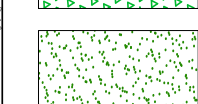
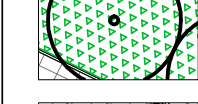
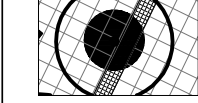
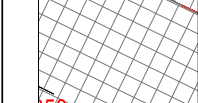


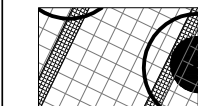
Appendix C. Landscaping Details

- Ground cover planting
- Grass
- 

Existing specimen shrub
- 

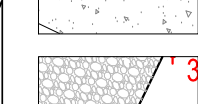
Proposed specimen shrub
- Tree
- 

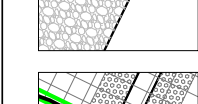
Tree in existing GRP planter relocated as shown
- 

Paving slabs to pedestrian walkways, 450x450mm Marshalls Saxon textured to match existing
- 

Hardscape concrete textured sett paving, 100x100mm - Breccia Tangenta A
- 

Existing block benches and cubes relocated as shown
- 

Bitumen macadam surface
- 

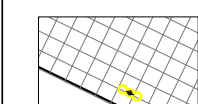
Gravel edge strip
- 

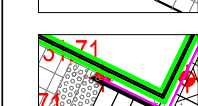
Pin kerb, 150x50x915mm
- 

Half battered kerb 125x255mm Drop Kerb
- 

Engineering Brick retaining wall
- 

Bollard
- 

Twin lamp column light to match existing: to engineers detail
- 

Stainless steel handrail
- 

Thermoplastic white line marking
- 

Proposed levels: to engineers detail

REV F - Final Construction issue - JW- 150416
REV E - levels to entrance paving - SB- 141121
REV D - Ramp update - SB- 141013
REV C - Ramp update - SB- 141010
REV B - Construction issue - DP- 140303

REVISIONS	

H

Hyland Edgar Driver

Landscape Architects and Urban Designers

One Wessex Way Colden Common Winchester Hampshire, SO21 1WG
Telephone 01962 711600 Facsimile 01962 713945

PROJECT
HYDE_PARK_HAYES

SUBJECT
HPH5_GENERAL_ARRANGEMENT

DATE 300920 DRAWN BY JS
SCALE 1:250@A1 CHECKED BY DP
DRAWING NUMBER HED.983.111 REVISION F

DRAWING STATUS			
A - PRELIMINARY	B - ISSUED FOR PLANNING	C - ISSUED FOR DESIGN / INFORMATION	D - ISSUED FOR TENDER
E - ISSUED FOR APPROVAL	F - ISSUED FOR CONSTRUCTION	G - AS BUILT	



Appendix D. Jacobs Verification Sampling (Formation Layer and Topsoil), 18 June 15

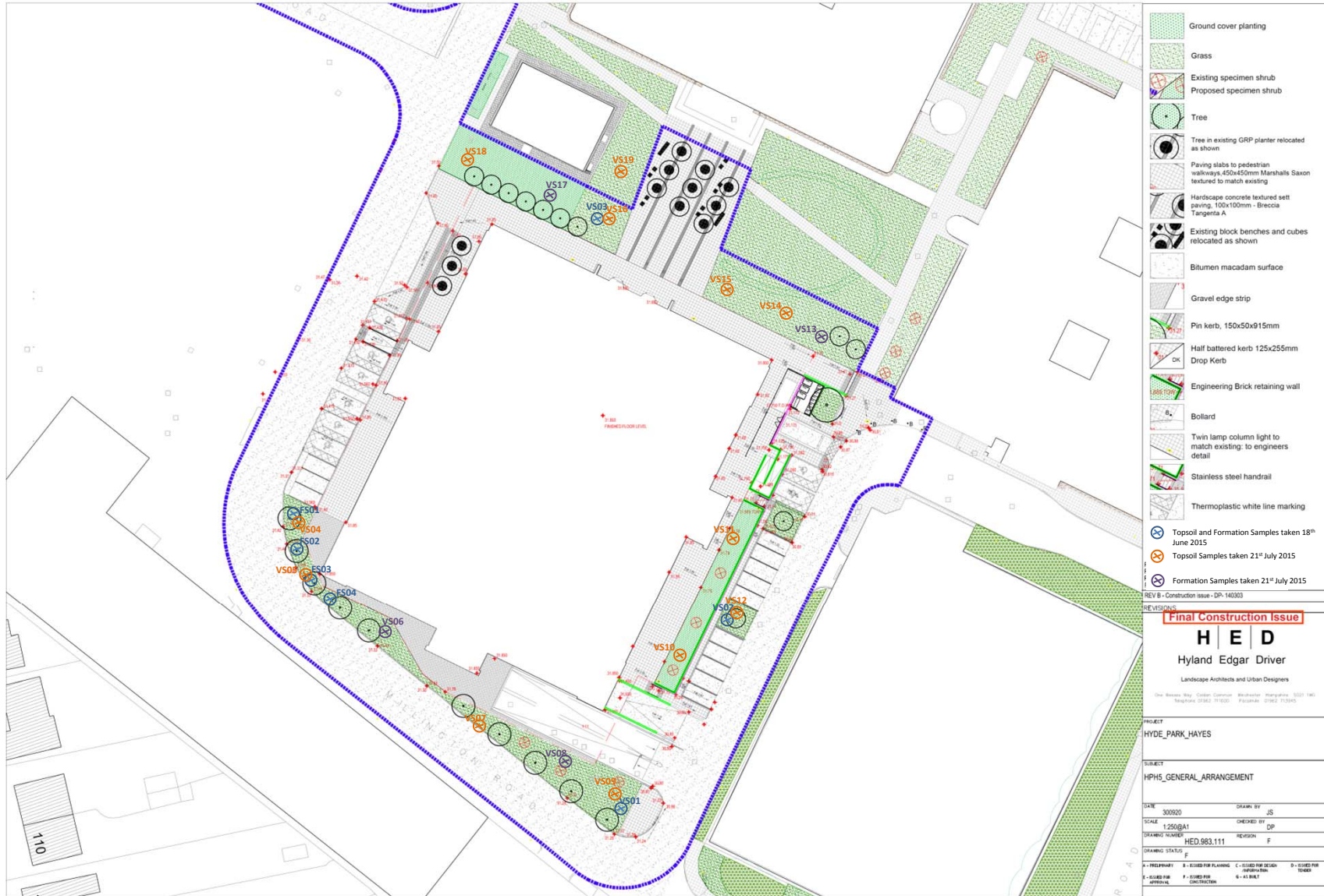
Soil Sampling HPH 18th June 2015

Soil sampling was undertaken by Melanie Lane and Katherine Hunt on 18th June 2015.

Four formation samples (FS01-04) were taken within Area 2 and a further three Verification Samples (VS01-03) taken within the site boundary. Sample pits were dug using a hand trowel and samples put into sample containers provided by i2 laboratories.

Sample Summary

18 TH June 2015					
Sample ID	Depth of sample (m)	Depth of Imported Soil (m)	Required Depth (m)	Geotextile	Pass / Fail
FS01	0.27	0.27	0.45	0.3	Fail
FS02	0.3	0.3	0.45	0.3	Fail
FS03	0.3	0.3	0.45	0.3	Fail
FS04	0.41	0.41	0.45	Not found	Fail
VS01	0.5	-	0.45	Not found	Fail
VS02	0.5	-	0.45	Not found	Fail
VS03	0.5	0.31	0.45	Not found	Fail



VS04



VS05



VS06



VS07



VS08



VS09



VS10	VS11
	
VS12	VS13
	
VS14	VS15
	

VS16



VS17



VS18



VS19



Formation and Top Soil Sampling Laboratory Analysis Results Compared With Remediation Criteria, HPH5

Lab Sample Number				456375	456376	456377	456378	456380	456381	456382	
Sample Reference				FS 01	FS 02	FS 03	FS 04	VS 01	VS 02	VS 03	
Sample type				Formation	Formation	Formation	Formation	Topsoil	Topsoil	Topsoil	
Date Sampled				18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	18/06/2015	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status								Remediation Criteria From Appendix 3 of the SKM Enviro Remediation Statement
Stone Content	%	0.1	NONE	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	
Moisture Content	%	N/A	NONE	12	9.6	14	12	16	15	15	
Total mass of sample received	kg	0.001	NONE	1.3	1.3	1.3	1.2	1.2	1.1	1.2	

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose fibres	Crocidolite- Loose fibres	Chrysotile- Insulation lagging, Crocidolite- Loose fibres	Amosite- Loose fibres	Chrysotile- Loose fibres	Chrysotile- Loose fibres	Chrysotile- Loose fibres	
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	Detected	Detected	Detected	Nil

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.1	0.08	0.2	0.13	0.13	0.11	0.12	1.6
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.15	0.22	< 0.10	< 0.10	< 0.10	0.18	
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.3	< 0.10	< 0.10	< 0.10	< 0.10	
Phenanthrene	mg/kg	0.1	MCERTS	0.62	1.8	3.3	0.89	1.5	0.92	1.6	
Anthracene	mg/kg	0.1	MCERTS	0.17	0.5	1	0.23	0.41	0.2	0.45	
Fluoranthene	mg/kg	0.1	MCERTS	1.8	4.2	8.8	2.8	5.1	2.1	4.1	
Pyrene	mg/kg	0.1	MCERTS	1.5	3.6	7.3	2.5	4.2	1.9	3.6	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.99	2.2	4.9	1.7	2.8	1.2	1.9	5.4
Chrysene	mg/kg	0.05	MCERTS	0.97	1.9	4.2	1.4	2.4	1.1	1.7	8.8
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.93	1.6	3.8	1.5	2.3	0.9	1.4	9.8
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.72	1.9	4	1.4	2.3	1	1.6	10.1
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.81	1.8	4.3	1.6	2.2	1	1.4	1.00
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.54	1.2	2.7	0.83	1.7	0.64	0.88	9.7
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.24	0.54	0.21	0.29	0.1	< 0.10	1.0
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.73	1.6	3.3	1.3	2	0.99	1.3	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	9.86	22.7	48.7	16.4	27.3	12.2	20.2	
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	16	45	51	43	< 1.0	16	< 1.0	428
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14	16	15	15	14	14	35
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.9	1.1	1	0.9	0.8	0.8	42

Formation and Top Soil Sampling Laboratory Analysis Results Compared With Remediation Criteria, HPH5

[illegible]

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Analytical Report Number : 15-73876-A

Replaces Analytical Report Number : 15-73876, issue no. 2

Project / Site name:	Hyde Park, Hayes	Samples received on:	19/06/2015
Your job number:	KU033000	Samples instructed on:	19/06/2015
Your order number:		Analysis completed by:	14/07/2015
Report Issue Number:	3	Report issued on:	14/07/2015
Samples Analysed:	4 soil samples		

Signed:



Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

Signed:



Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 15-73876-A

Project / Site name: Hyde Park, Hayes

Lab Sample Number	456375	456376	456377	456378	
Sample Reference	FS 01	FS 02	FS 03	FS 04	
Sample Number	None Supplied	None Supplied	None Supplied	None Supplied	
Depth (m)	0.27	0.30	0.30	0.41	
Date Sampled	18/06/2015	18/06/2015	18/06/2015	18/06/2015	
Time Taken	None Supplied	None Supplied	None Supplied	None Supplied	
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	12	9.6
Total mass of sample received	kg	0.001	NONE	1.3	1.3

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose fibres	Crocidolite- Loose fibres	Chrysotile- Insulation lagging, Crocidolite- Loose fibres	Amosite- Loose fibres	
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected	Detected	

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.10	0.08	0.20	0.13	
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10	< 0.10	
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	0.15	0.22	< 0.10	
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.30	< 0.10	
Phenanthrene	mg/kg	0.1	MCERTS	0.62	1.8	3.3	0.89	
Anthracene	mg/kg	0.1	MCERTS	0.17	0.50	1.0	0.23	
Fluoranthene	mg/kg	0.1	MCERTS	1.8	4.2	8.8	2.8	
Pyrene	mg/kg	0.1	MCERTS	1.5	3.6	7.3	2.5	
Benzo(a)anthracene	mg/kg	0.1	MCERTS	0.99	2.2	4.9	1.7	
Chrysene	mg/kg	0.05	MCERTS	0.97	1.9	4.2	1.4	
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	0.93	1.6	3.8	1.5	
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	0.72	1.9	4.0	1.4	
Benzo(a)pyrene	mg/kg	0.1	MCERTS	0.81	1.8	4.3	1.6	
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	0.54	1.2	2.7	0.83	
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	< 0.10	0.24	0.54	0.21	
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	0.73	1.6	3.3	1.3	

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	9.86	22.7	48.7	16.4	
-----------------------------	-------	-----	--------	------	------	------	------	--

Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	16	45	51	43	
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	14	14	16	15	
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	1.2	0.9	1.1	1.0	
Boron (water soluble)	mg/kg	0.2	MCERTS	2.6	1.3	1.5	1.5	
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	6.0	15	28	25	
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0	< 4.0	
Chromium (III)	mg/kg	1	NONE	40	44	50	53	
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	40	44	50	53	
Copper (aqua regia extractable)	mg/kg	1	MCERTS	1300	250	150	210	
Lead (aqua regia extractable)	mg/kg	1	MCERTS	130	190	220	250	
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	0.6	< 0.3	< 0.3	
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	40	40	40	38	
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0	< 1.0	
Tin (aqua regia extractable)	mg/kg	1	MCERTS	23	40	37	30	
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	46	37	46	44	
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	580	520	350	300	

Analytical Report Number : 15-73876-A

Project / Site name: Hyde Park, Hayes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
456375	FS 01	None Supplied	0.27	Brown sandy loam with gravel.
456376	FS 02	None Supplied	0.30	Brown sandy loam with gravel.
456377	FS 03	None Supplied	0.30	Brown loam and sand with gravel.
456378	FS 04	None Supplied	0.41	Brown loam and sand with gravel.

Analytical Report Number : 15-73876-A

Project / Site name: Hyde Park, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

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Analytical Report Number : 15-73876-B

Replaces Analytical Report Number : 15-73876, issue no. 2

Project / Site name:	Hyde Park, Hayes	Samples received on:	19/06/2015
Your job number:	KU033000	Samples instructed on:	19/06/2015
Your order number:		Analysis completed by:	14/07/2015
Report Issue Number:	3	Report issued on:	14/07/2015
Samples Analysed:	3 soil samples		

**Signed:**

Rexona Rahman
Reporting Manager
For & on behalf of i2 Analytical Ltd.

**Signed:**

Emma Winter
Assistant Reporting Manager
For & on behalf of i2 Analytical Ltd.

Other office located at: ul. Pionierów 39, 41 -711 Ruda Śląska, Poland

Standard sample disposal times, unless otherwise agreed with the laboratory, are :

soils	- 4 weeks from reporting
leachates	- 2 weeks from reporting
waters	- 2 weeks from reporting
asbestos	- 6 months from reporting

Excel copies of reports are only valid when accompanied by this PDF certificate.

Analytical Report Number: 15-73876-B

Project / Site name: Hyde Park, Hayes

Lab Sample Number	456380	456381	456382		
Sample Reference	VS 01	VS 02	VS 03		
Sample Number	None Supplied	None Supplied	None Supplied		
Depth (m)	0.05	0.05	0.05		
Date Sampled	18/06/2015	18/06/2015	18/06/2015		
Time Taken	None Supplied	None Supplied	None Supplied		
Analytical Parameter (Soil Analysis)	Units	Limit of detection	Accreditation Status		
Stone Content	%	0.1	NONE	< 0.1	< 0.1
Moisture Content	%	N/A	NONE	16	15
Total mass of sample received	kg	0.001	NONE	1.2	1.1

Asbestos in Soil Screen / Identification Name	Type	N/A	ISO 17025	Chrysotile- Loose fibres	Chrysotile- Loose fibres	Chrysotile- Loose fibres		
Asbestos in Soil	Type	N/A	ISO 17025	Detected	Detected	Detected		

Speciated PAHs

Naphthalene	mg/kg	0.05	MCERTS	0.13	0.11	0.12		
Acenaphthylene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Acenaphthene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	0.18		
Fluorene	mg/kg	0.1	MCERTS	< 0.10	< 0.10	< 0.10		
Phenanthrene	mg/kg	0.1	MCERTS	1.5	0.92	1.6		
Anthracene	mg/kg	0.1	MCERTS	0.41	0.20	0.45		
Fluoranthene	mg/kg	0.1	MCERTS	5.1	2.1	4.1		
Pyrene	mg/kg	0.1	MCERTS	4.2	1.9	3.6		
Benzo(a)anthracene	mg/kg	0.1	MCERTS	2.8	1.2	1.9		
Chrysene	mg/kg	0.05	MCERTS	2.4	1.1	1.7		
Benzo(b)fluoranthene	mg/kg	0.1	MCERTS	2.3	0.90	1.4		
Benzo(k)fluoranthene	mg/kg	0.1	MCERTS	2.3	1.0	1.6		
Benzo(a)pyrene	mg/kg	0.1	MCERTS	2.2	1.0	1.4		
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	MCERTS	1.7	0.64	0.88		
Dibenz(a,h)anthracene	mg/kg	0.1	MCERTS	0.29	0.10	< 0.10		
Benzo(ghi)perylene	mg/kg	0.05	MCERTS	2.0	0.99	1.3		

Total PAH

Speciated Total EPA-16 PAHs	mg/kg	1.6	MCERTS	27.3	12.2	20.2		
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Heavy Metals / Metalloids

Antimony (aqua regia extractable)	mg/kg	1	ISO 17025	< 1.0	16	< 1.0		
Arsenic (aqua regia extractable)	mg/kg	1	MCERTS	15	14	14		
Beryllium (aqua regia extractable)	mg/kg	0.06	MCERTS	0.9	0.8	0.8		
Boron (water soluble)	mg/kg	0.2	MCERTS	1.2	0.7	1.3		
Cadmium (aqua regia extractable)	mg/kg	0.2	MCERTS	2.6	5.9	0.9		
Chromium (hexavalent)	mg/kg	4	MCERTS	< 4.0	< 4.0	< 4.0		
Chromium (III)	mg/kg	1	NONE	43	73	30		
Chromium (aqua regia extractable)	mg/kg	1	MCERTS	43	73	30		
Copper (aqua regia extractable)	mg/kg	1	MCERTS	59	80	45		
Lead (aqua regia extractable)	mg/kg	1	MCERTS	150	150	200		
Mercury (aqua regia extractable)	mg/kg	0.3	MCERTS	0.5	< 0.3	0.4		
Nickel (aqua regia extractable)	mg/kg	1	MCERTS	24	32	20		
Selenium (aqua regia extractable)	mg/kg	1	MCERTS	< 1.0	< 1.0	< 1.0		
Tin (aqua regia extractable)	mg/kg	1	MCERTS	13	17	8.0		
Vanadium (aqua regia extractable)	mg/kg	1	MCERTS	42	45	39		
Zinc (aqua regia extractable)	mg/kg	1	MCERTS	180	240	130		

Analytical Report Number : 15-73876-B

Project / Site name: Hyde Park, Hayes

* These descriptions are only intended to act as a cross check if sample identities are questioned. The major constituent of the sample is intended to act with respect to MCERTS validation. The laboratory is accredited for sand, clay and loam (MCERTS) soil types. Data for unaccredited types of solid should be interpreted with care.

Stone content of a sample is calculated as the % weight of the stones not passing a 10 mm sieve. Results are not corrected for stone content.

Lab Sample Number	Sample Reference	Sample Number	Depth (m)	Sample Description *
456380	VS 01	None Supplied	0.05	Brown loam and sand with gravel.
456381	VS 02	None Supplied	0.05	Brown loam and sand with gravel.
456382	VS 03	None Supplied	0.05	Brown loam and sand with gravel.

Analytical Report Number : 15-73876-B

Project / Site name: Hyde Park, Hayes

Water matrix abbreviations: Surface Water (SW) Potable Water (PW) Ground Water (GW)

Analytical Test Name	Analytical Method Description	Analytical Method Reference	Method number	Wet / Dry Analysis	Accreditation Status
Asbestos identification in soil	Asbestos Identification with the use of polarised light microscopy in conjunction with disperion staining techniques.	In house method based on HSG 248	A001-PL	D	ISO 17025
Boron, water soluble, in soil	Determination of water soluble boron in soil by hot water extract followed by ICP-OES.	In-house method based on Second Site Properties version 3	L038-PL	D	MCERTS
Cr (III) in soil	In-house method by calculation from total Cr and Cr VI.	In-house method by calculation	L080-PL	W	NONE
Hexavalent chromium in soil	Determination of hexavalent chromium in soil by extraction in water then by acidification, addition of 1,5 diphenylcarbazine followed by colorimetry.	In-house method	L080-PL	W	MCERTS
Metals in soil by ICP-OES	Determination of metals in soil by aqua-regia digestion followed by ICP-OES.	In-house method based on MEWAM 2006 Methods for the Determination of Metals in Soil.	L038-PL	D	MCERTS
Moisture Content	Moisture content, determined gravimetrically.	In-house method based on BS1377 Part 3, 1990, Chemical and Electrochemical Tests	L019-UK/PL	W	NONE
Speciated EPA-16 PAHs in soil	Determination of PAH compounds in soil by extraction in dichloromethane and hexane followed by GC-MS with the use of surrogate and internal standards.	In-house method based on USEPA 8270	L064-PL	D	MCERTS
Stones content of soil	Standard preparation for all samples unless otherwise detailed. Gravimetric determination of stone > 10 mm as % dry weight.	In-house method based on British Standard Methods and MCERTS requirements.	L019-UK/PL	D	NONE

For method numbers ending in 'UK' analysis have been carried out in our laboratory in the United Kingdom.

For method numbers ending in 'PL' analysis have been carried out in our laboratory in Poland.

Soil analytical results are expressed on a dry weight basis. Where analysis is carried out on as-received the results obtained are multiplied by a moisture correction factor that is determined gravimetrically using the moisture content which is carried out at a maximum of 30oC.

Appendix E. Sharpe Industrial Services Method Statement for Underground Storage Tank Removal

SHARPE INDUSTRIAL SERVICES LIMITED

METHOD STATEMENT AND RISK ASSESSMENTS

FOR THE

**DE-COMMISSIONING AND CUTTING UP OF ONE
REDUNDANT 6,000 GALLON OIL STORAGE TANK**

AT

CELTIC TECHNOLOGIES LTD

MILLINGTON ROAD

HAYES

MIDDLESEX

UB3 4AZ

SHARPE INDUSTRIAL SERVICES LIMITED

Arlington Works, 21-27 Arlington Road

East Twickenham

Middlesex TW1 2BB

Telephone: 020 8892 0502 Fax: 01483 210208

Email: barry@sharpesoil.co.uk

www.sharpesoil.co.uk

SHARPE INDUSTRIAL SERVICES LIMITED

Contents

1. Method statement for the de-commissioning and cutting up of one redundant 6,000 gallon oil storage tank.

Scope of works to include the following:-

Remove residual fuel, clean and gas free.

Issue gas free certification.

Cut and leave metal on site.

2. Risk Assessment for Specific Site Hazards

Hot cutting operations

Materials Handling

Interface with other contractors

Confined Spaces Working
(Tank Cleaning)

3. Site Specific COSHH Assessment

Assessment can be reviewed in site vehicle

SHARPE INDUSTRIAL SERVICES LIMITED

Contract No: 20131210

Start Date: tba

1.0 Introduction

This method statement deals with works as described above.

This statement sets out the specific principles and safe working procedures, which are to be followed by all Sharpe Industrial Services Limited employees.

2.0 Procedure

- 2.1 Upon arrival on site all SIS Limited employees shall report to the site security and complete the necessary site register.
- 2.2 Agree programme and sequence of works with the Site Manager and establish any relevant emergency procedures to be followed by SIS Limited whilst on site e.g. fire evacuation procedure, bomb alert, accident reporting and first aid treatment procedures.
- 2.3 Prior to starting a particular job, the SIS Limited Supervisor will carefully re-assess the work to be undertaken and ensure that all potential hazards are identified as recorded in the Risk Assessment.
- 2.4 A Permit to Work system for the proposed works including hot cutting shall be necessary and afforded by the Site Manager. This shall prevent unauthorized access into the work areas during the works being carried out.
- 2.5 Applications for permits shall be submitted to the Site Manager or his deputy.
- 2.6 The SIS Limited Supervisor shall carry this out and shall ensure all requirements on the Permit to Work are implemented as required.
- 2.7 All tools and equipment shall be transported to the work area.
- 2.8 The bolts holding the manhole on will be removed by using sockets and spanners and moved to one side.
- 2.9 The oil filled tank shall be drained by connecting various lengths of 2 inch armored hose between the road tankers and the tank.
- 2.10 The hoses will be placed through the manhole into the tank and as much oil sucked out as possible before tank entry.
- 2.11 All waste will be disposed of to a licensed waste disposal site as required under the Environmental Protection Act 1995.
- 2.12 The air inside the tank will be tested using a gas monitor to ensure that it is within working parameters before entry by a Confined Space operative. The air will be constantly monitored whilst the operative is in the tank.
- 2.13 The operative will enter the tank wearing a rope and harness via a ladder (which will be removed during the cleaning process). A

top person being present at all times to observe their procedures and for safety.

- 2.14 The operative will then squeegee the remaining oil and water into a bucket.
- 2.15 The tank will then be scraped of any residues prior to being rag dried.
- 2.16 The bucket will be lifted out on a rope and sucked out by the road tanker.
- 2.17 The ladder will be placed back into the tank in order for the operative to egress the tank.
- 2.18 Once a gas free environment has been established and a zero concentration level has been identified a Gas Free certificate shall be issued to allow hot work to commence.
- 2.19 The armored hoses will be replaced on the road tankers.
- 2.20 Before cutting commences, the client will provide his machinery and labour to dig around the tank, lift the tank from the ground and put it in a safe place.
- 2.21 The oil tank will then be cut into manageable size pieces using oxy-propane cutting equipment from the outside of the tank and the metal left on site for the client to put into a skip.
- 2.22 During any works being carried out on site by SIS Limited, the Site Manager shall immediately be notified of any discrepancies or unsafe situations discovered.
- 2.23 Upon completion of all works, care will be taken to remove all waste materials and clear the workplace properly, to ensure a safe environment.

Additional Information

Any risk involving the work outlined in the Method Statement shall be fully assessed by a competent person as required under the current Management of Health and Safety at Work Regulations.

All SIS Limited employees will be fully conversant with all agreed methods of work, safe systems of work and any control measures necessary to avoid all risk to health and the safety of themselves and that of others who may be affected by their acts or omissions.

All workers shall be properly dressed and equipped, appropriate to work situations and conditions. Any equipment provided shall comply with all the requirements under the Personal Protective Equipment Regulations.

Additional Control Measures to be considered

N/A

Supervision and Monitoring Arrangements

SIS Limited will have a supervisor, Barry Roads, on site at all times to monitor and co-ordinate the works. He will liaise with other contractors as necessary, to ensure safe working practice.

Site Specific PPE required

Hard hat, gloves, overalls, steel capped boots, Hi Vis, eye protection, Filter Mask (suitable filters), wellington boots, oil resistant gloves and flameproof overalls/cutting gauntlets, head visor and mask.

Site Specific Training required

General Health and Safety

Confined Spaces

(Training credentials of personnel will be issued on Induction to site)

Plant and Equipment required

Fire Extinguishers
Squeegees & Rags
Gas Monitor
Van
Ladder

Oxy-propane Cutting Equip
Hand tools
Vacuum Tankers
Harness & Rope

First Aid/Welfare

SIS Limited personnel trained in first aid will carry an appropriate sized first kit in his vehicle.

Welfare facilities to be provided by the main contractor.

Emergency Procedures

SIS Limited will establish and conform to emergency procedures as required by the site – see Confined Spaces Risk Assessment for specific rescue procedure re man collapsed in tank.

In preparing this Method Statement, reference has been made to current Health, Safety and Environmental legislation.

This Method Statement was compiled by Mrs Theresa Roads, for and on behalf of Sharpe Industrial Services Limited.

Date:

As a member of the contractor's team, I confirm that I understand the agreed methods and safe system of work as outlined in the above Method Statement and attached Risk Assessment (s).

I will not compromise my own safety and that of others who may be affected by the operations outlined in the above.

Name (printed)

Signature

Date

Note: Clearance to proceed with this Method Statement does not relieve the Contractor or his Sub-Contractor of their contractual obligations, including safety, structural integrity, or any implication to the permanent works arising from these proposals.

SHARPE INDUSTRIAL SERVICES LIMITED

RISK ASSESSMENTS

SHARPE INDUSTRIAL SERVICES LIMITED

RISK ASSESSMENT

CONFINED SPACES WORK

Project:	Millington Road, Hayes
Contractor:	SIS Limited
Client:	Celtic Technologies Ltd
Document No:	20131210
Assessed by:	Theresa Roads
Date:	10 th December 2013

Task/Operation and Location (inc. any tools/equipment)

Confined spaces work within the existing oil tank vessel under the requirements of client's permit to work system.

Significant Hazards Assessment of Risk

- | | |
|---|------|
| • Excess oxygen/lack of oxygen | High |
| • Toxic or Flammable gases or fumes | High |
| • Contaminated water, especially in sewers | High |
| • Sudden flows of waste materials | High |
| • Slip and trip hazards from unsure footing | High |
| • Man trapped in tank | High |

Note: With control measures implemented the risk rating is Low.

Harm

- Asphyxiation
- Poisoning from toxic gases
- Injuries from exploding or igniting gases
- Infection from contaminated water e.g. Weil's disease
- Drowning
- Back injuries or falls or collisions with structures/fittings in the working area

Controls

- Wherever possible consider doing the work from outside the space.
- A two person Confined Space qualified team will be supplied
- The operative in the tank will be wearing a rope and harness, one end of the rope will be held by the top person who will not enter the tank
- A Permit to Work system should be in operation. This will stipulate any time limits on working in the confined space
- Workers must be physically fit and competent to enter and undertake work in the confined spaces
- Effective communication should be established between workers in the confined space and those outside the area
- The atmosphere of the confined space should be monitored for the presence of and levels of gases and must always be tested before entry. If dangerous fumes are present suitable breathing apparatus should be worn and the person entering the confined space should wear a harness and rope, one end of which is held by the person keeping watch outside
- Suitable ventilation will be provided
- Local weather reports should be obtained if rainfall is likely to cause flooding
- Equipment which may release excess oxygen, or engines which omit carbon monoxide gas should not be used in confined spaces
- Smoking, naked lights, sparking tools and any nylon material should be prohibited
- If working in contact with contaminated water e.g. in sewers, workers must be inoculated against serious disease. Any skin cut should be covered
- Appropriate personal protective equipment (PPE's) should be worn
- Washing facilities should be available to encourage good hygiene

Information, Instruction and Training

- Workers should be suitably trained and certified for all aspects of confined space work
- Workers should be briefed on any particular hazards and safe systems of work to be employed
- Workers should be trained in handling emergency situations
- Practicable exercises to be carried out as part of training

Emergency Procedures

- Establish relevant emergency procedures with Site Manager to be followed by Sharpe Industrial Services Limited e.g. fire evacuation procedure, bomb alert, accident reporting and first aid treatment procedure
- The Permit to Work should outline the set rescue procedure
- The top person in communication with the worker in the confined space should instigate rescue procedures. If a worker has collapsed in the tank due to a heart attack etc., the top person will immediately call the emergency services.
- Emergency equipment e.g. rope, first aid box, etc., should be accessible
- Response times to the site location must be obtained. First aid provision and rescue arrangements will be based on these

Monitoring Procedures

- Workers outside the confined space should monitor activities through regular communication with the work in the confined space
- The atmosphere in the confined space should be monitored to ensure the safety of the worker inside
- Supervisors should ensure that workers are physically able to carry out the work.

Signature

Date for Review

SHARPE INDUSTRIAL SERVICES LIMITED

RISK ASSESSMENT

HOT CUTTING OPERATIONS

Project:	Millington Road, Hayes
Contractor:	SIS Limited
Client:	Celtic Technologies Ltd
Document No:	20131210
Assessed by:	Theresa Roads
Date:	10th December 2013

Task/Operation and Location (inc. any tools/equipment)

Using hot cutting techniques under the requirements of clients permit to work system to cut up the tank.

Significant Hazards Assessment of Risk

- | | |
|---|--------|
| • Fire and explosion from the ignition of gas cylinders | High |
| • Ignition of other flammable materials whilst hot cutting operations are under way | High |
| • Metal spatter | Medium |
| • Hot work pieces | Medium |
| • Prolonged exposure to heat | Medium |
| • Gases and fumes – exposure whilst working within tank vessels | Medium |
| • Ladders | Medium |

Note: With control measures implemented the risk rating is Low

Harm

- Risk of falling
- Burns
- Eye injury and skin damage from exposure to hot cutting process

- Heat stress leading to fainting in extreme conditions
- Respiratory problems from exposure to fumes
- Systemic poisoning from fumes galvanized, lead-coated or other toxic metals, e.g. metal fume fever manifests itself in the form of a flu-like illness which can last 2/3 days

Controls

- Use only the bottom four rungs of the ladder, where practicable
- Permits to work should be issued before any work begins
- Where possible all flammable materials should be removed from the welding operations area
- Fire resisting sheets should be used to protect the surroundings from flame and spatter
- Personal protective equipment (PPE) should be worn
- Extra ventilation should be introduced to reduce the likelihood of heat stress occurrence
- Reduced time exposure should be considered
- Effective fume control equipment should be provided
- The extraction equipment should be placed adjacent to the hot cutting process so that the fume extraction is captured. Fumes should be exhausted to the atmosphere or filtered through an electrostatic filter so that clean air is returned to the work area
- If hot cutting operations are being undertaken on coated materials, air sampling should be carried out and consideration given to the use of respirators for this work. The Control of Lead at Work Regulations must be observed under these circumstances
- Where other operations are being undertaken adjacent to the welding area e.g. painting, the combined effect should be considered and suitable systems of work put in place
- SIS Limited Supervisor to ensure all control measures required are implemented

Information, Instruction and Training

- All contractors on site should be informed if cutting operations are to take place so that hazardous work interfaces can be identified and precautions taken to prevent them

- Workers should be informed of the control measures and instructed to wear the required PPE
- Refresher training should be undertaken in the form of tool-box talks
- Supervisors and Managers should be trained in fire prevention, welding and electrical safety
- All persons involved in hot cutting operations should receive site-specific training and information regarding the specific control measures that apply

Emergency Procedures

- Establish relevant emergency procedures with Site Manager to be followed by SIS Limited e.g. fire evacuation procedure, bomb alert, accident reporting and first aid treatment procedures
- Site emergency procedures should take into account the enhanced fire risk from hot cutting operations
- Site first-aid facilities must hold appropriate treatment for burns
- Fire extinguishers to be next to the work place and operatives at all time. They should be either or all: Foam, CO2, Dry Powder.

Monitoring Procedures

- Regular reviews of control measures should be undertaken to ensure that they are effective and that workers are adhering to them, where necessary, procedures should be updated
- Fire inspections should be made after every cutting operation
- The air in the breathing zone of the cutter should be monitored if it suspected that fume control may be inadequate
- Gas cylinders must be regularly checked for leaks, using water and detergent which will bubble at any puncture points
- Hoses on gas cylinders and flashback arrestors should be inspected daily for damage

Other items

Arrangements for effective communication with security to be established, via two-way radio handsets, if required.

Signature**Date for Review**

SHARPE INDUSTRIAL SERVICES LIMITED

RISK ASSESSMENT

INTERFACE WITH OTHER CONTRACTORS

Project:	Millington Road, Hayes
Contractor:	SIS Limited
Client:	Celtic Technologies Ltd
Document No:	20131210
Assessed by:	Theresa Roads
Date:	10th December 2013

Task/Operation and Location (inc. any tools/equipment)

Interface with other contractors whilst decommissioning the existing tank vessel using hot cutting techniques under the requirements of client's permit to work system.

Significant hazards assessment of risk

- | | |
|---|--------|
| • Electric shock/burns | Medium |
| • Fire | Medium |
| • Falling from heights | Medium |
| • Injuries to third parties – falls | Medium |
| • Injuries to third parties – falling objects | Medium |
| • Emergency routes obstructed | Medium |

Note: With control measures implemented, the risk rating is Low

Harm

- Burns or fatalities may arise from contact with live conductors
- Serious burns, injury or fatalities and property damage
- Significant injuries or fatalities to third parties from falls of persons or falling objects
- Confusion to third parties/occupants within premises in the event of an emergency procedure

Controls

- Planning will include exchange of information with owner/occupier to ensure full reciprocal knowledge of existing hazards
- Physical barriers and notices will be installed to isolate work from occupants and members of the public
- Fire exits and routes will be kept clear from obstructions, or alternative routes will be clearly demarcated
- Suitable access equipment shall be provided to ensure maximum safety of workers and occupants

Information, Instruction and Training

- All operatives shall be made aware of safe systems of work in place and necessary precautions required to ensure a safe working environment
- Induction training shall include emergency procedures as required or instructed by the client or building occupier

Emergency Procedures

- Establish relevant emergency procedures with Site Manager to be followed by SIS Limited e.g. fire evacuation procedure, bomb alert, accident reporting and first aid treatment procedures
- Standard site emergency procedures should be observed and all persons must know how to raise the alarm in an emergency
- The emergency services should be called immediately if there is a fall from height
- Suitable first aid facilities as required generally for the site must be accessible

Monitoring Procedures

- Supervisors will monitor safe systems of work during all works tasks and that areas are left safe at the end of each work period
- Regular liaison will take place with occupants to co-ordinate work and eliminate hazards to them

- Work should be monitored to ensure that any additional precautions or equipment required are provided

Other items

Arrangements for effective communication with security to be established, via two-way radio handsets

Signature**Date for Review**

SHARPE INDUSTRIAL SERVICES LIMITED

RISK ASSESSMENT

MATERIALS HANDLING

Project:	Millington Road, Hayes
Contractor:	SIS Limited
Client:	Celtic Technologies Ltd
Document No:	20131210
Assessed by:	Theresa Roads
Date:	10th December 2013

Task/Operation and Location (inc. any tools/equipment)

General manual handling of loads and materials

Significant hazards assessment of risk

- | | |
|---|--------|
| • Manual handling operations, especially if materials are large and difficult to maneuver in restricted areas | Medium |
| • Slips, trips and falls | Medium |
| • Falling materials | Low |
| • Lacerations to hands, legs and feet | Medium |

Harm

- Back strain, permanent disablement or recurring back problems or other musculoskeletal injuries
- Impact injuries
- Damage to property
- Injuries to hands, legs and feet

Controls

- Use of mechanical aids for handling materials should be used where possible

- Correct storage of materials to avoid obstructions and potential trips during manual handling of loads
 - Site Supervisor to ensure established standards are maintained on site at all times
 - Suitable personal protective equipment to be worn
 - Training in handling techniques should be given to all operatives, minimum requirement tool-box talk to be given
-

Celtic
Columbus House
Greenmeadow Springs, Tongwynlais
Cardiff
CF15 7NE

AMENDED LABORATORY TEST REPORT



Results of analysis of 10 samples
received 19 December 2013

Report Date
15 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

					248042					
					AJ56127	AJ56128	AJ56129	AJ56130	AJ56131	AJ56132
					V1	V2	V3	V4	V5	V8
					1	1	1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2010	pH			M	7.7	7.3	8.1	7.2	7.6	7.3
2175	Sulfur (total TRL report 447)		%	M	0.03	0.01	0.01	0.03	0.02	0.02
2625	Total Organic Carbon		%	M	0.39	0.20	0.23	1.3	0.30	0.47
2450	Arsenic	7440382	mg kg ⁻¹	M	14	13	8.4	14	11	10
	Cadmium	7440439	mg kg ⁻¹	M	<0.10	9.3	0.47	95	1.9	6.3
	Chromium	7440473	mg kg ⁻¹	M	20	90	17	17	23	22
	Copper	7440508	mg kg ⁻¹	M	11	11	7.8	8.5	16	39
	Mercury	7439976	mg kg ⁻¹	M	0.10	<0.10	<0.10	<0.10	<0.10	0.20
	Nickel	7440020	mg kg ⁻¹	M	21	26	22	19	23	22
	Lead	7439921	mg kg ⁻¹	M	15	7.6	7.5	8.1	15	49
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	43	34	26	960	58	89
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	< 10 ¹	< 10 ¹	14 ¹	3100 ¹	< 10 ¹	< 10 ¹
	TPH >C6-C8		mg kg ⁻¹	N				< 1 ¹		
	TPH >C8-C10		mg kg ⁻¹	N				7.9 ¹		
	TPH >C10-C16		mg kg ⁻¹	N				34 ¹		
	TPH >C16-C24		mg kg ⁻¹	N				340 ¹		
	TPH >C24-C40		mg kg ⁻¹	N				2700 ¹		
	Total Petroleum Hydrocarbons		mg kg ⁻¹	M				3100 ¹		
2675	TPH aliphatic >C5-C6		mg kg ⁻¹	N				< 0.1 ¹		
	TPH aliphatic >C6-C8		mg kg ⁻¹	N				< 0.1 ¹		
	TPH aliphatic >C8-C10		mg kg ⁻¹	N				< 0.1 ¹		
	TPH aliphatic >C10-C12		mg kg ⁻¹	M				< 1 ¹		
	TPH aliphatic >C12-C16		mg kg ⁻¹	M				6.2 ¹		

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

All tests undertaken between 10/12/2013 and 15/01/2014

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 1

Report page 1 of 3

LIMS sample ID range AJ56127 to AJ61012

Celtic
Columbus House
Greenmeadow Springs, Tongwynlais
Cardiff
CF15 7NE

AMENDED LABORATORY TEST REPORT



Results of analysis of 10 samples
received 19 December 2013

Report Date
15 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

Login Batch No

Chemtest LIMS ID

Sample ID

Sample No

Sampling Date

Depth

Matrix

SOP↓ Determinand↓

CAS No↓

Units↓

*

248042

AJ61009

AJ61010

AJ61011

AJ61012

V6

V7

V9

V10

1

1

1

1

9/12/2013

9/12/2013

9/12/2013

9/12/2013

SOIL

SOIL

SOIL

SOIL

2010	pH			M	7.7	8.3	8.4	7.5
2175	Sulfur (total TRL report 447)		%	M	0.01	<0.01	0.02	<0.01
2625	Total Organic Carbon		%	M	0.14	0.22	0.21	<0.10
2450	Arsenic	7440382	mg kg ⁻¹	M	13	11	13	11
	Cadmium	7440439	mg kg ⁻¹	M	9.3	12	13	1.5
	Chromium	7440473	mg kg ⁻¹	M	36	25	31	16
	Copper	7440508	mg kg ⁻¹	M	21	35	40	5.6
	Mercury	7439976	mg kg ⁻¹	M	<0.10	<0.10	0.55	<0.10
	Nickel	7440020	mg kg ⁻¹	M	22	30	24	15
	Lead	7439921	mg kg ⁻¹	M	18	42	64	<5.0
	Selenium	7782492	mg kg ⁻¹	M	<0.20	<0.20	<0.20	<0.20
	Zinc	7440666	mg kg ⁻¹	M	67	73	110	24
2670	Total Petroleum Hydrocarbons		mg kg ⁻¹	M	< 10 ^{1 2}	< 10 ^{1 2}	< 10 ^{1 2}	< 10 ^{1 2}
	TPH >C6-C8		mg kg ⁻¹	N				
	TPH >C8-C10		mg kg ⁻¹	N				
	TPH >C10-C16		mg kg ⁻¹	N				
	TPH >C16-C24		mg kg ⁻¹	N				
	TPH >C24-C40		mg kg ⁻¹	N				
	Total Petroleum Hydrocarbons		mg kg ⁻¹	M				
2675	TPH aliphatic >C5-C6		mg kg ⁻¹	N				
	TPH aliphatic >C6-C8		mg kg ⁻¹	N				
	TPH aliphatic >C8-C10		mg kg ⁻¹	N				
	TPH aliphatic >C10-C12		mg kg ⁻¹	M				
	TPH aliphatic >C12-C16		mg kg ⁻¹	M				

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

* Accreditation status

This report should be interpreted in conjunction with the notes on the accompanying cover page.

Column page 2

Report page 1 of 3

LIMS sample ID range AJ56127 to AJ61012

AMENDED LABORATORY TEST REPORT

Results of analysis of 10 samples
received 19 December 2013

Report Date
15 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

					248042					
					AJ56127	AJ56128	AJ56129	AJ56130	AJ56131	AJ56132
					V1	V2	V3	V4	V5	V8
					1	1	1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2675	TPH aliphatic >C16-C21		mg kg ⁻¹	M				98 ¹		
	TPH aliphatic >C21-C35		mg kg ⁻¹	M				2000 ¹		
	TPH aliphatic >C35-C44		mg kg ⁻¹	N				440 ¹		
	TPH aromatic >C5-C7		mg kg ⁻¹	N				< 0.1 ¹		
	TPH aromatic >C7-C8		mg kg ⁻¹	N				< 0.1 ¹		
	TPH aromatic >C8-C10		mg kg ⁻¹	N				< 0.1 ¹		
	TPH aromatic >C10-C12		mg kg ⁻¹	N				< 1 ¹		
	TPH aromatic >C12-C16		mg kg ⁻¹	M				< 1 ¹		
	TPH aromatic >C16-C21		mg kg ⁻¹	M				20 ¹		
	TPH aromatic >C21-C35		mg kg ⁻¹	N				370 ¹		
	TPH aromatic >C35-C44		mg kg ⁻¹	N				62 ¹		
Total Petroleum Hydrocarbons								3000 ¹		
2700	Naphthalene	91203	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Acenaphthylene	208968	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Acenaphthene	83329	mg kg ⁻¹	M	< 0.1	< 0.1	0.14	< 0.1	< 0.1	< 0.1
	Fluorene	86737	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Phenanthrene	85018	mg kg ⁻¹	M	< 0.1	< 0.1	0.15	< 0.1	< 0.1	< 0.1
	Anthracene	120127	mg kg ⁻¹	M	< 0.1	< 0.1	0.12	< 0.1	< 0.1	< 0.1
	Fluoranthene	206440	mg kg ⁻¹	M	< 0.1	0.26	0.18	< 0.1	< 0.1	< 0.1
	Pyrene	129000	mg kg ⁻¹	M	< 0.1	0.18	0.12	< 0.1	< 0.1	< 0.1
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	< 0.1	0.11	< 0.1	< 0.1	< 0.1	< 0.1
	Chrysene	218019	mg kg ⁻¹	M	< 0.1	0.11	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 10 samples
received 19 December 2013

Report Date
15 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

				248042			
				AJ61009	AJ61010	AJ61011	AJ61012
				V6	V7	V9	V10
				1	1	1	1
				9/12/2013	9/12/2013	9/12/2013	9/12/2013
				SOIL	SOIL	SOIL	SOIL
2675	TPH aliphatic >C16-C21		mg kg ⁻¹	M			
	TPH aliphatic >C21-C35		mg kg ⁻¹	M			
	TPH aliphatic >C35-C44		mg kg ⁻¹	N			
	TPH aromatic >C5-C7		mg kg ⁻¹	N			
	TPH aromatic >C7-C8		mg kg ⁻¹	N			
	TPH aromatic >C8-C10		mg kg ⁻¹	N			
	TPH aromatic >C10-C12		mg kg ⁻¹	N			
	TPH aromatic >C12-C16		mg kg ⁻¹	M			
	TPH aromatic >C16-C21		mg kg ⁻¹	M			
	TPH aromatic >C21-C35		mg kg ⁻¹	N			
	TPH aromatic >C35-C44		mg kg ⁻¹	N			
	Total Petroleum Hydrocarbons		mg kg ⁻¹	N			
2700	Naphthalene	91203	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1
	Acenaphthylene	208968	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1
	Acenaphthene	83329	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1
	Fluorene	86737	mg kg ⁻¹	M	< 0.1	0.17	< 0.1
	Phenanthrene	85018	mg kg ⁻¹	M	< 0.1	1.1	< 0.1
	Anthracene	120127	mg kg ⁻¹	M	< 0.1	0.89	< 0.1
	Fluoranthene	206440	mg kg ⁻¹	M	< 0.1	0.89	< 0.1
	Pyrene	129000	mg kg ⁻¹	M	< 0.1	0.75	< 0.1
	Benzo[a]anthracene	56553	mg kg ⁻¹	M	< 0.1	0.4	< 0.1
	Chrysene	218019	mg kg ⁻¹	M	< 0.1	0.51	< 0.1
	Benzo[b]fluoranthene	205992	mg kg ⁻¹	N	< 0.1	0.44	< 0.1
	Benzo[k]fluoranthene	207089	mg kg ⁻¹	N	< 0.1	0.28	< 0.1
	Benzo[a]pyrene	50328	mg kg ⁻¹	M	< 0.1	0.38	< 0.1

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AMENDED LABORATORY TEST REPORT

Results of analysis of 10 samples
received 19 December 2013

Report Date
15 January 2014

FAO Amy Plint/James Hardy

Hayes Validation

					248042					
					AJ56127	AJ56128	AJ56129	AJ56130	AJ56131	AJ56132
					V1	V2	V3	V4	V5	V8
					1	1	1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL	SOIL	SOIL
2700	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1	< 0.1
	Total (of 16) PAHs		mg kg ⁻¹	M	< 2	< 2	< 2	< 2	< 2	< 2
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹	< 1.0 ¹

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

AMENDED LABORATORY TEST REPORT

Results of analysis of 10 samples
received 19 December 2013

Report Date
15 January 2014

FAO Amy Plint/James Hardy

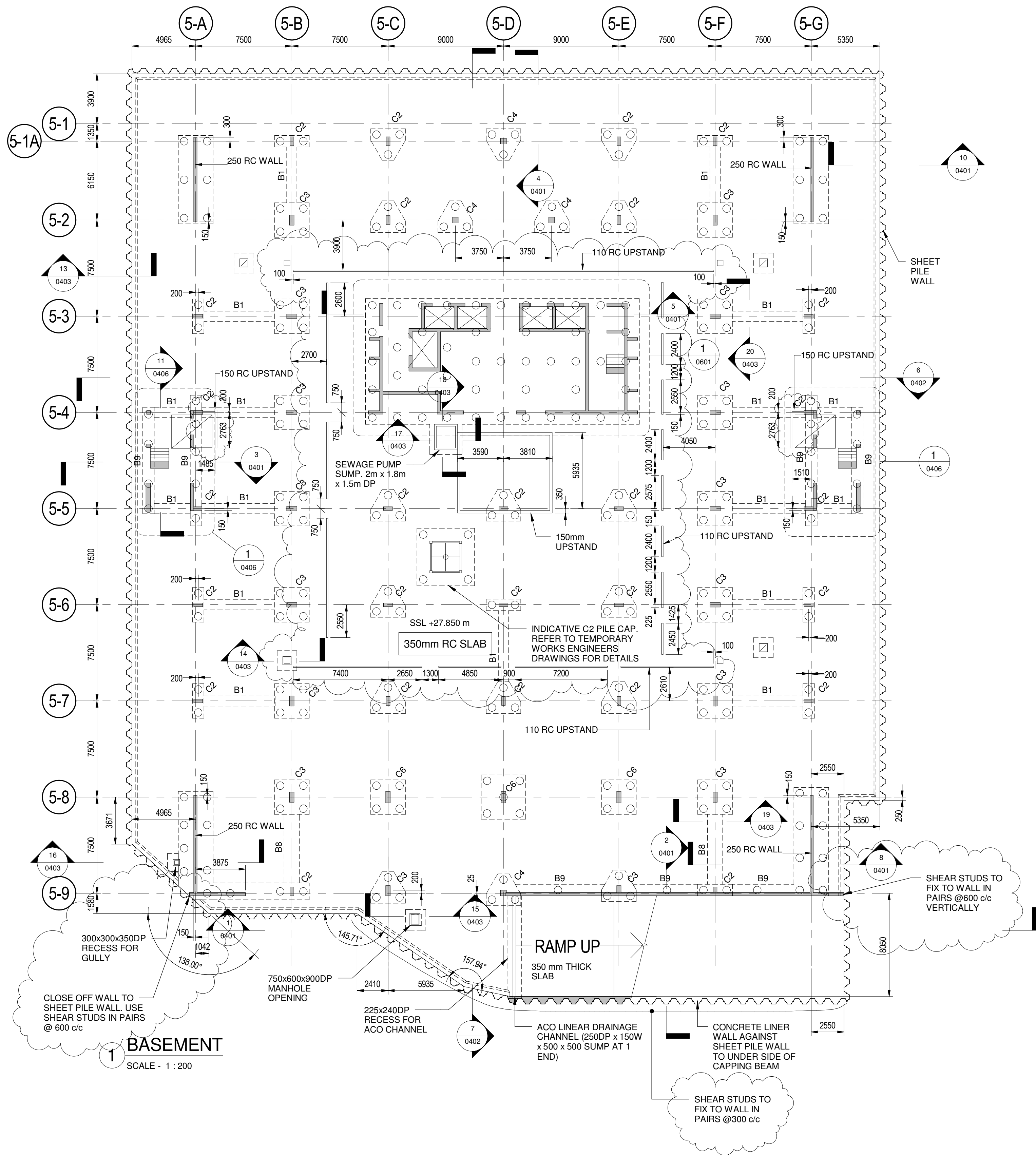
Hayes Validation

					248042			
					AJ61009	AJ61010	AJ61011	AJ61012
					V6	V7	V9	V10
					1	1	1	1
					9/12/2013	9/12/2013	9/12/2013	9/12/2013
					SOIL	SOIL	SOIL	SOIL
2700	Dibenzo[a,h]anthracene	53703	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Indeno[1,2,3-cd]pyrene	193395	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Benzo[g,h,i]perylene	191242	mg kg ⁻¹	M	< 0.1	< 0.1	< 0.1	< 0.1
	Total (of 16) PAHs		mg kg ⁻¹	M	< 2	5.8	< 2	< 2
2760	Benzene	71432	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	Toluene	108883	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	Ethylbenzene	100414	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	m- & p-Xylene	1330207	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}
	o-Xylene	95476	µg kg ⁻¹	M	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}	< 1.0 ^{1 2}

¹The sample container/fill level was not appropriate for the specified analysis - these results may be compromised. The accreditation for these results remains unaffected.

²The stability time for this analyte has been exceeded - these results may be compromised. The accreditation for these results remains unaffected.

Appendix F. Sheet Piling and Basement Drawings



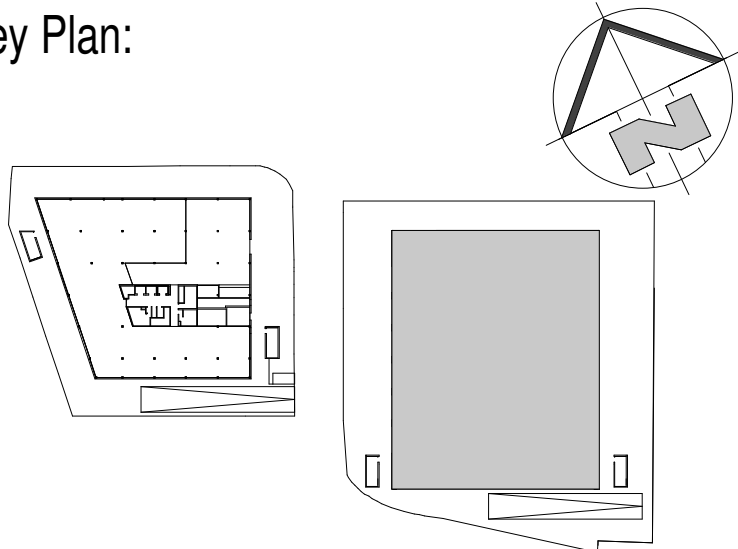
1
BASEMENT
SCALE : 1 : 200

Structural Column Schedule	
Ref.	Type
C2	300 x 700
C3	350 x 800
C4	450 x 450
C5	250 x 600
C6	350 x 900
C10	300 x 300
C11	250 x 1000

Structural Framing Schedule	
Ref.	Type (W x D) (mm)
B1	800x425 RC BEAM
B3	750x800 CAPPING BEAM
B4	400x1000 RC BEAM
B5	750x940 CAPPING BEAM
B6	500x600 RC BEAM
B7	450x600 RC BEAM
B8	1200x1475 RC BEAM
B9	900x1500 RC BEAM
B10	600x150 RC UPSTAND
B11	300x500 RC BEAM
B12	600x750 RC BEAM
B13	600x200 RC UPSTAND

ALL PILES AND SHEET PILE WALL'S INDICATED ON THIS DRAWING ARE INDICATIVE ONLY AND SUBJECT TO DESIGN BY SPECIALIST SUB-CONTRACTOR

Key Plan:



Notes:

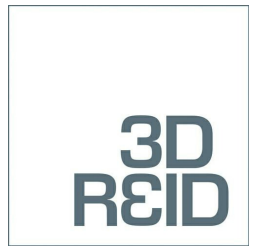
- DO NOT SCALE FROM THIS DRAWING, WORK ONLY TO DIMENSIONS SHOWN.
- ALL DIMENSIONS ARE IN MILLIMETERS UNLESS NOTED OTHERWISE.
- FOR ALL SETTING OUT OF BUILDING GEOMETRY REFER TO ARCHITECTURAL DRAWINGS.
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH ALL ARCHITECTURAL, MECHANICAL, ELECTRICAL DRAWINGS AND SPECIFICATIONS.
- ALL CONCRETE FOR PILECAPS, PILES AND STRUCTURES IN CONTACT WITH GROUND TO BE GRADE C40 SULPHATE RESISTING.
- WATERPROOFING TO BASEMENT TO BE PROVIDED BY EITHER EXTERNAL MEMBRANE OR ADMIXTURE CONCRETE. DETAILS TO BE AGREED BY THE ARCHITECT. ADOPTED SYSTEM TO BE FULLY DESIGNED AND DETAILED BY A SPECIALIST WATERPROOFING SUBCONTRACTOR TO ACHIEVE A GRADE 2 BASEMENT STRUCTURE. THE CONTRACTOR IS TO SUBMIT DESIGN, DETAILS AND WARRANTIES TO THE CLIENT TEAM FOR COMMENT AND REVIEW PRIOR TO COMMENCEMENT OF THE WORKS ON SITE.
- ALL CONCRETE NOT METIONED ABOVE TO BE GRADE C40.
- ALL PILES AND SHEET PILE WALLS INDICATED ON THIS DRAWING ARE INDICATIVE AND SUBJECT TO DESIGN BY A SPECIALIST SUBCONTRACTOR.
- FOR DETAILS OF BOREHOLES REFER TO SKM SITE INVESTIGATION REPORT AND HALCROW GEOTECHNICAL INTERPRETIVE REPORT.
- POSITION AND DESIGN OF CRANE BASE IS INDICATIVE BASED UPON ADVICE FROM KIER. THE CONTRACTOR SHOULD MAKE AN ALLOWANCE FOR NUMBERS OF CRANES TO SUIT THEIR OWN METHOD OF CONSTRUCTION. FINAL CRANE LOCATION AND BASE DESIGN TO BE AS THE MAIN CONTRACTORS REQUIREMNTS.
- FOR SETTING OUT OF MANHOLES, SUMPS AND GULLEYS REFER TO DRAINAGE LAYOUT DRAWING.

C03	MJY	JM	SMcM	07/02/2014	UPSTANDS AMENDED. SHEAR STUD NOTES ADDED
C02	MJY	JM	SMcM	19/12/2013	SHEET PILE WALL AMENDED. UPSTANDS ADDED
C01	MJY	JM	SMcM	15/11/2013	FOR CONSTRUCTION
Rev	By	Chkd	Apprvd	Date	Description

Client

HPHA Ltd.

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Halcrow Yolles
A CH2M HILL COMPANY

Project

HYDE PARK HAYES

Drawing

BASEMENT FLOOR PLAN

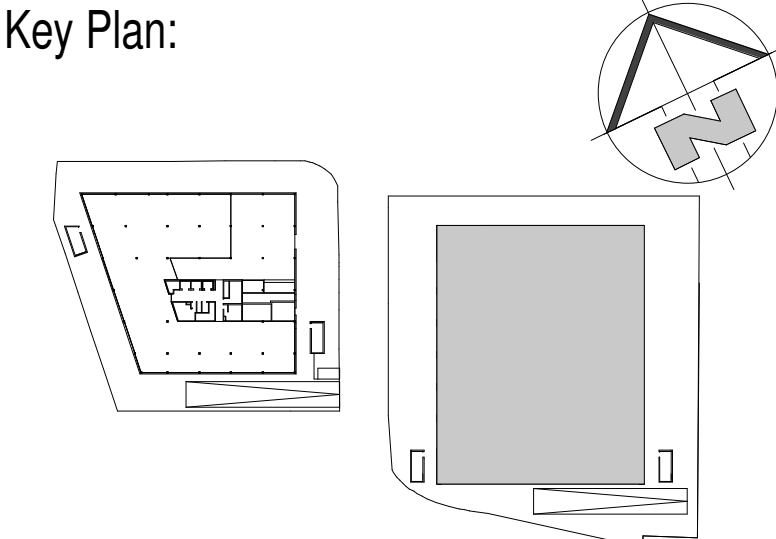
Drawn by:	MJY	Date:	MAY 2012
Checked by:	JMcL	Date:	MAY 2012
Approved by:	SMcM	Date:	MAY 2012

Drawing No.	Revision
-------------	----------

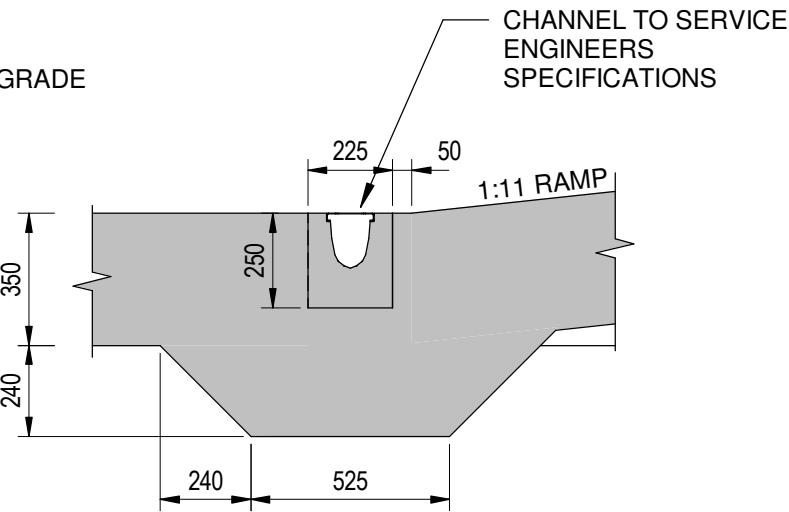
110475- HYC- BD5- B1- DR- S-0199 C03

Drawing Scale: AS INDICATED

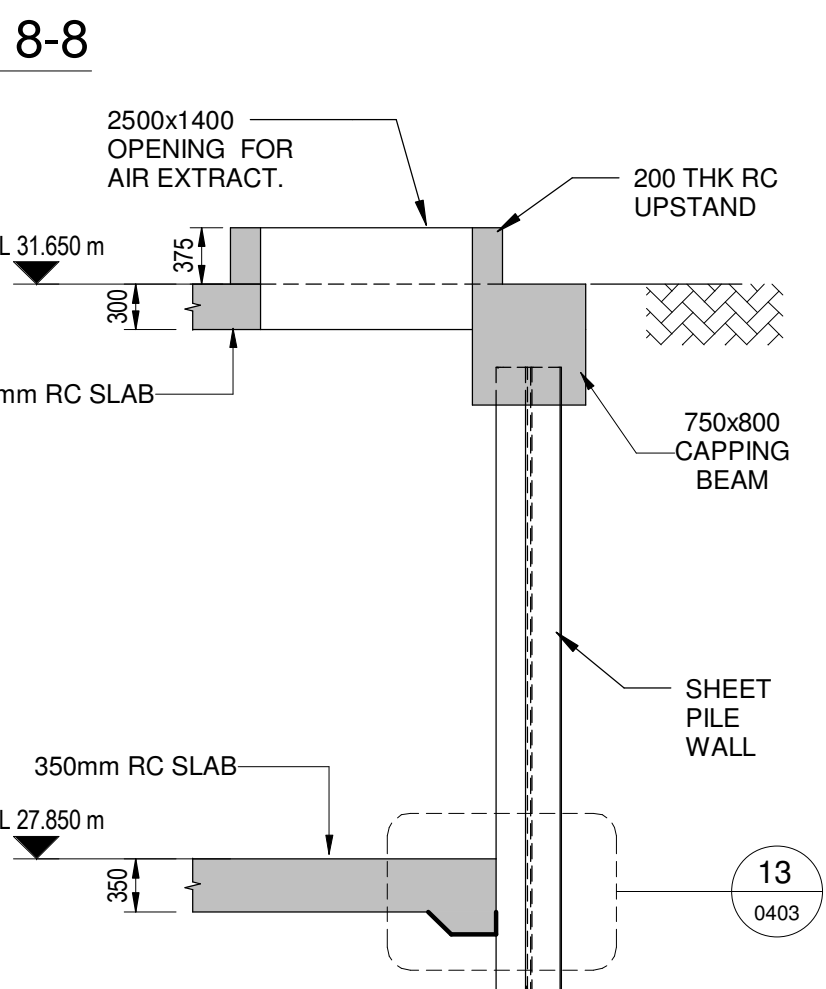
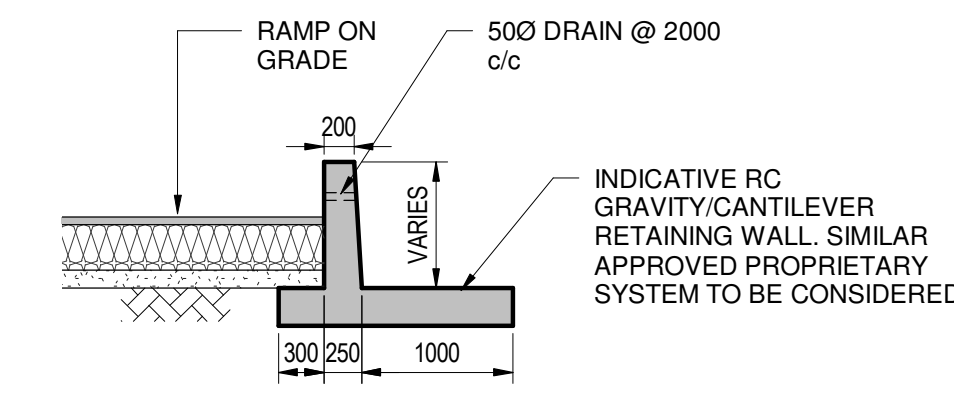
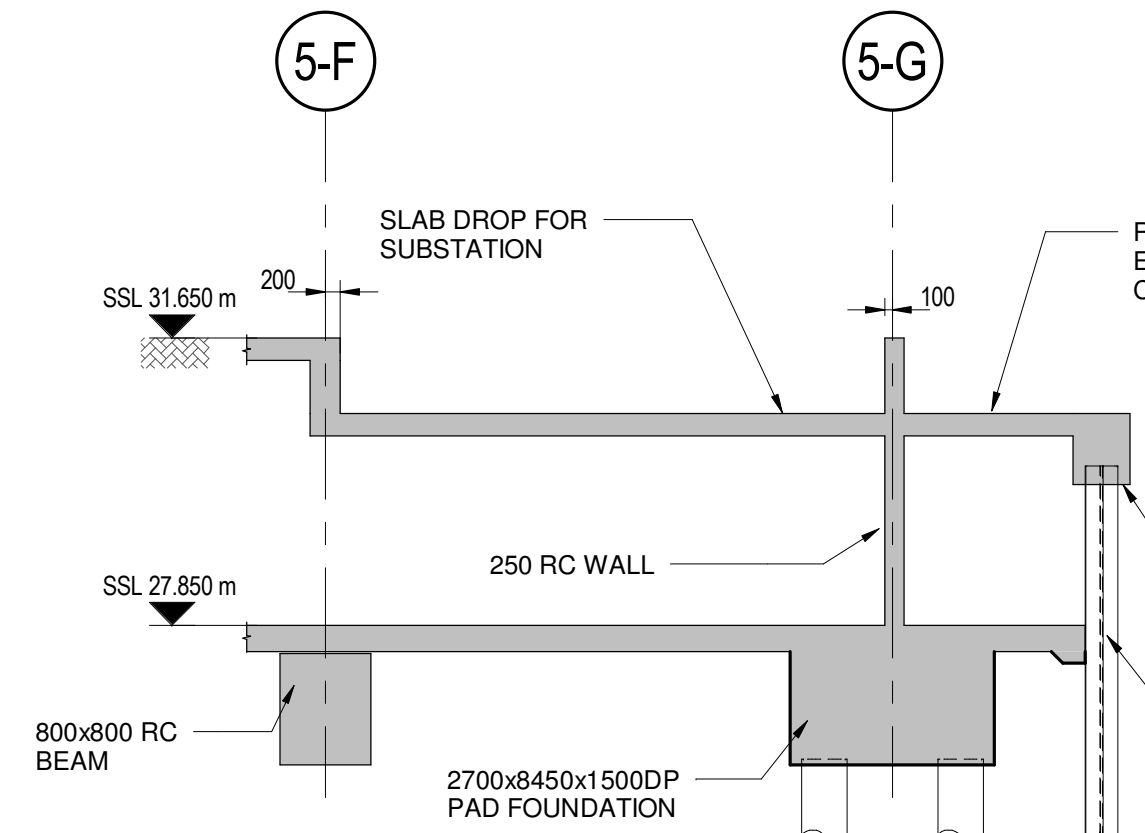
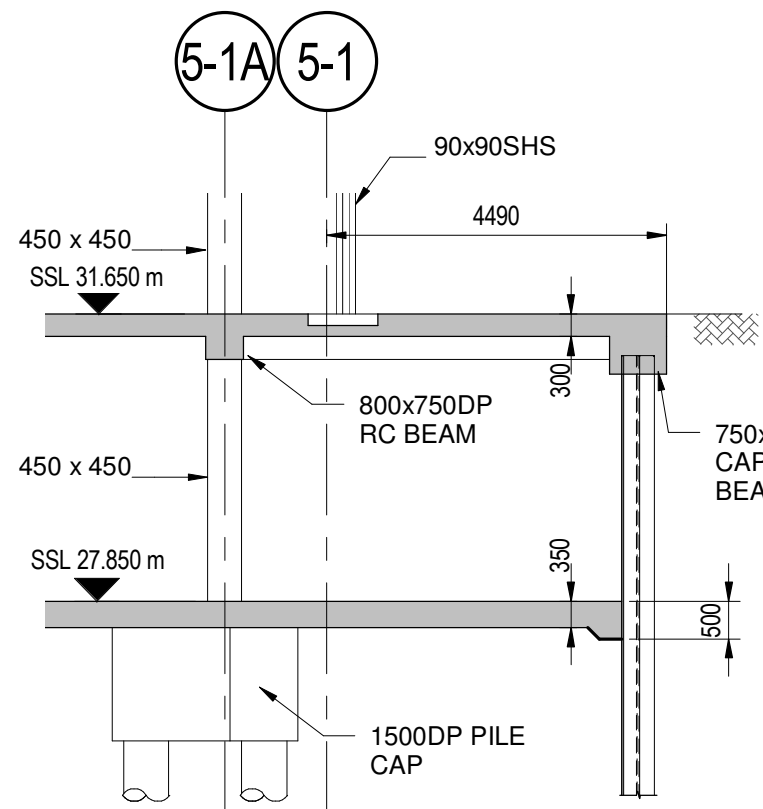
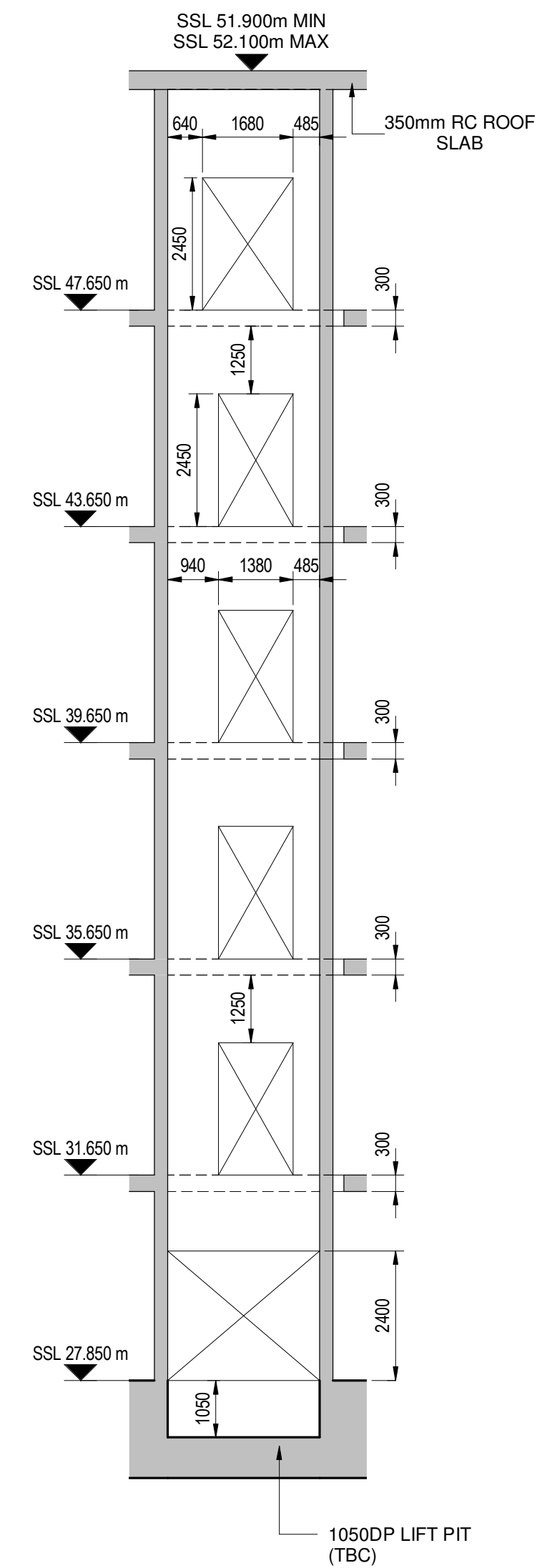
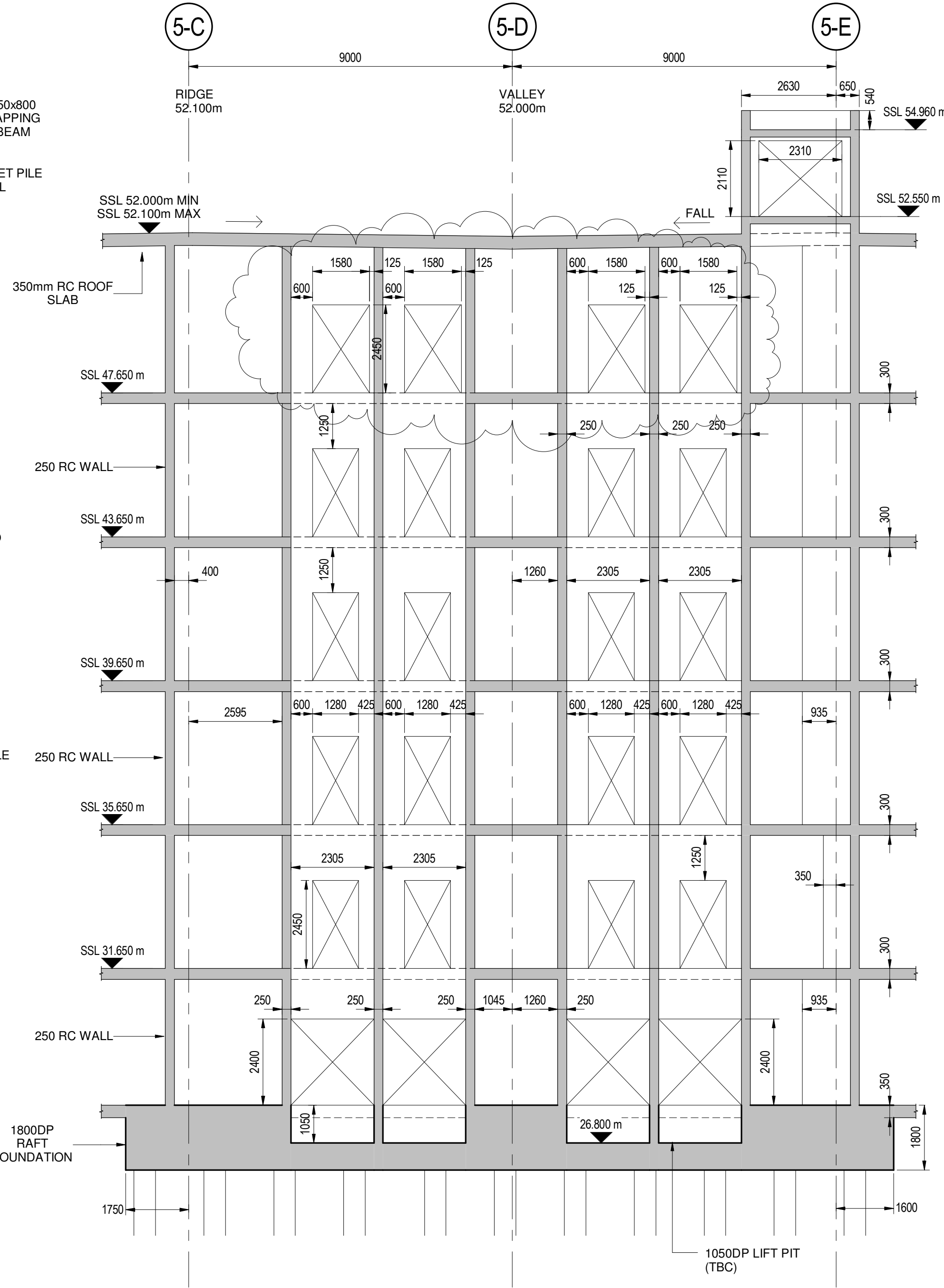
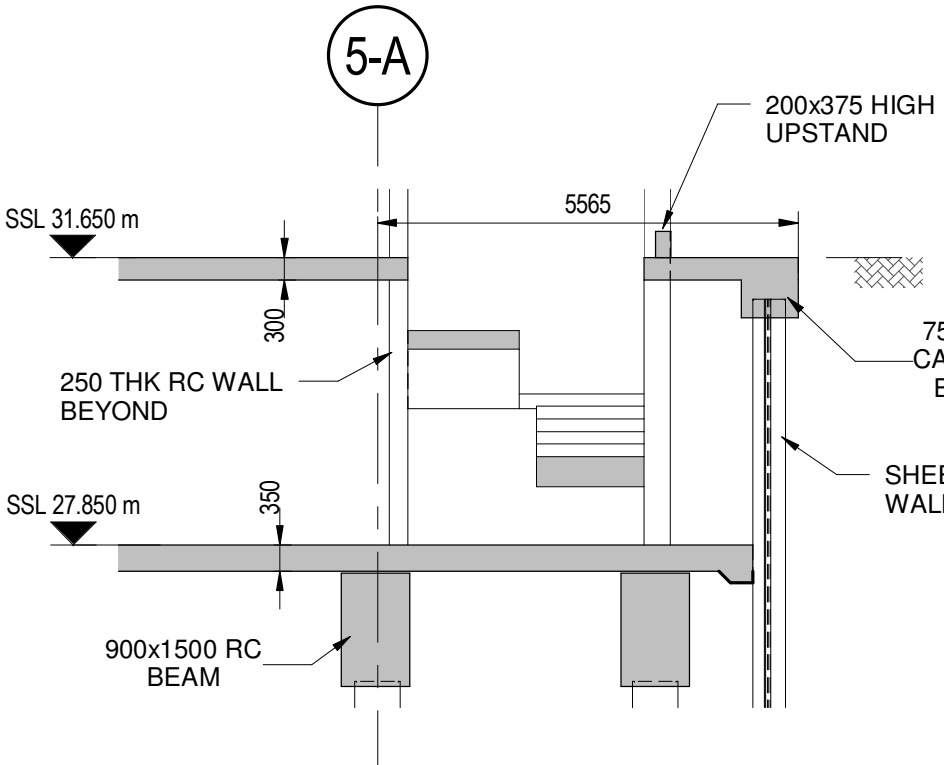
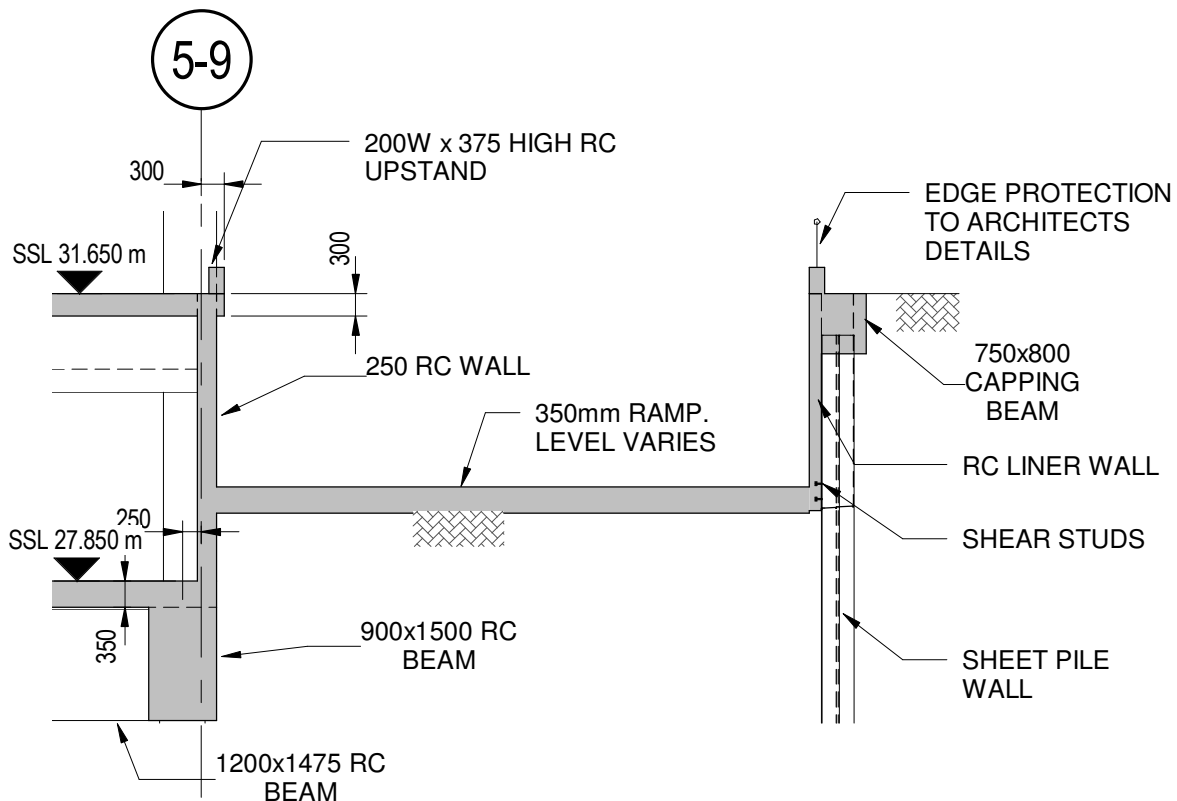
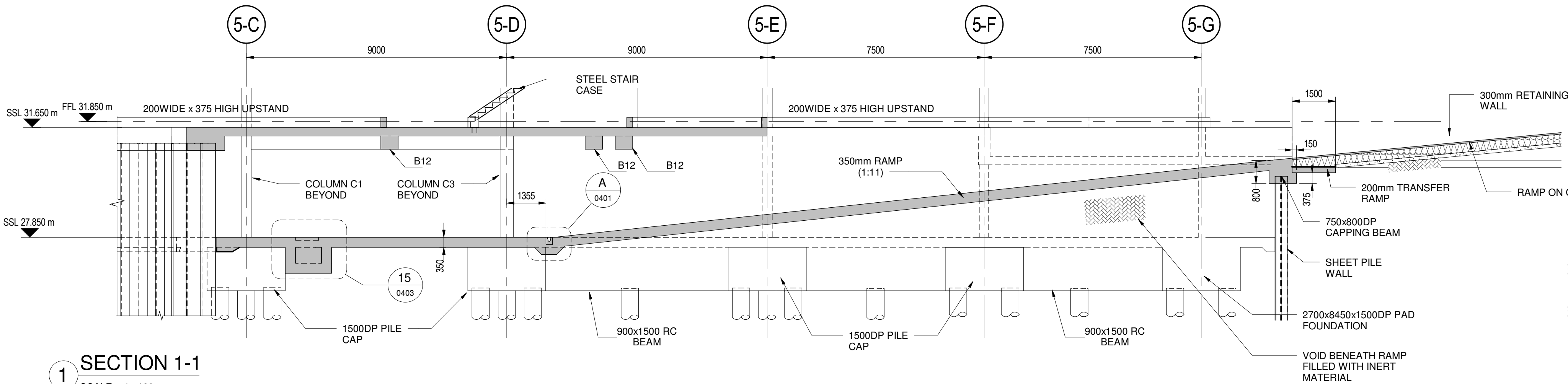
FOR CONSTRUCTION



- Notes:
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A CHANNEL DETAIL
SCALE - 1 : 20



SECTION 5-5
SCALE - 1 : 100

FOR CONSTRUCTION

C04	MJY	KD	SMcM	11/06/2014	AMENDED AS CLOUDED
C03	MJY	KD	SMcM	02/05/2014	AMENDED AS CLOUDED
C02	MJY	KD	SMcM	08/04/2014	SECTION 21 ADDED. LIFT DOORS AMENDED
C01	MJY	JM	SMcM	17/02/2014	ISSUED FOR CONSTRUCTION
Rev	By	Chkd	Apprv	Date	Description

Client

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Halcrow Yolles
A CH2M HILL COMPANY

Project

HYDE PARK HAYES

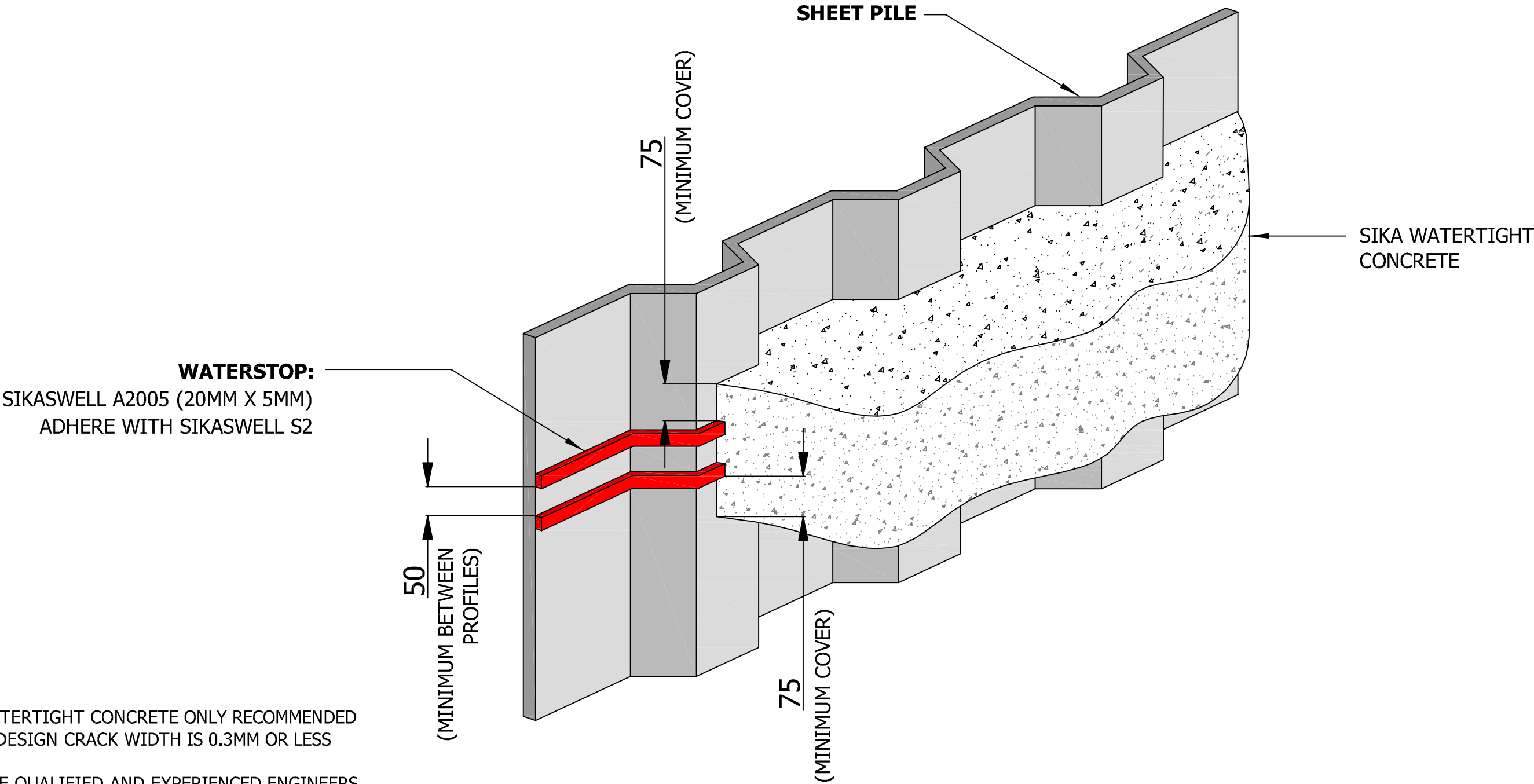
Drawing

SECTIONS AND DETAILS

Drawn by:	MJY	Date:	MAY 2012
Checked by:	JMcL	Date:	MAY 2012
Approved by:	SMcM	Date:	MAY 2012
Drawing No.		Revision	
110475- HYC- BD5- XX- DR- S-0401		C04	
Drawing Scale:	AS INDICATED		

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11/06/2014 14:38:28
User and Per Date

SIKASWELL STANDARD DETAIL FOR SHEET PILE
CONSTRUCTION JOINT - SLAB



SIKA WATERTIGHT CONCRETE ONLY RECOMMENDED
WHERE DESIGN CRACK WIDTH IS 0.3MM OR LESS

SUITABLE QUALIFIED AND EXPERIENCED ENGINEERS
OR ARCHITECTS SHOULD CARRY OUT THE DESIGN
AND SITE SUPERVISION OF BELOW GROUND
STRUCTURES

NOTE : ALL INFORMATION PROVIDED ON THIS
DRAWING IS SUBJECT TO THE TERMS AND
CONDITIONS OF SALE OF THE COMPANY

ALL DIMENSIONS ARE IN MM UNLESS STATED DO NOT SCALE FROM DRAWING	THIS DRAWING IS THE CONFIDENTIAL PROPERTY OF SIKA LIMITED AND MUST NOT BE REPRODUCED EITHER WHOLLY OR PARTLY. ALL RIGHTS IN RESPECT OF PATENTS, DESIGN AND COPYRIGHTS ARE RESERVED. SIKALTD. WWW.SIKALTD.CO.UK		Drawn by <i>M. Ramsay</i>	Checked by <i>E. Cassidy</i>	Approved by <i>M. Lewis</i>	Date 18-08-08
			Description SIKASWELL SATNDARD DETAIL FOR SHEET PILE CONSTRUCTION JOINT - SLAB			
			Drawing No. SIKACBU-008		Issue B	Sheet 1 / 1