028	1870
11.016	11.016	11.016	1880
11.004	11.004	11.004	1890
11.000	11.000	11.000	1900

BH 2

ENT N 6/1000/300mm



LEGEND

- Made Ground
- SAND
- SILT
- Gravelly SILT
- SAND & GRAVEL
- Clayey SILT
- SILTSTONE

XX 0.021" (0.5mm) in 6 hrs

Pile Length 12.5m
Pile Diameter 450mm
Date Installed 18.4.83

DOUGSETT PREPAKT PILE

LOAD (TONS)



0.025 (0.2mm) in 6 hrs

WORKING LOAD
(80 TONS)

(mm)

0 5 10 15 20
0.2 0.4 0.6 0.8

(INCHES)

SETTLEMENT

TEST PILE AT GRIDLINE B

PATRIOTIC STREET CARPARK

JERSEY

12289

AT
15.6.83

BH 4

SIT N Bldg

0.0

0

10

20

30

40

100

0.001" (0.5 mm) in bldg

File Length 12.0m

File Diameter 450mm

Date Installed 15.9.83

SUNSETT PREFABT PILE

DEPTH (m)

4.0

6.0

8.0

10.0

12.0

14.0

(7)

(6)

(5)

(9)

(10)

(9)

N=17 for 28mm

EOB

Pile toe (12.0m)

LOAD (TONS)

40

20

0.012" (0.3 mm) in bldg

WORKING LOAD

(80 TONS)

(mm)

0

5

10

15

20

0.2

0.4

0.6

0.8

LEGEND



Made Ground



Silty SAND



SILT



Sandy Silty CLAY



Silty gravelly SAND



Clayey SILT



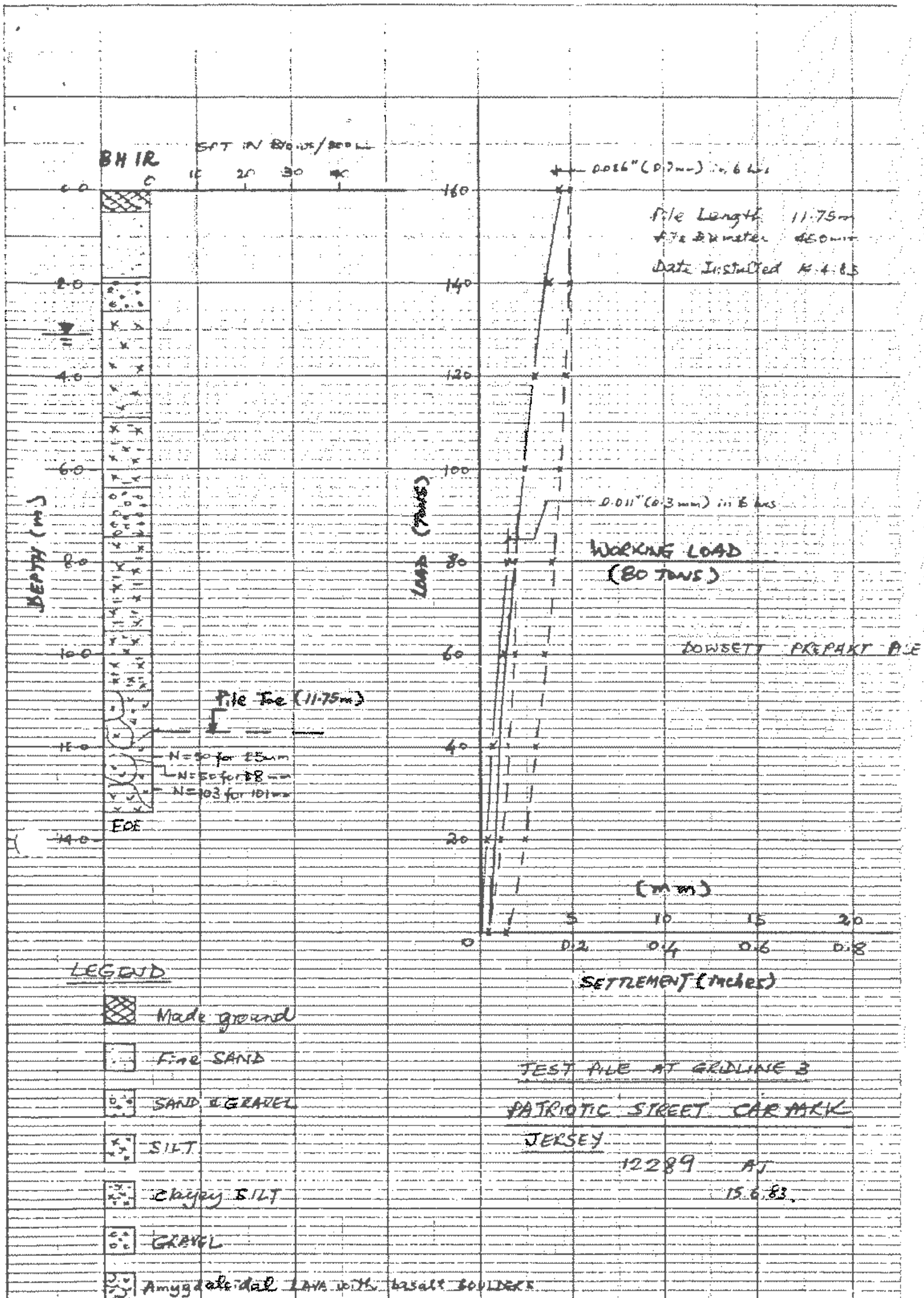
SILTSTONE

SETTLEMENT (mm)

TEST PILE AT GRIDLINE 16

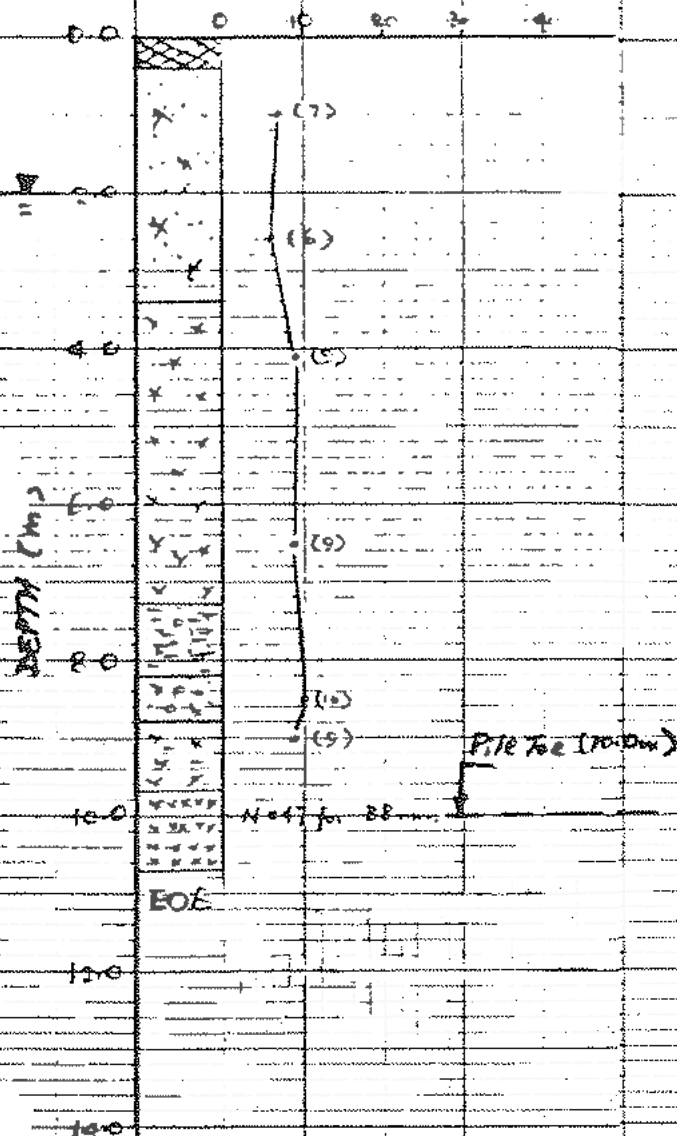
PATRIOTIC STREET CAR PARK

JERSEY



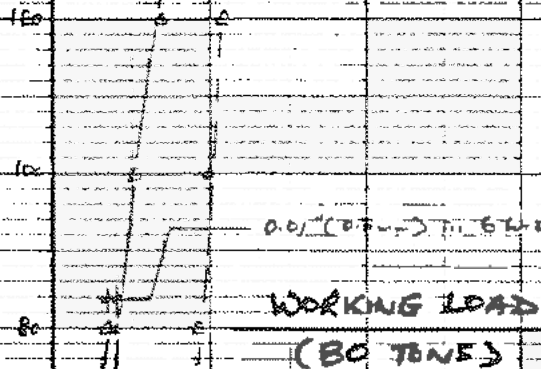
SH4

ST N BLOW 2000



11.31" (10.8m) in 6.4s
 Pile Length 10.0m
 Pile Diameter 450mm
 Date Installed 18-4-83

DOWNSETT PRECAST PILE



LEGEND

- Made Ground
- SILTY SAND
- SILT
- Sandy SILTY CLAY
- SILTY GRAVELLY SAND
- CLAYEY SILT
- SILTSTONE

SETTLEMENT

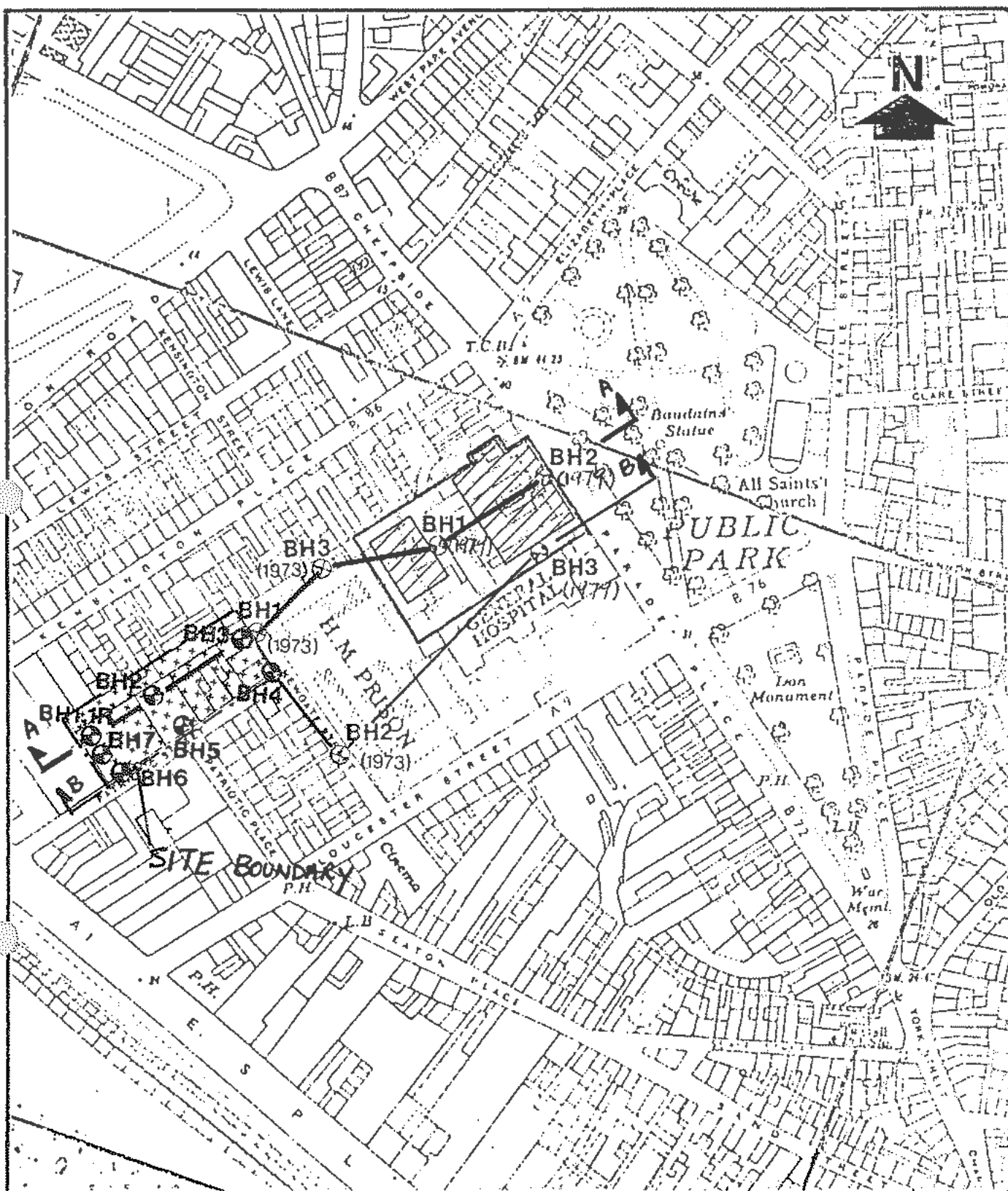
TEST PILE AT GRIDLINE 13

PATRIOTIC STREET CARPARK

JERSEY

12289

AT 15.6.83



Scale 1:2 500

SITE PLAN SHOWING
BOREHOLE LOCATIONS

FIGURE 1

12289



12289/

Made by

A.T.

Date

4.2.83

APPENDIX A

Description of rock types extracted from borehole logs(a) Multi-storey car park (Present Site)

BH1R(BH1): Boulders with gravel in a clay matrix

BH2: Moderately strong gray fine SILTSTONE

BH3: Thinly bedded amygdaloidal moderately strong LAVA

BH4: Thinly bedded dark green moderately strong SILTSTONE

BH5: Same as BH4 but very thinly bedded

BH6: Dense to very dense SAND

BH7: Closely jointed white veined dark gray fine, basic volcanic (BASALT)

(b) Jersey General Hospital (Site Investigation, 1973)

BH1: Hard dark grey fractured and slightly weathered very fine grey MUDSTONE

BH2: Hard grey slightly weathered porphyritic DOLERITE with clay smear (SHALE)*

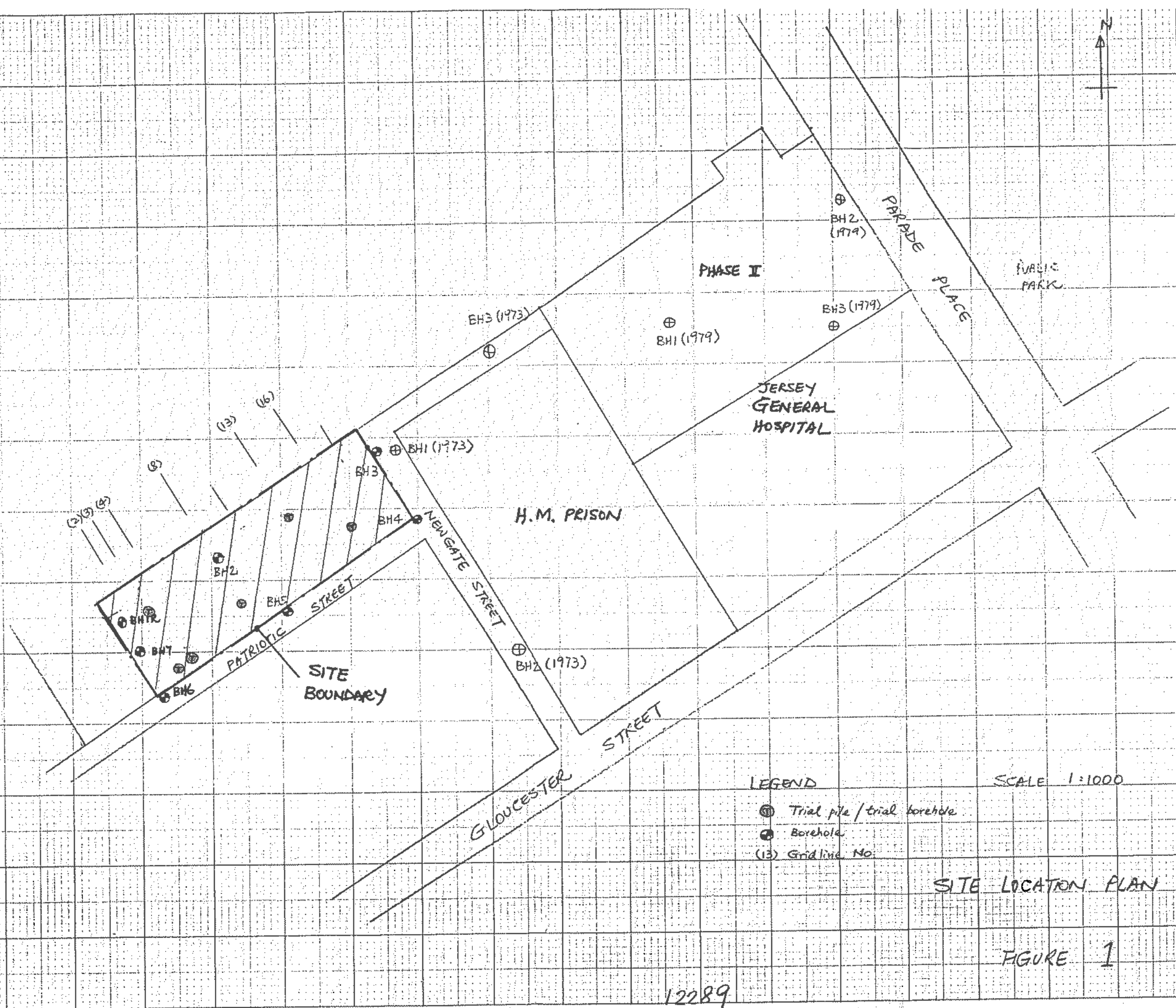
BH3: Hard grey green porphyritic DOLERITE

(c) Jersey General Hospital Phase II (Site Investigation, 1979)

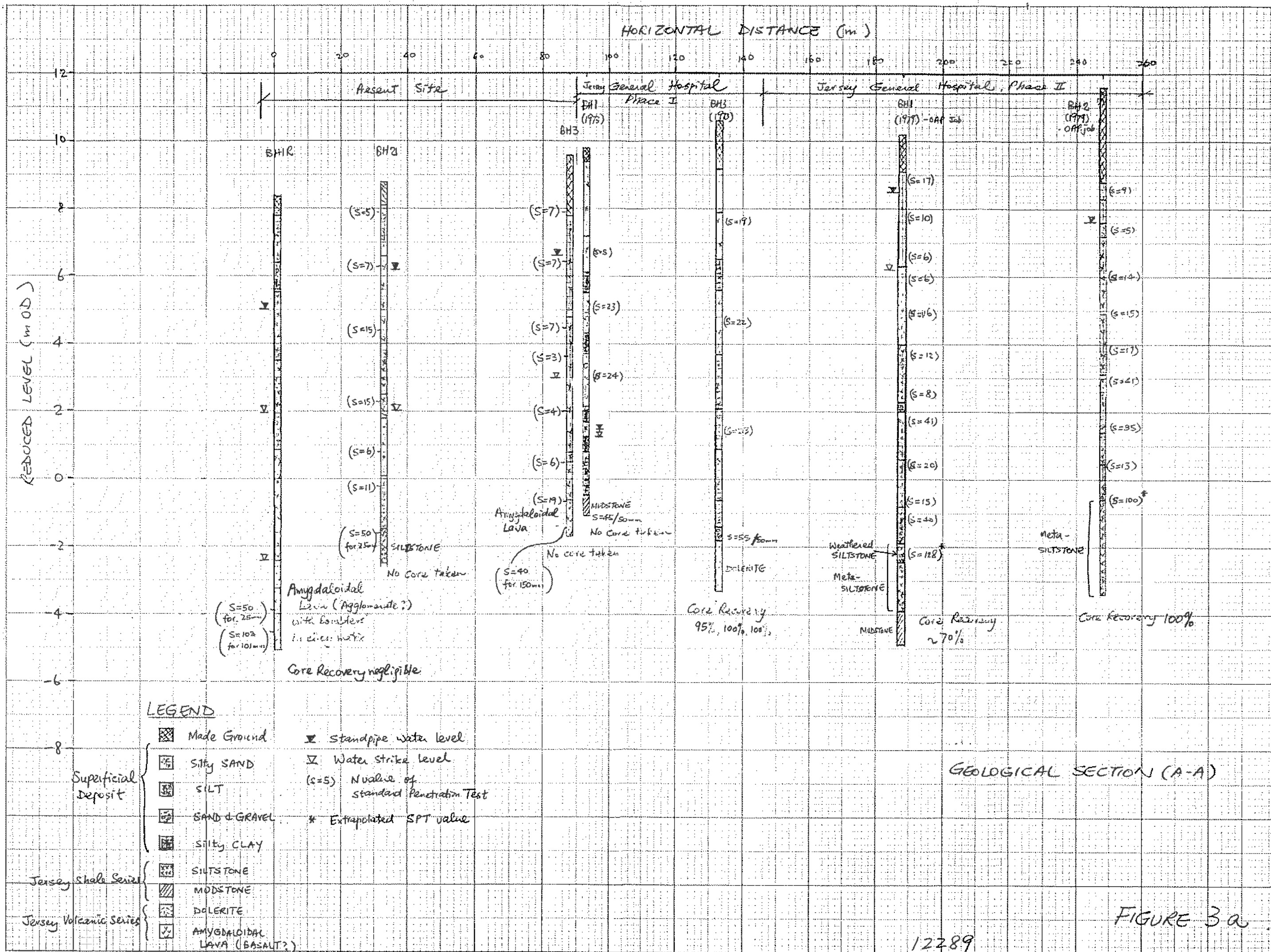
BH1: Moderately weathered very strong pale greenish grey lightly metamorphic chloritic MUDSTONE

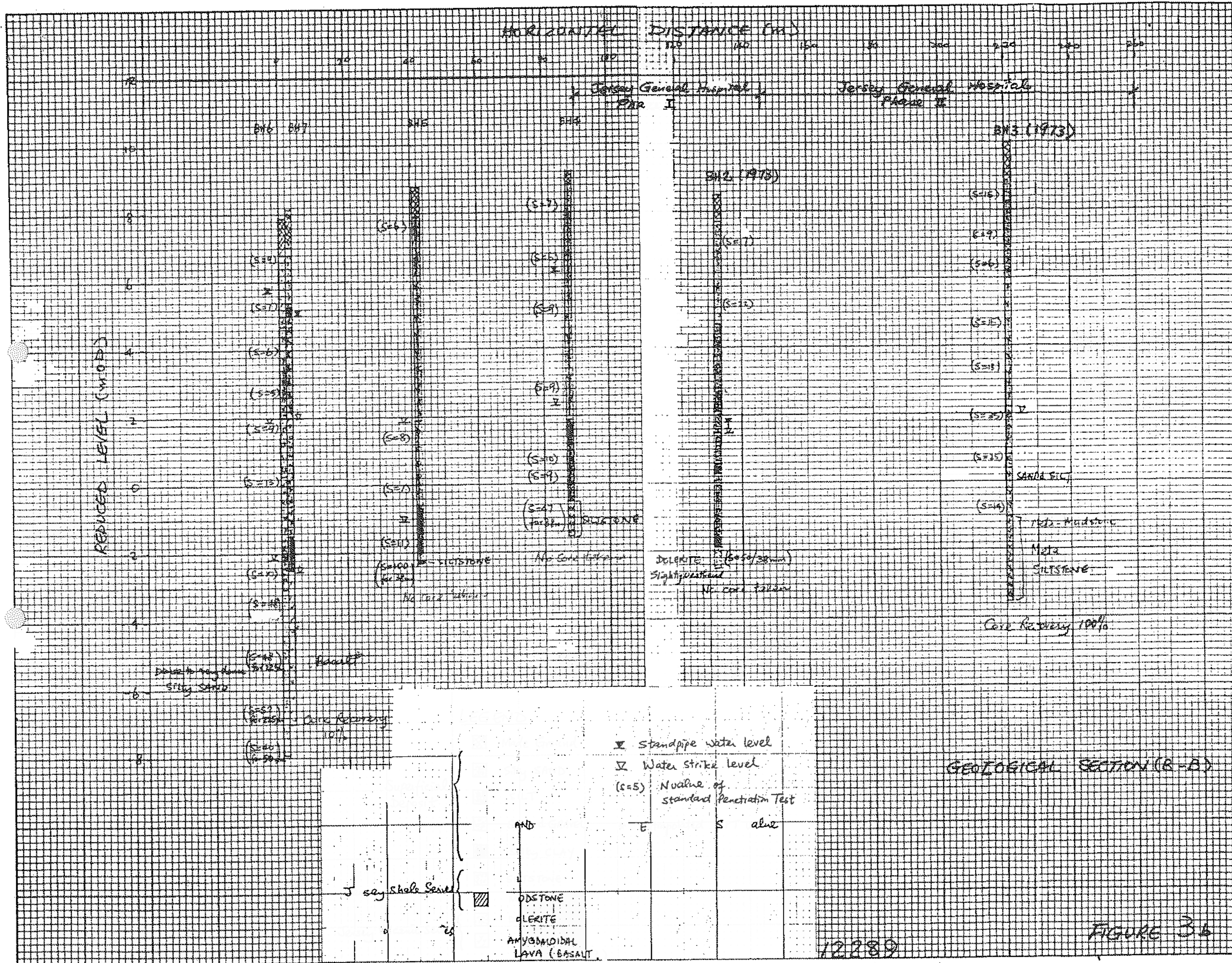
BH2: Strong moderately weathered grey META-SILTSTONE

BH3: Highly weathered strong dark grey, in places laminated, lightly metamorphosed MUDSTONE with clay smear. Becoming META-SILTSTONE, moderately



12289





54300

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH1Boring Method
Fraste PL RigCasing Diameter
113mm cased to 8.90mGround Level (mOD)
99.80Client
Regal Construction (Jersey) LtdJob
Number
0762Location
as site planDates
12/01/2007-
15/01/2007Engineer
Peter Brett AssociatesSheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					99.56	(0.04)	CONCRETE		
					99.40	0.04 (0.16) 0.20	Hardcore		
							Very loose to loose brown fine to medium SAND and little gravel		
1.20-1.70	X 0.22			12/01/2007: 0.00m		(1.80)			
1.20-1.65	SPT N=4		DRY	13/01/2007: DRY 2.1/2.1, 1.1					
1.70-2.00	X 0.00								
2.00-2.23	X 0.00				97.60	2.00	Soft dark brown sandy SILT		
2.23-2.50	X 0.76					(0.40)			
2.50-2.95	SPT N=10	1.90	DRY	2.2/3.2, 2.3	97.20	2.40	Soft to firm brown slightly sandy SILT		
2.50-3.50	X 0.53					(0.60)			
					96.60	3.00	Soft to firm blue grey slightly sandy CLAY/SILT		
3.50-3.95	SPT N=3	3.40	DRY	1/1, 1.2					
3.95-4.00	X 0.50	4.00							
4.00-4.40	U 0.40		2.83	12 blows					
4.00-5.00	X 0.55	4.31				(3.30)			
5.00-5.45	SPT N=5	4.31	3.95	1.1/1.1, 1.2.1					
5.00-6.00	X 0.50	5.92							
6.00-6.50	X 0.74								
6.50-6.95	SPT N=36	6.20	3.06	1.2/5.9, 10.12	93.30	6.30	Dense blue grey very clayey fine to coarse GRAVEL		
6.50-7.12	X 0.62	6.75				(1.50)			
7.12-7.67	X 0.00								
7.67-7.75	X 0.00	7.30		13/01/2007: 3.27m	91.80	7.80	Very dense brown clayey sandy fine to medium GRAVEL		
7.75-7.76	X 0.00								
7.76-7.80	X 0.60								

Remarks

Starter pit excavated by hand from ground level to 1.20m bgl
 Exploratory hole drilled using the Fraste PL Rig
 Dry drilling from 1.20m - 9.13m
 Rock core drilling with water flush from 9.13m - 10.27m
 U70 drilling from 4.00m - 4.40m - 12 blow counts
 Ground levels are not Ordnance Datum

Scale
(approx)

1:40

Logged
By

MRW

Figure No.

0762.BH1

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
Kensington Gate Car Park, St Helier, Jersey

Borehole
Number
BH1

Boring Method Fraser PL Rig	Casing Diameter 113mm cased to 8.90m	Ground Level (mOD) 99.60	Client Regal Construction (Jersey) Ltd	Job Number 0762
	Location as site plan	Dates 12/01/2007- 15/01/2007	Engineer Peter Brett Associates	Sheet 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
7.80-8.22 7.80-8.25	X 0.00 SPT N=52	7.80	4.90	3,4,7,15,12,18		(0.50)	Stratum as above		
8.22-8.33 8.33-8.38 8.38-9.13	X 0.11 X 0.50 X 0.75	8.00 8.11 8.90			91.30	8.30	Soft to firm brown sandy SILT		
						(0.80)			
9.11 9.13	TCR SCR RQD FI				90.50	9.10	Moderately strong grey slightly weathered ANDESITE, iron-stained joints		
	100 90 60 6					(1.17)			
9.79	100 75 25 10								
10.27				15/01/2007 3.21m	89.33	10.27	Complete at 10.27m		

Remarks	Scale (approx) 1:40	Logged By MRW
	Figure No. 0762.BH1	

54301

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH2Boring Method
Fraste PL RigCasing Diameter
113mm cased to 8.30mGround Level (mOD)
99.40Client
Regal Construction (Jersey) LtdJob
Number
0762Location
as site planDates
16/01/2007-
18/01/2007Engineer
Peter Brett AssociatesSheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					99.30	(0.10) 0.10	CONCRETE			
						(0.90)	Layers of concrete and sand			
0.80-1.20	X 0.35				98.40	1.00	CONCRETE			
1.20-2.00	X 0.57									
2.00-2.73	X 0.73					(2.80)				
2.73-3.67	X 0.30			16/01/2007 17/01/2007: 2.24m						
3.67-3.82 3.82-4.27 3.82-4.73	X 0.10 SPT N=0 X 0.38		2.00	/	95.60	3.80	Very soft to firm grey/brown slightly sandy CLAY with a little fine gravel			
4.73-5.00	X 0.45									
5.00-5.45 5.00-6.00	SPT N=5 X 0.52	4.80	2.00	1/, 2, 3		(3.00)				
6.00-6.45 6.00-6.60	SPT N=11 X 0.52	4.80 6.42	2.14	1, 1/2, 2, 3, 4						
6.60-7.00	X 0.50				92.60	6.80	Firm to stiff orange/brown sandy CLAY with a little fine to medium gravel			
7.00-7.45 7.00-7.35	SPT N=31 X 0.35	6.42 7.25	3.06	3, 4, 7, 10, 10						
7.35-7.62	X 0.27									
7.62-8.13	X 0.00									

Remarks

Starter pit excavated by hand from ground level to 1.20m bgl
 Exploratory hole drilled using a Fraste PL rig
 Dry drilling from 3.82m - 9.24m
 Rock core drilling with water flush from 0.80m - 3.82m, 9.24m - 10.47m
 Standpipe piezometer with tip installed at 10.40m bgl
 Ground levels are not Ordnance Datum

Scale
(approx)
1:40Logged
By
MRFFigure No.
0762.BH2

AMPLUS LTD				Foundation & Geotechnical Specialists		Site Kensington Gale Car Park, St Helier, Jersey		Borehole Number BH2	
Boring Method Fraste PL Rig		Casing Diameter 113mm cased to 8.30m		Ground Level (mOD) 99.40		Client Regal Construction (Jersey) Ltd		Job Number 0762	
		Location as site plan		Dates 16/01/2007- 18/01/2007		Engineer Peter Brett Associates		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Instr
8.13-8.63	X 0.00	8.30		17/01/2007					
				18/01/2007:2.90m					
8.63-9.00	X 0.23					(2.40)			
9.00-9.24	X 0.40						Stratum as above		
9.00-9.31	CPT 80/155	8.30	2.23	2,3/5,25,50	90.20	9.20			
	TCR SCR RQD FI								
9.24	15 0						Moderately weak grey slightly weathered ANDESITE, very closely jointed		
9.50	100 0								
9.66	100 0					(1.27)			
9.93	100 10 0 10+								
				18/01/2007:2.99m	88.93	10.47			
10.47							Complete at 10.47m		
Remarks								Scale (approx)	Logged By
								1:40	MRF
								Figure No. 0762.BH2	

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH2Installation Type
Standpipe Piezometer

Dimensions

Client
Regal Construction (Jersey) LtdJob
Number
0782Location
as site planGround Level (mOD)
99.40Engineer
Peter Brett AssociatesSheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
					Bentonite Seal						5 min	10 min	15 min	20 min		
			98.20	1.20												
						Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						16/01/07	am					pm	2.73			
						17/01/07	am	2.73		2.24	97.16	pm	8.13	7.25		
						18/01/07	am	8.13	8.30	2.90	96.50	pm	10.47	8.30	2.99	96.41
						Instrument Groundwater Observations										
					Gravel Filter	Inst. [A] Type : Standpipe Piezometer										
						Date	Instrument [A]			Remarks						
							Time	Depth (m)	Level (mOD)							
						18/01/07			3.07	96.33						
						06/02/07	14:42		2.64	96.76						
			89.20	10.20												
			89.00	10.40	Piezometer Tip											

54302

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH3Boring Method
Fraste PL RigCasing Diameter
113mm cased to 9.21mGround Level (mOD)
100.10Client
Regal Construction (Jersey) LtdJob
Number
0762Location
as site planDates
08/01/2007-
12/01/2007Engineer
Peter Brett AssociatesSheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					100.03	(0.07) 0.07	CONCRETE		
						(1.43)	Loose light brown fine to medium SAND		
1.20-1.50	X 0.00								
1.50-1.60	X 0.00	1.65	DRY		98.60	1.50	Very soft red brown sandy SILT becoming firm with depth		
1.60-1.67	X 0.47								
1.67-2.12	SPT N=11	1.65	1.46	2,2/2,3,3,3					
1.67-2.30	X 0.00								
2.30-2.50	X 0.52			08/01/2007: 1.46m					
2.50-2.92	X 0.15	2.85		09/01/2007: DRY					
2.50-2.95	SPT N=10	1.65	DRY	1,2/2,3,3,2					
2.92-3.50	X 0.32								
3.50-3.95	SPT N=0	2.85	2.00	1/					
3.50-4.50	X 0.90								
						(5.50)			
4.50-4.95	SPT N=11	4.40	2.22	1,1/2,3,3,3					
4.50-5.50	X 0.50								
5.50-5.95	SPT N=13	4.40	2.85	1,1/2,3,4,4					
5.50-6.10	X 0.60	5.83							
6.10-6.50	X 0.40			09/01/2007: GLm					
				11/01/2007: 1.37m					
6.50-6.90	U 0.28								
6.50-7.14	X 0.57								
7.14-7.50	X 0.00				93.10	7.00	Dense grey and brown clayey very sandy fine to coarse GRAVEL with occasional cobbles		
7.50-7.52	X 0.00	7.30							
7.52-7.67	X 0.00								
7.67-7.87	X 0.00	7.80				(1.50)			
7.87-7.93	X 0.00								

Remarks
 Starter pit excavated by hand from ground level to 1.20m bgl
 Exploratory hole drilled using a Fraste PL Rig
 Dry drilling from 1.20m - 9.42m, 9.64m - 9.89m
 Rock core drilling with water flush from 9.42m - 9.64m, 9.69m - 10.97m
 U70 drilling from 6.50m - 6.90m
 Ground levels are not Ordnance Datum

Scale
(approx)

1:40

Logged
By

MFW

Figure No.
0762.BH3

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
Kensington Gate Car Park, St Helier, Jersey

Borehole
Number
BH3

Boring Method
Fraste PL Rig

Casing Diameter
113mm cased to 9.21m

Ground Level (mOD)
100.10

Client
Regal Construction (Jersey) Ltd

Job
Number
0762

Location
as site plan

Dates
08/01/2007-
12/01/2007

Engineer
Peter Brett Associates

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
7.93-8.33	X 0.00	8.10				(1.50)	Stratum as above		
8.33-8.46 8.46-9.28 8.46-8.91	X 0.50 X 1.20 CPT N=48	9.21 8.10	3.22	4,7,7,11,14,16	91.80	8.50	Firm to stiff brown sandy SILT with occasional grey fine to medium gravel		
						(1.10)			
9.42-9.64 9.28-9.40 9.40-9.42 9.64-9.69	X 0.00 X 0.00 X 0.12			11/01/2007:3.07m	90.50	9.60	Moderately strong light grey slightly weathered ANDESITE, iron stained planar discontinuities		
9.69	TCR	SCR	RQD	FI	12/01/2007:2.14m X 0.27				
	95	90	75	5		(1.37)			
10.97					12/01/2007:3.40m	89.13	10.97	Complete at 10.97m	

Remarks

Scale
(approx)

Logged
By

1:40

MPW

Figure No.
0762.BH3

Project Name
Kensington Place

Project No.
749

Co-ords: -

Hole Type
WLS

Location: Kensington Place

Level: -

Scale
1:50

Client: Regal Construction (Jersey) Limited

Dates: 21/07/2009

Logged By
NH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00-0.55	D					Brown very gravelly silty fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Occasional cobbles. Slight hydrocarbon smell. (MADE GROUND)	
		0.55-0.81	D		0.55			Brown silty gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Layer of pale brown/white sand. (MADE GROUND)	
		0.81-0.98	D		0.81				
		0.98-1.16	D		0.98				
		1.16-1.40	D		1.16			Brown silty gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Layer of pale brown/white sand. (MADE GROUND)	
					1.40				
								Light brown gravelly fine to medium grained SAND. Gravel is fine to coarse. Increased sand content. (MADE GROUND)	
		1.40-2.90	D					Pale brown/white slightly gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-rounded. Coarse cobbles present. (MADE GROUND)	
								Gray/tan sandy CLAY. Strong hydrocarbon smell. (HEAD DEPOSITS) Sand is fine grained with angular fine to coarse gravel with occasional brick fragments at 1.40m.	
					2.90				
								Gray CLAY. Contains calcareous shells. Strong hydrocarbon smell. (HEAD DEPOSITS) Sub-angular coarse gravel fragments at 2.90m.	
		2.90-4.40	D						
					4.40			Gray slightly sandy CLAY. Rare gravel fragments, fine to coarse, sub-angular. Hydrocarbon smell. (HEAD DEPOSITS)	
		4.40-5.90	D						
					5.90			Tan slightly sandy gravelly CLAY. Gravel is fine to coarse, sub-angular. (HEAD DEPOSITS)	
		5.90-6.70	D						
					6.70			Reddish colour, highly gravelly at 6.60m.	
								End of Borehole at 6.80 m	

Remarks: Slotted well from 6.80m to 1.80m with gravel pack. Plain well from 1.80m to ground level with bentonite surround. Well cover flush at surface.



Project Name
Kensington Place

Project No.
749

Co-ords: -

Hole Type
WLS

Location: Kensington Place

Level: -

Scale
1:50

Client: Regal Construction (Jersey) Limited

Dates: 20/07/2009

Logged By
NH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00-0.65	D					Brown silty very gravelly medium grained SAND. Occasional rootlets. Gravel is fine to coarse, sub-angular, cobbles. (MADE GROUND)	
		0.65-0.79	D		0.65			Brown very gravelly fine to medium grained SAND. Contains large concrete fragments. Gravel is fine to coarse, sub-angular. (MADE GROUND)	1
		0.79-1.43	D		1.43			Brown very gravelly fine to medium grained SAND. Contains rootlets. Gravel is fine to coarse, sub-angular. Concrete powder observed. (MADE GROUND)	
								Tan sandy CLAY. Hydrocarbon smell. (HEAD DEPOSITS) Brown very gravelly SAND at 1.55m	
		1.43-2.90	D		2.90				2
								Brown/ grey very slightly sandy CLAY. Rare angular coarse gravel. Strong hydrocarbon smell, dark grey lines running through. (HEAD DEPOSITS)	3
		2.90-4.40	D		4.40				4
								Brown/ grey CLAY. Rare fine gravel. Hydrocarbon smell. (MADE GROUND)	
		4.40-5.90	D		5.90				5
		5.90-6.35	D		6.35			Brown gravelly CLAY. Gravel is fine to medium, sub-angular. (MADE GROUND)	6
								Reddish very gravelly SAND at 6.30m	
								End of Borehole at 6.55m	7
									8
									9
									10

Remarks: Slotted well from 6.55m to 2.00m with gravel pack. Plain well from 2.00m to ground level with bentonite surround. Well cover flush at surface.

Project Name
Kensington Place

Project No.
749

Co-ords: -

Hole Type
WLS

Location: Kensington Place

Level: -

Scale
1:50

Client: Regal Construction (Jersey) Limited

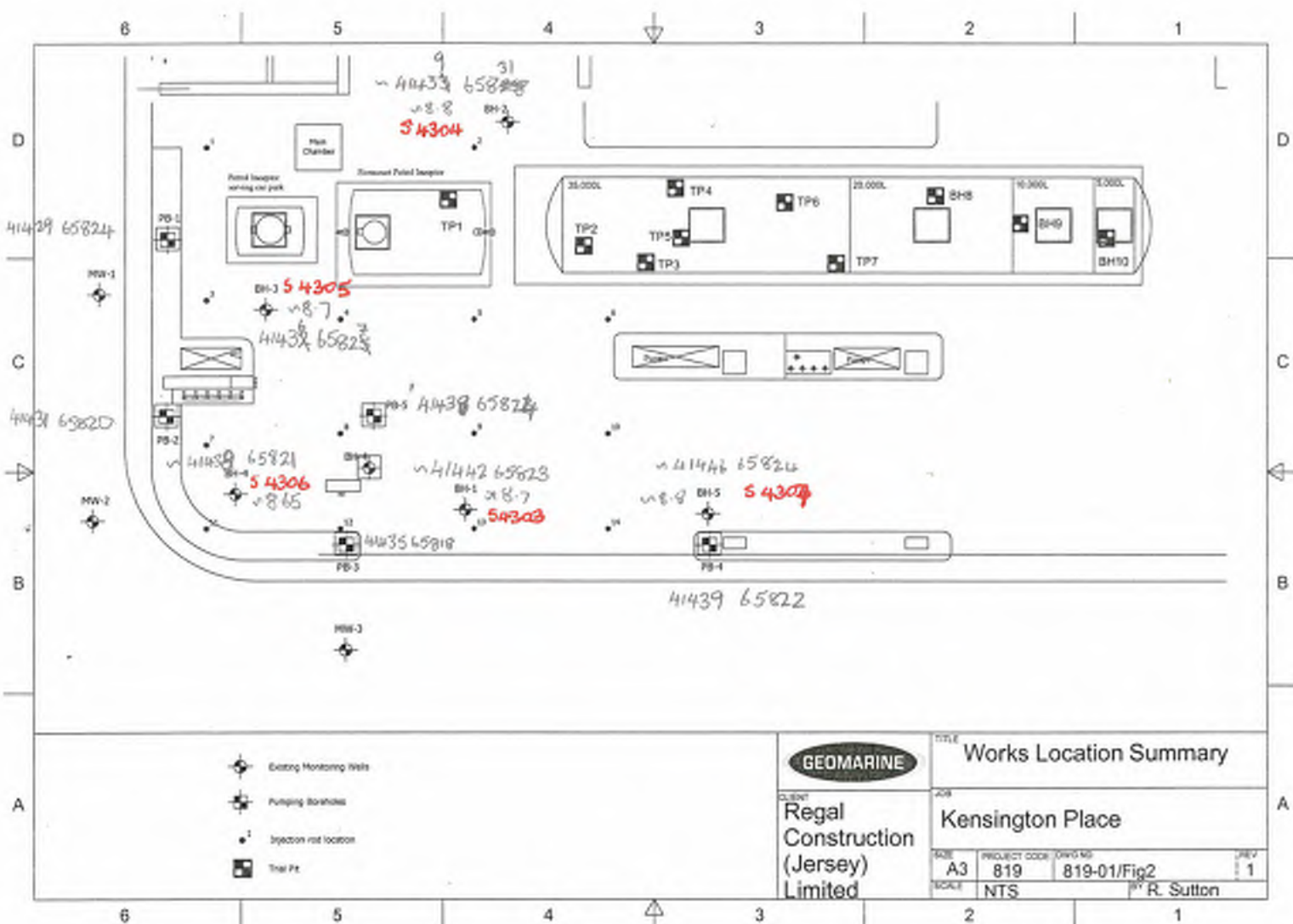
Dates: 16/07/2009

Logged By
NH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00-0.50	D		0.50			Dark brown gravelly clayey fine grained SAND. Gravel, fine to coarse, sub-angular. Cobbles, brick fragments and rootlets. (MADE GROUND)	
					0.80			Tan fine to medium grained SAND. (MADE GROUND)	
		0.95-1.25	D		1.40			Dark brown gravelly clayey SAND. Gravel, fine to coarse, sub-angular. Occasional cobbles, brick fragments and rootlets. Interbedded tan sand. (MADE GROUND)	1
		1.40-2.90	D		2.90			Dark brown gravelly clayey fine grained SAND. Gravel is fine to coarse, sub-rounded. (HEAD DEPOSITS)	2
		2.90-3.10	D		3.10			Dark brown clayey fine grained SAND. (HEAD DEPOSITS)	3
		3.10-4.60	D		4.60			Grey very slightly gravelly CLAY. Fine gravel, sub-rounded. Faint hydrocarbon smell. (HEAD DEPOSITS) Black/ grey clayey SAND at 3.10m Hydrocarbon smell. Layer of black hydrocarbon- stained CLAY at 3.30m	4
		6.10-6.90	D		6.80			Grey/ brown slightly gravelly CLAY. Fine gravel, sub-rounded, cohesive. (HEAD DEPOSITS) No recovery at 4.60m to 6.10m	5
		6.90-7.50	D		7.50			Reddish/ brown very gravelly clayey fine grained SAND. Gravel is fine to medium, sub-angular. (HEAD DEPOSITS) Brown/ grey very gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Rare cobbles present. Faint hydrocarbon smell. (HEAD DEPOSITS)	7
		7.50-8.40	D		8.40			Grey/ brown slightly gravelly CLAY. Gravel is fine to coarse, sub-angular. Rare cobbles present. Hydrocarbon smell. (HEAD DEPOSITS) Very gravelly CLAY at 7.50m	8
								End of Borehole at 8.40 m	9

Remarks: No installation. Backfill to surface.

GEOMARINE BH LOCATIONS



AMPLUS LTD		Foundation & Geotechnical Specialists		Site		Borehole Number				
Boring Method Inspection pit to 0.90m Competitor Rig		Casing Diameter 115mm cased to 7.00m		Ground Level (mOD)		Client Dandara Jersey Ltd				
Location as per site plan		Dates 21/03/2014- 28/03/2014		Engineer Dandara		Job Number 1503				
Sheet 1/1										
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00	X 0.57	1.00	DRY			0.10 (0.10) 0.30 (0.30) 0.60 (0.30) 0.90	MADE GROUND - Concrete MADE GROUND - Silty sand MADE GROUND - Gravel (Hoggin) Silty brown CLAY Light yellow SAND Brown CLAY with fine to medium gravel			
1.00-2.00	X 0.75	2.00	DRY			(1.10)				
2.00-3.00	X 0.78	3.00	DRY			2.00 (1.00)	Light brown silty SAND with fine to medium gravel			
3.00-4.00	X 1.00	4.00	DRY			3.00 (1.00)	Light brown Silty SAND			
4.00-5.00	X 1.00	5.00	DRY			4.00 (1.00)	Brown sandy SILT			
5.00-6.00	X 1.00	6.00	DRY	27/03/2014: DRY 28/03/2014: 3.75m		5.00 (1.00)	Yellow brown sandy SILT			
6.00-7.00	x 1.00	7.00	DRY	28/03/2014: 3.90m		6.00 (1.00) 7.00	Light brown silty sandy CLAY with fine to medium gravels Complete at 7.00m			
Remarks Inspection pit excavated by hand on 21.03.14 to 0.9m, dry and stable, backfilled before drilling Window sampling from 1.20 - 7.00m								Scale (approx) 1:50	Logged By MFW	Figure No. 1503.BH1

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH1

Installation Type
Single Installation

Dimensions
Internal Diameter of Tube [A] = 50 mm

Client
Dandara Jersey Ltd

Job
Number
1503

Location
as per site plan

Ground Level (mOD)

Engineer
Dandara

Sheet
1/1

Remarks

Source No: 4803

AMPLUS LTD						Foundation & Geotechnical Specialists		Site		Borehole Number
								66-72 Esplanade, St Helier		BH2
Boring Method		Casing Diameter		Ground Level (mOD)		Client		Job Number		
Inspection pit to 1.20m Fraser PL Rig		113mm cased to 6.18m				Dandara Jersey Ltd		1503		
		Location		Dates		Engineer		Sheet		
		as per site plan		21/03/2014- 04/04/2014		Dandara		1/2		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.00-1.13	X 0.50					0.10 (0.15) 0.20	MADE GROUND - Concrete			
							MADE GROUND - Gravel			
						(0.95)	Clayey gravelly SAND with cobble sized stones becoming light yellow sand			
1.13-1.28	X 0.40	1.18				1.20	Loose yellow and brown SAND with fine gravel			
1.28-1.55	X 0.00					(0.70)				
1.55-1.90	X 0.00					1.90	Loose brown fine SAND			
1.90-3.05	X 0.20					(1.15)				
3.05-3.50	SPT N=2	2.16	DRY	0.0/0.0,1.1		3.05	Very soft brown sandy SILT			
3.05-3.51	X 0.10	3.16								
3.51-4.10	X 0.95					(1.58)				
4.10-4.63	X 0.53	4.16				4.63	Soft brown and grey sandy SILT			
4.63-5.08	SPT N=5	5.04	GL	0.1/1.0,2.2		(0.65)				
4.63-5.04	X 0.41					5.28	Soft brown sandy CLAY			
5.04-5.28	X 0.22					(0.68)				
5.28-5.58	X 0.30					5.96	Medium dense brown fine slightly clayey slightly sandy GRAVEL			
5.58-5.96	X 0.38					(1.82)				
5.96-6.41	SPT N=33	6.18		2.5/6.8,9.10						
5.96-6.43	X 0.47									
6.43-6.65	X 0.22									
6.65-6.92	X 0.00									
6.92-6.95	X 0.00	6.68		03/04/2014:2.40m						
6.95-7.24	X 0.00									
7.24-7.33	X 0.00	7.18	2.35	04/04/2014:1.95m						
7.33-7.78	SPT N=26	7.68		5.3/6.7,7.6		7.78	Firm brown sandy silty CLAY with little firm to medium gravel			
7.33-7.57	X 0.00									
7.57-7.68	X 0.00									
7.68-8.28	X 0.75									
8.28-8.94	X 0.66	8.68				(1.62)				
8.94-9.39	SPT N=14			4.3/2.3,4.5						
8.94-9.38	X 0.00									
9.38-9.63	X 0.65	9.18				9.40	Stiff grey sandy CLAY			
9.63-9.85	X 0.22					(0.77)				
9.85-10.17	X 0.32									
Remarks								Scale (approx)	Logged By	
Inspection pit excavated to 1.20m on 21.03.14 dry & stable, backfilled before drilling								1:50	MPW	
Dry drilling from GL to 10.48m								Figure No.		
Rotary coring to 11.55								1503.BH2		
BH collapsed after pulling casing										

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH2

Boring Method
Inspection pit to 1.20m
Fraste PL Rig

Casing Diameter
113mm cased to 6.18m

Ground Level (mOD)

Client
Dandara Jersey Ltd

**Job
Number**
1503

Location
as per site plan

Dates
21/03/2014-
04/04/2014

Engineer
Dandara

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.17-10.46	X 0.29					10.17 (0.29)	... as previous		
10.46-10.53	C 0.00					10.46	Stiff grey CLAY with fragments of rock		
10.53-10.90	C 0.45						Weak grey slightly weathered Jersey Shale Formation with iron stained close bedding (no solid core recovery)		
10.90-11.55	C 0.65					(1.09)			
				04/04/2014:1.44m		11.55	Complete at 11.55m		

Remarks
Inspection pit excavated to 1.20m on 21.03.14 dry & stable, backfilled before drilling
Dry drilling from GL to 10.46m
Rotary coring to 11.55
BH collapsed after pulling casing

**Scale
(approx)**

1:50

**Logged
By**

MFV

Figure No.
1503.BH2

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH2

Installation Type

Dimensions

Client

Dandara Jersey Ltd

Job
Number
1503

Location

as per site plan

Ground Level (mOD)

Engineer

Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
						5 min	10 min	15 min	20 min							
						Groundwater Observations During Drilling										
						Start of Shift						End of Shift				
						Date	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						03/04/14						17.00	6.95	6.18	2.40	
						04/04/14	08.00	6.95	6.18	1.95		17.00	11.55	9.18	1.44	
						Instrument Groundwater Observations										
						Inst. [A] Type :										
						Instrument [A]				Remarks						
						Date	Time	Depth (m)	Level (mOD)							

Remarks

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH3

Boring Method Inspection pit to 1.20m Competitor Rig	Casing Diameter 115mm cased to 7.00m	Ground Level (mOD) Client Dandara Jersey Ltd	Job Number 1503
	Location as per site plan	Dates 25/03/2014- 26/03/2014	Engineer Dandara
			Sheet 1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00	WS 0.17	1.00				(0.13) 0.13 (0.32) 0.45 (0.25) 0.70 (0.20) 0.90	MADE GROUND - Concrete MADE GROUND - Gravel, metal sheet MADE GROUND - Dark grey gravelly silt Light grey silty CLAY Light yellow SAND			
1.00-1.45 1.00 1.00-2.00	SPT N=23 J WS 1.00	2.00	DRY	1,3/4,5,6,8		(0.30) 1.20 (0.80)	Stiff brown sandy CLAY with fine to medium gravels			
2.00-2.45 2.00 2.00-2.70	SPT N=68 J WS 1.00	2.70	DRY	8,9/12,17,17,22		2.00 (1.45)	Dense light brown fine to coarse SAND with fine to medium gravels			
2.70-3.00 3.00-3.45 3.00 3.00-4.00	WS 0.30 SPT N=31 J WS 1.00	4.00	2.85	8,12/10,8,7,6		3.45 (0.55)	Firm brown and grey sandy SILT			
4.00-4.45 4.00 4.00-4.70	SPT N=2 J WS 1.00	4.70	3.84	0,0/0,0,0,2		4.00 (1.00)	Soft brown sandy clayey SILT			
4.70-5.00 5.00-5.45 5.00 5.00-5.72	WS .30 SPT N=12 J WS 1.00	5.72	4.92	1,2/2,2,4,4		5.00 (1.00)	Firm brown sandy SILT			
5.72-6.00 6.00-6.45 6.00 6.00-6.63	WS 0.20 SPT N=24 J WS 1.00	6.63	WET	2,1/3,5,6,10		6.00 (1.50)	Medium dense to dense brown clayey sandy fine to coarse GRAVEL			
6.63-7.00 7.00-7.45 7.00 7.00-7.50	WS 0.31 SPT N=68 J WS 0.35	7.00		25/03/2014:5.12m 26/03/2014:4.57m 13,11/12,18,19,19 26/03/2014:2.23m		7.50	Complete at 7.50m			

Remarks Inspection pit excavated on 21.03.14 from GL to 1.2m, dry & stable, backfilled before drilling Window sampling 1.2 - 7.50m Hole unable to be extended below 7.50m because of dense ground Slotted pipe installed, response zone 7.00-1.00mbgl	Scale (approx) 1:50 Logged By MFW Figure No. 1503.BH3
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AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH3

Installation Type
Single Installation

Dimensions
Internal Diameter of Tube (A) = 50 mm

Client
Dandara Jersey Ltd

Job
Number
1503

Location
as per site plan

Ground Level (mOD)

Engineer
Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
				0.70 1.00	Cement/Bentonite Grout Gravel Filter	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
											5 min	10 min	15 min	20 min		
						Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						25/03/14						17.00	6.63	6.63	5.12	
						26/03/14	07.30	6.63	6.63	4.57		17.00	7.50	7.00	2.23	
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
						Date	Instrument [A]			Remarks						
Time	Depth (m)	Level (mOD)														
08/04/14	17:00	2.82														
11/04/14	17:00	2.81														

Remarks

AMPLUS LTD

Foundation & Geotechnical Specialists

Site

66-72 Esplanade, St Helier

Borehole Number

BH4

Boring Method Inspection pit hand excavated to 1.2m Fraste PL Rig	Casing Diameter 113mm cased to 2.28m 0.98mm cased to 9.21m	Ground Level (mOD)	Client Dandara Jersey Ltd	Job Number 1503
	Location as per site plan	Dates 21/03/2014-02/04/2014	Engineer Dandara	Sheet 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						(0.20)	MADE GROUND - Concrete			
						(0.20)	MADE GROUND - Gravelly silt			
						(0.20)	Dark brown peaty SILT			
						(0.20)	Brown silty CLAY			
						(0.20)	Dense light yellow brown to off white fine to medium silty SAND			
1.20-1.65	SPT N=34			2,2/6,8,10,10		(1.62)				
1.20-1.54	X 0.34									
1.54-1.71	X 0.20									
1.71-1.88	X 0.17									
1.88-2.08	X 0.20									
2.08-2.28	X 0.20	2.28								
2.28-2.42	X 0.17									
2.42-2.65	X 0.00			28/03/2014: DRY		2.42	Dense off white grey brown slightly silty sandy GRAVEL			
2.65-2.71	X 0.00			01/04/2014: WET		(0.83)				
2.71-2.85	SPT N=45	2.68		5,11/11,12,12,10						
2.85-3.25	X 0.43	3.25								
3.25-3.70	SPT N=7	3.25	GL	2,1/1,2,2,2		3.25	Firm brown sandy SILT with a little fine to medium gravel			
3.70-4.06	X 0.50	4.00								
4.06-4.56	X 0.50									
4.56-5.01	SPT N=9		3.25	0,1/2,2,2,3		(2.67)				
4.56-5.12	X 0.50	4.30								
5.12-5.42	X 0.33	4.68								
5.42-5.92	X 0.50	5.68								
5.92-6.37	SPT N=28		GL	2,3/4,7,8,9		5.92	Medium dense brown clayey slightly sandy GRAVEL			
5.92-6.34	X 0.42	6.23								
6.34-6.53	X 0.19	6.68				(1.68)				
6.53-6.92	X 0.39									
6.92-7.00	X 0.00									
7.00-7.14	X 0.00									
7.14-7.43	X 0.00									
7.43-7.54	X 0.00	7.23				7.60	Stiff grey sandy clayey SILT with a little fine to medium gravel			
7.54-7.89	X 0.60									
7.89-8.34	SPT N=20		3.00	3,4/5,5,5,5		(1.61)				
7.89-8.27	X 0.38	8.23								
8.27-8.58	X 0.31									
8.58-9.21	X 0.63									
9.21-9.66	SPT N=25	9.21	2.51	2,5/5,6,6,8		9.21	Stiff grey sandy CLAY with fine gravels			
9.21-9.49	X 0.41			01/04/2014: 5.63m						
9.49-9.79	X 0.27			02/04/2014: 5.47m		(1.01)				
9.79-9.96	X 0.20									

Remarks

Inspection pit excavated by hand, backfilled before drilling

Dry drilling to 10.62m

Rotary Drilling to depth

Slotted pipe installed, response zone 11.60 - 6.00mbgl

Scale (approx)

1:50

Logged By

MFV

Figure No.

1503.BH4

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH4

Boring Method

Inspection pit hand excavated
to 1.2m
Fraste PL Rig

Casing Diameter

113mm cased to 2.28m
0.98mm cased to 9.21m

Ground Level (mOD)

Dates
21/03/2014-
02/04/2014

Client

Dandara Jersey Ltd

Job
Number
1503

Location

as per site plan

Engineer

Dandara

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
9.96-10.22	X 0.30						... as previous			
10.22-10.49	X 0.27					10.22 (0.27)	Stiff brown CLAY with fine gravels			
10.49-10.64	SPT 6"/75 25/70		4.21	6,0/25,0,0,0		10.49	Weak grey slightly weathered Jersey Shale Formation, iron stained close bedding, no solid core recovery, recovered as slightly clayey sandy gravel			
10.49-10.62	X 0.00					(1.14)				
10.62-10.72	C 0.00									
10.72-11.15	C 0.66									
11.15-11.65	C 0.36									
				02/04/2014:2.05m		11.63	Complete at 11.65m			

Remarks

Scale
(approx)

1:50

Logged
By

MFV

Figure No.

1503.BH4

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH4

Installation Type
Single Installation

Dimensions
Internal Diameter of Tube (A) = 50 mm

Client
Dandara Jersey Ltd

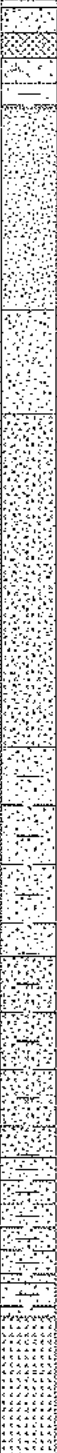


Job
Number
1503

Location
as per site plan

Ground Level (mOD)

Engineer
Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
					Gravel Filter	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
											5 min	10 min	15 min	20 min		
						Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						28/03/14						11.00	2.42		DRY	
						01/04/14	08.00	2.42	2.26	WET		17.00	9.49	9.21	5.63	
						02/04/14	08.00	9.49		5.47		17.00	11.65		2.05	
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
	Instrument [A]			Remarks												
Date	Time	Depth (m)	Level (mOD)													
08/04/14	17:00	2.40														
11/04/14	17:00	2.41														
Slotted Standpipe																

Matthew F Warner & Associates Limited
Consulting Civil Engineers and Geotechnical Specialists

BOREHOLE LOG 1

Client Ove Arup
Date 4 - 6 January 1994

Site Westaway Court St Helier
Elevation

Sheet 1 of 2
Scale 1:50

Progress/ Water level	Casing (m)	Sample no./core	Sample /test	Depth (m)	Piezo- meter	Description	Depth (m)	Level (mOD)	Legend
4.1.94		D1		0.10		Brown fine to medium slightly gravelly SAND with pockets of dark brown silt and organic material.			
	0.75	D2 B1 D4 D3	SPT N=7	0.60 0.75-1.50 0.75 0.75-1.20		Loose light brown/grey fine slightly silty SAND with lenses of coarser brown/orange sand. The sands become darker and finer with depth.	0.60		
	1.50	B2 D6 D5	SPT N=6	1.50-2.25 1.50 1.50-1.95					
	2.25	B3 D8 D7	SPT N=5	2.25-3.00 2.25 2.25-2.70					
	3.00	B4 D10 D9	SPT N=12	3.00-3.75 3.00 3.00-3.45		Firm brown/orange slightly gravelly sandy clayey SILT with grey lenses of sandy clayey silt where the sand fraction reduces with depth.	3.00		
	3.75	B5 D12 D11	SPT N=11	3.75-4.50 3.75 3.75-4.20					
pmv/3.90m		B6 D14 D13	SPT N=7	4.50-5.25 4.50 4.50-4.95		Firm brown/orange slightly gravelly clayey fine sandy SILT. Including occasional lenses of grey clayey sandy silt.	4.50		
5.1.94	4.50	B7 D16 D15	SPT N=3	5.25-6.00 5.25 5.25-5.70					
	5.25								
	6.00	B8 D18 D17	SPT N=8	6.00-6.75 6.00 6.00-6.45		Firm black/dark brown sandy clayey SILT becoming slightly gravelly with depth.	6.00		
	6.75	B9 D20 D19	SPT N=13	6.75-7.50 6.75 6.75-7.20					
	7.50	B10 D22 D21	SPT N=13	7.50-8.25 7.50 7.50-7.95					
	8.25	B11 D24 D23	SPT N=14	8.25-9.00 8.40 8.25-8.70		Firm to stiff green/grey slightly gravelly (angular) sandy clayey SILT becoming darker and less clayey with depth.	8.40		
	9.00	B12 D26 D25	SPT N=15	9.00-9.75 9.00 9.00-9.45					
	9.75	B13 D28 D27	SPT N=27	9.75-10.50 9.75 9.75-10.20					
Continued sheet 2 of 2									
Equipment/Methods		Dando cable percussive boring rig from 0.70m to 15.00m (150mm casing) by C I Irrigation (Drilling) Limited. Water added from 0.70m to 15.00m, 200 litres.							
Remarks		Chiselling from GL to 0.70m to avoid services for half an hour. Chiselling from 14.90m to 15.00m for an hour.					Job No. 94.002	Figure	

Matthew F Warner & Associates Limited
Consulting Civil Engineers and Geotechnical Specialists

BOREHOLE LOG 1

Client Ove Arup
Date 4 - 6 January 1994

Site Westaway Court St Helier
Elevation

Sheet 2 of 2
Scale 1:50

Progress/ Water level	Casing (m)	Sample no./core	Sample /test	Depth (m)	Piezo- meter	Description	Depth (m)	Level (mOD)	Legend
5.1.94									
	10.50	B14 D30 D29	SPT N=16	10.5-11.25 10.50 10.5-10.95		Firm to stiff green/grey slightly gravelly (angular) clayey sandy SILT becoming darker and less clayey with depth.			
	11.25	B15 D32 D31	SPT N=20	11.25-12.0 11.25 11.25-11.7		Very stiff blue/grey slightly gravelly very silty CLAY.	11.30		
		U1		12.00--					
		D33		12.50					
water struck 13.60m, Fast inflow, Rose to 7.50m. pm/5.90m	(150) 13.50 12.75	B16 D34	SPT N=23	12.75-13.5 12.75-13.2					
		U2		13.50					
6.1.94 am/5.90m	13.60	B17 D35 D36	SPT N=31	13.6-14.25 13.60 13.6-14.05		Dense blue/grey slightly clayey SILT and SAND.	13.60		
	14.25	B18 D37	SPT N=60+	14.25-14.9 14.25-14.7		Moderately strong slightly weathered blue/grey fine grained igneous rock (Basalt?).	14.30		
pm/6.00m		D38				Blue/black fine grained basic igneous rock, as above.	14.90		
						End of Borehole..	15.00		
Equipment/Methods Dando cable percussive boring rig from 0.70m to 15.00m (150mm casing) by C I Irrigation (Drilling) Limited. Water added from 0.70m to 15.00m, 200 litres.									
Remarks Chiselling from GL to 0.70m to avoid services for half an hour. Chiselling from 14.90m to 15.00m for an hour.							Job No.	Figure	
							94.002		

Matthew F Warner & Associates Limited
Consulting Civil Engineers and Geotechnical Specialists

TRIAL PIT LOG 3

Client Ove Arup
Date 5 January 1994

Site Westaway Court St Helier
Elevation

Sheet 1 of 1
Scale 1:50

Water Level	Sample No.	Sample /test	Depth (m)	Description of Strata	Depth (m)	Reduced Levels	Legend
				TOPSOIL / TURF	0.20	XXXX	
				Brown fine SAND	0.40	
		D1	2.10	(Loose to medium dense) off-white light brown fine SAND Roots down to 1.00m		
		D2	2.60		2.60	
				Loose-soft grey sandy SILT, some organic lenses.	2.70	XXXX	
				END OF TRIAL PIT			
Comments Trial pit excavated by Channel Island Drilling Limited with MF 860 backhoe. Pit size 3.0mx0.8m in plan.							
Ground Water None						Job No. 94.002	Logged by MFW

Matthew F Warner & Associates Limited
Consulting Civil Engineers and Geotechnical Specialists

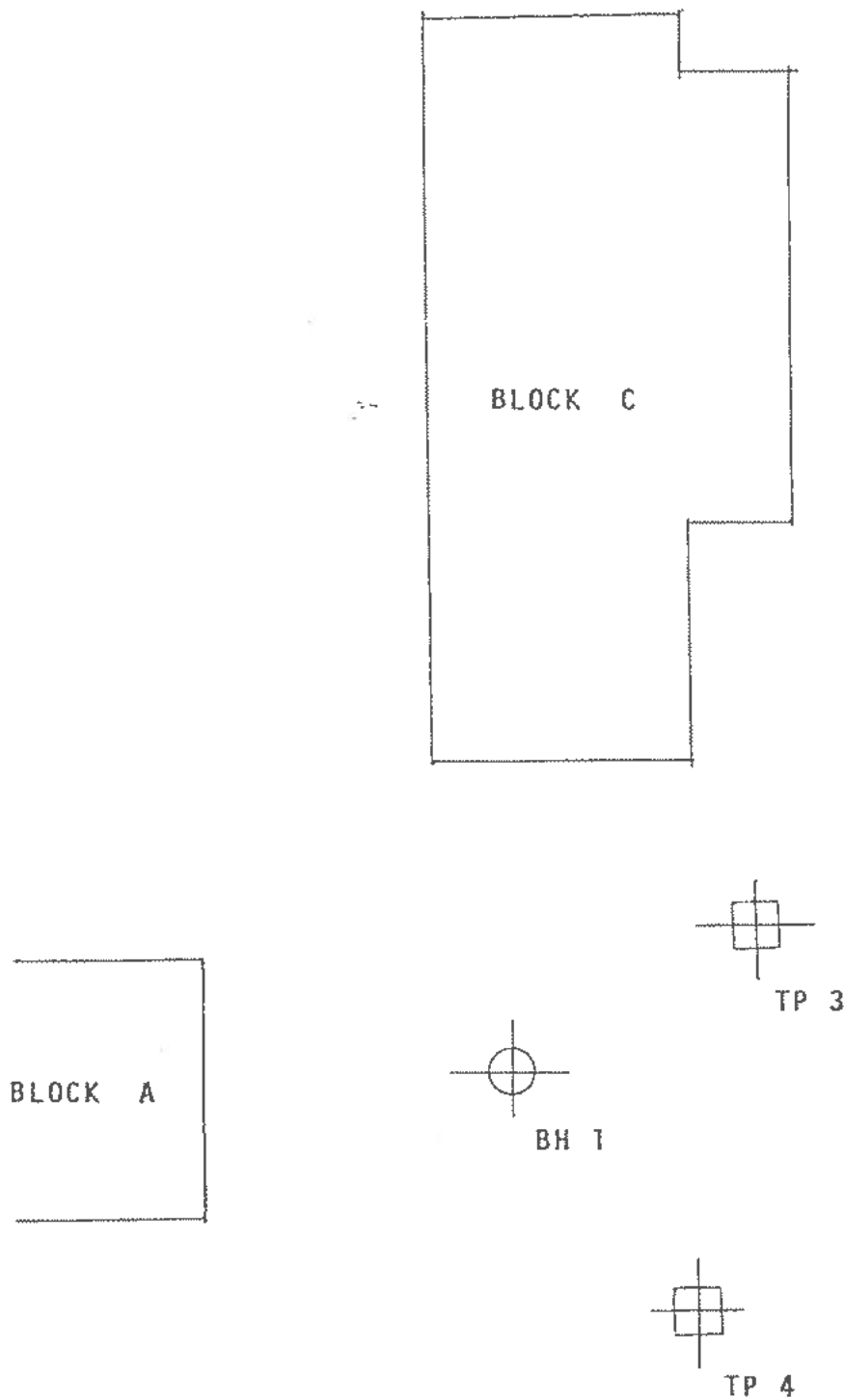
TRIAL PIT LOG 4

Client Ove Arup
Date 5 January 1994

Site Westaway Court St Helier
Elevation

Sheet 1 of 1
Scale 1:50

Water Level	Sample No.	Sample /test	Depth (m)	Description of Strata	Depth (m)	Reduced Levels	Legend
				TOPSOIL / TURF	0.40		
				(Loose to medium dense) off-white light brown fine SAND (Fill)	0.60		
				MADE GROUND: brick, stone in grey silty matrix, slightly organic	1.35		
				(Loose) off-white fine SAND	2.50		
				END OF TRIAL PIT			
<u>Comments</u> Trial pit excavated by Channel Island Drilling Limited with MF 860 backhoe. Pit size 3.0mx0.8m in plan.							
<u>Ground Water</u> None						<u>Job No.</u> 94.002	<u>Logged by</u> MFW



APPROXIMATE BOREHOLE & TRIAL PIT LOCATIONS

(Scale 1:200 approx.)

Appendix F-1

Geotechnical Desk Study - Part 3

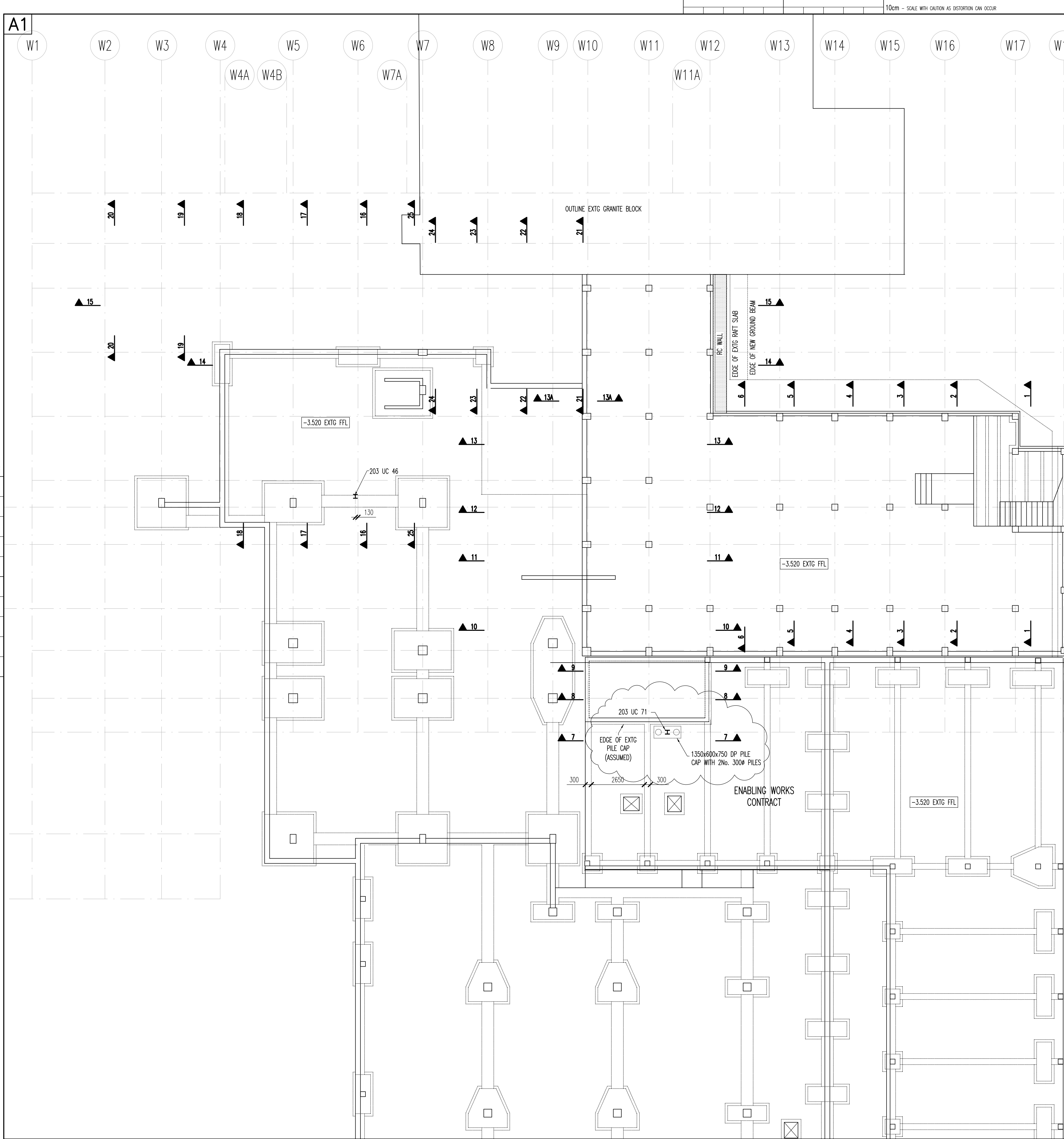
Appendix E

Available Construction Drawings

Appendix E-1

Available Construction Drawings – Jersey General Hospital

- Jersey General Hospital Daycare Extension, Proposed Basement Structural General Arrangement, Revision C1, Apr 2007
- Jersey General Hospital Daycare Extension, Proposed Ground Floor Structural General Arrangement, Revision C1, Apr 2007
- Jersey General Hospital Daycare Extension, Proposed Ground Floor Structural General Arrangement Sheet 2 – Theatre Corridor, Revision C3, Apr 2007
- Department of Public Building and Works States Offices, General Hospital Phase 1, General Arrangement Pile Caps Sheet 2, Revision D, Jun 1976
- Department of Public Building and Works States Offices, General Hospital, Jersey Phase One Redevelopment, Pile Layout Sheet 1, Feb 1975
- Department of Public Building and Works States Offices, General Hospital, Jersey Phase One Redevelopment, Pile Layout Sheet 2 – Revision D, Apr 1976
- Culvert Details, 6-14 Gloucester Street, St Helier, Jersey, Rothwell & Partners Ltd, Feb 2006
- Pile Layout, Jersey General Hospital, Phase 1B, Ove Arup & Partners – Revision A, May 1980
- Existing Basement Plan, Jersey General Hospital, Health & Social Services, Jersey Property Holdings Design & Building Services, Drawing 001, Aug 2016
- Existing ground Floor Plan, Jersey General Hospital, Health & Social Services, Jersey Property Holdings Design & Building Services, Drawing 002, Aug 2016
- Phase 1A Engineering Department, Pile Layout, Sheet 1, Ove Arup & Partners, Working Drawing, September 1978
- Phase 1A Engineering Department, Pile Layout, Sheet 2. Ove Arup & Partners, Working Drawing, September 1978



- NOTES:
1. ALL DIMENSIONS & GRIDLINES ARE BASED ON PROFESSIONAL HI-TECH SERVICES TRAVERSE SURVEY. THE CONTRACTOR MUST ENSURE THAT HE CARRIES OUT HIS OWN ON SITE CHECKS & CO-ORDINATION GRID. ALL DIMS MUST BE CHECKED ON SITE PRIOR TO FABRICATION. DO NOT SCALE FROM THIS DRAWING.
 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S & ENGINEER'S DRGS & SPECIFICATIONS.
 3. THIS DRG TO BE READ IN CONJUNCTION WITH DRG 10300/S/11/01-25.
 4. PILES TO BE 300MM MINIPILES FOUNDED ON OR IN BED ROCK (ASSUMED Ø=300).
 5. ALL REINFORCED CONCRETE AT THIS LEVEL TO BE 35 Nmm⁻² @ 28 DAYS.

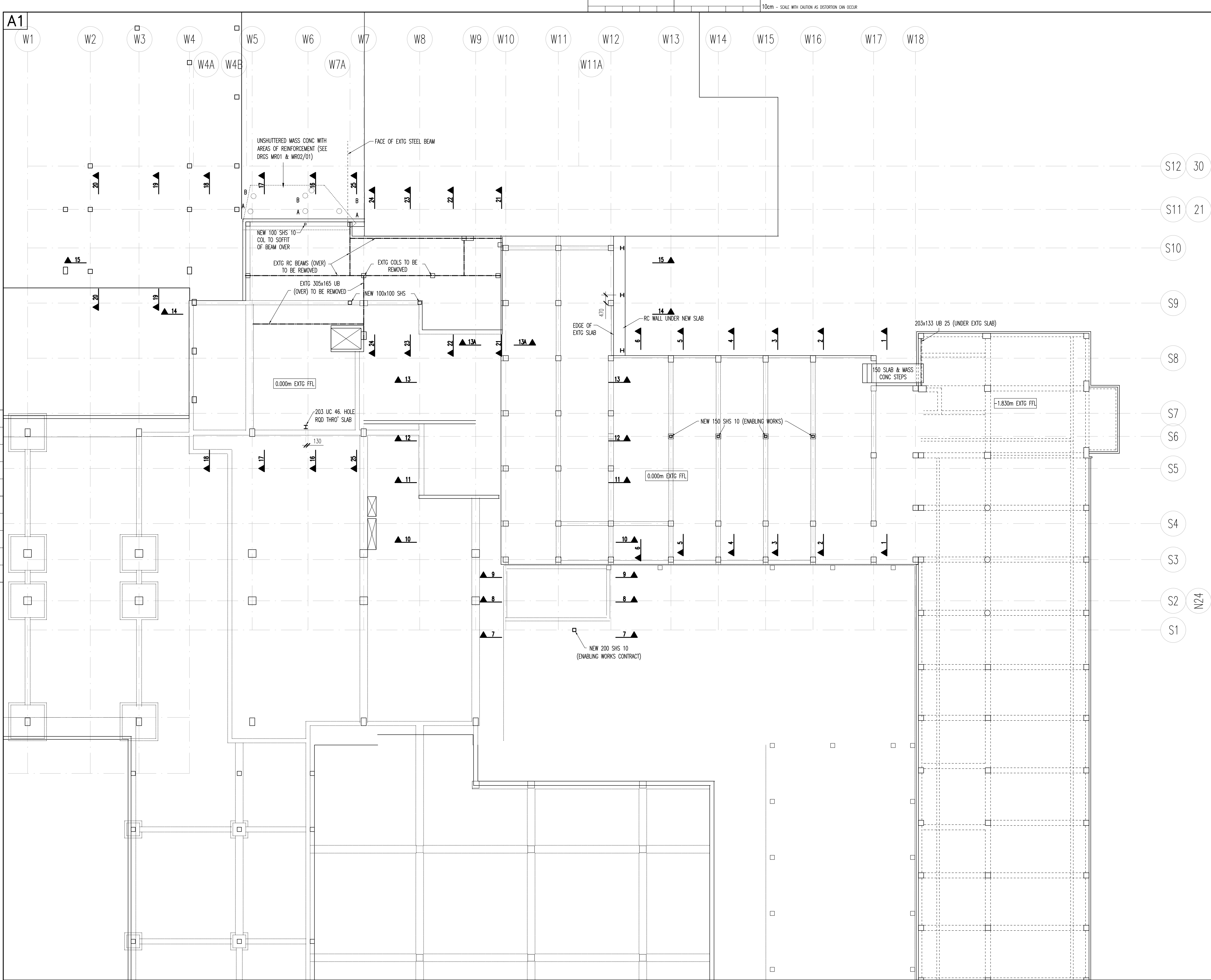
C1	03/04/07	ARF	AS-BUILT, COL (NR W6,S6) SECTION CHANGED
C0	18/08/05	ARF	ISSUED FOR CONSTRUCTION
Rev.	Date	By	Description

Drawing Status
AS-BUILT

Job Title
**JERSEY GENERAL HOSPITAL
DAYCARE EXTENSION**

Drawing Title
**PROPOSED BASEMENT
STRUCTURAL GENERAL
ARRANGEMENT**

Rothwell & Partners Ltd.
17 La Motte Street, St. Helier, Jersey, JE2 4SY
Tel: (01534) 734585
Fax: (01534) 768609
Email: anup.rothwell@arup.com
Scales: 1:100
Checked: Approved: Date: 03/04/07
Job No: 10300
Drawing No: L/-1/01
Rev: C1



- NOTES:
1. ALL DIMENSIONS & GRIDLINES ARE BASED ON PROFESSIONAL HI-TECH SERVICES TRAVERSE SURVEY. THE CONTRACTOR MUST ENSURE THAT HE CARRIES OUT HIS OWN ON SITE CHECKS & CO-ORDINATION GRID. ALL DIMS MUST BE CHECKED ON SITE PRIOR TO FABRICATION. DO NOT SCALE FROM THIS DRAWING.
 2. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARCHITECT'S & ENGINEER'S DRGS & SPECIFICATIONS.
 3. THIS DRG TO BE READ IN CONJUNCTION WITH DRG 10300/S/11/01-25.
 4. ALL REINFORCED CONCRETE AT THIS LEVEL TO BE 35 Nmm⁻² @ 28 DAYS.
 5. PILES TYPE A TO BE 350kN CAPACITY.
PILES TYPE B TO BE TENSION PILES WITH CAPACITY OF 175kN (EXCLUDES PILE SELF WEIGHT.)
- KEY:
- INDICATES 203 UC 71 COLUMN

C1	03/04/07	ARF	AS-BUILT: AMENDED: GRD BEAMS W5-W7A, S11; OFFSET COL NR W12,S9.
C0	18/08/05	ARF	ISSUED FOR CONSTRUCTION
Rev.	Date	By	Description

Drawing Status
AS-BUILT

Job Title
**JERSEY GENERAL HOSPITAL
DAYCARE EXTENSION**

Drawing Title
**PROPOSED GROUND FLOOR
STRUCTURAL GENERAL
ARRANGEMENT**

Rothwell & Partners Ltd.
17 La Motte Street, St. Helier,
Jersey, JE2 4SY
Tel: (01534) 734585
Fax: (01534) 768609
Email: arup.rothwell@arup.com

Scales: 1:100
Checked: Approved: Date: 03/04/07
Job No: 10300
Drawing No: L/00/01
Rev: C1

A1

10cm - SCALE WITH CAUTION AS DISTORTION CAN OCCUR

NOTES:

1. ALL DIMENSIONS & GRIDLINES ARE BASED ON PROFESSIONAL HI-TECH SERVICES TRAVERSE SURVEY. THE CONTRACTOR MUST ENSURE THAT HE CARRIES OUT HIS OWN ON SITE CHECKS & CO-ORDINATION GRID. ALL DIMS MUST BE CHECKED ON SITE PRIOR TO FABRICATION. DO NOT SCALE FROM THIS DRAWING.
2. THIS DRAWING TO BE READ IN CONJUNCTION WITH ALL RELEVANT ARHICTECT'S & ENGINEER'S DRGS & SPECIFICATIONS.
3. THIS DRG TO BE READ IN CONJUNCTION WITH DRG 10300/5/00/02-06.
4. TOP OF STEELWORK TO BE EXTG SSL - 130mm U.N.O.
5. PILES TO BE DESIGNED FOR A VERTICAL CHARACTERISTIC LOAD OF 350kN. PILES TO BE DESIGNED BY CONTRACTOR. SIZES SHOWN ARE INDICATIVE ONLY.

KEY:

⊞ INDICATES 152 UC 30 COLUMN

C3	03/04/07	ARF	AS-BUILT. EXTG SERVICES ADDED NR W2,N18.
C2	06/04/06	EW	SETTING OUT DIMENSION TO COLUMN ADDED.
C1	31/03/06	EW	ORIENTATION OF COLUMNS REVISED TO SUIT CLADDING FIXINGS REVISIONS.
C0	18/08/05	ARF	ISSUED FOR CONSTRUCTION
Rev.	Date	By	Description

Drawing Status

AS-BUILT

Job Title

JERSEY GENERAL HOSPITAL
DAYCARE EXTENSION

Drawing Title

PROPOSED GROUND FLOOR
STRUCTURAL GENERAL
ARRANGEMENT SHEET 2 -
THEATRE CORRIDOR.

Rothwell & Partners Ltd.

17 La Motte Street, St. Helier,
Jersey, JE2 4SY

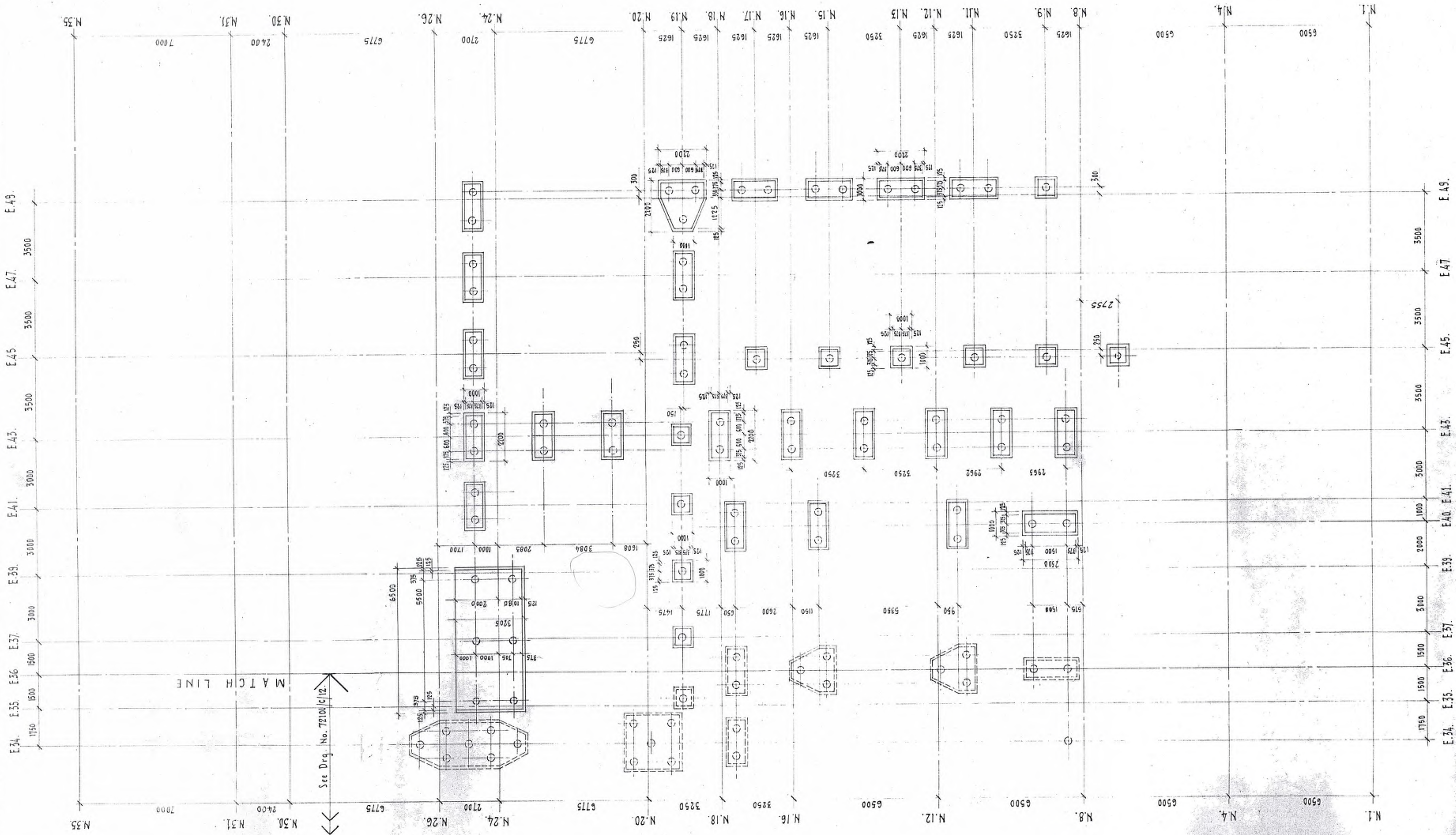
Tel: (01534) 734585
Fax: (01534) 768609
Email: arup.rothwell@arup.com

Originator ARF

Checked Approved Date 03/04/07

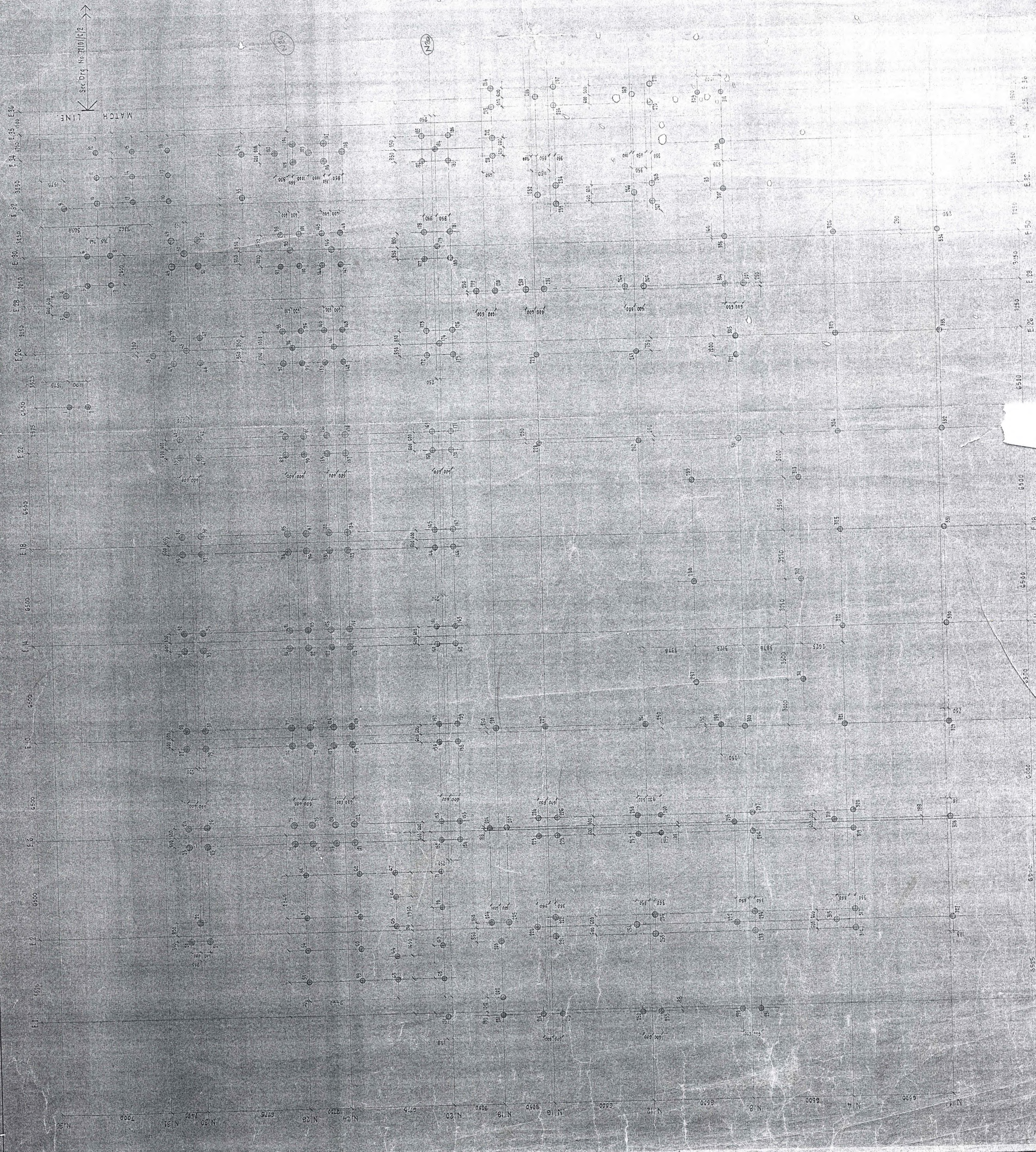
Job No. Drawing No. Rev.

10300 L/00/02 C3



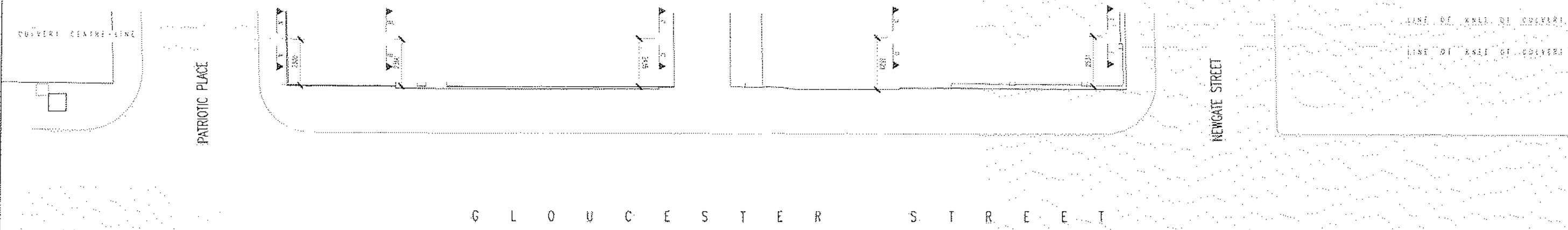
D	N/2 1/4 DIMENSION REVISED	11/24/54
C	DAY AT ELEV. RELOCATED	11/24/54
B	MINOR REVISIONS	11/24/54
A	MINOR AMENDMENTS	11/24/54
AMENDMENTS		
FIRST CONTRACT ISSUE		
PRE-CONTRACT ISSUE		
DATE CHECKED		
DEPARTMENT OF PUBLIC BUILDING AND WORKS SOUTH HILL JERSEY C.I.		
STATES OF JERSEY PUBLIC HEALTH COMMITTEE		
GENERAL HOSPITAL PHASE ONE		
GENERAL ARRANGEMENT PILE CAPS SHEET 2		
SCALE	DATE	1-100
1-100	DATE	1-100
EDWARDS AND BLACKIE CONSULTING ENGINEERS 55 VICTORIA STREET, LONDON, S.W.1 11, NEWHALL STREET, BIRMINGHAM, 3.		
DRAWING NO. 72101/12		

NOTES

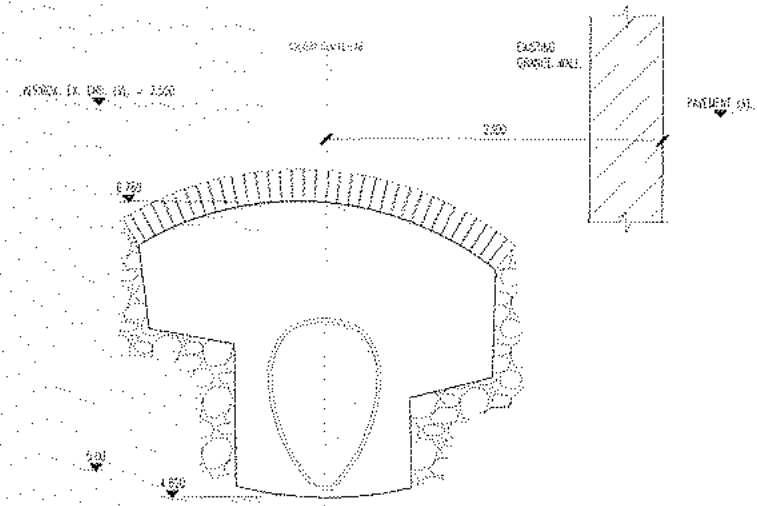


AMENDMENTS	
FIRST CONTRACT ISSUE	
FOR TENDER ONLY	
PRELIMINARY ISSUE	
DEPARTMENT OF PUBLIC BUILDINGS	
AND WORKS	
STATES OFFICES, SOUTH ISLAND	
GENERAL HOSPITAL - JERSEY	
PHASE ONE, REDEVELOPMENT	
FILE LAYOUT	
SHEET 1	
SCALE	1:100
EDWARDS AND BLACKIE	
CONSULTING ENGINEERS	
15, ABERCROMBIE STREET	
GLASGOW, GL3 7AF	
DRAWN BY 72101	
CHECKED BY	

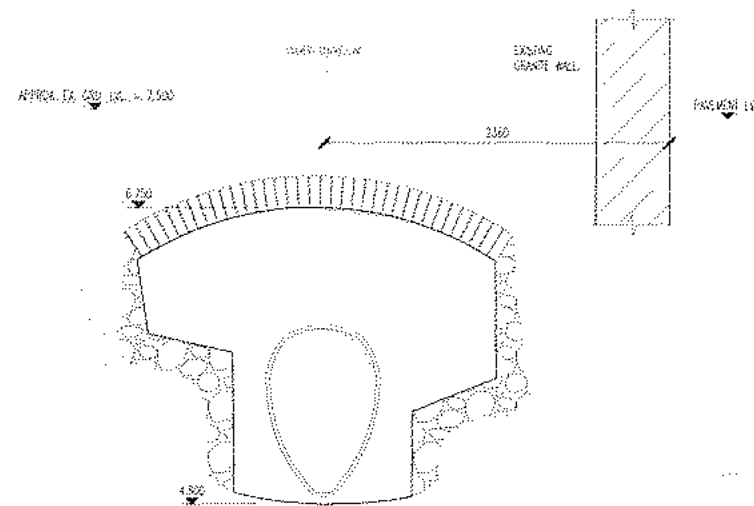
A1



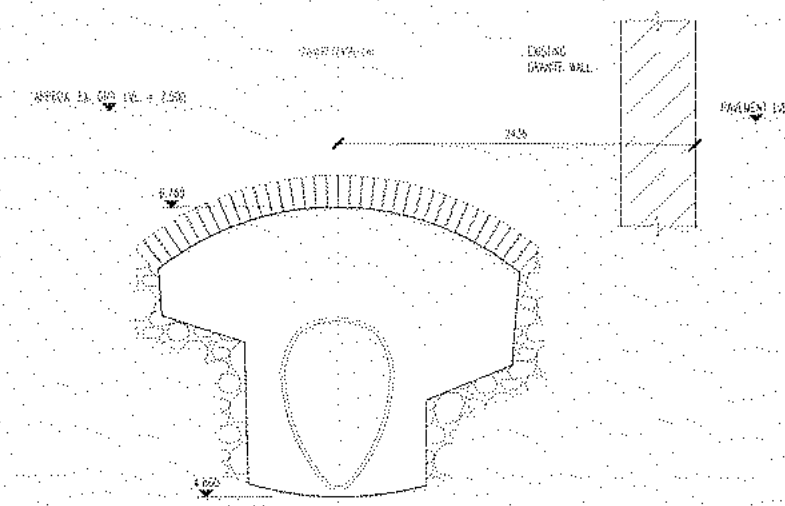
SITE PLAN SHOWING CULVERT OUTLINE
SCALE 1 : 100



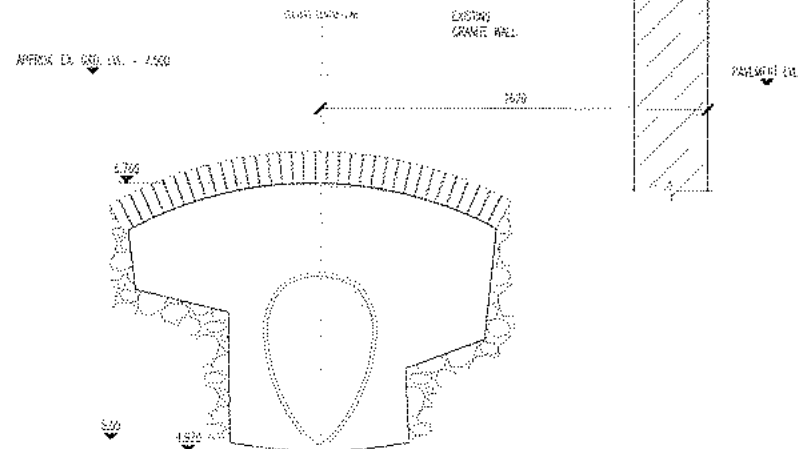
SECTION A-A
SCALE 1 : 25



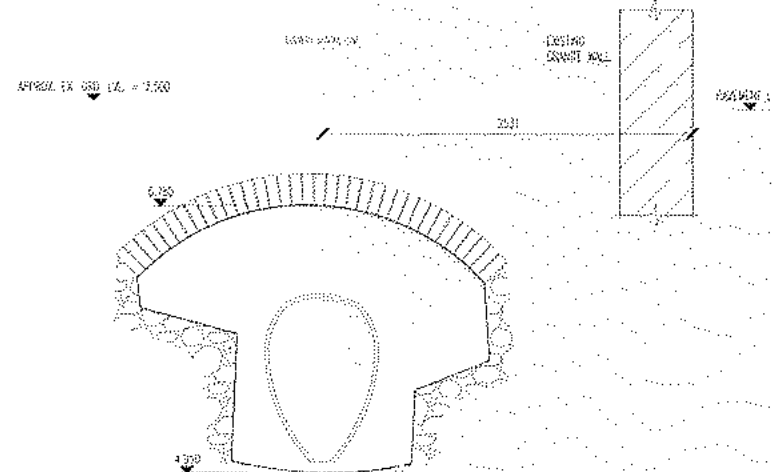
SECTION B-B
SCALE 1 : 25



SECTION C-C
SCALE 1 : 25



SECTION D-D
SCALE 1 : 25

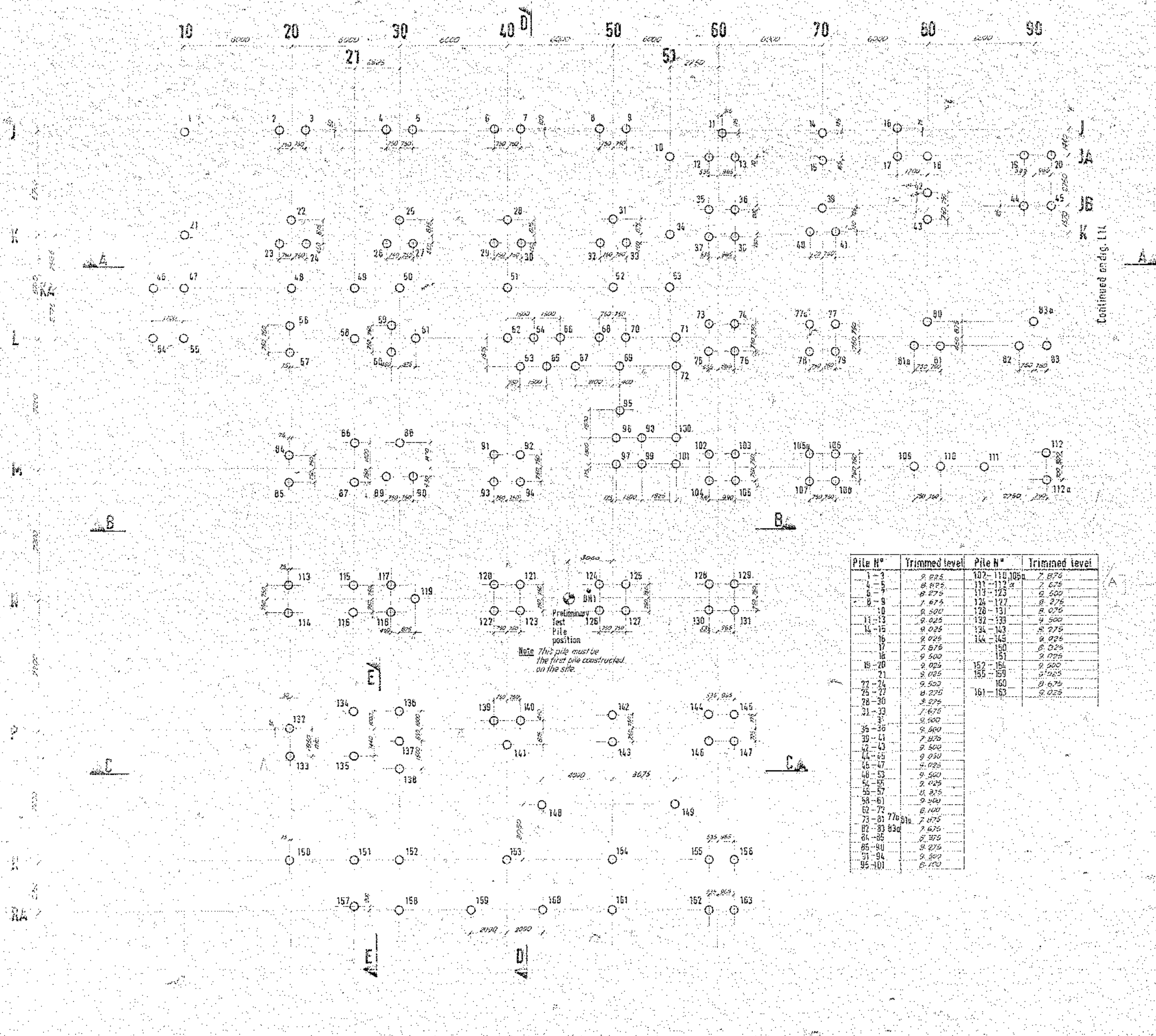


SECTION E-E
SCALE 1 : 25

NO.	REV.	DATE	DESCRIPTION
1			

6 - 14 GLOUCESTER STREET,
ST. HELIER,
JERSEY.

Rothwell & Partners Ltd.
17 Le Marchant Street, St. Helier
Jersey JE2 4ST
Tel: 01534 720000
Fax: 01534 720001
Email: info@rothwell.co.uk
Web: www.rothwell.co.uk
10733



- Notes:**
1. All piles to be 450 nominal diameter, 3000 mm working length.
 2. All piles to be set out by main contractor.
 3. All piles to be constructed with grade 25.
 4. All piles are capped on ends unless shown otherwise.
 5. All piles are to be concreted to 10.000 level, except for piles on grid 10, which are to be concreted to 9.500 level.
 6. All piles to be trimmed to 15 mm above bottom of pile cap.
 7. All pile positions are to be proved by the main contractor to a depth of 1.5 m below existing level, except for pile 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, which are to be proved to 6.500 level.

Continued on fig. 111

Pile No	Trimmed level	Pile No	Trimmed level
1-3	9.875	102-110, 105a	7.875
4-6	9.875	111-112	7.875
7-9	9.875	113-123	9.500
10-12	9.500	124-127	8.275
13-15	9.025	128-131	8.025
16-18	8.025	132-133	9.500
19-21	8.025	134-143	9.275
22-24	8.025	144-145	9.025
25-27	8.025	146-151	8.025
28-30	8.025	152-154	9.500
31-33	8.025	155-159	9.025
34-36	8.025	160-163	8.025
37-39	8.025		
40-42	8.025		
43-45	8.025		
46-48	8.025		
49-51	8.025		
52-54	8.025		
55-57	8.025		
58-61	8.025		
62-72	8.025		
73-81, 77a, 81a	7.875		
82-83, 83a	7.875		
84-85	8.025		
86-90	8.025		
91-94	9.500		
95-101	6.100		

WORKING DRAWING

JERSEY GENERAL HOSPITAL Phase 1B

Pile Layout

OVE ARUP & PARTNERS

8588 01 1.01

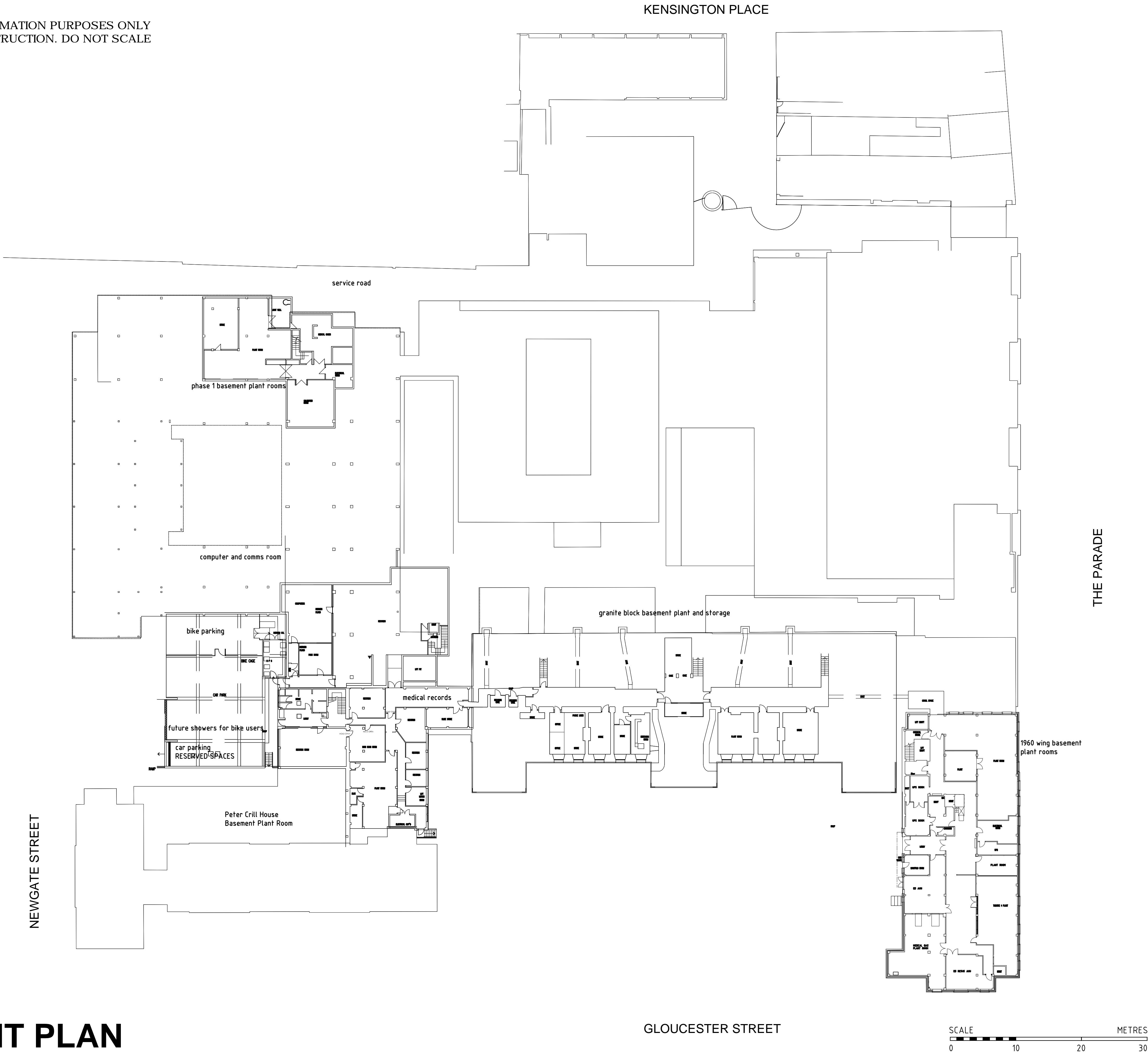
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10 May 80

Appendix F-1

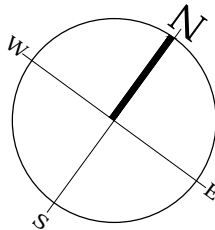
Geotechnical Desk Study - Part 4

NOTE:
THIS DRAWING IS FOR INFORMATION PURPOSES ONLY
AND NOT FOR USE IN CONSTRUCTION. DO NOT SCALE
FROM THIS DRAWING.



BASEMENT PLAN

Revisions		
Rev	Description	Date



Do not scale from this drawing.
This drawing may not be altered, traced, copied, photographed or used for any other purpose other than which it is issued without the permission of the Director of Architecture.
The Contractor is to check all dimensions on site prior to commencement of any works and report any discrepancies to the Architect.
All details shown are based on site conditions related to the area. No responsibility can be accepted for abnormal conditions unless reported to the Architect so that any amendments may be considered.
Drawings should be read in conjunction with all other relevant and approved /current drawings.

client
HEALTH & SOCIAL SERVICES

project
Diagrammatic Floor Plans
(For Layout Purposes Only)
Jersey General Hospital
Gloucester Street, St Helier,

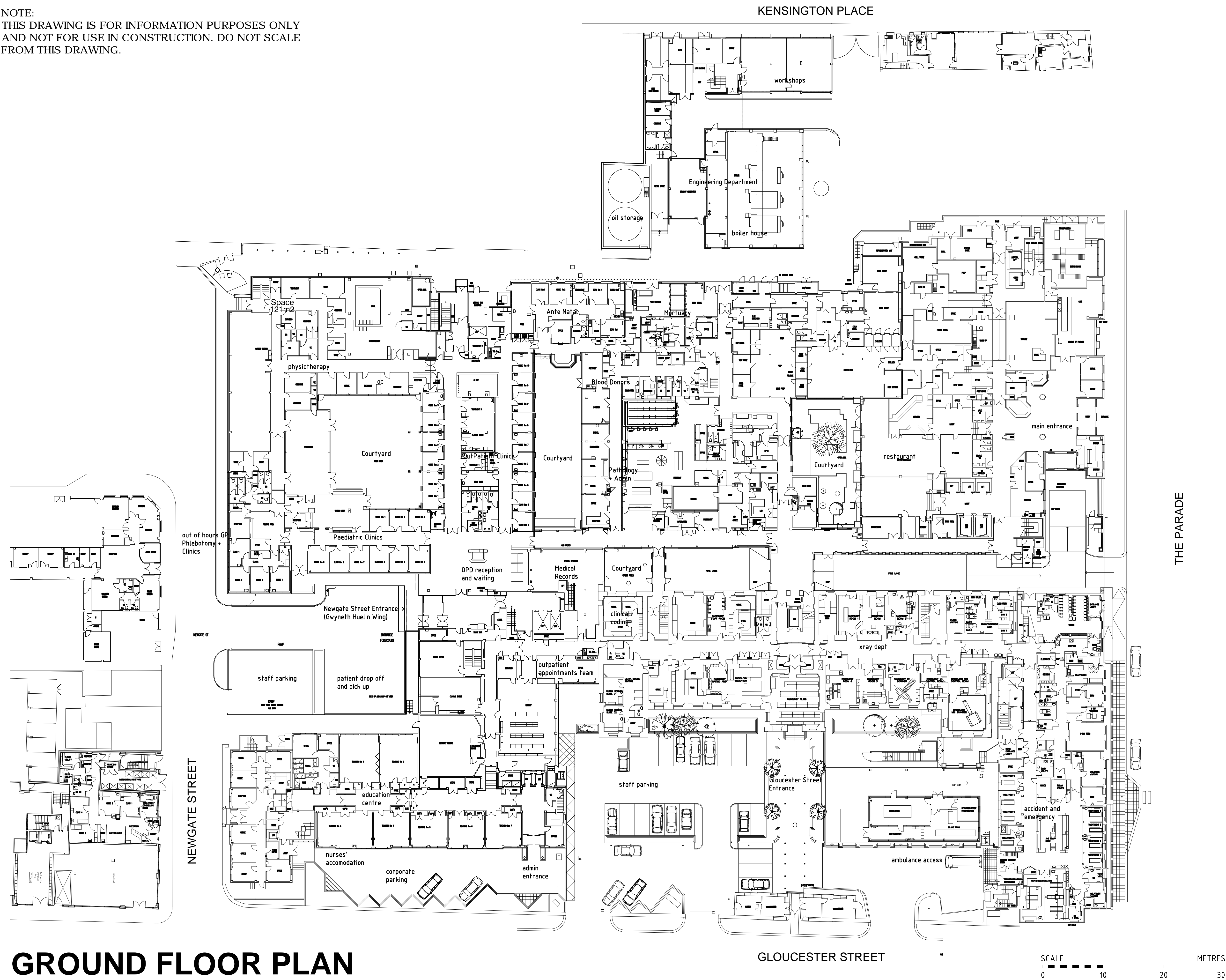
drawing
Existing Basement Plan

Treasury and Resources Department
Jersey Property Holdings
Design & Building Services
Maritime House,
La Route du Port Elizabeth,
St Helier, Jersey, JE2 3NW
Tel. + 44 (0)1534 447800

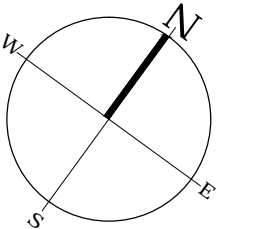
States of Jersey

scale 1:300 @ A1	date August 2016	drawn JPC
drawing no	001	revision

NOTE:
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AND NOT FOR USE IN CONSTRUCTION. DO NOT SCALE
FROM THIS DRAWING.



Revisions		
Rev	Description	Date



Do not scale from this drawing.
This drawing may not be altered, traced, copied, photographed or used for any other purpose other than which it is issued without the permission of the Director of Architecture.
The Contractor is to check all dimensions on site prior to commencement of any works and report any discrepancies to the Architect.
All details shown are based on site conditions related to the area. No responsibility can be accepted for abnormal conditions unless reported to the Architect so that any amendments may be considered.
Drawings should be read in conjunction with all other relevant and approved /current drawings.

client
HEALTH & SOCIAL SERVICES

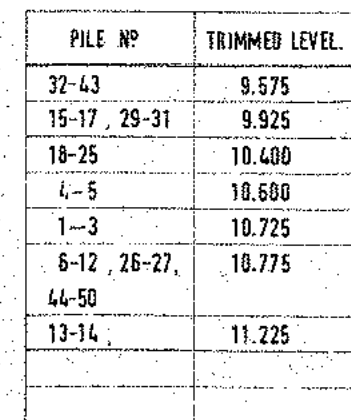
project
**Diagrammatic Floor Plans
(For Layout Purposes Only)
Jersey General Hospital
Gloucester Street, St Helier,**

drawing
Existing Ground Floor Plan

Treasury and Resources Department
Jersey Property Holdings
Design & Building Services
Maritime House,
La Route du Port Elizabeth,
St Helier, Jersey, JE2 3NW
Tel. + 44 (0)1534 447800
States of Jersey

scale 1:300 @ A1	date August 2016	drawn JPC
---------------------	---------------------	--------------

drawing no 002	revision
--------------------------	----------



NOTES

3. For general notes see p.m. 12

ONE ASUP & PARTNERS

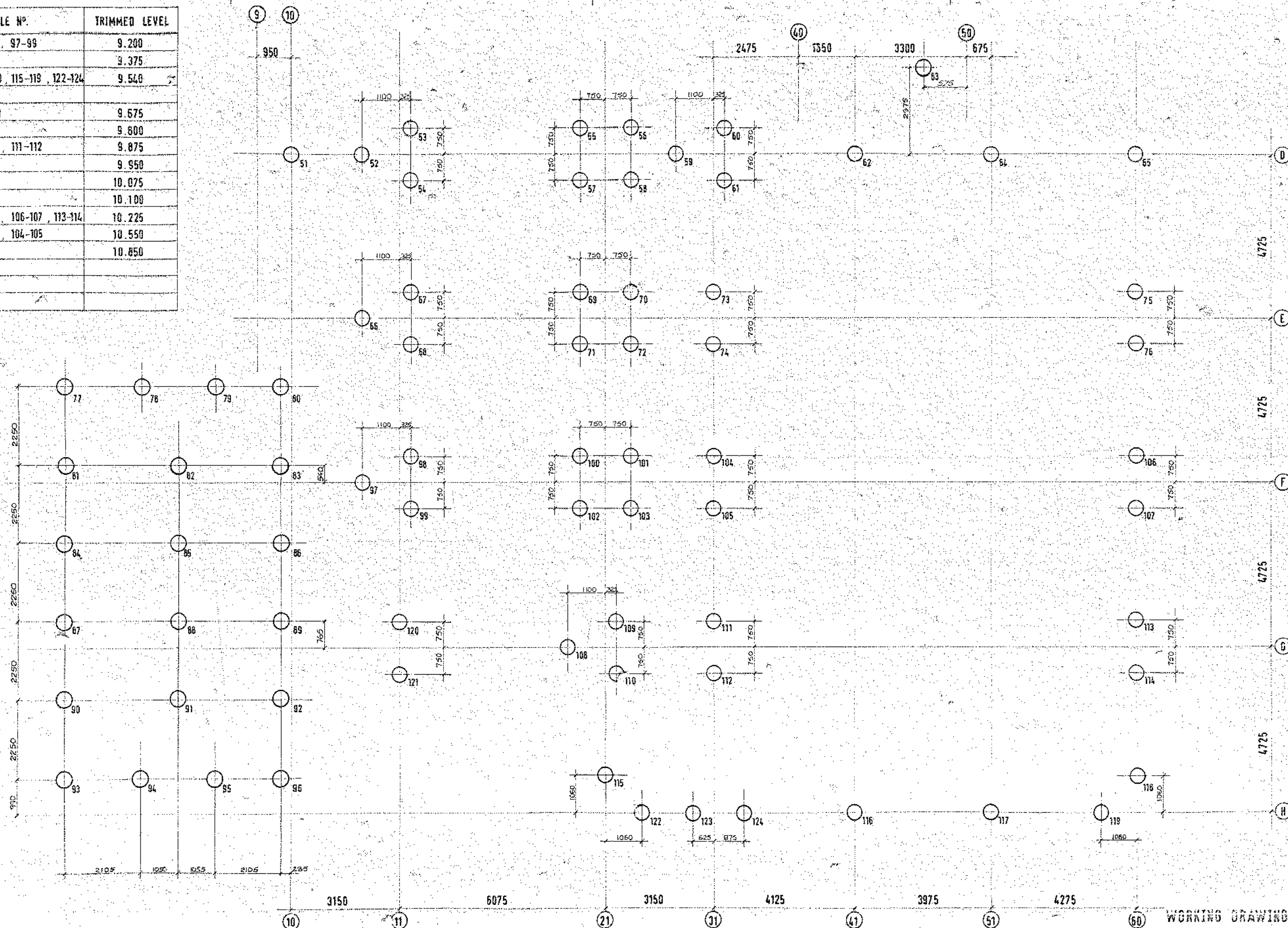
9689

107

1:50
b6
b7C

A1
 ORIGINAL
 VEGATRIC

PILE NO.	TRIMMED LEVEL
66-68, 97-99	9.200
120-121	9.375
106-110, 115-119, 122-124	9.540
100-103	9.575
52-54	9.800
69-72, 111-112	9.875
55-61	9.950
77-96	10.075
62-65	10.100
75-76, 106-107, 113-114	10.225
73-74, 104-105	10.550
51	10.850



NOTES

1. All piles to be a minimum of 1m. from face of existing buildings.
2. See L.OI.
3. For general notes see drg. M2

JERSEY GENERAL HOSPITAL
 PHASE 1A ENGINEERS DEPT.
 PILE LAYOUT
 SHEET 2 OF 2.

OVE ARUP & PARTNERS

8588

L02

SEPT 78

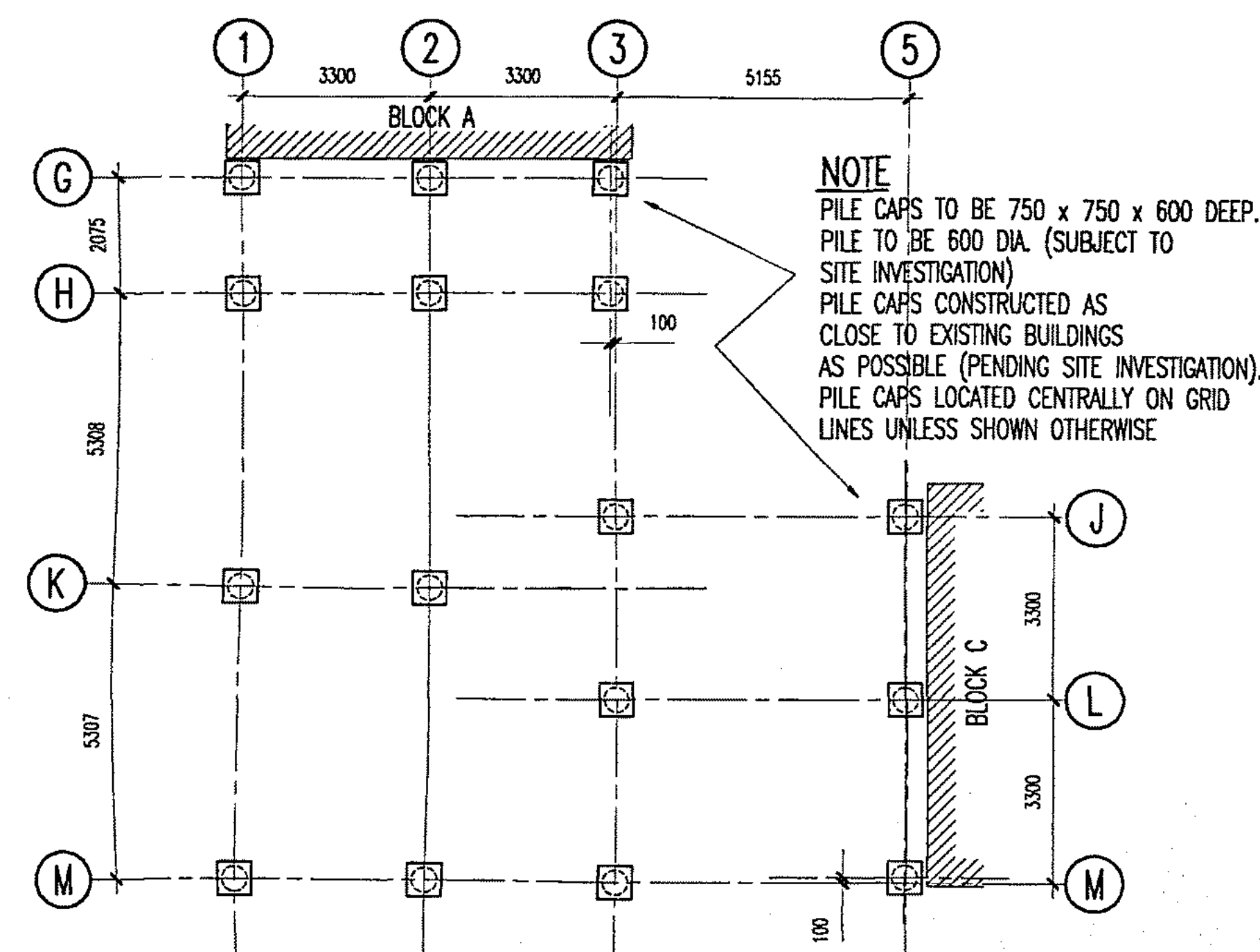
WORKING DRAWING

Appendix E-2

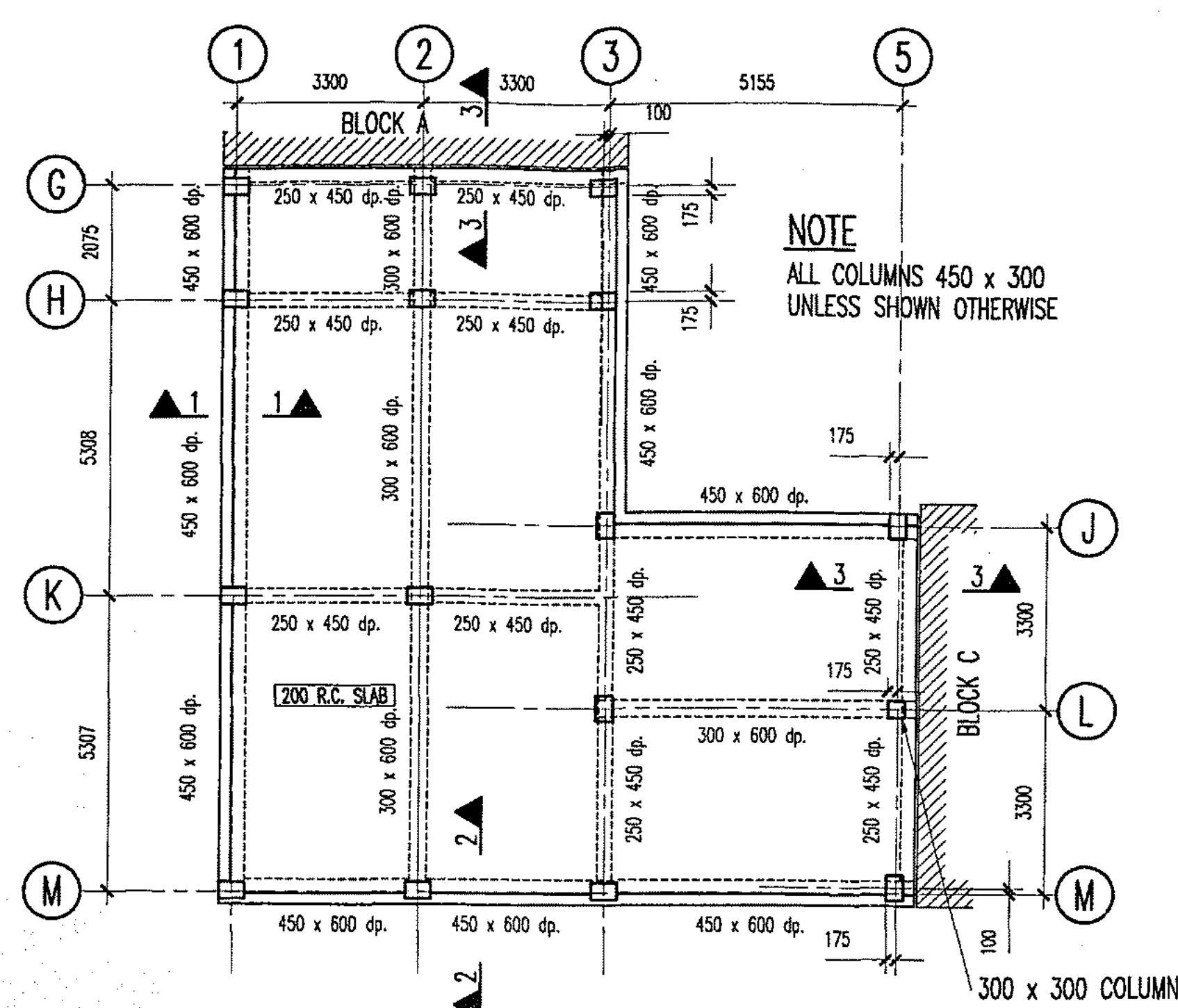
Available Construction Drawings – Westaway Court

- Ove Arup and Partners, Westaway Court, Proposed Link (Block D) Sheet 1, (February 1993)
- Layout Plans of Pile setting out, Pile Caps and Ground Beams, Medical Staff Accommodation Block C Phase 2, Muir Wilson Associates, (March 1974)

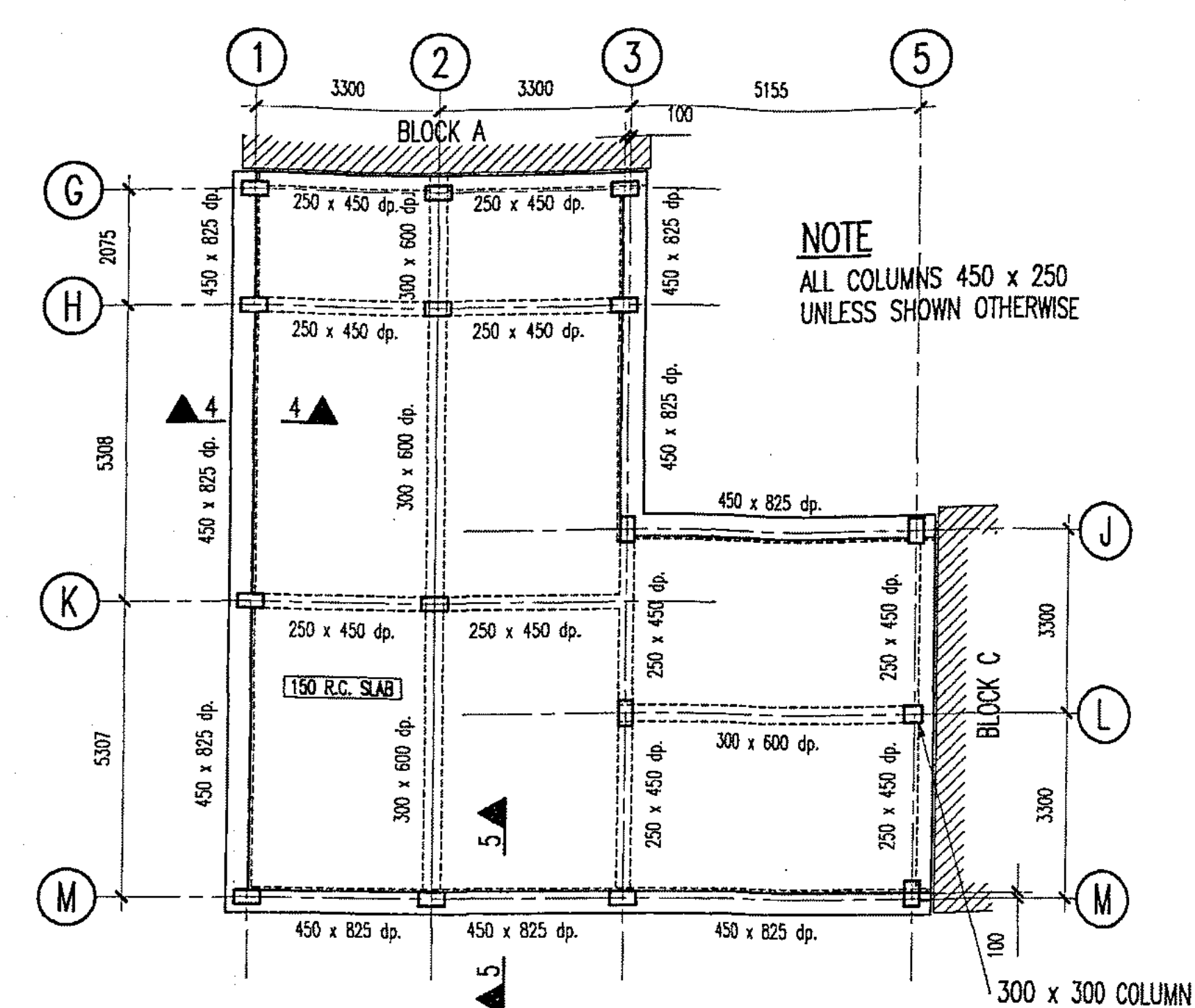
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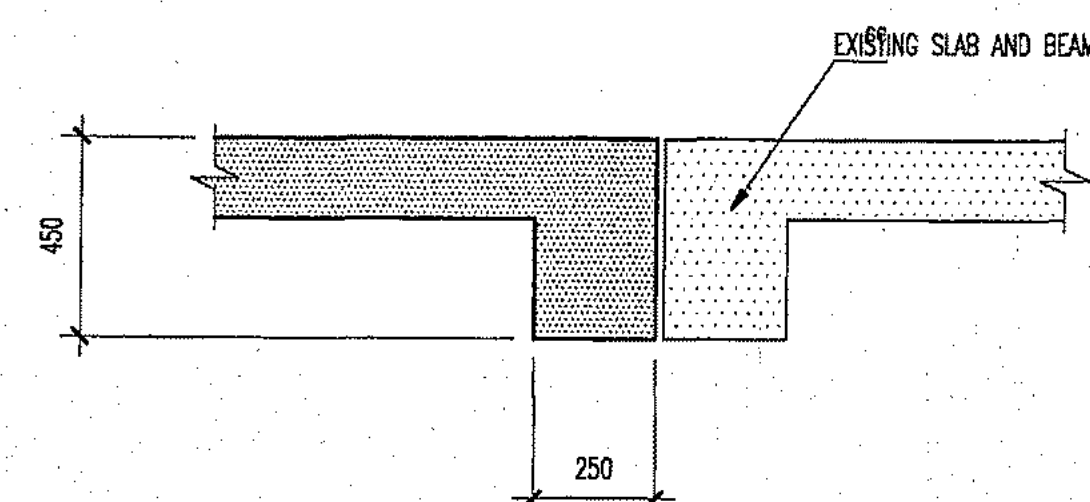
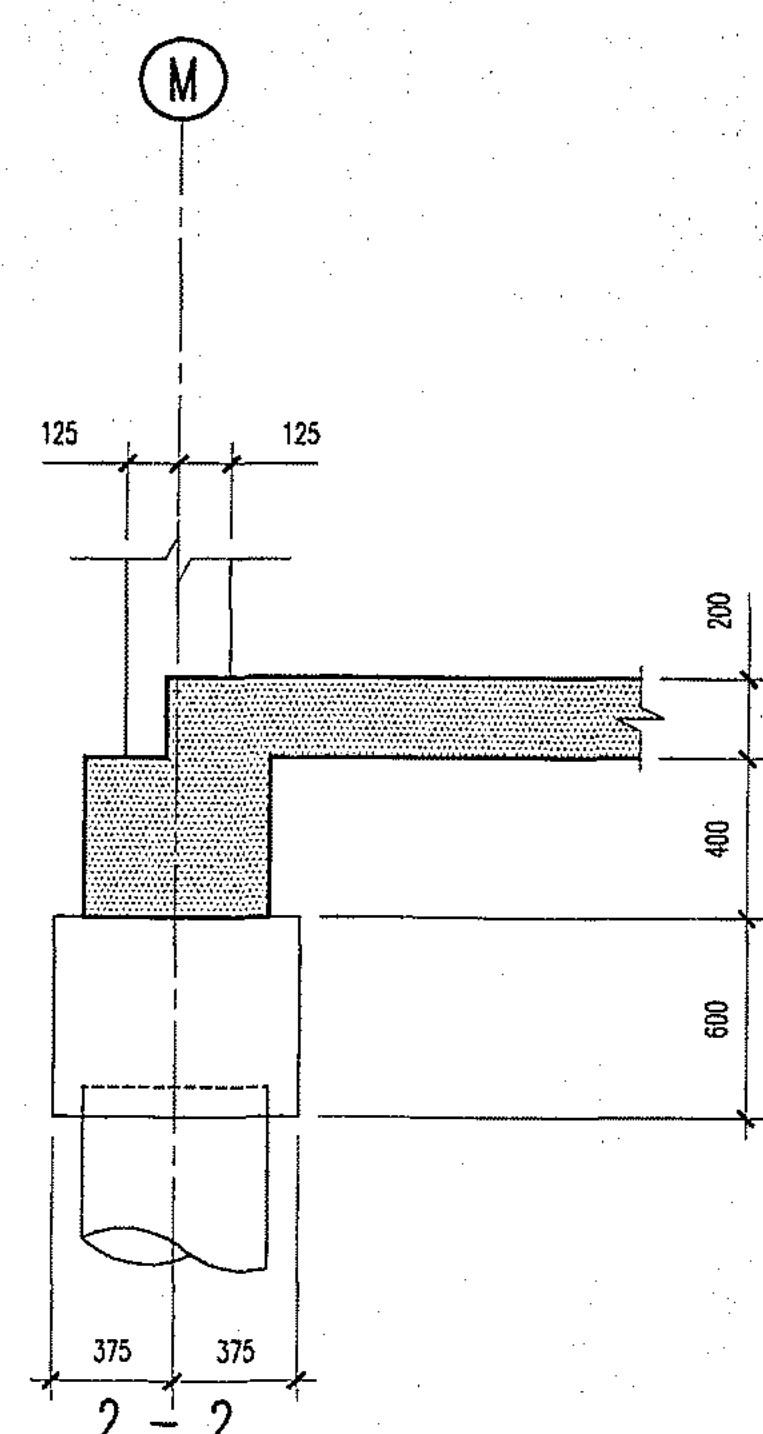
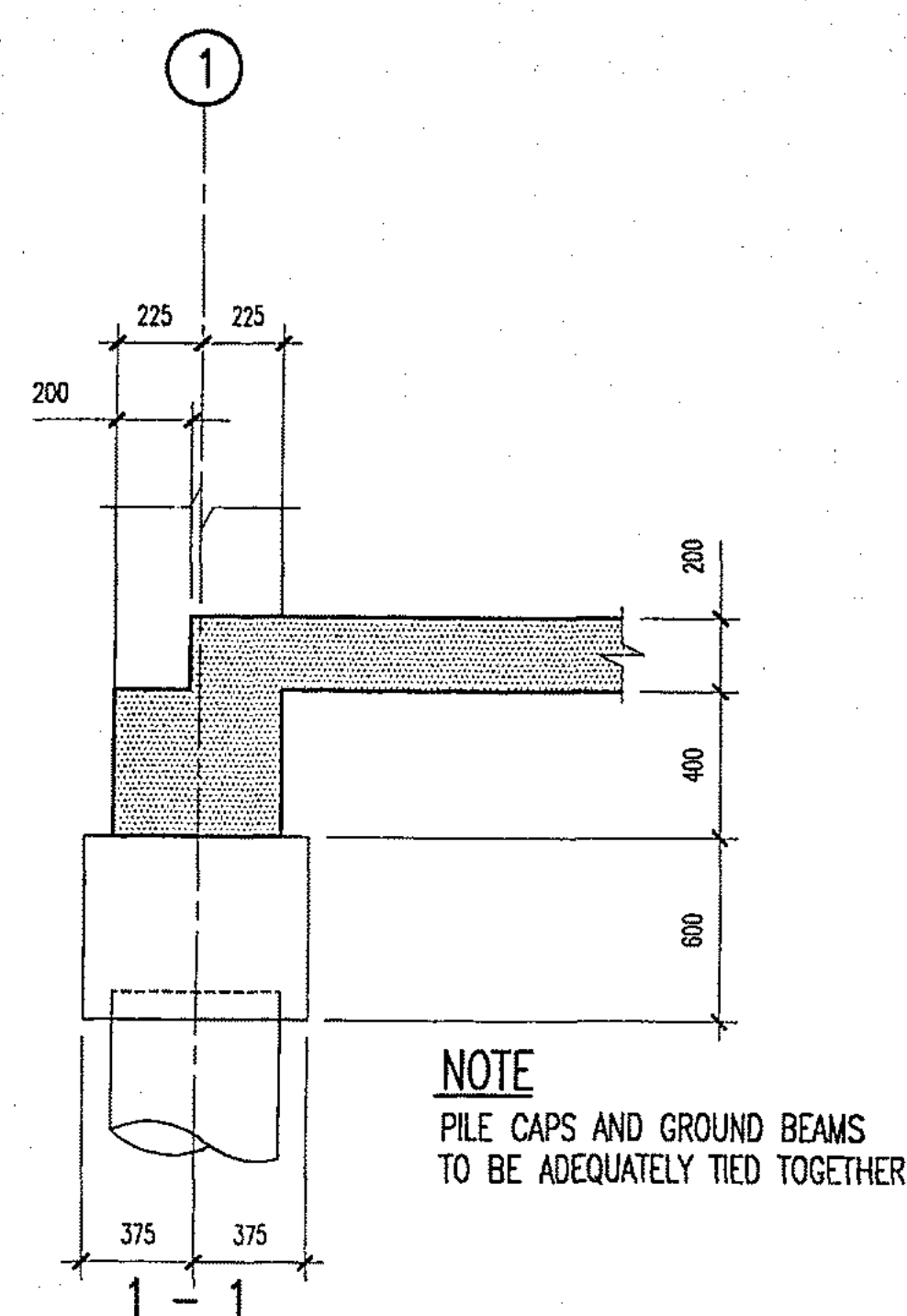
PLAN - PILE LAYOUT



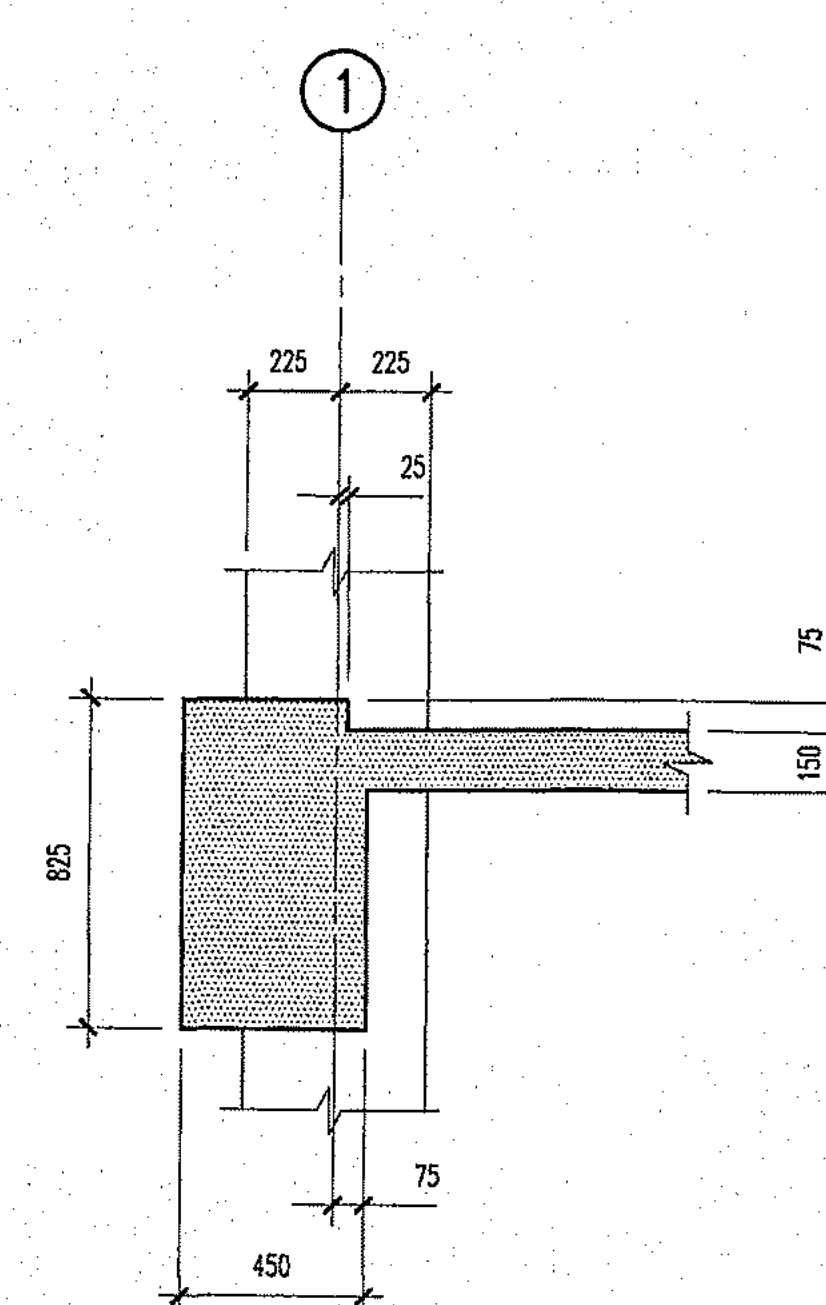
PLAN - GROUND FLOOR



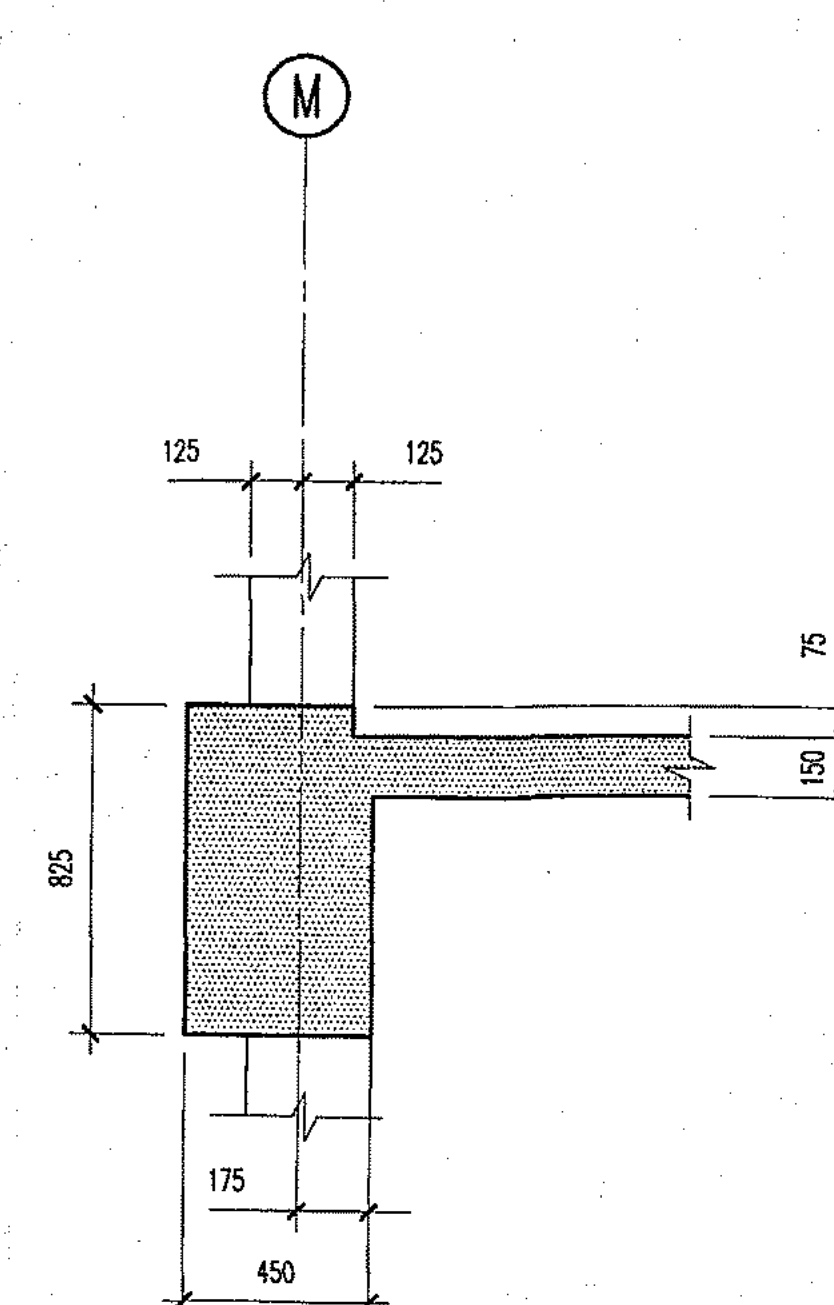
PLAN - 1st. FLOOR



3-3



4-4



5-5

CONCRETE NOTES.

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH BS 8110 AND THE GENERAL CONCRETE SPECIFICATION.
2. ALL MATERIAL USED IN PRODUCTION OF CONCRETE SHALL COMPLY WITH THE RELEVANT BRITISH STANDARDS. WATER SHALL BE CLEAN AND FREE FROM HARMFUL MATTER. ALL SOURCES OF MATERIAL SHALL BE AGREED WITH THE ENGINEER PRIOR TO START ON SITE.
3. ALL PROPOSED MIX PROPORTIONS TO BE SUBMITTED TO THE ENGINEER FOR APPROVAL PRIOR TO CONCRETE WORK COMMENCING.
4. THE USE OF ADMIXTURES IN CONCRETE IS NOT ALLOWED WITHOUT PRIOR APPROVAL BY THE ENGINEER.

5. TESTING PROCEDURES FOR THE WORKABILITY AND QUALITY CONTROL IN ACCORDANCE WITH THE SPECIFICATION.
6. METHOD OF CURING CONCRETE TO BE AGREED WITH THE ENGINEER PRIOR TO CONCRETE WORK COMMENCING.
7. REINFORCEMENT TO BE IN ACCORDANCE WITH BS 4449 FOR MILD STEEL, BS 4449 OR 4461 FOR HIGH YIELD STEEL AND BS 4483 FOR MESH.
8. STRIKING OF FORMWORK AND CONCRETE CURING REFER TO THE SPECIFICATION.
9. OPENINGS SHOWN ON ENGINEERS DRAWINGS TO BE CHECKED WITH RELEVANT SERVICES DRAWINGS PRIOR TO CONSTRUCTION.
10. LOCATIONS FOR BRICKWORK - TIE CAST-IN INSERTS. REFER TO ARCHITECTS BRICKWORK DETAILS AND STRUCTURAL DRAWINGS.
11. TOLERANCES ARE TO BE IN ACCORDANCE WITH THE SPECIFICATIONS.

WESTAWAY COURT
ST. HELIER, JERSEY

PROPOSED LINK
(BLOCK D)
SHEET 1

ARUP Ove Arup & Partners
Consulting Engineers, Architects, Planners, Surveyors,
Contractors, Project Managers, Environmental Engineers,
Civil, CEM, E&P, Tel 0222-475727

Scale 1:100, 1:20
Dra. MC Date 2/93
Job No. 40231/07
Drawing No. 01

40134/14/ACAD/40231SK1

40531/101

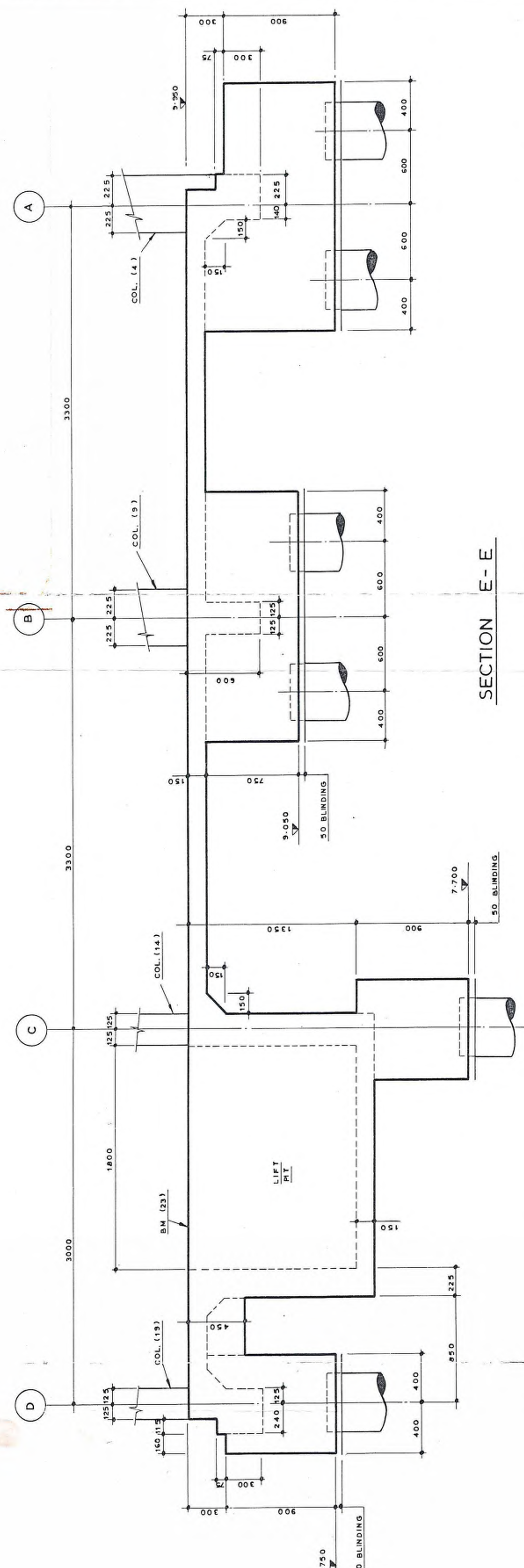
PILE REINFORCEMENT

MAIN CONTRACTOR TO PROVIDE 75mm ABOVE UNDERSIDE OF PILE CAP

INITIAL PILE CUT OFF LEVEL

UNDERSIDE OF PILE CAP

450



SECTION E-E



1. THIS DRG. TO BE READ IN CONJUNCTION WITH DRG. NOS. 7283 / 1 & 3.
2. FINISHED GROUND LEVEL TAKEN AS DATUM +10.000
3. SETTING OUT MAIN GRID LINES AND PILE POSITIONS TO BE CARRIED OUT BY GENERAL CONTRACTOR AND APPROVED BY ARCHITECT PRIOR TO COMMENCEMENT OF PILING OPERATIONS.
4. PILES TO BE BORED IN SITU CONCRETE WITH WORKING LOAD OF 55 TONNES
5. CONCRETE CUBES TO BE MADE AND TESTED AS SPECIFIED AND DIRECTED BY THE ENGINEER.
6. ALL CONCRETE EXCEPT BLINDING TO BE MIX REF. 'D', VIBRATED THROUGHOUT
7. BLINDING CONCRETE TO BE MIX REF. 'A'.
8. REINFORCEMENT IN GROUND BEAMS IS SHOWN ON BENDING SCHEDULE NOS 6 - 18 INCL.

SECTION G - G

NOTES 1. PILE CAPS ARE GENERALLY 900 THICK
2. SEE DRG 7283 / 3 FOR GROUND FLOOR PLAN
SHOWING COLUMN DIMENSIONS AND SETTING OUT

[illegible]

Appendix F-1

Geotechnical Desk Study - Part 5

Appendix F

Ground Risk Register (GRR)

F1 Ground Risk Register (GRR)

Ground Risk Register

ARUP

Register reference

Project	Jersey Future Hospitals & Westaway Court	Job number	237035-00
Package/Topic	Design stage		

Remember: Avoid – Reduce – Control and Communicate relevant information to others

Date (+ initials)	Area/Location of Risk Exposure	Description of Hazard and Risk Exposure	Mitigation of Risk (Potential or Achieved)	A	R	C	Further Action	By	Status
									Active / Closed
15/09/16 (JC)	Jersey General Hospital	Anecdotal evidence of running sand under site area. Possibility of encountering more running sand and destabilising existing buildings.	Undertake ground investigation to determine extent and thickness of blown sand deposits and therefore potential for running sand.				Ground Investigation		Active
27/09/16 (JC)	Jersey General Hospital & Westaway Court	Sub-surface obstructions, such as existing piles, encountered during construction.	Use existing pile layout drawings to inform of current pile locations and where they will be encountered.						Active
27/09/16 (JC)	Jersey General Hospital	Damage caused to existing surface water culvert running parallel to Peter Crill house.	Undertake ground investigation to determine depth and location of culvert.				Ground Investigation		Active
27/09/16 (JC)	Westaway Court	Possible sub surface obstructions from previous building on site as indicated from historical mapping.	Undertake ground investigation to understand the extent and type of possible foundations				Ground Investigation		Active

Ground Risk Register

ARUP

Register reference

Project	Jersey Future Hospitals & Westaway Court	Job number	237035-00
Package/Topic	Design stage		

Remember: Avoid – Reduce – Control and Communicate relevant information to others

Date (+ initials)	Area/Location of Risk Exposure	Description of Hazard and Risk Exposure	Mitigation of Risk (Potential or Achieved)	A	R	C	Further Action	By	Status
									Active / Closed
			associated with historical building.						
27/09/16 (JC)	Jersey General Hospital & Westaway Court	Arisings classed as hazardous, suitable for hazardous waste disposal only.	Undertake ground investigation to confirm nature and classification of arisings through chemical testing.				Ground Investigation		Active
27/09/16 (JC)	Jersey General Hospital	Possible interaction with groundwater during basement development.	Undertake ground investigation and in combination with previous GI records determine groundwater level. Look at appropriate design options to mitigate against ground water incursion.				Ground Investigation		Active

Ground Risk Register

ARUP

Register reference

Project	Jersey Future Hospitals & Westaway Court	Job number	237035-00
Package/Topic	Design stage		

Remember: Avoid – Reduce – Control and Communicate relevant information to others

Date (+ initials)	Area/Location of Risk Exposure	Description of Hazard and Risk Exposure	Mitigation of Risk (Potential or Achieved)	A	R	C	Further Action	By	Status
									Active / Closed
28/09/16 (JC)	Jersey General Hospital	Unknown extent of underground structure, identified in site photo 23 in Appendix B-1 .	Further site investigation to determine the extent and nature of the structure shown on photo 23 in Appendix B-1 .						Active
28/09/16 (JC)	Jersey General Hospital	Gas storage identified in site photos 6 and 7 in Appendix B-1 could pose a risk to future ground investigation.	Gas bottles must be removed before any ground investigation is undertaken within the vicinity.				Temporary removal of gas storage		Active
30/09/16 (JC)	Jersey General Hospital & Westaway Court	Potential for artesian groundwater conditions.	Further investigation required for scope of the ground investigation works.				Ground Investigation		Active
30/09/16 (JC)	Jersey General Hospital	Possibility that the ground underneath site is impacted by saline intrusion.	Ground investigation is recommended to install tidal inducer monitoring to determine saline intrusion.				Ground Investigation		Active

Ground Risk Register

ARUP

Register reference

Project	Jersey Future Hospitals & Westaway Court	Job number	237035-00
Package/Topic	Design stage		

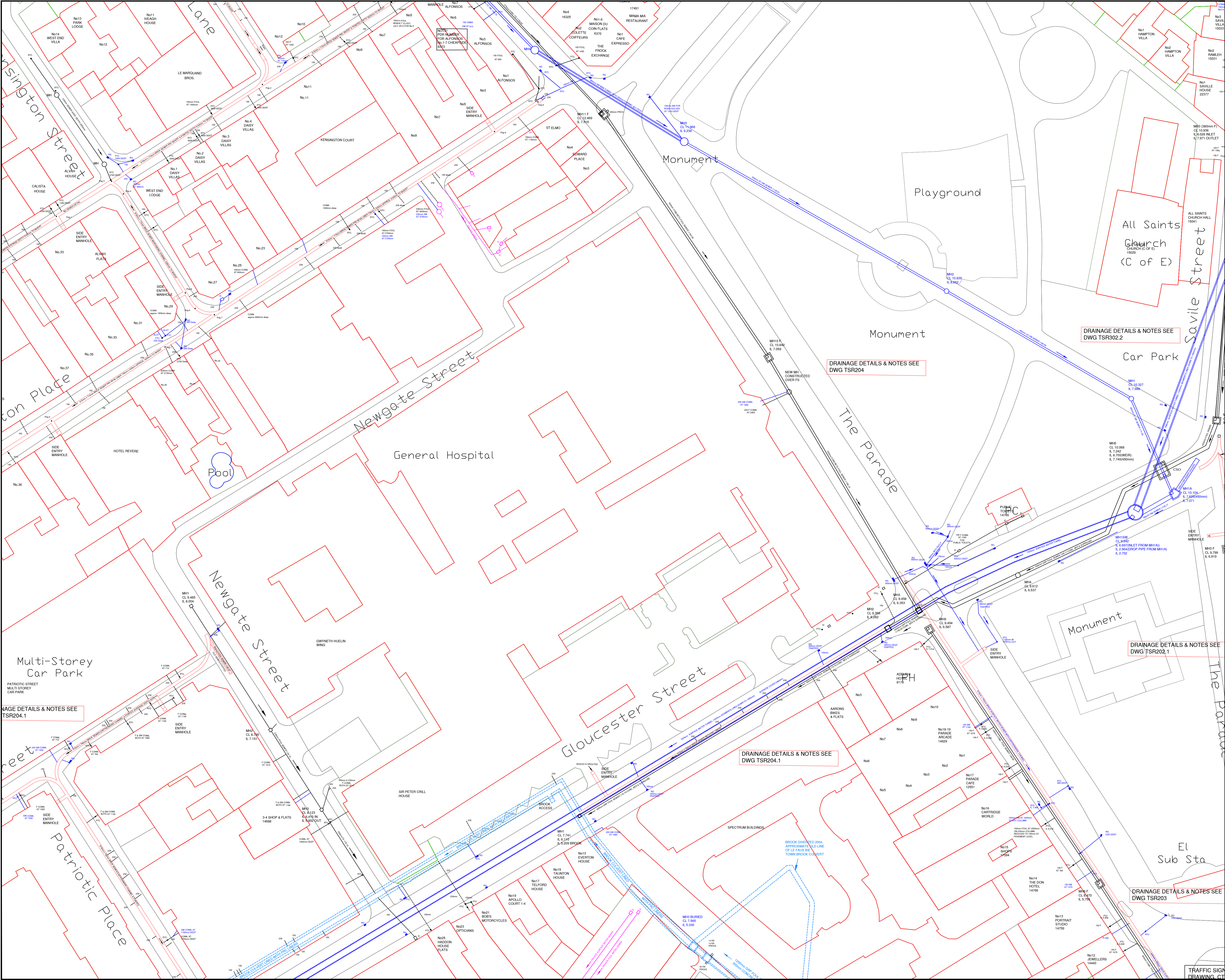
Remember: Avoid – Reduce – Control and Communicate relevant information to others

Date (+ initials)	Area/Location of Risk Exposure	Description of Hazard and Risk Exposure	Mitigation of Risk (Potential or Achieved)	A	R	C	Further Action	By	Status
									Active / Closed
30/09/16 (JC)	Jersey General Hospital	Risk of buildings outside of building footprint will required demolition to accommodate the new proposed basement and building.	Careful consideration of demolition extent in particular between Blocks E and F and Block G and the existing hotel buildings.						Active
<u>28/10/16</u> <u>(JC)</u>	<u>Jersey General</u> <u>Hospital</u>	<u>'Le Faux Bie' stormwater</u> <u>culvert, parallel to</u> <u>Gloucester Street, may</u> <u>impact on foundation</u> <u>design requirements and</u> <u>temporary works</u>	<u>Accurately locate</u> <u>and position</u> <u>stormwater culvert.</u> <u>Accommodation of</u> <u>appropriate</u> <u>foundation design</u> <u>consideration at</u> <u>early stage.</u>				<u>Review of available</u> <u>culvert drawings and</u> <u>surveys (when complete)</u> <u>in relation to foundation</u> <u>design consideration.</u>		<u>Active</u>

Appendix G

States of Jersey Sub-Surface Drainage Network

G1 States of Jersey Drawing



DWG NO. -----

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INFORMATION HAS BEEN PROVIDED FROM DATA CURRENTLY AVAILABLE AND IS THEREFORE NOT NECESSARILY COMPREHENSIVE.

ALL DEVELOPMENTS MUST BE IN COMPLIANCE WITH DRAINAGE (JERSEY) LAW, 2005.

DRAINAGE (JERSEY) LAW, 2005 ARTICLE 17(1)(b) STIPULATES THAT NO NEW CABLE, CONDUIT MAIN OR PIPE SHALL BE CONSTRUCTED WITHIN ONE METRE OF A PUBLIC SEWER OR OUTFALL.

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States of Jersey

TRANSPORT AND TECHNICAL SERVICES DEPARTMENT

**P.O. BOX 412
STATES OFFICES
SOUTH HILL
ST HELIER
JERSEY
JE4 8UY**

**TEL: 01534 445509
FAX: 01534 448570**

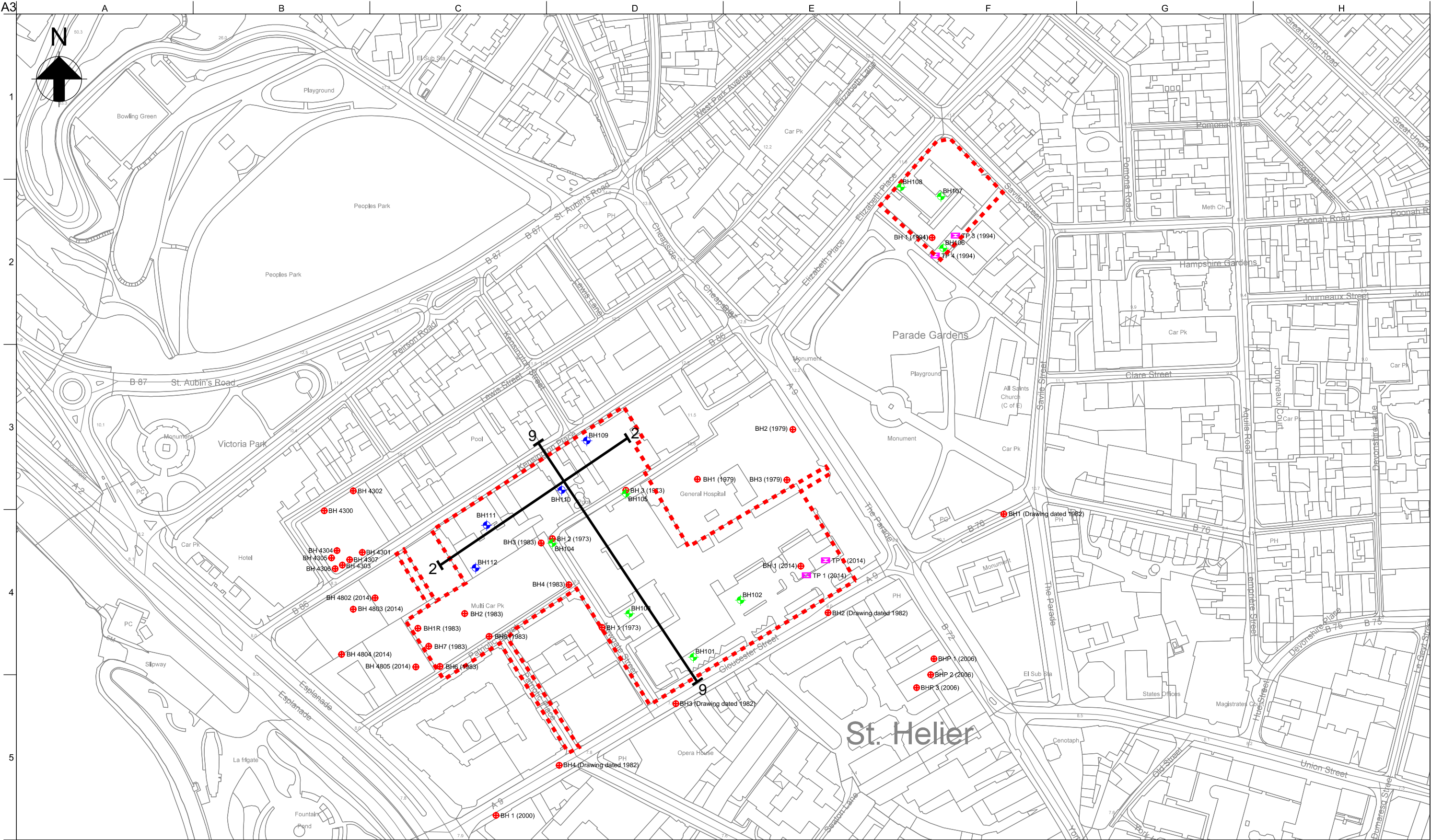
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JGH - EXISTING SITE GLOUCESTER ST & THE PARADE St Helier	
DRAWN BY TTS RECORDS	DATE 11/02/2015
SCALE 1:250	SHEET SIZE A1
DWG NO. -----	
SHEET NO. 1 of 1	REVISION RECORD

FILE PATH: I:\RECORDS\DRAWINGS\RECORD\DWIsland Sewers\Town.dwg

Appendix H

Geological Section Drawings

H1



- Legend**
- Site Boundary
 - Historic Borehole location
 - Historic Trial pit location

- Indicative proposed locations of Phase 1 GI
- Indicative proposed locations of Phase 2 GI

Client
States of Jersey

Job Title
Jersey Hospital

Scale at A3
1:2000

Discipline
General

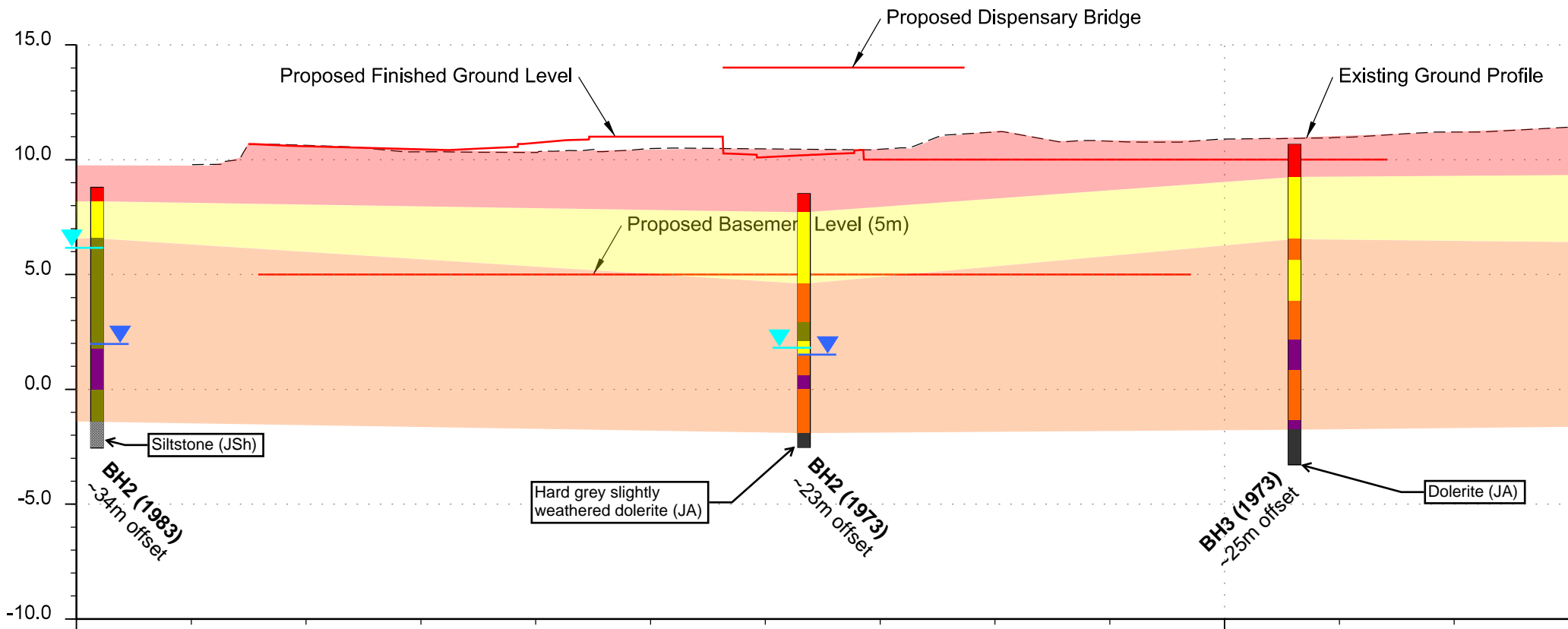
ARUP

4 Pierhead St, Capital Waterside
Cardiff, CF10 4QP
T +44(0)29 20473727 F +44(0)29 20472277
www.arup.com

Appendix H
Ground Investigation locations
and Section lines

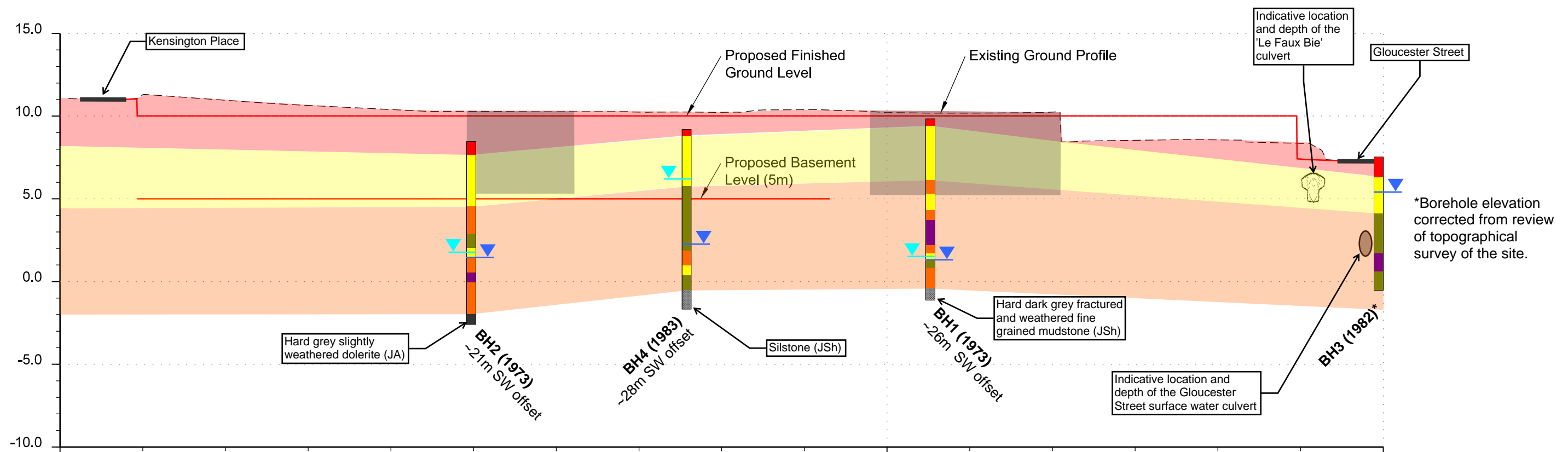
Drawing Status
For Information
Job No
237035-00

Issue



Section 2 - 2
1:500H 1:250V @ A4

- Key**
- Made Ground
 - Blown Sand
 - Silt
 - Clay
 - Gravel
 - Jersey Shale Formation (JSh)
 - St John's Andesite Formation (JA)



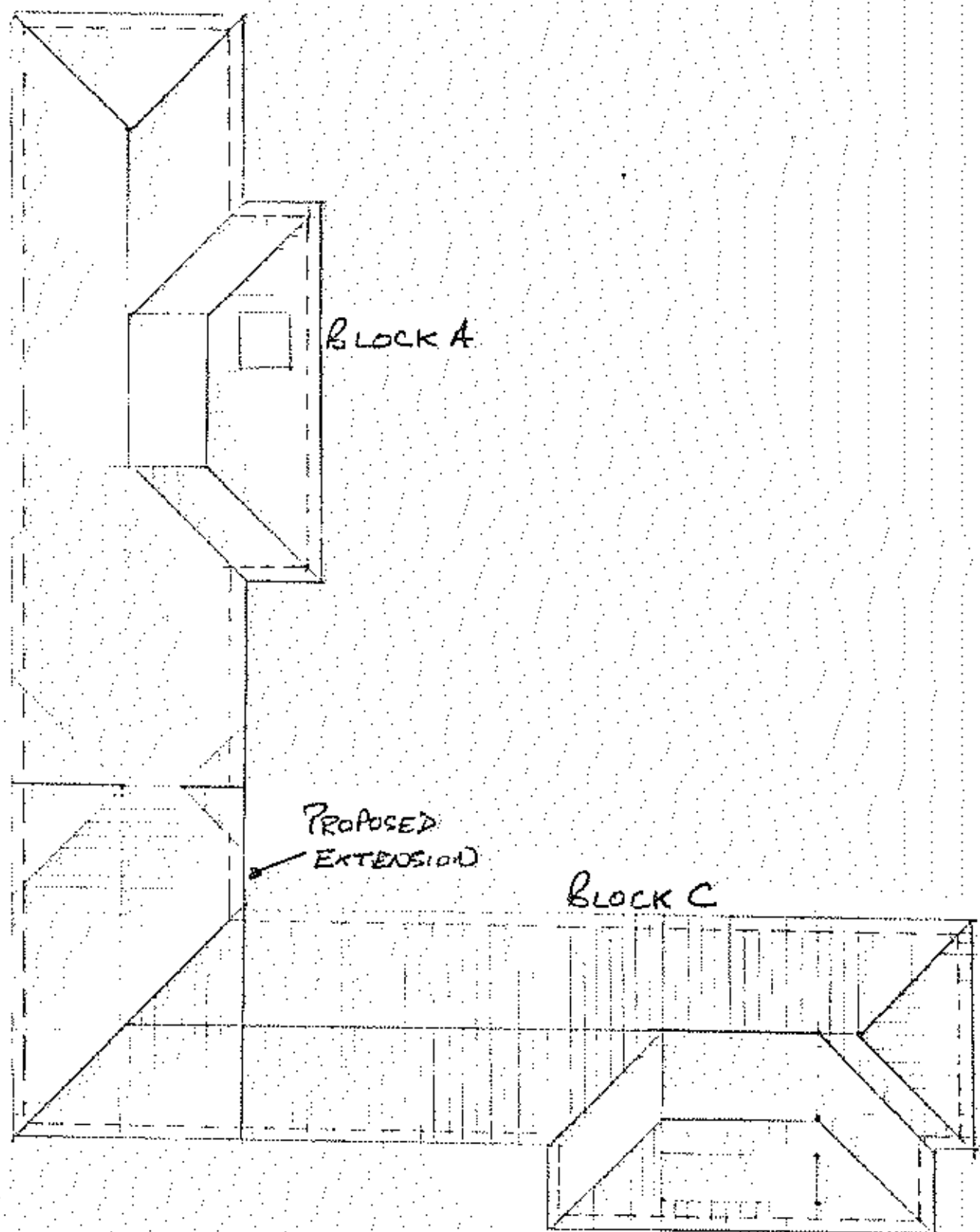
Key

- Made Ground
- Blown Sand
- Silt
- Clay
- Gravel
- Jersey Shale Formation (JSh)
- St John's Andesite Formation (JA)

Appendix I

Extracts of Arup Calculations &
Sketches - Westaway Court

I1 Extracts of Arup Calculations & Sketches – Westaway



WESTAWAY COURT
40231/07
OVERALL PLAN OF
PROPOSED PITCHED
ROOFSCHEME SKH

40221/07

Member/Location

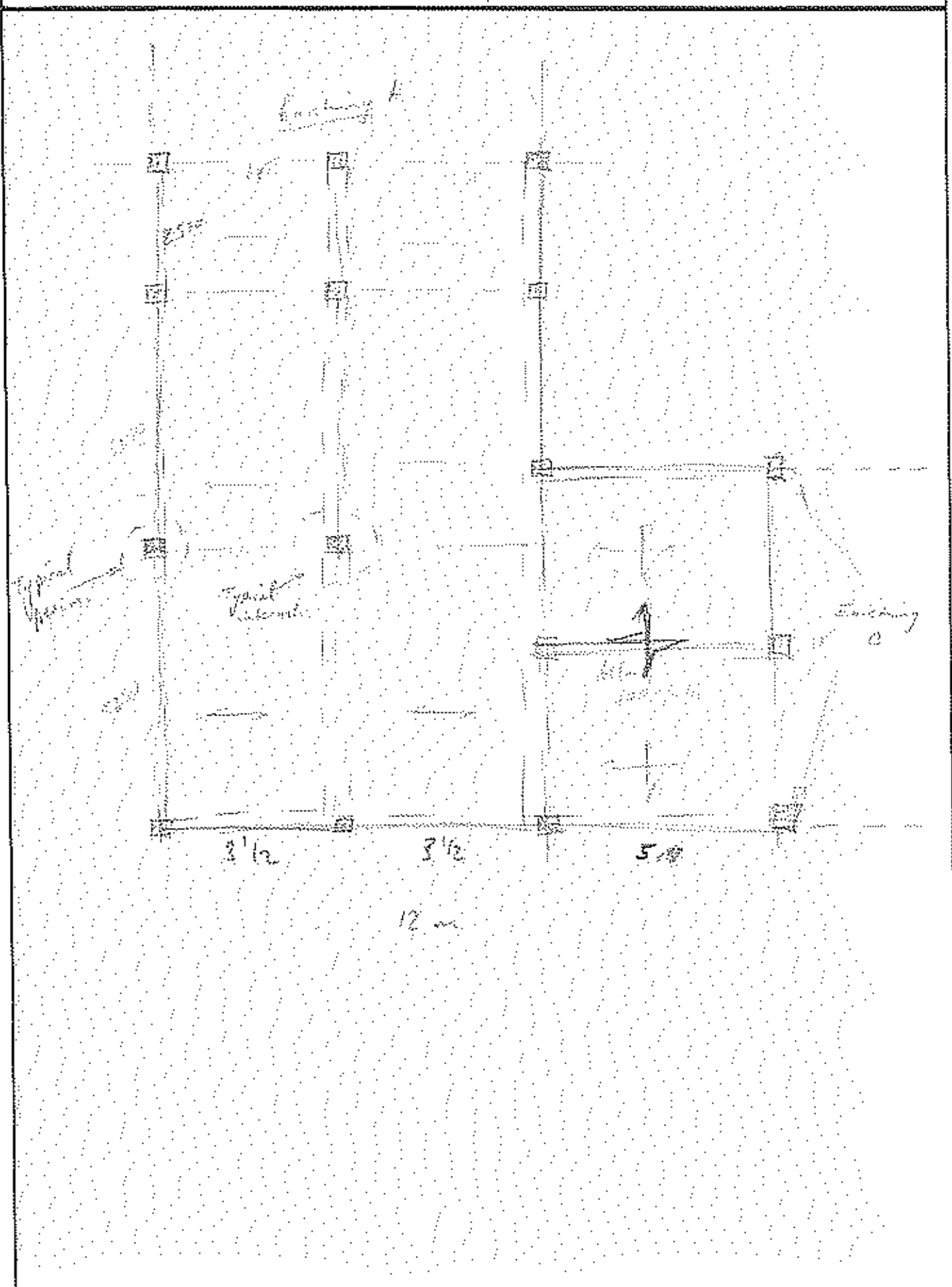
Job Title

Org. Ref.

Made by

Date

Chd.



40271/07

Made by CH2

Date 17/10/31

Westonday Foundations.

Contacted Bill Grose (London Geotech) re. Fund² for Jersey General Hospital. Job No. 8688.
His recollections were:-

CFA piles (450 or 600 ϕ) were used. Bored thro' superficial deposits to bedrock. Patented Bennett system was used, known as prepacking method. (Not called CFA then). 12 to 14 m. superfcials (water bearing). Concerned about end-bearing of piles. Worried that may be weaker layer underneath. Capacities limited to 500 or 700 kN.

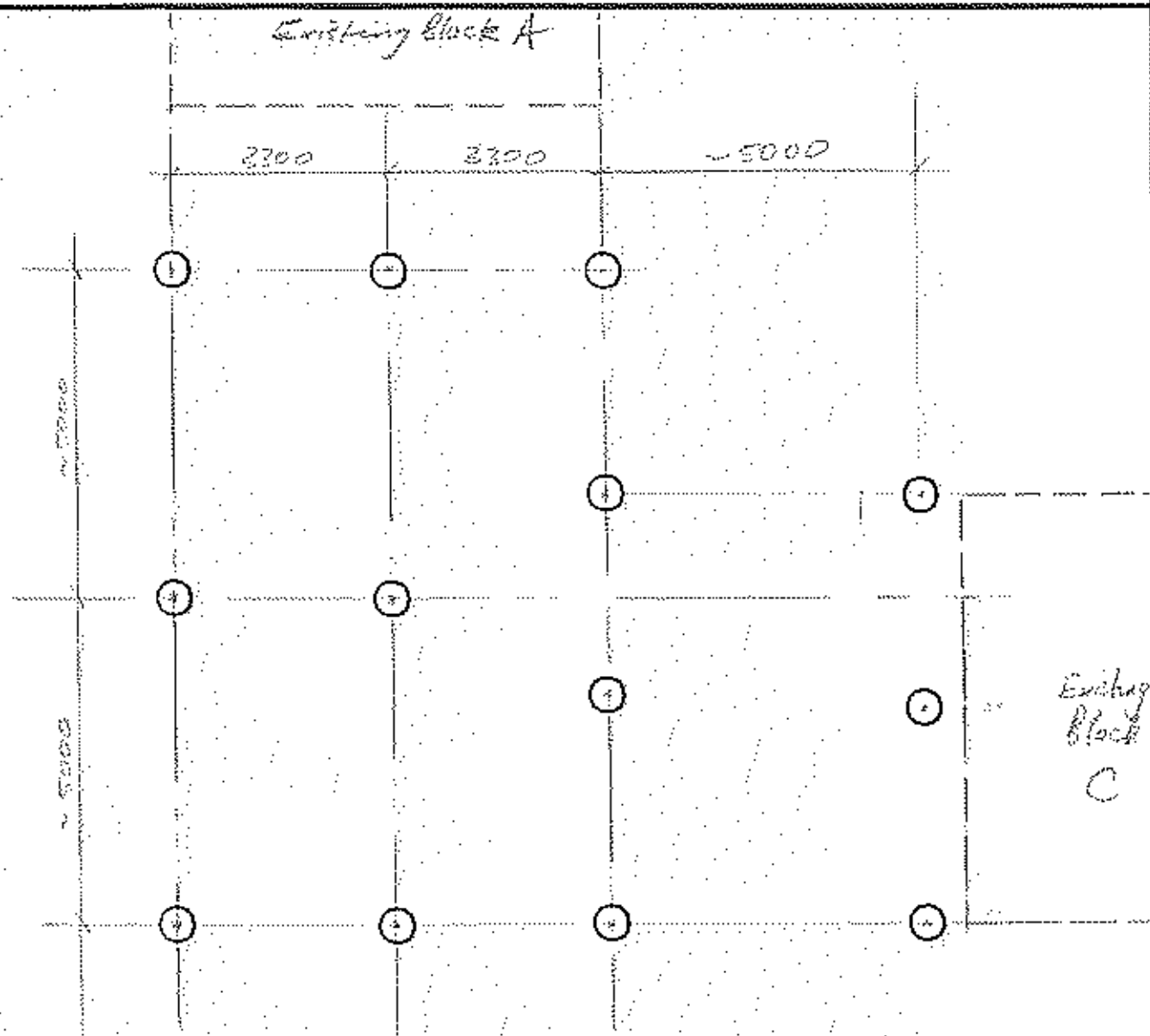
Very little skin friction - test pile pulled out about 6 anchor piles.

ARUP

Ove Arup & Partners
Calculation Sheet

Job No.	Sheet No.	Rev.
40231/07		
Member/Location	Particulars of Pile Cap	
Org. Ref.	V	
Made by	Date	
CAAR	18/10/91 CH	

Job Title: Westbury CP.



Piles 600mm ϕ CFA. bored.

Depth taken as 15m based on information from nearby sites but subject to proposed site investigation.

40231/07

Member/Location

Pile caps, grd beam + slab.

Org. Ref.

Preliminary layout

Made by

CML

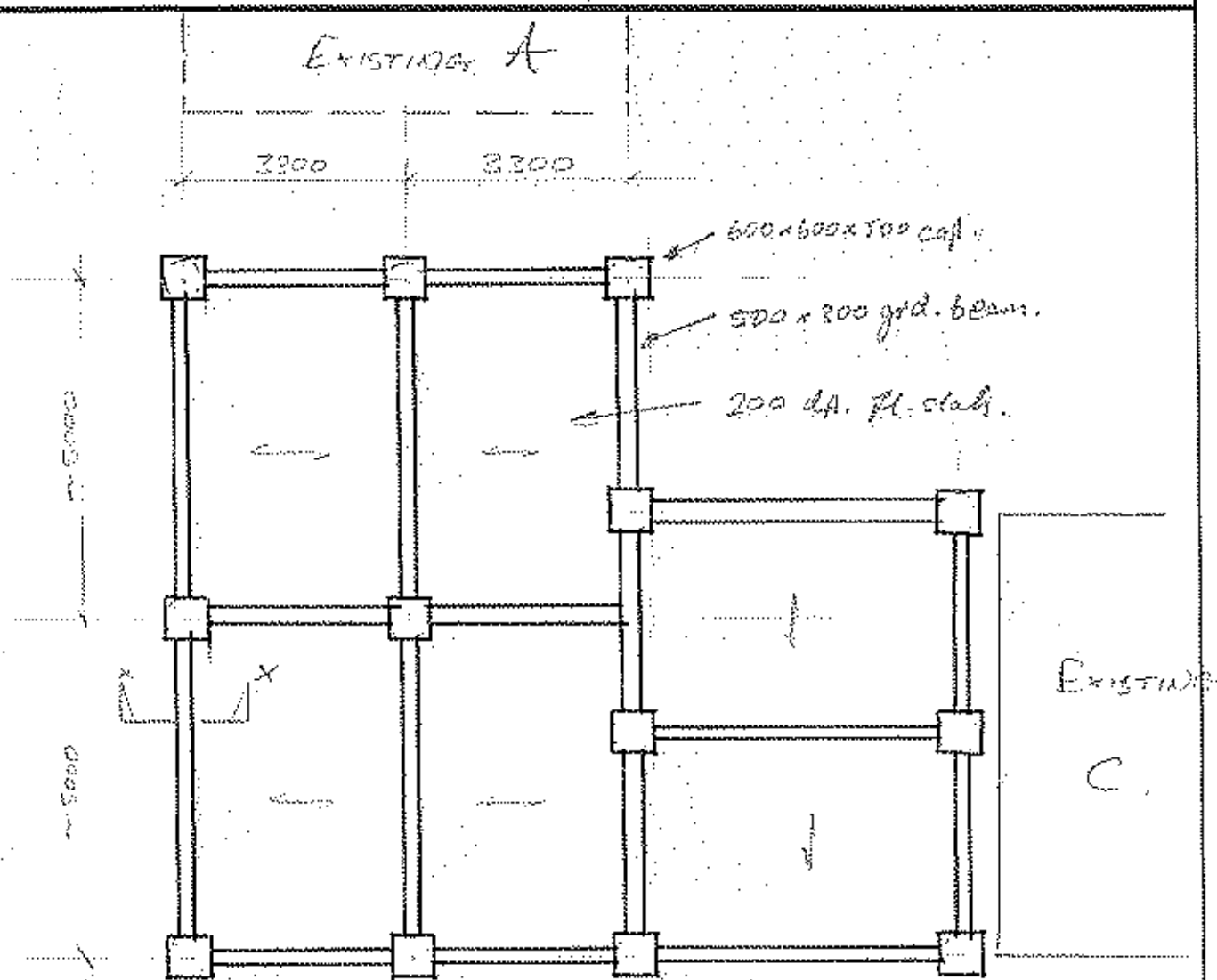
Date

18/10/91

Chd

Job Title

Woolfenden Cr.



Pile caps 600 mm square in plan, 500 mm deep.

All ground beams 500 deep, 300 wide.

Ground Floor slab (suspended) 200 deep.

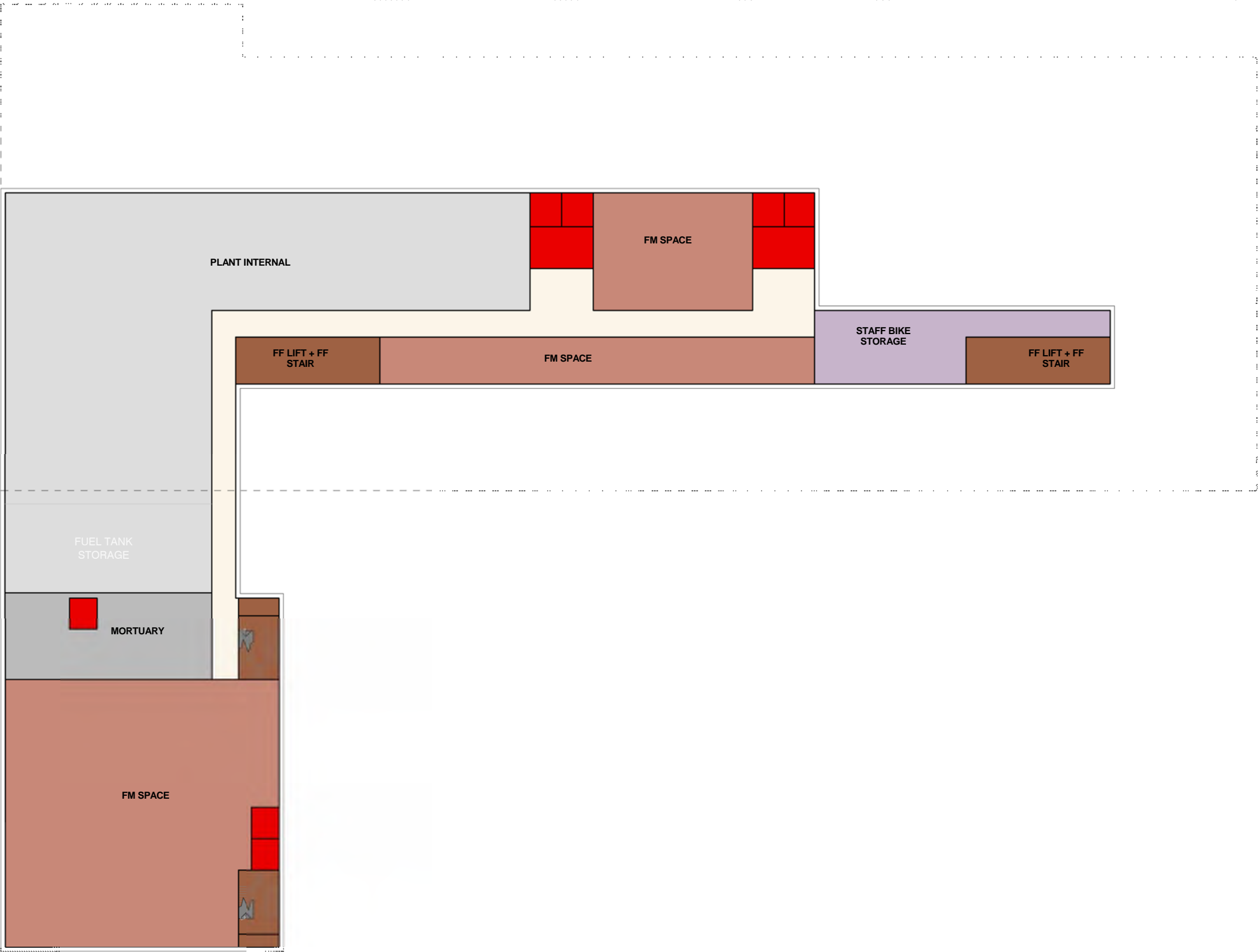


SECTION X-X

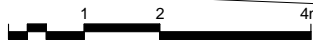
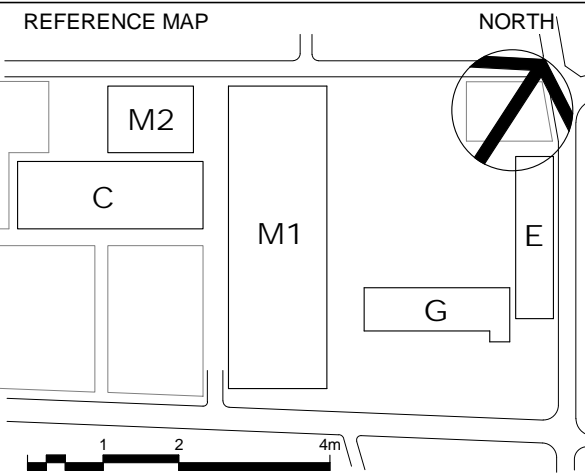
Appendix J

Indicative Project Proposals

**J1 Jersey General Hospital Indicative
Proposals**



GFA based on MJM (V1.9.3)



1:100

NOTES

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S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
REV	DESCRIPTION	DATE

CONSULTANT

HASSELL Limited CN 7545819
LEVEL 2 PARK HOUSE
GREYFRIARS ROAD
CARDIFF CF10 3AF UNITED KINGDOM
CARDIFF@HASSELLSTUDIO.COM
T +44 29 2072 9071

HASSELL

CLIENT

STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

B01 BASEMENT FLOOR -
DEPARTMENTS

STATUS

INFORMATION

SCALE @ A3	ORIGINATOR PROJECT #	REVIEWED	APPROVED
1 : 500	012145	JB	KM

PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV

JFH-HSL-M0-B1-DR-A-1800-S2.P33



GFA based on MJM (V1.9.3)

REFERENCE MAP

1:100

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S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P27	Drawing Updated	21/04/17
S2.P26	Functional Layout	07/04/17

CONSULTANT

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HASSELL

CLIENT

STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L00 GROUND FLOOR -
DEPARTMENTS

STATUS

INFORMATION

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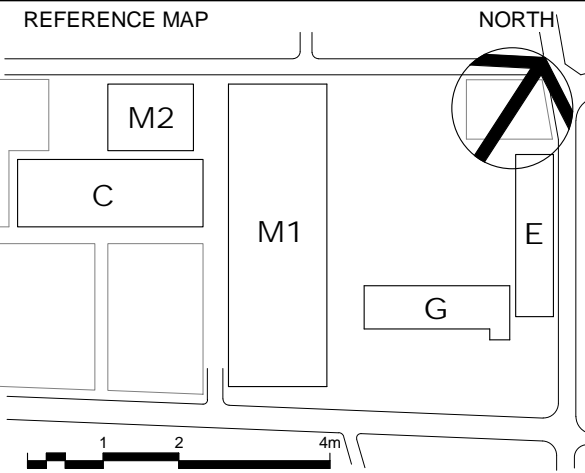
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GFA based on MJM (V1.9.3)



- 1:100
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S2.P32	Graphics Updated	16/05/17
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S2.P29	Drawing Updated	26/04/17
S2.P26	Functional Layout	07/04/17
REV	DESCRIPTION	DATE

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HASSELL

CLIENT

STATES OF JERSEY

PROJECT
JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L01 FIRST FLOOR - DEPARTMENTS

STATUS

INFORMATION

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PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV JFH-HSL-M0-01-DR-A-1802-S2.P33			



REFERENCE MAP

1:100

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S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P26	Functional Layout	07/04/17
REV	DESCRIPTION	DATE

CONSULTANT

HASSELL Limited CN 7545819
LEVEL 2 PARK HOUSE
GREYFRIARS ROAD
CARDIFF CF10 3AF UNITED KINGDOM
CARDIFF@HASSELLSTUDIO.COM
T +44 29 2072 9071

HASSELL

CLIENT

STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

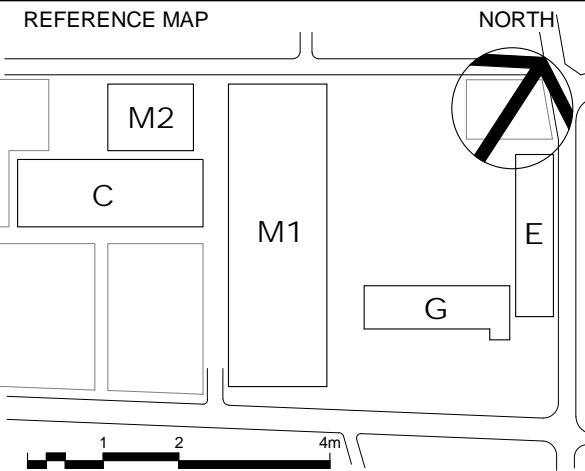
L02 SECOND FLOOR -
DEPARTMENTS

STATUS

INFORMATION

SCALE @ A3	ORIGINATOR PROJECT #	REVIEWED	APPROVED
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PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV			
JFH-HSL-M0-02-DR-A-1803-S2.P33			

Original Sheet Size A3 - 420 x 297mm



- 1:100
- NOTES
- DO NOT SCALE DRAWINGS. WRITTEN DIMENSIONS GOVERN.
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REV	DESCRIPTION	DATE
S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P26	Functional Layout	07/04/17

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STATES OF JERSEY

PROJECT
JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L03 THIRD FLOOR -
DEPARTMENTS

STATUS

INFORMATION

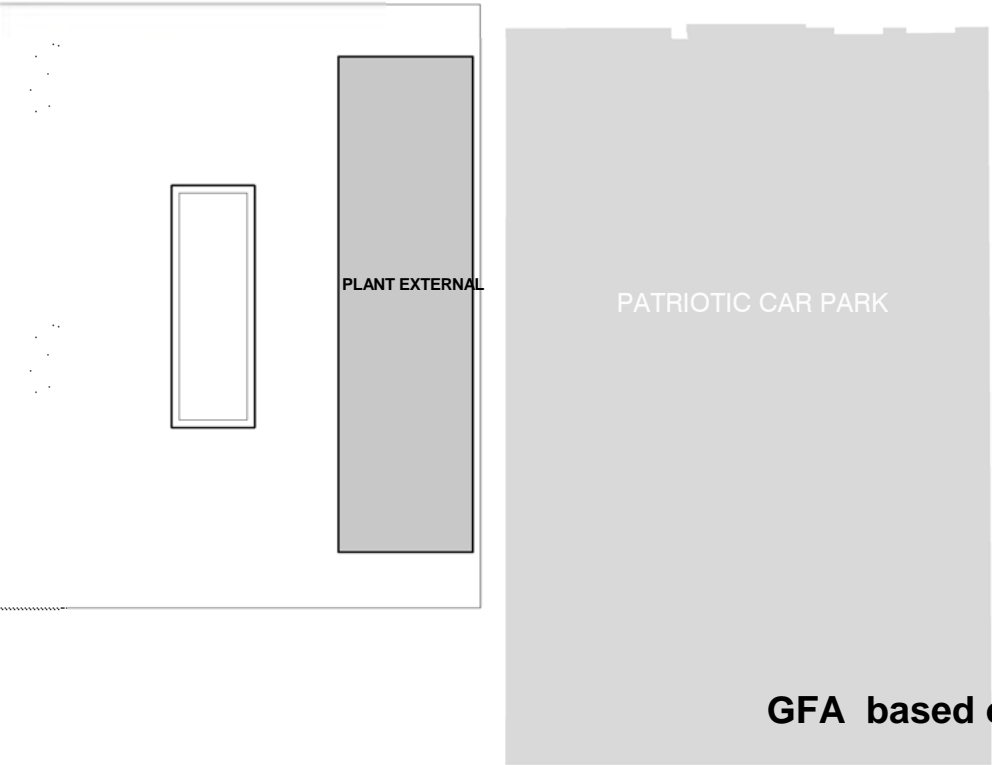
SCALE @ A3 1 : 500	ORIGINATOR PROJECT # 012145	REVIEWED JB	APPROVED KM
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PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV

JFH-HSL-M0-03-DR-A-1804-S2.P33

Original Sheet Size A3 - 420 x 297mm

05/06/2017 20:23:07
C:\Revit
Projects\JFH-HSL-M0-ZZ-M3-A-BUILD_PR_2_kiegm.rvt



GFA based on MJM (V1.9.3)

REFERENCE MAP

NORTH

1:100

NOTES

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S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P26	Functional Layout	07/04/17
REV	DESCRIPTION	DATE

CONSULTANT

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CARDIFF CF10 3AF UNITED KINGDOM
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T +44 29 2072 9071

HASSELL

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STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

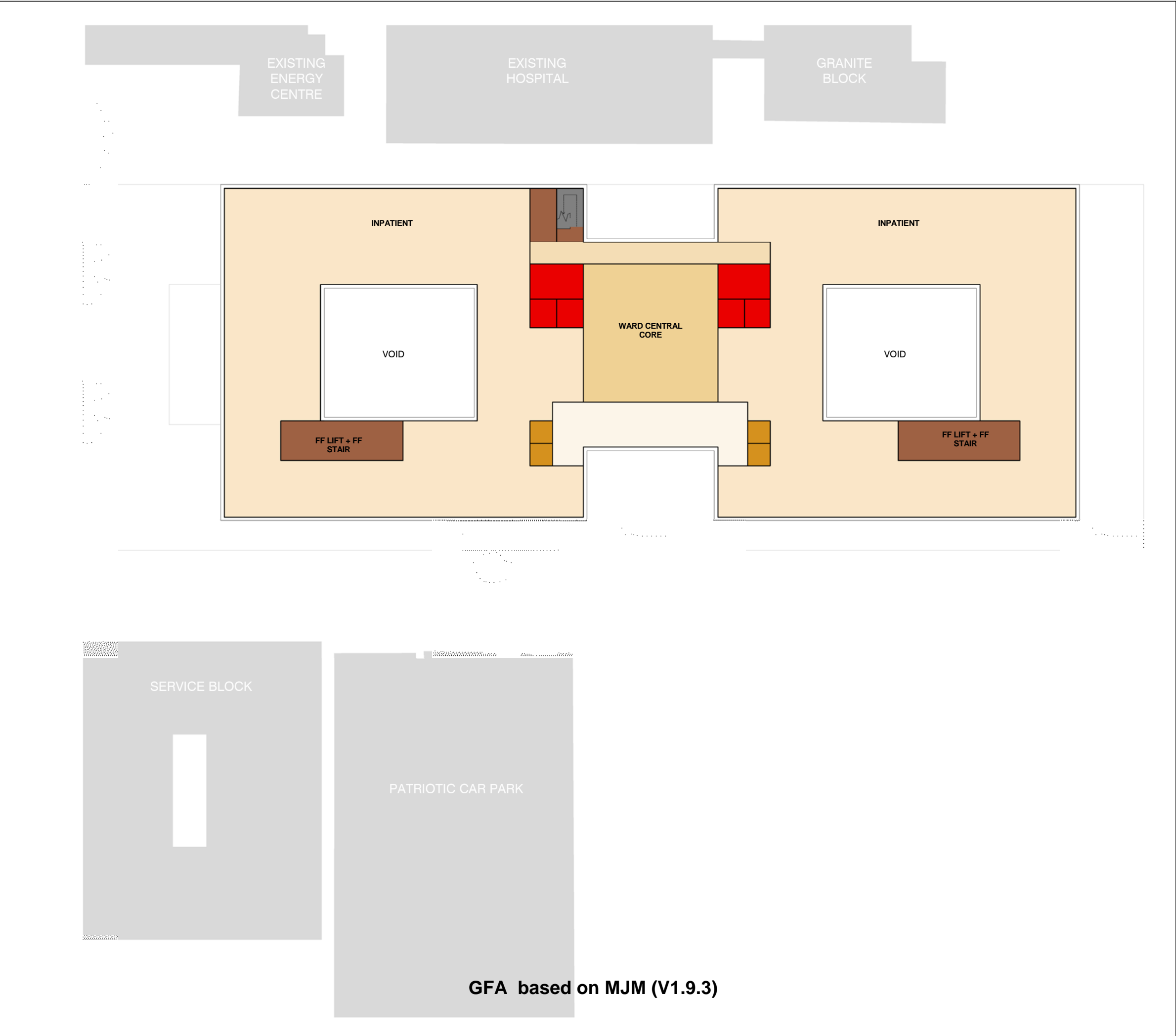
L04 FOURTH FLOOR -
DEPARTMENTS

STATUS

INFORMATION

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PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV			
JFH-HSL-M0-04-DR-A-1805-S2.P33			

Original Sheet Size A3 - 420 x 297mm



REFERENCE MAP

12m

1

2

4m

1:100

NOTES

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S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P26	Functional Layout	07/04/17
REV	DESCRIPTION	DATE

CONSULTANT

HASSELL Limited CN 7545819
LEVEL 2 PARK HOUSE
GREYFRIARS ROAD
CARDIFF CF10 3AF UNITED KINGDOM
CARDIFF@HASSELLSTUDIO.COM
T +44 29 2072 9071

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STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L05 FIFTH FLOOR -
DEPARTMENTS

STATUS

INFORMATION

SCALE @ A3	ORIGINATOR PROJECT #	REVIEWED	APPROVED
1 : 500	012145	JB	KM

PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV

JFH-HSL-M0-05-DR-A-1806-S2.P33

Original Sheet Size A3 - 420 x 297mm

05/06/2017 20:23:16 C:\Revit Projects\JFH-HSL-M0-ZZ-M3-A-BUILD_PR_2_kiegm.rvt



GFA based on MJM (V1.9.3)

REFERENCE MAP

1:100

NOTES

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S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P27	Drawing Updated	21/04/17
REV	DESCRIPTION	DATE

CONSULTANT

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CARDIFF CF10 3AF UNITED KINGDOM
CARDIFF@HASSELLSTUDIO.COM
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CLIENT

STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L06 SIXTH FLOOR - DEPARTMENTS

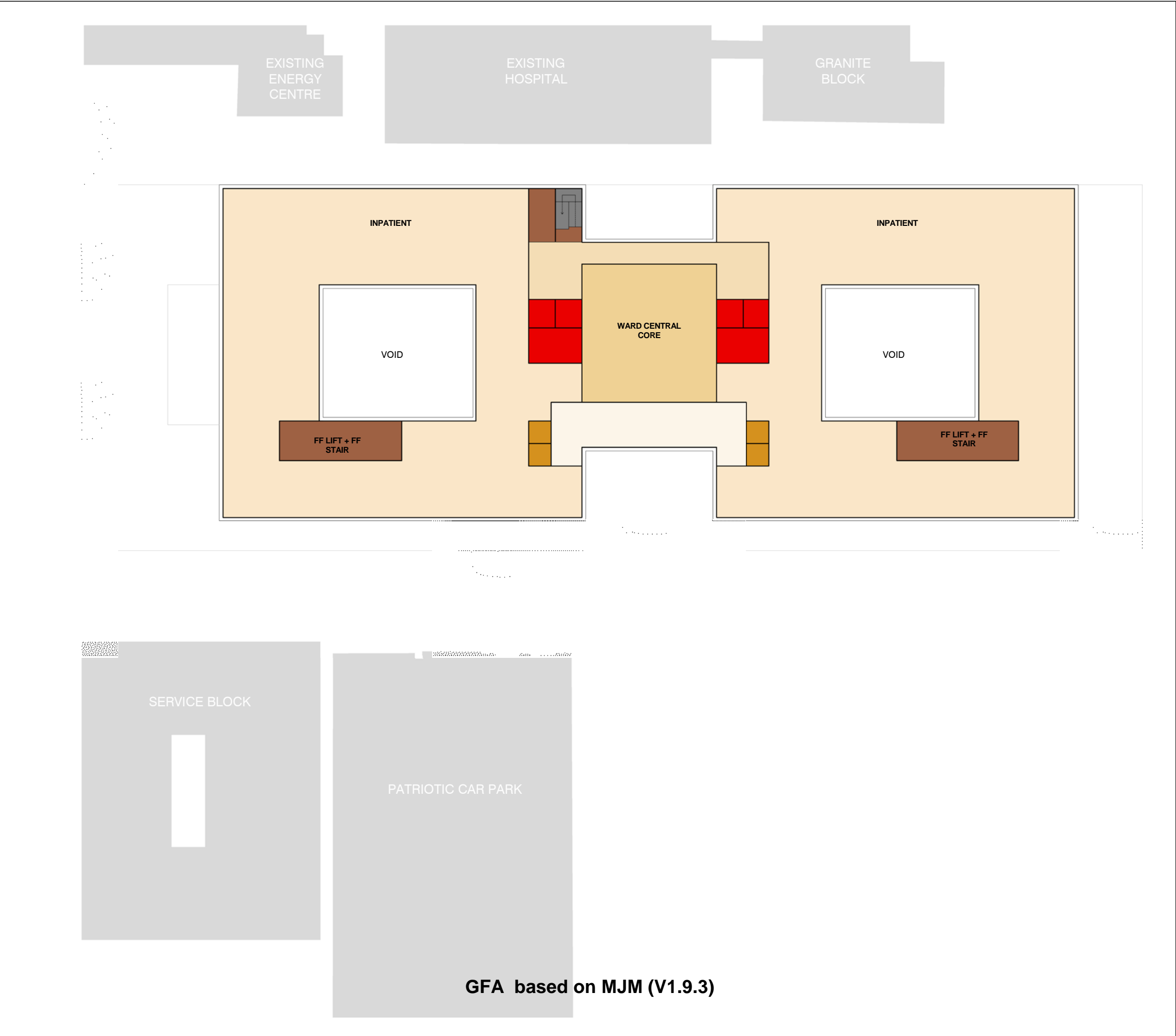
STATUS

INFORMATION

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Original Sheet Size A3 - 420 x 297mm

05/06/2017 20:23:20 C:\Revit Projects\JFH-HSL-M0-ZZ-M3-A-BUILD_PR_2_kiegm.rvt



REFERENCE MAP

1:100

NOTES

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S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P27	Drawing Updated	21/04/17
REV	DESCRIPTION	DATE

CONSULTANT

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CARDIFF CF10 3AF UNITED KINGDOM
CARDIFF@HASSELLSTUDIO.COM
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STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L07 SEVENTH FLOOR - DEPARTMENTS

STATUS

INFORMATION

SCALE @ A3	ORIGINATOR PROJECT #	REVIEWED	APPROVED
1 : 500	012145	JB	KM

PROJECT# - ORIGIN - ZONE - LEVEL - TYPE - ROLE - DRAWING# - STATUS+REV

JFH-HSL-M0-07-DR-A-1808-S2.P33

Original Sheet Size A3 - 420 x 297mm

05/06/2017 20:23:24 C:\Revit Projects\JFH-HSL-M0-ZZ-M3-A-BUILD_PR_2_kiegm.rvt



REFERENCE MAP

NOTES

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REV	DESCRIPTION	DATE
S2.P33	Areas Updated	05/06/17
S2.P32	Graphics Updated	16/05/17
S2.P31	Areas Updated	15/05/17
S2.P30	Areas Updated	09/05/17
S2.P29	Drawing Updated	26/04/17
S2.P27	Drawing Updated	21/04/17

CONSULTANT

HASSELL Limited CN 7545819
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GREYFRIARS ROAD
CARDIFF CF10 3AF UNITED KINGDOM
CARDIFF@HASSELLSTUDIO.COM
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CLIENT

STATES OF JERSEY

PROJECT

JERSEY FUTURE HOSPITAL (JFH) - MAIN
HOSPITAL SITE
THE PARADE, ST HELIER, JERSEY JE1_3QS

DRAWING TITLE

L08 EIGHTH FLOOR -
DEPARTMENTS

STATUS

INFORMATION

SCALE @ A3	ORIGINATOR PROJECT #	REVIEWED	APPROVED
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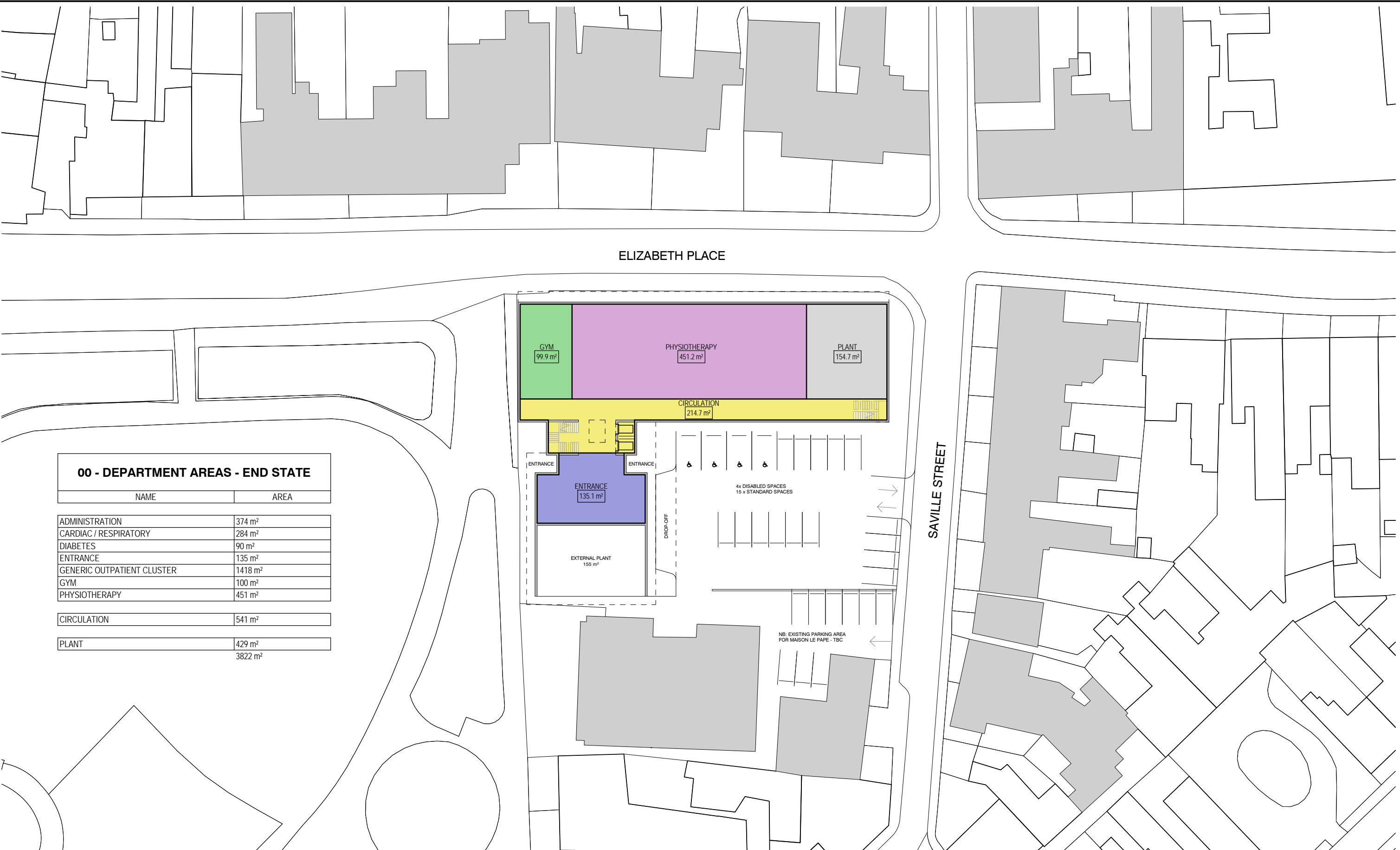
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Original Sheet Size A3 - 420 x 297mm

05/06/2017 20:23:28 C:\Revit Projects\JFH-HSL-M0-ZZ-M3-A-BUILD_PR_2_kiegm.rvt

J2 Westaway Court Indicative Proposals



00 - DEPARTMENT AREAS - END STATE	
NAME	AREA
ADMINISTRATION	374 m²
CARDIAC / RESPIRATORY	284 m²
DIABETES	90 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1418 m²
GYM	100 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²

Date	Description
09/02/17	FIRST ISSUE
17/02/17	Revised parking & additional plant

Revision
S2.P01
S2.P02

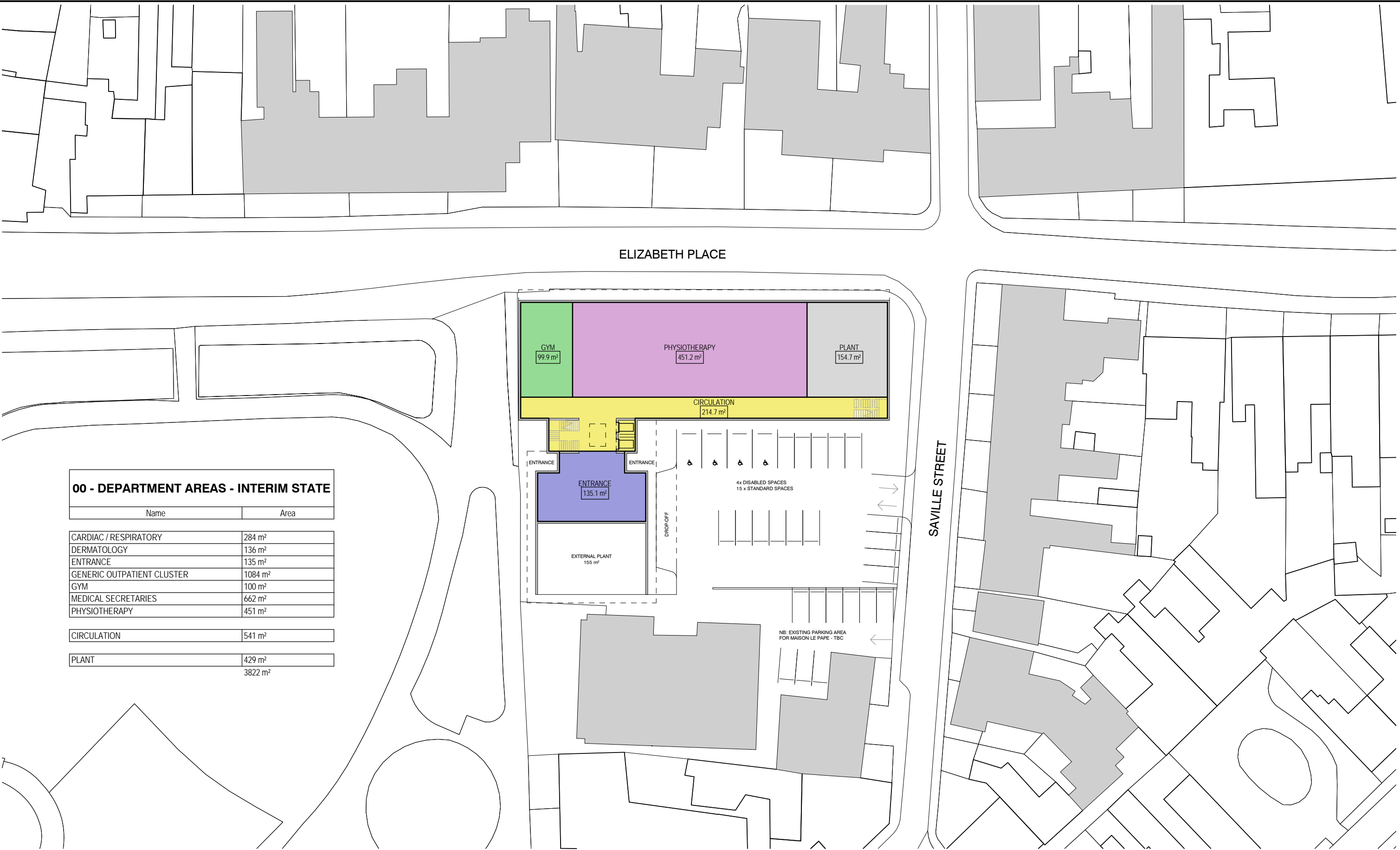
Scale
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Client
STATES OF JERSEY

Project Name
WESTAWAY COURT

Drawing
JFH-HSL-ES7-00-DR-A-0110-S2.P02
WESTAWAY COURT - PROPOSED
GROUND FLOOR (END STATE)

HASSELL



00 - DEPARTMENT AREAS - INTERIM STATE

Name	Area
CARDIAC / RESPIRATORY	284 m²
DERMATOLOGY	136 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1084 m²
GYM	100 m²
MEDICAL SECRETARIES	662 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²

Date	Description
09/02/17	FIRST ISSUE
17/02/17	Revised parking & additional plant

Revision
S2.P01
S2.P02

Scale
1 : 500 @ A3

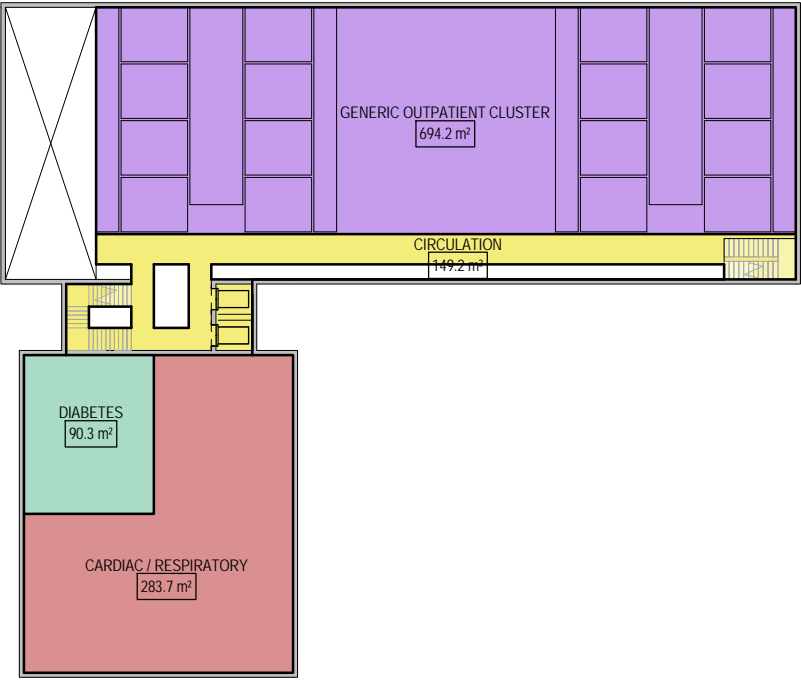
Client
STATES OF JERSEY

Project Name
WESTAWAY COURT

Drawing
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WESTAWAY COURT - PROPOSED
GROUND FLOOR (INTERIM STATE)

HASSELL

00 - DEPARTMENT AREAS - END STATE	
NAME	AREA
ADMINISTRATION	374 m²
CARDIAC / RESPIRATORY	284 m²
DIABETES	90 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1418 m²
GYM	100 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²



HASSELL

Date
09/02/17
17/02/17

Description
FIRST ISSUE
Revised parking & additional plant

Revision
S2.P01
S2.P02

Scale
1 : 500 @ A3

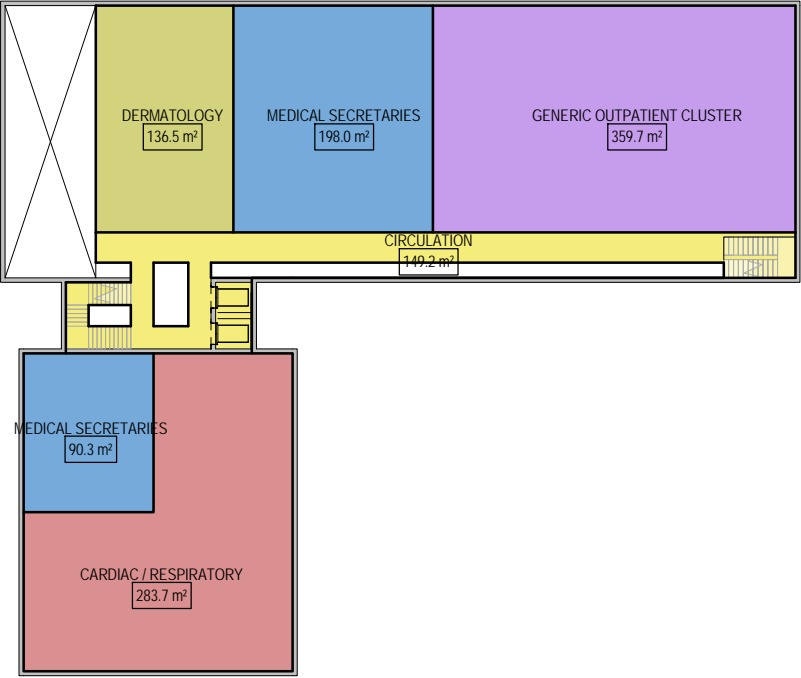
Client
STATES OF JERSEY

Project Name
WESTAWAY
COURT

Drawing
JFH-HSL-ES7-01-DR-A-0111-S2.P02
WESTAWAY COURT - PROPOSED
FIRST FLOOR (END STATE)

00 - DEPARTMENT AREAS - INTERIM STATE

Name	Area
CARDIAC / RESPIRATORY	284 m²
DERMATOLOGY	136 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1084 m²
GYM	100 m²
MEDICAL SECRETARIES	662 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²



HASSELL

Date	Description
09/02/17	FIRST ISSUE
17/02/17	Revised parking & additional plant

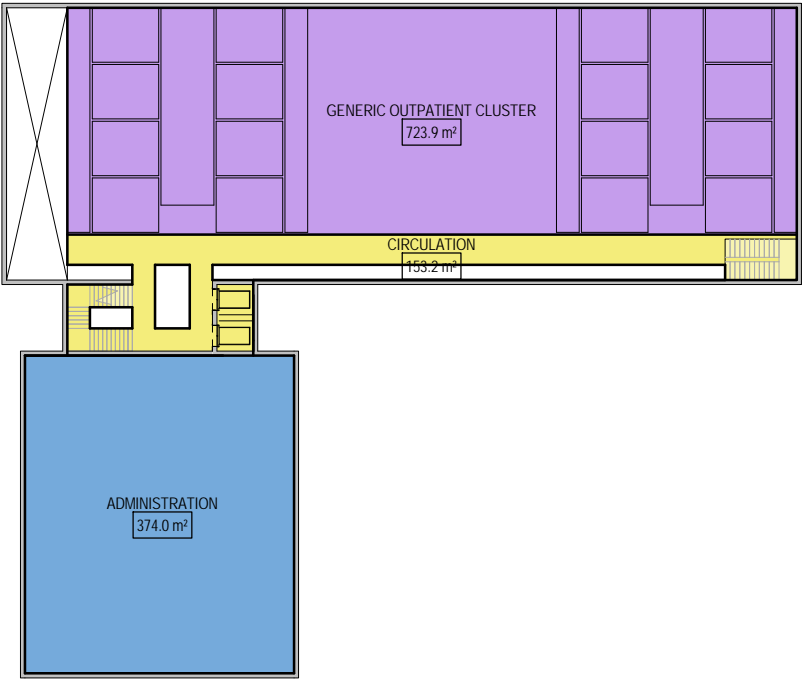
Revision	Scale
S2.P01	
S2.P02	1 : 500 @ A3

Client
STATES OF JERSEY

Project Name
WESTAWAY COURT

Drawing
JFH-HSL-ES7-01-DR-A-0116-S2.P02
WESTAWAY COURT - PROPOSED FIRST FLOOR (INTERIM STATE)

00 - DEPARTMENT AREAS - END STATE	
NAME	AREA
ADMINISTRATION	374 m²
CARDIAC / RESPIRATORY	284 m²
DIABETES	90 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1418 m²
GYM	100 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²



HASSELL

Date	Description
09/02/17	FIRST ISSUE
17/02/17	Revised parking & additional plant

Revision
S2.P01
S2.P02

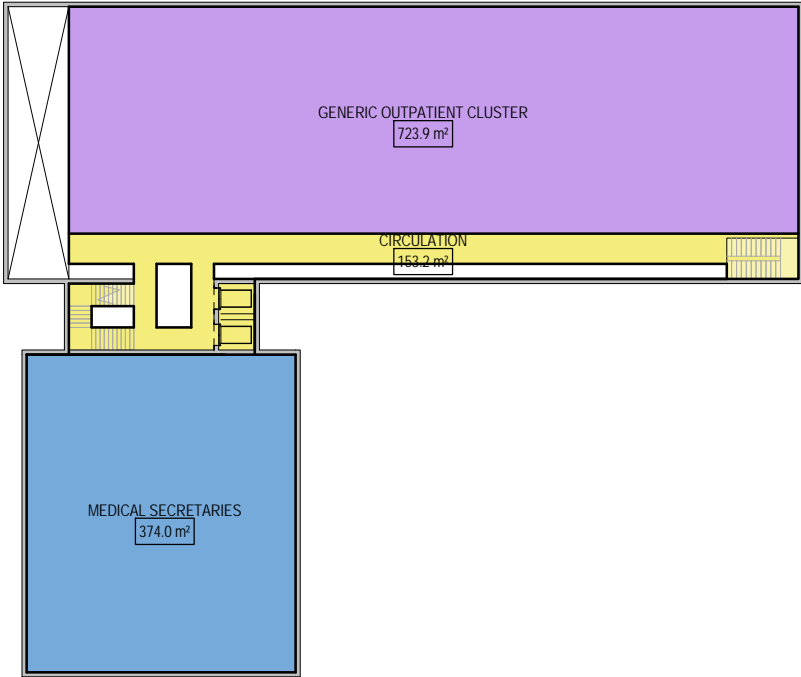
Scale
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Client
STATES OF JERSEY

Project Name
WESTAWAY COURT

Drawing
JFH-HSL-ES7-02-DR-A-0112-S2.P02
WESTAWAY COURT - PROPOSED
SECOND FLOOR (END STATE)

00 - DEPARTMENT AREAS - INTERIM STATE	
Name	Area
CARDIAC / RESPIRATORY	284 m²
DERMATOLOGY	136 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1084 m²
GYM	100 m²
MEDICAL SECRETARIES	662 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²



HASSELL

Date	Description
09/02/17	FIRST ISSUE
17/02/17	Revised parking & additional plant

Revision
S2.P01
S2.P02

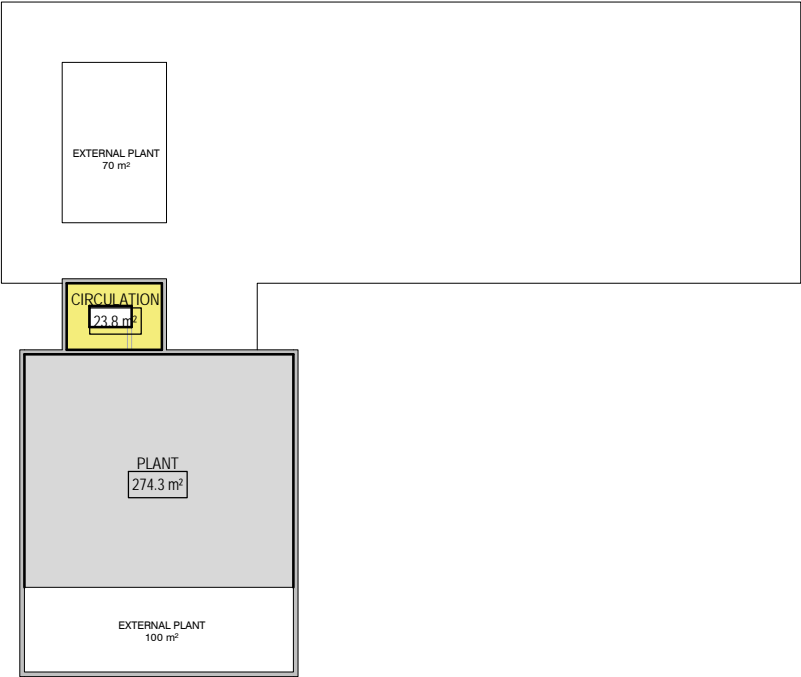
Scale
1 : 500 @ A3

Client
STATES OF JERSEY

Project Name
WESTAWAY COURT

Drawing
JFH-HSL-ES7-02-DR-A-0117-S2.P02
WESTAWAY COURT - PROPOSED
SECOND FLOOR (INTERIM STATE)

00 - DEPARTMENT AREAS - END STATE	
NAME	AREA
ADMINISTRATION	374 m²
CARDIAC / RESPIRATORY	284 m²
DIABETES	90 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1418 m²
GYM	100 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²



HASSELL

Date	Description
09/02/17	FIRST ISSUE
17/02/17	Revised parking & additional plant

Revision
S2.P01
S2.P02

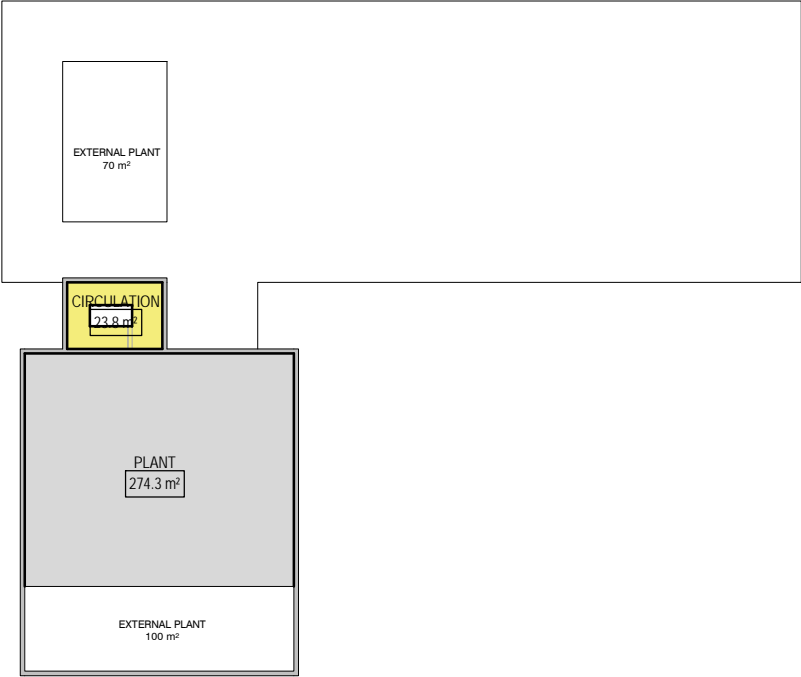
Scale
1 : 500 @ A3

Client
STATES OF JERSEY

Project Name
WESTAWAY COURT

Drawing
JFH-HSL-ES7-03-DR-A-0113-S2.P02
WESTAWAY COURT - PROPOSED
THIRD FLOOR (END STATE)

00 - DEPARTMENT AREAS - INTERIM STATE	
Name	Area
CARDIAC / RESPIRATORY	284 m²
DERMATOLOGY	136 m²
ENTRANCE	135 m²
GENERIC OUTPATIENT CLUSTER	1084 m²
GYM	100 m²
MEDICAL SECRETARIES	662 m²
PHYSIOTHERAPY	451 m²
CIRCULATION	541 m²
PLANT	429 m²
	3822 m²



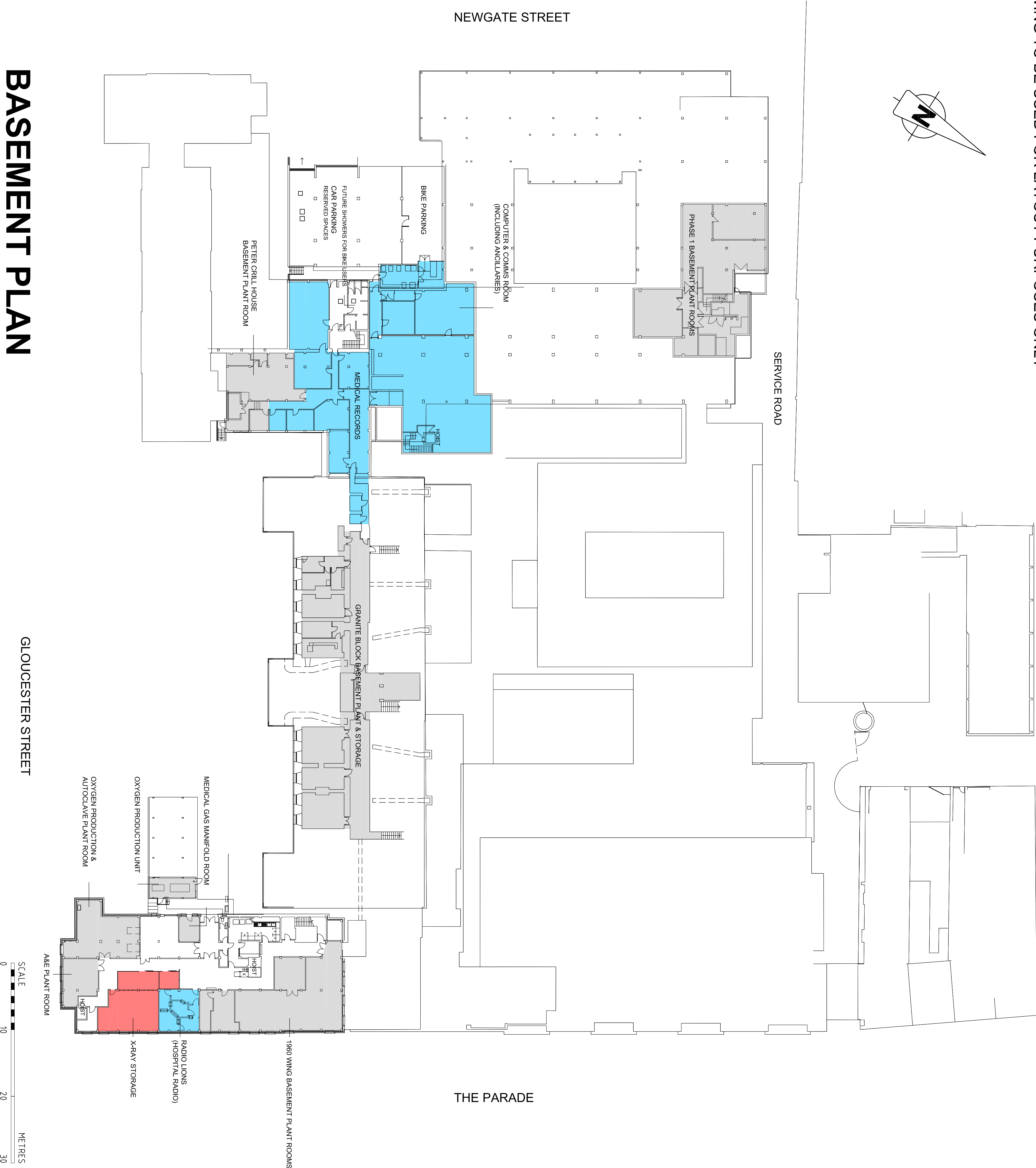
HASSELL	Date	Description	Revision	Scale	Client	Project Name	Drawing
	09/02/17	FIRST ISSUE	S2.P01	1 : 500 @ A3	STATES OF JERSEY	WESTAWAY COURT	JFH-HSL-ES7-03-DR-A-0118-S2.P02
	17/02/17	Revised parking & additional plant	S2.P02				WESTAWAY COURT - PROPOSED THIRD FLOOR (INTERIM STATE)

Appendix K

Detailed Existing Basement
Drawing - Jersey General
Hospital

K1

THIS DRAWING TO BE USED FOR LAYOUT PURPOSES ONLY



revisions		
no.	date	description
A	14/12/07	Revised to current layout
B	02/01/08	DSU structural columns added
C	04/03/08	Granite block layout corrected

X REF:- PATH-L:\Cstates\Engineering\GH Engineers\Admin
RECORD DRAWINGS\INDIVIDUAL FLOOR PLANS
A-G-SURVEY\A-G-SURVEY.dwg
B-60-B\B-60-b.dwg
C-60-B\B-60-b.dwg
E-71-B\B-71-b.dwg

general notes

Do not scale from this drawing.
This drawing is to be read in conjunction with all other drawings, schedules and specifications issued.
All dimensions to be checked on site prior to the commencement of work, any discrepancies to be reported to the Project Manager.
This drawing may not be altered, traced, copied, photographed or used for any purpose other than the work for which it was issued.
The drawing is the property of the project and shall remain the property of the project manager. All drawings, specifications and notes to be submitted to the Project Manager.

project


**Diagrammatic Floor Plans
(For Layout Purposes Only)**
Jersey General Hospital,
Gloucester Street, St. Helier.

drawing title

**Basement Plan
(Showing Floor Uses)**

The States of Jersey Department for
Health & Social Services

Estate Management Services
Engineering Department
Jersey General Hospital
Gloucester Street,
St. Helier, Jersey, JE1 3QS.
Telephone: (01534) 622383

**States
of Jersey**

drawn by	date	scale
I W Manuel	Mar 2005	
project officer		

Appendix L

Jersey Environmental Health
Radon Protection

L1

From: Alan Irving <a.irving@health.gov.je>
Sent: 10 November 2014 11:42
To: Katherine Iles
Subject: Radon

Health and Social Services Department
Environmental Health, Public Health Department Maison Le Pape, The Parade St Helier, Jersey, JE2
3PU
Tel: +44 (0)1534 443712
Fax: +44 (0)1534 445773
Email: eh@health.gov.je

Dear Katherine

Re: Radon queries

Thank you for the email. The following website also should assist you:

www.ukradon.org

All of Jersey is considered a Radon affected area and we refer any queries relating to testing to the Public Health England (formerly the Health Protection Agency). Building Control are considering introducing radon protection measures for commercial building as part of changes to the Building Byelaws. The new hospital I understand will be fitted with Radon protection measures.

The Environmental Scrutiny panel have produced a report considering Radon in Jersey which is available at <http://www.statesassembly.gov.je/ScrutinyReports/2014/Report%20-%20Radon%20-%20Adviser%20-%208%20September%202014.pdf>

I hope this is helpful. Please contact me should you have any queries.

Yours sincerely

Mr A M Irving
Chartered Environmental Health Officer
BSc (Hons) MSc

Direct Dial: 01534 445811

Please note my days of work are Monday - Thursday 9.30am - 2.30pm

Think of the environment...do you need to print this e-mail?

Good morning Environmental Health,
Please review and respond to email received from Katherine Iles.
Kind regards,
Environmental Protection
Department of the Environment
Environmental Protection, Howard Davis Farm, La Route de la Trinité, Trinity, Jersey. JE3 5JP

T: +44(0)1534 441600 | F: +44(0)1534 441601 | E: EnvProtection@gov.je | W: **Error! Hyperlink reference not valid.>** |

Twitter: follow<<http://twitter.com/StatesofJersey>>

WORKING FOR A BETTER ENVIRONMENT

Be ECO-ACTIVE, please don't print this e-mail unless you really need to

From: Katherine Iles [<mailto:katherine.iles@arup.com>]

Sent: 04 November 2014 13:49

To: Environmentalprotection

Subject: Re: Radon in new buildings

To whom it may concern,

I'm preparing a desk study report for proposed new buildings and from the geology understand radon protection measures may be required in new buildings.

The Radon section on your website states the following for new homes.....

'What about new houses?

All new houses built in Jersey must now be protected against radon, however it is still recommended that they are tested to check that the protection is adequate.'

Do you have a radon affected areas map / have a any specifics with regards to new buildings such as hospitals?

Your earliest response would be much appreciated.

Many Thanks

Katherine

Katherine Iles

Geologist / Scientist | Geotechnics

BSc (Hons) FGS MIES CSci.

Arup

4 Pierhead Street Capital Waterside Cardiff CF10 4QP United Kingdom t +44 29 2047 3727 d +44 29 2026 6548 f +44 29 2047 2277 m +44 7841 249655 **Error! Hyperlink reference not valid.>**

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Appendix M

Indicative Location of Tower Crane Piled Base

M1



Photo 1 (Day Care Extension to Block H) – around 2007



Photo 2 (Day Care Extension to Block H) – around 2007

The above photographs provide an indicative location of a piled base for a tower crane within the Gloucester Street car park in front of the Granite Block (Block C) at the Jersey General site.

Appendix N

Gloucester St. Surface Water
Outfall Plan & Section of Tunnel
and Sewer

N1

NOTE

- 1 All levels are related to admiralty datum.
- 2 Boreholes 1A & 1B have recently been sunk and have piezometers installed.

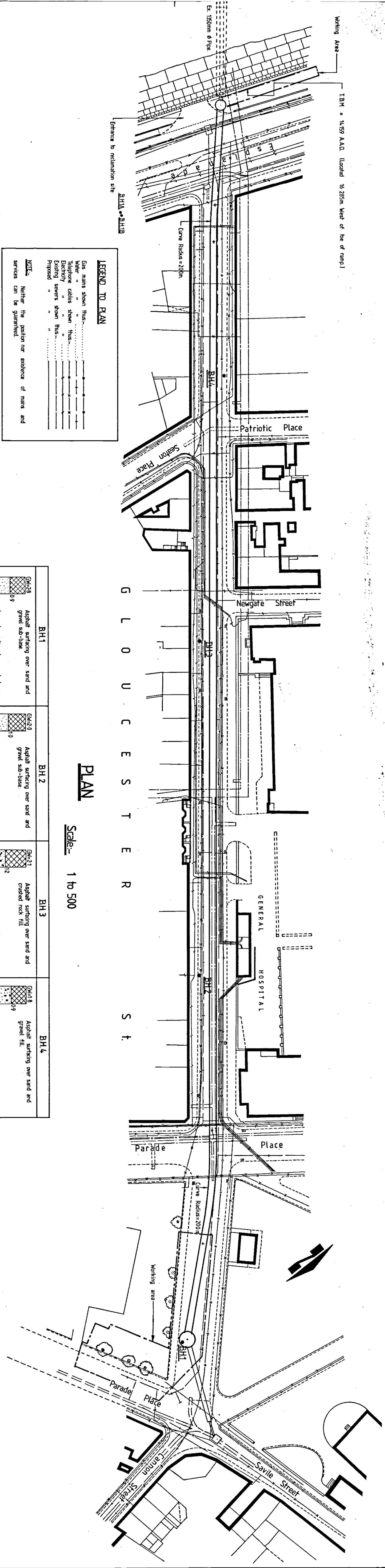
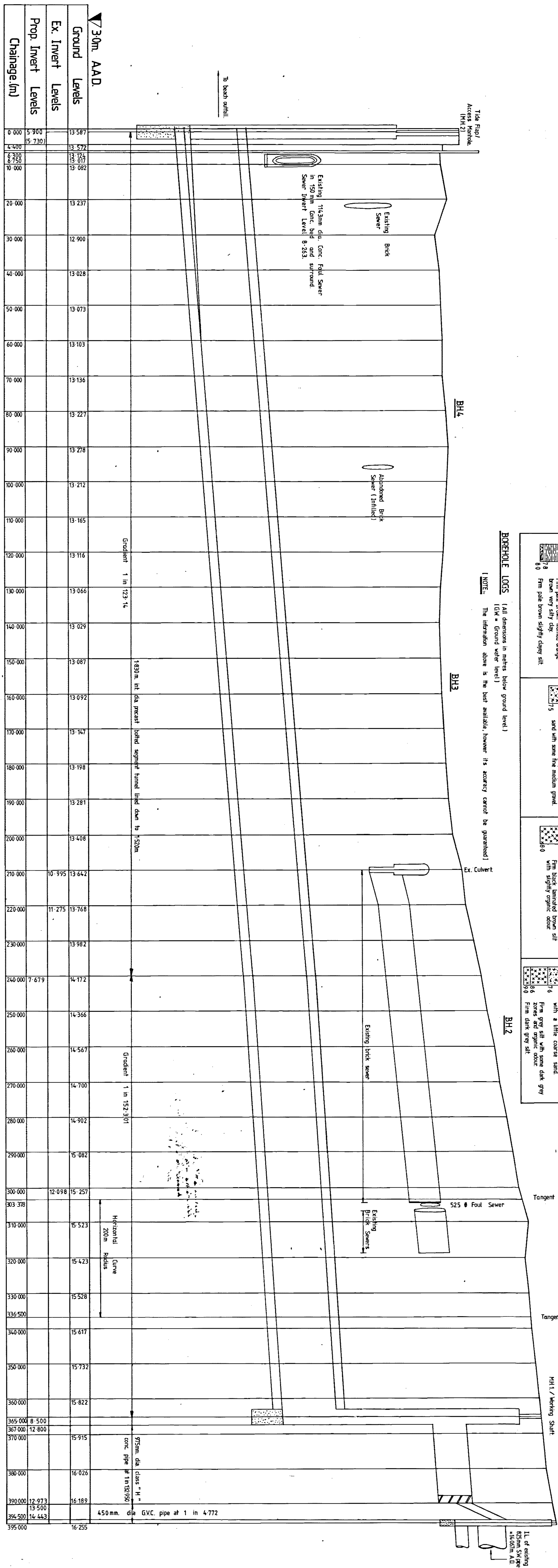
Gloucester Street
Surface Water Outfall

Plan And Section Of Tunnel And Sewer

DRAWING TITLE:

Contract N°	120.	Sheet N°	2 of 6.
DRAWN BY:	M.R.	TRACED BY:	M.R.
CHECKED BY:	88.	WORKS N°	
SCALE:	1 to 50/500.	DATE:	APR. 1981.

REG. DRG. N° TS 693



PLAN

Scale:- 1 to 500

LONGITUDINAL SECTION

Scale:-
H: 1 to 50
V: 1 to 50

Appendix F-2

Previous GI Reports

RECORD OF BOREHOLE No: 1

Location : JERSEY
 Contract No. : ST. HELIER HOSPITAL
 CF 669 /1121H
 Type of Boring : Shell and Auger
 Date (started) : 12.3.73

Borehole Dia : 8" 6"
 Casing : 8" to 25' 6"
 6" to 33' 6"
 Ground Level : 32.1 ft OD.
 Sheet 1 of 1

Depth of casing	Water Level	SAMPLES			STRATA		DESCRIPTION OF STRATA
		Depth	Type	No.	Legend	Depth Thickness	
						G.L.	
		1' 3"	D	1		1' 3"	MADE GROUND: Tarmac to 2" overlying compacted sandstone.
		(N.20) 5' 0"	D	2		7' 3"	Medium dense light brown fine silty SAND with pebbles below 7' 6"
		7' 6"	D	3			
		8' 6"	D	4		8' 6"	Loose light brown/grey silty SAND.
		(N.5) 10' 0"	D	5		3' 6"	
		12' 0" - 13' 1"	U	6		12' 0"	Firm light brown sandy very silty CLAY.
		13' 6"	D	7		14' 0"	
		14' 0"	D	8			
		(N.23) 15' 0"	D	9		4' 0"	Medium dense brown silty clayey f.m. SAND.
		18' 0"	D	10		18' 0"	Firm to stiff grey silty CLAY.
		19' 0" - 20' 2"	U	11		20' 0"	
		20' 0"	D	12			
		(N.24) 22' 0"				5' 0"	Medium dense sandy GRAVEL. (f.m.c.)
		22' 6"	D	13			
		25' 0"	D	14		25' 0"	Firm grey silty CLAY.
		25' 6" - 26' 8"	U	15		26' 6"	
		26' 6"	D	16		1' 6"	Medium dense dark grey silty fine SAND.
3' 0"	5' 6"	28' 0"	D	17		28' 0"	Firm grey clayey laminated SILT.
3' 8"	5' 8"	29' 6"	D	18		29' 6"	
		30' 0" - 31' 0"	U	19		4' 0"	Stiff grey slightly silty CLAY with fine gravel - below 32' 6" brown and without gravel.
		32' 6"	D	20			
		33' 6"	D	21		33' 6"	Hard dark grey fractured and slightly weathered very fine grained MUDESTONE.
33' 6"	10' 3"	(N.45) 35' 6"	D	22		35' 6"	
3' 6"	8' 3"	(initial 2")	W				

Notes: Chisel used for 2 hours 33' 6" - 35' 6" to prove bedrock.
 Water added to assist in shelling and to prevent sand and gravel from blowing.

RECORD OF BOREHOLE No: 2

Location : JERSEY
: ST. HELIER HOSPITAL
Contract No. : CF 669/1121H
Type of Boring : Shell and Auger
Date (started) : 10: 3: 73

Borehole Dia : 8" 6"
Casing : 8" to 20'-0"
6" to 34'-0"

Ground Level : 27.9 ft OD.

Sheet 1 of 1

Date and Time	Depth of Casing	Water Level	SAMPLES			STRATA		DESCRIPTION OF STRATA	
			Depth	Type	No.	Legend	Depth		Thickness
9:30							G.L.		MADE GROUND: 3" formae over 3" roadstone overlying granite boulders and slabs.
			3'-0"	D	1	X	2'-6"		
			(N.17) 5'-0"	D	2	X	2'-6"		
			7'-0"	D	3	X	10'-0"		Medium dense light brown slightly silty f.m. SAND. Horizon is dark brown and very silty 7'-0" - 10'-0"
			(N.22) 10'-0"	D	4	X			
			12'-6"	D	5	X	12'-6"		
			15'-0" - 16'-3"	U	6	X	6'-0"		Soft to firm brown sandy silty CLAY.
			16'-6"	D	7	X			
			18'-6"	D	8	X	18'-6"		Soft to firm brown/grey sandy
1800	20'-0"	5'-6"	20'-0" - 21'-2"	U	9	X	2'-6"		SILT. with some clay.
1375	20'-0"	6'-3"	21'-0"	D	10	X	21'-0"		Medium dense light grey/brown silty f.m. SAND.
800			23'-0"	D	11	X	23'-0"		
			25'-0" - 26'-4"	U	12	X	3'-0"		Firm green/brown/grey CLAY.
			26'-0"	D	13	X	26'-0"		Medium dense sandy GRAVEL with some green/grey clay bind
			28'-0"	D	14	X	28'-0"		
			30'-0" - 31'-3"	U	15	X	4'-6"		Soft to firm grey/brown silty CLAY.
			31'-0"	D	16	X			
			32'-6"	D	17	X	32'-6"		Stiff brown silty CLAY with traces of gravel.
			34'-0"	D	18	X	34'-0"		
			(N.59) 35'-0"			X	2'-0"		Hard grey slightly weathered porphyritic DOLERITE broken with clay smears.
			(initial 1/2")	W		E.O.B.	36'-0"		

REMARKS: Chisel used for 2 hours 1" 1/2 hr. in made ground and 1 1/2 hrs. 34' 0" 36' 0" to prove bedrock.

Water added to assist in shelling

RECORD OF BOREHOLE No: 3

Location : JERSEY
ST HELIER HOSPITAL
Contract No. : CF 669/1121H
Type of Boring : Shell and Auger and
Rotary Core
Date (started) : 6 : 3 : 73

Borehole Dia : 8" 6" HX
Casing : 8" to 20' 6" 6" to 40' 0"
HX to 40' 6"
Ground Level : 34' 8 ft O.D.
(10166 m OD)
Sheet 1 of 2

No.	Depth of Casing	Water Level	SAMPLES			STRATA		DESCRIPTION OF STRATA	
			Depth	Type	No.	Legend	Depth		Thickness
73							G.L.		
			1' 3"	D	1		1' 3"	1' 3"	MADE GROUND: concrete ducting.
								3' 3"	MADE GROUND: Brown sand with gravel and brick.
			4' 6"	D	2		4' 6"		
			(N.41) 5' 0"	D	3	X		4' 6"	Dense light brown slightly silty f.m. SAND.
						X			
			9' 0"	D	4		9' 0"		
			(N.19) 10' 0"	D	5	X		4' 6"	Medium dense dark brown clayey silty SAND with some organic matter.
						X			
			13' 6"	D	6	X	13' 6"		
			15' 0" - 16' 0"	U	7			3' 0"	Firm brown/yellow sandy CLAY.
			16' 6"	D	8	X	16' 6"		
						X			
			(N.22) 20' 0"	D	9	X		6' 0"	Medium dense brown/grey silty f.m. SAND.
						X			
			22' 6"	D	10	X	22' 6"		
						X			
			25' 0" - 26' 0"	U	11	X		5' 6"	Firm to stiff light grey sandy silty CLAY.
						X			
			28' 0"	D	12		28' 0"		
			(N.23) 30' 0"					4' 0"	Medium dense sandy GRAVEL (f.m.s.)
			32' 0"	D	13		32' 0"		
				W					
			35' 0" - 36' 1"	U	14	X		5' 0"	Firm grey very silty laminated CLAY.
						X			
			37' 0"	D	15		37' 0"		
								2' 6"	Stiff grey/green/brown CLAY.
			39' 6"	D	16		39' 6"	1' 0"	Dense GRAVEL and cobbles.
							(40' 0")	Cont'd	

REMARKS: Water added to assist in chelling.
Three trial pits dug to locate services. Pipes found 4 ft down in two of them.

RITA LANE

PHASE 1A

BH3



trial hole 1
G.L. 10011
T.M. 7-411



BH2



PHASE 1

trial hole 3
G.L. 10,420
T.M. 7-570



PHASE 2

PHASE 3

NEWGATE

STREET

CLIENT STATES OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
SITE JERSEY GENERAL HOSPITAL
DATE 12-14 JULY 1979 GROUND LEVEL 10.30m. A.O.D.

SCALE 1:50

Progress and casing water level record		Description	SPT/ RPT	Core sample	Depth	Level
12 JULY		MADE GROUND and with some gravel and brick.			0.00	9.30
	Nil	Medium dense becoming looser with increasing depth, white fine SAND	N = (17)		1.17	
	Nil	becoming pale grey fine and medium SAND. See Remarks 2.	N = (10)		2.00	
	Nil		N = (6)		2.17	
Struck water at 4.00m. level after striking 4.00	Nil				3.17	
Before water flush 4.00	Nil	Medium dense orange brown silty fine SAND	N = (6)		4.00	6.30
P.M. After flushing in casing - at surface	5.15 P.M. 5.61	5.80-5.85m. band of silty fine sand with fine gravel.	N = (16)		4.17	
		6.25-6.30m. band of partially cemented silty fine sand			4.50	
		Medium dense orange mottled grey fine sandy SILT, with some iron-stained patches. Laminated from 6.30-6.50m. and 7.45-7.50m. A little clayey below 7.50m.	N = (12)		4.80	
	6.49				5.31	
	7.51		N = (8)		6.30	4.00
	8.44	Medium dense grey green mottled orange silty fine SAND and fine GRAVEL.	N = (4)		6.65	
		Dense grey silty fine SAND and fine and medium GRAVEL. See Remarks 2.			7.67	
					8.00	2.30
					8.30	2.00
					8.60	
					9.60	0.70
		Continued in different stratum on Sheet 2.				

BOREHOLE LOG

STATE OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
JERSEY GENERAL HOSPITAL
12-14 JULY 1979 GROUND LEVEL 10.30m AOD.

BOREHOLE No 1 (Sheet 2 of 2)
SCALE 1:50

progress and casing		description	SPT/ RPT	core sample	depth	level	
water level	record						
13 JULY	9.50	Firm grey laminated fine sandy SILT with pale grey fine sand laminations, dark grey clayey silt bands, some brown staining and black organic inclusions. Occasional rounded fine gravel around 9.60m. Becoming slightly clayey at increasing depth. Stiff and laminated below 10.95m.	N=(20)		9.60 9.67	0.70	
	10.55		N=(15)		10.71 11.00	0.70	
	11.29	Very stiff grey mottled yellow grey clayey sandy SILT with strong and highly weathered iron-stained fragments of meta-siltstones. (COMPLETELY WEATHERED ROCK)	N=(10)		11.45		
	12.24 12.24		I * N=(128)		12.20 12.36	-1.90	
	13.00	Highly weathered iron-stained fragments of META-SILTSTONES, friable below approx. 12.65m.			12.75	-2.45	
	13.35	Completely weathered very weak pale grey fine grained gravel META-SILTSTONE fragments in a silty clay matrix.			14.20	-3.90	
M 2.60 PM 13.35		Moderately weathered very strong pale greenish grey lightly metamorphosed chlorite rich MUDSTONE with calcite crystals, occasional pyrite and numerous calcite veins.			15.20	-4.90	
14 JULY	1.45	End of borehole.					
Fore pulling	14.55						
Casing 1.96 recovered							
P.M. 1.45							
16-19 JULY	1.45						
<u>Remarks</u>							
1. Starter pit excavated to 0.75m depth.							
2. No recovery from 2.00 - 4.00m. and 8.90 - 9.50m.							
3. SPT records.							
1.01 - (5), 4, 5, 4, 4 7.51 - (3), 1, 2, 2, 3							
2.01 - (3), 3, 2, 2, 3 8.44 - (5), 8, 10, 11, 12							
3.01 - (2), 1, 2, 2, 1 9.50 - (10), 7, 4, 4, 5							
4.00 - (2), 1, 2, 1, 2 10.55 - (5), 3, 3, 4, 5							
5.15 - (5), 4, 4, 4, 4 11.29 - (16), 7, 7, 8, 14							
6.49 - (4), 3, 3, 3, 3 12.20 - (24), 32							
4. Standpipe installed 3.00 - 5.00m.							
Undisturbed sample, open-drive or prepared from drill core							
GEL JOB No.				FIGURE			

BOREHOLE LOG

CLIENT STATES OF JERSEY
DEPT. OF PUBLIC BUILDING AND WORKS
SITE JERSEY GENERAL HOSPITAL
DATE 14-17 JULY 1979 GROUND LEVEL 11.60M. AOD.

BOREHOLE No 2 (Sheet 1 of 2)

SCALE 1:50

geology	progress and water level	casing record	description	SPT/ RPT	core sample	depth	level	
	14 JULY		MADE GROUND - sand with some gravel and brick fragments.					
						1.20	10.40	
			MADE GROUND - yellow brown very silty fine sand with some poorly cemented patches.			1.80	7.80	
						1.99		
		ru	MADE GROUND - pale yellow grey and brown mottled fine and medium sand.	N (17)	drilling	2.80	8.80	
	Drop below 3.30m.					3.04		
	Struck water at 3.97	ru	Loose pale yellow fine SAND.	N (7)		3.30	8.30	
	Level after striking 3.97		Medium dense yellow and brown medium and fine SAND.			3.97		
						4.00	7.60	
						4.13		
	P.M. 3.97	ru	Loose brown silty medium to fine SAND.	N (5)		4.50	7.10	
			TRANSITIONAL					
	16 JULY A.M. 3.94		Med dense greenish grey in places mottled orange poorly laminated fine sandy SILT with dark grey laminations and bands of clayey silt. Some iron nodules and staining.			5.02		
		ru				5.57		
		ru				6.00		
		5.86	Becoming less sandy with increasing depth.			6.56		
		5.86	TRANSITIONAL	N (15)	dry	6.70	4.90	
			Blue grey mottled yellow poorly laminated fine sandy SILT with some iron staining along laminations. Clayey between 7.40m. and 8.20m. Band of yellow cemented silty fine sand at 7.90m.			7.00		
		6.86				7.56		
		6.86		N (17)		8.04		
		7.86				8.50	3.10	
			Continued in different stratum on Sheet 2.					

undisturbed sample, open-drive or prepared from drill core

GEL JOB No.

FIGURE

BOREHOLE No 2 (Sheet 2 of 2)

SCALE 1:50

SCALE 1:50

Before water
Husk - Dry

P. M. 3-64
17 JULY
A. M. 3-80

Before pulling
COSTED 3-26

P. M. 5-78

18-21 JULY received	
B-17	

End of borehole.

Remarks

1. Starter pit excavated to 1.00m depth.
2. SPT records.
- | | |
|------------------------|---------------------------|
| 1-83 - (5), 5, 4, 4, 4 | 7-40 - (5), 4, 5, 4, 4 |
| 2-88 - (4), 2, 3, 2, 2 | 8-44 - (6), 9, 10, 10, 12 |
| 3-97 - (2), 1, 1, 2, 1 | 9-79 - (5), 9, 12, 8, 6 |
| 5-42 - (4), 3, 4, 4, 3 | 11-12 - (6), 3, 3, 4, 3 |
| 6-40 - (5), 4, 3, 4, 4 | 12-00 - (6), 24, 26 - |
3. Piezometer installed: tip at 8.60m.
response zone 8.10 - 9.10m.

GEL JOB No.

FIGURE

A water barrel

BOREHOLE No 3 (Sheet 1 of 2)

SCALE 1:50

geology	progress and water level	casing record	description	SPT/ RPT	core sample	depth	level	
	18 JULY		MADE GROUND - Sand with some gravel.					
						1.25	6.75	
						1.47		
		nil	Medium dense pale yellow grey fine SAND becoming white below 1.60m.	N = (15)	drilling	2.49		
		nil		N = (7)		3.00	7.00	
			Loose white fine and medium SAND.			3.20	6.80	
			Loose brown fine and medium SAND with occasional dark brown silty patches.			3.49		
	Damp below 3.20m.	3.20	Orange brown silty medium to fine SAND.	N = (6)		4.00	6.00	
			TRANSITIONAL			4.25	5.75	
		4.28	Medium dense blue grey poorly laminated very silty fine SAND.		core	4.80	5.20	
			TRANSITIONAL			5.36		
		4.28	Firm blue grey mottled yellow laminated fine sandy SILT with some iron-staining along laminae.	N = (15)		6.00		
		6.00	5.60 - 5.80m. wet silt with extensive iron-staining.			6.56		
		6.00		N = (13)		7.36		
		7.36	Becoming more blue and clayey from 7.10 - 7.20m.		Dry	7.76	2.24	
						7.80	2.20	
		7.36	Dense yellow silty fine SAND with some fine gravel.	N = (35)		8.00		
	Struck water at 8.26 Level after striking 8.00		Dense to medium dense grey becoming brown silty SAND and fine and medium subrounded to subangular GRAVEL, strongly iron-stained at 8.60m. Occasionally subrounded coarse gravel.			8.25		
						8.65		
						9.00	1.00	
			Continued in different stratum on Sheet 2.					

BOREHOLE No. 3 (Sheet 2 of 2)

SCALE 1:50

date	progress and water level	casing record	description	SPT/ RPT	core sample	depth	level	
18 JULY	9:00 P.M. 3:26	P.M. 9:20	Firm orange brown silty fine SAND (100mm) becoming blue grey laminated slightly clayey fine sandy SILT with dark grey clay laminations and black organic inclusions.	N (25)	drilling	9.00 9.16	1.00	
19 JULY	A.M. 3:40		9.75 - 9.85m. very wet silty sand, becoming very silty fine SAND between 10.00 and 10.20m.		core	9.55 9.75 10.00		
			TRANSITIONAL		core	10.40 10.56	-0.40	
			Stiff blue grey laminated very silty CLAY with occasional subrounded fine gravel.	N (14)	drilling	10.80 11.00	-0.80 -1.00	
			Highly weathered rock fragments in a silty CLAY.		Water-flush diamond core drilling			
20 JULY	P.M. 3:60	P.M. 12:01	Highly weathered strong dark grey, in places laminated, lightly metamorphosed MUDSTONES with clay smearing on some joint faces. Becoming grey META-SILTSTONE, moderately weathered and massive below 11.70m. Iron-stained along most joint surfaces. Several sets of high angled joints. Average separation 200-300mm. Becoming dark grey and more fine grained below 13.00m. Laminated in places with occasional bands including pyrite crystals.		72mm. dia.	13.50	-3.50	
	P.M. 1:00	12:01	Bedding approx. 10° dip.					
			End of borehole.					
			Remarks:					
			1. Starter pit excavated to 0.75m. depth.					
			2. SPT records.					
			1.33 - (5), 4, 4, 4, 3					
			6.40 - (4), 3, 3, 3, 4					
			2.33 - (4), 2, 2, 3, 2					
			7.60 - (8), 9, 8, 8, 10					
			3.33 - (2), 1, 2, 1, 2					
			9.00 - (6), 8, 9, 4, 4					
			5.20 - (4), 3, 4, 4, 4					
			10.40 - (6), 3, 4, 4, 3					
			3. Piezometer installed: tip at 13.00m.					
			response zone 12.50 - 13.50m.					

undisturbed sample, open-drive or prepared from drill core

GEL JOB No.	FIGURE
-------------	--------

STAFFORD
HOTEL.

PHASE 1A

SITE
ACCESS

No 2 Edward Place
No 1 Edward Place

La Preference

Margarella



THE PARADE

PHASE I
(NEW BUILDING)

MAIN HOSPITAL BUILDING

SCALE 1:500

NIXEY

PHASE 1B - GENERAL HOSPITAL - JEFFREY C.I.

Borehole Log

Borehole No.

BH1

Sheet 1 of 2

Project Name: Jersey General Hospital, Main
Theatres Upgrade SI

Project No.
CN 1343

Co-ords: 564726.84 - 5448673.17

Hole Type
BH

Location: St Helier




























Level:	13.00
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Scale
1:50

Client: Property Holdings

Dates: 07/03/2014 - 08/03/2014

Logged By
KMS





Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		1.20 1.20 - 1.65	SPTL S	N=6 (1,1/1,2,1,2)	0.10	12.90		TARMAC	1
					0.30	12.70		DRILLERS DESCRIPTION: TYPE 1 (MADE GROUND)	
					0.50	12.50		DRILLERS DESCRIPTION: FILL comprising bricks, concrete, etc. (MADE GROUND)	
					0.80	12.20		DRILLERS DESCRIPTION: Orange coarse SAND. (BEACH DEPOSITS?)	
								Orange brown gravelly SILT. (BEACH DEPOSITS?)	
									
		2.70 2.70 - 3.15	SPTL S	N=10 (2,2/2,3,3,2)	1.45	11.55		Grey-white fine SAND. (BLOWN SAND)	2
					2.40	10.60		Grey brown laminated sandy SILT. (ALLUVIUM)	
					2.80	10.20		Grey mottled brown silty SAND. (ALLUVIUM)	
					3.25	9.75		Green grey sandy SILT. (ALLUVIUM)	
4.05 4.05 - 4.50	SPTL S	N=13 (3,3/4,2,3,4)	3.55	9.45		Green grey laminated SILT. (ALLUVIUM)	4		
									
									
									
5.45 5.45 - 5.90	SPTL S	N=9 (2,1/2,2,3,2)					5		
									
									
									
7.15 7.15 - 7.60	SPTL S	N=16 (3,4/4,4,4,4)					7		
									
									
									
8.69 8.69 - 9.14	SPTL S	N=22 (4,6/6,5,4,7)	8.75	4.25		Grey silty cobbly GRAVEL. Gravel is medium to coarse, sub-rounded Cobbles are rounded. Gravel is of mixed lithology becoming a weathered Jersey Shale with depth. (ALLUVIUM)	9		
									
									
									
							Continued on next sheet	10	

Continued on next sheet

Remarks

Ground level is arbitrary level. Water strike at 4.05m rising to ground level after 30 minutes. Borehole backfilled with grout on completion.



 Geomarine Les Ruettes, La Grande Route de St Jean, St John, Jersey, JE3 4FN Tel: 01534 856566 Email: enqueries@geomarine.je		<h1>Borehole Log</h1>			Borehole No. BH1 Sheet 2 of 2				
Project Name: Jersey General Hospital, Main Theatres Upgrade SI		Project No. CN 1343		Co-ords: 564726.84 - 5448673.17		Hole Type BH			
Location: St Helier		Level: 13.00		Scale 1:50					
Client: Property Holdings		Dates: 07/03/2014 - 08/03/2014		Logged By KMS					
Well	Water Strikes	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		10.10	SPTL S	N=47 (6,9/8,9,11,19)	10.21	2.79		Grey blue rock recovered as medium to coarse angular gravel of rock.	11
		10.10 - 10.55							
					12.67	0.33		End of borehole at 12.67 m	13
									14
									15
									16
									17
									18
									19
									20
Remarks Ground level is arbitrary level. Water strike at 4.05m rising to ground level after 30 minutes. Borehole backfilled with grout on completion.									

Trial Pit Log

Trialpit No

TP1

Sheet 1 of 1

Project Name:	Jersey General Hospital, Main Theatres Upgrade SI
---------------	---------------------------------------------------

Project No.
CN 1343

Co-ords: 564730.80 - 5448668.93

Level: 13.00

Date
08/03/2014

Location: St Helier

Dimensions
(m):

0.4

Depth
0.50

0.5

Scale
1:25

Logged
GW


Client: Property Holdings

[illegible]

Remarks:	Trial pit to identify foundation of retaining wall. Ground level is arbitrary level.
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Stability:	Good
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AGS

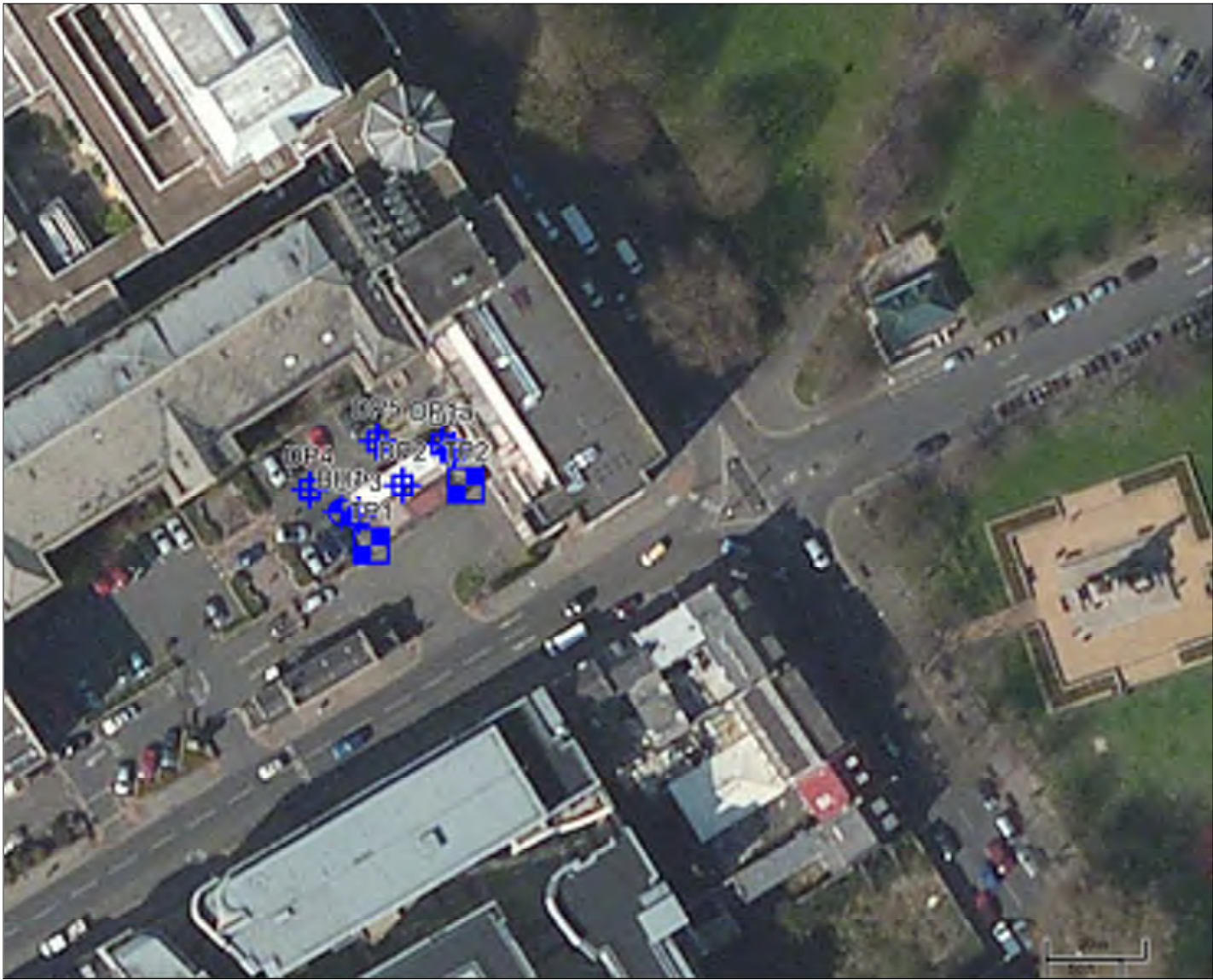
 Geomarine Les Ruettes, La Grande Route de St Jean, St John, Jersey, JE3 4FN Tel: 01534 856566 Email: enqueries@geomarine.je				<h1 style="text-align: center;">Trial Pit Log</h1>				Trialpit No TP2 Sheet 1 of 1	
Project Name: Jersey General Hospital, Main Theatres Upgrade SI				Project No. CN 1343		Co-ords: 564743.02 - 5448676.87 Level: 13.00		Date 08/03/2014	
Location: St Helier						Dimensions (m): <div style="display: flex; align-items: center; margin-top: 10px;"> <div style="margin-right: 10px;">Depth 1.20</div> <div style="border: 1px solid black; padding: 5px; text-align: center;"> <div style="display: flex; justify-content: space-between; width: 100%;"> 0.5 0.4 </div> </div> </div>		Scale 1:25 Logged GW	
Client: Property Holdings									

Water Strike	Samples and In Situ Testing			Depth (m)	Level (m)	Legend	Stratum Description	
	Depth	Type	Results					
				0.10	12.90		TARMAC	
							BACKFILL - TYPE 1	
				0.95	12.05		CONCRETE FOOTING	
							...@ 0.95 Concrete footing protrudes 250mm from wall.	1
				1.20	11.80		End of pit at 1.20 m	
								2
								3
								4
								5

Remarks: Trial pit to identify foundation of retaining wall. Ground level is arbitrary level.

Stability: Good

AGS



NOTES:



CLIENT
States of
Jersey

TITLE
Exploratory Locations

JOB
Main Theatres Upgrade SI

SIZE	PROJECT CODE	DWG NO	REV
A4	1343	1343-01/Fig2	1
SCALE	Scale NTS		
	BY R. Sutton		

M L U S L I D

M U L T I

pa.

AMPLUS LTD		Foundation & Geotechnical Specialists		Site 15-16 The Parade, St Helier, Jersey		Borehole Number P1			
Boring Method Twintech TD308		Casing Diameter 110mm cased to 10.46m		Ground Level (mOD)		Client Tillyard for 16 the Parade Limited			
		Location as site plan		Dates 11/09/2006		Engineer Beaumont Structural Consultants			
						Job Number 0948			
						Sheet 1/1			
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.50) 0.50	Made Ground		
							Loose medium dense light brown SAND		
						(2.50)			
						3.00	Soft to firm brown and grey sandy CLAY/SILT		
						(4.00)			
						7.00	Firm to stiff brown gravelly CLAY		
						(2.00)			
						9.00	Firm to stiff brown and grey slightly sandy CLAY		
						(1.46)			
						10.46	Complete at 10.46m		
Remarks Probe hole drilled using a Twintech 308 drilling rig Probe hole drilled using 110mm augers to refusal at 10.46m bgl 10.46m Refusal: presumed weathered rock head and end of probe hole No ground water strike using this method of boring.								Scale (approx) 1:100	Logged By GW
								Figure No. 0948.P1	

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
15-16 The Parade, St Helier, Jersey

Borehole
Number
P2

Boring Method
Twintech TDS08

Casing Diameter
110mm cased to 9.90m

Ground Level (mOD)

Client
Tillyard for 16 the Parade Limited

Job
Number
0948

Location
as site plan

Dates
11/09/2006

Engineer
Beaumont Structural Consultants

Sheet
1/1

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
						(0.50) 0.50	Made Ground		
						(2.50)	Loose medium dense light brown SAND		
						3.00	Soft to firm brown and grey sandy CLAY/SILT		
						(4.00)			
						7.00	Firm to stiff brown gravelly CLAY		
						(1.50)			
						8.50	Firm to stiff brown and grey slightly sandy CLAY		
						(1.40)			
						9.90	Complete at 9.90m		

Remarks

Probe hole drilled using a Twintech 308 drilling rig
Probe hole drilled using 110mm augers to refusal at 9.90m bgl
9.90m Refusal: presumed weathered rock head and end of probe hole
No ground water strike using this method of boring.

Scale
(approx)
1:100

Logged
By
GW

Figure No.
0948.P2

AMPLUS LTD						Foundation & Geotechnical Specialists		Site 15-16 The Parade, St Helier, Jersey		Borehole Number P3	
Boring Method Twintech TD308		Casing Diameter 110mm cased to 9.70m		Ground Level (mOD)		Client Tillyard for 16 the Parade Limited		Job Number 0948		Sheet 1/1	
		Location as site plan		Dates 11/09/2006		Engineer Beaumont Structural Consultants					
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water		
						(0.50) 0.50	Made Ground				
							Loose medium dense light brown SAND				
						(2.50)					
						3.00	Soft to firm brown and grey sandy CLAY/SILT				
						(4.00)					
						7.00	Firm to stiff brown gravelly CLAY				
						(1.00)					
						8.00	Firm to stiff brown and grey slightly sandy CLAY				
						(1.70)					
						9.70	Complete at 9.70m				
Remarks Probe hole drilled using a Twintech 308 drilling rig Probe hole drilled using 110mm augers to refusal at 9.70m bgl 9.70m Refusal: presumed weathered rock head and end of probe hole No ground water strike using this method of boring.								Scale (approx) 1:100		Logged By GW	
								Figure No. 0948.P3			

07-SEP-2006 13:27 FROM

T-008 P.002/002 F-002

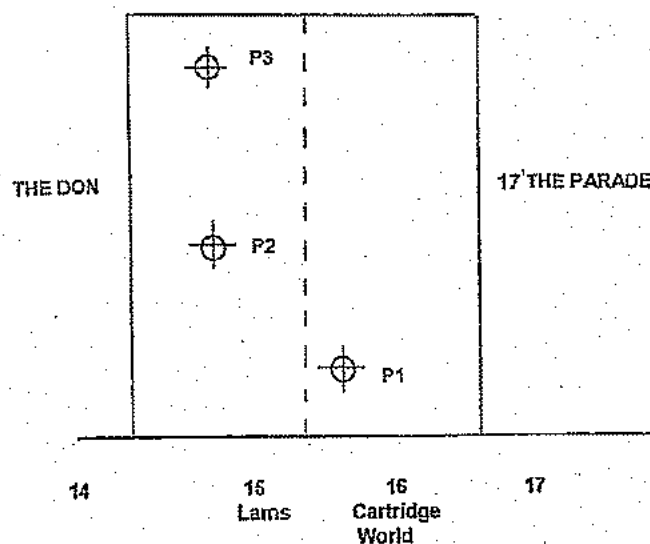


BEAUMONT
STRUCTURAL
CONSULTANTS

15/16 THE PARADE
SKETCH OF BUREAU
LOCATIONS

Drawn	Rev
01	01
02	01
03	01

SPECTRUM



THE PARADE

54300

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH1Boring Method
Fraste PL RigCasing Diameter
113mm cased to 8.90mGround Level (mOD)
99.80Client
Regal Construction (Jersey) LtdJob
Number
0762Location
as site planDates
12/01/2007-
15/01/2007Engineer
Peter Brett AssociatesSheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					99.56	(0.04)	CONCRETE		
					99.40	(0.16)	Hardcore		
						0.20	Very loose to loose brown fine to medium SAND and little gravel		
1.20-1.70	X 0.22			12/01/2007: 0.00m		(1.80)			
1.20-1.65	SPT N=4		DRY	13/01/2007: DRY 2.1/2, 1.1					
1.70-2.00	X 0.00								
2.00-2.23	X 0.00				97.60	2.00	Soft dark brown sandy SILT		
2.23-2.50	X 0.76					(0.40)			
2.50-2.95	SPT N=10	1.90	DRY	2.2/3, 2.2, 3	97.20	2.40	Soft to firm brown slightly sandy SILT		
2.50-3.50	X 0.53					(0.60)			
					96.60	3.00	Soft to firm blue grey slightly sandy CLAY/SILT		
3.50-3.95	SPT N=3	3.40	DRY	1/1, 2					
3.95-4.00	X 0.50	4.00							
4.00-4.40	U 0.40		2.83	12 blows					
4.00-5.00	X 0.55	4.31				(3.30)			
5.00-5.45	SPT N=5	4.31	3.95	1.1/1, 1.2, 1					
5.00-6.00	X 0.50	5.92							
6.00-6.50	X 0.74								
6.50-6.95	SPT N=36	6.20	3.06	1.2/5, 9, 10, 12	93.30	6.30	Dense blue grey very clayey fine to coarse GRAVEL		
6.50-7.12	X 0.62	6.75				(1.50)			
7.12-7.67	X 0.00								
7.67-7.75	X 0.00	7.30		13/01/2007: 3.27m	91.80	7.80	Very dense brown clayey sandy fine to medium GRAVEL		
7.75-7.76	X 0.00								
7.76-7.80	X 0.60								

Remarks

Starter pit excavated by hand from ground level to 1.20m bgl
 Exploratory hole drilled using the Fraste PL Rig
 Dry drilling from 1.20m - 9.13m
 Rock core drilling with water flush from 9.13m - 10.27m
 U70 drilling from 4.00m - 4.40m - 12 blow counts
 Ground levels are not Ordnance Datum

Scale
(approx)

1:40

Logged
By

MRW

Figure No.

0762.BH1

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
Kensington Gate Car Park, St Helier, Jersey

Borehole
Number
BH1

Boring Method Fraser PL Rig	Casing Diameter 113mm cased to 8.90m	Ground Level (mOD) 99.60	Client Regal Construction (Jersey) Ltd	Job Number 0762
	Location as site plan	Dates 12/01/2007- 15/01/2007	Engineer Peter Brett Associates	Sheet 2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
7.80-8.22 7.80-8.25	X 0.00 SPT N=52	7.80	4.90	3,4,7,15,12,18		(0.50)	Stratum as above		
8.22-8.33 8.33-8.38 8.38-9.13	X 0.11 X 0.50 X 0.75	8.00 8.11 8.90			91.30	8.30	Soft to firm brown sandy SILT		
						(0.80)			
9.11 9.13	TCR SCR RQD FI				90.50	9.10	Moderately strong grey slightly weathered ANDESITE, iron-stained joints		
	100 90 60 6					(1.17)			
9.79	100 75 25 10								
10.27				15/01/2007 3.21m	89.33	10.27	Complete at 10.27m		

Remarks	Scale (approx) 1:40	Logged By MRW
	Figure No. 0762.BH1	

54301

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH2Boring Method
Fraste PL RigCasing Diameter
113mm cased to 8.30mGround Level (mOD)
99.40Client
Regal Construction (Jersey) LtdJob
Number
0762Location
as site planDates
16/01/2007-
18/01/2007Engineer
Peter Brett AssociatesSheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
					99.30	(0.10) 0.10	CONCRETE			
						(0.90)	Layers of concrete and sand			
0.80-1.20	X 0.35				98.40	1.00	CONCRETE			
1.20-2.00	X 0.57									
2.00-2.73	X 0.73					(2.80)				
2.73-3.67	X 0.30			16/01/2007 17/01/2007: 2.24m						
3.67-3.82 3.82-4.27 3.82-4.73	X 0.10 SPT N=0 X 0.38		2.00	/	95.60	3.80	Very soft to firm greybrown slightly sandy CLAY with a little fine gravel			
4.73-5.00	X 0.45									
5.00-5.45 5.00-6.00	SPT N=5 X 0.52	4.80	2.00	1/2,3		(3.00)				
6.00-6.45 6.00-6.60	SPT N=11 X 0.52	4.80 6.42	2.14	1,1/2,2,3,4						
6.60-7.00	X 0.50				92.60	6.80	Firm to stiff orange/brown sandy CLAY with a little fine to medium gravel			
7.00-7.45 7.00-7.35	SPT N=31 X 0.35	6.42 7.25	3.06	3,4,4,7,10,10						
7.35-7.62	X 0.27									
7.62-8.13	X 0.00									

Remarks

Starter pit excavated by hand from ground level to 1.20m bgl
 Exploratory hole drilled using a Fraste PL rig
 Dry drilling from 3.82m - 9.24m
 Rock core drilling with water flush from 0.80m - 3.82m, 9.24m - 10.47m
 Standpipe piezometer with tip installed at 10.40m bgl
 Ground levels are not Ordnance Datum

Scale
(approx)
1:40Logged
By
MRFFigure No.
0762.BH2

AMPLUS LTD				Foundation & Geotechnical Specialists		Site Kensington Gale Car Park, St Helier, Jersey		Borehole Number BH2	
Boring Method Fraste PL Rig		Casing Diameter 113mm cased to 8.30m		Ground Level (mOD) 99.40		Client Regal Construction (Jersey) Ltd		Job Number 0762	
		Location as site plan		Dates 16/01/2007- 18/01/2007		Engineer Peter Brett Associates		Sheet 2/2	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Instr
8.13-8.63	X 0.00	8.30		17/01/2007					
				18/01/2007:2.90m					
8.63-9.00	X 0.23					(2.40)			
9.00-9.24	X 0.40						Stratum as above		
9.00-9.31	CPT 80/155	8.30	2.23	2,3/5,25,50	90.20	9.20			
	TCR SCR RQD FI								
9.24	15 0						Moderately weak grey slightly weathered ANDESITE, very closely jointed		
9.50	100 0								
9.66	100 0					(1.27)			
9.93	100 10 0 10+								
				18/01/2007:2.99m	88.93	10.47			
10.47							Complete at 10.47m		
Remarks								Scale (approx)	Logged By
								1:40	MRF
								Figure No. 0762.BH2	

54302

AMPLUS LTD

Foundation & Geotechnical
SpecialistsSite
Kensington Gate Car Park, St Helier, JerseyBorehole
Number
BH3Boring Method
Fraste PL RigCasing Diameter
113mm cased to 9.21mGround Level (mOD)
100.10Client
Regal Construction (Jersey) LtdJob
Number
0762Location
as site planDates
08/01/2007-
12/01/2007Engineer
Peter Brett AssociatesSheet
1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
					100.03	(0.07) 0.07	CONCRETE		
						(1.43)	Loose light brown fine to medium SAND		
1.20-1.50	X 0.00								
1.50-1.60	X 0.00	1.65	DRY		98.60	1.50	Very soft red brown sandy SILT becoming firm with depth		
1.60-1.67	X 0.47								
1.67-2.12	SPT N=11	1.65	1.46	2,2/2,3,3,3					
1.67-2.30	X 0.00								
2.30-2.50	X 0.52			08/01/2007: 1.46m					
2.50-2.92	X 0.15	2.85		09/01/2007: DRY					
2.50-2.95	SPT N=10	1.65	DRY	1,2/2,3,3,2					
2.92-3.50	X 0.32								
3.50-3.95	SPT N=0	2.85	2.00	1/					
3.50-4.50	X 0.90								
						(5.50)			
4.50-4.95	SPT N=11	4.40	2.22	1,1/2,3,3,3					
4.50-5.50	X 0.50								
5.50-5.95	SPT N=13	4.40	2.85	1,1/2,3,4,4					
5.50-6.10	X 0.60	5.83							
6.10-6.50	X 0.40			09/01/2007: GLm					
				11/01/2007: 1.37m					
6.50-6.90	U 0.28								
6.50-7.14	X 0.57								
7.14-7.50	X 0.00				93.10	7.00	Dense grey and brown clayey very sandy fine to coarse GRAVEL with occasional cobbles		
7.50-7.52	X 0.00	7.30							
7.52-7.67	X 0.00								
7.67-7.87	X 0.00	7.80				(1.50)			
7.87-7.93	X 0.00								

Remarks
 Starter pit excavated by hand from ground level to 1.20m bgl
 Exploratory hole drilled using a Fraste PL Rig
 Dry drilling from 1.20m - 9.42m, 9.64m - 9.89m
 Rock core drilling with water flush from 9.42m - 9.64m, 9.69m - 10.97m
 U70 drilling from 6.50m - 6.90m
 Ground levels are not Ordnance Datum

Scale
(approx)

1:40

Logged
By

MFW

Figure No.
0762.BH3

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
Kensington Gate Car Park, St Helier, Jersey

Borehole
Number
BH3

Boring Method
Fraste PL Rig

Casing Diameter
113mm cased to 9.21m

Ground Level (mOD)
100.10

Client
Regal Construction (Jersey) Ltd

Job
Number
0762

Location
as site plan

Dates
08/01/2007-
12/01/2007

Engineer
Peter Brett Associates

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
7.93-8.33	X 0.00	8.10				(1.50)	Stratum as above		
8.33-8.46 8.46-9.28 8.46-8.91	X 0.50 X 1.20 CPT N=48	9.21 8.10	3.22	4,7,7,11,14,16	91.80	8.50	Firm to stiff brown sandy SILT with occasional grey fine to medium gravel		
						(1.10)			
9.42-9.64 9.28-9.40 9.40-9.42 9.64-9.69	X 0.00 X 0.00 X 0.12			11/01/2007:3.07m	90.50	9.60	Moderately strong light grey slightly weathered ANDESITE, iron stained planar discontinuities		
9.69	TCR	SCR	RQD	FI	12/01/2007:2.14m X 0.27				
	95	90	75	5		(1.37)			
10.97				12/01/2007:3.40m	89.13	10.97	Complete at 10.97m		

Remarks

Scale
(approx)

Logged
By

1:40

MPW

Figure No.
0762.BH3

Project Name
Kensington Place

Project No.
749

Co-ords: -

Hole Type
WLS

Location: Kensington Place

Level: -

Scale
1:50

Client: Regal Construction (Jersey) Limited

Dates: 21/07/2009

Logged By
NH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00-0.55	D					Brown very gravelly silty fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Occasional cobbles. Slight hydrocarbon smell. (MADE GROUND)	
		0.55-0.81	D		0.55			Brown silty gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Layer of pale brown/white sand. (MADE GROUND)	
		0.81-0.98	D		0.81				
		0.98-1.16	D		0.98				
		1.16-1.40	D		1.16			Brown silty gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Layer of pale brown/white sand. (MADE GROUND)	
					1.40				
								Light brown gravelly fine to medium grained SAND. Gravel is fine to coarse. Increased sand content. (MADE GROUND)	
		1.40-2.90	D					Pale brown/white slightly gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-rounded. Coarse cobbles present. (MADE GROUND)	
								Gray/tan sandy CLAY. Strong hydrocarbon smell. (HEAD DEPOSITS) Sand is fine grained with angular fine to coarse gravel with occasional brick fragments at 1.40m.	
					2.90				
								Gray CLAY. Contains calcareous shells. Strong hydrocarbon smell. (HEAD DEPOSITS) Sub-angular coarse gravel fragments at 2.90m.	
		2.90-4.40	D						
					4.40			Gray slightly sandy CLAY. Rare gravel fragments, fine to coarse, sub-angular. Hydrocarbon smell. (HEAD DEPOSITS)	
		4.40-5.90	D						
					5.90			Tan slightly sandy gravelly CLAY. Gravel is fine to coarse, sub-angular. (HEAD DEPOSITS)	
		5.90-6.70	D						
					6.70			Reddish colour, highly gravelly at 6.60m.	
								End of Borehole at 6.80 m	

Remarks: Slotted well from 6.80m to 1.80m with gravel pack. Plain well from 1.80m to ground level with bentonite surround. Well cover flush at surface.



Project Name
Kensington Place

Project No.
749

Co-ords: -

Hole Type
WLS

Location: Kensington Place

Level: -

Scale
1:50

Client: Regal Construction (Jersey) Limited

Dates: 20/07/2009

Logged By
NH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00-0.65	D					Brown silty very gravelly medium grained SAND. Occasional rootlets. Gravel is fine to coarse, sub-angular, cobbles. (MADE GROUND)	
		0.65-0.79	D		0.65			Brown very gravelly fine to medium grained SAND. Contains large concrete fragments. Gravel is fine to coarse, sub-angular. (MADE GROUND)	1
		0.79-1.43	D		1.43			Brown very gravelly fine to medium grained SAND. Contains rootlets. Gravel is fine to coarse, sub-angular. Concrete powder observed. (MADE GROUND)	
								Tan sandy CLAY. Hydrocarbon smell. (HEAD DEPOSITS) Brown very gravelly SAND at 1.55m	2
		1.43-2.90	D		2.90			Brown/ grey very slightly sandy CLAY. Rare angular coarse gravel. Strong hydrocarbon smell, dark grey lines running through. (HEAD DEPOSITS)	3
									4
		2.90-4.40	D		4.40			Brown/ grey CLAY. Rare fine gravel. Hydrocarbon smell. (MADE GROUND)	5
									6
		4.40-5.90	D		5.90			Brown gravelly CLAY. Gravel is fine to medium, sub-angular. (MADE GROUND)	7
		5.90-6.35	D		6.35			Reddish very gravelly SAND at 6.30m	8
								End of Borehole at 6.55m	9
									10

Remarks: Slotted well from 6.55m to 2.00m with gravel pack. Plain well from 2.00m to ground level with bentonite surround. Well cover flush at surface.

Project Name
Kensington Place

Project No.
749

Co-ords: -

Hole Type
WLS

Location: Kensington Place

Level: -

Scale
1:50

Client: Regal Construction (Jersey) Limited

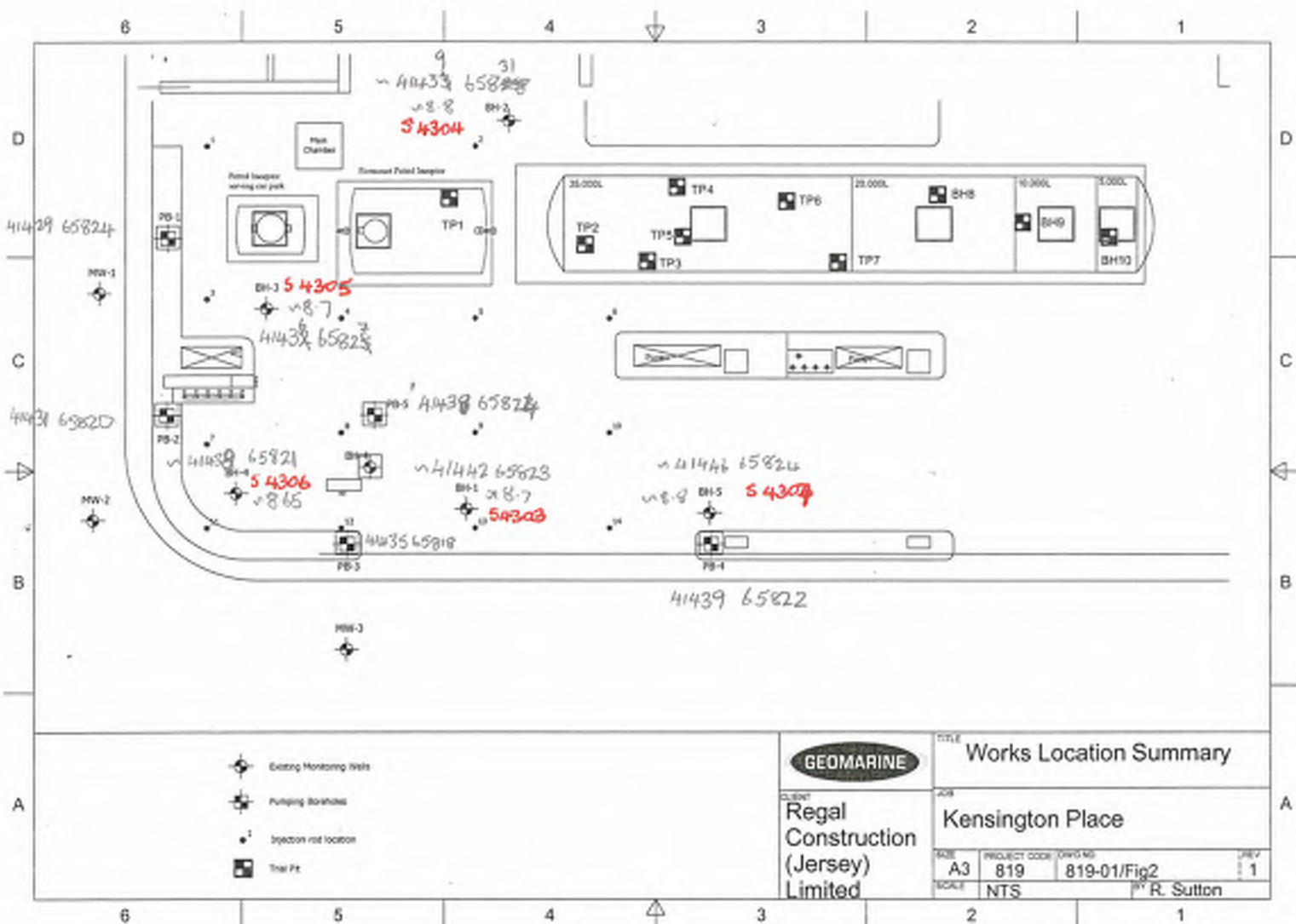
Dates: 16/07/2009

Logged By
NH

Well	Water Strikes	Samples & In Situ Testing			Depth (m)	Level (m AOD)	Legend	Stratum Description	
		Depth (m)	Type	Results					
		0.00-0.50	D		0.50			Dark brown gravelly clayey fine grained SAND. Gravel, fine to coarse, sub-angular. Cobbles, brick fragments and rootlets. (MADE GROUND)	
					0.80			Tan fine to medium grained SAND. (MADE GROUND)	
		0.95-1.25	D		1.40			Dark brown gravelly clayey SAND. Gravel, fine to coarse, sub-angular. Occasional cobbles, brick fragments and rootlets. Interbedded tan sand. (MADE GROUND)	1
		1.40-2.90	D		2.90			Dark brown gravelly clayey fine grained SAND. Gravel is fine to coarse, sub-rounded. (HEAD DEPOSITS)	2
		2.90-3.10	D		3.10			Dark brown clayey fine grained SAND. (HEAD DEPOSITS)	3
		3.10-4.60	D		4.60			Grey very slightly gravelly CLAY. Fine gravel, sub-rounded. Faint hydrocarbon smell. (HEAD DEPOSITS) Black/ grey clayey SAND at 3.10m Hydrocarbon smell. Layer of black hydrocarbon- stained CLAY at 3.30m	4
								Grey/ brown slightly gravelly CLAY. Fine gravel, sub-rounded, cohesive. (HEAD DEPOSITS) No recovery at 4.60m to 6.10m	5
		6.10-6.90	D		6.80				6
		6.90-7.50	D		7.50			Reddish/ brown very gravelly clayey fine grained SAND. Gravel is fine to medium, sub-angular. (HEAD DEPOSITS) Brown/ grey very gravelly fine to medium grained SAND. Gravel is fine to coarse, sub-angular. Rare cobbles present. Faint hydrocarbon smell. (HEAD DEPOSITS)	7
		7.50-8.40	D		8.40			Grey/ brown slightly gravelly CLAY. Gravel is fine to coarse, sub-angular. Rare cobbles present. Hydrocarbon smell. (HEAD DEPOSITS) Very gravelly CLAY at 7.50m	8
								End of Borehole at 8.40 m	9

Remarks: No installation. Backfill to surface.

GEOMARINE BH LOCATIONS



AMPLUS LTD		Foundation & Geotechnical Specialists		Site		Borehole Number				
Boring Method Inspection pit to 0.90m Competitor Rig		Casing Diameter 115mm cased to 7.00m		Ground Level (mOD)		Client Dandara Jersey Ltd				
Location as per site plan		Dates 21/03/2014- 28/03/2014		Engineer Dandara		Job Number 1503				
Sheet 1/1										
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.00-1.00	X 0.57	1.00	DRY			0.10 (0.10) 0.30 (0.30) 0.60 (0.30) 0.90	MADE GROUND - Concrete MADE GROUND - Silty sand MADE GROUND - Gravel (Hoggin) Silty brown CLAY Light yellow SAND			
1.00-2.00	X 0.75	2.00	DRY			(1.10)	Brown CLAY with fine to medium gravel			
2.00-3.00	X 0.78	3.00	DRY			2.00 (1.00)	Light brown silty SAND with fine to medium gravel			
3.00-4.00	X 1.00	4.00	DRY			3.00 (1.00)	Light brown Silty SAND			
4.00-5.00	X 1.00	5.00	DRY			4.00 (1.00)	Brown sandy SILT			
5.00-6.00	X 1.00	6.00	DRY	27/03/2014: DRY 28/03/2014: 3.75m		5.00 (1.00)	Yellow brown sandy SILT			
6.00-7.00	x 1.00	7.00	DRY	28/03/2014: 3.90m		6.00 (1.00) 7.00	Light brown silty sandy CLAY with fine to medium gravels Complete at 7.00m			
Remarks Inspection pit excavated by hand on 21.03.14 to 0.9m, dry and stable, backfilled before drilling Window sampling from 1.20 - 7.00m								Scale (approx) 1:50	Logged By MFW	Figure No. 1503.BH1

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH1

Installation Type
Single Installation

Dimensions
Internal Diameter of Tube [A] = 50 mm

Client
Dandara Jersey Ltd

Job
Number
1503

Location
as per site plan

Ground Level (mOD)

Engineer
Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
					Cement/Bentonite Grout						5 min	10 min	15 min	20 min		
				0.70	Gravel Filter											
				1.00												
						Groundwater Observations During Drilling										
						Start of Shift					End of Shift					
						Date	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						27/03/14						17.00	5.00	5.00	DRY	
						28/03/14	08.00	5.00	5.00	3.75		17.00	7.00	7.00	3.90	
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
					Slotted Standpipe	Instrument [A]				Remarks						
						Date	Time	Depth (m)	Level (mOD)							
						08/04/14	17:00	2.80								
						11/04/14		2.75								
				6.95												

Remarks

Source No: 4803

AMPLUS LTD						Foundation & Geotechnical Specialists		Site		Borehole Number
								66-72 Esplanade, St Helier		BH2
Boring Method		Casing Diameter		Ground Level (mOD)		Client		Job Number		
Inspection pit to 1.20m Fraser PL Rig		113mm cased to 6.18m				Dandara Jersey Ltd		1503		
		Location		Dates		Engineer		Sheet		
		as per site plan		21/03/2014- 04/04/2014		Dandara		1/2		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	
0.00-1.13	X 0.50					0.10 (0.15) 0.20	MADE GROUND - Concrete			
							MADE GROUND - Gravel			
						(0.95)	Clayey gravelly SAND with cobble sized stones becoming light yellow sand			
1.13-1.28	X 0.40	1.18				1.20	Loose yellow and brown SAND with fine gravel			
1.28-1.55	X 0.00					(0.70)				
1.55-1.90	X 0.00					1.90	Loose brown fine SAND			
1.90-3.05	X 0.20					(1.15)				
3.05-3.50	SPT N=2	2.16	DRY	0.0/0.0,1.1		3.05	Very soft brown sandy SILT			
3.05-3.51	X 0.10	3.16								
3.51-4.10	X 0.95					(1.58)				
4.10-4.63	X 0.53	4.16				4.63	Soft brown and grey sandy SILT			
4.63-5.08	SPT N=5	5.04	GL	0.1/1.0,2.2		(0.65)				
4.63-5.04	X 0.41					5.28	Soft brown sandy CLAY			
5.04-5.28	X 0.22					(0.68)				
5.28-5.58	X 0.30					5.96	Medium dense brown fine slightly clayey slightly sandy GRAVEL			
5.58-5.96	X 0.38					(1.82)				
5.96-6.41	SPT N=33	6.18		2.5/6.8,9.10						
5.96-6.43	X 0.47					7.78	Firm brown sandy silty CLAY with little firm to medium gravel			
6.43-6.65	X 0.22					(1.62)				
6.65-6.92	X 0.00									
6.92-6.95	X 0.00	6.68		03/04/2014:2.40m						
6.95-7.24	X 0.00									
7.24-7.33	X 0.00	7.18	2.35	04/04/2014:1.95m						
7.33-7.78	SPT N=26	7.68		5.3/6.7,7.6						
7.33-7.57	X 0.00									
7.57-7.68	X 0.00									
7.68-8.28	X 0.75									
8.28-8.94	X 0.66	8.68				(1.62)				
8.94-9.39	SPT N=14			4.3/2.3,4.5		9.40	Stiff grey sandy CLAY			
8.94-9.38	X 0.00					(0.77)				
9.38-9.63	X 0.65	9.18								
9.63-9.85	X 0.22									
9.85-10.17	X 0.32									
Remarks								Scale (approx)	Logged By	
Inspection pit excavated to 1.20m on 21.03.14 dry & stable, backfilled before drilling								1:50	MPW	
Dry drilling from GL to 10.48m								Figure No.		
Rotary coring to 11.55								1503.BH2		
BH collapsed after pulling casing										

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH2

Boring Method
Inspection pit to 1.20m
Fraste PL Rig

Casing Diameter
113mm cased to 6.18m

Ground Level (mOD)

Client
Dandara Jersey Ltd

**Job
Number**
1503

Location
as per site plan

Dates
21/03/2014-
04/04/2014

Engineer
Dandara

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water
10.17-10.46	X 0.29					10.17 (0.29)	... as previous		
10.46-10.53	C 0.00					10.46	Stiff grey CLAY with fragments of rock		
10.53-10.90	C 0.45						Weak grey slightly weathered Jersey Shale Formation with iron stained close bedding (no solid core recovery)		
10.90-11.55	C 0.65					(1.09)			
				04/04/2014:1.44m		11.55	Complete at 11.55m		

Remarks
Inspection pit excavated to 1.20m on 21.03.14 dry & stable, backfilled before drilling
Dry drilling from GL to 10.46m
Rotary coring to 11.55
BH collapsed after pulling casing

**Scale
(approx)**

**Logged
By**

1:50

MFV

Figure No.
1503.BH2

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH2

Installation Type

Dimensions

Client

Dandara Jersey Ltd

Job
Number
1503

Location

as per site plan

Ground Level (mOD)

Engineer

Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
						5 min	10 min	15 min	20 min							
						Groundwater Observations During Drilling										
						Start of Shift						End of Shift				
						Date	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						03/04/14						17.00	6.95	6.18	2.40	
						04/04/14	08.00	6.95	6.18	1.95		17.00	11.55	9.18	1.44	
						Instrument Groundwater Observations										
						Inst. [A] Type :										
						Instrument [A]				Remarks						
						Date	Time	Depth (m)	Level (mOD)							

Remarks

AMPLUS LTD				Foundation & Geotechnical Specialists		Site		Borehole Number	
Boring Method Inspection pit to 1.20m Competitor Rig				Casing Diameter 115mm cased to 7.00m		Ground Level (mOD)		Client Dandara Jersey Ltd	
Location as per site plan				Dates 25/03/2014- 26/03/2014		Engineer Dandara		Job Number 1503	
								Sheet 1/1	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Instr
0.00-1.00	WS 0.17	1.00				(0.13) 0.13 (0.32) 0.45 (0.25) 0.70 (0.20) 0.90	MADE GROUND - Concrete MADE GROUND - Gravel, metal sheet MADE GROUND - Dark grey gravelly silt Light grey silty CLAY Light yellow SAND		
1.00-1.45 1.00 1.00-2.00	SPT N=23 J WS 1.00	2.00	DRY	1,3/4,5,6,8		(0.30) 1.20	Stiff brown sandy CLAY with fine to medium gravels		
2.00-2.45 2.00 2.00-2.70	SPT N=68 J WS 1.00	2.70	DRY	8,9/12,17,17,22		(0.80) 2.00	Dense light brown fine to coarse SAND with fine to medium gravels		
2.70-3.00 3.00-3.45 3.00 3.00-4.00	WS 0.30 SPT N=31 J WS 1.00	3.00 3.85 4.00	2.85	8,12/10,8,7,6		(1.45) 3.45 (0.55)	Firm brown and grey sandy SILT		
4.00-4.45 4.00 4.00-4.70	SPT N=2 J WS 1.00	4.70	3.84	0,0/0,0,0,2		(1.00) 4.00 (1.00)	Soft brown sandy clayey SILT		
4.70-5.00 5.00-5.45 5.00 5.00-5.72	WS .30 SPT N=12 J WS 1.00	5.00 5.72	4.92	1,2/2,2,4,4		(1.00) 5.00 (1.00)	Firm brown sandy SILT		
5.72-6.00 6.00-6.45 6.00 6.00-6.63	WS 0.20 SPT N=24 J WS 1.00	6.00 6.63	WET	2,1/3,5,6,10		(1.50) 6.00 (1.50)	Medium dense to dense brown clayey sandy fine to coarse GRAVEL		
6.63-7.00 7.00-7.45 7.00 7.00-7.50	WS 0.31 SPT N=68 J WS 0.35	7.00 5.05		25/03/2014:5.12m 26/03/2014:4.57m 13,11/12,18,19,19 26/03/2014:2.23m		(1.50) 7.50	Complete at 7.50m		
Remarks Inspection pit excavated on 21.03.14 from GL to 1.2m, dry & stable, backfilled before drilling Window sampling 1.2 - 7.50m Hole unable to be extended below 7.50m because of dense ground Slotted pipe installed, response zone 7.00-1.00mbgl								Scale (approx) 1:50	Logged By MFW
								Figure No. 1503.BH3	

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH3

Installation Type
Single Installation

Dimensions
Internal Diameter of Tube (A) = 50 mm

Client
Dandara Jersey Ltd

Job
Number
1503

Location
as per site plan

Ground Level (mOD)

Engineer
Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling									
				0.70 1.00	Cement/Bentonite Grout	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)
										5 min	10 min	15 min	20 min		
					Groundwater Observations During Drilling										
					Date	Start of Shift					End of Shift				
						Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
					25/03/14						17.00	6.63	6.63	5.12	
					26/03/14	07.30	6.63	6.63	4.57		17.00	7.50	7.00	2.23	
					Instrument Groundwater Observations										
					Inst. [A] Type : Slotted Standpipe										
					Date	Instrument [A]			Remarks						
Time	Depth (m)	Level (mOD)													
08/04/14	17:00	2.82													
11/04/14	17:00	2.81													
				7.00	Gravel Filter										
				7.50											

Remarks

AMPLUS LTD

Foundation & Geotechnical Specialists

Site

66-72 Esplanade, St Helier

Borehole Number

BH4

Boring Method Inspection pit hand excavated to 1.2m Fraste PL Rig	Casing Diameter 113mm cased to 2.28m 0.98mm cased to 9.21m	Ground Level (mOD)	Client Dandara Jersey Ltd	Job Number 1503
	Location as per site plan	Dates 21/03/2014-02/04/2014	Engineer Dandara	Sheet 1/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
						(0.20)	MADE GROUND - Concrete			
						(0.20)	MADE GROUND - Gravelly silt			
						(0.20)	Dark brown peaty SILT			
						(0.20)	Brown silty CLAY			
						(0.20)	Dense light yellow brown to off white fine to medium silty SAND			
1.20-1.65	SPT N=34			2,2/6,8,10,10		(1.62)				
1.20-1.54	X 0.34									
1.54-1.71	X 0.20									
1.71-1.88	X 0.17									
1.88-2.08	X 0.20									
2.08-2.28	X 0.20	2.28								
2.28-2.42	X 0.17									
2.42-2.65	X 0.00			28/03/2014: DRY		2.42	Dense off white grey brown slightly silty sandy GRAVEL			
2.65-2.71	X 0.00			01/04/2014: WET		(0.83)				
2.71-2.85	SPT N=45	2.68		5,11/11,12,12,10						
2.85-3.25	X 0.43	3.25								
3.25-3.70	SPT N=7	3.25	GL	2,1/1,2,2,2		3.25	Firm brown sandy SILT with a little fine to medium gravel			
3.70-4.06	X 0.50	4.00								
4.06-4.56	X 0.50									
4.56-5.01	SPT N=9		3.25	0,1/2,2,2,3		(2.67)				
4.56-5.12	X 0.50	4.30								
5.12-5.42	X 0.33	4.68								
5.42-5.92	X 0.50	5.68								
5.92-6.37	SPT N=28		GL	2,3/4,7,8,9		5.92	Medium dense brown clayey slightly sandy GRAVEL			
5.92-6.34	X 0.42	6.23								
6.34-6.53	X 0.19	6.68				(1.68)				
6.53-6.92	X 0.39									
6.92-7.00	X 0.00									
7.00-7.14	X 0.00									
7.14-7.43	X 0.00									
7.43-7.54	X 0.00	7.23				7.60	Stiff grey sandy clayey SILT with a little fine to medium gravel			
7.54-7.89	X 0.60									
7.89-8.34	SPT N=20		3.00	3,4/5,5,5,5		(1.61)				
7.89-8.27	X 0.38	8.23								
8.27-8.58	X 0.31									
8.58-9.21	X 0.63									
9.21-9.66	SPT N=25	9.21	2.51	2,5/5,6,6,8		9.21	Stiff grey sandy CLAY with fine gravels			
9.66-9.99	X 0.41			01/04/2014: 5.63m						
9.99-10.00	X 0.27			02/04/2014: 5.47m		(1.01)				
10.00-10.00	X 0.20									

Remarks

Inspection pit excavated by hand, backfilled before drilling

Dry drilling to 10.62m

Rotary Drilling to depth

Slotted pipe installed, response zone 11.60 - 6.00mbgl

Scale (approx)

1:50

Logged By

MFV

Figure No.

1503.BH4

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH4

Boring Method

Inspection pit hand excavated
to 1.2m
Fraste PL Rig

Casing Diameter

113mm cased to 2.28m
0.98mm cased to 9.21m

Ground Level (mOD)

Dates
21/03/2014-
02/04/2014

Client

Dandara Jersey Ltd

Job
Number
1503

Location

as per site plan

Engineer

Dandara

Sheet
2/2

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (mOD)	Depth (m) (Thickness)	Description	Legend	Water	Instr
9.96-10.22	X 0.30						... as previous			
10.22-10.49	X 0.27					10.22 (0.27)	Stiff brown CLAY with fine gravels			
10.49-10.64	SPT 6"/75 25/70		4.21	6,0/25,0,0,0		10.49	Weak grey slightly weathered Jersey Shale Formation, iron stained close bedding, no solid core recovery, recovered as slightly clayey sandy gravel			
10.49-10.62	X 0.00					(1.14)				
10.62-10.72	C 0.00									
10.72-11.15	C 0.66									
11.15-11.65	C 0.36									
				02/04/2014:2.05m		11.63	Complete at 11.65m			

Remarks

Scale
(approx)

1:50

Logged
By

MFV

Figure No.

1503.BH4

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
66-72 Esplanade, St Helier

Borehole
Number
BH4

Installation Type
Single Installation

Dimensions
Internal Diameter of Tube (A) = 50 mm

Client
Dandara Jersey Ltd

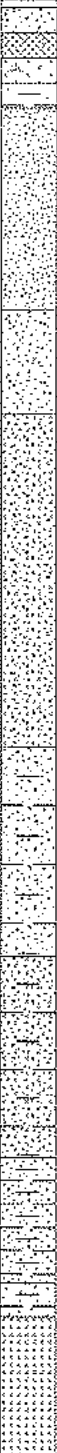


Job
Number
1503

Location
as per site plan

Ground Level (mOD)

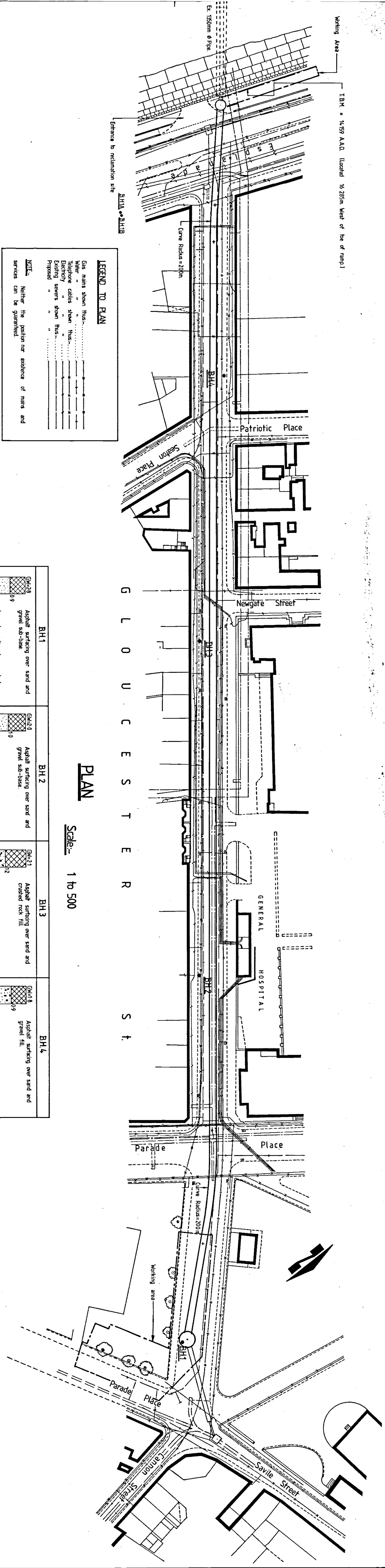
Engineer
Dandara

Sheet
1/1

Legend	Water	Instr (A)	Level (mOD)	Depth (m)	Description	Groundwater Strikes During Drilling										
					Gravel Filter	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)	
											5 min	10 min	15 min	20 min		
						Groundwater Observations During Drilling										
						Date	Start of Shift					End of Shift				
							Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (mOD)
						28/03/14						11.00	2.42		DRY	
						01/04/14	08.00	2.42	2.26	WET		17.00	9.49	9.21	5.63	
						02/04/14	08.00	9.49		5.47		17.00	11.65		2.05	
						Instrument Groundwater Observations										
						Inst. [A] Type : Slotted Standpipe										
	Instrument [A]			Remarks												
Date	Time	Depth (m)	Level (mOD)													
08/04/14	17:00	2.40														
11/04/14	17:00	2.41														
Slotted Standpipe																

NOTES

- 1 All levels are related to admiralty datum.
- 2 Boreholes 1A & 1B have recently been sunk and have piezometers installed.

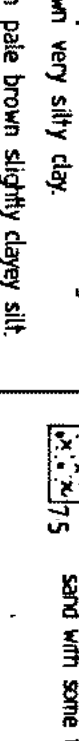
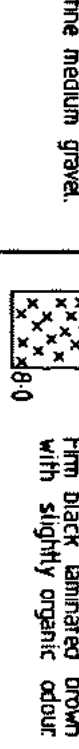
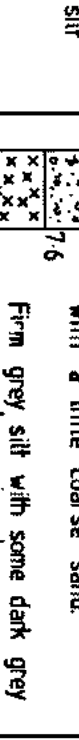



LEGEND TO PLAN

NOTE: Neither the position nor existence of man and services can be guaranteed.

PLAN

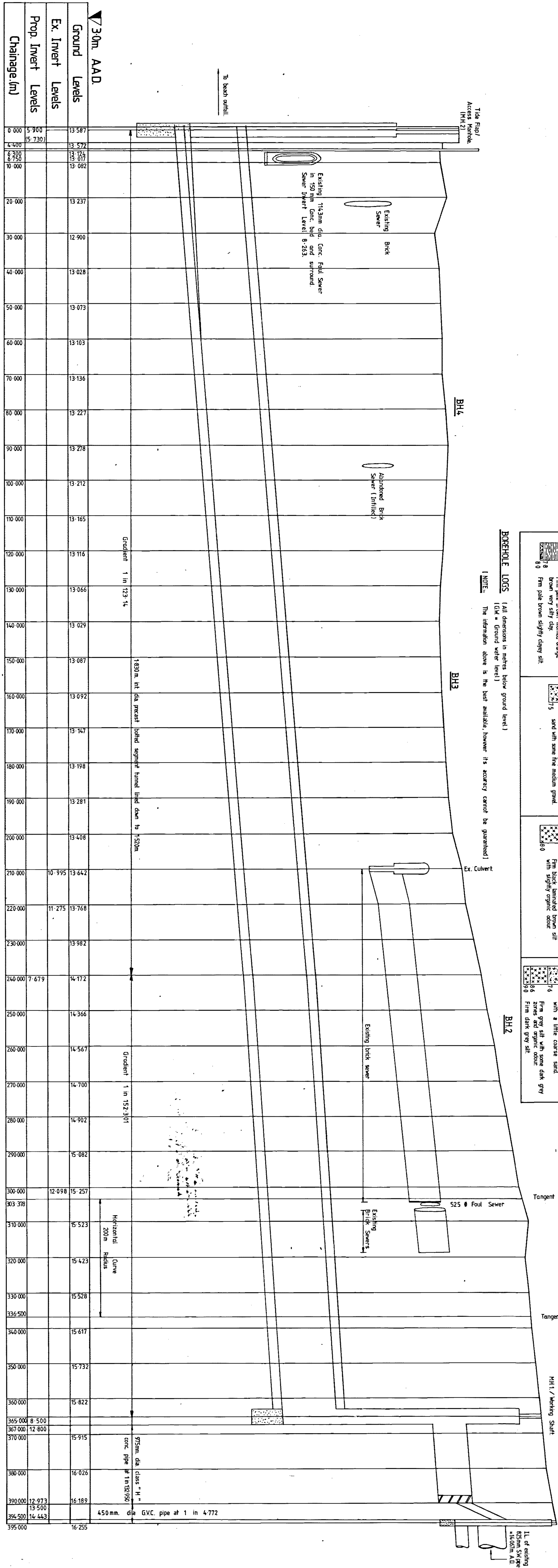
Scale:- 1 to 500

BH1	BH2	BH3	BH4
 <p>0-10 Asphalt surface over sand and gravel, sub-base</p> <p>10-19 Loose to medium dense pale brown fine medium sand</p> <p>19-25 Firm to stiff mottled pale brown and orange brown slightly clayey silt with traces of roots</p> <p>25-35 Soft to firm grey silt</p> <p>35-40 Firm pale brown mottled orange brown very silty clay</p> <p>40-44 Firm pale brown slightly clayey silt</p> <p>44-47 Firm grey silt</p> <p>47-50 Firm grey silt</p> <p>50-53 Firm grey silt</p> <p>53-56 Firm grey silt</p> <p>56-59 Firm grey silt</p> <p>59-62 Firm grey silt</p> <p>62-65 Firm grey silt</p> <p>65-68 Firm grey silt</p> <p>68-71 Firm grey silt</p> <p>71-74 Firm grey silt</p> <p>74-77 Firm grey silt</p> <p>77-80 Firm grey silt</p>	 <p>0-10 Asphalt surface over sand and gravel, sub-base</p> <p>10-15 Medium dense pale brown, fine medium sand</p> <p>15-28 Soft pale brown, becoming grey silt</p> <p>28-39 Soft to firm grey very silty clay with zones of brown silt</p> <p>39-40 Grey slightly sandy silt</p> <p>40-43 Firm fine medium gravel</p> <p>43-46 Medium dense, grey silty fine medium sand with some fine medium gravel</p> <p>46-49 Soft with some fine medium gravel</p> <p>49-52 Soft with some fine medium gravel</p> <p>52-55 Soft with some fine medium gravel</p> <p>55-58 Soft with some fine medium gravel</p> <p>58-61 Soft with some fine medium gravel</p> <p>61-64 Soft with some fine medium gravel</p> <p>64-67 Soft with some fine medium gravel</p> <p>67-70 Soft with some fine medium gravel</p> <p>70-73 Soft with some fine medium gravel</p> <p>73-76 Soft with some fine medium gravel</p> <p>76-79 Soft with some fine medium gravel</p> <p>79-82 Soft with some fine medium gravel</p> <p>82-85 Soft with some fine medium gravel</p> <p>85-88 Soft with some fine medium gravel</p> <p>88-91 Soft with some fine medium gravel</p> <p>91-94 Soft with some fine medium gravel</p> <p>94-97 Soft with some fine medium gravel</p> <p>97-100 Soft with some fine medium gravel</p>	 <p>0-10 Asphalt surface over sand and crushed rock fill</p> <p>10-12 Loose coarse medium gravel with some pale brown medium sand</p> <p>12-14 Loose coarse medium gravel with some pale brown medium sand</p> <p>14-16 Loose coarse medium gravel with some pale brown medium sand</p> <p>16-18 Loose coarse medium gravel with some pale brown medium sand</p> <p>18-20 Loose coarse medium gravel with some pale brown medium sand</p> <p>20-22 Loose coarse medium gravel with some pale brown medium sand</p> <p>22-24 Loose coarse medium gravel with some pale brown medium sand</p> <p>24-26 Loose coarse medium gravel with some pale brown medium sand</p> <p>26-28 Loose coarse medium gravel with some pale brown medium sand</p> <p>28-30 Loose coarse medium gravel with some pale brown medium sand</p> <p>30-32 Loose coarse medium gravel with some pale brown medium sand</p> <p>32-34 Loose coarse medium gravel with some pale brown medium sand</p> <p>34-36 Loose coarse medium gravel with some pale brown medium sand</p> <p>36-38 Loose coarse medium gravel with some pale brown medium sand</p> <p>38-40 Loose coarse medium gravel with some pale brown medium sand</p> <p>40-42 Loose coarse medium gravel with some pale brown medium sand</p> <p>42-44 Loose coarse medium gravel with some pale brown medium sand</p> <p>44-46 Loose coarse medium gravel with some pale brown medium sand</p> <p>46-48 Loose coarse medium gravel with some pale brown medium sand</p> <p>48-50 Loose coarse medium gravel with some pale brown medium sand</p> <p>50-52 Loose coarse medium gravel with some pale brown medium sand</p> <p>52-54 Loose coarse medium gravel with some pale brown medium sand</p> <p>54-56 Loose coarse medium gravel with some pale brown medium sand</p> <p>56-58 Loose coarse medium gravel with some pale brown medium sand</p> <p>58-60 Loose coarse medium gravel with some pale brown medium sand</p> <p>60-62 Loose coarse medium gravel with some pale brown medium sand</p> <p>62-64 Loose coarse medium gravel with some pale brown medium sand</p> <p>64-66 Loose coarse medium gravel with some pale brown medium sand</p> <p>66-68 Loose coarse medium gravel with some pale brown medium sand</p> <p>68-70 Loose coarse medium gravel with some pale brown medium sand</p> <p>70-72 Loose coarse medium gravel with some pale brown medium sand</p> <p>72-74 Loose coarse medium gravel with some pale brown medium sand</p> <p>74-76 Loose coarse medium gravel with some pale brown medium sand</p> <p>76-78 Loose coarse medium gravel with some pale brown medium sand</p> <p>78-80 Loose coarse medium gravel with some pale brown medium sand</p>	 <p>0-10 Asphalt surface over sand and gravel fill</p> <p>10-15 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>15-18 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>18-20 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>20-22 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>22-24 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>24-26 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>26-28 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>28-30 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>30-32 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>32-34 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>34-36 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>36-38 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>38-40 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>40-42 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>42-44 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>44-46 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>46-48 Medium dense, pale brown medium sand and medium coarse gravel</p> <p>48-50 Medium dense, pale brown medium sand and medium coarse gravel</p>

BOREHOLE LOGS (All dimensions in metres below ground level)

NOTE:-

(GW = Ground water level)



3.0m. A.A.D.

Ground Levels	Ex. Invert Levels	Prop. Invert Levels	Chainage (m)
13.587		0.000	0.000
13.572		5.900	4.000
13.574		5.730	6.730
13.682			10.000
			20.000
13.237			30.000
12.900			40.000
13.028			50.000
13.073			60.000
13.103			70.000
13.136			80.000
13.227			90.000
13.278			100.000
13.212			110.000
13.165			120.000
13.116			130.000
13.066			140.000
13.029			150.000
13.087			160.000
13.092			170.000
13.147			180.000
13.198			190.000
13.281			200.000
13.408			210.000
13.642	10.995		220.000
13.768	11.275		230.000
13.982			240.000
14.172		7.679	250.000
14.366			260.000
14.567			270.000
14.700			280.000
14.902			290.000
15.082			300.000
15.257	12.098		303.378
15.523			310.000
15.423			320.000
15.528			330.000
15.617			336.500
15.732			340.000
15.822			350.000
15.915	12.809	8.500	365.000
16.026	12.463	14.443	370.000
16.189	12.973		380.000
16.255			390.000
			395.000

LONGITUDINAL SECTION

Scale:-

H:	1 to 50
V:	1 to 50

DRAWING TITLE:

Plan And Section Of Tunnel And Sewer

Contract N°	120.	Sheet N°	2 of 6
DRAWN BY:	M.R.	TRACED BY:	M.R.
CHECKED BY:	88.	WORKS N°	
SCALE: 1 to 50/500.		DATE: APR. 1981.	
REG. DRG. N°	TS 693.	<input checked="" type="checkbox"/> A	<input checked="" type="checkbox"/> C

REG. DRG. N°	T.S. 693.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
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Appendix F-3

On-going Phase I Ground Investigation – Draft Data

AMPLUS LTD				Foundation & Geotechnical Specialists			Site Jersey Future Hospital		Borehole Number BH101						
Boring Method		Casing Diameter		Ground Level (AMS)		Client				Job Number					
Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm		113mm cased to 12.65m		8.37		States of Jersey				1887					
		Location (Observed measurements) as per site plan		Dates 23/01/2018-26/01/2018		Engineer Arup				Sheet 1/3					
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (AMS)	Depth (m) (Thickness)	Description	Legend	Water	Instr					
0.30	S1	1.55	0.90	Water flush started	8.31	0.06	MADE GROUND - Tarmac								
0.30	S1				8.23	0.14	MADE GROUND - Hoggin								
0.60	S2				8.12	0.25	MADE GROUND - Concrete								
1.20	J4				0.90	0.90	Coring thrthrough Concrete Starter pit excavated by hand to 1.20mbgl Coring thrthrough Concrete 7,7/5,4,3,3				7.47	0.90	MADE GROUND - Sandy gravelly clay with hardcore and boulders		
1.20-1.65	SPT N=15												7.37	1.00	MADE GROUND - Concrete
1.20	S3												7.27	1.10	MADE GROUND - Stones
1.20-1.25	NR												Stiff brown sandy cobbly CLAY		
1.20-1.92	B5 0.51												(1.55)		
1.92-2.27	S6 0.40														
2.27-2.72	SPT N=2				2.55	DRY	1,1/1,,1								
2.27	J7														
2.27-2.73	B8 0.46														
2.73-3.09	S9 0.36	3.08	GL	23/01/2018:DRY	5.72	2.65	Very loose brown SAND								
3.09-3.54	SPT N=20	5.64			2.73	Loose becoming medium dense brown SAND									
3.09	J10	(0.85)													
3.09-3.58	B11 0.49											4.79	3.58	Small granitic Cobbles	
3.58-4.09	X12 0.10													(0.51)	Stiff green brown sandy SILT
4.09-4.54	SPT N=16	4.28			4.09										
4.09	J13	(0.45)			Medium dense brown grey SAND with cobbles										
4.09-4.61	B14 0.56	3.83				4.54	(0.72)								
4.61-5.22	NR	3.11				5.26	Firm green grey sandy SILT								
5.22-5.26	S15 0.65	5.09			0.12	5,3/3,3,3,3	2.36				6.01	Firm brown SILT			
5.26-5.71	SPT N=12		0.12	2.07				6.30	Firm grey CLAY						
5.26	J16								1.76	6.61		Firm grey CLAY			
5.26-6.01	NR	1.29			7.08	Firm fine gravelly SILT									
6.01-6.05	B17 0.50		0.37	8.00		Firm to stiff grey CLAY									
6.05-6.61	X18 0.56					(0.56)	8.56	Very dense grey silty SAND							
6.61-7.06	SPT N=17	-0.19			8.56										
6.61	J19		(0.62)	9.18					Dense green grey fine GRAVEL with coarse sand						
6.61-7.08	B20 0.47					(0.32)	9.38		Stiff grey SILT						
7.08-7.53	U21/70 0.40	-1.33			9.70			Stiff grey SILT							
7.53-7.87	X22 0.40														
7.87-8.40	X23 0.53														
8.40-8.56	X24 0.16														
8.56	J25														
8.56-9.18	B26 0.62														
8.56-9.00	SPT 53/285														
9.18-9.38	X27 0.20														
9.38-9.70	X28 0.32														
9.70-10.32	X29 0.50														
Remarks Concrete coring 0.14-0.25l & 0.90-1.00 mbgl Starter pit excavated by hand to 0.25-1.20mbgl Dry drilling from GL - 11.10 mbgl Rotary coring from 11.10 mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone mbgl Ins B: Perforated Pipe with Geosock gravel response zone mbgl								Driller: MM			Scale (approx) 1:50	Logged By MFW			
							Figure No. 1887.BH101								

AMPLUS LTD						Foundation & Geotechnical Specialists		Site Jersey Future Hospital			Borehole Number BH101	
Boring Method Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm			Casing Diameter 113mm cased to 12.65m		Ground Level (AMSL) 8.37		Client States of Jersey			Job Number 1887		
			Location (Observed measurements) as per site plan		Dates 23/01/2018-26/01/2018		Engineer Arup			Sheet 2/3		
Depth (m)	Sample / Tests		Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr	
10.32 10.32-10.77 10.32-10.98	J30 SPT N=46 B31 0.55		10.65	5.88 5.88	4,5/9,11,13,13	-1.95	(0.62)	Stiff grey SILT				
							10.32	Dense grey fine SAND				
							(0.66)					
10.98-11.10 11.10-11.28 11.10	TCR	SCR	RQD	FI	3,21/25 X32 0.18 SPT(C) 25/25 X33	-2.61 -2.73	10.98	Grey fine SAND with fragments of rock				
	100	0	0	—			11.10	Weak grey slightly weathered Mudstone (Jersey Shale Formation) closely bedded				
11.57	100	20	0	—	X34							
12.19	100	40	20	10	X35		(2.68)					
12.82	100	85	50	8	X36							
13.78	100	0	0	—	25/01/2018:1.94m X37	-5.41	13.78	Strong grey fresh to slightly weathered Mudstone (Jersey Shale Formation) medium spaced bedding				
					26/01/2018:1.85m							
14.32	100	60	0	—	X38							
15.06	100	95	85	3	X39							
16.18	100	90	75	5	X40							
17.59	100	15	0	10+	X41		(7.84)					
18.27	100	90	70	5	X42							
19.40					X43							
Remarks Concrete coring 0.14-0.25l & 0.90-1.00 mbgl Starter pit excavated by hand to 0.25-1.20mbgl Dry drilling from GL - 11.10 mbgl Rotary coring from 11.10 mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone mbgl Ins B: Perforated Pipe with Geosock gravel response zone mbgl									Driller: MM		Scale (approx) 1:50	Logged By MFW
											Figure No. 1887.BH101	

AMPLUS LTD						Foundation & Geotechnical Specialists		Site Jersey Future Hospital			Borehole Number BH101	
Machine : Fraste PL			Casing Diameter 113mm cased to 12.65m			Ground Level (AMSL) 8.37		Client States of Jersey			Job Number 1887	
Flush : w			Location (Observed measurements) as per site plan			Dates 23/01/2018- 26/01/2018		Engineer Arup			Sheet 3/3	
Core Dia: 101 mm												
Method : Cable Percussion												
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr	
20.89 21.39 21.62	100	90	85	3	X44 X45 26/01/2018:1.86m	-13.25	21.62	Complete at 21.62m				
	100	100	100	5								
	100	50	50	5								
<div>Remarks</div> <div>Concrete coring 0.14-0.25l & 0.90-1.00 mbgl</div> <div>Starter pit excavated by hand to 0.25-1.20mbgl</div> <div>Dry drilling from GL - 11.10 mbgl</div> <div>Rotary coring from 11.10 mbgl to depth</div> <div>Ins A: Perforated Pipe with Geosock gravel response zone mbgl</div> <div>Ins B: Perforated Pipe with Geosock gravel response zone mbgl</div> <div>No return of flush to top of casing during drilling</div> <div>Driller: MM</div> <div>Scale (approx) 1:50</div> <div>Logged By MFW</div> <div>Figure No. 1887.BH101</div>												

AMPLUS LTD

Foundation & Geotechnical
Specialists

Site
Jersey Future Hospital

Borehole
Number
BH103

Boring Method

Fraste PL Rig
Sample S = 1 x 1kg plastic
tub, 1 x 250g glass jar & 2 x
600g glass vial
Hole diameter initially 101mm

Casing Diameter

113mm cased to 12.65m

Ground Level (AMSL)

8.10

Client

States of Jersey

Job
Number
1887

Location (Observed measurements)

as per site plan

Dates

12/01/2018-
18/01/2018

Engineer

Arup

DRAFT

Sheet
1/3

Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.30	S1			Starter pit excavated by hand to 1.20mbgl	7.85	(0.25) 0.25	MADE GROUND - Reinforced Concrete			
0.60	S2				7.50	(0.35) 0.60	MADE GROUND - Sub-base - crushed granite and hoggin			
0.90	S3					(0.60)	SAND			
1.20-1.65	SPT N=6		DRY	0,1/2,1,2,1	6.90	1.20	Loose yellow brown SAND			
1.20	S4					(0.93)				
1.20-1.55	NR									
1.55-1.92	NR									
1.92-2.09	B5 0.17		DRY	1,1/2,3,1,3	5.97	2.13	Loose brown SAND			
2.09-2.54	SPT N=9			12/01/2018: DRY		(0.97)				
2.09-2.13	NR									
2.13-2.52	NR									
2.52-3.10	S6 0.50			15/01/2018: 1.60m						
3.10-3.55	SPT N=14		1.88	2,3/3,3,4,4	5.00	3.10	Firm to stiff brown SILT			
3.10	J7									
3.10-3.82	X8									
3.82-4.48	S9 0.66	3.65		Water flush started		(1.90)				
4.48-4.93	SPT N=25		2.88	3,4/5,7,6,7						
4.48-5.00	X11 0.52	5.00								
5.00-5.24	S12 0.24				3.10	5.00	Stiff grey SILT			
5.24-5.69	SPT N=25		2.89	4,5/6,6,6,7						
5.24	J13									
5.24-6.11	X14 0.52	6.00				(1.94)				
6.11-6.49	X15 0.35									
6.49-6.94	U70/16 0.45		3.35	43 blows						
6.94-7.39	SPT N=44		3.59	11,9/9,9,12,14	1.16	6.94	Dense COBBLES			
6.94	J17				1.10	7.00	Stiff grey SILT			
6.94-7.40	X18 0.43	7.15				(0.40)				
7.40-7.74	X19 0.34				0.70	7.40	Dense brown fine GRAVEL with coarse sand			
7.74-8.05	NR					(0.93)				
8.05-8.16	NR									
8.16-8.32	NR									
8.32-8.33	X20	8.15		15/01/2018: 3.39m	-0.23	8.33	Very dense pink grey fine GRAVEL with small cobbles			
8.33-9.32	NR			16/01/2018: 2.02m						
8.33-8.62	SPT(C) 33/135	2.38		8,10/8,25,0,0		(1.00)				
9.32-9.33	X21	9.15			-1.23	9.33	Stiff grey CLAY			
9.33-9.66	X22					(0.33)				
9.66-10.21	X23				-1.56	9.66	Stiff grey coarse sandy SILT			

Remarks

Concrete coring GL-0.25mbgl
Starter pit excavated by hand to 0.25-1.20mbgl
Dry drilling from GL - 12.80 mbgl
Rotary coring from 12.80 mbgl to depth
Ins A: Perforated Pipe with Geosock gravel response zone 11.50-10.00 mbgl
Ins B: Perforated Pipe with Geosock gravel response zone 2.60-1.10 mbgl




Driller: MM

Scale
(approx)
1:50

Logged
By
MFW



Figure No.
1887.BH103

AMPLUS LTD					Foundation & Geotechnical Specialists		Site Jersey Future Hospital		Borehole Number BH103		
Boring Method Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm		Casing Diameter 113mm cased to 12.65m		Ground Level (AMSL) 8.10		Client States of Jersey		<div>DRAFT</div>	Job Number 1887		
		Location (Observed measurements) as per site plan		Dates 12/01/2018-18/01/2018		Engineer Arup			Sheet 2/3		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr	
10.21	J24	10.15	2.43	1,2/4,6,8,8	-2.11	(0.55)	Stiff grey coarse sandy SILT				
10.21-10.66	SPT N=26					10.21	Medium dense brown coarse silty fine SAND				
10.21-10.62	X25					(1.00)					
10.62-11.21	X26	11.15									
11.21-11.85	NR	11.15	0.88	25/	-3.11	11.21	Very dense brown coarse SAND				
11.21-11.27	SPT(C) 25*/60										
11.85-12.19	NR	12.15		25/ SPT(C) 25*/35 16/01/2018:2.21m X30	-3.90	12.00	Very dense brown coarse silty SAND				
12.19-12.25	X27					12.28	Very stiff grey brown SILT with fragments of rock				
12.28-12.55	X					(0.52)					
12.55-12.80	NR	12.80	Weak to medium strong blue grey slightly to moderately weathered Mudstone (Jersey Shale Formation) iron stained bedding closely spaced								
12.80	TCR	100	0		0	—	17/01/2018:1.87m X31				
12.80-12.84	SCR	100	0		0	—					
13.04		100	0	0	—						
14.12		100	20	0	—	X32					
15.21	100	0	0	—	X33 X34	(5.20)					
15.29	100	50	20	10							
15.90	0	0	0	—	NR X35						
16.04	100	50	0	—							
16.27	100	30	15	10	Falling / Rising Head Test from 16.27-16.93mbgl X36						
17.24	100	75	50	8	17/01/2018:2.07m X37 18/01/2018:1.69m						
18.13	100	90	80	6	X38	18.00	Medium strong to strong blue grey slightly weathered Mudstone (Jersey Shale Formation) smooth planar bedding closeto medium spaced				
19.26					X39	(2.68)					
	100	95	50	6							
Remarks Concrete coring GL-0.25mbgl Starter pit excavated by hand to 0.25-1.20mbgl Dry drilling from GL - 12.80 mbgl Rotary coring from 12.80 mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 11.50-10.00 mbgl Ins B: Perforated Pipe with Geosock gravel response zone 2.60-1.10 mbgl							Driller: MM		Scale (approx) 1:50	Logged By MFW	
							Figure No. 1887.BH103				

AMPLUS LTD						Foundation & Geotechnical Specialists		Site Jersey Future Hospital		Borehole Number BH103		
Machine : Fraste PL Flush : w Core Dia: 101 mm Method : Cable Percussion			Casing Diameter 113mm cased to 12.65m			Ground Level (AMSL) 8.10		Client States of Jersey		<div>DRAFT</div>		
			Location (Observed measurements) as per site plan			Dates 12/01/2018-18/01/2018		Engineer Arup				Job Number 1887
Depth (m)		TCR	SCR	RQD	FI	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.68						X40	-12.58	20.68 (0.51)	Mudstone (Jersey Shale Formation)			
		100	10	0	—				Weak to medium strong blue grey slightly to moderately weathered Mudstone (Jersey Shale Formation) iron stained bedding closely spaced			
21.19		100	15	10	10	X41	-13.09	21.19	Medium strong to strong blue grey slightly weathered Mudstone (Jersey Shale Formation) smooth planar bedding closeto medium spaced with iron stained surfaces			
22.07		100	80	70	7	18/01/2018:1.88m X42	(2.00)					
						19/01/2018:1.58m						
23.19						19/01/2018:1.55m	-15.09	23.19	Complete at 23.19m			
<div>Remarks</div> <div>Concrete coring GL-0.25mbgl Starter pit excavated by hand to 0.25-1.20mbgl Dry drilling from GL - 12.80 mbgl Rotary coring from 12.80 mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 11.50-10.00 mbgl Ins B: Perforated Pipe with Geosock gravel response zone 2.60-1.10 mbgl</div> <div>Driller: MM</div> <div>Scale (approx) 1:50</div> <div>Logged By MFW</div> <div>Figure No. 1887.BH103</div>												

AMPLUS LTD					Foundation & Geotechnical Specialists		Site Jersey Future Hospital			Borehole Number BH104	
Boring Method Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm		Casing Diameter 113mm cased to 11.05m		Ground Level (AMSL) 9.50		Client States of Jersey			Job Number 1887		
		Location (Observed measurements) as per site plan		Dates 02/02/2018-09/02/2018		Engineer Arup			Sheet 1/3		
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr	
0.30	SWAC/1			02/02/2018:DRY	9.45	0.05	MADE GROUND - Tarmac				
				05/02/2018:DRY	9.37	0.13	MADE GROUND - Tarmac - 2nd layer				
0.60	SWAC/2				8.90	0.60	MADE GROUND - Sand with cobbles				
0.90	SWAC/3			Starter pit excavated by hand to 1.50mbgl		(0.90)	MADE GROUND - Yellow sand				
1.20	SWAC/4				8.00	1.50	Loose to medium dense brown SAND				
1.20-1.50	- NR		DRY	1,2/2,2,3,3							
1.50-1.95	SPT N=10										
1.50-1.98	B5 0.48										
1.98-2.25	S6 0.30	2.15									
2.25-2.70	SPT N=7		DRY	1,2/2,1,2,2							
2.25-2.79	B7 0.55										
2.79-3.08	S8 0.29	2.65				(2.90)					
3.08-3.53	SPT N=14		2.35	1,2/3,3,4,4							
3.08	J9										
3.08-3.58	B10 0.50										
3.58-4.00	S11 0.42	3.60		Water flush started							
4.00-4.45	SPT N=10	4.00	GL	2,2/2,2,3,3							
4.00-4.45	J12										
4.00-4.56	B13 0.45	4.54			5.10	4.40	Firm brown clayey SILT				
4.56-5.03	S14 0.47	5.01				(0.63)					
5.03-5.48	SPT N=11		1.05	1,1/2,2,3,4	4.47	5.03	Firm grey SILT				
5.03	J15										
5.03-5.76	B16 0.65					(1.18)					
	100 0	0	—								
5.76-6.21	U17/70 0.45		3.96	32 blows							
6.21-6.64	X18 0.45	6.05		05/02/2018:4.23m	3.29	6.21	Firm to stiff grey SILT				
6.64-7.09	SPT N=19		3.68	06/02/2018:3.14m							
6.64	J19			2,3/3,4,6,6							
6.64-7.90	B20 0.74	7.55				(2.14)					
7.90-8.35	X21 0.45										
8.35-8.80	SPT N=35	8.10	3.53	5,6/4,6,12,13	1.15	8.35	Stiff brown fine gravelly SILT				
8.35	J22					(0.58)					
8.35-8.93	B23 0.58	8.60									
8.93-9.75	X24 0.30				0.57	8.93	Firm to stiff grey clayey SILT				
						(1.41)					
9.75-10.20	SPT N=13		2.52	1,2/3,3,3,4							
9.75	J25										
Remarks Starter pit excavated by hand to GL-1.50mbgl Dry drilling from GL - 11.07mbgl Rotary coring from 11.07mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 4.00-2.00 mbgl Ins B: Perforated Pipe with Geosock gravel response zone 7.00-6.00 mbgl								Driller: MM		Scale (approx) 1:50	Logged By MFW
								Figure No. 1887.BH104			

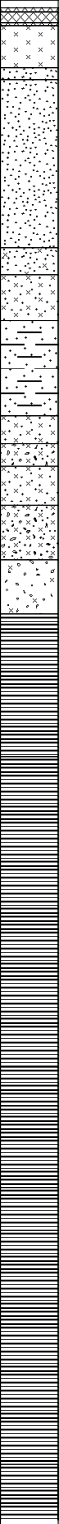

AMPLUS LTD						Foundation & Geotechnical Specialists		Site Jersey Future Hospital		Borehole Number BH104				
Boring Method Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm			Casing Diameter 113mm cased to 11.05m		Ground Level (AMSL) 9.50		Client States of Jersey			Job Number 1887				
			Location (Observed measurements) as per site plan		Dates 02/02/2018-09/02/2018		Engineer Arup			Sheet 2/3				
Depth (m)	Sample / Tests		Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr			
9.75-10.34	B26 0.59		9.55		25/ SPT(C) 25*/50 X30			Firm to stiff grey clayey SILT						
10.34-10.63	X27 0.29		10.55			-0.84	10.34 (0.29)	Medium dense brown silty cobbly SAND						
10.63-10.83 10.83-11.07	X28 0.20 X29 0.24				-1.13	10.63 (0.44)	Very dense weathered ANDESITE recovered as fragments							
11.07-11.12 11.07	TCR	SCR	RQD	FI	-1.57	11.07	Grey fractured ANDESITE							
11.52	100	0	0	—										
	100	0	0	—	X31									
12.46					X32		(2.70)							
	100	0	0	—										
13.77	100	0	0	—	06/02/2018:2.91m X33	-4.27	13.77	Grey fractured ANDESITE						
14.15	100	0	0	—	07/02/2018:2.75m X34									
15.07	100	30	0	—	X35		(3.61)							
15.63	100	10	0	—	X36									
16.10	100	20	20	10	X37									
17.38	100	90	85	5	X38	-7.88	17.38	Strong grey slightly weathered to fresh ANDESITE						
18.60	100	95	90	4	X39									
20.00														
Remarks Starter pit excavated by hand to GL-1.50mbgl Dry drilling from GL - 11.07mbgl Rotary coring from 11.07mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 4.00-2.00 mbgl Ins B: Perforated Pipe with Geosock gravel response zone 7.00-6.00 mbgl									Driller: MM		Scale (approx)		Logged By	
											1:50		MFV	
									Figure No. 1887.BH104					

AMPLUS LTD						Foundation & Geotechnical Specialists		Site Jersey Future Hospital		Borehole Number BH104				
Machine : Fraste PL Flush : w Core Dia: 101 mm Method : Cable Percussion			Casing Diameter 113mm cased to 11.05m			Ground Level (AMSL) 9.50		Client States of Jersey		Job Number 1887				
			Location (Observed measurements) as per site plan			Dates 02/02/2018-09/02/2018		Engineer Arup		Sheet 3/3				
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr			
20.78	100	90	80	5	07/02/2018:3.50m 09/02/2018:2.53m	-17.91	(10.03)	Strong grey slightly weathered to fresh ANDESITE						
22.12	100	95	90	4										
22.84	100	100	100	2										
24.16	100	100	100	2										
25.47	100	90	90	3										
26.77	100	95	90	2										
27.41	100	100	95	2	09/02/2018:3.23m									
								Complete at 27.41m						
Remarks Starter pit excavated by hand to GL-1.50mbgl Dry drilling from GL - 11.07mbgl Rotary coring from 11.07mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 4.00-2.00 mbgl Ins B: Perforated Pipe with Geosock gravel response zone 7.00-6.00 mbgl									Driller: MM		Scale (approx) 1:50		Logged By MFW	
									Figure No. 1887.BH104					

<div> <div>AMPLUS LTD</div> <div>Foundation & Geotechnical Specialists</div> </div>						<div> <div>Site</div> <div>Jersey Future Hospital</div> </div>			<div> <div>Borehole Number</div> <div>BH105</div> </div>	
<div> <div>Boring Method</div> <div>Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm</div> </div>		<div> <div>Casing Diameter</div> <div>113mm cased to 13.56m</div> </div>		<div> <div>Ground Level (AMSL)</div> <div>10.40</div> </div>		<div> <div>Client</div> <div>States of Jersey</div> </div>			<div> <div>Job Number</div> <div>1887</div> </div>	
		<div> <div>Location (Observed measurements)</div> <div>as per site plan</div> </div>		<div> <div>Dates</div> <div>14/02/2018-20/02/2018</div> </div>		<div> <div>Engineer</div> <div>Arup</div> </div>			<div> <div>Sheet</div> <div>1/3</div> </div>	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr
0.30	SWACX1				10.33 10.26 10.20	0.07 0.14 0.20	MADE GROUND - Tarmac			
0.60	SWAC2					(0.80)	MADE GROUND - Tarmac			
0.90	SWAC3			Starter pit excavated by hand to 1.50mbgl	9.40	1.00	MADE GROUND - Hoggin			
1.20-1.65 1.20 1.20 1.20-1.73 1.73-2.03	SPT N=9 J5 SWAC4 B6 0.53 S7 0.30		DRY	2,2/2,3,2,2			MADE GROUND - Sandy matrix with stones and fragments of hardcore			
2.03-2.48 2.03	SPT N=12 J8		DRY	1,1/3,2,3,4		(2.01)	Loose becoming medium dense yellow brown SAND			
2.50-2.60 2.60	B9 0.40 S10	2.15								
3.01-3.50	B11 0.49	3.50		Water flush started 14/02/2018:GL	7.39	3.01	Loose becoming medium dense brown SAND			
3.01-3.46 3.50	SPT N=7 S12	4.03	2.27	15/02/2018:2.27m 2,2/2,1,2,2		(1.49)				
4.08-4.53 4.08 4.08-4.60	SPT N=15 J13 B14 0.38	4.55	GL	2,3/5,3,3,4	5.90	4.50	Medium dense occasionally loose brown fine silty SAND			
4.60	S15 0.38									
5.06-5.51 5.06 5.06-5.60	SPT N=8 J16 B17 0.45		1.84	1,1/1,2,2,3						
5.60-6.05	U18 0.45	5.60	2.28	33 blows		(2.78)				
6.05-6.48	X19 0.43									
6.48-6.93 6.48 6.48-6.86 6.86-7.28	SPT N=30 J20 B21 0.30 X22 0.49	6.61 7.05	2.13	3,6/6,8,8,8						
7.28-8.09	X23 0.60	8.07			3.12	7.28	Stiff grey brown CLAY			
						(1.19)				
8.09-8.54 8.09 8.09-8.47	SPT N=24 J24 B25 0.38	8.50	0.57	2,4/4,4,8,8	1.93	8.47 (0.34)	Medium dense brown and grey cobbly GRAVEL			
8.69-8.81 8.81-8.95	X26 0.10 X27 0.15			15/02/2018:1.95m	1.59	8.81 (0.14)	Medium dense brown and grey coarse SAND and fine GRAVEL			
				16/02/2018:2.33m	1.45	8.95				
9.21-10.15	X28 0.85	10.10				(1.20)	Medium dense grey SAND becoming clayey SAND			
<div> <div>Remarks</div> <div> Starter pit excavated by hand to GL-1.20mbgl Dry drilling from GL - 13.02mbgl Rotary coring from 13.02mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 3.50-1.50mbgl Ins B: Perforated Pipe with Geosock gravel response zone 15.50-14.00mbgl </div> </div>								Driller: MM	<div> <div>Scale (approx)</div> <div>1:50</div> </div>	<div> <div>Logged By</div> <div>MFW</div> </div>
								<div> <div>Figure No.</div> <div>1887.BH105</div> </div>		

<div> <div>AMPLUS LTD</div> <div>Foundation & Geotechnical Specialists</div> </div>						<div> <div>Site</div> <div>Jersey Future Hospital</div> </div>			<div> <div>Borehole Number</div> <div>BH105</div> </div>	
<div> <div>Boring Method</div> <div>Fraste PL Rig Sample S = 1 x 1kg plastic tub, 1 x 250g glass jar & 2 x 600g glass vial Hole diameter initially 101mm</div> </div>		<div> <div>Casing Diameter</div> <div>113mm cased to 13.56m</div> </div>		<div> <div>Ground Level (AMSL)</div> <div>10.40</div> </div>		<div> <div>Client</div> <div>States of Jersey</div> </div>			<div> <div>Job Number</div> <div>1887</div> </div>	
		<div> <div>Location (Observed measurements)</div> <div>as per site plan</div> </div>		<div> <div>Dates</div> <div>14/02/2018-20/02/2018</div> </div>		<div> <div>Engineer</div> <div>Arup</div> </div>			<div> <div>Sheet</div> <div>2/3</div> </div>	
Depth (m)	Sample / Tests	Casing Depth (m)	Water Depth (m)	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr
10.15-10.48	X29 0.33				0.25	10.15 (0.33)	Medium dense brown and grey coarse SAND and fine GRAVEL			
10.48-11.25	X30 0.65				-0.08	10.48	Stiff light grey CLAY			
							Stiff dark grey sandy CLAY			
11.25-11.70	J31 SPT N=24 B32 0.33	11.65	7.78	2,4/4,6,6,8		(1.85)				
11.91-12.33	X33 0.70									
12.33-12.70	X34 0.37	12.60			-1.93	12.33 (0.37)	Stiff green grey sandy CLAY			
12.70-12.83	X36 0.17 X35 0.13	13.10		2,8/25 SPT(C) 25/35	-2.30	12.70 (0.32)	Stiff yellow brown SILT with fragments of weathered rock			
13.02-13.21	TCR			X37	-2.62	13.02 (0.18)	weathered ANDESITE			
13.21-13.02	SCR				-2.80	13.20	Medium strong grey slightly weathered ANDESITE iron stained planar joints			
13.87				X38						
14.76				16/02/2018:3.60m X39		(3.57)				
				19/02/2018:3.22m						
16.18				X40						
16.77				Falling Head Test X41	-6.37	16.77 (1.08)	Weak grey brown slightly to moderately weathered ANDESITE, closely spaced joints			
17.85				X42	-7.45	17.85 (1.15)	Medium strong grey slightly weathered ANDESITE iron stained planar joints			
19.00				X43	-8.60	19.00 (0.82)	Weak grey brown slightly to moderately weathered ANDESITE, closely spaced joints			
19.52				X44	-9.42	19.82	Weak grey brown slightly to moderately weathered			
<div> <div>Remarks</div> <div> Starter pit excavated by hand to GL-1.20mbgl Dry drilling from GL - 13.02mbgl Rotary coring from 13.02mbgl to depth Ins A: Perforated Pipe with Geosock gravel response zone 3.50-1.50mbgl Ins B: Perforated Pipe with Geosock gravel response zone 15.50-14.00mbgl Starter pit excavated by hand to GL-1.20mbgl </div> </div>							Driller: MM	Scale (approx)	Logged By	
							Driller: MM	1:50	MFV	
								Figure No.	1887.BH105	

<div> <div>AMPLUS LTD</div> <div>Foundation & Geotechnical Specialists</div> </div>							<div> <div>Site</div> <div>Jersey Future Hospital</div> </div>			<div> <div>Borehole Number</div> <div>BH105</div> </div>	
<div> <div>Machine : Fraste PL</div> <div>Flush : water</div> <div>Core Dia: 101 mm</div> <div>Method : Cable Percussion</div> </div>			<div> <div>Casing Diameter</div> <div>113mm cased to 13.56m</div> </div>		<div> <div>Ground Level (AMSL)</div> <div>10.40</div> </div>		<div> <div>Client</div> <div>States of Jersey</div> </div>			<div> <div>Job Number</div> <div>1887</div> </div>	
			<div> <div>Location (Observed measurements)</div> <div>as per site plan</div> </div>		<div> <div>Dates</div> <div>14/02/2018-20/02/2018</div> </div>		<div> <div>Engineer</div> <div>Arup</div> </div>			<div> <div>Sheet</div> <div>3/3</div> </div>	
Depth (m)	TCR	SCR	RQD	FI	Field Records	Level (AMSL)	Depth (m) (Thickness)	Description	Legend	Water	Instr
20.63					X45	-9.63	(0.21) 20.03	ANDESITE, closely spaced joints Weak grey brown slightly to moderately weathered ANDESITE, closely spaced joints			
							(1.76)	Medium strong grey slightly weathered ANDESITE iron stained planar joints			
21.79					19/02/2018:3.65m X46	-11.39	21.79	Medium strong grey slightly weathered ANDESITE iron stained planar joints			
					20/02/2018:3.14m		(0.72)				
22.51					X47	-12.11	22.51	Weak grey brown slightly to moderately weathered ANDESITE, closely spaced joints			
							(1.59)				
23.63					X47						
24.10					20/02/2018:3.28m	-13.70	24.10	Complete at 24.10m			
<div> <div>Remarks</div> <div>Dry drilling from GL - 13.02mbgl</div> <div>Rotary coring from 13.02mbgl to depth</div> <div>Ins A: Perforated Pipe with Geosock gravel response zone 3.50-1.50mbgl</div> <div>Ins B: Perforated Pipe with Geosock gravel response zone 15.50-14.00mbgl</div> </div>									<div> <div>Scale (approx)</div> <div>1:50</div> </div>	<div> <div>Logged By</div> <div>MFW</div> </div>	<div> <div>Figure No.</div> <div>1887.BH105</div> </div>

AMPLUS LTD				Foundation & Geotechnical Specialists			Site Jersey Future Hospital				Borehole Number BH102								
Installation Type Double Installation				Dimensions Internal Diameter of Tube [A] = 20 mm Internal Diameter of Tube [B] = 50 mm				Client States of Jersey				Job Number 1887							
				Location as per site plan		Ground Level (AMSL) 8.80		Engineer Arup				Sheet 1/1							
Legend	Water	Instr (A) (B)	Level (AMSL)	Depth (m)	Description	Groundwater Strikes During Drilling													
						Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)				
5 min	10 min	15 min	20 min																
			8.30	0.50	Concrete Bentonite Seal														
			7.80	1.00	Cement/Bentonite Grout														
						27/11/17		2.97	2.65										
					Bentonite Seal	Groundwater Observations During Drilling													
			2.30	6.50		Date	Start of Shift					End of Shift							
			1.30	7.50			Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (AMSL)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (AMSL)			
						24/11/17						17.00	2.15	1.53	DRY				
						27/11/17	08.00	2.15	1.53	DRY		17.00	9.20	9.15	GL				
						28/11/17	08.00	9.20	9.15	GL		17.00	16.48	9.65	2.38	6.42			
			-0.20	9.00	Slotted Standpipe	29/11/17	08.00	16.48	9.65	2.53	6.27	17.00	25.20	9.65	2.59	6.21			
					Bentonite Seal														
			-2.20	11.00	Slotted Standpipe														
			-3.70	12.50	Bentonite Seal	Instrument Groundwater Observations													
			-4.70	13.50	Cement/Bentonite Grout	Inst. [A] Type : Slotted Standpipe					Inst. [B] Type : Slotted Standpipe								
						Date	Instrument [A]			Instrument [B]			Remarks						
							Time	Depth (m)	Level (AMSL)	Time	Depth (m)	Level (AMSL)							
						30/11/17	17:00	2.56	6.24	17:00	2.48	6.32							
						01/12/17	08:00	2.51	6.29	08:00	2.45	6.35							
						01/12/17	17:00	2.54	6.26	17:00	2.48	6.32							
						14/12/17	11:30	2.40	6.40	11:30	2.34	6.46							
-16.40	25.20																		

Remarks
Ins A: Perforated Pipe with Geosock gravel response zone 12.50 - 11.00mbgl
Ins B: Perforated Pipe with Geosock gravel response zone 9.00 - 7.50mbgl

AMPLUS LTD				Foundation & Geotechnical Specialists				Site				Borehole Number			
								Jersey Future Hospital				BH107			
Installation Type				Dimensions				Client				Job			
Double Installation				Internal Diameter of Tube [A] = 20 mm Internal Diameter of Tube [B] = 50 mm				States of Jersey				Number 1887			
Location				Ground Level (AMSL)		Engineer				Sheet					
as per site plan				11.70		Arup				1/1					
Legend	Water	Instr (A) (B)	Level (AMSL)	Depth (m)	Description	Groundwater Strikes During Drilling									
			10.70	1.00	Concrete	Date	Time	Depth Struck (m)	Casing Depth (m)	Inflow Rate	Readings				Depth Sealed (m)
			9.70	2.00	Bentonite Seal						5 min	10 min	15 min	20 min	
					Slotted Standpipe	15/11/17		2.04	3.04		1.99	1.98			1.98
			7.70	4.00											
			6.70	5.00	Bentonite Seal										
			Groundwater Observations During Drilling												
			Date	Start of Shift					End of Shift						
				Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (AMSL)	Time	Depth Hole (m)	Casing Depth (m)	Water Depth (m)	Water Level (AMSL)		
			15/11/17						17.00	6.82	3.04	3.15	8.55		
			16/11/17	08.00	6.82	3.04	1.96	9.74	17.00	12.37	11.65	7.06	4.64		
			17/11/17	08.00	12.37	11.65	6.58	5.12	17.00	19.13	14.15	3.81	7.89		
			20/11/17	08.00	19.13	14.15	3.40	8.30	17.00	27.58	14.15	3.90	7.80		
			21/11/17	08.00	27.58	14.15	3.42	8.28	17.00	30.66	14.15	3.95	7.75		
			Instrument Groundwater Observations												
			Inst. [A] Type : Slotted Standpipe					Inst. [B] Type : Slotted Standpipe							
			Date	Instrument [A]			Instrument [B]			Remarks					
				Time	Depth (m)	Level (AMSL)	Time	Depth (m)	Level (AMSL)						
			22/11/17	17:00	3.48	8.22	17:00	1.98	9.72						
			23/11/17	08:00	3.58	8.12	08:00	1.98	9.72						
			14/12/17	11:20	3.03	8.67	11:20	1.63	10.07						