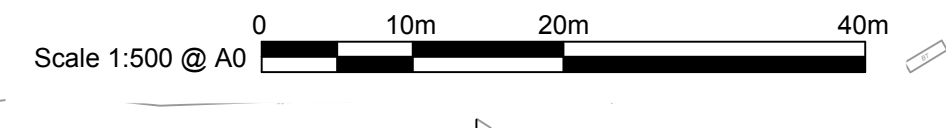
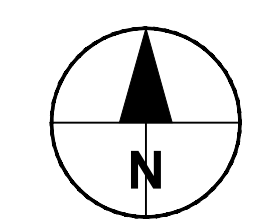
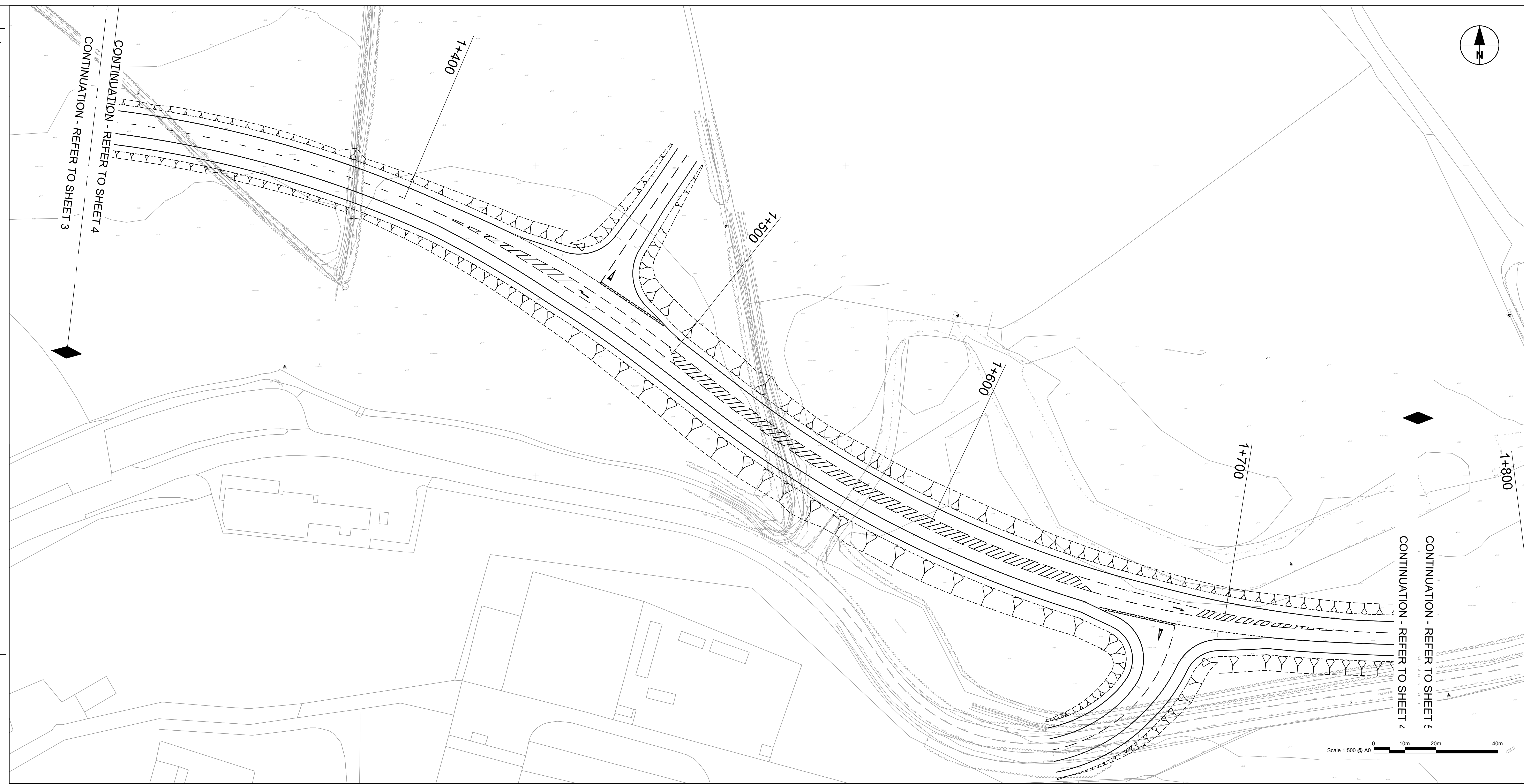
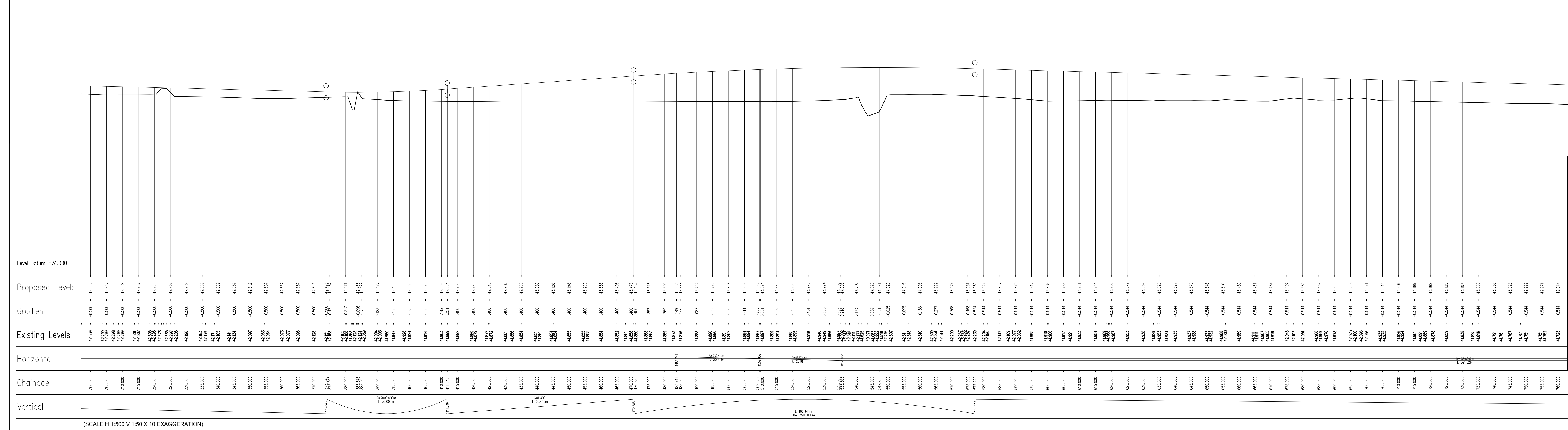


NOTES
 1. ALL DIMENSIONS SHOWN ARE IN METRES UNLESS OTHERWISE SPECIFIED



LEGEND



Proposed Levels	Gradient	Existing Levels	Horizontal	Chainage	Vertical
42.96	0.00%	42.96	1300.00	1300.00	42.96
42.95	-0.02%	42.95	1305.00	1305.00	42.95
42.94	-0.02%	42.94	1310.00	1310.00	42.94
42.93	-0.02%	42.93	1315.00	1315.00	42.93
42.92	-0.02%	42.92	1320.00	1320.00	42.92
42.91	-0.02%	42.91	1325.00	1325.00	42.91
42.90	-0.02%	42.90	1330.00	1330.00	42.90
42.89	-0.02%	42.89	1335.00	1335.00	42.89
42.88	-0.02%	42.88	1340.00	1340.00	42.88
42.87	-0.02%	42.87	1345.00	1345.00	42.87
42.86	-0.02%	42.86	1350.00	1350.00	42.86
42.85	-0.02%	42.85	1355.00	1355.00	42.85
42.84	-0.02%	42.84	1360.00	1360.00	42.84
42.83	-0.02%	42.83	1365.00	1365.00	42.83
42.82	-0.02%	42.82	1370.00	1370.00	42.82
42.81	-0.02%	42.81	1375.00	1375.00	42.81
42.80	-0.02%	42.80	1380.00	1380.00	42.80
42.79	-0.02%	42.79	1385.00	1385.00	42.79
42.78	-0.02%	42.78	1390.00	1390.00	42.78
42.77	-0.02%	42.77	1395.00	1395.00	42.77
42.76	-0.02%	42.76	1400.00	1400.00	42.76
42.75	-0.02%	42.75	1405.00	1405.00	42.75
42.74	-0.02%	42.74	1410.00	1410.00	42.74
42.73	-0.02%	42.73	1415.00	1415.00	42.73
42.72	-0.02%	42.72	1420.00	1420.00	42.72
42.71	-0.02%	42.71	1425.00	1425.00	42.71
42.70	-0.02%	42.70	1430.00	1430.00	42.70
42.69	-0.02%	42.69	1435.00	1435.00	42.69
42.68	-0.02%	42.68	1440.00	1440.00	42.68
42.67	-0.02%	42.67	1445.00	1445.00	42.67
42.66	-0.02%	42.66	1450.00	1450.00	42.66
42.65	-0.02%	42.65	1455.00	1455.00	42.65
42.64	-0.02%	42.64	1460.00	1460.00	42.64
42.63	-0.02%	42.63	1465.00	1465.00	42.63
42.62	-0.02%	42.62	1470.00	1470.00	42.62
42.61	-0.02%	42.61	1475.00	1475.00	42.61
42.60	-0.02%	42.60	1480.00	1480.00	42.60
42.59	-0.02%	42.59	1485.00	1485.00	42.59
42.58	-0.02%	42.58	1490.00	1490.00	42.58
42.57	-0.02%	42.57	1495.00	1495.00	42.57
42.56	-0.02%	42.56	1500.00	1500.00	42.56
42.55	-0.02%	42.55	1505.00	1505.00	42.55
42.54	-0.02%	42.54	1510.00	1510.00	42.54
42.53	-0.02%	42.53	1515.00	1515.00	42.53
42.52	-0.02%	42.52	1520.00	1520.00	42.52
42.51	-0.02%	42.51	1525.00	1525.00	42.51
42.50	-0.02%	42.50	1530.00	1530.00	42.50
42.49	-0.02%	42.49	1535.00	1535.00	42.49
42.48	-0.02%	42.48	1540.00	1540.00	42.48
42.47	-0.02%	42.47	1545.00	1545.00	42.47
42.46	-0.02%	42.46	1550.00	1550.00	42.46
42.45	-0.02%	42.45	1555.00	1555.00	42.45
42.44	-0.02%	42.44	1560.00	1560.00	42.44
42.43	-0.02%	42.43	1565.00	1565.00	42.43
42.42	-0.02%	42.42	1570.00	1570.00	42.42
42.41	-0.02%	42.41	1575.00	1575.00	42.41
42.40	-0.02%	42.40	1580.00	1580.00	42.40
42.39	-0.02%	42.39	1585.00	1585.00	42.39
42.38	-0.02%	42.38	1590.00	1590.00	42.38
42.37	-0.02%	42.37	1595.00	1595.00	42.37
42.36	-0.02%	42.36	1600.00	1600.00	42.36
42.35	-0.02%	42.35	1605.00	1605.00	42.35
42.34	-0.02%	42.34	1610.00	1610.00	42.34
42.33	-0.02%	42.33	1615.00	1615.00	42.33
42.32	-0.02%	42.32	1620.00	1620.00	42.32
42.31	-0.02%	42.31	1625.00	1625.00	42.31
42.30	-0.02%	42.30	1630.00	1630.00	42.30
42.29	-0.02%	42.29	1635.00	1635.00	42.29
42.28	-0.02%	42.28	1640.00	1640.00	42.28
42.27	-0.02%	42.27	1645.00	1645.00	42.27
42.26	-0.02%	42.26	1650.00	1650.00	42.26
42.25	-0.02%	42.25	1655.00	1655.00	42.25
42.24	-0.02%	42.24	1660.00	1660.00	42.24
42.23	-0.02%	42.23	1665.00	1665.00	42.23
42.22	-0.02%	42.22	1670.00	1670.00	42.22
42.21	-0.02%	42.21	1675.00	1675.00	42.21
42.20	-0.02%	42.20	1680.00	1680.00	42.20
42.19	-0.02%	42.19	1685.00	1685.00	42.19
42.18	-0.02%	42.18	1690.00	1690.00	42.18
42.17	-0.02%	42.17	1695.00	1695.00	42.17
42.16	-0.02%	42.16	1700.00	1700.00	42.16



SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION

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Construction

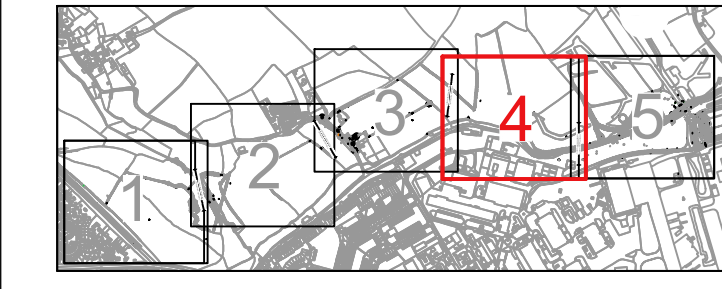
For Hazards Refer to Document: Safety in Design - Designers Residual Hazard Register

STATUS
 FOR INFORMATION

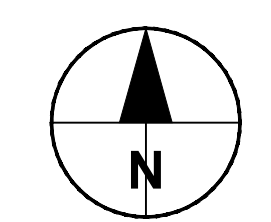
ISSUE/REVISION

ISSUE/REVISION	DATE	DESCRIPTION
A	03-10-2016	JUNCTION AMENDMENTS
-	19-08-2016	DRAFT FOR COMMENT

KEY PLAN

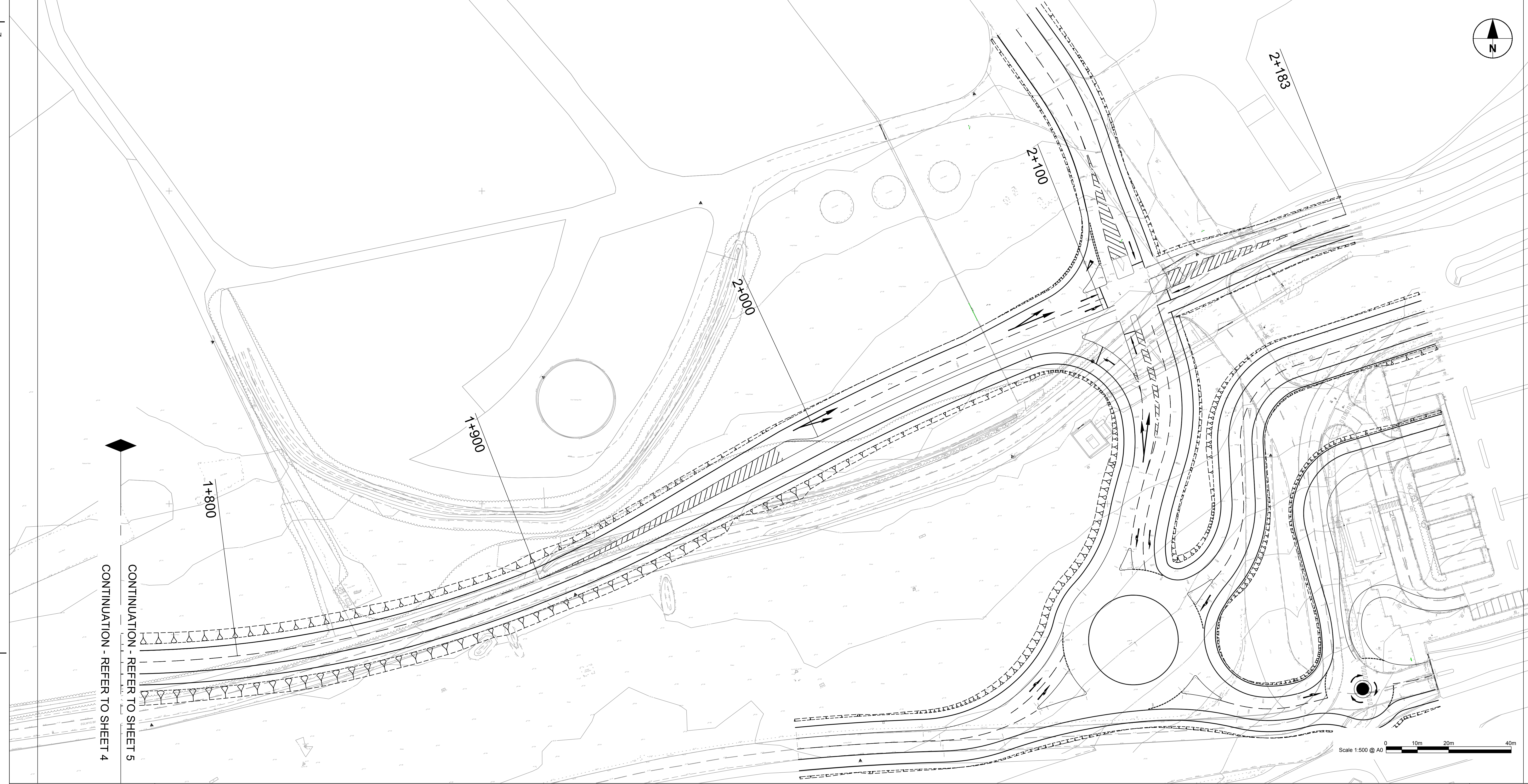


NOTES
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CONTINUATION - REFER TO SHEET 4
 CONTINUATION - REFER TO SHEET 5

LEGEND

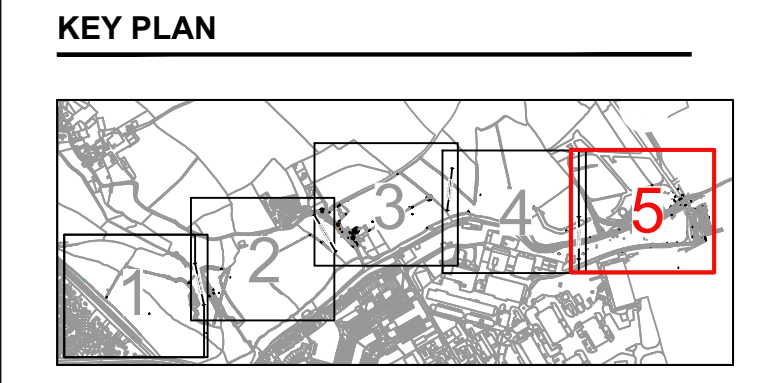
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1+710.00	42.82	-1.52	42.81		171.000	42.81
1+720.00	42.82	-1.52	42.81		172.000	42.81
1+730.00	42.82	-1.52	42.81		173.000	42.81
1+740.00	42.82	-1.52	42.81		174.000	42.81
1+750.00	42.82	-1.52	42.81		175.000	42.81
1+760.00	42.82	-1.52	42.81		176.000	42.81
1+770.00	42.82	-1.52	42.81		177.000	42.81
1+780.00	42.82	-1.52	42.81		178.000	42.81
1+790.00	42.82	-1.52	42.81		179.000	42.81
1+800.00	42.82	-1.52	42.81		180.000	42.81
1+810.00	42.82	-1.52	42.81		181.000	42.81
1+820.00	42.82	-1.52	42.81		182.000	42.81
1+830.00	42.82	-1.52	42.81		183.000	42.81
1+840.00	42.82	-1.52	42.81		184.000	42.81
1+850.00	42.82	-1.52	42.81		185.000	42.81
1+860.00	42.82	-1.52	42.81		186.000	42.81
1+870.00	42.82	-1.52	42.81		187.000	42.81
1+880.00	42.82	-1.52	42.81		188.000	42.81
1+890.00	42.82	-1.52	42.81		189.000	42.81
1+900.00	42.82	-1.52	42.81		190.000	42.81
1+910.00	42.82	-1.52	42.81		191.000	42.81
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1+980.00	42.82	-1.52	42.81		198.000	42.81
1+990.00	42.82	-1.52	42.81		199.000	42.81
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2+080.00	42.82	-1.52	42.81		208.000	42.81
2+090.00	42.82	-1.52	42.81		209.000	42.81
2+100.00	42.82	-1.52	42.81		210.000	42.81
2+110.00	42.82	-1.52	42.81		211.000	42.81
2+120.00	42.82	-1.52	42.81		212.000	42.81
2+130.00	42.82	-1.52	42.81		213.000	42.81
2+140.00	42.82	-1.52	42.81		214.000	42.81
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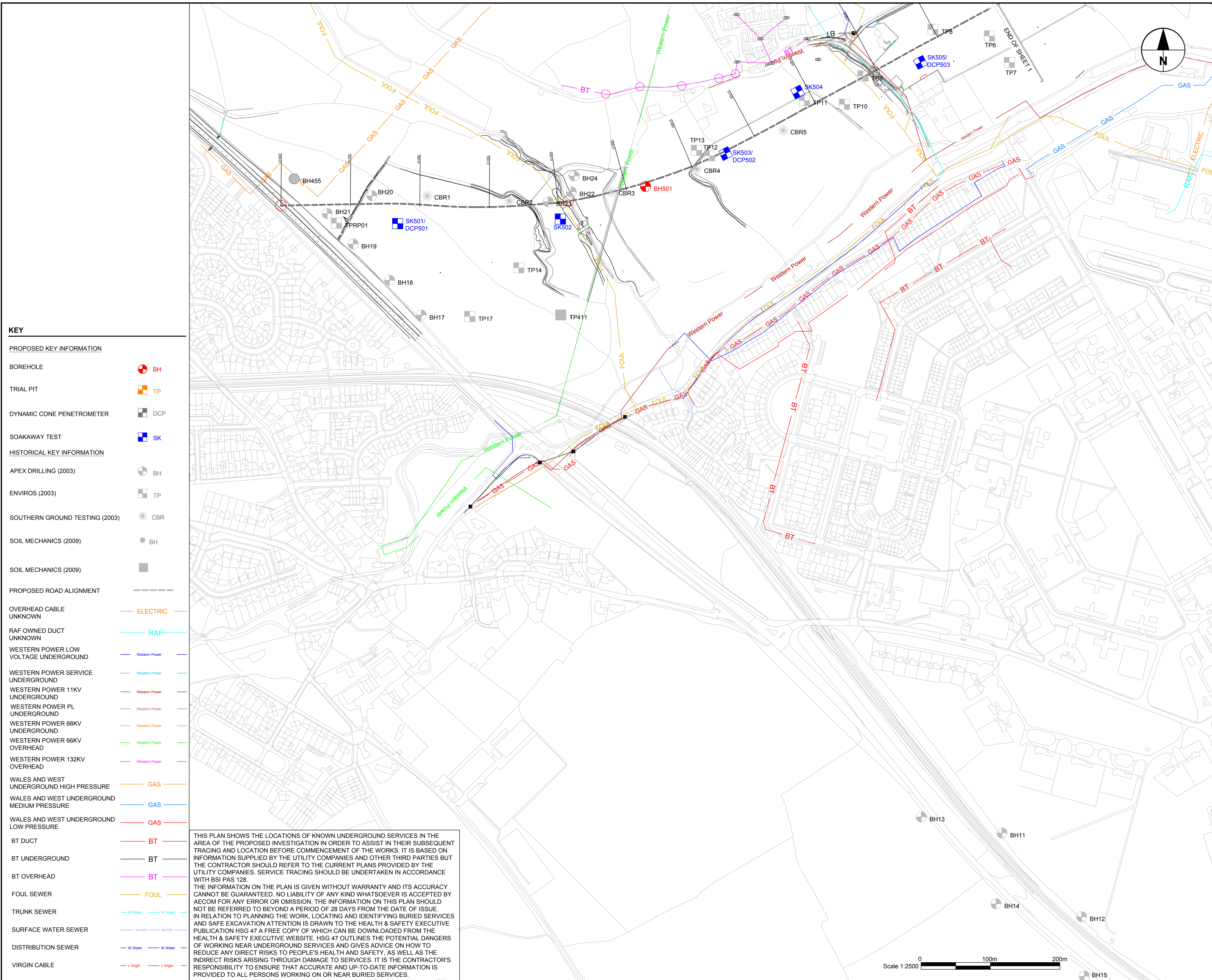
(SCALE H 1:500; V 1:50 X 10 EXAGGERATION)

STATUS
 FOR INFORMATION

ISSUE/REVISION

IR	DATE	DESCRIPTION
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-	19-08-2016	DRAFT FOR COMMENT





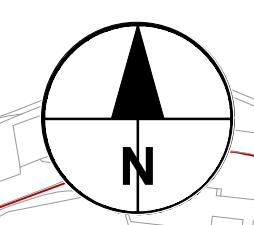
KEY

PROPOSED KEY INFORMATION	
BOREHOLE	BH
TRIAL PIT	TP
DYNAMIC CONE PENETROMETER	DCP
SOAKAWAY TEST	SK
HISTORICAL KEY INFORMATION	
APEX DRILLING (2003)	BH
ENVIROS (2003)	TP
SOUTHERN GROUND TESTING (2003)	CBR
SOIL MECHANICS (2009)	BH
SOIL MECHANICS (2009)	TP
PROPOSED ROAD ALIGNMENT	
OVERHEAD CABLE UNKNOWN	ELECTRIC
RAF OWNED DUCT UNKNOWN	RAF
WESTERN POWER LOW VOLTAGE UNDERGROUND	Western Power
WESTERN POWER SERVICE UNDERGROUND	Western Power
WESTERN POWER 11KV UNDERGROUND	Western Power
WESTERN POWER PL UNDERGROUND	Western Power
WESTERN POWER 66KV UNDERGROUND	Western Power
WESTERN POWER 66KV OVERHEAD	Western Power
WESTERN POWER 132KV OVERHEAD	Western Power
WALES AND WEST UNDERGROUND HIGH PRESSURE	GAS
WALES AND WEST UNDERGROUND MEDIUM PRESSURE	GAS
WALES AND WEST UNDERGROUND LOW PRESSURE	GAS
BT DUCT	BT
BT UNDERGROUND	BT
BT OVERHEAD	BT
FOUL SEWER	FOUL
TRUNK SEWER	W Water W Water
SURFACE WATER SEWER	WATER WATER
DISTRIBUTION SEWER	W Water W Water
VIRGIN CABLE	v Virgin v Virgin

THIS PLAN SHOWS THE LOCATIONS OF KNOWN UNDERGROUND SERVICES IN THE AREA OF THE PROPOSED INVESTIGATION IN ORDER TO ASSIST IN THEIR SUBSEQUENT TRACING AND LOCATION BEFORE COMMENCEMENT OF THE WORKS. IT IS BASED ON INFORMATION SUPPLIED BY THE UTILITY COMPANIES AND OTHER THIRD PARTIES BUT THE CONTRACTOR SHOULD REFER TO THE CURRENT PLANS PROVIDED BY THE UTILITY COMPANIES. SERVICE TRACING SHOULD BE UNDERTAKEN IN ACCORDANCE WITH BSI PAS 128.

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PROJECT
 ST. ATHAN
 NORTHERN ACCESS
 ROAD

CLIENT
 WELSH GOVERNMENT



Llywodraeth Cymru
 Welsh Government

CONSULTANT
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 1 CALLAGHAN SQUARE
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NOTES

DRAFT

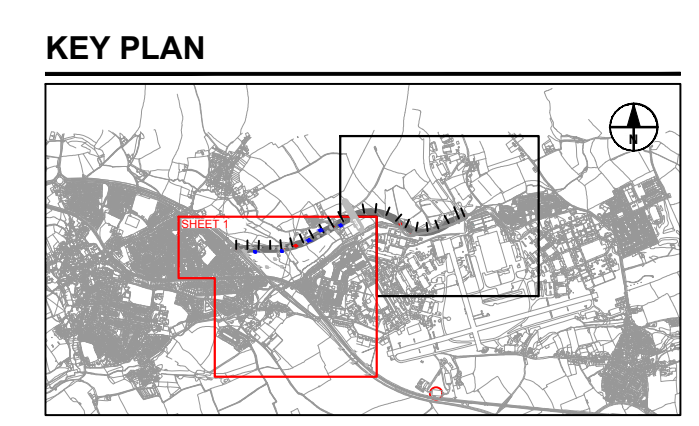
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ISSUE/REVISION

NO	DATE	DESCRIPTION
A	09-09-2016	FOR APPROVAL
I/R	DATE	DESCRIPTION

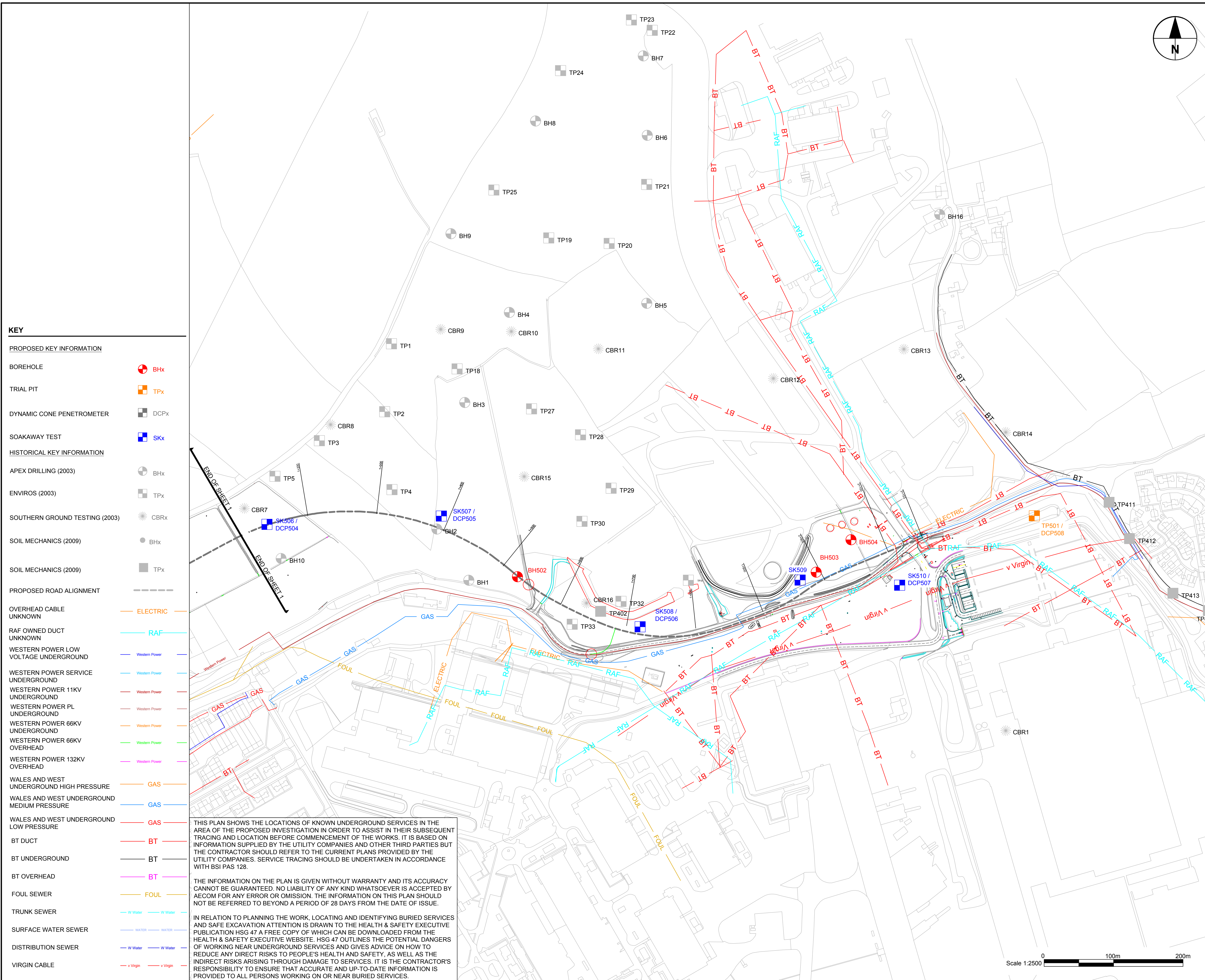


PROJECT NUMBER
 60509148

SHEET TITLE
 ST ATHAN
 PROPOSED GROUND INVESTIGATION
 LOCATIONS
 SHEET 1 OF 2

SHEET NUMBER
 60509148-SHT-30-0000-CT-0652

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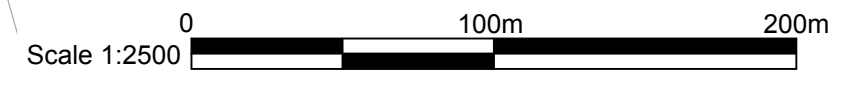
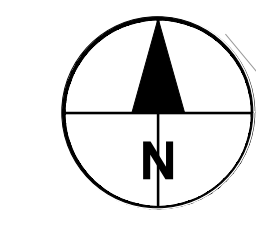
KEY

PROPOSED KEY INFORMATION	
BOREHOLE	BHx
TRIAL PIT	TPx
DYNAMIC CONE PENETROMETER	DCPx
SOAKAWAY TEST	SKx
HISTORICAL KEY INFORMATION	
APEX DRILLING (2003)	BHx
ENVIROS (2003)	TPx
SOUTHERN GROUND TESTING (2003)	CBRx
SOIL MECHANICS (2009)	BHx
SOIL MECHANICS (2009)	TPx
PROPOSED ROAD ALIGNMENT	---
OVERHEAD CABLE UNKNOWN	ELECTRIC
RAF OWNED DUCT UNKNOWN	RAF
WESTERN POWER LOW VOLTAGE UNDERGROUND	Western Power
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WESTERN POWER 11KV UNDERGROUND	Western Power
WESTERN POWER PL UNDERGROUND	Western Power
WESTERN POWER 66KV UNDERGROUND	Western Power
WESTERN POWER 66KV OVERHEAD	Western Power
WESTERN POWER 132KV OVERHEAD	Western Power
WALES AND WEST UNDERGROUND HIGH PRESSURE	GAS
WALES AND WEST UNDERGROUND MEDIUM PRESSURE	GAS
WALES AND WEST UNDERGROUND LOW PRESSURE	GAS
BT DUCT	BT
BT UNDERGROUND	BT
BT OVERHEAD	BT
FOUL SEWER	FOUL
TRUNK SEWER	W Water
SURFACE WATER SEWER	WATER
DISTRIBUTION SEWER	W Water
VIRGIN CABLE	v Virgin

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NOTES

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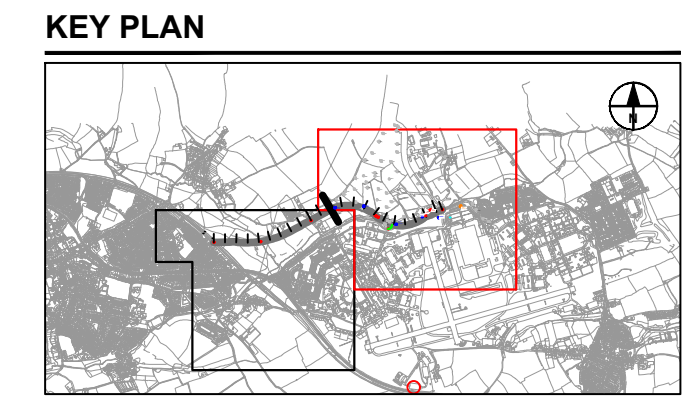
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I/R	DATE	DESCRIPTION
A	09-09-2016	FOR APPROVAL



PROJECT NUMBER
60509148

SHEET TITLE
ST ATHAN
PROPOSED GROUND INVESTIGATION
LOCATIONS
SHEET 2 OF 2

SHEET NUMBER
60509148-SHT-30-0000-CT-0653

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Appendices

Appendix A - Previous Ground Investigation Information

- Historical Ground Investigation Information Northern Link Road – Logs (Capita Gwent Consultancy, 2003)
- St. Athan Defence Technical College Factual Report on Ground Investigation Volume 2/C: Tremains Farm and Eglwys Brewis Road Area, 400& EB Series (Zone H&J) (Soil Mechanics, 2009)
- St. Athan Geo-Environmental Validation Report (Pell Frishmann, 2010)
- Defence Estates Proposed Service Family Accommodation at Picketston South West, RAF St. Athan Ground Conditions Assessment Report (WYG, 2011)

Appendix B Site Walkover Photographs



Photos 1 and 2 Llanmaes Brook looking South (photo 1) and west showing embankment along the brook (photo 2)



Photos 3 and 4 Millands Caravan Park approx. 30m south of and field in the vicinity of Ch. 900m



Photos 5 and 6 Proposed location of road alignment (Ch.1550m)



Photos 7 and 8 Eglwys Brewis Road in vicinity of proposed tie-in. St. Athan MOD base is located south of fence.

Appendix C Envirocheck Report

Appendix D BGS Borehole Logs



Job No. : FSE96124A
 Site Name : RAF St Athan
 Client : Welsh Development Agency

Drilling	30/09/04	Sheet No.	05020004
Number	100063	Est. Code	30000004
Ground level	66.476 AOD	Record Date	05/02/2005
Final Depth	11.20	Page	1 of 2

Program	Coring Details							Strata		
	Core No	Flush Volume %	105	106	107	108	109	Depth (m)	Level (m AOD)	Strata Description
	1000									
	1001									
			100	95	75			11.20	66.07	

<table border="1"> <thead> <tr> <th colspan="3">Diameters</th> </tr> <tr> <th>Depth (m)</th> <th> Hole (mm)</th> <th> Casing (mm)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Diameters			Depth (m)	Hole (mm)	Casing (mm)				General remarks 	Equipment and Methods Pickle Chest
Diameters													
Depth (m)	Hole (mm)	Casing (mm)											
<table border="1"> <thead> <tr> <th colspan="3">Groundwater</th> </tr> <tr> <th>Depth (m)</th> <th> Altitude (m AOD)</th> <th> Depth (m)</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>			Groundwater			Depth (m)	Altitude (m AOD)	Depth (m)					
Groundwater													
Depth (m)	Altitude (m AOD)	Depth (m)											
Notes: All dimensions in metres unless otherwise stated													
Checked by:		Drilled by: APL											
		Logged by: RL											

Parsons Brinckerhoff Ltd, Guyon Woodville House, (Scotland Hill, Wexham), Woking, Surrey GU24 0JH, UK. Tel: 0118 933 0000 Fax: 0118 933 0003



Job No. : FSE96124A
 Site Name : RAF St Athan
 Client : Welsh Development Agency

Easting	299914	Start date	19/03/2004
Northing	109911	End date	19/03/2004
Ground level	41.95 m AOD	Drill date	19/03/2004
Final depth	11.00m	Page	1 of 2

Program	Coring Details						Logunit	Strata		Strata Descriptions
	Coring run m	Flush Volume %	TCR %	GOR %	SO3 %	Misc Sol %		Depth Observed	Level m AOD	
								0.00		FILL - (Grilles description)
								0.40	41.17	CLAY - (Grilles description)
							1.00			
								1.50	41.17	Broken LIMESTONE, clay-bands - (Grilles description)
							2.70			
	1.50			58	16	6				Moderately weathered, indicates strong to strong grey clay, fine to medium grained LIMESTONE (subhorizontal and horizontal, very closely to closely spaced, overlapping and open with grey black clayey infill in lens)
	4.05									
	4.05			49	21	20				2.00m to 2.20m with grey black, clayey gravel. Gravel is angular, fine to medium of limestone and dolomite with grey black, clayey gravel
	5.50			24	41	28				4.15m to 4.20m Gravel is angular, fine to medium of limestone and dolomite, with red, grey black clay.
	5.50									5.50m to 6.70m with moderately weak to weak, grey black silts.
	7.50									6.55m to 6.65m with excessively weak to weak, grey black silts.
	7.50									7.00m to 7.10m with moderately weak to weak, grey black silts.
	7.50			27	46	25				7.25m to 7.35m with moderately weak to weak, grey black silts.
	8.50									7.85m to 7.95m with moderately weak to weak, grey black silts.
	8.50			31	50	42				8.75m to 8.85m with grey black, clayey gravel. Gravel is angular, fine to medium of limestone and dolomite.
	11.00									9.50m to 9.60m with orange brown discoloration of subsurface fractures.

Demands			General remarks	Equipment and Methods	
Depth (m)	Hole (mm)	Casing (mm)		Pore Count	
Groundwater					
Depth struck	After 30 mins	Depth reached			
Notes: All dimensions in metres unless otherwise stated			Checked by:	Drilled by: APC	Logged by: JH

Parsons Brinckerhoff Ltd, Queens Victoria House, Redland HO3, Redland, Bristol BS6 6QR Tel: 0117 5010000 Fax: 0117 502 8000

Job No. : FSE96124A
 Site Name : RAF St Athan
 Client : Welsh Development Agency

Coring	22013	Start date	21/02/04
Logging	10/12/04	End date	11/03/04
Ground level	41.76m AOD	Revised date	27/02/2004
Final depth	14.00m	Page	1 of 3

Progress	Coring Details							Legend	Depth (Metres)	Level (m.AOD)	Strata	Strata Description
	Coring No.	Flush Return	TCN	SCN	RCN	SPSC	TI					
	1100		38	38	38	38	38		11.20	41.76	10.00-11.20m	with very soft, brown, very silty mudstone

Diagrams Depth (m) Hole (mm) Coring (mm)			General remarks	Equipment and Methods Rotary Core
Orientation Dip (°) Azim (°) Dip (°)				
Note: All dimensions in metres unless otherwise stated				
Checked by:			Logged by: ML	

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Project Name

Job No. : FSE90124A
 Site Name : RAF St Athan
 Client : Welsh Development Agency

Logging	020204	Start date	20020204
Drilling	180801	End date	20020204
Current level	41.0m AOD	Next borehole	06020204
Final depth	10.0m	Page	1 of 2

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Progress	Coring Details					R	Log type	Depth metres	Level m AOD	Soils		Remarks
	Core no. m	Push volume %	TOC %	WATER %	WATER %					Soils Description	Soils Description	
								0.00			Blank CLAY and FILL. (Cities swapped)	
								1.00	41.10		LIMEY CLAY, broken lumps, color 10m. Broken shards.	
	2.00		10	20	40	M 10		2.00	41.40		Slightly weathered, generally silty heavy clay, grey blue, fine grained LIMESTONE. Substrata 10-15 degrees, clayey to clayey spread, rounded and silty, rough, size with a light brown, slightly sandy lit. 10-15mm.	
	3.00		15	25	30	M 10		3.00				
	4.00		15	25	30	M 10		4.00			4.15m to 4.25m	with a moderately well and moderately strong, light brown, sandy silts.
	5.00		15	25	30	M 10		5.00			4.45m to 4.55m	with a grey/black, moderately well sorted, silts.
	6.00		15	25	30	M 10		6.00			6.25m to 6.35m	with grey/black, very weak, silts.
	7.00		15	25	30	M 10		7.00			6.75m to 6.85m	with grey/black, very weak, silts.
	8.00		15	25	30	M 10		8.00			8.25m to 8.35m 8.45m to 8.55m	with grey/black, weak and moderately weak, silts. with grey/black, very weak, silts.
Classics			General remarks					Equipment and Methods				
Depth int	Hole level	Coring level						Rotary Core				
Groundwater												
Depth stick	After 20 mins	Depth logged										
			Notes All dimensions in metres unless otherwise stated					Checked by: APER Logged by: RL				

Client: Defense Canada	Current Location (U.S.G.): 46305	Well Type: Open Hole (cont.)
Project: NAF Station, Phase 2 J-047 No. 80599949F	How Open: 1.8L	Dr-Station: E 20059.054 N 18021.007
Location: Pickering	Well Depth in (S.O.D.): 42.800	Logbit No: 100000
Date: 24.03.00	Base of Spontaneous Flow in (S.O.D.): 46.200	Sheet No.: 1 of 1

Depth (meters) Elevation	Geological Description (00000-0000)	Core Type	Well Depth	Core Run Depth (m)	Total Core Rec. %	Split Core Rec. %	WGS %	Discard/Rebut Remarks
0.00	Top layer 10' with surface of limestone (NADE GROUND)							
4.00	Dark grey black clay shale (SANDSTONE) Hydrocarbon show 100' 101							
30.00	Fractured dark grey crystalline SANDSTONE with muscovite and clay bands at 3.1, 3.25, 3.5, 4, 4.5, 4.8, 5.25, 5.5, 5.85, 6.3 and 6.5m							3.5' to 4.5' to 6.5'
34.20	Hardly fractured light grey crystalline LIMESTONE stained orange brown in fracture							3.5' to 4.5' to 6.5'
35.40	Light grey crystalline LIMESTONE with mudstone bands at 3.5, 7.7, 8, 8.15, 8.25 and 8.5m							3.5' to 4.5' to 6.5'
36.10								

Contractor: Lyster Drilling	Well Diameter (mm): 116	0000 000000 000000 0000
Drill Type: Rotary air bit	Drilling Depth (m): 42	0000 000 000 000 000
Bit Type: P/B.S.	Core Diameter (mm): 100mm x100 x100	0000 000 000 000
Rig Type: D/Split	Drilled by: SAJ	

