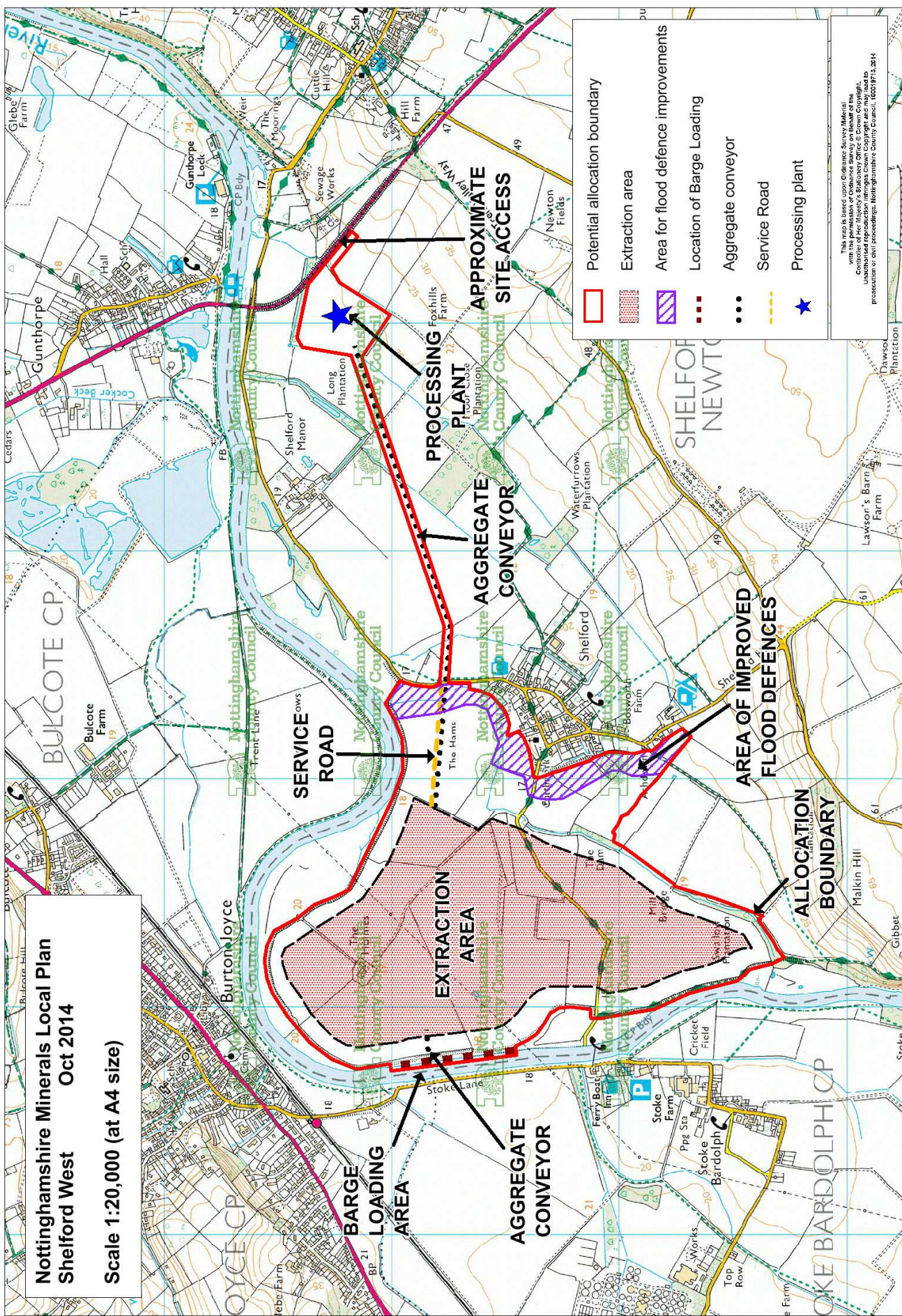









Nottinghamshire Minerals Local Plan
Shelford West
Oct 2014
Scale 1:20,000 (at A4 size)



-  Potential allocation boundary
-  Extraction area
-  Area for flood defence improvements
-  Location of Barge Loading
-  Aggregate conveyor
-  Service Road
-  Processing plant

The map is based on Ordnance Survey data with permission from the Controller of Her Majesty's Stationery Office. Crown Copyright. Unauthorised reproduction (including photocopying and recording) is prohibited. Nottinghamshire County Council, 10/02/14 2814

Appendix 1, Table 2 Nottinghamshire annual dwelling completions by district													
	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	TOTAL	10y average completions	Future annual requirement
Ashfield	652	575	283	362	352	412	434	454	425	558	4507	451	452
Bassetlaw	331	514	359	160	264	303	226	249	241	338	2985	299	435
Broxtowe	367	376	268	95	222	140	67	150	78	100	1863	186	362
Gedling		447	204	274	341	275	227	321	311	174	2574	286	426
Mansfield	583	269	216	224	359	265	206	296	254	388	3060	306	376
Newark and Sherwood	481	330	346	403	431	293	366	274	447	396	3767	377	740
Nottingham City	1318	1272	537	653	218	-22	309	166	658	741	5850	585	1009
Rushcliffe	261	456	493	191	227	293	209	199	373	487	3189	319	774
TOTAL	3993	4239	2706	2362	2414	1959	2044	2109	2787	3182	27795	351	572

ASHFIELD

TABLE 4: Comparison of past delivery against requirement

ASHFIELD DISTRICT: Comparison of past delivery against requirement						
Year on Year Completions (1st April to 31st March)						
Year	Net Dwelling Completions	Scenario A Annual requirement including EMRP	Difference (Scenario A)	Scenario B Annual requirement excluding EMRP	Difference (Scenario B)	
1/4/2002 - 31/3/2003	582	405	177	405	177	
1/4/2003 - 31/3/2004	404	405	-1	405	-1	
1/4/2004 - 31/3/2005	361	405	-44	405	-44	
1/4/2005 - 31/3/2006	548	405	143	405	143	
1/4/2006 - 31/3/2007	652	560	92	405	247	
1/4/2007 - 31/3/2008	575	560	15	405	170	
1/4/2008 - 31/3/2009	283	560	-277	405	-122	
1/4/2009 - 31/3/2010	362	560	-198	405	-43	
1/4/2010 - 31/3/2011	352	560	-208	405	-53	
1/4/2011 - 31/3/2012	412	314	98	314	98	
1/4/2012 - 31/3/2013	434	314	120	314	120	
1/4/2013 - 31/3/2014	454	480	-26	480	-26	
1/4/2014 - 31/3/2015	425	480	-55	480	-55	
1/4/2015 - 31/3/2016	558	480	78	480	78	
1/4/2016 - 31/3/2017	544	480	64	480	64	
Total 2002 - 2016	6946	6968	-22	6193	753	
			Shortfall	-0.3%	Oversupply	12.2%

3 Calculating the Five Year Supply

Delivery against the Core Strategy Housing Requirement

- 3.1 The council's previous housing delivery rates are set out below in Table 2.
- 3.2 When calculating the Council's housing land supply BDC has adopted the widely favoured 'Sedgefield method', whereby, in line with National Planning Practice Guidance, Local planning authorities should aim to deal with any undersupply within the first 5 years of the plan period where possible.
- 3.3 Although the Bassetlaw Core Strategy period runs from 2010-2028, the base year for the housing target from the RSS was 2006/07. Overall, in the ten year period up to 31 March 2016, including the 338 dwellings completed in 2015/16, 2,985 new dwellings have been delivered in Bassetlaw. This represents a cumulative **under delivery of 685 dwellings**.
- 3.4 While the above stated under delivery is initially based on the Core Strategy target of 350 dwellings per annum, from 2014/15 the target is revised upwards to at least 435 dwellings per annum. This new target is the objectively assessed housing need figure derived from the North Derbyshire & Bassetlaw SHMA (November 2013).

Year	Past Completions	Core Strategy Target	Over/Under Delivery	Cumulative Over/Under Delivery
2006/07	331	350	-19	-19
2007/08	514	350	164	145
2008/09	359	350	9	154
2009/10	160	350	-190	-36
2010/11	264	350	-86	-122
2011/12	303	350	-47	-169
2012/13	226	350	-124	-293
2013/14	249	350	-101	-394
2014/15	241	435	-194	-588
2015/16	338	435	-97	-685

Table 2: Bassetlaw District Council housing monitoring data

The Five Year Housing Requirement

- 3.5 Within the next five year period, in light of previous under delivery on both the annual Core Strategy housing target (350 dpa) and the updated objectively assessed housing need target (435 dpa), the revised basic annual target is 572 dwellings per annum (435 dpa + current cumulative shortfall, spread over five years). Further to this, due to persistent under-delivery, the NPPF (paragraph 49) stipulates an additional 20% buffer must be applied to the target, to provide a realistic prospect of achieving the planned supply and to ensure choice

BROXTOWE

Broxtowe Borough Council Strategic Housing Land Availability Assessment (SHLAA) 2015/16

consider a range of issues, such as the effect of imposed housing moratoriums and the delivery rate before and after any such moratoriums.

The assessment of a local delivery record is likely to be robust if a longer term view is taken, since this is likely to take account of the peaks and troughs of the housing market cycle...'

It is necessary therefore to look back over previous years at Broxtowe to consider whether any under-delivery in the provision of housing is persistent.

It is acknowledged that emerging plans take some time from their draft stage to adoption and nearly always have a 'start date' of several years before they were adopted. The table below shows housing delivery as measured against the most recently adopted development plan available at each year in question (2004 – 2016). The figures in bold represent the most recently adopted development plan available at the time.

Table 18: Housing delivery measured against adopted housing requirement

Year	1996 Structure Plan Review / 2004 Broxtowe Local Plan ⁸ requirement	2006 Joint Structure Plan requirement	2009 Regional Plan requirement	2014 Aligned Core Strategy requirement	Net Completions
2004/5	275	210	340		315
2005/6	275	210	340		381
2006/7	275	210	340		367
2007/8	275	210	340		376
2008/9	275	210	340		268
2009/10	275	210	340		95
2010/11	275	210	340		222
2011/12	275	210	340	140	140
2012/13	275	210	340	60	67
2013/14	275	210	340	360	150
2014/15				360	78
2015/16				360	100
Total	2750	2100	3400	1280	2559

In a large housing site appeal decision for Broxtowe (Hempshill Hall), taken in January 2014, the Inspector concluded that;

"Levels of housing delivery within the Borough have been below the level of 340 since 2008/9. However immediately before the recession they had been in excess of that figure. Thus ... the performance in better times shows that this should not be taken as indicating a pattern of persistent under delivery. On that basis, I consider that the requirement should include a buffer of 5%".

The stance of the Appeal Inspector in terms of applying a 5% buffer was consistent with advice from the Planning Inspectorate⁹ which is that Councils should prepare supporting evidence to demonstrate that they have not persistently under delivered against past plans. The evidence could take reasonable account of macro-economic factors where housing delivery might have experienced an understandable drop/trough but where housing land has been available. It was

⁸ Plan adopted August 2004

⁹ PINS soundness advice visit to the Greater Nottingham Councils, August 2012, Inspector Keith Holland.

GEDLING

17 Paragraph 97 of the Inspector’s Report on the Aligned Core Strategy⁴ states “In general it would be ideal for housing completions over the full plan period to be the same in each year of a plan, in order to meet the emerging requirements or needs in full. Higher numbers might be necessary to make good any shortfalls in supply in the recent past (ideally in the early years using the Sedgefield approach)”. The National Planning Practice Guidance states local planning authorities should aim to deal with any undersupply within the first five years of the plan period where possible.

18 In the light of the Aligned Core Strategy Inspector’s Report and national guidance, it is considered appropriate to apply the Sedgefield approach to assess housing land supply.

5% or 20% buffer

19 To assess whether Gedling Borough has “a record of persistent under delivery of housing”, it is important to look at the long term trend over an economic cycle. The Aligned Core Strategy was adopted in September 2014 so housing delivery against previous development plans also need to be assessed.

20 The East Midlands Regional Plan was adopted in March 2009 and set a housing requirement of 8,000 homes for the period 2006 to 2026 (equating to an annual requirement of 400 homes). The Aligned Core Strategy sets a housing requirement of 7,250 homes for the period 2011 to 2028, but provides different annual targets through the plan period, as shown in Table 1. **Table 2** shows that the number of new homes completed between 2011 and 2013 exceeded the Aligned Core Strategy target for those years. The number of net homes completed between 2013 and 2017 falls short of the Aligned Core Strategy target for those years.

Table 2: Gedling’s net completions (cumulative) in the last 10 years

		Net completions (annual)	Net completions (cumulative)	Plan target	% of target
East Midlands Regional Plan	2007/08	447	743	800	93 %
	2008/09	204	947	1,200	79 %
	2009/10	274	1,221	1,600	76 %
	2010/11	341	1,562	2,000	78 %
Aligned Core Strategy	2011/12	275	275	250	110 %
	2012/13	227	502	500	100 %
	2013/14	321	823	940	88 %
	2014/15	311	1,134	1,380	82 %
	2015/16	174	1,308	1,820	72 %
	2016/17	198	1,506	2,260	67 %

⁴ http://www.gngrowthpoint.com/media/361914/broxtowe__gedling__nottingham_city_final_acs_inspectors_report_july_2014.pdf

Historic Completion and Supply Rates

Figure 8.

Period	Gross Completions			Total Losses			Net Completions			Supply
	Warsop Parish	Mansfield	District Total	Warsop Parish	Mansfield	District Total	Warsop Parish	Mansfield	District Total	
1991/1992	Not Recorded	Not Recorded	240	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1992/1993	Not Recorded	Not Recorded	371	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1993/1994	Not Recorded	Not Recorded	362	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1994/1995	Not Recorded	Not Recorded	335	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1995/1996	Not Recorded	Not Recorded	338	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1996/1997	Not Recorded	Not Recorded	274	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1997/1998	Not Recorded	Not Recorded	287	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1998/1999	Not Recorded	Not Recorded	211	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
1999/2000	Not Recorded	Not Recorded	226	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
2000/2001	Not Recorded	Not Recorded	158	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded	Not Recorded
2001/2002	Not Recorded	Not Recorded	286	Not Recorded	Not Recorded	18	Not Recorded	Not Recorded	268	Not Recorded
2002/2003	Not Recorded	Not Recorded	373	Not Recorded	Not Recorded	0	Not Recorded	Not Recorded	373	3416
2003/2004	Not Recorded	Not Recorded	350	Not Recorded	Not Recorded	5	Not Recorded	Not Recorded	345	3443
2004/2005	Not Recorded	Not Recorded	336	Not Recorded	Not Recorded	172	Not Recorded	Not Recorded	164	3350
2005/2006	Not Recorded	Not Recorded	441	Not Recorded	Not Recorded	116	Not Recorded	Not Recorded	325	3897
2006/2007	Not Recorded	Not Recorded	631	Not Recorded	Not Recorded	48	Not Recorded	Not Recorded	583	3572
2007/2008	Not Recorded	Not Recorded	285	Not Recorded	Not Recorded	17	Not Recorded	Not Recorded	268	3650
2008/2009	Not Recorded	Not Recorded	253	Not Recorded	Not Recorded	37	Not Recorded	Not Recorded	216	3290
2009/2010	Not Recorded	Not Recorded	469	Not Recorded	Not Recorded	245	Not Recorded	Not Recorded	224	4306
2010/2011	Not Recorded	Not Recorded	371	Not Recorded	Not Recorded	12	Not Recorded	Not Recorded	359	3096
2011/2012	57	212	271	0	6	6	57	206	265	5310
2012/2013	53	151	209	0	3	3	53	148	206	5640
2013/2014	78	203	297	0	1	1	78	202	296	5622
2014/2015	59	174	255	0	1	1	59	173	254	5372
2015/2016	70	305	389	0	1	1	70	304	388	
Total	317	1045	8018	0	12	682	317	1033	4534	
Average	63	209	321	0	2	45	63	207	302	

N.B. 2006/2007, 2013/2014 shows artificially high completion rates due to inclusion of dwellings actually completed in previous years which were found during an overhaul of the monitoring system.

NEWARK AND SHERWOOD

Section Four

District Completions and Losses Data

Figure 8: Net Completions by Year

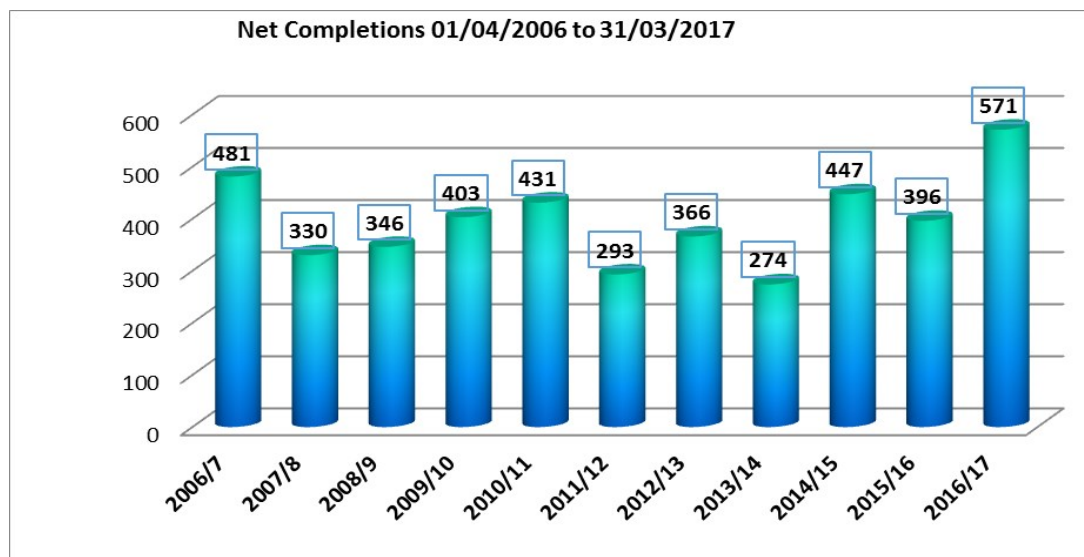


Figure 8 provides comparison data for net completions for the plan period from 01/04/2006 to 31/03/2017

Figure 9 provides comparison data for net and gross completions and losses for the plan period from 2006 onwards.

The average gross completion rate from 2006 is **411** dwellings each year.

The average net completion rate from 2006 is **394** dwellings each year.

Figure 9: Gross Completions and Losses by Year

Year	2006/7	2007/8	2008/9	2009/10	2010/11	2011/12	2012/13	2013/14	2014/15	2015/16	2016/17
Gross Completions	484	333	348	405	433	335	383	312	462	440	585
Losses	3	3	2	2	2	42	17	38	15	44	14
Net Completions	481	330	346	403	431	293	366	274	447	396	571

* Losses are higher from 2011/12 onwards due to a change in the way that they are recorded, this involves recording the loss during the year it happens, previously losses were recorded once the development was complete. In 2015/16 the replacement dwelling monitoring was amalgamated so losses are higher again this year where dwellings have been demolished but the replacement is yet to be completed.

NOTTINGHAM CITY

Appendix D

Comparison of actual completions against adopted plan at year-end (e.g. 31/3/1998 for 1997/98)

April to March	Gross comps exc. Student dwellings	Demolitions	Net comps exc. Student dwellings	Student dwellings (net)	Net comps inc. student dwellings	Nottm Local Plan (400 p.a. Gross 1991 to 2011) adopted Oct 1997***			Structure Plan (925 p.a. Net 2001 to 2021) adopted Feb 2006			Regional Plan (1,000 p.a. Net 2006 to 2026) adopted March 2009			Aligned Core strategy (475 p.a. Net 2011 to 2013, 880 Net 2013 to 2018) adopted September 2014		
						Required (cumulative)	Actual**	Actual minus required	Required (cumulative)	Actual	Actual minus required	Required (cumulative)	Actual	Actual minus required	Required (cumulative)	Actual	Actual minus required
1997-98	380	-	-	-	-	2,800	3,713	913	-	-	-	-	-	-	-	-	-
1998-99	414	-	-	-	-	3,200	4,127	927	-	-	-	-	-	-	-	-	-
1999-2000	473	-	-	-	-	3,600	4,600	1,000	-	-	-	-	-	-	-	-	-
2000-01	373	13	360	6	366	4,000	4,973	973	-	-	-	-	-	-	-	-	-
2001-02	1140	22	1,118	6	1,124	4,400	6,113	1,713	-	-	-	-	-	-	-	-	-
2002-03	808	22	786	279	1,065	4,800	6,921	2,121	-	-	-	-	-	-	-	-	-
2002-03	1124	21	1,103	229	1,332	5,200	8,045	2,845	-	-	-	-	-	-	-	-	-
2004-05	1254	200	1,054	132	1,186	5,600	9,299	3,699	-	-	-	-	-	-	-	-	-
2005-06	1453	399	1,054	1,003	2,057	-	-	-	4,625	5,115	490	-	-	-	-	-	-
2006-07	1574	256	1,318	205	1,523	-	-	-	5,550	6,433	883	-	-	-	-	-	-
2007-08	1382	110	1,272	88	1,360	-	-	-	6,475	7,705	1,230	-	-	-	-	-	-
2008-09****	573	36	537	213	750	-	-	-	-	-	-	3,000	3,633	633	-	-	-
2009-10	789	136	653	259	912	-	-	-	-	-	-	4,000	4,545	545	-	-	-
2010-11	476	258	218	96	314	-	-	-	-	-	-	5,000	4,859	-141	-	-	-
2011-12	279	301	-22	444	422	-	-	-	-	-	-	6,000	5,281	-719	-	-	-
2012-13*	369	60	309	490	799	-	-	-	-	-	-	-	-	-	950	1,221	271
2013-14*	524	358	166	297	463	-	-	-	-	-	-	-	-	-	1,830	1,684	-146
2014-15	662	4	658	364	1,022	-	-	-	-	-	-	-	-	-	2,710	2,706	-4
2015-16	748	7	741	206	947	-	-	-	-	-	-	-	-	-	3,590	3,653	63

* There was no adopted plan at 31/3/13 or 31/3/14.

** Local Plan says actual completions to December 1995 were 2,937. 1996/97 has been added to this.

*** The Nottingham Local Plan (1997) requirement was gross.

**** CLG's definitions changed to include student dwellings in 2009, so it is probably correct to include them in the actual to compare with the Regional Plan for 2008/09. However, even if the change is not made until 2009/10 the Regional Plan requirement is still met in 2008/09.

5 Key monitoring indicators

Housing requirement and delivery

5.1 The housing requirement for the Borough, including the methodology for calculating 5 year land supply, is set by Policy 3 of the Core Strategy. The policy requires the delivery of a minimum of 13,150 new homes between 2011 and 2028, identifying that the following phases of housing delivery will be used for monitoring purposes:

2012 – 2013	2014 – 2018	2019 – 2023	2024 - 2028
500	2,350	6,500	4,100
250 per annum	470 per annum	1,300 per annum	820 per annum

Housing completions 2011-2016

5.2 Monitoring of new housing development takes part as the Council's Housing Land Availability (HLA) review. This includes a full list of all extant planning approvals and tracks completions over the period April to March each year. The 2016 HLA report is included in this report as **Appendix 1**.

2011/12	2012/13	2013/14	2014/15	2015/16	Total completions over plan period
293	209	199	373	487	1,561

RUSHCLIFFE

Table 4.4a: Additional Dwellings Rushcliffe – Total

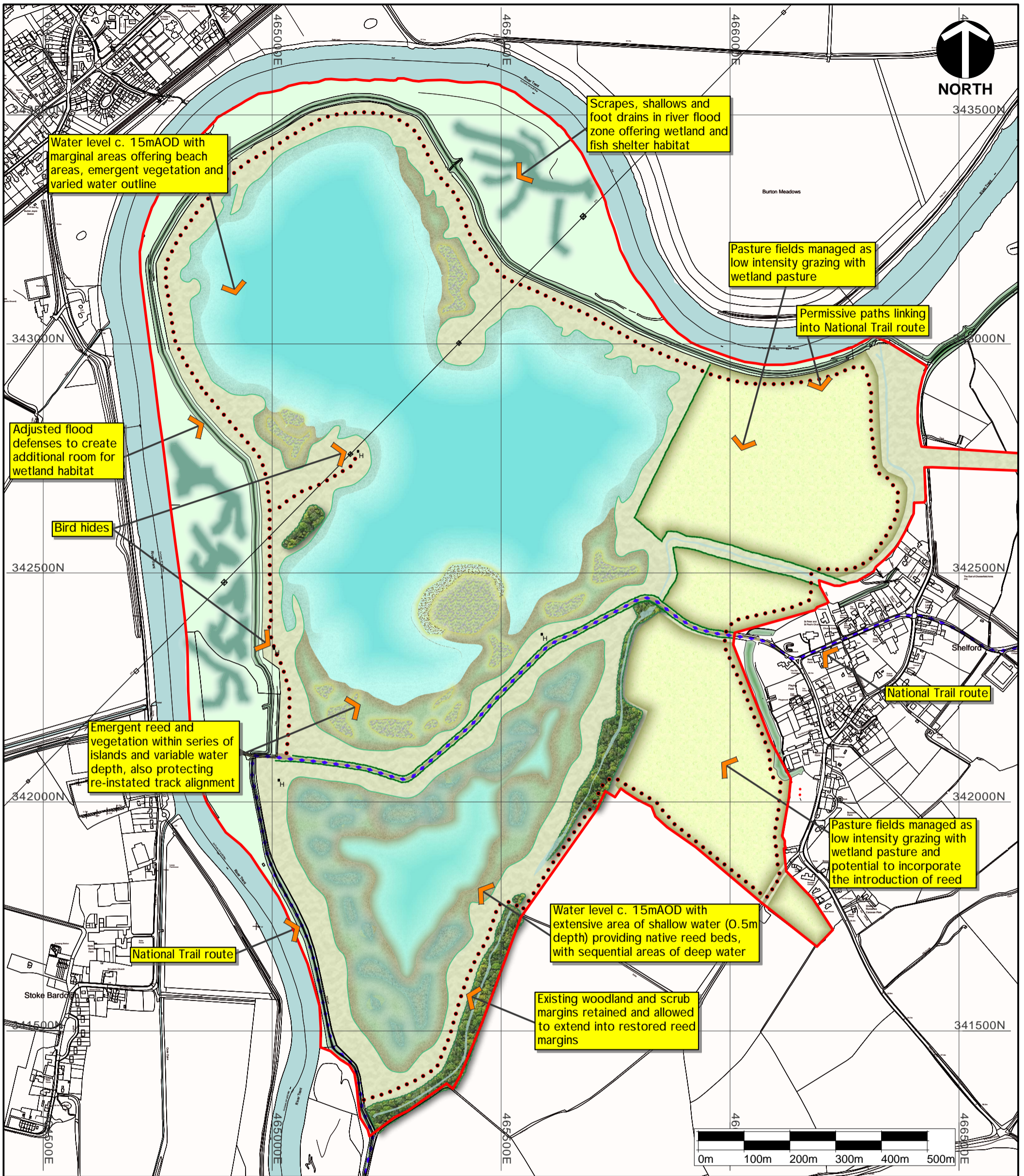
Indicator	05/06	06/07	07/08	08/09	09/10	10/11	11/12 Curr	12/13 Y1	13/14 Y2	14/15 Y3	15/16 Y4	16/17 Y5	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	
H2a	261	456	493	191	227																	
H2b						216																
H2c	Net Additions						233	258	318	370	372	549	488	326	216	112	140	20	12	149	18	
	Target							942	994	1051	1113	1187										
H2d	n/a as Core Strategy has not been adopted.																					

Table 4.4b: Additional Dwellings Rushcliffe – Nottingham Principal Urban Area

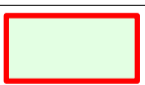
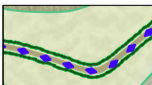
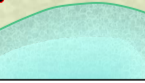

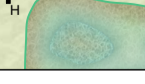
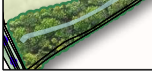
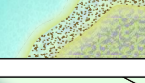
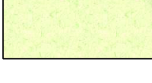

Indicator	05/06	06/07	07/08	08/09	09/10	10/11	11/12 Curr	12/13 Y1	13/14 Y2	14/15 Y3	15/16 Y4	16/17 Y5	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	
H2a	56	216	85	21	9																	
H2b						9																
H2c	Net Additions						28	63	106	133	200	315	240	220	163	100	100	0	12	149	18	
	Target							731	782	839	903	973										
H2d	n/a as Core Strategy has not been adopted.																					

Table 4.4c: Additional Dwellings Rushcliffe – Rural

Indicator	05/06	06/07	07/08	08/09	09/10	10/11	11/12 Curr	12/13 Y1	13/14 Y2	14/15 Y3	15/16 Y4	16/17 Y5	17/18	18/19	19/20	20/21	21/22	22/23	23/24	24/25	25/26	
H2a	205	240	408	170	218																	
H2b						207																
H2c	Net Additions						205	191	209	237	172	234	248	106	53	59	87	67	47	47	47	
	Target							211	212	213	210	214										
H2d	n/a as Core Strategy has not been adopted.																					



Key

	The site restoration boundary		Reinstated public footpath/track and new hedgerow adjacent to track
	Principal lake areas and adjacent conservation grassland		Routes of permissive footpaths
	Reed and shallows area with adjacent conservation grassland and bird hide		Existing woodland and drainage
	Islands and gravel spit areas		Restored wetland pasture grassland
	Shallows, scrapes and footdrains		

DRAFT PLAN ISSUE

Client: **Brett Group** 

Project: **Shelford Proposed Quarry Development**

Title: **Concept Restoration Masterplan**

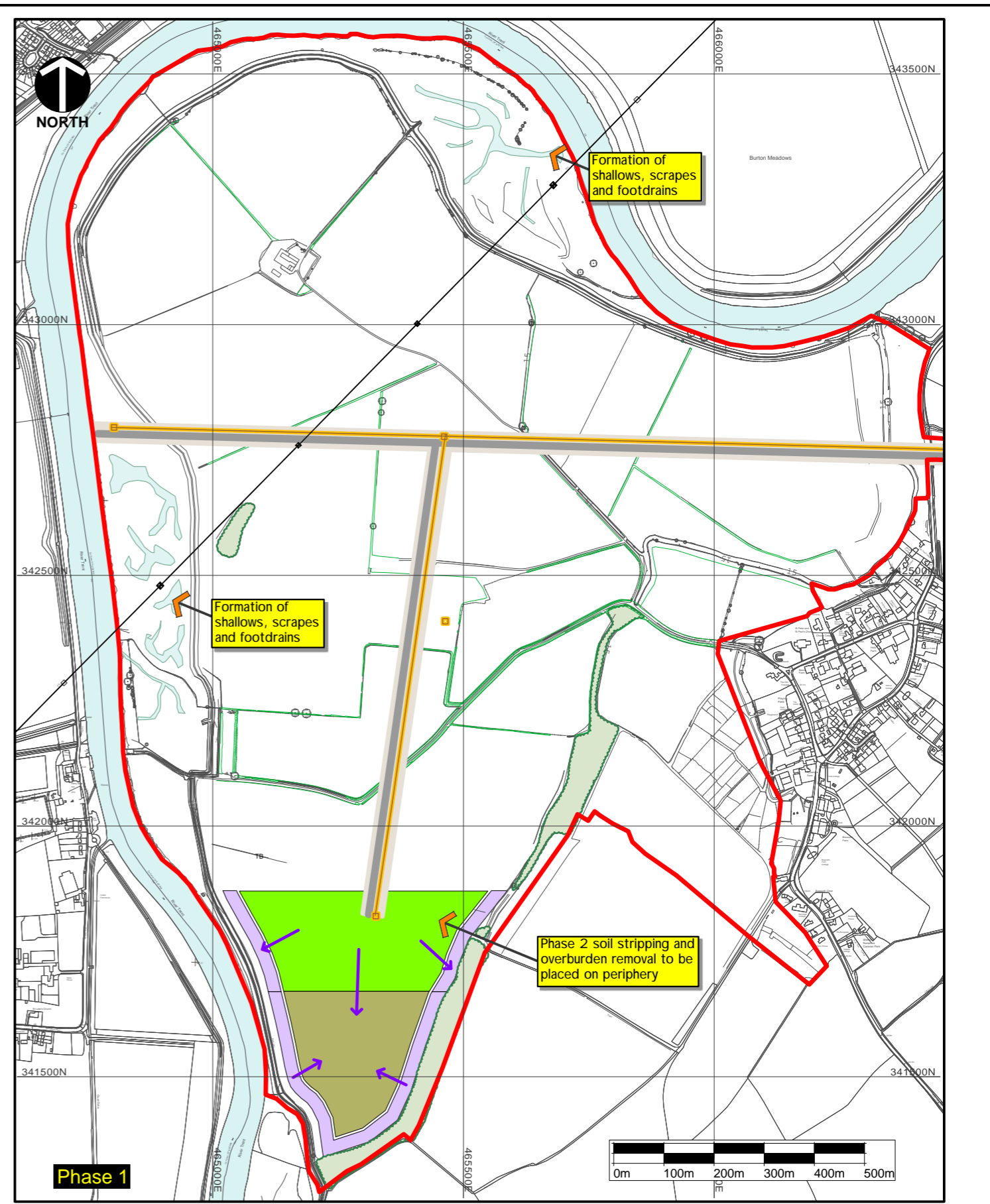
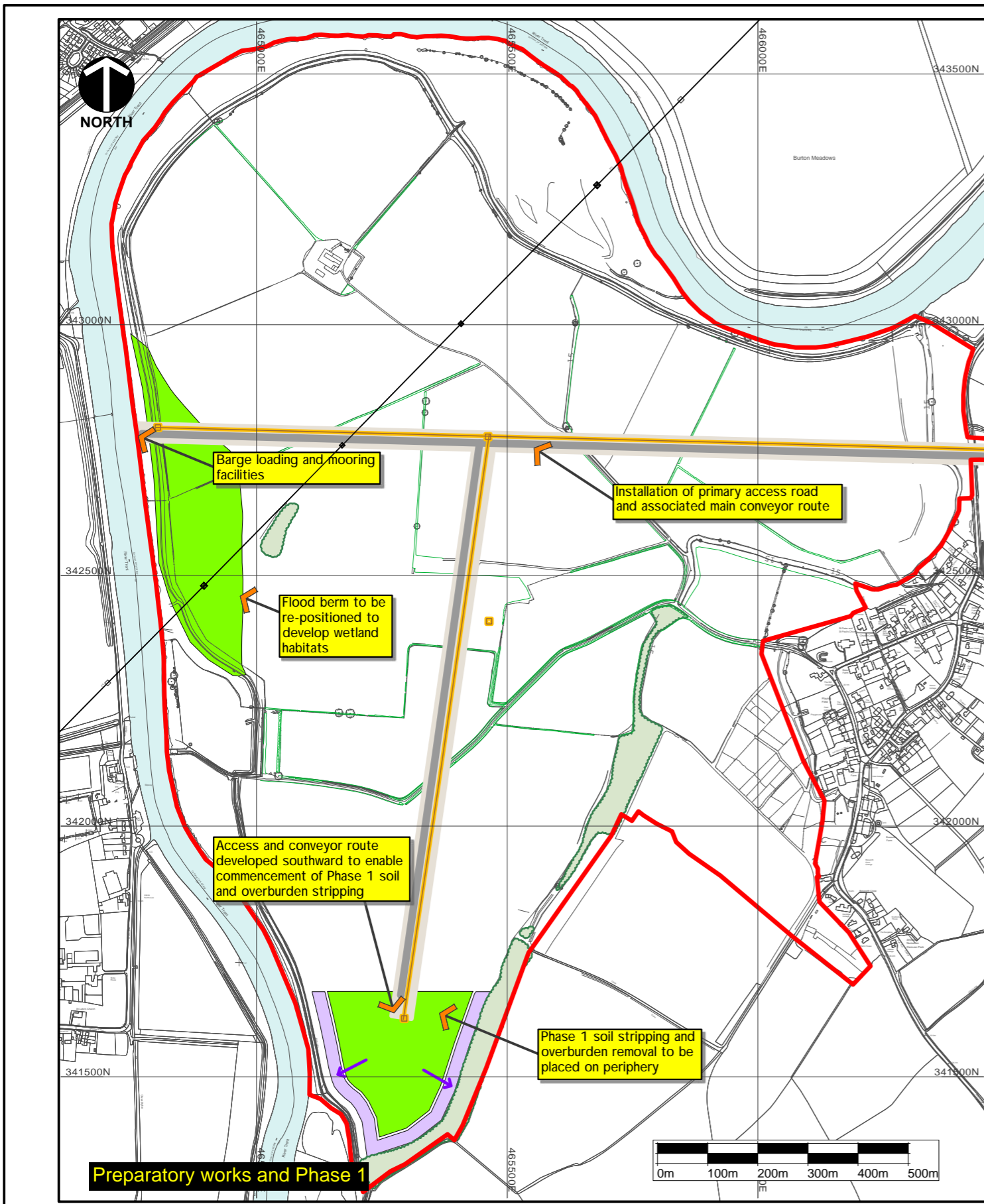
CAD Ref: SH1088-D3v1	Version: 1	Drawn by: RB	Scale @ A3: Plan 1:8000	Origin Date: May 2017
----------------------	------------	--------------	-------------------------	-----------------------

bright & associates
landscape and environmental consultants
Pear Tree House Dovaston Oswestry Shropshire SY10 8DP
01691 682 773 www.bright-associates.co.uk

Registered Practice **Landscape Institute**

Drawing Number: **SH1088-D3**

Table 3, East Midlands and S. Yorks, annual aggregate production by county												
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Current output compared with 2006 output
Nottinghamshire	3.15	2.97	2.37	1.27	1.56	1.71	1.55	1.39	1.43	1.52	1.27	40%
Lincolnshire	3.37	2.47	2.27	1.99	1.79	1.92	1.85	1.88	2.15	2.19	2.17	64%
Leicestershire	1.27	1.33	1.09	0.83	0.91	0.92	0.91	1.1	1.45	1.41	1.5	110%
Derbyshire	1.2	1.22	1.1	0.91	1.04	1.1	0.81	0.82	0.95	1.13	1.29	108%
Northamptonshire	0.43	0.36	0.25	0.17	0.22	0.24	0.4	0.51	0.52	0.27	0.4	93%
East Midlands RAWP area	9.92	8.91	7.54	5.5	5.83	6.23	5.88	6.04	6.85	6.9	6.95	70%
S. Yorkshire	0.5	0.4	0.4	0.5	0.16	0.14	0.14	0.15	0.14	0.4		80%



Key	
	The site restoration boundary
	Primary site access tracks
	Primary conveyor routes (secondary routes not shown)
	Soil & overburden strip area
	Soil and overburden storage
	Direction of principal soil and overburden movement
	Restoration area

Note:
Phasing layout is indicative for purpose of illustration of sequential working only

DRAFT PLAN ISSUE

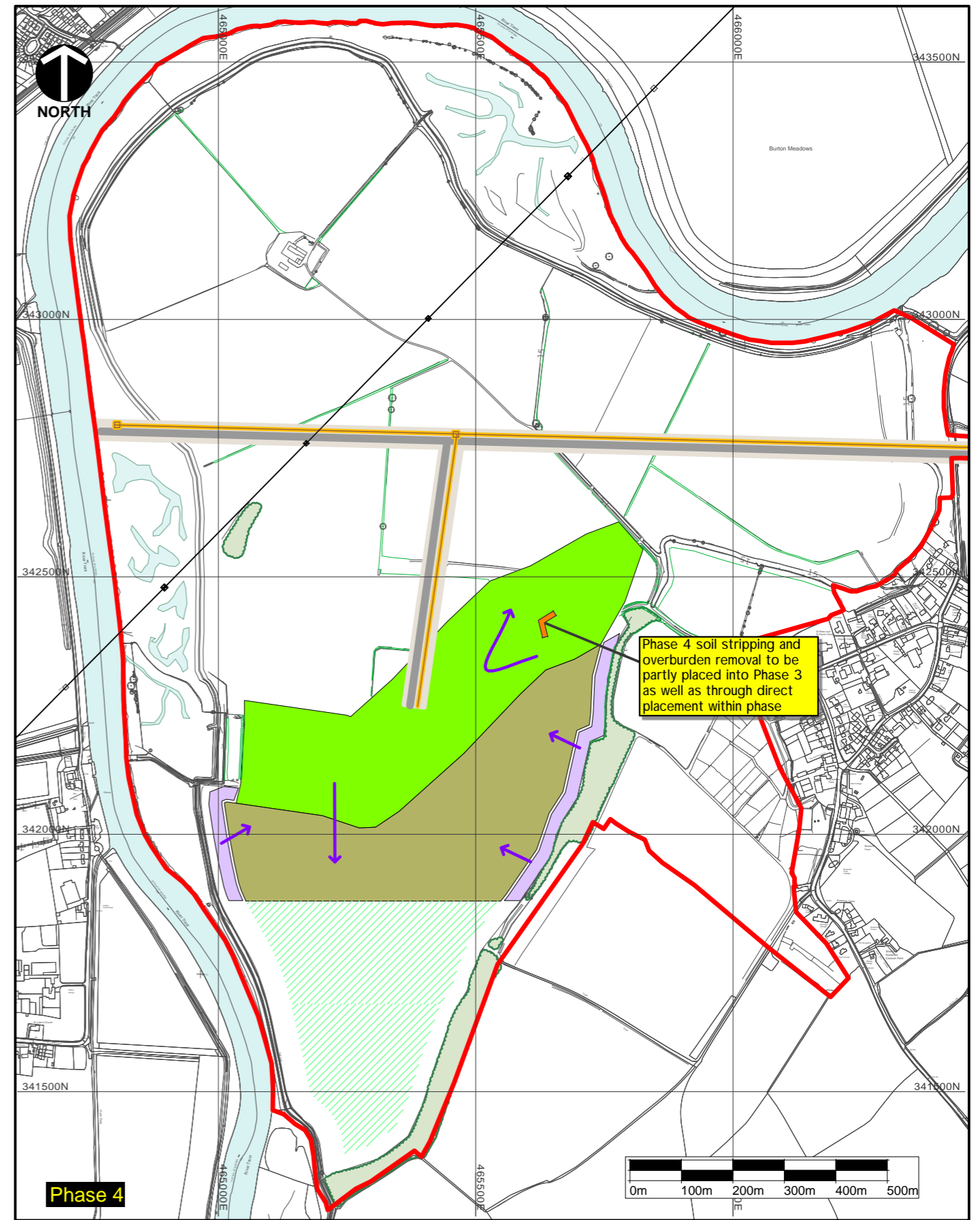
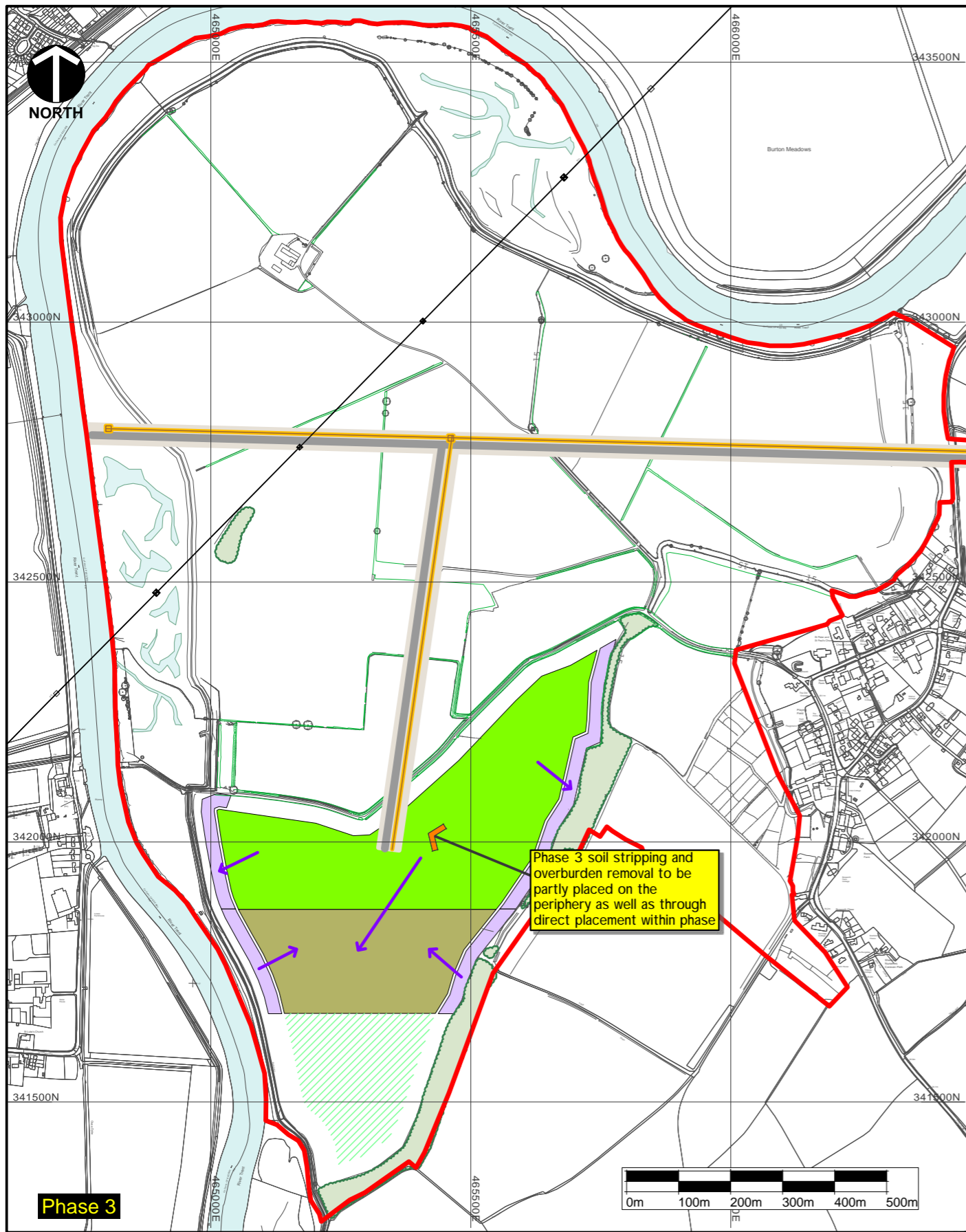
Revision Number	Revision Summary			Revision Date
CAD Ref:	Version:	Drawn by:	Scale @ A3:	Origin Date:
SH1088-D2v2	2	RB	Plan 1:10,000	May 2017

	bright & associates landscape and environmental consultants Pear Tree House Dovaston Oswestry Shropshire SY10 8DP 01691 682 773 www.bright-associates.co.uk Registered Practice	Drawing Number: SH1088-D2 (Sheet 1 of 4)
--	---	---

Client: **Brett Group**

Project: **Shelford Proposed Quarry Development**

Title: **Concept Phasing Sequence
Preparatory Works, Phase 1 and Phase 2**



- Key**
- The site restoration boundary
 - Primary site access tracks
 - Primary conveyor routes (secondary routes not shown)
 - Soil & overburden strip area
 - Soil and overburden storage
 - ← Direction of principal soil and overburden movement
 - Restoration area applicable to the phase sequence
 - Completed restoration area

Note:
Phasing layout is indicative for purpose of illustration of sequential working only

DRAFT PLAN ISSUE

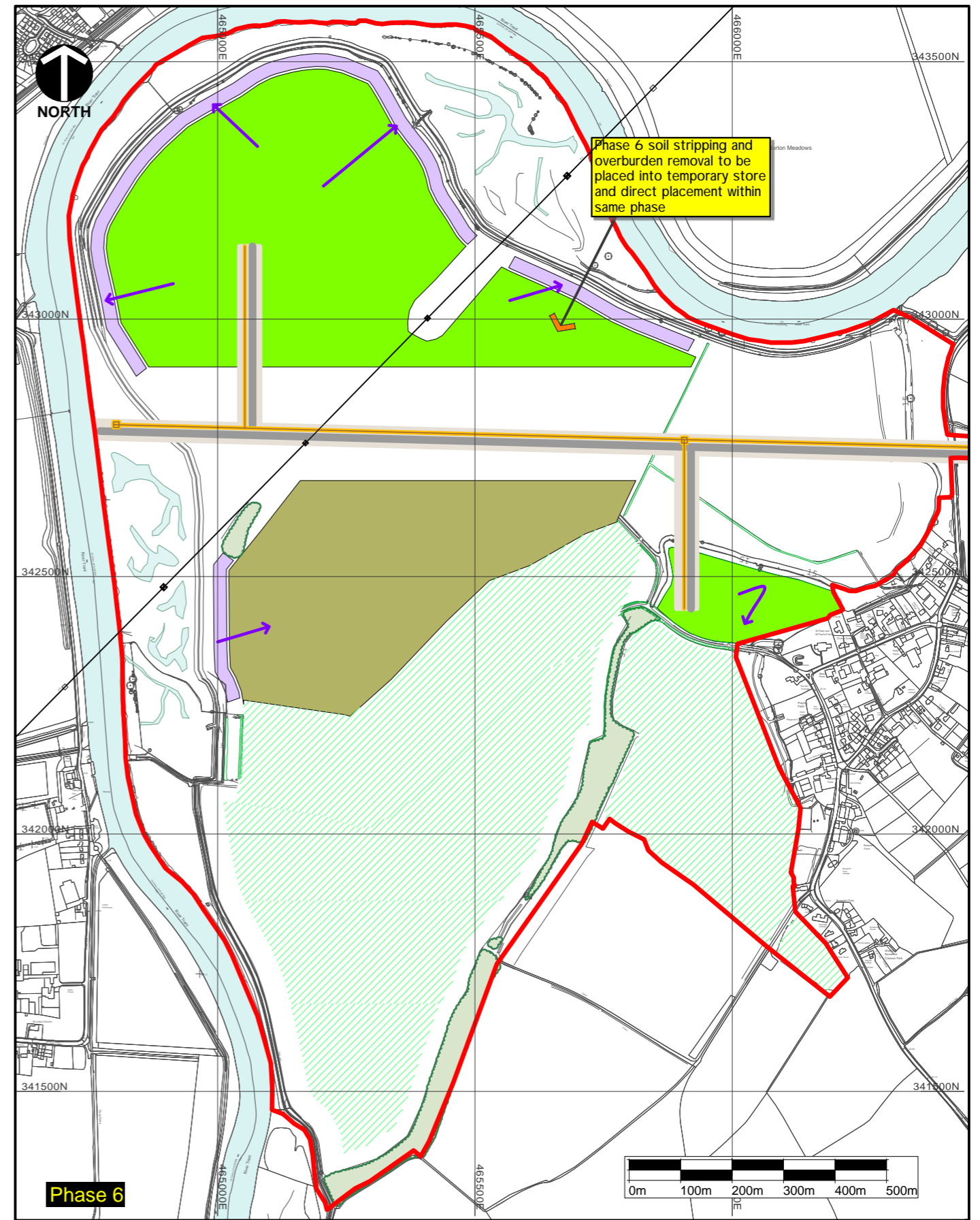
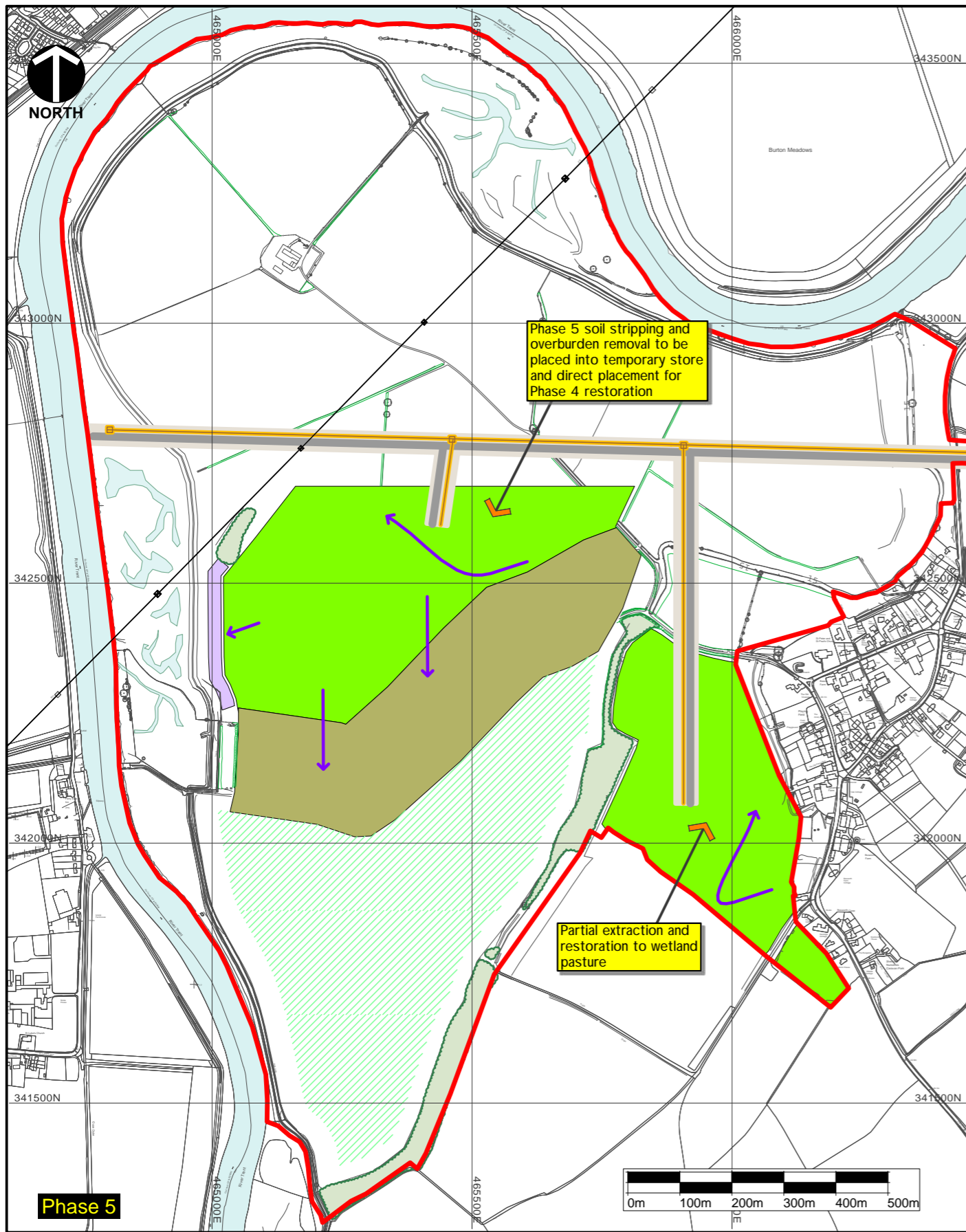
Revision Number	Revision Summary			Revision Date
CAD Ref:	Version:	Drawn by:	Scale @ A3:	Origin Date:
SH1088-D2v2	2	RB	Plan 1:10,000	May 2017

<p>bright & associates landscape and environmental consultants Pear Tree House Dovaston Oswestry Shropshire SY10 8DP 01691 682 773 www.bright-associates.co.uk</p>	Drawing Number:
	SH1088-D2 (Sheet 2 of 4)

Client: **Brett Group**

Project: **Shelford Proposed Quarry Development**

Title: **Concept Phasing Sequence Phase 3 and Phase 4**



- Key**
- The site restoration boundary
 - Primary site access tracks
 - Primary conveyor routes (secondary routes not shown)
 - Soil & overburden strip area
 - Soil and overburden storage
 - ← Direction of principal soil and overburden movement
 - Restoration area applicable to the phase sequence
 - Completed restoration area

Note:
Phasing layout is indicative for purpose of illustration of sequential working only

DRAFT PLAN ISSUE

Revision Number	Revision Summary			Revision Date
CAD Ref:	Version:	Drawn by:	Scale @ A3:	Origin Date:
SH1088-D2v2	2	RB	Plan 1:10,000	May 2017

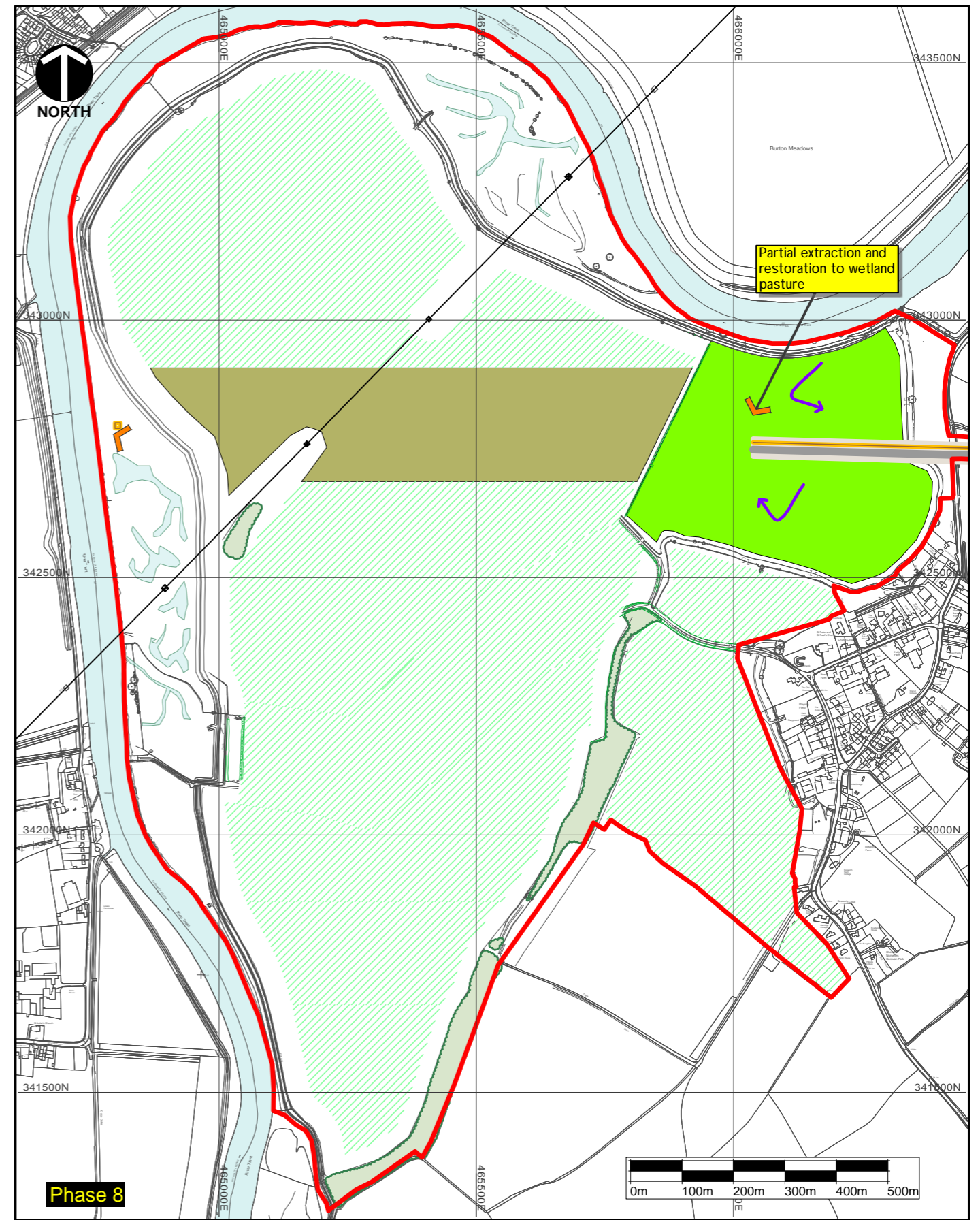
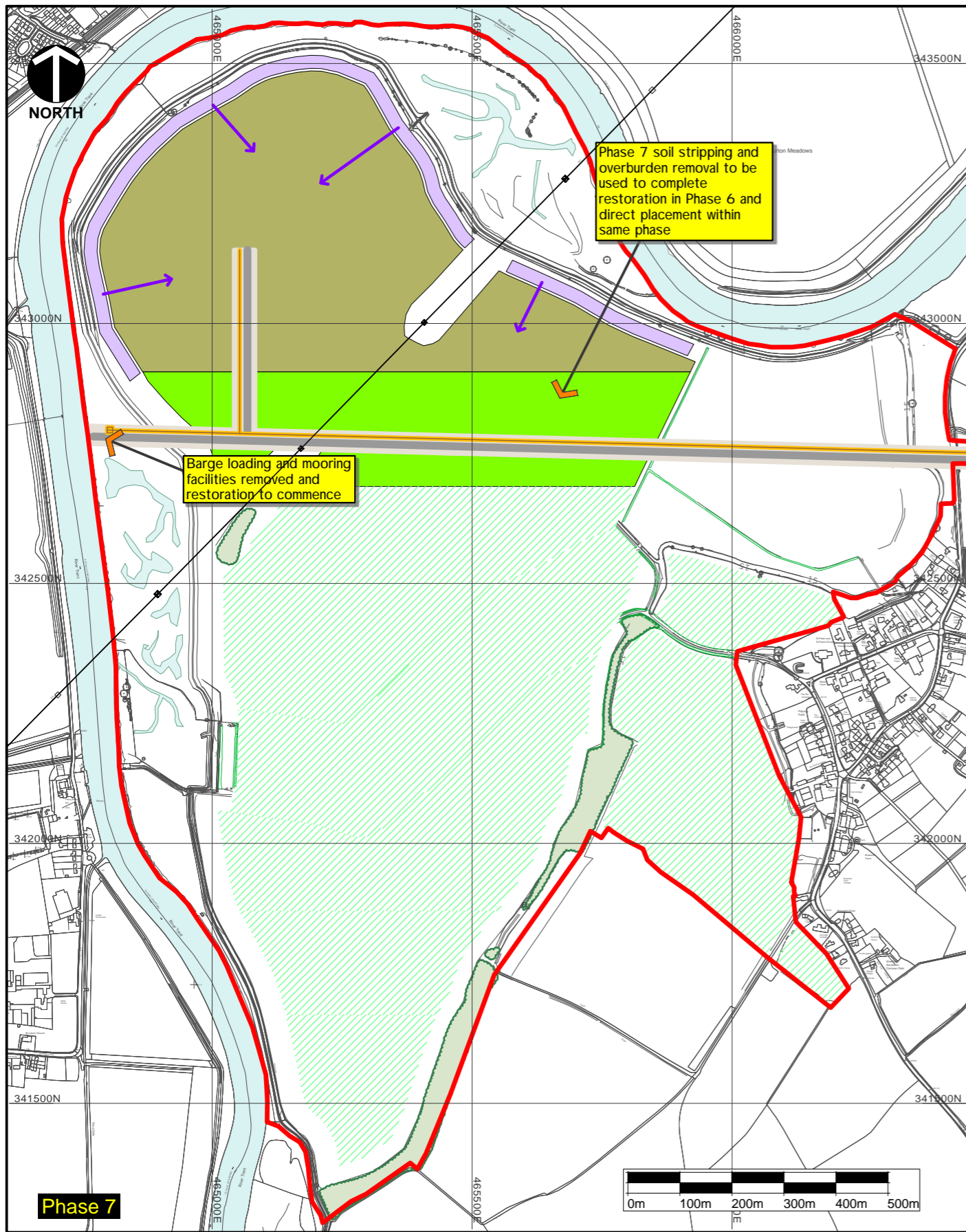
bright & associates
landscape and environmental consultants
Pear Tree House Dovaston Oswestry Shropshire SY10 8DP
01691 682 773 www.bright-associates.co.uk
Registered Practice Landscape Institute

Drawing Number: **SH1088-D2**
(Sheet 3 of 4)

Client: **Brett Group**

Project: **Shelford Proposed Quarry Development**

Title: **Concept Phasing Sequence Phase 5 and Phase 6**



Key

- The site restoration boundary
- Primary site access tracks
- Primary conveyor routes (secondary routes not shown)
- Soil & overburden strip area
- Soil and overburden storage
- ← Direction of principal soil and overburden movement
- Restoration area applicable to the phase sequence
- Completed restoration area

Note:
Phasing layout is indicative for purpose of illustration of sequential working only. For final restoration following Phase 8 see Drawing SH1088-D3

DRAFT PLAN ISSUE

Revision Number		Revision Summary			Revision Date	
CAD Ref:	Version:	Drawn by:	Scale @ A3:	Origin Date:		
SH1088-D2v2	2	RB	Plan 1:10,000	May 2017		
 landscape and environmental consultants Pear Tree House Dovaston Oswestry Shropshire SY10 8DP 01691 682 773 www.bright-associates.co.uk				Drawing Number: SH1088-D2 (Sheet 4 of 4)		

Client: **Brett Group**

Project: **Shelford Proposed Quarry Development**

Title: **Concept Phasing Sequence Phase 7 and Phase 8**

Appendix 3, Table 4 Nottinghamshire permitted reserves by area. Based on Oct 2017 LAA

	Tonnage MT	Operator
North Notts		
Finningly	0.45	Tarmac
Scrooby	0.72	Rotherham Sand and Gravel
Mission Bawtry Road	0.60	Rowley
Mission West	0.03	Hanson
Sturton le steeple	7.5	Tarmac
TOTAL for North Notts	9.3MT	
Newark		
Girton	3.56	Tarmac
Langford Lowfields	1.35	Tarmac
Besthorpe	0.5	Tarmac
Cromwell	2.4	Cemex
TOTAL for Newark allocations highlighted yellow	7.81MT	
South Notts		
East Leake	2.34	Cemex
TOTAL for South Notts permitted sites	2.34MT	
	19.45MT	

12% of S and G reserves are located in the south of the County.

13.36MT controlled by one operator which represents 69% of the landbank.



Sand and Gravel Provision


Emissions Footprint

Nottinghamshire

For Brett Aggregates Ltd



Quality Management

Prepared by:	Fiona Prismall MSc, BSc (Hons), CEnv, MIAQM, MEnvSc	Associate		22/10/14
Reviewed & checked by:	Rosemary Challen MSc, BSc, AMEnvSc	Assistant Consultant		22/10/14
Authorised by:	Jon Pullen PhD, CSci, CChem, MRSC, MIAQM, MEnvSc	Operational Director		22.10.14
Date of issue:	22 October 2014		Revision	0
Project number	JAP8088			
Document file path:	O:\Jobs_8001-9000\8088p\Deliverable\8088p_AQDft_rev0_20141022.docx			

Revision History				
Rev	Date	Status	Reason for revision	Additional comments
0	22/10/2014	Draft	-	-

DISCLAIMER

RPS has used reasonable skill and care in completing this work and preparing this report, within the terms of its brief and contract and taking account of the resources devoted to it by agreement with the client. We disclaim any responsibility to the client and others in respect of any matters outside the stated scope. This report is confidential to the client and we accept no responsibility to third parties to whom this report, or any part thereof, is made known. The opinions and interpretations presented in this report represent our reasonable technical interpretation of the data made available to us. RPS accepts no responsibility for data provided by other bodies and no legal liability arising from the use by other persons of data or opinions contained in this report.

Except for the provision of professional services on a fee basis, RPS does not have a commercial arrangement with any other person or company involved in the interests that are the subject of this report.

COPYRIGHT © RPS

The material presented in this report is confidential. This report has been prepared for the exclusive use of the client and shall not be distributed or made available to any other company or person without the knowledge and written consent of the client or RPS.

Executive Summary

In October 2013, Nottinghamshire County Council (NCC) published *Minerals Local Plan – Preferred Approach Consultation* which set out the broad policy principles for mineral development in Nottinghamshire between 2012 and 2030. The plan identified three distinct areas for sand and gravel production: North Nottinghamshire, Newark and South Nottinghamshire. The largest growth in the County is likely to be in Nottingham City and the surrounding area.

Brett Aggregates Ltd responded to the consultation in December 2013 pointing out that sand and gravel extracted from sites in the north of the County and the Newark area would have to be transported long distances to reach Nottingham, the area with the largest demand. Brett Aggregates Ltd suggested that construction and development needs in and around Nottingham, throughout the plan period, would be better met by mineral resources closer to this potential market. Specifically, potential extraction sites were identified at Shelford East and Shelford West.

This report considers the traffic-related emissions savings that could be achieved from transporting sand and gravel from Shelford East and/or West compared with transporting sand and gravel from sites in North Nottinghamshire or the Newark area.

There are emission reductions in all traffic-related pollutants savings when sand and gravel is transported from Shelford. The greatest emissions savings relate to carbon dioxide (CO₂): the calculated emissions assuming the sand and gravel are transported from Shelford are less than half of the emissions assuming that the same mass of sand and gravel are transported from Newark and less than 20% of the emissions assuming that the same mass of sand and gravel are transported from North Nottinghamshire.

The report has been produced based upon appropriate information provided by Brett Aggregates Ltd and its project team. In preparing this report, RPS experts have exercised professional skills and judgement to the best of their abilities and have given professional opinions that are objective, reliable and backed with scientific rigour. These professional responsibilities are in accordance with the code of professional conduct set by the Institution of Environmental Sciences for members of the Institute of Air Quality Management (IAQM).

Contents

Executive Summary	i
1 Introduction.....	1
2 Approach to Quantifying Emissions	2
Background	2
Information and Assumptions Used in Calculations.....	2
3 Results of Emissions Quantification.....	5
4 Conclusion	7

Tables and Figures

Tables

Table 2.1 Comparison of the Supply and Demand Proportions of Sand and Gravel	2
Table 2.2 Summary of Published Emissions to Air from Barges (grammes per tonne.km)	3
Table 2.3 Emissions to Air from Barges (grammes per tonne.km) – Used in Calculations	4
Table 3.1 Summary of Calculated Emissions in Kg per Annum.....	5
Table 3.2 Summary of Calculated Emissions in Kg per Annum.....	6

Figures

Figure 1: Shelford East/West to Nottingham

Figure 2: Coddington to Nottingham

Figure 3: North Nottinghamshire to Nottingham

1 Introduction

- 1.1 In October 2013, Nottinghamshire County Council (NCC) published *Minerals Local Plan – Preferred Approach Consultation* which set out the broad policy principles for mineral development in Nottinghamshire between 2012 and 2030. The plan identified three distinct areas for sand and gravel production: North Nottinghamshire, Newark and South Nottinghamshire. The largest growth in the County is likely to be in Nottingham City and the surrounding area.
- 1.2 In December 2013, Brett Aggregates Ltd responded to the consultation identifying that sand and gravel extracted from sites in the north of the County and Newark would have to be transported long distances to reach Nottingham, the area with the largest demand. Brett Aggregates Ltd suggested that construction and development needs in and around Nottingham, throughout the plan period, would be better met by mineral resources closer to this potential market. Specifically, potential extraction sites were identified at Shelford East and Shelford West.
- 1.3 This report considers the traffic-related emissions savings that could be achieved from transporting sand and gravel from Shelford East and/or West compared with transporting sand and gravel from sites in North Nottinghamshire or Newark.

2 Approach to Quantifying Emissions

Background

- 2.1 Table 2.1 provides a comparison of the supply and demand proportions of sand and gravel in the three locations identified by NCC.

Table 2.1 Comparison of the Supply and Demand Proportions of Sand and Gravel

Area	Sand and Gravel Resources - Supply	Housing Requirement - Demand
Newark	68%	16%
South Nottinghamshire	13%	56%
North Nottinghamshire	19%	18%
Total	100%	100%

- 2.2 It can be seen that the highest housing demand is in South Nottinghamshire, where the currently proposed allocation of mineral reserves is lowest.
- 2.3 Traffic-related pollutant emissions have been calculated for transporting sand and gravel to the city of Nottingham where the majority of the construction and development will take place, from mineral extraction sites in North Nottinghamshire, the Newark area and East/West Shelford.

Information and Assumptions Used in Calculations

Modes of Transport

- 2.4 Each of the Shelford sites is capable of producing 500,000 tonnes per annum. The sites would be worked consecutively. When the first site is exhausted, extraction would commence at the second site.
- 2.5 The Shelford sites are in close proximity to the River Trent. It is proposed that 180,000 tonnes per annum would be transported by barge along the River Trent as far as Colwick Wharf in Nottingham. The remaining 320,000 tonnes per annum would be transported by heavy goods vehicles (HGVs) via the A6097 to Nottingham. A conveyor would be used to transport the extracted minerals from the sites to the River Trent or the A6097. The routes assumed to be taken by the HGVs and the barges are illustrated in Figure 1.
- 2.6 The key-traffic related pollutants are nitrogen oxides (NO_x), particulate matter (PM₁₀) and carbon dioxide (CO₂). Emissions of NO_x and PM₁₀ are associated with respiratory and cardiovascular adverse health effects on a local level. Emissions of CO₂ are associated with climate change effects on a regional level. Emissions of NO_x, PM₁₀ and CO₂ associated with the transportation of 500,000 tonnes of sand and gravel from Shelford to Nottingham have been calculated.

- 2.7 For the purposes of calculating the number of barges from the proposed Shelford site, it has been assumed that each barge has a capacity 300 tonnes and that each barge will be fully loaded on the out-bound trip.
- 2.8 For the purposes of calculating the number of HGVs from the proposed Shelford site, it has been assumed that each HGV has a capacity 20 tonnes. Again, it has been assumed that each HGV will be fully loaded on the out-bound trip. Emissions factors for road vehicles are speed-dependent and it has been assumed that all HGVs will travel at 40 miles per hour (64 km per hour).
- 2.9 The calculated emissions associated with transporting sand and gravel from Shelford have been compared with the emissions associated with transporting the same amount of sand and gravel (500,000 tonnes) from Newark to Nottingham and from North Nottinghamshire to Nottingham. For Newark sites, the calculations assume that the sand and gravel will be extracted at Coddington; however, consideration has also been given to the extraction from sites at Collingham and Cromwell.
- 2.10 It is assumed that all transportation from Newark and North Nottinghamshire would be by road.
- 2.11 The routes are illustrated in Figures 2 and 3 respectively. To allow a direct comparison with the calculations for Shelford, the same assumptions have been made in all scenarios.

Emissions factors

Heavy Goods Vehicles

- 2.12 Speed-related HGV emissions have been drawn from Defra's 2014 emission factor toolkit (version 6.0) which uses emissions generated by the European Environment Agency (EEA) COPERT 4 (v10) emission calculation tool.

Barges

- 2.13 Emissions factors for inland waterway journeys are not readily available. A literature review has been undertaken to find sources of emissions. For barges, emissions are generally provided as a mass per tonne.km. The results of the literature review are summarised in Table 2.2 below.

Table 2.2 Summary of Published Emissions to Air from Barges (grammes per tonne.km)

Pollutant	Emissions in grammes per tonne.km		
	WWF	EU	CEFIC
NO _x	0.72	0.95	-
PM	0.038	0.03	-
CO ₂	48.50	-	31

WWF = World Wide Fund for Nature (2005) Literature Review: Inland Navigation and Emissions

EU = EU Transport GHG: Routes to 2050? (February 2012) Development of a better understanding of the scale of co-benefits associated with transport sector GHG reduction policies

CEFIC = European Chemical Industries Council (March 2011) Guidelines for Measuring and Managing CO₂ Emission from Freight Transport Operations

- 2.14 For NO_x, the EU data source provides a slightly higher emission than the WWF. For PM₁₀, the data sources provide very similar emissions. There is less agreement in the available emissions published for CO₂.
- 2.15 To ensure that the emissions assumptions for the Shelford scenario are conservative, the highest reported emission rate has been used in each case. The emissions used in the calculations are set out in Table 2.3.

Table 2.3 Emissions to Air from Barges (grammes per tonne.km) – Used in Calculations

Pollutant Emitted	Emissions (grammes per tonne.km)	Source
NO _x	0.95	EU
PM	0.038	WWF
CO ₂	48.5	WWF

- 2.16 As barge emissions are related to load as well as distance, the barges are assumed to be fully laden on their journey to Nottingham and assumed to have a 1 tonne load for the return journey.

3 Results of Emissions Quantification

- 3.1 Table 3.1 summarises the total emissions calculated for the three options for providing 500,000 of sand and gravel to Nottingham.

Table 3.1 Summary of Calculated Emissions in Kg per Annum

Scenario	Atmospheric Emissions (kg per annum) - for Transporting 500,000 Tonnes of Sand and Gravel to Nottingham		
	NO _x	PM	CO ₂
Shelford East/West to Nottingham	3,725 (2,388)	180 (96)	470,885 (121,927)
Newark (Coddington) to Nottingham	4,385	276	1,144,774
North Nottinghamshire to Nottingham	9,502	598	2,480,659

The amounts shown in parentheses for Shelford East/West to Nottingham relate are the barge emissions.

- 3.2 It should be clear that the emissions for transporting 500,000 tonnes of sand and gravel from Shelford to Nottingham are considerably lower for all pollutants than the emissions associated with transporting the same mass of sand and gravel from with Coddington or North Nottinghamshire.
- 3.3 As set out in Section 2, emissions of NO_x and PM₁₀ are associated with respiratory and cardiovascular adverse health effects on a local level. Emissions of CO₂ are associated with climate change effects on a regional or global level.
- 3.4 For the Shelford Sites, 36 % (180,000 tonnes out of a total of 500,000 tonnes) of the sand and gravel extracted each year would be transported by barge. For CO₂, the emissions associated with transporting this material by barge are 26 % (121,927 /, 470,885) of the total emissions for this scenario. This demonstrates that the use of barges to transport the material is beneficial in terms of climate change effects on a regional or global level.
- 3.5 For NO_x and particulate matter, the barges contribute a greater proportion of the total; however, these are local pollutants and moving the transportation off the local road network and onto inland waterways is likely to be beneficial as roadside pollutant concentrations are likely to be reduced when compared with the use of HGVs as a sole means of transportation.
- 3.6 The greatest emissions savings relate to CO₂. In the case of CO₂, the emissions for transporting sand and gravel from Shelford are less than half of the emissions for transporting sand and gravel from Coddington and less than 20% of the emissions assuming the sand and gravel are transported from North Nottinghamshire.
- 3.7 Further analysis has been undertaken to quantify the emissions for the scenarios of the sand and gravel in Newark having been extracted from sites at Collingham and Cromwell. The calculated emissions are provided in Table 3.2.

Table 3.2 Summary of Calculated Emissions in Kg per Annum

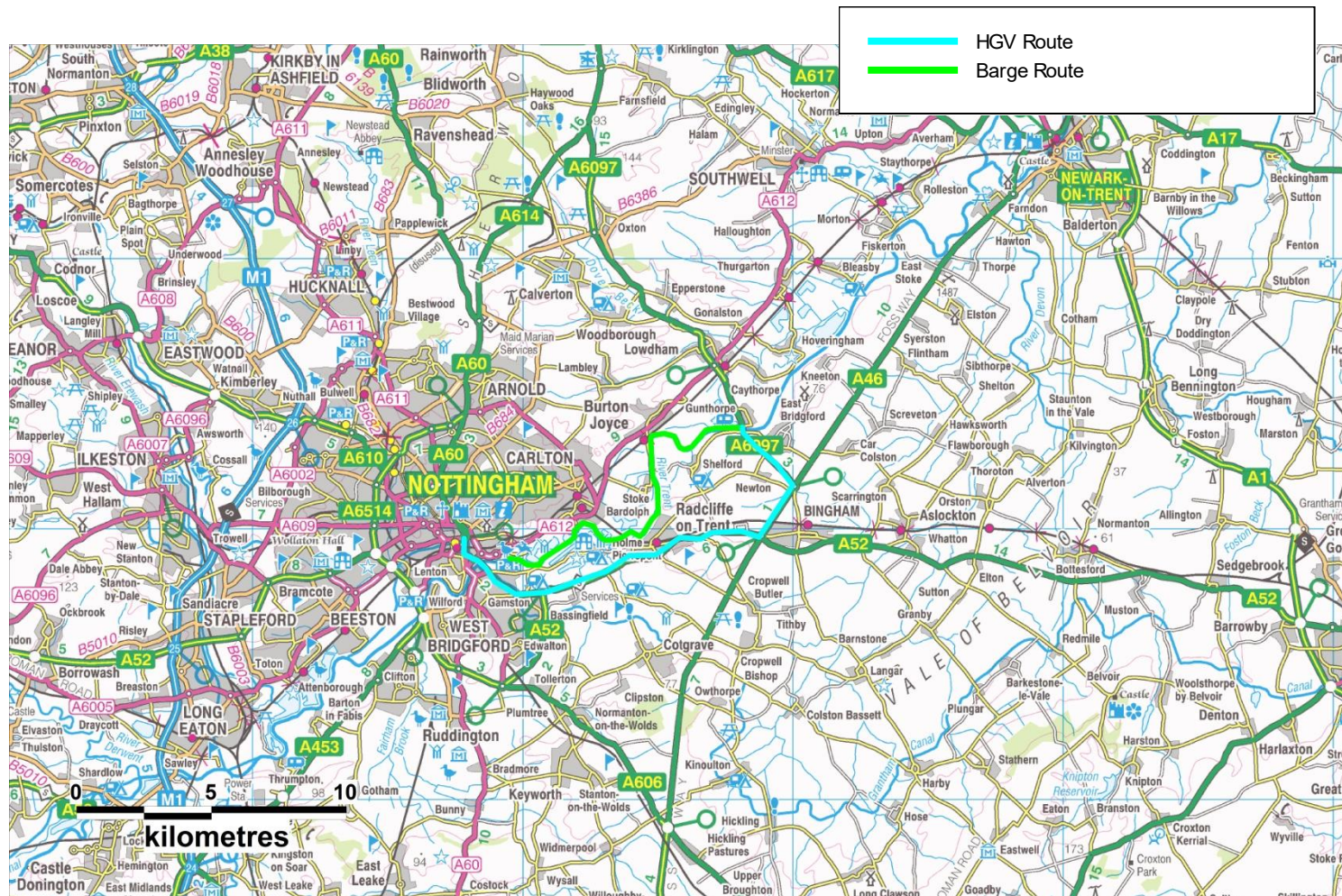
Scenario	Atmospheric Emissions (kg per annum) - for Transporting 500,000 Tonnes of Sand and Gravel to Nottingham		
	NO _x	PM	CO ₂
Shelford East/West to Nottingham	3,725	180	470,885
Newark (Coddington) to Nottingham	4,385	276	1,144,774
Newark (Collingham) to Nottingham	4,829	304	1,260,731
Newark (Cromwell) to Nottingham	4,806	303	1,254,557
North Nottinghamshire to Nottingham	9,502	598	2,480,659

- 3.8 When the sand and gravel in Newark is extracted from sites at Collingham or Cromwell, the emissions are greater than if the sand and gravel is extracted from Coddington; however, for all sites in Newark, the transport-related emissions exceed those associated with the Shelford sites.

4 Conclusion

- 4.1 In October 2013, Nottinghamshire County Council (NCC) published *Minerals Local Plan – Preferred Approach Consultation* which set out the broad policy principles for mineral development in Nottinghamshire between 2012 and 2030. The plan identified three distinct areas for sand and gravel production: North Nottinghamshire, Newark and South Nottinghamshire. The largest growth in the County is likely to be in Nottingham City and the surrounding area.
- 4.2 Brett Aggregates Ltd responded to the consultation in December 2013 pointing out that sand and gravel extracted from sites in the north of the County and the Newark area would have to be transported long distances to reach Nottingham, the area with the largest demand. Brett Aggregates Ltd suggested that construction and development needs in and around Nottingham, throughout the plan period, would be better met by mineral resources closer to this potential market. Specifically, potential extraction sites were identified at Shelford East and Shelford West.
- 4.3 This report considers the traffic-related emissions savings that could be achieved from transporting sand and gravel from Shelford East and/or West compared with transporting sand and gravel from sites in North Nottinghamshire or the Newark area.
- 4.4 The calculations demonstrate that for all traffic-related pollutants, emissions are reduced when sand and gravel is transported from Shelford. The greatest emissions savings relate to CO₂: the calculated emissions assuming the sand and gravel are transported from Shelford are less than half of the emissions assuming that the same mass of sand and gravel are transported from Coddington, near Newark, and less than 20% of the emissions assuming that the same mass of sand and gravel are transported from North Nottinghamshire.
- 4.5 When the sand and gravel in Newark is extracted from sites at Collingham or Cromwell, the emissions are greater than if the sand and gravel is extracted from Coddington; however, for all sites in Newark, the transport-related emissions exceed those associated with the Shelford sites.

Figures



—	HGV Route
—	Barge Route

(c) 2014 R PS Group

Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used



6-7 Lovers Walk
Brighton East Sussex BN1 6AH

T 01273 546800 F 01273 546801
E rpsbn@rpsgroup.com W rpsgroup.com

Client: Brett Aggregates

Project: Sand and Gravel Provision

Job Ref: JAP 8088

File location: O:\Jobs_8001-9000\8088p\Maps

Date: 20/10/2014

Rev: 0

Drawn: FP

Checked:

Figure Number: 1

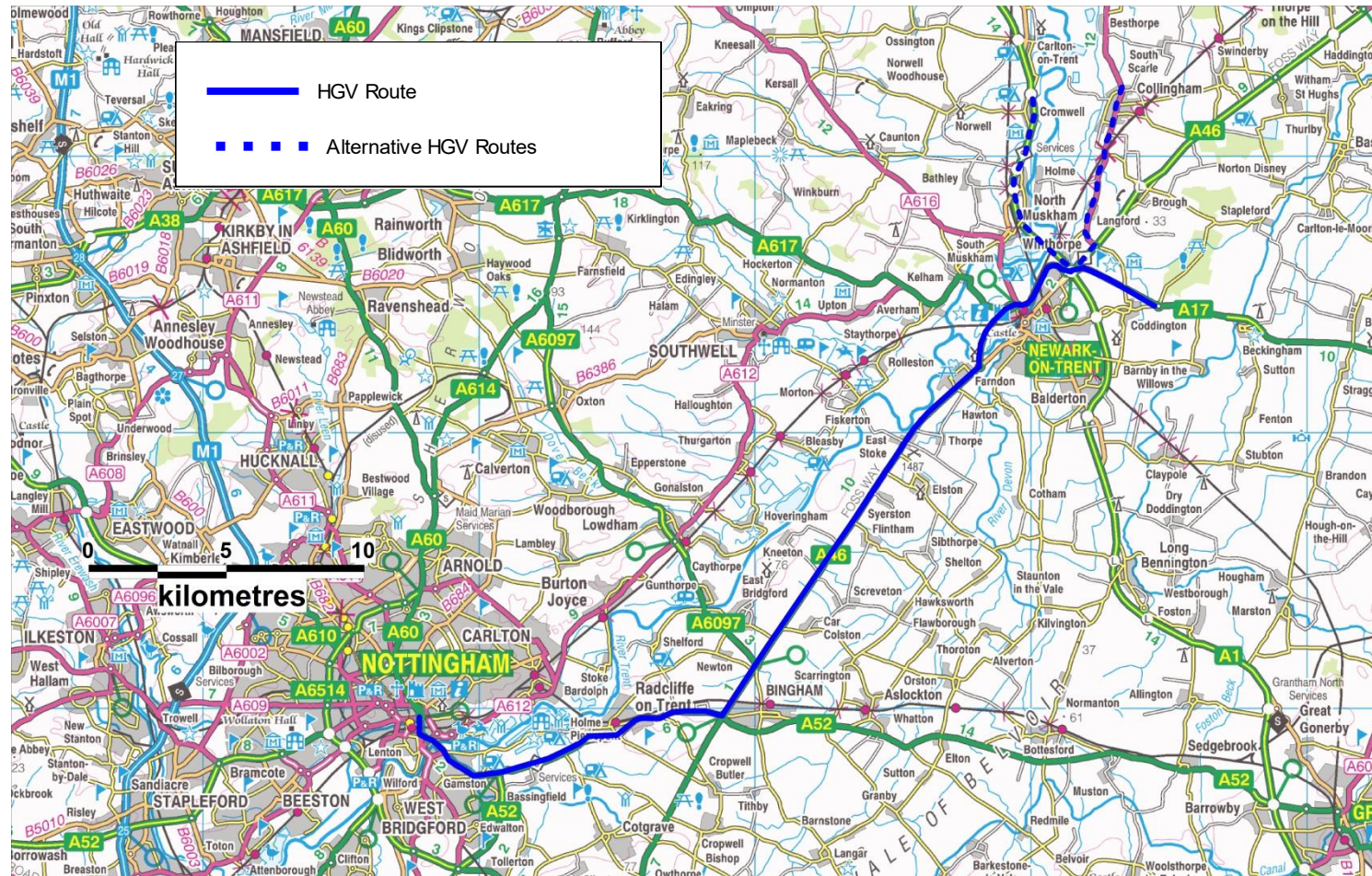
Title: Shelford East/West to Nottingham

rpsgroup.com/uk

(c) 2014 RPS Group

Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used



6-7 Lovers Walk
Brighton East Sussex BN1 6AH

T 01273 546800 F 01273 546801
E rpsbn@rpsgroup.com W rpsgroup.com

Client: Brett Aggregates

Project: Sand and Gravel Provision

Job Ref: JAP 8088

File location: O:\Jobs_8001-9000\8088p\Maps

Date: 20/10/2014

Drawn: FP

Figure Number: 2

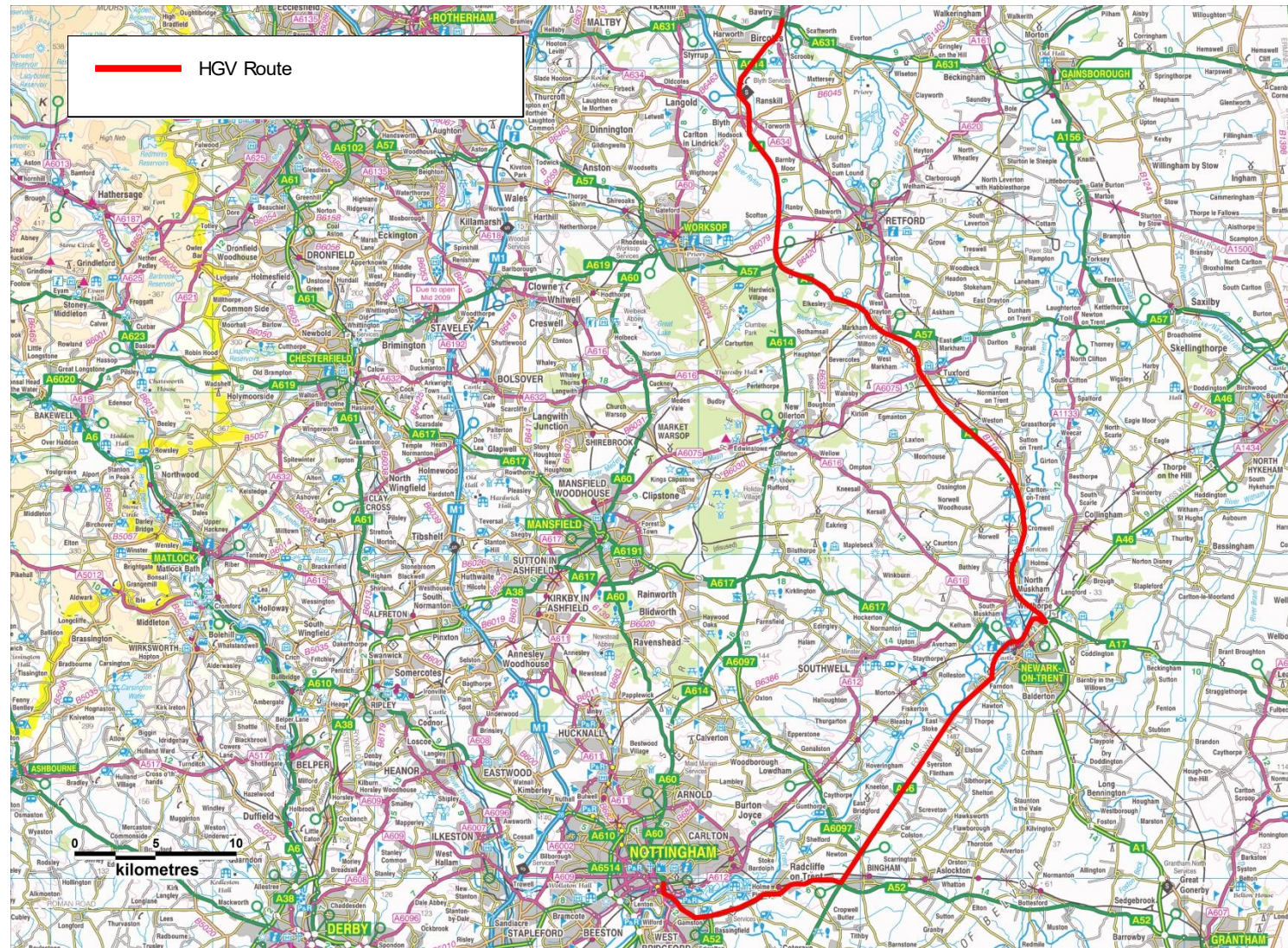
Title: Coddington to Nottingham

rpsgroup.com/uk

(c) 2014 RPS Group

Notes

1. This drawing has been prepared in accordance with the scope of RPS's appointment with its client and is subject to the terms and conditions of that appointment. RPS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided.
2. If received electronically it is the recipient's responsibility to print to correct scale. Only written dimensions should be used



6-7 Lovers Walk
Brighton East Sussex BN1 6AH

T 01273 546800 F 01273 546801
E rpsbn@rpsgroup.com W rpsgroup.com

Client: Brett Aggregates

Project: Sand and Gravel Provision

Job Ref: JAP 8088

File location: O:\Jobs_8001-9000\8088p\Maps

Date: 20/10/2014

Drawn: FP

Figure Number: 3

Title: North Nottinghamshire to Nottingham

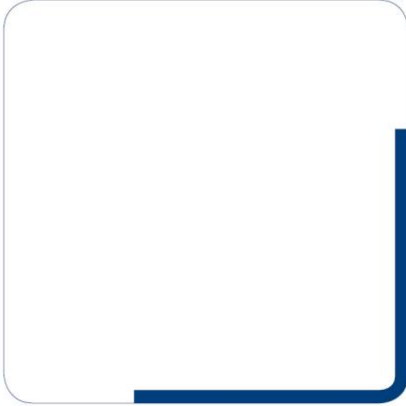
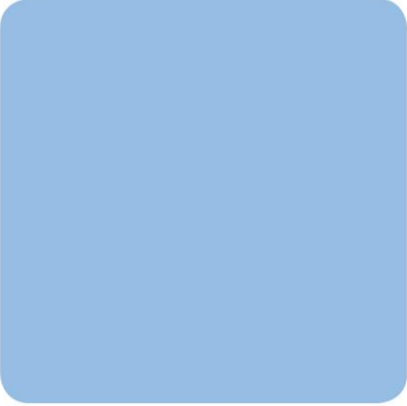
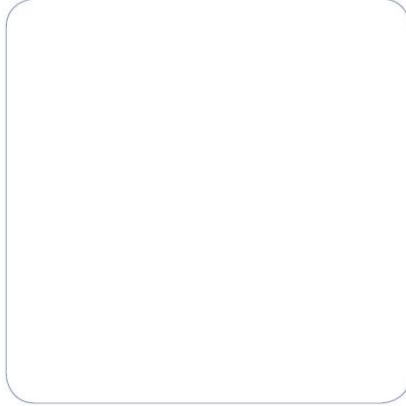
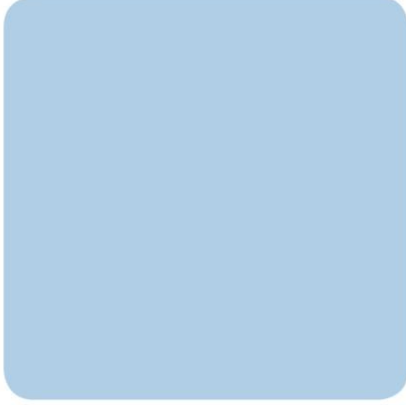
rpsgroup.com/uk

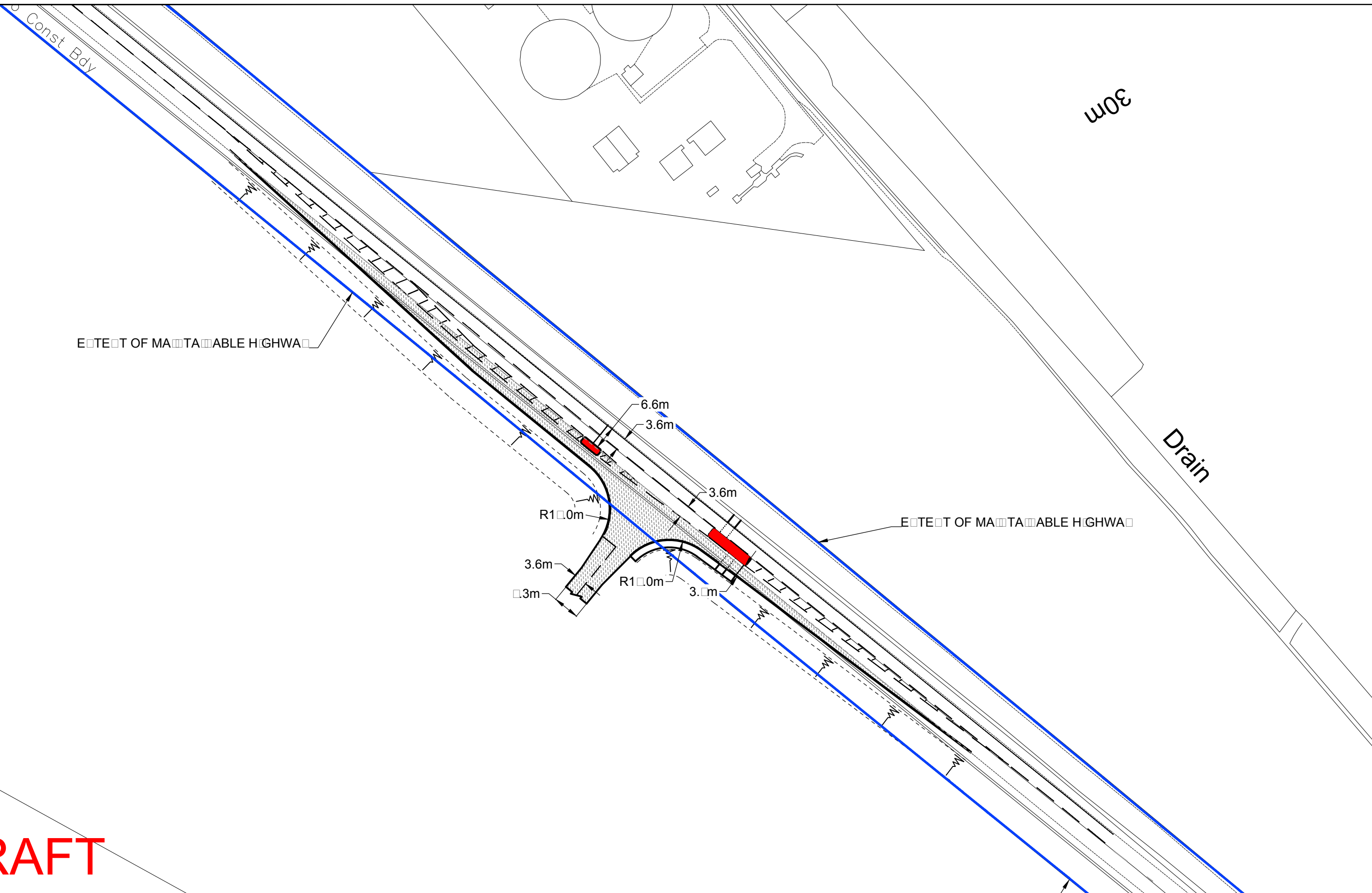


Contact

Fiona Prismall
Associate

RPS Planning & Development
6-7 Lovers Walk
Brighton
East Sussex
BN1 6AH
T: +44 (0) 1273 546 800
prismallf@rpsgroup.com





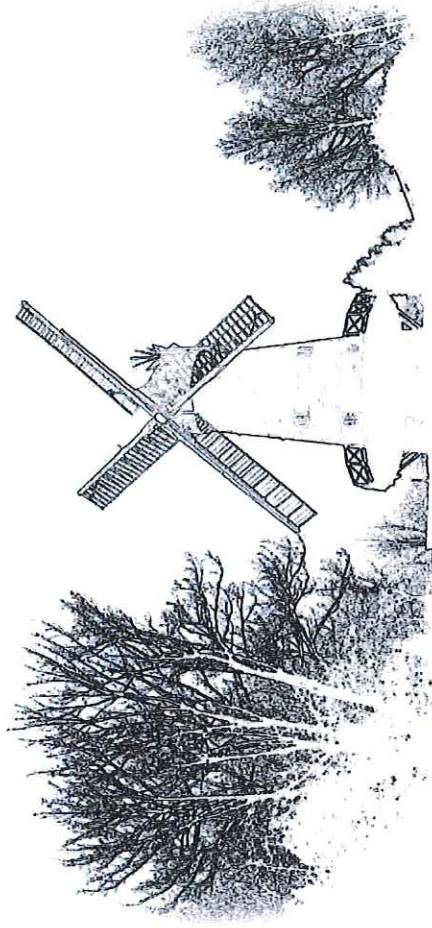
DRAFT

PROJECT TITLE		CLIENT		DATE				Cannon Consulting Engineers Beacon House, Warwick Road, Beaconsfield, Bucks, HP2PE Tel: 44 (0)163 200000 Fax: 44 (0)1494 60000 info@cannonce.co.uk www.cannonce.co.uk	
SHELFORD, WOTTONHAMSHIRE		BRETT AGGREGATES		10/10/14				DRAWING NUMBER	
DRAWING TITLE		DESIGNED	DRAWN	CHECKED	PASSED	SCALE	ISSUE STATUS	B161 / 100	
PROPOSED SITE ACCESS		JOB	JOB	M	.	1:1000	PRELIMINARY	A	
REV	DESCRIPTION	CH	PA	DATE					
A	SITE ACCESS DETAILS UPDATED	JB	M	12.11.14					

NOTE THE PROPERTY OF THIS DRAWING AND DESIGN IS RESTED IN CANNON CONSULTING ENGINEERS AND MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR WRITTEN CONSENT

SHELFORD

Nottinghamshire



DAVID JARVIS ASSOCIATES
planning development landscape environment

October 2008

MJCA
Technical advisers on environmental issues

BRET
built on relationships

Key / Notes

- Site boundary
- Extent of potential mineral excavation

B	Amendment to key and title	29/10/08
A	Amendment to mineral excavation boundary	20/10/08
Rev	Amendments	Date
Site: SHELFORD		
Drawing Ref: BGLSH/10-08/14593revB		
Scale: 1:20,000@A3		
Issue Date: 20/10/2008		
Drawn by: KR	Approved by: MM	Checked by: M
Reproduced from Landward 1:25,000 scale maps by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright 2008. All rights reserved. License number 100171811.		
Plan showing the site boundary and the extent of potential mineral excavations.		

Figure 1

Scale: 1:20,000@A3

Drawing Ref: BGLSH/10-08/14593revB

Issue Date: 20/10/2008

Drawn by: KR

Approved by: MM

Checked by: M

Reproduced from Landward 1:25,000 scale maps by permission of Ordnance Survey on behalf of The Controller of Her Majesty's Stationery Office. © Crown Copyright 2008. All rights reserved. License number 100171811.

MJCA
 Muckley Valley Colliery Office,
 Main Road, Barnsley, Yorkshire
 S70 2JF
 Telephone: 01427 717891
 Facsimile: 01427 718207

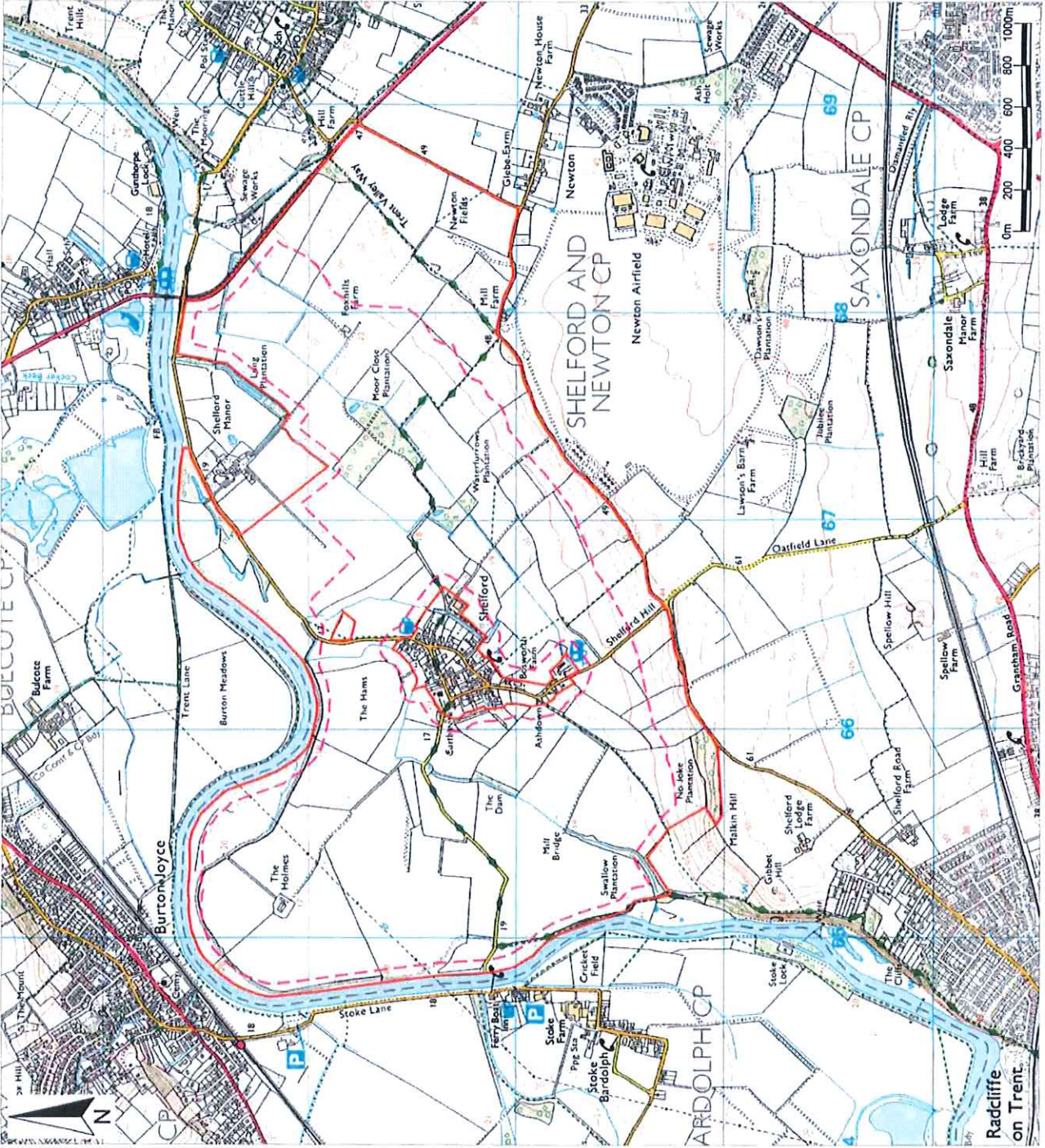
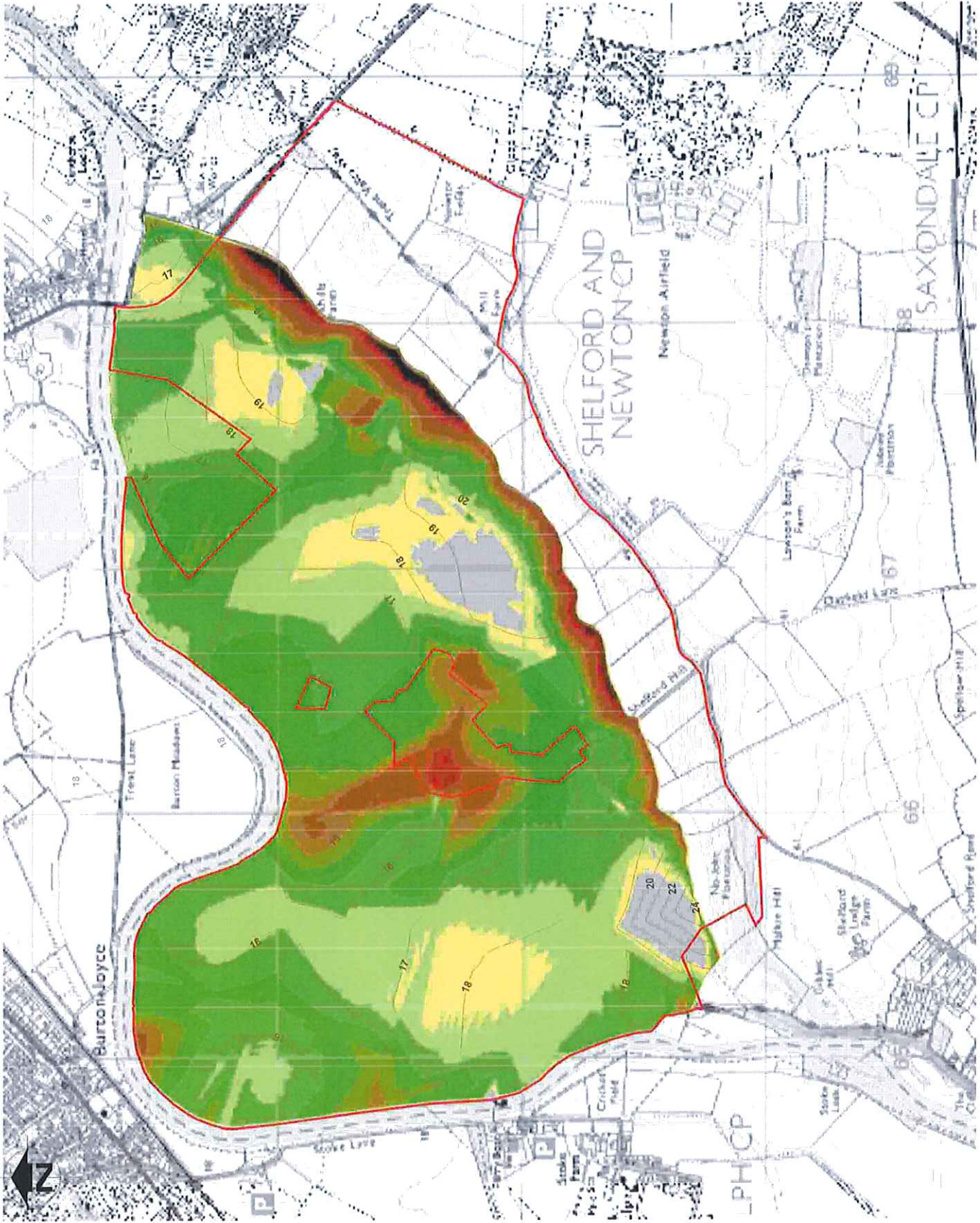


FIGURE 2



KEY

- SITE BOUNDARY
- EXISTING CONTOUR
- BASE OF OVERBURDEN

DEPTH OF OVERBURDEN

0m	Less than 3.5m
Less than 0.5m	Less than 4.0m
Less than 1.0m	Less than 4.5m
Less than 1.5m	Less than 5.0m
Less than 2.0m	Less than 5.5m
Less than 2.5m	Less than 6.0m
Less than 3.0m	Above bands

Reproduced with the permission of the Controller of HMSO London by AA 19995

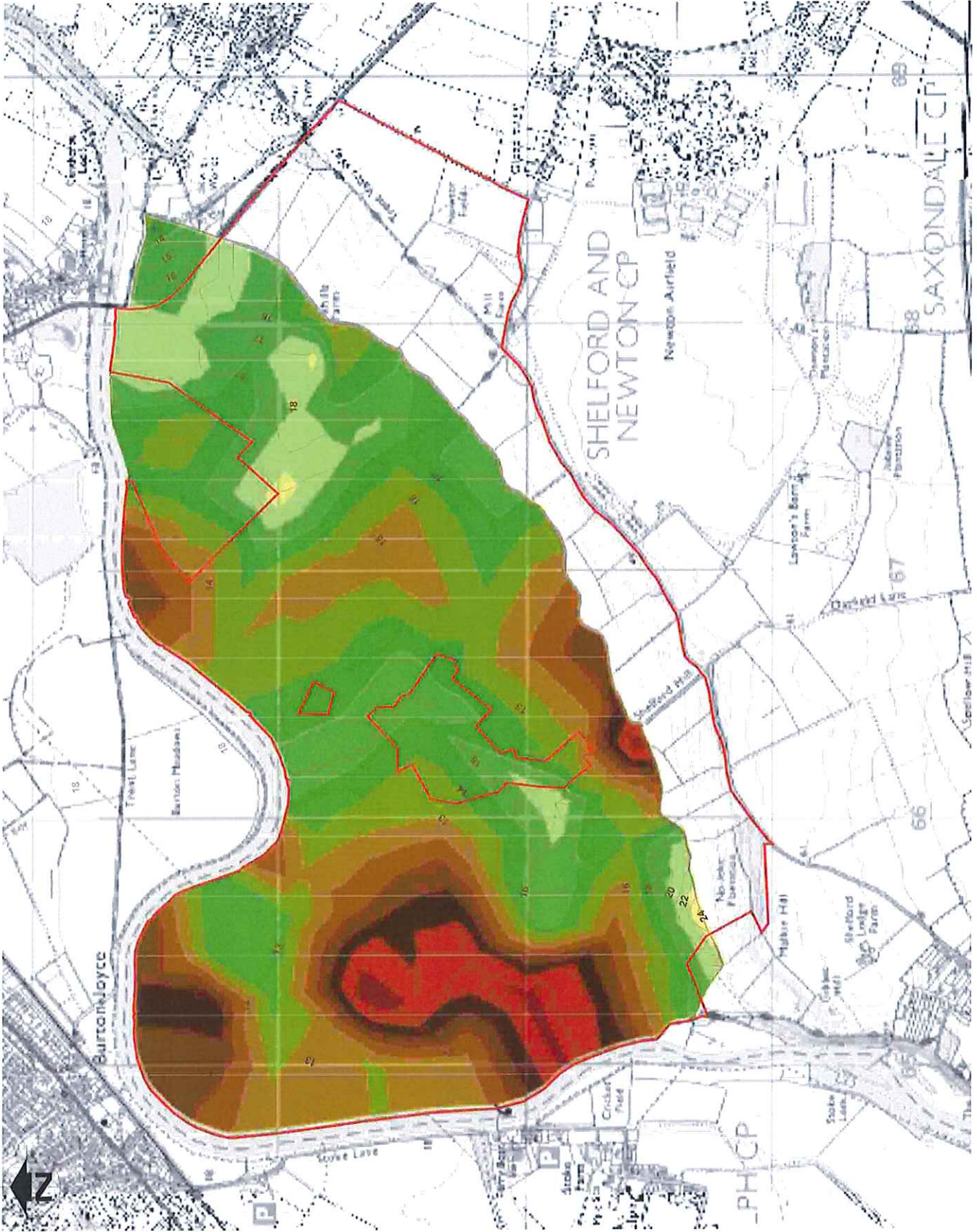
DAVID JARVIS ASSOCIATES
 planning development landscape environment
 1500 International Court, Suite 100, Bingham, Ohio 45309
 Tel: 937.833.1233 Fax: 937.833.1225
 Email: david.jarvis@jarvis.com

Client: **ROBERT BRETT AND SONS LIMITED**
 Project: **BINGHAM**

Drawing Title: **OVERBURDEN**

Scale: **1:15000 AT A3** Date: **OCT 2008**
 Drawing No: **1533/019B**

FIGURE 3
13



Approved for the purposes of the conditions of M&S Licence No. JK 11065

DAVID JARVIS ASSOCIATES
 planning development landscape environment
 DAVID JARVIS ASSOCIATES LIMITED
 101, STATION STREET, SHELFORD, LEICESTERSHIRE, LE11 1DT
 Email: david.jarvis@jarvis.co.uk Tel: 01533 537777 Fax: 01533 534257

Client: **ROBERT BRETT AND SONS LIMITED**
 Project: **BINGHAM**

Drawing Title: **SAND AND GRAVEL**

Scale: **1:15000 AT A3** Date: **OCT 2008**
 Drawing No: **1533/021B**

FIGURE 4

APPENDIX 3

GEOLOGICAL INVESTIGATION REPORT

February 2005

Contents	
Section	Page
1. Summary	1
2. Introduction	2
3. Site Description	2
4. Known geology	2
5. Constraints	4
6. Field work	4
7. Results of investigation	5

Appendix 1 – Plans

Borehole Location plan
Overburden
Sand
Sand and gravel

Appendix 2 – Tabulated borehole results

Appendix 3 – Borehole logs

Appendix 4 – Particle Size Distribution analysis

Appendix 1

Plans

KEY

- INVESTIGATION BOUNDARY
- BLOCK BOUNDARY
- BOREHOLE LOCATIONS (NB, there is no borehole No.12)

NOTE 1: Borehole information has been extrapolated to the Block outer edge

NOTE 2: Outer Block edges are calculated with a 1m2 slope; inner Block edges are calculated as level

NOTE 3: Block 5 has inadequate borehole information and should be used as a guide ONLY

NOTE 4: Borough boundary and borehole 6 moved as per Borehole 18, Jan 05.

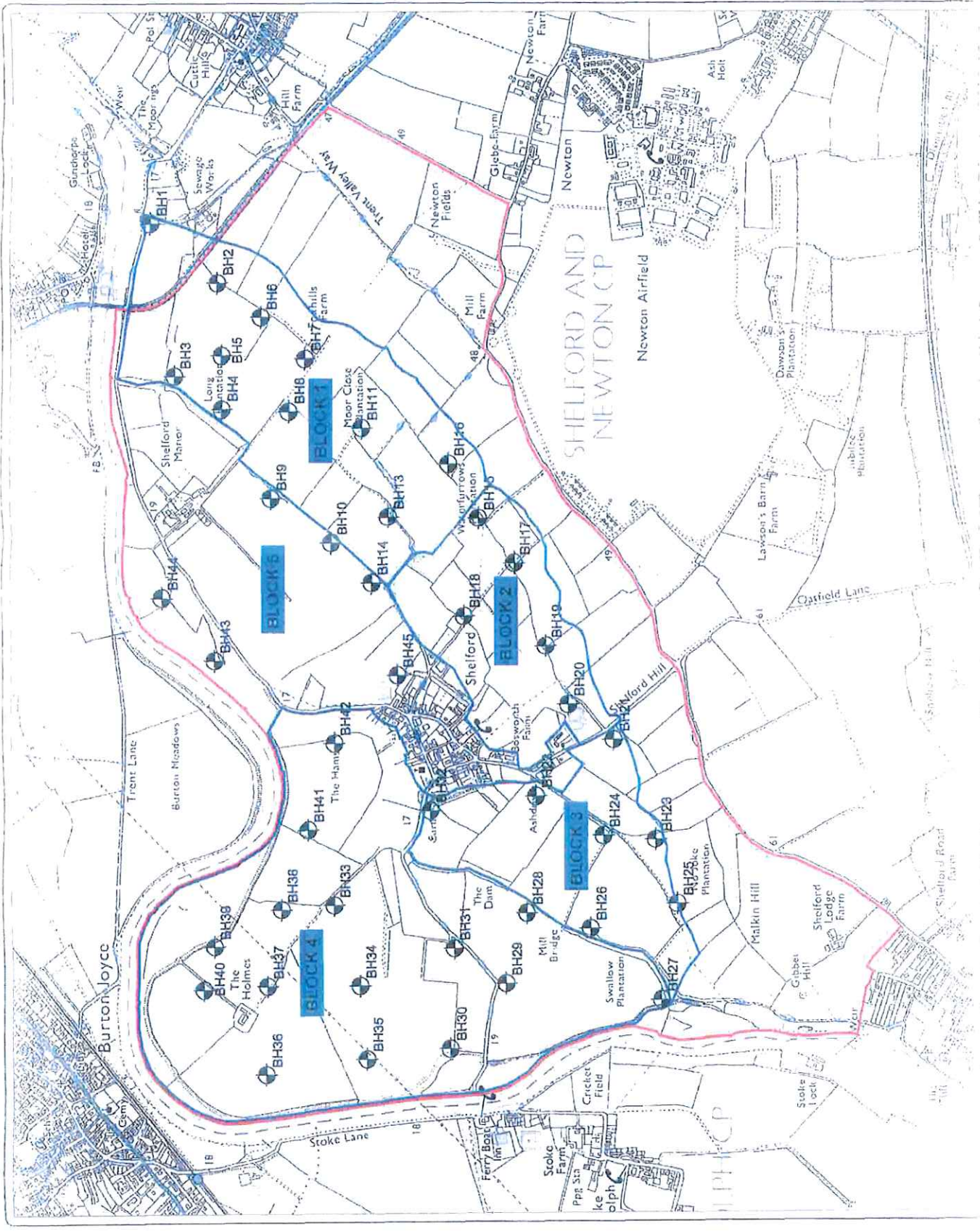
DAVID JARVIS ASSOCIATES
PLANNING DEVELOPMENT LANDSCAPE ENVIRONMENT
David Jarvis Associates Limited
1 Trenton Street
BIRMINGHAM B1H 6DT
Tel: 0121 812170 Fax: 0121 812125
Email: david.jarvis@djaplan.co.uk

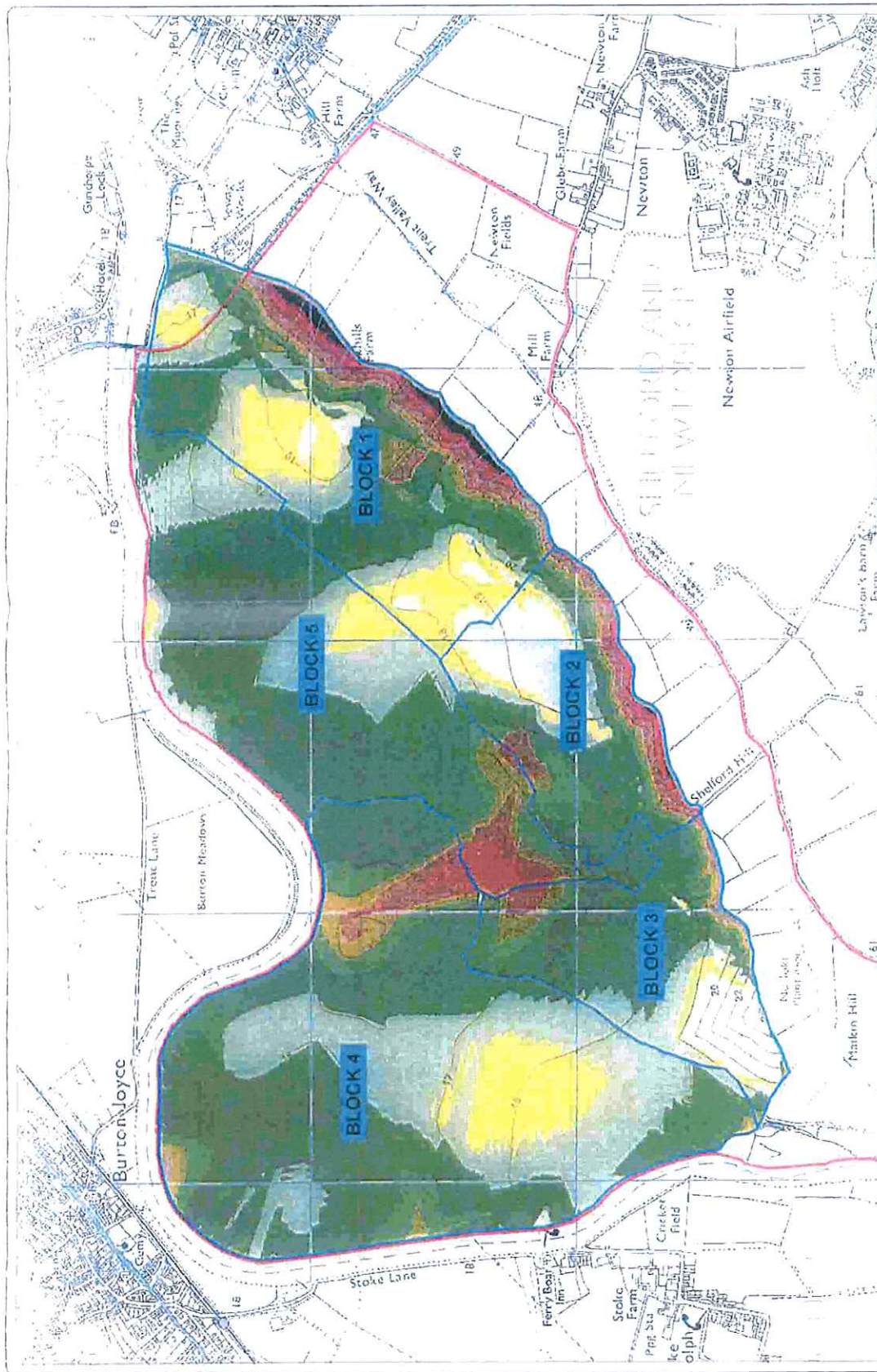
Client: **ROBERT BRETT & SONS LIMITED**
Project: **BINGHAM**

Drawing Title: **BOREHOLE LOCATION PLAN**

Scale: 1:15,000 @ A3 Date: NOV. 2004

Drawing No: 1533 / 012A





KEY

- INVESTIGATION BOUNDARY
- BLOCK BOUNDARY
- EXISTING CONTOUR
- BASE OF OVERBURDEN

DEPTH OF OVERBURDEN

	Less than 0m		Less than 3.5m
	Less than 0.5m		Less than 4.0m
	Less than 1.0m		Less than 4.5m
	Less than 1.5m		Less than 5.0m
	Less than 2.0m		Less than 5.5m
	Less than 2.5m		Less than 6.0m
	Less than 3.0m		Above bands

NOTE 1: Block information has been extrapolated to the Block outer edge

NOTE 2: Over Block areas are situated (see A1, A2, A3, A4) from Block divisions are calculated as areas

NOTE 3: Block 5 has indicative topographic information and should be used as a guide ONLY

REV A
JWB/C Southern boundary and blocks 5 moved as per their time: 19 Jan 05

REV B: All volume and areas included as per Blatt e-mail 29 Jan 05

Manufactured with the permission of the Controller of HMSO. London W1P 0LP.

DAVID JARVIS ASSOCIATES
 PLANNING DEVELOPMENT ARCHITECTURAL ENGINEERING
 David Jarvis Associates Limited
 The Mill, Newton
 SUTTONS WAY, NEWTON, LEICESTERSHIRE LE19 2DT
 Tel: 01753 612773 Fax: 01753 613929
 Email: djars@djars.co.uk
 Email (Drawing): dw@djars.co.uk

Client: **ROBERT BRETT & SONS LIMITED**
 Project: **BINGHAM**

Drawing title: **OVERBURDEN**

Date:
 Scale:
 1:15,000 @ A3 FEEL 2005
 Drawing No: 15107/010 B

OVERBURDEN

	AREA (sq.m)	VOLUME (cu.m)
BLOCK 1	1116451	1020481
BLOCK 2	579867	818257
BLOCK 3	581670	988839
BLOCK 4	2184688	2775839
TOTAL of BLOCK 1,2,3,4	4462376	5603416
BLOCK 5	1299861	1630722
TOTAL of BLOCK 1,2,3,4,5	5762227	7234138

KEY

INVESTIGATION BOUNDARY

BLOCK BOUNDARY

EXISTING CONTOUR

BASE OF SAND

DEPTH OF SAND

0m

Less than 0.5m

Less than 1.0m

Less than 1.5m

Less than 2.0m

Less than 2.5m

NOTE 1: Blockhole information has been abstracted by the Block order edge.

NOTE 2: Outer Blockhole edges are calculated with a 1% slope. Inner Blockhole contours are calculated as vertical.

NOTE 3: Block 5 has inadequate blockhole information and should be used as a guide ONLY.

REVA: The southern boundary and bottom is moved at per site edge to 10m OD.

REV B: All volumes and areas abstracted as per Site email 20 Jun 05.



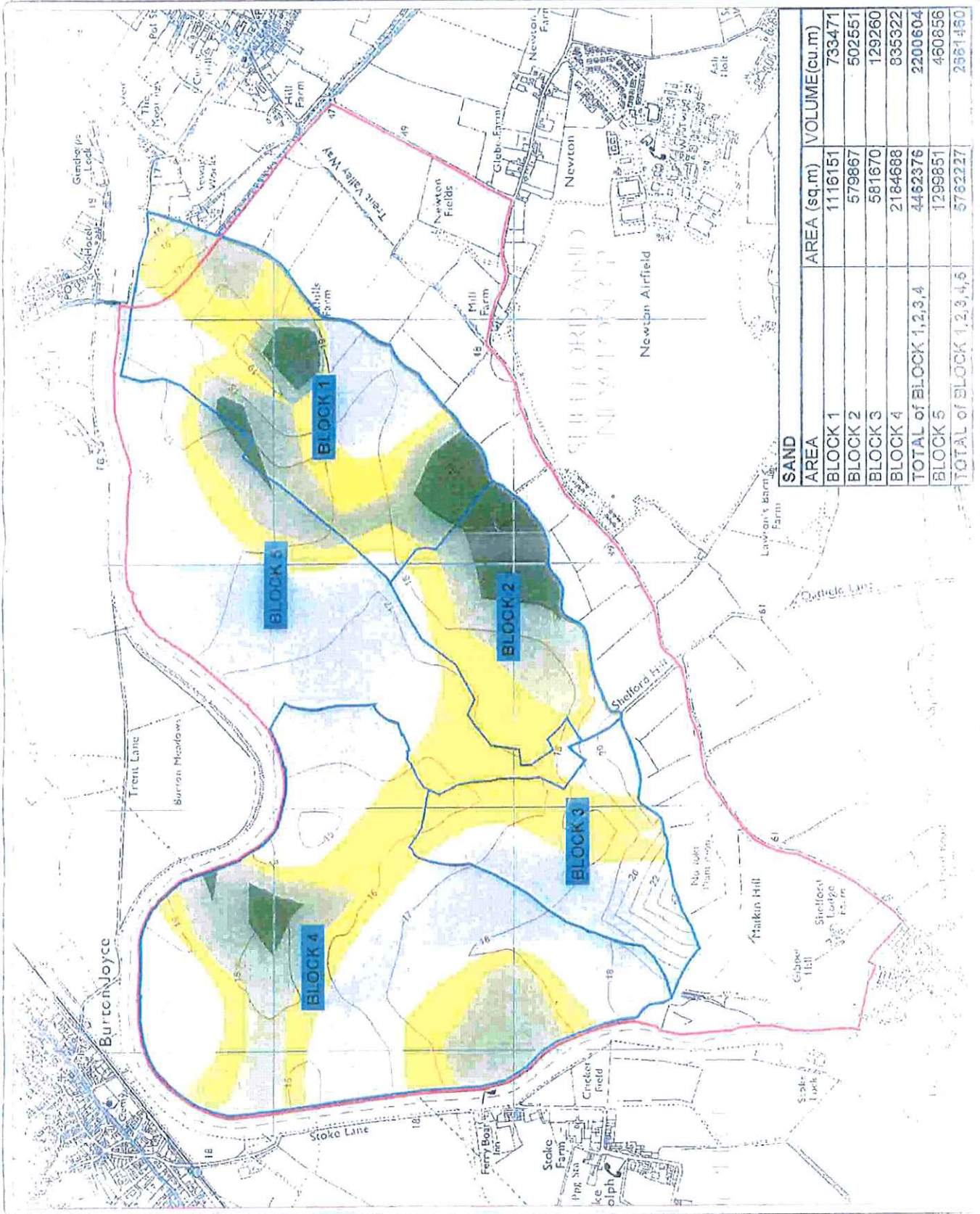
REV	DATE	DESCRIPTION

DAVID JARVIS ASSOCIATES
 Planning, Environmental, Landscape, Environmental
 David Jarvis Associates Limited
 11 Tanqueray Street
 SWANSON WAYNE BH1 5DT
 Tel: 01793 612172 Fax: 01793 612625
 Email: david.jarvis@djarvis.co.uk
 Email: david.jarvis@djarvis.co.uk

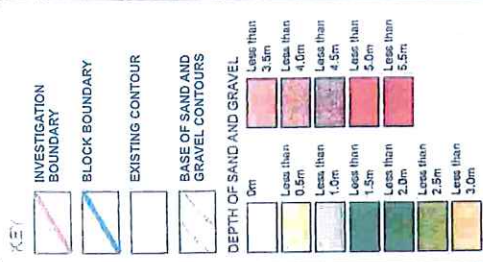
Client:
ROBERT BRETT & SONS LIMITED
 Project:
BINGHAM

Drawing Title:
SAND

Scale:
 1:15,000 @ A3
 Date:
 FEB. 2005



SAND	AREA (sq.m)	VOLUME (cu.m)
BLOCK 1	1116151	733471
BLOCK 2	579867	502551
BLOCK 3	581670	129260
BLOCK 4	2184688	935322
TOTAL of BLOCK 1,2,3,4	4462376	2200604
BLOCK 5	1299851	460856
TOTAL of BLOCK 1,2,3,4,5	5762227	2661460



NOTE 1: Block information has been extrapolated to the Block outer edge.

NOTE 2: Outer Block edges are calculated with a 1:2 slope. Inner Block divisions are calculated as vertical.

NOTE 3: Block 5 has been added because topographic information was not available as a quote ONLY.

REVA: Surveyed boundary and volume 5 moved as per first letter 18 Jan 05

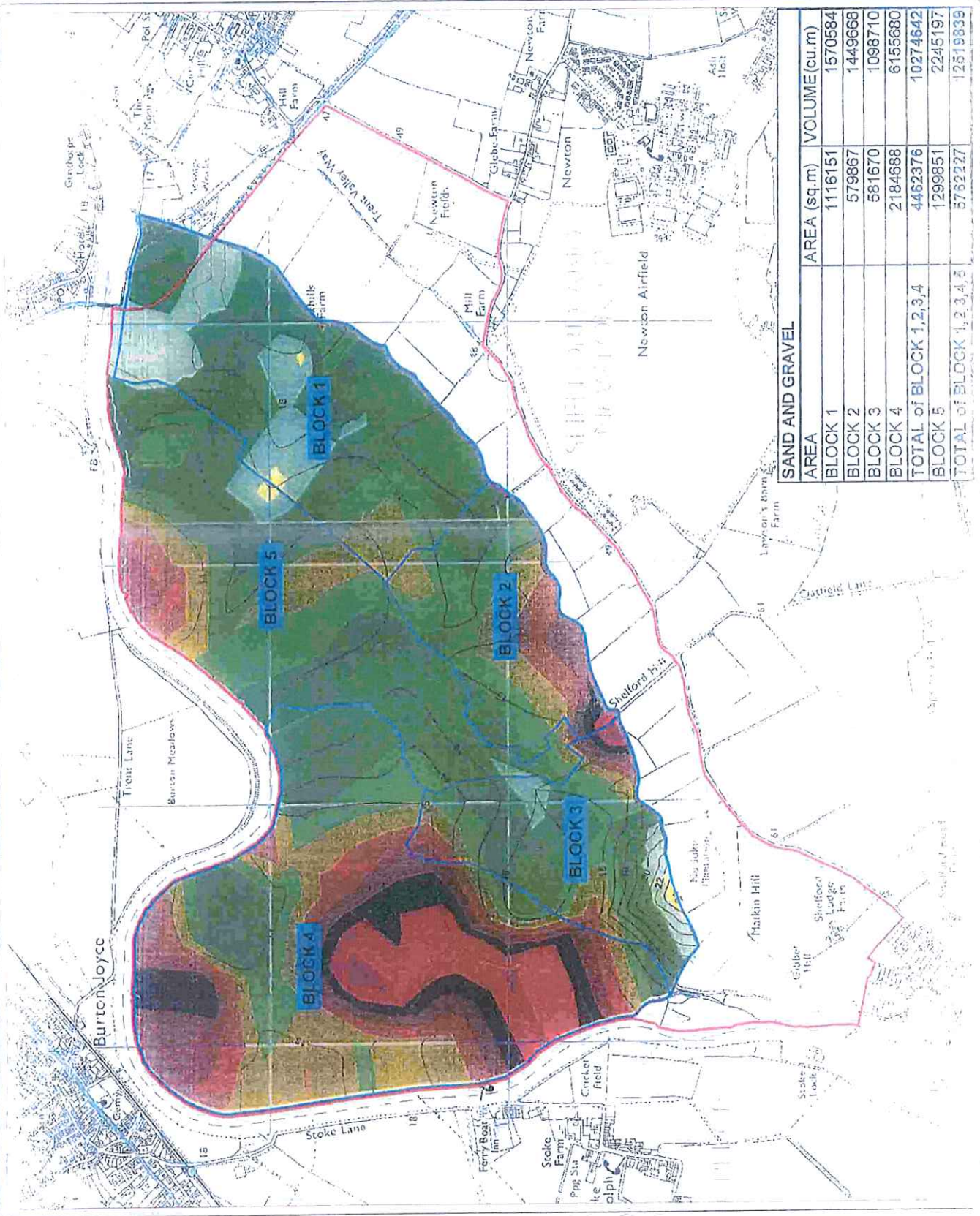
REV B: A3 volume and areas amended as per Blett e-mail 20 Jan 05

Reproduced with the permission of the copyright owner: BINGHAM PLC. 04/05/05

DAVID JARVIS ASSOCIATES
 PLANNING, ENVIRONMENT, LANDSCAPE, ENVIRONMENTAL
 David Jarvis Associates Limited
 1 Tenbyrian Street
 SWINDON Wiltshire SN1 1SD
 Tel: 01753 612173 Fax: 01753 613225
 Email: (Text) mja@darjavis.co.uk
 Email (Drawings) drawings@darjavis.co.uk

Client: **ROBERT BRETT & SONS LIMITED**
 Project: **BINGHAM**

Drawing Title: **SAND AND GRAVEL**
 Scale: 1:15,000 @ A3 | Date: 1 FEB. 2005
 Drawing No: 1023 / 021 B



SAND AND GRAVEL		
AREA	AREA (sq.m)	VOLUME (cu.m)
BLOCK 1	1116151	1570584
BLOCK 2	579867	1449668
BLOCK 3	581670	1098710
BLOCK 4	2184688	6153680
TOTAL of BLOCK 1,2,3,4	4462376	10274642
BLOCK 5	1299851	2245197
TOTAL of BLOCK 1, 2, 3, 4, 5	5762227	12519839

Appendix 2

Tabulated borehole results

	Topsoil	Sub soil	Clay and overburden	Sand/gravelly sand	Sand & Gravel	borehole bottomed	Combined soils and overburden	sands and gravel
BLOCK 5								
3	0.3	0.5	0.3	0	0.6	1.8	1.2	0.8
4	0.3	0	0	1.2	1.9	3.4	0.3	3.1
9	0.3	0.7	0.5	1.0	0.3	2.8	1.5	1.3
10	0.2	0	0	0.7	2.4	3.3	0.2	3.1
14	0	0.9	0	0	2.4	3.3	0.9	2.4
22	0.3	0	1.6	0.5	0.6	3	1.9	1.1
32	0.4	0	1.3	0.5	2.5	4.7	1.7	3.0
42	0.3	0	1.3	0	1.2	2.8	1.6	1.2
43	0.3	0	1.3	0	2.4	4	1.6	2.4
44	0.3	1	0	0	3.6	4.9	1.3	3.6
45	0.3	0	1.3	0	1.1	2.7	1.6	1.1
Average	0.3	0.3	0.7	0.4	1.7	3.3	1.3	2.1

In order to obtain a better average for each block the boreholes within each block and those immediately adjacent have been used to calculate the likely content.

Appendix 3

Borehole logs

FIELD IDENTIFICATION AND DESCRIPTION OF MINERALS

1) MATERIAL/PARTICLE SIZE:

Description of material	Particle Size Range
CLAY	less than 0.002mm
SILT	0.002 to 0.06mm
very fine SAND	0.06
fine SAND	to
(med.) SAND	5.0mm
coarse SAND	more than 5.0mm
very coarse SAND	
GRAVEL	

Where material is characterised by a predominant size, this is indicated e.g. <40mm.

2) MATERIAL PROPORTIONS:

The major constituent is shown in capitals e.g. slightly gravelly SAND.

Description of Material	Proportion of Major Constituent	Proportion of Minor Constituent
SAND	100%	0%
SAND, occasional gravel	95 - 100%	0 - 5%
slightly gravelly SAND	85 - 95%	5 - 15%
gravelly SAND	70 - 85%	15 - 30%
very gravelly SAND	55 - 70%	30 - 45%
SAND and GRAVEL	45 - 55%	45 - 55%

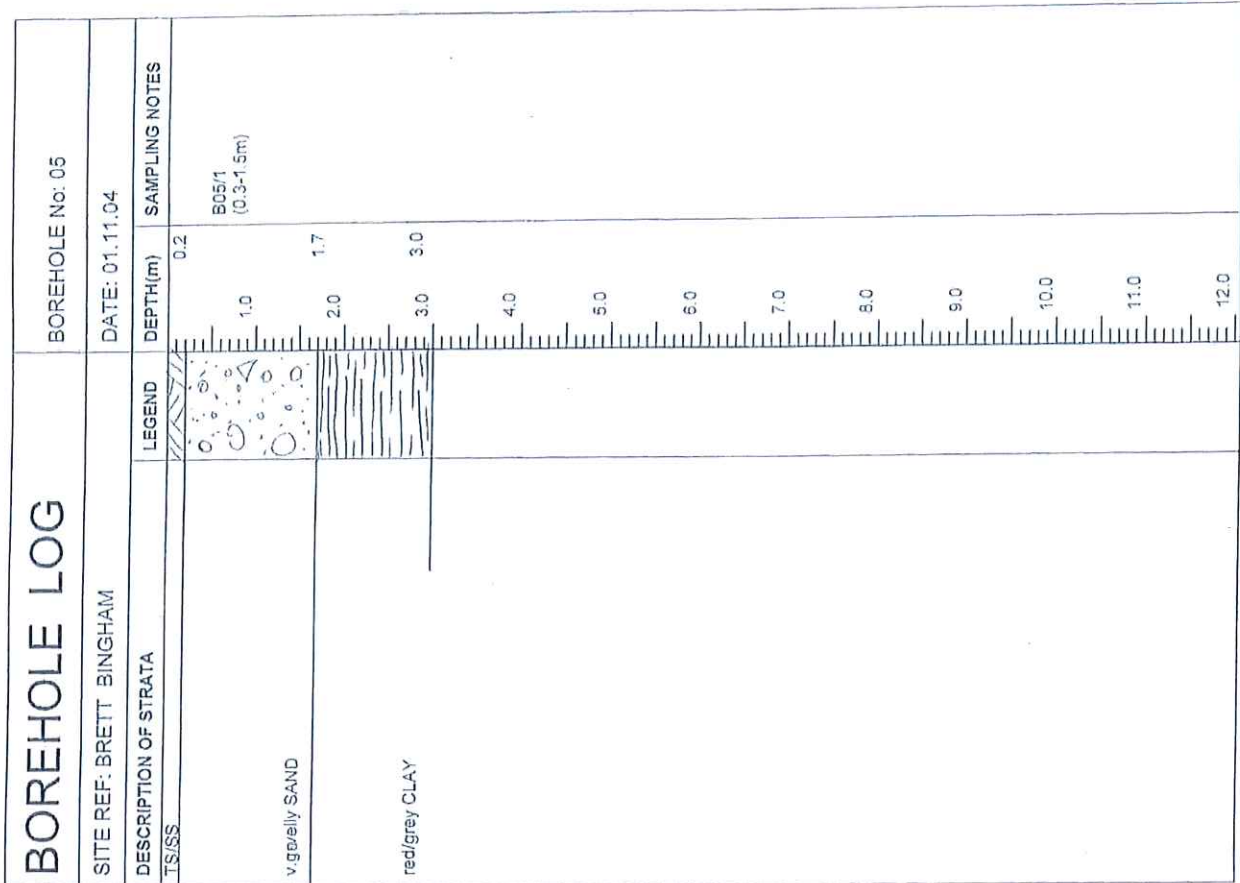
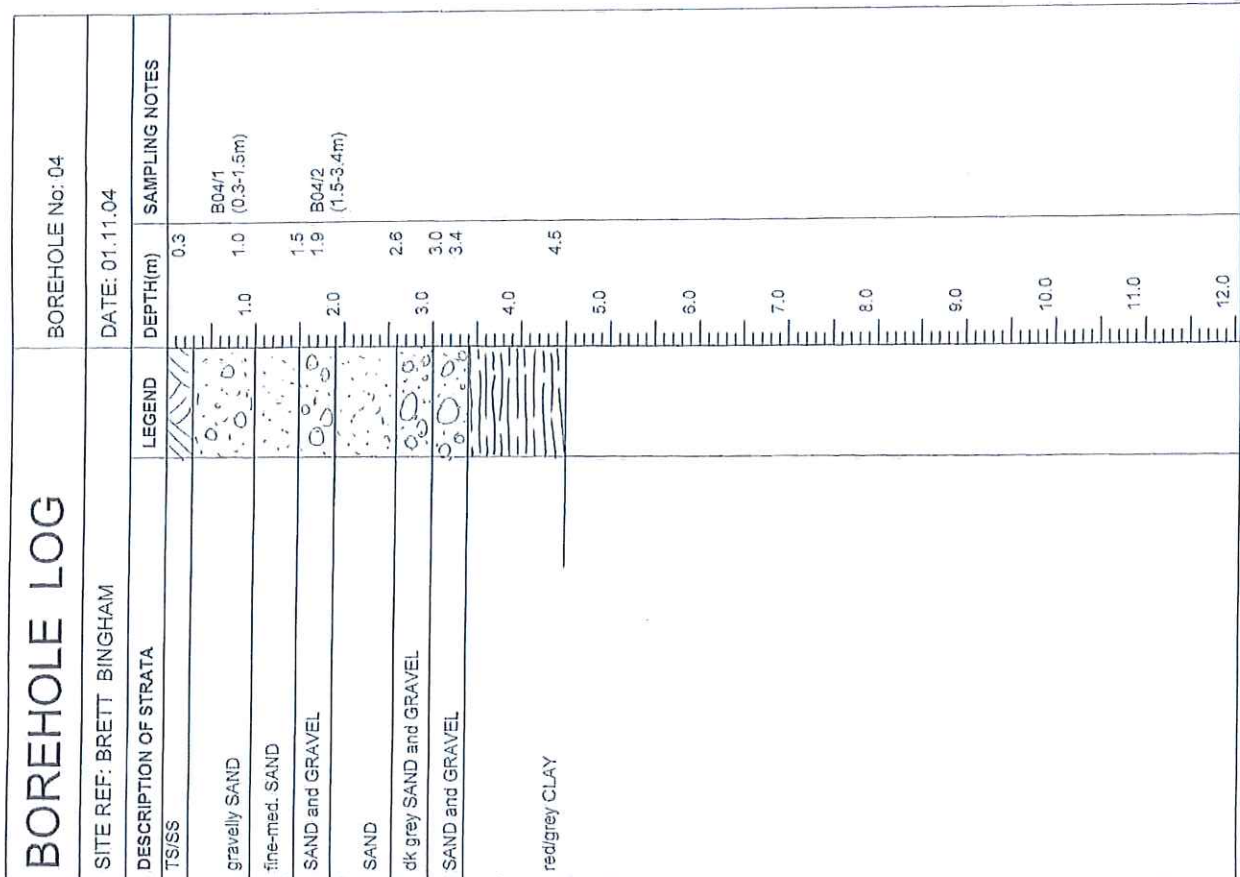
NOTE

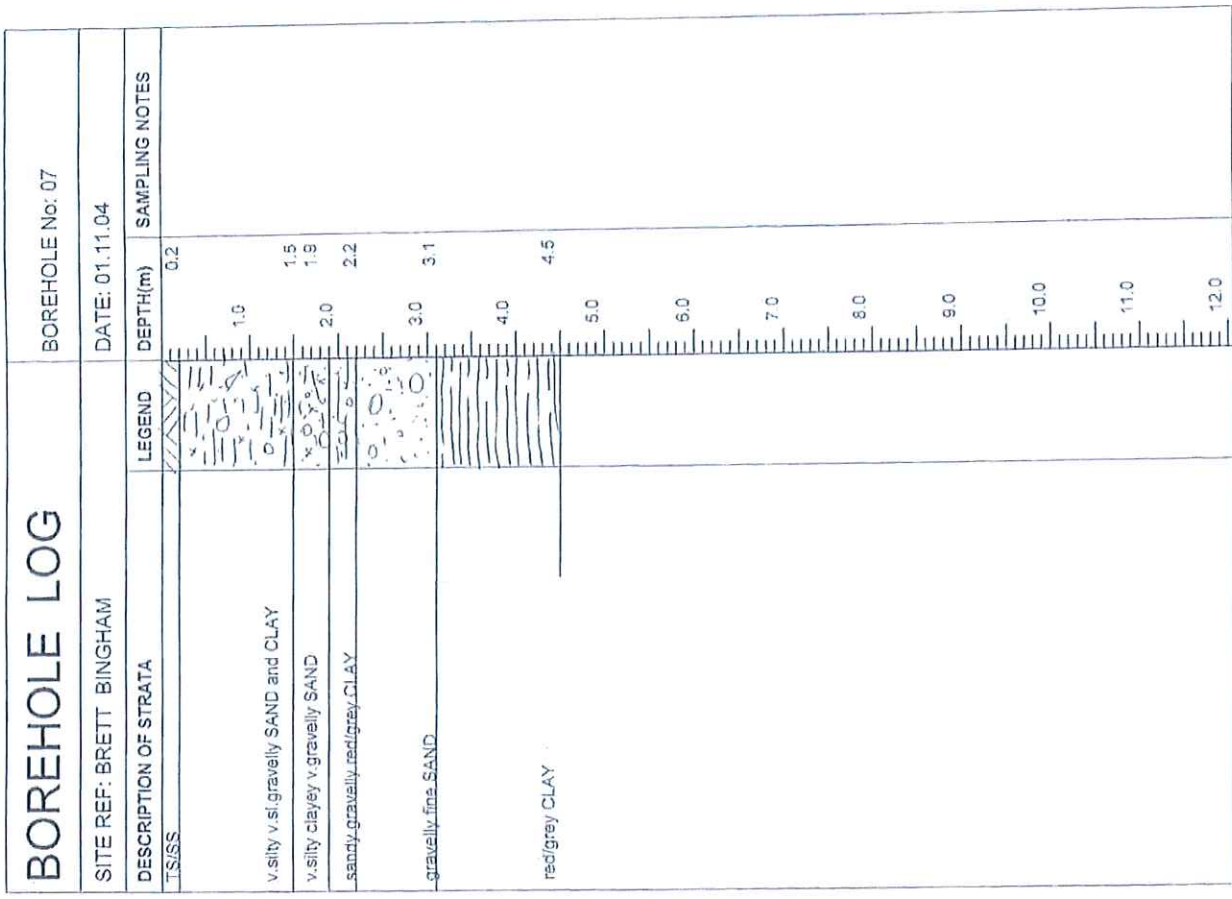
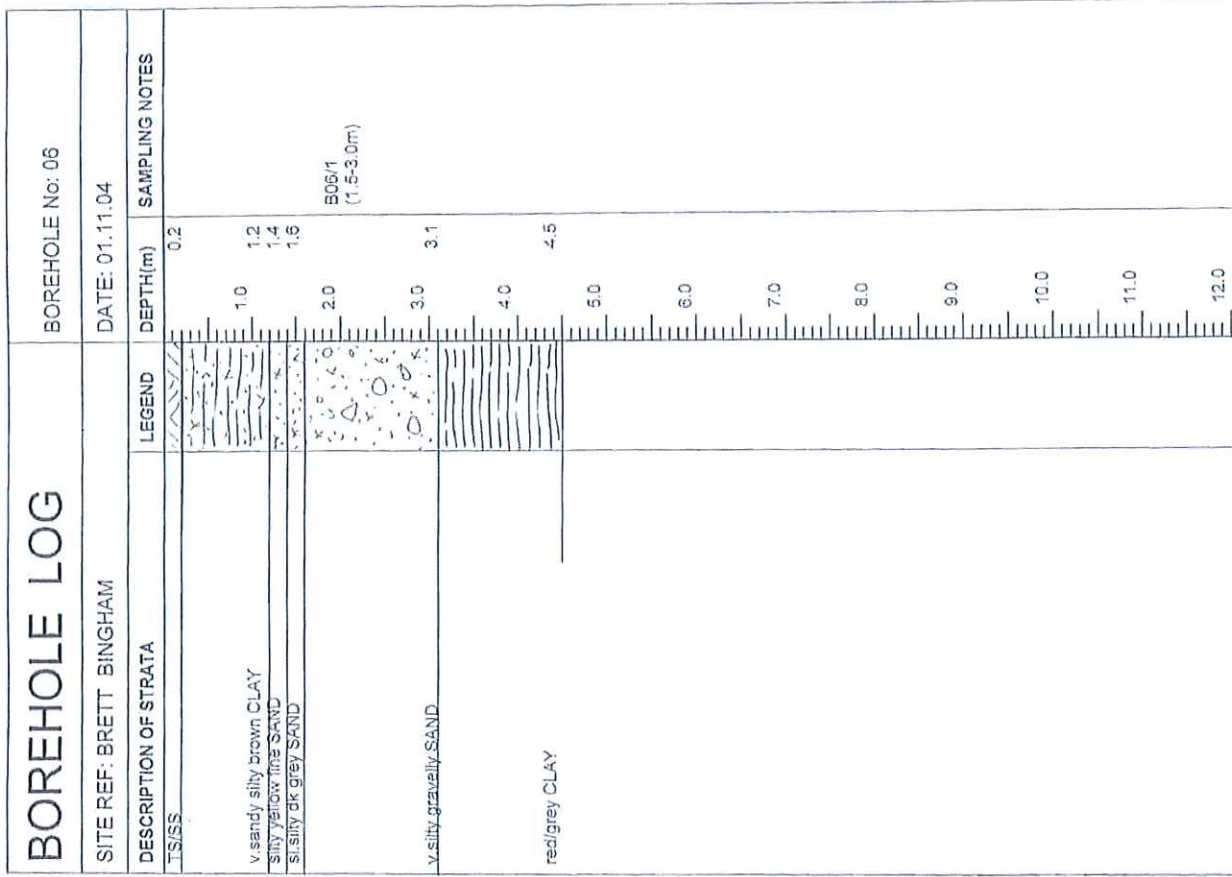
It is advisable to support visual descriptive data from borehole logs with proper grading analysis of samples before taking commercial decisions relating to the mineral deposit under investigation.

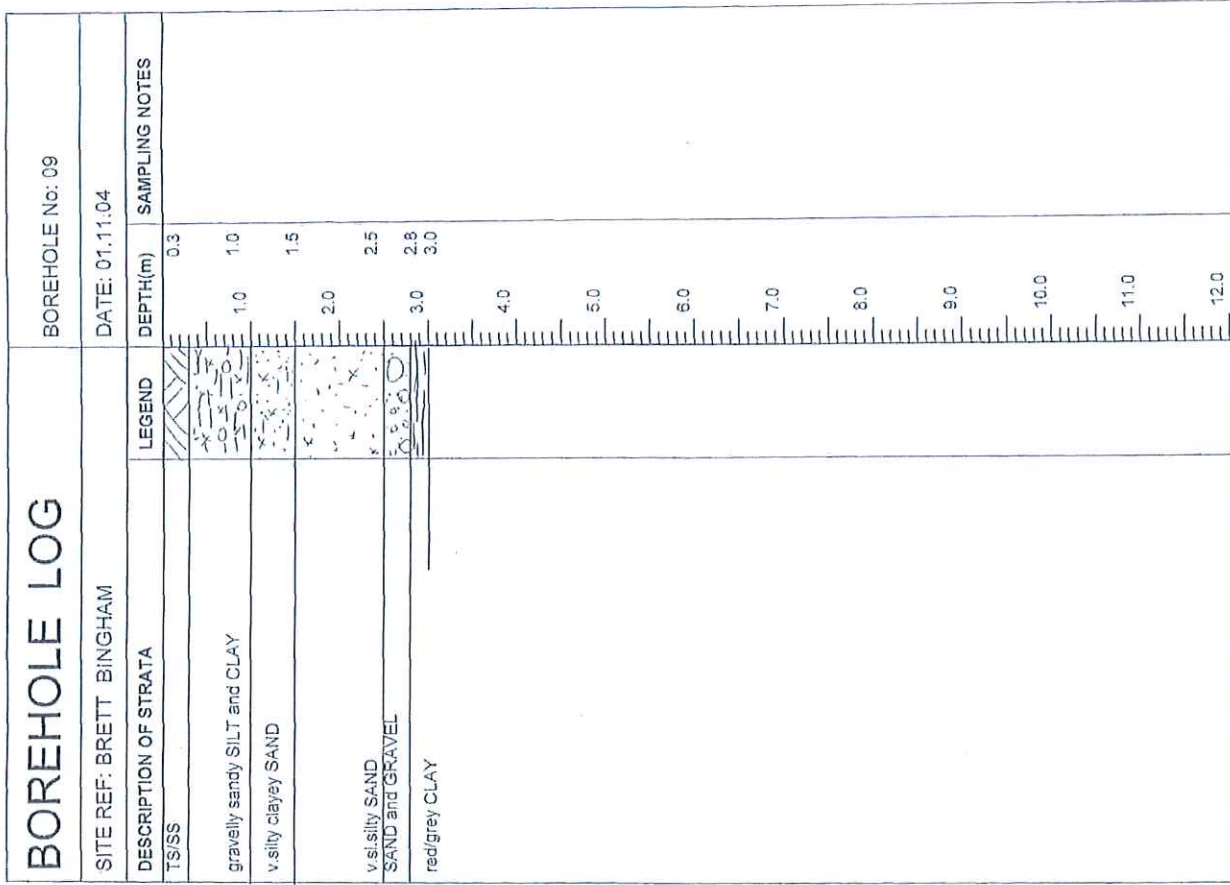
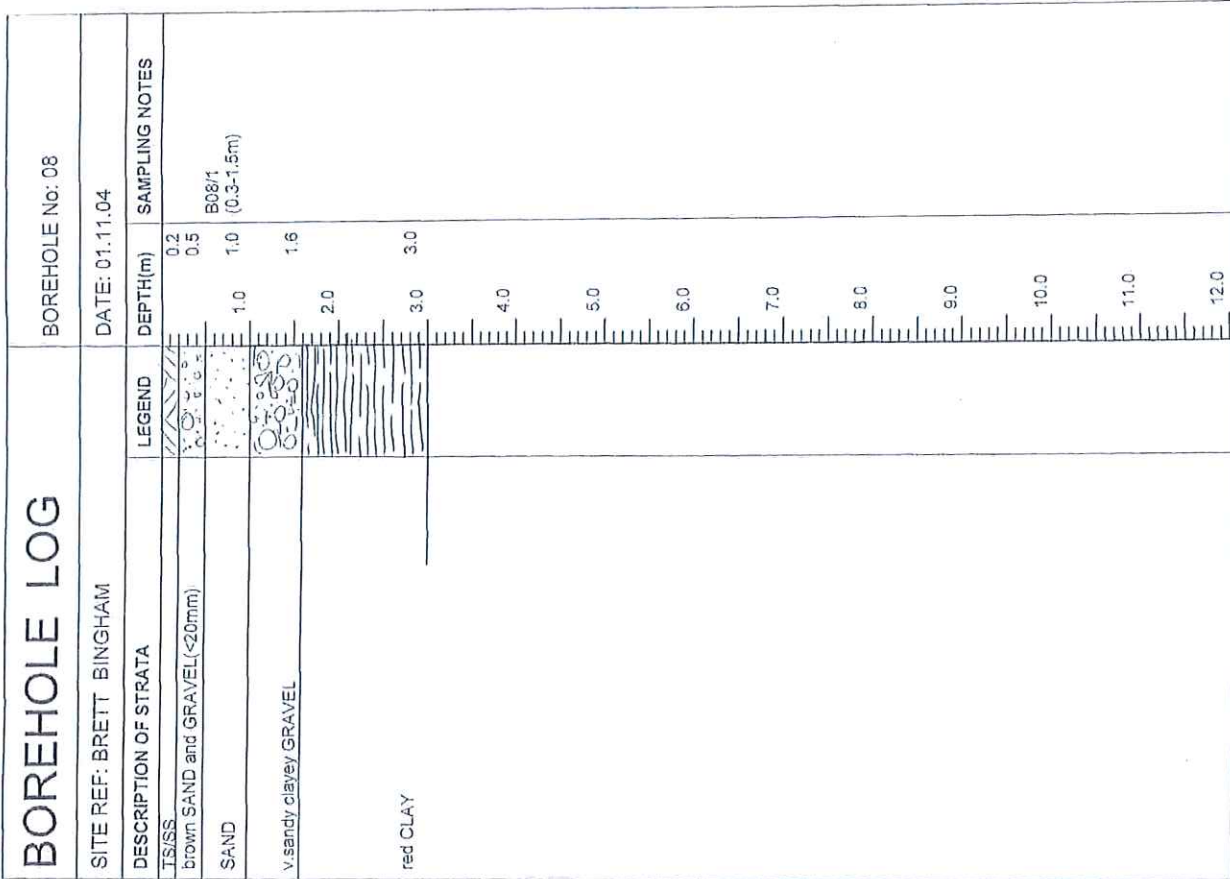
BOREHOLE LOG		BOREHOLE No: 01	
SITE REF: BRETT BINGHAM		DATE: 01.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
fine sandy brown SILT and CLAY		1.0	
dk grey SAND and SILT		2.0	
v.silty v gravelly pale brown SAND		2.6	wet at 2.7m
		3.0	
		4.0	B01/1 (3.0-4.5m)
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 02	
SITE REF: BRETT BINGHAM		DATE: 01.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
v.silty clayey fine SAND		1.0	0.8
v.silty v.fine SAND		1.3	
sl.silty SAND		2.0	B02/1 (1.5-2.7m)
v.sl.gravelly silty SAND		2.7	
red/grey CLAY		3.0	3.0
		4.0	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 03	
SITE REF: BRETT BINGHAM		DATE: 01.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
sl.gravelly brown CLAY		1.0	0.9
sl.gravelly grey/orange CLAY		1.2	
v.silty v.gravelly SAND		2.0	1.8
red/grey CLAY		3.0	3.0
		4.0	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	





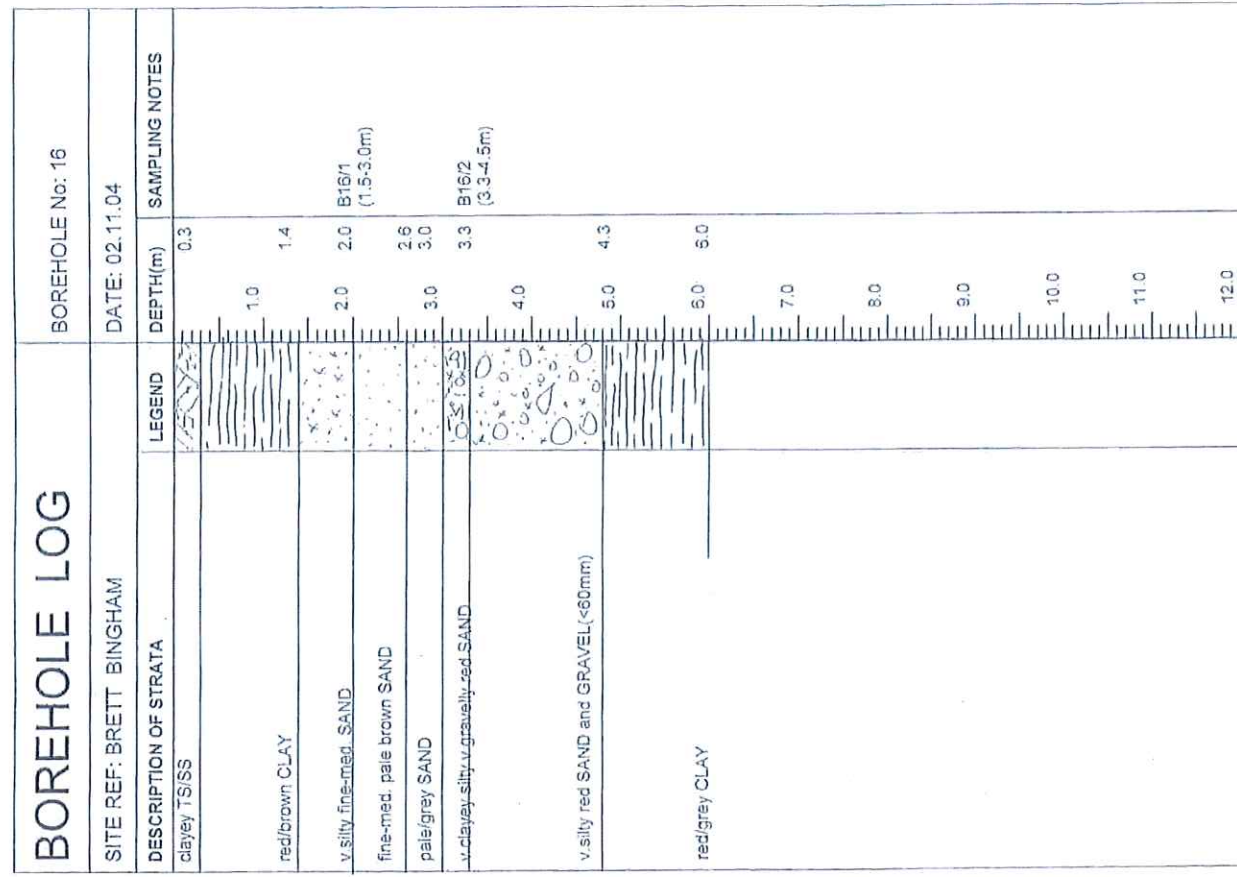
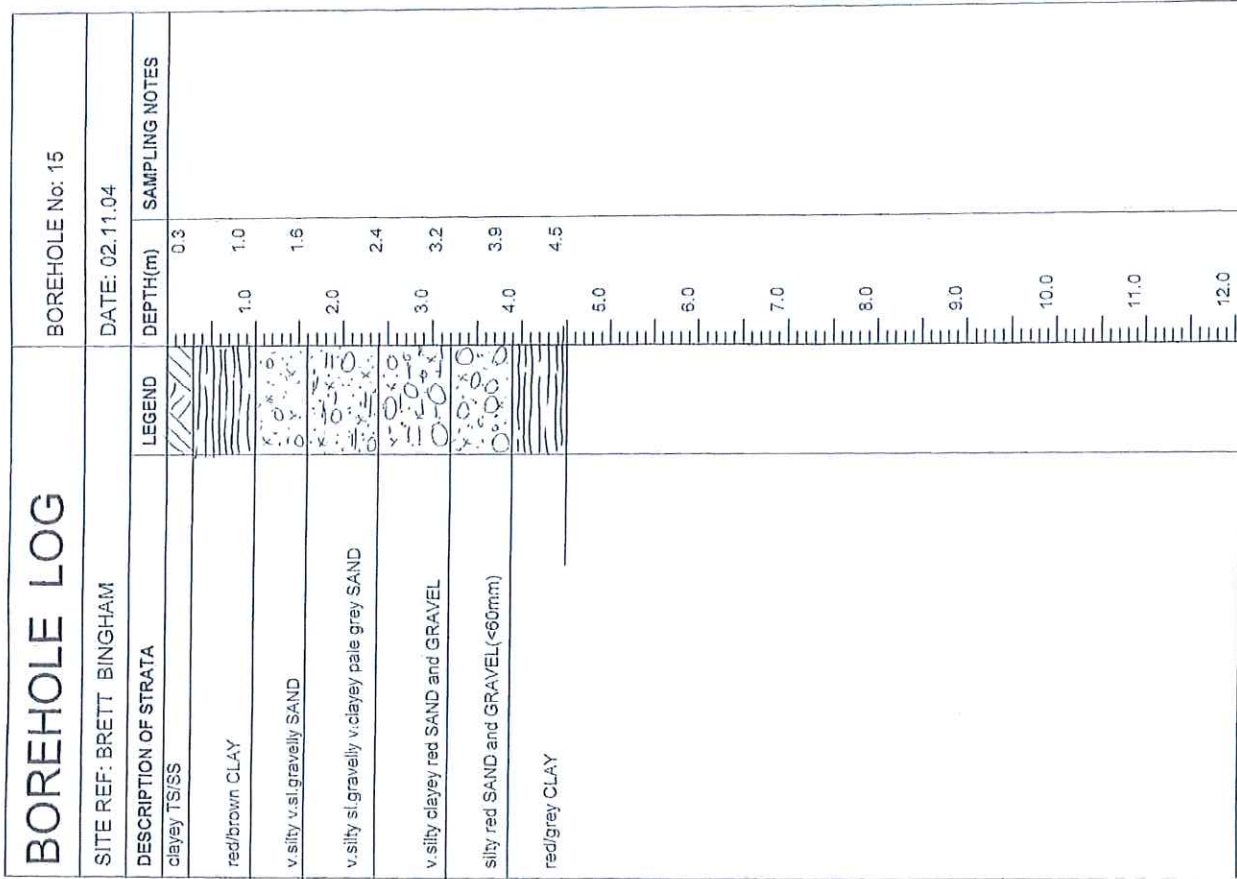


BOREHOLE LOG		BOREHOLE No: 10	
SITE REF: BRETT BINGHAM		DATE: 01.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
gray_sandy_S		0.2	
v.silty clayey silty gravelly yellow SAND		1.0	
silty brown/red SAND and GRAVEL		1.8	B10/1 (1.5-3.0m)
med.-coarse SAND and GRAVEL		3.3	
red/grey CLAY		4.5	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 11	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
grey/yellow/orange SAND, CLAY and SILT		1.0	
SAND and GRAVEL (<50mm)		2.0	B11/1 (1.6-2.5m)
v.silty clayey red SAND and GRAVEL (<75mm)		2.2	
red/grey CLAY		2.5	
		3.0	
		4.0	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

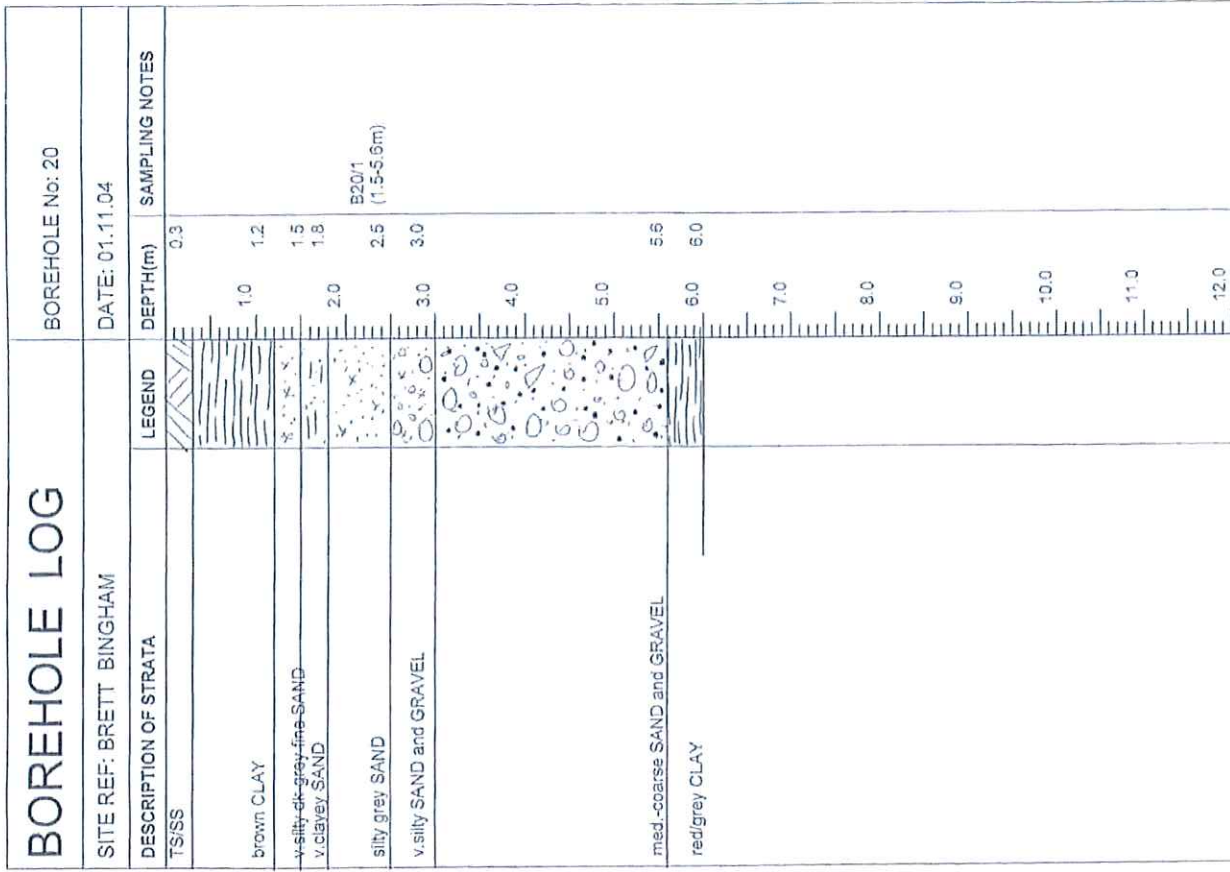
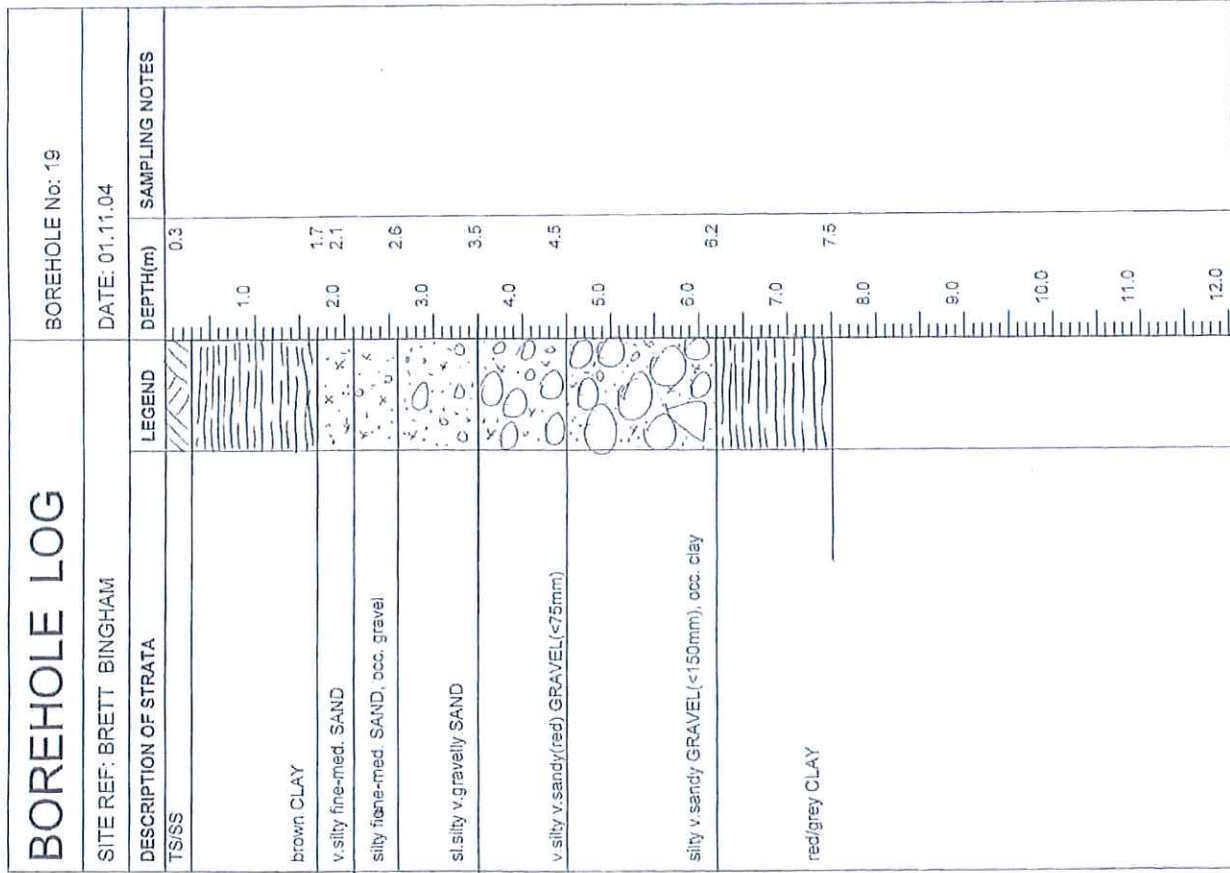
BOREHOLE LOG		BOREHOLE No: 13	
SITE REF: BRETT BINGHAM		DATE: 01.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS		0.1	
v. gravely (<60mm) silty fine-med. SAND		0.8 1.0 1.1	B13/1 (0.3-1.5m)
gravelly yellow/orange SAND		1.5	
v. silty gravelly grey/pale brown SAND		2.0	B13/2 (1.5-3.0m)
v. gravelly grey/pale brown SAND		3.0	
red CLAY		3.5 4.0 4.5	
		5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0	

BOREHOLE LOG		BOREHOLE No: 14	
SITE REF: BRETT BINGHAM		DATE: 01.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
sl. clayey brown SAND and SILT		1.0	
sl. clayey med.-coarse SAND and GRAVEL (<50mm)		2.0	B14/1 (1.5-3.0m)
v. sandy GRAVEL (<75mm)		3.0	
red/grey CLAY		3.3 4.0 4.5	
		5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0	



BOREHOLE LOG		BOREHOLE No: 17	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
clayey TS/SS		0.3	
sandy red CLAY		1.0	
sl. gravelly sandy red CLAY		1.2	
		1.5	
		2.0	B17/1 (1.5-3.0m)
		3.0	
red SAND		3.1	
silty gravelly red SAND		3.4	
v. silty red SAND		3.9	B17/2 (3.0-4.2m)
silty v. gravelly red SAND		4.0	
		4.2	
		5.0	
silty sandy GRAVEL (<50mm)		5.7	B17/3 (4.5-6.0m)
v. clayey red SAND and GRAVEL (<75mm)		6.0	
		6.1	
		7.0	
red/grey CLAY		7.5	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 18	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS		0.1	
v. silty gravelly yellow/brown SAND		0.8	B18/1 (0.3-1.5m)
		1.0	
silty yellow/brown SAND and GRAVEL (<50mm)		1.7	
		2.1	B18/2 (1.5-2.5m)
silty dk grey SAND and GRAVEL		2.0	
v. sandy GRAVEL (<30mm)		2.5	
		3.0	
v. silty sl. clayey v. sandy (red) GRAVEL (<60mm)		3.0	
		4.0	
		4.5	
red/grey CLAY		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	



BOREHOLE LOG		BOREHOLE No: 21	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
red/brown/pale fine SAND, SILT and CLAY		1.0	
silty red SAND and CLAY		1.7	
v. silty SAND and GRAVEL (<30mm)		2.3	
v. silty v. sandy GRAVEL (<50mm)		3.3	B21/1 (3.0-4.5m)
v. silty clayey sandy/(red) GRAVEL (<75mm)		4.2	
silty v. sandy GRAVEL (<50mm)		4.7	B21/2 (4.7-6.0m)
gravelly SAND		5.2	
silty SAND and GRAVEL (<75mm)		5.6	
red/grey CLAY		6.0	B21/3 (6.0-7.5m)
		7.0	
		7.6	
		8.0	
		9.0	
		9.0	
		10.0	
		11.0	
		12.0	

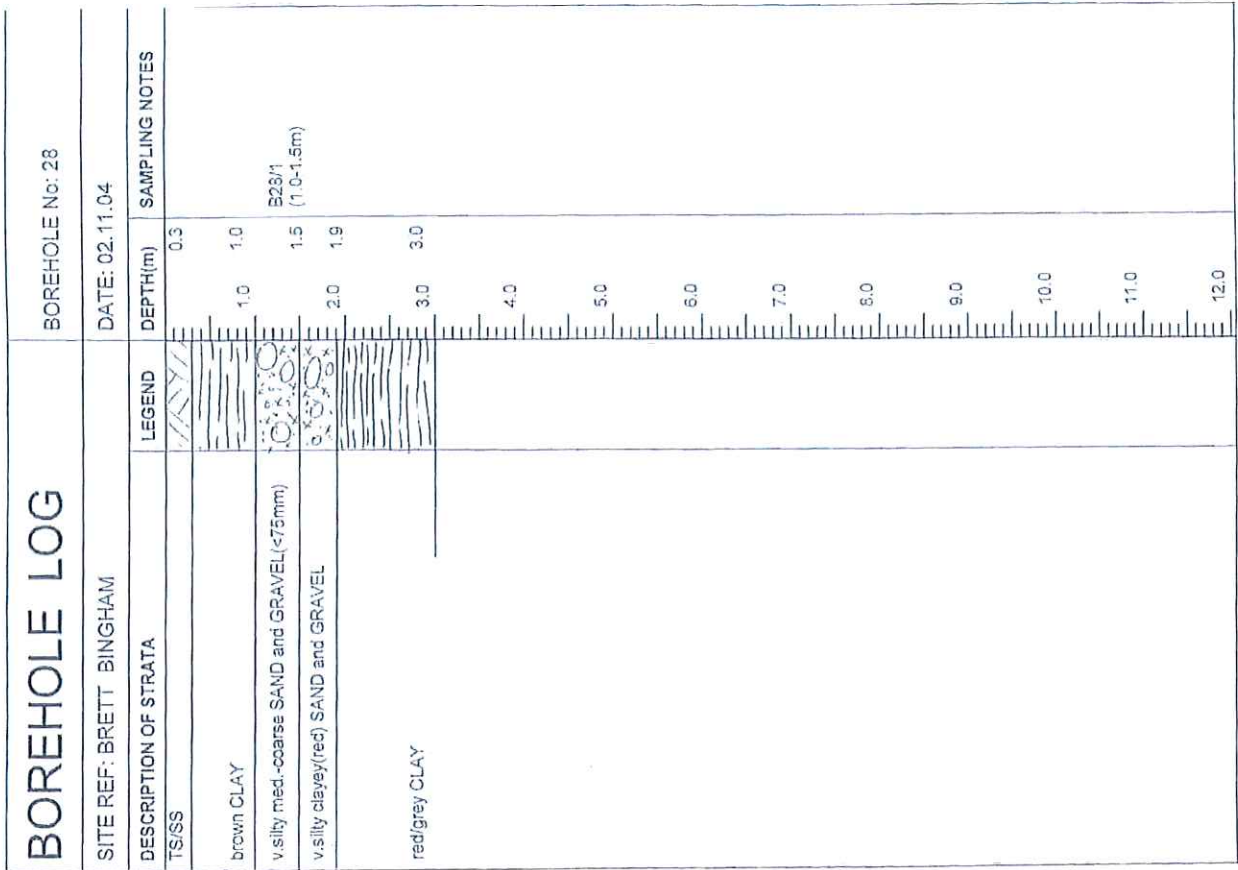
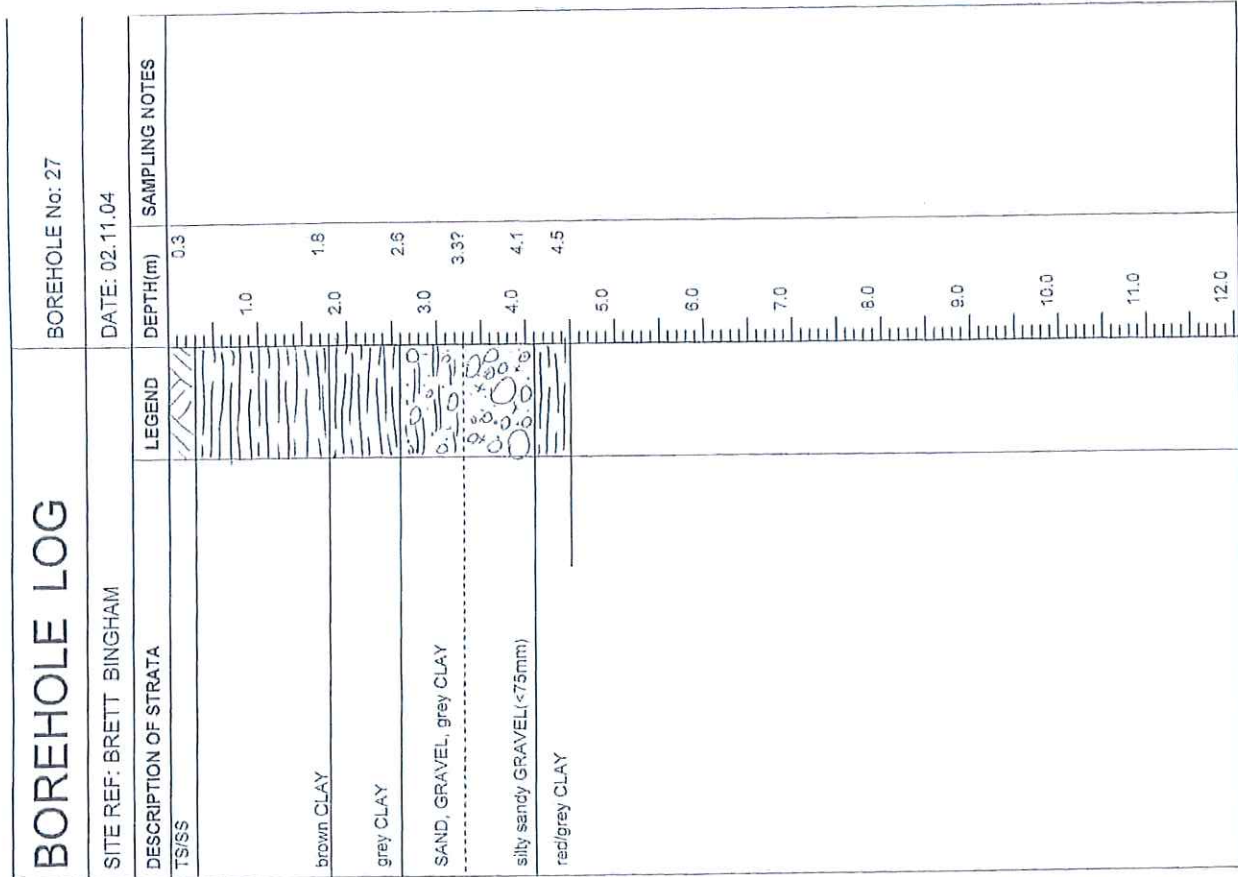
BOREHOLE LOG		BOREHOLE No: 22	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
brown CLAY		1.0	
grey/orange CLAY		1.5	
v. silty grey SAND		1.9	
sl. clayey v. silty SAND and GRAVEL		2.0	B22/1 (2.0-3.0m)
		2.4	
		3.0	
		3.0	
		4.0	
		4.5	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 23	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
clay/red SAND and SILT		1.0	
dk grey/red/brown CLAY		1.7	
gravely red SAND and SILT		2.7	
v. silty coarse SAND and GRAVEL (<80mm)		3.3	B23/12 (3.3-4.1m)
grey CLAY and SILT		4.1	
red/grey CLAY		4.5	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 24	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
red/brown CLAY		1.0	
v. gravely med.-coarse red/grey SAND and CLAY		1.6	
		2.0	
		3.0	
v. silty v. gravely red SAND		3.5	B24/1 (3.0-4.0m)
silty SAND		4.0	
red/grey CLAY		4.5	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 25	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DEPTH(m)	DESCRIPTION OF STRATA	LEGEND	SAMPLING NOTES
0.3			
0.7	disturbed red/grey/brown CLAY		
1.0			
1.5	red/grey CLAY		
2.0			
3.0			
4.0			
5.0			
6.0			
7.0			
8.0			
9.0			
10.0			
11.0			
12.0			

BOREHOLE LOG		BOREHOLE No: 26	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DEPTH(m)	DESCRIPTION OF STRATA	LEGEND	SAMPLING NOTES
0.3			
1.0	pale brown SAND		B26/2 (0.5-1.5m)
1.8	v. gravelly SAND		wet at 2.0m
2.0	sl. clayey v. silty SAND and GRAVEL(75mm)		B26/2 (1.5-4.1m)
2.3			
3.0			
4.0	v. silty v. sandy GRAVEL(<75mm)		
4.1			
4.5	red/grey CLAY		
5.0			
6.0			
7.0			
8.0			
9.0			
10.0			
11.0			
12.0			




BOREHOLE LOG		BOREHOLE No: 29	
SITE REF: BRETT BINGHAM		DATE: 02.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
clayey silty v. gravelly brown SAND		1.0	B29/1 (0.5-1.5m)
pale brown SAND. ecc. gravel sandy GRAVEL(<30mm)		1.8 2.1	B29/2 (1.5-3.0m)
SAND and GRAVEL(<60mm)		3.0	
		4.0	B29/3 (3.0-4.5m)
		5.0	
		6.0	6.3
coarse SAND and GRAVEL(<60mm)		6.3	
red/grey CLAY		7.0	
		7.5	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 30	
SITE REF: BRETT BINGHAM		DATE: 03.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
brown SILT and CLAY		0.6	
silty SAND		1.0	
		1.2	
		2.0	B30/1 (0.8-4.1m)
gravelly SAND		2.5	
v.gravelly SAND		3.0	
		3.0	
		4.0	
SAND and GRAVEL		4.0	4.1
red/grey CLAY		4.5	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG				BOREHOLE No: 31
SITE REF: BRETT BINGHAM				DATE: 02.11.04
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES	
gravely TS/SS		0.3		
v.silty silty SAND		0.6		
silty v.sandy GRAVEL		0.9	B31/1	
v.gravely SAND		1.2	(0.3-1.5m)	
		2.0		
		3.0		
		4.0	B31/2	
		5.0	(3.0-4.5m)	
SAND and GRAVEL		5.3		
red/grey CLAY		6.0		
		7.0		
		8.0		
		9.0		
		10.0		
		11.0		
		12.0		

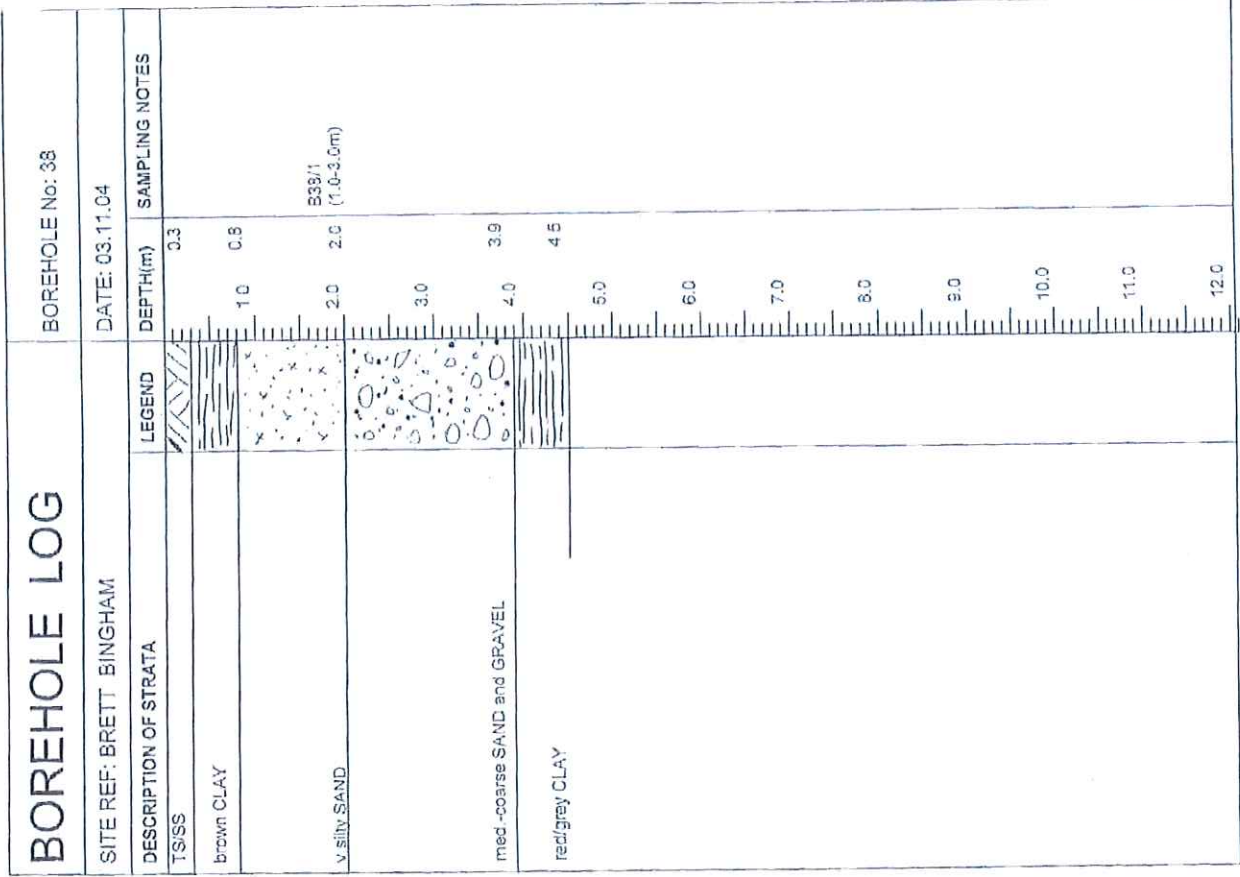
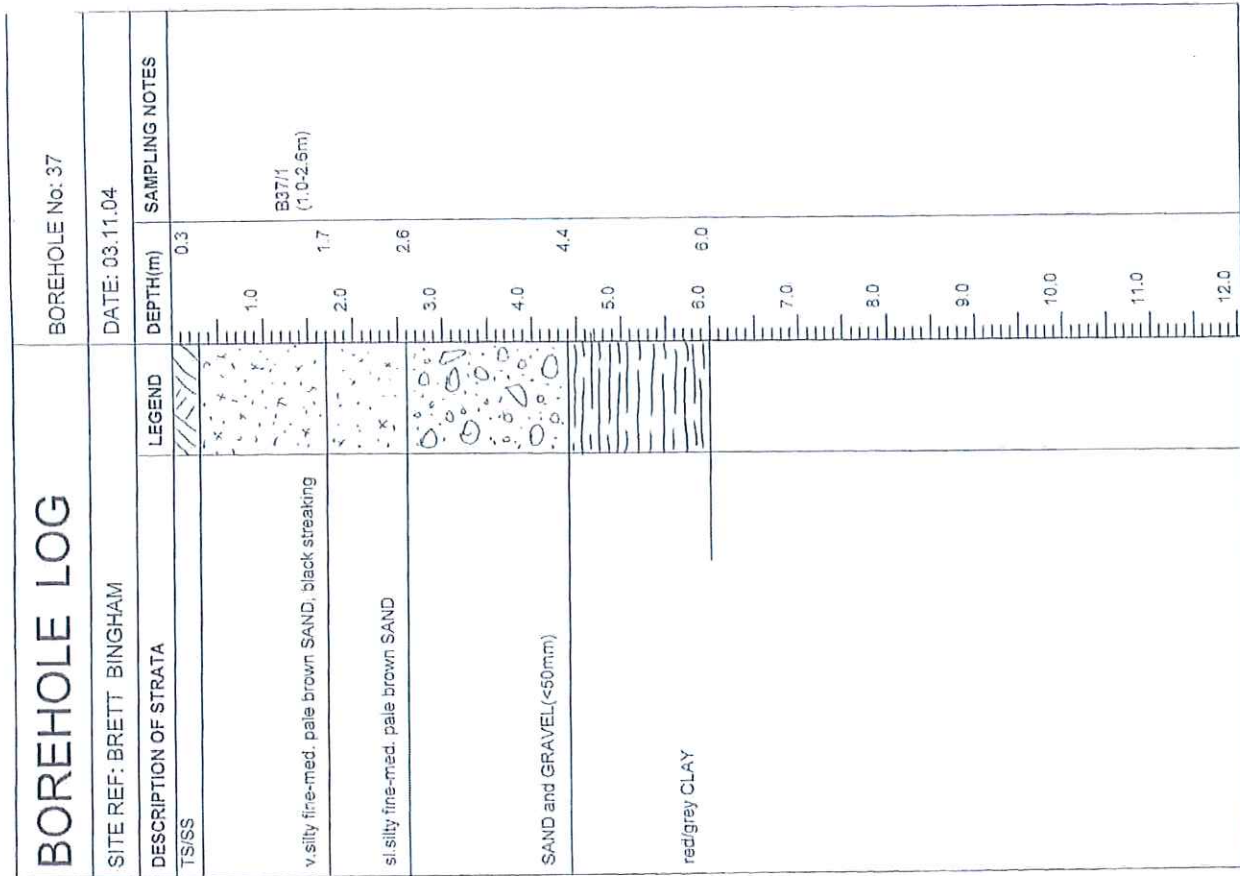
BOREHOLE LOG				BOREHOLE No: 32
SITE REF: BRETT BINGHAM				DATE: 02.11.04
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES	
clayey TS/SS		0.4		
silty fine-med. SAND		1.0		
orange/brown CLAY		1.5		
brown SILT and CLAY		1.8		
sandy SILT		2.2		
		3.0		
v.silty med.-coarse SAND and GRAVEL		4.0		
v.gravely SAND		3.7		
		4.0		
v.gravely SAND with occ. red/grey CLAY		4.7		
red/grey CLAY		6.0		
		6.0		
		7.0		
		8.0		
		9.0		
		10.0		
		11.0		
		12.0		

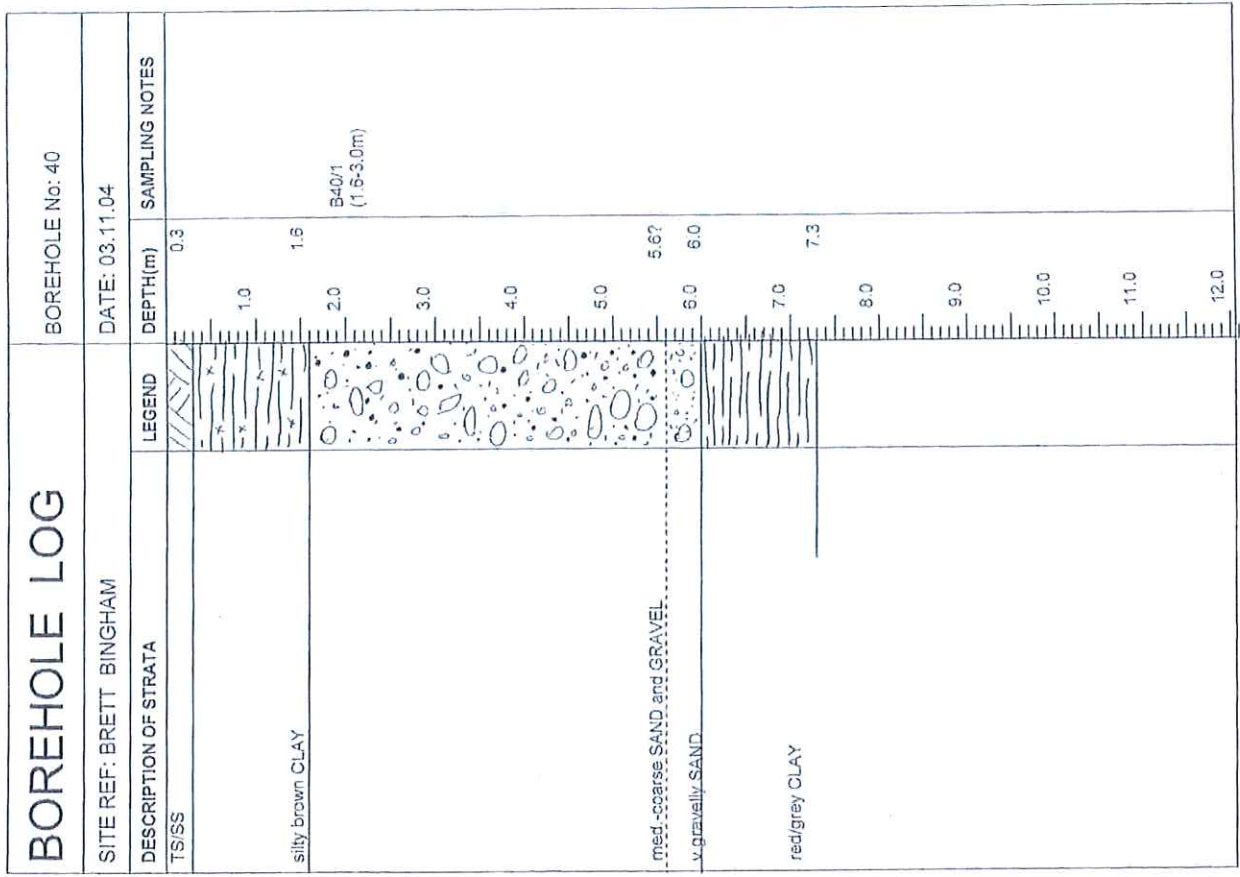
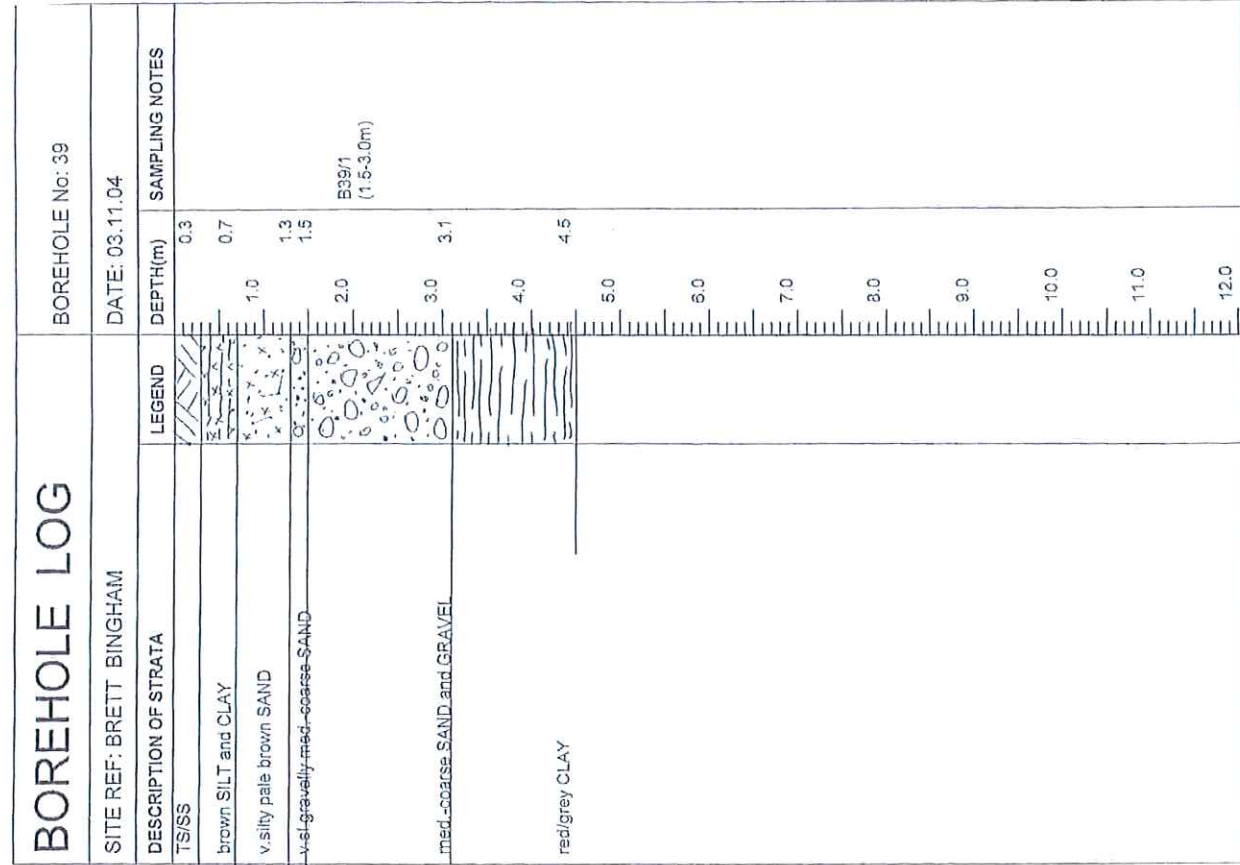
BOREHOLE LOG		BOREHOLE No: 33	
SITE REF: BRETT BINGHAM		DATE: 03.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
v. clayey brown SILT		1.0	
SAND		1.8	B33/1 (1.1-4.5m)
		5.1	
red/grey CLAY		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

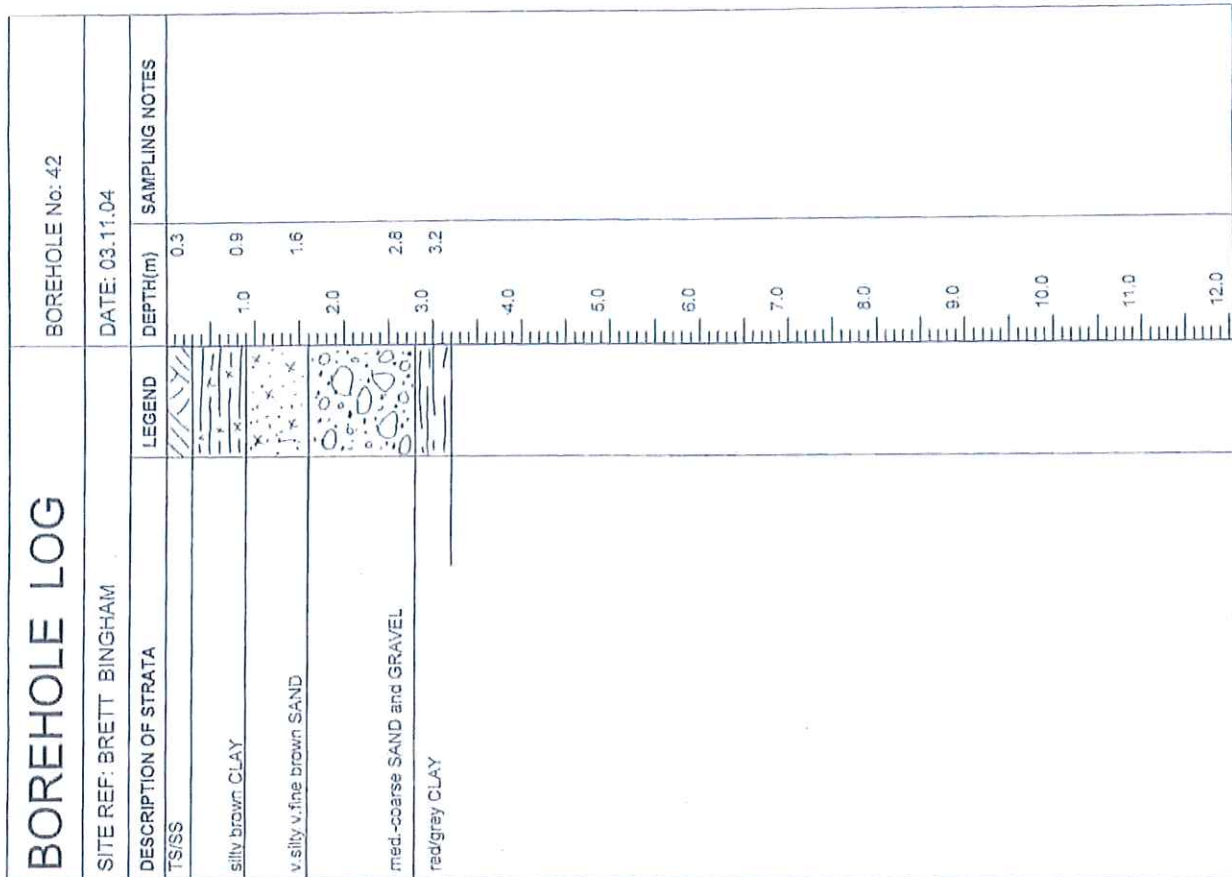
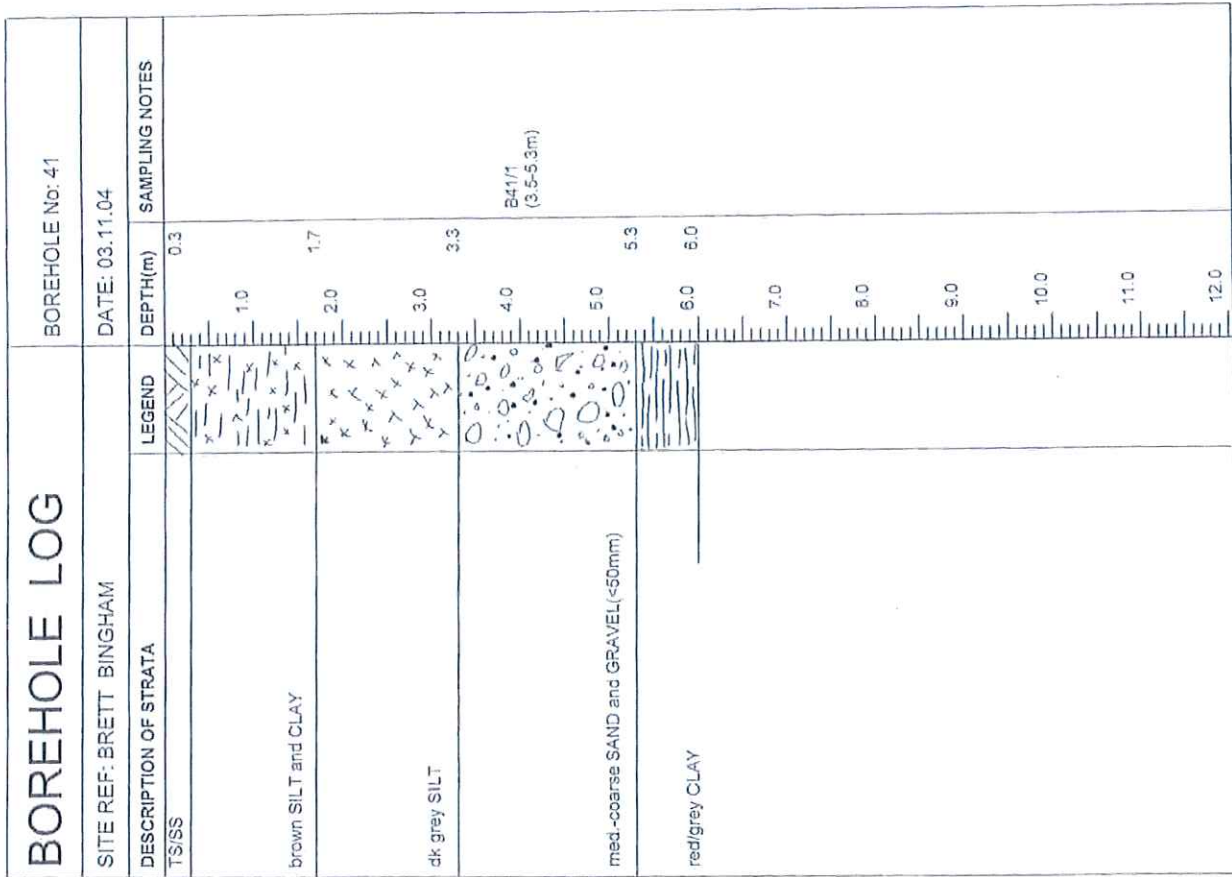
BOREHOLE LOG		BOREHOLE No: 34	
SITE REF: BRETT BINGHAM		DATE: 03.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
brown CLAY and GRAVEL		0.8	
v. clayey silty sandy GRAVEL		1.0	
		2.0	
silty med-coarse SAND and GRAVEL		3.0	B34/1 (0.7-4.5m)
		6.0	
med-coarse SAND and GRAVEL		6.1	
		7.0	
red/grey CLAY		7.5	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

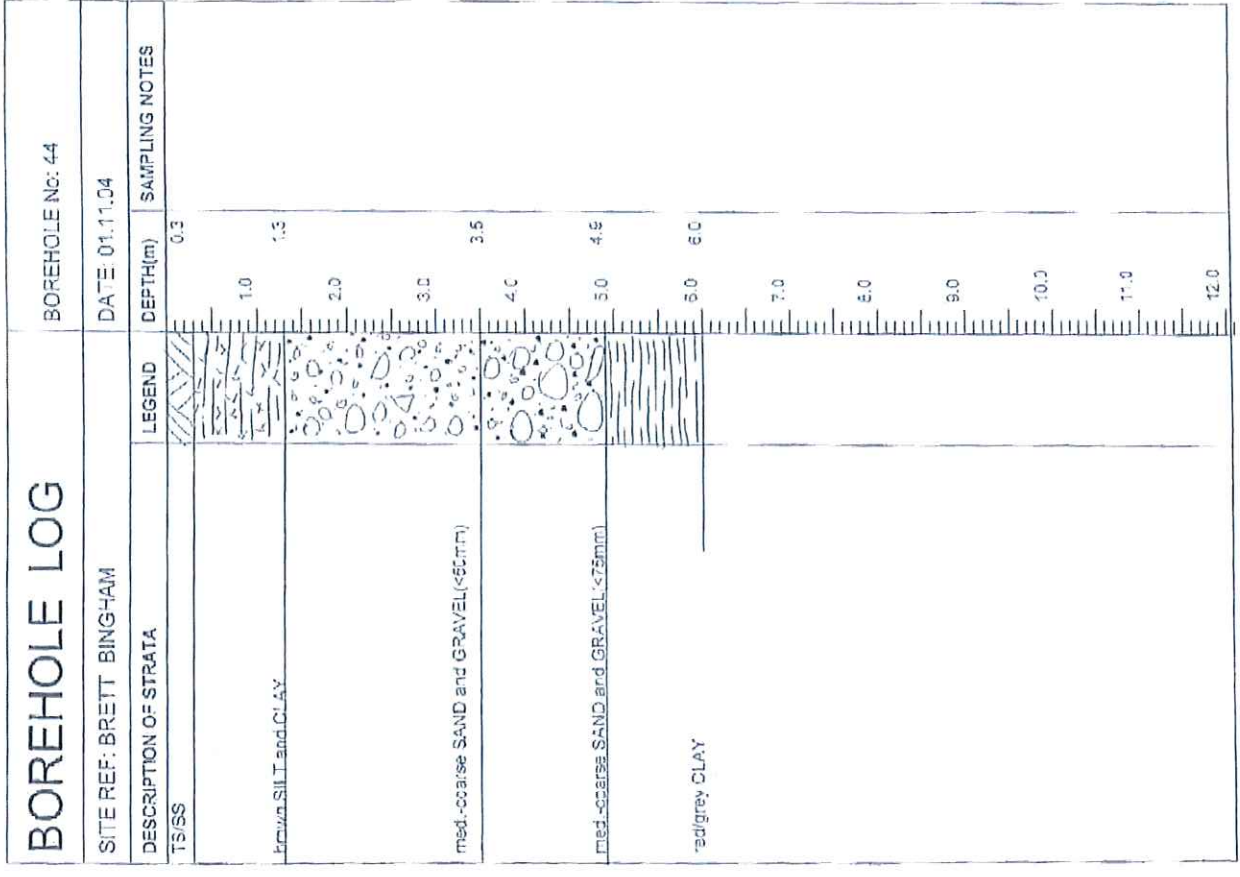
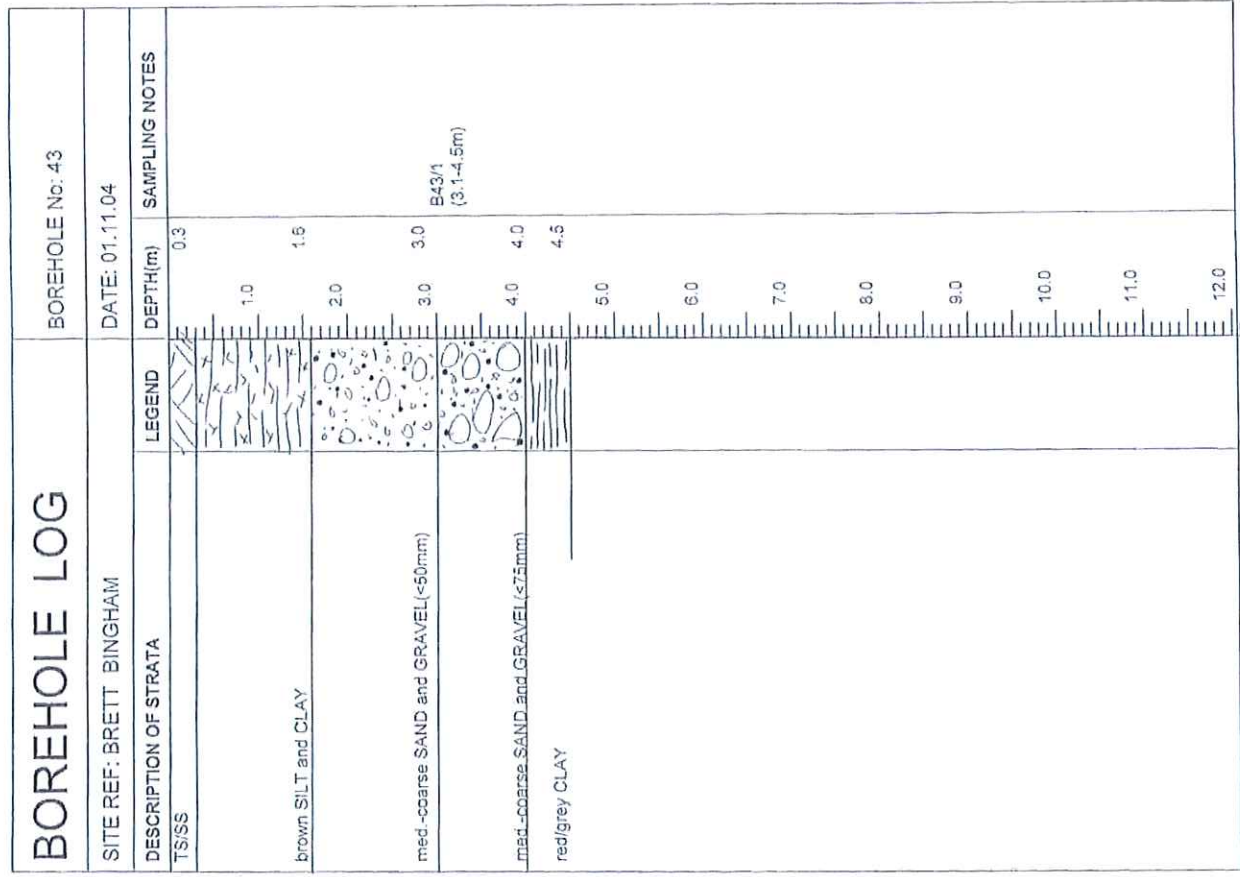
BOREHOLE LOG		BOREHOLE No: 35	
SITE REF: BRETT BINGHAM		DATE: 03.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
brown CLAY and SILT		1.0	
		1.8	
med.-coarse SAND and GRAVEL(<50mm)		3.0	B35/1 (2.0-3.0 / 3.6-4.5m)
sandy dk grey SILT and CLAY		3.4	
coarse SAND and GRAVEL		3.8	
		4.6	
red/grey CLAY		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

BOREHOLE LOG		BOREHOLE No: 36	
SITE REF: BRETT BINGHAM		DATE: 03.11.04	
DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
clayey sandy brown SILT		0.7	
		1.0	
v. silty fine-med. SAND		1.6	
		2.0	B36/1 (1.6-4.0m)
v. sandy GRAVEL(<50mm)		3.0	
SAND and GRAVEL		3.5	
gravelly SAND		3.8	
SAND and GRAVEL		4.0	
red/grey CLAY		4.5	
		5.0	
		5.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	









BOREHOLE LOG

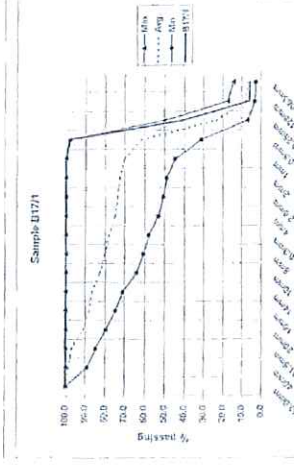
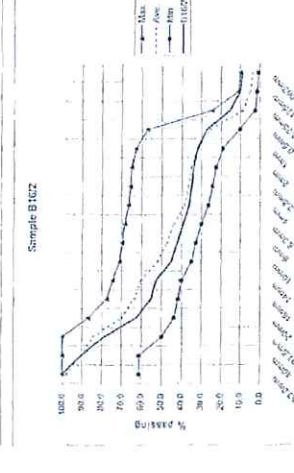
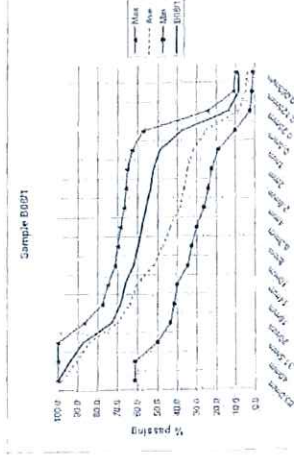
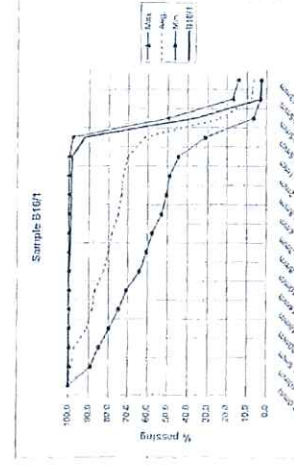
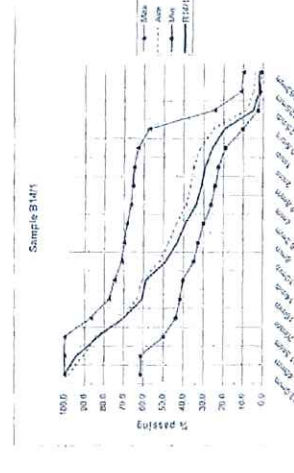
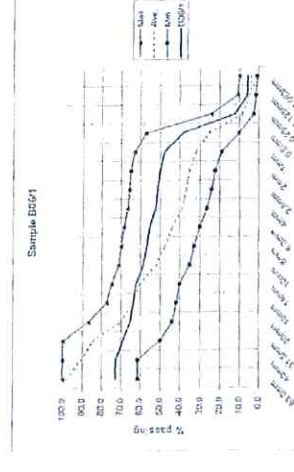
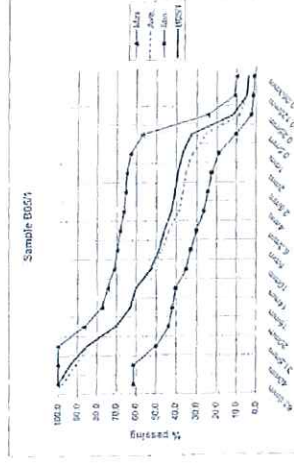
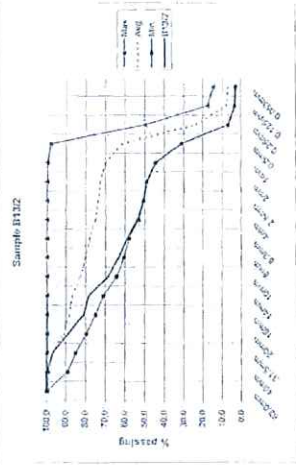
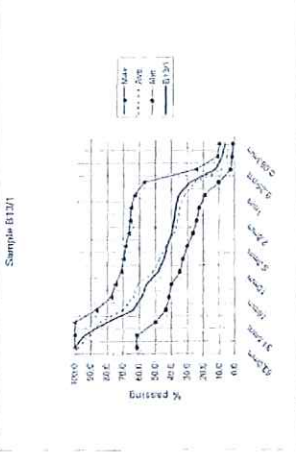
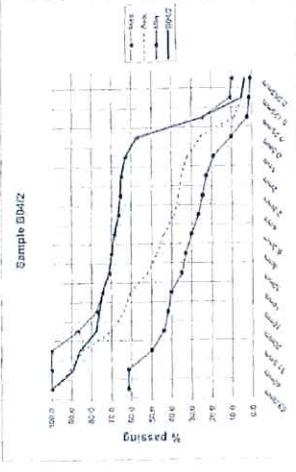
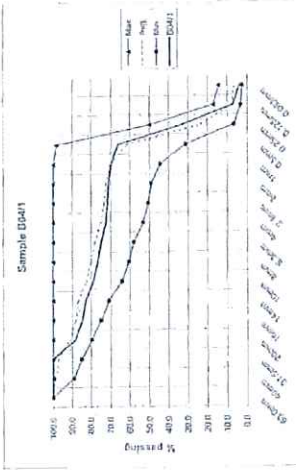
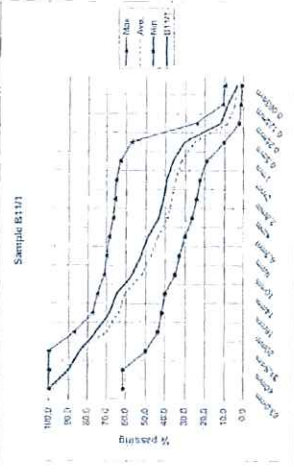
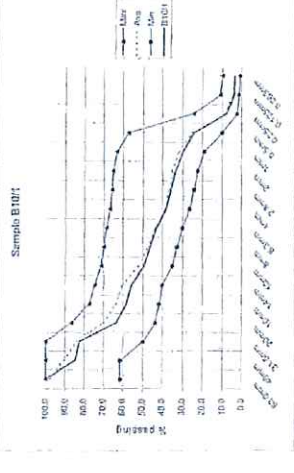
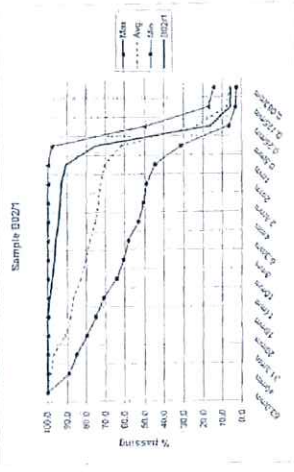
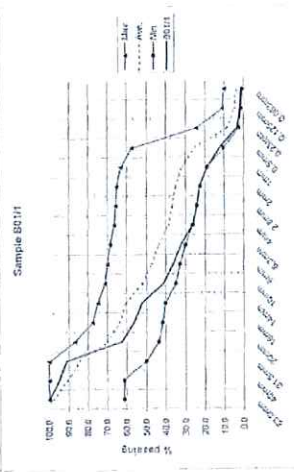
BOREHOLE No. 45

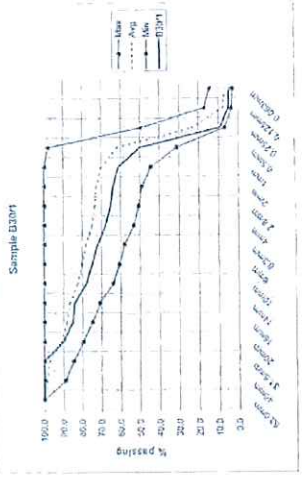
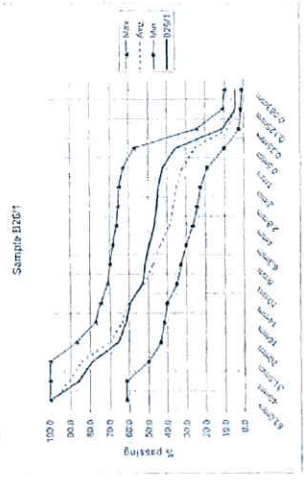
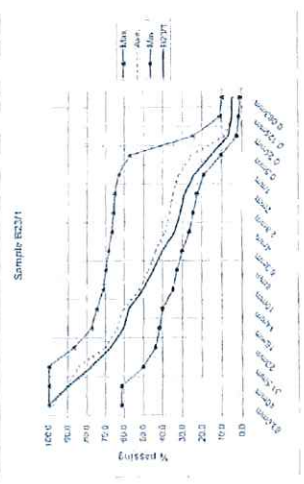
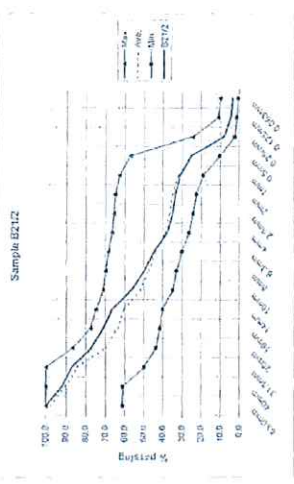
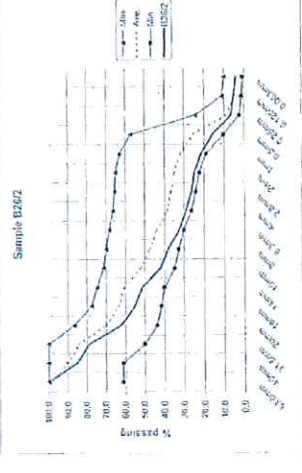
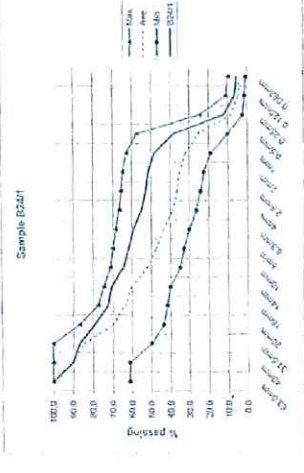
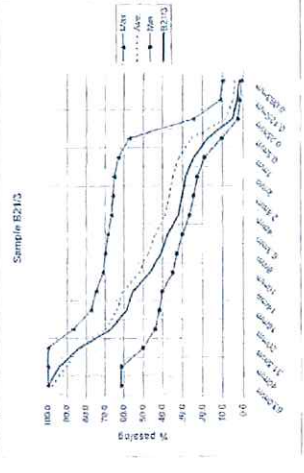
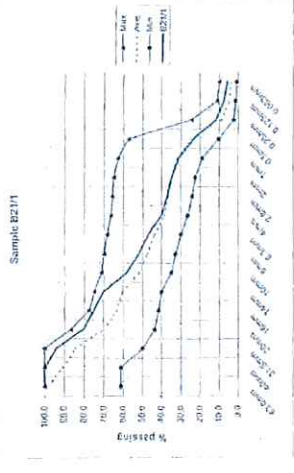
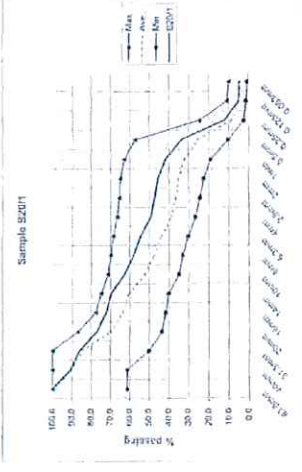
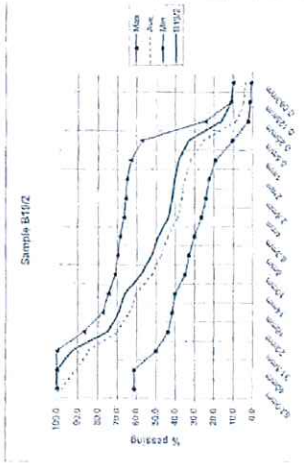
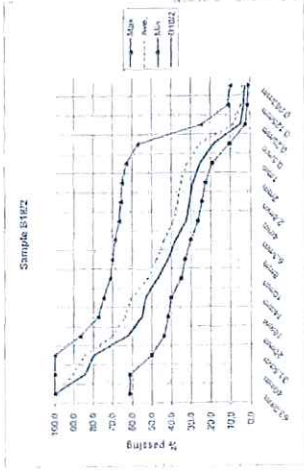
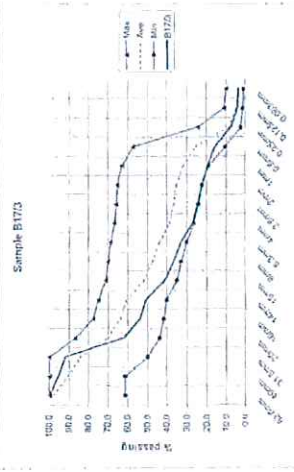
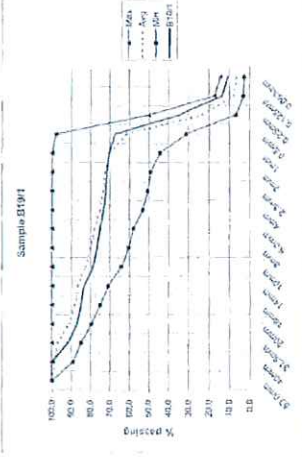
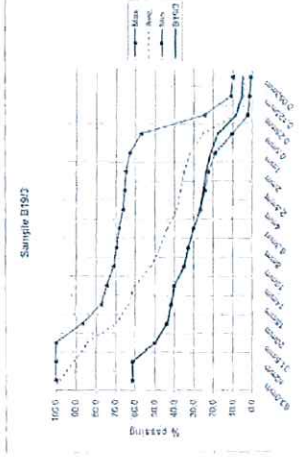
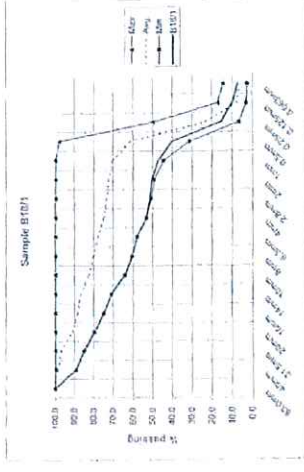
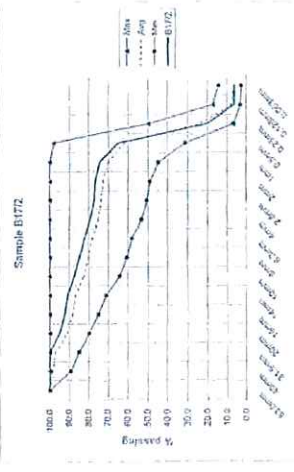
SITE REF: BRETT BINGHAM

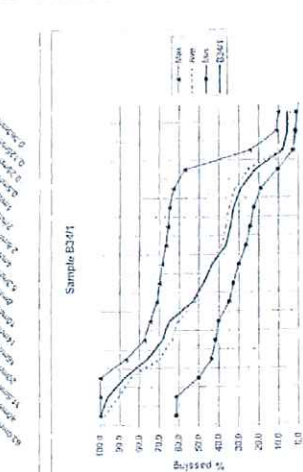
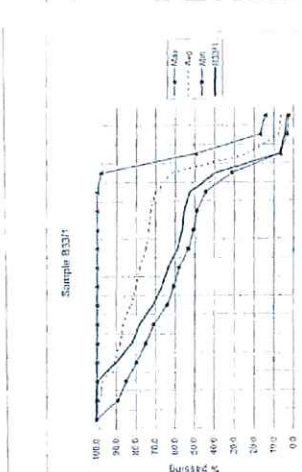
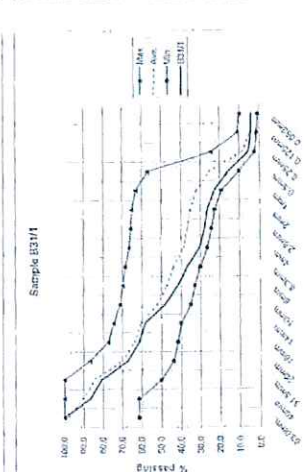
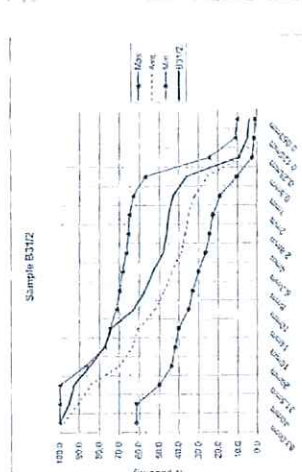
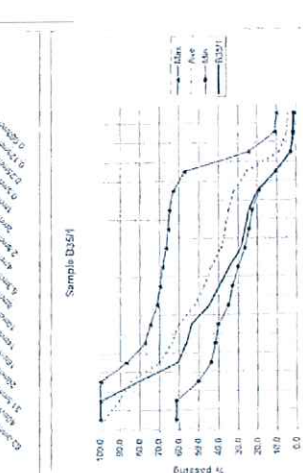
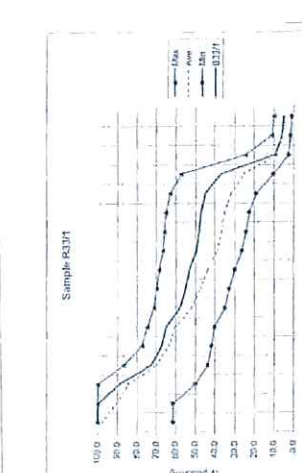
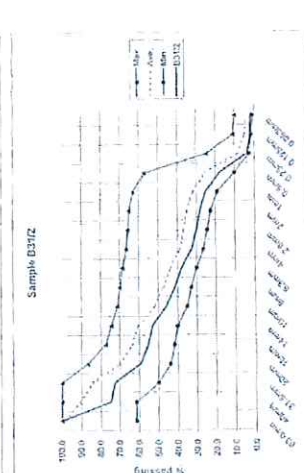
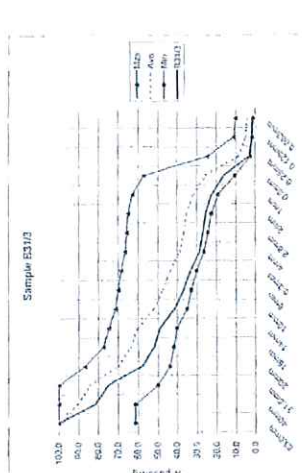
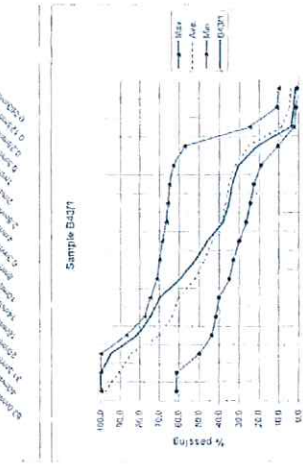
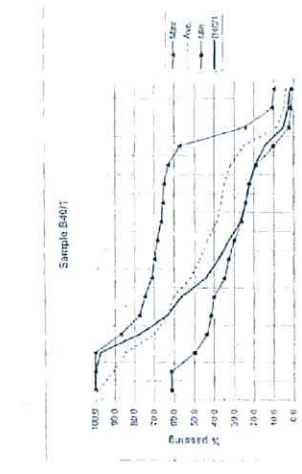
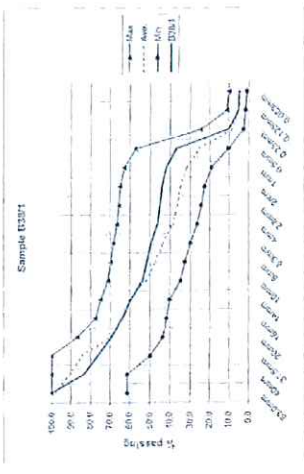
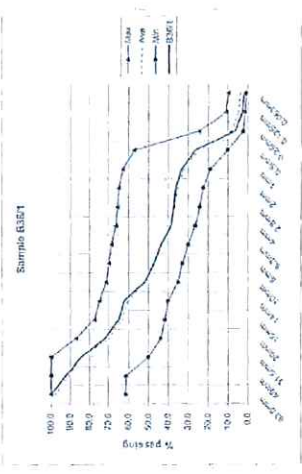
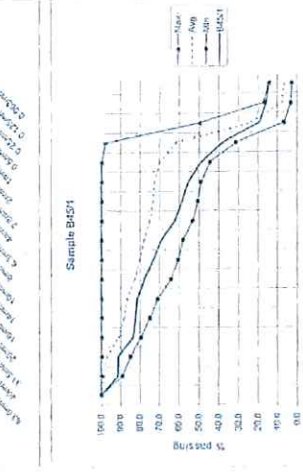
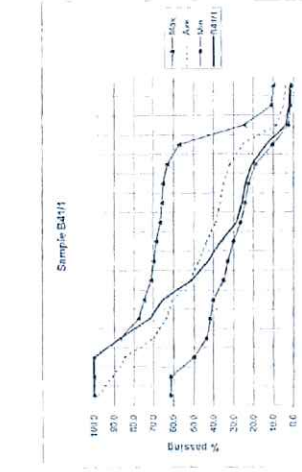
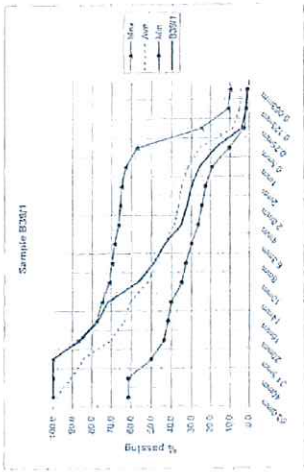
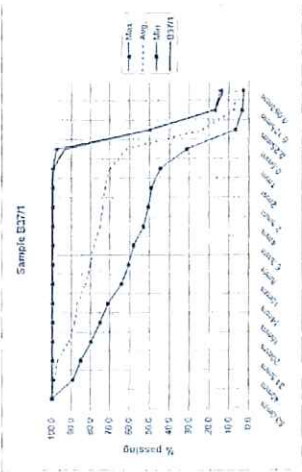
DATE: 03.11.04

DESCRIPTION OF STRATA	LEGEND	DEPTH(m)	SAMPLING NOTES
TS/SS		0.3	
grey/orange CLAY		1.0	
sandy silty grey CLAY		1.6	
		2.0	B45/1 (1.6-2.7m)
v silty dk grey SAND and GRAVEL		2.7	
red/grey CLAY		3.0	
		4.0	
		5.0	
		6.0	
		7.0	
		8.0	
		9.0	
		10.0	
		11.0	
		12.0	

Appendix 4 PARTICLE SIZE DISTRIBUTION ANALYSIS







Proposed mineral extraction at SHELFORD, NOTTINGHAMSHIRE

BY BRETT AGGREGATES LTD.

ENVIRONMENTAL STATEMENT SCREENING AND SCOPING REQUEST
SEPTEMBER 2015

CONTENTS

1. Introduction
2. Proposed application site
3. Description of the proposals
4. Proposed Environmental Statement contents
5. Conclusions

1.0 INTRODUCTION

General

In accordance with Regulation 13(1) of the Town and Country Planning (Environmental Impact Assessment) (England and Wales) Regulations 2011 (EIA Regulations), this is a formal request for Screening and Scoping Opinions in respect of the contents of an Environmental Statement to accompany a planning application for mineral working with restoration back to water based nature conservation to the north west of the village of Shelford in Nottinghamshire.

This request sets out the details and information as required by regulations 5(2) and 13(2) which states that such a request shall include “... *a plan sufficient to identify the land; a brief description of the nature and purpose of the development and of its possible effects on the environment; and such other information or representations as the person making the request may wish to provide or make...*”

It should be noted that the area of land associated with the proposal is greater than 25ha and, therefore, falls within Schedule 1 of the EIA Regulations and an Environmental Statement is not mandatory.

2.0 THE PROPOSED APPLICATION SITE

The Shelford West site where mineral will be extracted is located in the Borough of Rushcliffe. The site will be worked in phases with mineral either being processed on site and exported by barge along the River Trent or will be transported by conveyor to a processing plant and storage area alongside the A6097 from where it will be transported by road.

Approximately 6.5 million tonnes of mineral have been identified at the site through borehole surveys. It is expected that 500,000 tonnes per annum (tpa) will be processed and exported from the site with 180,000 tpa leaving by barge and 320,000 tpa by road. It is intended that the mineral from the Shelford West site will be used to continue to feed into the established markets in Nottingham and the south of the County.

Site and Surrounding Features

The Shelford West site lies in the expansive largely flat valley of the River Trent. It principally comprises intensively farmed agricultural land with large fields predominating. Alongside the River Trent an existing flood defence will be left as part of an undisturbed margin adjoining the river.

To the south of the site lies the village of Shelford. Between the village and the proposed extraction area are further flood defences and a belt of trees. It is proposed that restoration will be to water based nature conservation with overburden from the site used to create wetland areas.

Site Access and Public Rights of Way

The extraction area will be linked to the main plant site which will be located adjacent to the A6097 as shown on the appended drawings by conveyor.

Access to the site will be from the A6097 with a track running along the length of the conveyor. No Heavy Goods Vehicles (HGVs) carrying mineral will either travel along local roads or the access track alongside the conveyor. No HGVs hauling mineral will, therefore, pass through the village of Shelford.

A Public Right of Way (PROW) between the village and the river crosses the site. The PROW will be diverted during extraction and then reinstated during restoration. A new footpath link will be provided alongside the River Trent as part of the development.

Historic Environment

It is considered that the site has some potential for archaeology. The village of Shelford has a conservation area and listed buildings.

Ecological Environment

The extraction area, plant site and route of the conveyor do not have any ecology designations. There are no nationally designated areas nearby although there are some locally designated areas, principally belts of trees.

Hydrological/Hydrogeological Environment

It is expected that a number of groundwater abstraction licences and identified potential sources of pollution lie within the vicinity of the site. The site lies within Flood zone 3 and a small area is within a Source Protection Zone 3. The mineral extraction will be below the upper limit of the water table.

3.0 Description of the proposals

Mineral Extraction

The proposed extraction area contains a proven mineral reserve of circa 6.5 million tonnes of sand and gravel. It is proposed that extraction would take place at a rate of approximately 500,000 tonnes per annum (tpa) meaning that the life of the site would span approximately 14 years allowing for a 6 month set up period and a further year for final restoration to take place.

Mineral extraction will be phased and restoration will be progressive as the site is worked.

It is proposed that 320,000 tpa of the mineral will be exported from the site via a conveyor to a plant site adjacent to the A6097 whilst a further 180,000tpa will be processed at the extraction area and exported by barge on the River Trent.

See attached drawings for further information.

Initial Works

Initial works would involve the following:-

- Construction of the access onto the A6097.
- Construction of the plant site adjacent to the A6097 and the development of processing plant, office and weighbridge.
- The construction of a conveyor and associated track to the extraction area.
- Construction of the dolphins in the River Trent which will allow the barges to tie up whilst being loaded.
- Finally the access to the A6097 will be restored.

Site Restoration

It is proposed that the extraction area will be restored at the lower vertical level principally to wetland and water based nature conservation uses with public access. Overburden and silt from processing will be used to create wetland areas as shown on the attached drawing.

Once the extraction is completed the conveyor system together with the associated track and plant site will be removed and the land restored to agriculture.

4.0 Proposed Environmental Statement Contents.

It is proposed that the Environmental Statement (ES) will cover the following aspects of the environment.

Geology and Slope stability

The geotechnical, geological, hydrogeological, topographical and borehole data available from previous assessments and site investigations at the site will be reviewed to establish the baseline conditions. The potential sensitive receptors which may be effected by the works will be identified including the bank which will remain in place between the extraction area and the River Trent, any nearby buildings and roads and temporary and restored slopes which are close to features such as watercourses.

A conceptual model of the existing site, the proposed excavations and proposed restoration will be developed. A combination of qualitative and quantitative assessments will be undertaken for each slope identified in order to determine and or confirm the appropriate excavation slopes, depths and standoffs and to assess the stability of the proposed restoration slopes. Mitigation measures will be proposed as necessary to ameliorate any significant impacts identified and the residual impacts will be assessed.

Landscape and Visual Effects

Introduction

It is anticipated from the outset that, in common with almost all commercial minerals developments, some landscape and visual effects would occur as a result of the proposals.

A key principle of the European Landscape Convention is that all landscapes matter and should be managed appropriately. It is also acknowledged that landscapes provide the surroundings for people's daily lives and often

contribute positively to the quality of life and economic performance of an area.

Therefore as part of the EIA, it is proposed that a Landscape and Visual Impact Assessment (LVIA) is undertaken. This assessment will be undertaken by Chartered Landscape Architects who are experienced in the assessment of landscape and visual effects of minerals developments.

It is proposed that the LVIA will consider the potential effects of the development upon:

- Individual landscape features and elements;
- Landscape character; and
- Visual amenity and the people who view the landscape.

Overview of Approach and Methodology

It is proposed that the main objectives of the LVIA will be as follows:

- To identify, evaluate and describe the current landscape character of the site and its surroundings and also any notable individual or groups of landscape features within the site;
- To determine the sensitivity of the landscape to the type of development proposed, any values associated with it and its capacity to accommodate the development;
- To identify potential visual receptors (i.e. people that would be able to see the development) and evaluate their sensitivity to the type of changes proposed;
- To identify and describe any impacts of the development in so far as they affect the landscape and/or views of it and evaluate the magnitude of change due to these impacts;

- To identify and describe mitigation measures that have been adopted to avoid, reduce and compensate for landscape and visual effects (including restoration proposals);
- To identify and assess any cumulative landscape and visual effects;
- To evaluate the level of residual landscape and visual effects; and
- To make a professional judgement about which effects if any are significant.

Published LVIA Guidance

The LVIA shall be undertaken in accordance with the principles of best practice, as outlined in published guidance documents, notably the third edition of the Guidelines for Landscape and Visual Assessment (GLVIA3), (Landscape Institute and the Institute for Environmental Management and Assessment, 2013).

The methodology and assessment criteria for the assessment shall be developed in accordance with the principles established in this best practice document. It should be acknowledged that GLVIA3 establishes guidelines, not a specific methodology. The preface to GLVIA3 states:

“This edition concentrates on principles and processes. It does not provide a detailed or formulaic ‘recipe’ that can be followed in every situation – it remains the responsibility of the professional to ensure that the approach and methodology adopted are appropriate to the task in hand.”

The approach shall therefore be developed specifically for this assessment to ensure that the methodology is fit for purpose.

Distinction between Landscape and Visual Effects

In accordance with the published guidance, landscape and visual effects shall be assessed separately, although the procedure for assessing each of these is closely linked. A clear distinction has been drawn between landscape and visual effects as described below:

- Landscape effects relate to the effects of the proposals on the physical and perceptual characteristics of the landscape and its resulting character and quality;
- Visual effects relate to the effects on specific views experienced by visual receptors and on visual amenity more generally.

Types of Landscape and Visual Impacts Considered and Duration

The LVIA will address all phases of the development from the initial construction activities to the post restoration period. The duration of the different phases will range from short term (temporary) to long term and this will be discussed as appropriate throughout the assessment. It is likely that many of the extraction operations considered in the assessment will be medium term in duration but non-permanent. The only permanent effects of the development will relate to the long term post restoration phase. For the purposes of the LVIA it is proposed that, 'short term' shall be taken to mean less than 8 weeks, 'medium term' shall be taken to mean up to 5 years and 'long term' shall be taken to mean over 5 years in duration.

Consideration shall be given to seasonal variations in the visibility of the development and these will be described where necessary.

Both beneficial and adverse effects shall be identified in the assessment and reported as appropriate.

Effects shall be described as 'neutral' where beneficial effects are deemed to balance the adverse effects. The adverse and beneficial effects shall be communicated in each case so that the judgement is clear.

As part of the proposed development, areas of new planting may be introduced. Newly planted vegetation takes a number of years to mature and average growth rates shall be taken into consideration in this assessment. The effectiveness of vegetation would improve over time (both in terms of integrating the development into the surrounding landscape and in providing visual screening) and this shall be considered appropriately.

Whilst the effects of any phased restoration shall be considered iteratively as part of the operational phases, the permanent landscape and visual impacts of the scheme shall be assessed both in the winter of year 1 (the year in which restoration is completed in relation to the final phase) and also in the summer of year 15 (15 years after the restoration is completed in relation to the final phase). In this final scenario it is assumed that vegetation planted at the end of the restoration works would have established and benefitted from a degree of maturity.

Consideration shall also be given to the potential for any cumulative landscape and visual effects with other developments in the study area.

Baseline Information

The baseline landscape resource and visual receptors shall be identified through a combination of desk based studies of Ordnance Survey mapping; published landscape character studies; relevant planning policies; interrogation of aerial photography and historic mapping; as well as photographs taken and observations made during site visits.

Site visits shall be conducted in a variety of weather conditions and at different times of the day allowing a good understanding of general visibility.

Particular consideration will be given to the following published sources of information on landscape character:

- Natural England National Character Areas Profiles;
- Greater Nottingham LCA (2009);
- Nottinghamshire Historic Landscape Characterisation Project;
- Rushcliffe Borough Council Planting Guide.

Study Area

In order to assist with defining the study area, a digital Zone of Theoretical Visibility (ZTV) model shall be created. The ZTV shall identify locations within

the wider landscape where the proposed development would theoretically be visible within a bare earth scenario without the screening influence of any vegetation or built features that may preclude views.

Following a review of the ZTV plans and further on-site analysis an appropriate study area for the assessment shall be defined. This will extend to include the maximum distance to which any feature of the development would be visible from.

Proposed Assessment Viewpoints

The assessment of visual effects will be undertaken using viewpoint analysis as the starting point for the assessment as recommended by best practice guidelines. It is however acknowledged that viewpoints are simply snap shots of the view from a small number of the potential locations where the proposals would be visible. The visual assessment will therefore provide a broader discussion of visual effects on a range of visual receptors throughout the study area whilst also considering the effects on the views represented by the selected viewpoints.

Based on initial site work, we have developed a provisional list of viewpoints which we consider would be appropriate for the assessment. These are set out in Table 1 below and are illustrated on Figure 1.

The provisional list of viewpoints has been selected to represent a range of views and viewer types. The viewpoints cover a variety of different landscape character types and different visual receptor groups. The viewpoints are also located at a range of distances and elevations from the development to illustrate the varying magnitude of visual impacts with distance from the site.

Table 1 Provisional Selection of Viewpoints for LVIA

ID	Proposed Viewpoint	East ing	North ing
1	Stoke Ferry Lane (east)	4658 17	34244 4
2	Stoke Ferry Lane (west)	4649 76	34210 0
3	Trent Valley Way, near Swallow Plantation	4651 29	34148 1
4	Ferry Boat Inn, Stoke Bardolf	464 748	34207 3

5	Stoke Lane	464 690	34267 1
6	Burton Joyce, railway station platform	4644 89	34332 8
7	Burton Joyce, south	4649 07	34367 2
8	Burton Joyce, north	4646 77	34418 5
9	Bridleway north of River Trent near Burton Joyce	4654 92	34367 2
10	Footpath on northern banks of River Trent	4660 21	34306 3
11	Shelford Parish Church	4661 48	34237 5
12	Footpath from Shelford to Swallow Plantation	4660 15	34170 3
13	Shelford Hill on Shelford Road	4665 71	34127 4
14	Main road north of Shelford	4664 34	34271 4
15	Main road east of Shelford Manor	4678 20	34364 5
16	A6097	4683 44	34324 8
17	Trent Valley Way, near Newton Fields	4684 66	34262 9
18	Shelford Road, at Mill Farm	4678 99	34209 5
19	Trent Valley Way, south of Moor Close Plantation	4676 08	34242 8
20	Trent Valley Way, north of Waterfurrows Plantation	4669 20	34250 7

Supporting Visual Material

It is proposed that the LVIA shall be accompanied by a series of cross-section drawings of the development proposals during its various phases. In addition, a number of visualisations of the proposals will also be produced to illustrate the view from a selection of locations in the area surrounding the site.

Significance Criteria

The purpose of an LVIA when produced in the context of an EIA is to identify any significant effects on landscape and visual amenity arising from the proposed development. In this LVIA the level of effect on any given landscape or visual receptor will firstly be assessed and then a professional judgement provided as to whether the effect is significant or not.

Neither EC Directive 2011/12/EU nor the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 define a threshold at

which an effect may be determined to be significant. In certain other environmental disciplines there are regulatory thresholds or quantitative standards which help to determine the threshold of what constitutes a significant effect. However in LVIA, any judgement about what constitutes a significant effect is ostensibly a subjective opinion expressed by a competent and appropriately qualified professional assessor.

The LVIA chapter of the ES will set out the assessment criteria in detail to ensure that all judgements made in the assessment are transparent and justified.

Air Quality

Identification of the Key Air Quality Impacts

The potential air quality impacts for the proposed development are:

- i) dust (nuisance dust and suspended particulate matter) generated by activities within the extraction area and at the processing plant;
- ii) exhaust emissions from mobile plant and vehicles used within the extraction area and at the processing plant; and
- iii) exhaust emissions from vehicles on the local road network.

The main potential effect is the level of dust that could be deposited on surfaces, potentially leading to a nuisance impact.

Planning Policy and Guidance

The National Planning Policy Framework (NPPF) was published in March 2012. The NPPF sets out 12 core land-use planning principles. The relevant core principle in the context of this proposal is that planning should “*contribute to conserving and enhancing the natural environment and reducing pollution*”. It continues by defining pollution as “*anything that affects the quality of land, air, water or soils, which might lead to an adverse impact on human health,*

the natural environment or general amenity. Pollution can arise from a range of emissions, including smoke, fumes, gases, dust, steam, odour, noise and light.”

The minerals section of the national Planning Practice Guidance (nPPG) provides the principles to be followed in considering the environmental effects of surface mineral workings and states that: *“Where dust emissions are likely to arise, mineral operators are expected to prepare a dust assessment study, which should be undertaken by a competent person/organisation with acknowledged experience of undertaking this type of work.”*

NPPG advises that a dust assessment study may use a quantitative approach (e.g. computer dispersion modelling) or qualitative approach relying on professional judgement. The predecessor to the guidance set out in the nPPG, Minerals Policy Statement 2: Controlling and Mitigating the Environmental Effects of Minerals Extraction in England (MPS2), advised that the choice would depend on the type and scale of working and proximity of sensitive land uses in surrounding areas such as schools and residential areas.

Nottinghamshire County Council’s consultation document ‘*Minerals Local Plan Consultation Preferred Approach 23 October – 4 December 2013*’ is consistent with the NPPF and MPS2 stating that *“New and existing development should not contribute to, or be put at risk from, pollution or other sources of nuisance or intrusion which could adversely affect local amenity. Noise and dust pollution can arise from minerals development (including transport activities). It is important that applications for new minerals development provide evidence to demonstrate that any emissions will not adversely impact upon local amenity. The nature of the assessment will be dependant (sic) on the type and scale of the proposal.”*

Baseline Information

A desk study will be undertaken to establish the baseline conditions concerning the current air quality of the site. The current air quality in the area will be characterised with specific regard to the findings of Rushcliffe Borough

Council's Review and Assessment process, the results of available local monitoring and data available in the Defra maps.

Rushcliffe Borough Council has designated three Air Quality Management Areas (AQMAs) due to high level of nitrogen dioxide (NO₂) attributable to road traffic emissions. The nearest of the designated AQMAs is approximately 5 km to the southwest of the site suggesting that air quality in the immediate area of the site is generally good.

Assessment Methodology

There is currently no specific technical guidance for assessing the risk of dust impacts; however, the Institute of Air Quality Management (IAQM) 2014 'Guidance on the assessment of dust from demolition and construction' states:

"A qualitative dust assessment for a minerals site would therefore normally be expected to be at least as rigorous as one carried out in accordance with the IAQM construction dust method, reflecting the potential for minerals sites to have a greater impact than construction sites."; and

"... in the current absence of other detailed guidance, the IAQM construction dust method can be taken as a starting point for a minerals dust assessment provided it is used with appropriate modifications to the various terms and factors; some aspects of this guidance, such as the assessment of dust from earthworks and track-out, may be applicable with only minor adjustments."

For the proposed development, a qualitative assessment of the risk of dust impacts will be undertaken using the source-pathway-receptor conceptual model that underpins the IAQM construction method.

Human receptors will be identified within 350 m of the site boundary for the consideration of amenity impacts. These will include existing residential properties in Burton Joyce, Shelford and Stoke Bardolph. Human receptors will be identified within 50 m of the routes used by vehicles on the local road network to allow consideration of the level of risk of tracked-out dust. Additionally, any sensitive receptors within 1000 m of site activities will require consideration of the human-health impacts for particulate matter.

No sensitive nature designation sites have been identified in the vicinity of the application site and an assessment of dust impacts on ecological systems will be scoped out.

A substantial proportion of the sand and gravel extracted from the site will be transported by barge; however, there are no speed related emissions data for assessing the air quality impacts at sensitive receptors. The use of barges is expected to be beneficial in air quality terms as it will reduce the number of movements on the local road network. As such, the development is not expected to generate significant traffic movements on the local road network. The number of vehicle movements will be compared with the threshold criteria in the Environmental Protection UK (EPUK)/IAQM (May 2015) '*Land-Use Planning & Development Control: Planning for Air Quality*' document. If the threshold criteria are not exceeded, an assessment of vehicle-related emissions from the local road network will be scoped out. If the threshold criteria are exceeded, a quantitative assessment of the impacts at sensitive receptors will be undertaken and the significance of illustrated effects will be described using professional judgement and criteria definitions from the EPUK/IAQM document.

Mitigation and Control Measures

Dust mitigation and control measures that are consistent with the level of risk will be identified. Where relevant, these will be drawn from the Environmental Protection UK (EPUK)/IAQM (May 2015) '*Land-Use Planning & Development Control: Planning for Air Quality*' document and MPS2, Annex 1.

Noise

Identification of the Key Noise Impacts

The potential sources of noise impact associated with the proposed development which may affect noise sensitive receptors (NSRs), are:

- mobile plant and vehicles used for the stripping of soils and overburden and the construction of soil stores and bunds;
- vehicles used to transfer the overburden to the flood defence improvement areas adjacent to Shelford;
- mobile plant and vehicles used for mineral extraction;
- mobile plant and vehicles used for backfilling and restoration (which is likely to be similar to i) above);
- transfer of the mineral across the site to the processing area for export by barge;
- mineral processing on site for the mineral to be exported by barge;
- transfer of the mineral onto barges;
- transfer of the mineral by conveyor to the offsite processing facility for export by HGV;
- mineral processing off site for the mineral being exported by HGV;
- increases in road traffic associated with the export of mineral and the importation of restoration materials, if required; and
- barge traffic associated with the export of the mineral.

Vibration effects could arise from mobile plant, if very close to NSRs and/or HGVs on the public highway, if it contains significant discontinuities. However, mobile plant will not operate close to NSRs and it is assumed that the public highway will be well maintained. On this basis, vibration effects are unlikely to be significant and this element will be scoped out. With regard to the barge traffic, this is likely to be of low volume and relatively quiet; on this basis, the noise effects of barge traffic will be scoped out.

Planning Policy and Guidance

The Government has published national Planning Practice Guidance on a range of subjects including minerals (nPPGM). The guidance forms part of the

National Planning Policy Framework (NPPF) and provides advice on how to deliver its policies. The nPPGM states that proposals for the control or mitigation of noise emissions should:

- *“consider the main characteristics of the production process and its environs, including the location of noise-sensitive properties and sensitive environmental sites;*
- *assess the existing acoustic environment around the site of the proposed operations, including background noise levels at nearby noise-sensitive properties;*
- *estimate the likely future noise from the development and its impact on the neighbourhood of the proposed operations;*
- *identify proposals to minimise, mitigate or remove noise emissions at source;*
- *monitor the resulting noise to check compliance with any proposed or imposed conditions.”*

The guidance goes on to state that planning authorities will need to consider whether the overall effect of the noise exposure would be above or below the SOAEL and LOAEL, and whether a good standard of amenity can be achieved taking account of the prevailing acoustic environment. Guidance on the relationships between noise exposure, SOAEL and LOAEL is provided in the national Planning Practice Guidance on noise (nPPGN).

The PPGM suggests noise limits for various periods of operation (i.e. day, evening and night), including limits to normal operations relative to background noise levels, fixed upper limits for normal operations, and higher temporary limits to facilitate essential site preparation and restoration works.

Nottinghamshire County Council’s consultation document *‘Minerals Local Plan Consultation Preferred Approach 23 October – 4 December 2013’* is consistent with PPGN stating that *“New and existing development should not contribute to, or be put at risk from, pollution or other sources of nuisance or intrusion which could adversely affect local amenity. Noise and dust pollution can arise from minerals development (including transport activities). It is*

important that applications for new minerals development provide evidence to demonstrate that any emissions will not adversely impact upon local amenity. The nature of the assessment will be dependant (sic) on the type and scale of the proposal.”

Baseline Information

A desk-based study will be carried out to identify the nearest NSRs to the proposed development both in relation to the mineral extraction areas, the processing areas and the flood defence improvement works areas. This will also include those located adjacent to local traffic routes both on and off the public highway.

Baseline noise monitoring will be carried out at locations representative of the NSRs identified in order to determine the existing noise climate. One location will be chosen to represent each main group of NSRs. Short-term surveys will be carried out at each representative receptor consisting of three, 15 minute samples across the working day.

Assessment Methodology

A quantitative assessment of the noise effects of the proposed development will be carried out based upon a SoundPLAN noise model which will include the significant noise generating items of plant and activities. The assessment criteria will be those contained in the nPPGM.

An assessment will then be carried out of the potential noise effects in accordance with the NPPF, nPPGM, and nPPGN. Noise from traffic generation on the public highway will be assessed using the guidance in the 'Design Manual for Roads and Bridges (DMRB) Vol 11, Section 3 Part 7' and the methodology contained in 'Calculation of Road Traffic Noise'.

Mitigation and Control Measures

Where necessary, appropriate mitigation measures such as bunds and methods of working will be included in the site design and their effects will be assessed.

Ecology

Policy and Guidance

The assessment will follow the standard Ecological Impact Assessment guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM), with possible reference also to BS42020:2013. The baseline position will be established through desk-based and field surveys, allowing the key ecological receptors and their sensitivity to be identified. Impacts on each will be assessed taking into account any avoidance, mitigation and compensation measures incorporated into the scheme design or proposed as part of implementation. Residual impacts will be identified, characterised and assessed in terms of significance at the relevant geographical scale, in accordance with the CIEEM approach. The conclusions of the impact assessment process will be considered against the relevant legal and policy background, including in terms of the extent to which the development delivers net loss or gain of biodiversity resources in accordance with the *National Planning Policy Framework, March 2012* (NPPF), and its supporting Practice Guidance including Circular 06/2005 as well as applicable minerals policy at local levels, and with reference to ancillary policy documents (such as county Biodiversity Strategies and/or Action Plans) as and where relevant. Legal considerations will be addressed with reference to key legislation in respect of protected sites and species, including (where relevant) the EC Habitats and Birds Directives, the Conservation of Habitats and Species Regulations 2010 (as amended), the Wildlife and Countryside Act 1981 (as amended), the Natural Environment and Rural Communities Act 2006 and other legislation as appropriate (e.g. the Hedgerows Regulations 2007 and the Protection of Badgers Act 1992).

Consultation

Depending upon the detail contained in the Scoping Opinion, Nottinghamshire County Council (as MPA) will be the primary point of contact to clarify and confirm any issues necessary to ensure agreement on all aspects prior to

finalisation of the assessment. Contact may also be made with other relevant stakeholders, including the LPA, Nottinghamshire Wildlife Trust and/or local interest groups where and as considered appropriate.

Baseline Conditions

Baseline information relating to the pre-existing ecological interest within the zone of potential influence of the proposals, including onsite and offsite ecological receptors will be gathered by the following survey work:

- A desk study exercise - to obtain relevant published and unpublished data on ecological resources on the site and in the surrounding area that may be held by conservation organisations, such as Nottinghamshire Biological and Geological Records Centre.
- 'Extended' Phase 1 habitat survey - to classify and map the habitats present on the site and compile representative species lists for each. Further detail (up to and including Phase 2/NVC level if and where required) will be provided on any habitat areas of greater interest. Each habitat will also be assessed for its potential to support protected species such as reptiles, with a particular search made for evidence of badgers, such as latrines, setts, runs, foraging pits, snagged hair and push-throughs.
- Faunal surveys - Further detail on the presence or likely absence of protected/notable species may then be obtained by detailed surveys during the appropriate season. At this stage, such surveys are considered likely to include;
 - Up to 3No. wintering bird surveys, across November to March
 - Up to 3No. breeding bird surveys, one each in April, May and June
 - Preliminary bat roost assessment of built structures within the site that would be directly affected, and if necessary further dusk emergence and/or dawn re-entry surveys
 - Up to 3No. dusk activity surveys of the habitats within the site, one to include a combined dawn survey

- Initial Habitat Suitability Index Assessment (HSI) of waterbodies within and in proximity to the site, to assess the scope for great crested newts to be present. Additional eDNA and/or overnight bottle trapping and torch surveys of any that have an HSI score of greater than 0.5.
- Other surveys as required if scope for additional species is identified on basis on the outcome of the surveys detailed above.

Scope of the Assessment

The potential impacts that will be assessed will include:

- Habitat loss from the phased stripping of topsoils, subsoils and overburden, and deposition associated with the construction of soil stores and bunds.
- Habitat losses and disturbance effects associated with any construction activities required
- Habitat change within the extraction site during the phased extraction of the mineral.
- Indirect effects on receptors adjacent to or off-site from noise or human disturbance, dust, hydrological and water quality effects during the operational and restoration phases.
- Compensatory effects and the scope for net-positive impacts arising from the restoration proposals

The scope for potential effects that are likely to be significant to be avoided, reduced/mitigated or compensated will form part of the detailed scheme design. The assessment will assess the extent to which this reduces the magnitude and significance of identified effects, and will provide an assessment of residual effects and whether these are significant or not at the appropriate geographical scale. The legal and policy implications of any significant residual effects will then be considered.

Soils and Agricultural Land Quality

A detailed Agricultural Land Classification (ALC) survey of the site will be carried out. This will determine the extent of the various land grades.

Recommendations will be made in respect of the storage and handling of soils and placement during the restoration process. Further recommendations will be made in respect of aftercare.

Hydrology and Hydrogeology

A baseline study of the geology, hydrogeology and hydrology of the site will be undertaken. Based on the results of the baseline study and the site design a qualitative assessment will be carried out of the impact on the hydrogeological and hydrological regime at and in the vicinity of the site as a result of the extraction of sand and gravel with subsequent restoration to wetland at approximately existing ground levels and to water-based restoration. Mitigation measures will be proposed as necessary to ameliorate any significant impacts identified and the residual impacts will be assessed.

The potential impacts of the proposed development on groundwater levels, groundwater flows, groundwater resources and flows in watercourses will be assessed. The impacts on water dependant features of ecological importance and archaeological features of importance which may be affected by changes in the hydrogeological or hydrological regime of the site will be assessed. A small portion of the site is located in the total catchment (Source Protection Zone 3) of a public water supply (PWS). The hydrogeological and hydrological study will include a qualitative assessment of the potential for the proposed mineral extraction to affect nearby water abstractions including the PWS. An assessment of settlement as a result of groundwater dewatering on

the buildings and other structures in the vicinity of the proposed extraction area will be carried out.

Flood risk

The majority of the site is located in Flood Zone 3. Flood Zone 3 comprises land having a 1 in 100 or greater annual probability of river flooding. Sand and gravel workings are classified as water compatible development and as such comprise appropriate development in Flood Zone 3 provided that there is no net loss of flood storage, water flows are not impeded and flood risk is not increased elsewhere. Although from the nature of sand and gravel extraction including water-based restoration there will be a reduced flood risk to the village of Shelford as a result of the development it is proposed as a positive benefit to existing residents that the standard of the defences around Shelford will be improved in order to bring them up to a standard to provide protection for at least a 1 in 100 year flood event taking into account climate change. Improvement to the flood defences around Shelford are not needed to mitigate flood risk from the proposed development.

A flood risk assessment will be prepared in general accordance with the National Planning Policy Framework and associated planning guidance notes. The flood risk assessment will include flood modelling as necessary to assess the potential impacts from the proposed development including restoration and the proposed improvements to flood defences around Shelford.

Cultural Heritage to include Heritage Assets and Archaeology

The proposed Site is located in the valley of the Trent, an archaeologically rich landscape. Sites and monuments of all periods are present in the vicinity of the Site and preservation can be good due to a protective blanket of alluvium that reduces the impact of ploughing.

An early map of 1609 includes the area of the proposed Site and on this is marked a "warrener's house" and a rabbit warren, both of which lie within the extraction area. However, these areas have been ploughed, so any evidence is likely to have been truncated to some extent. The 1609 map also shows the old course of the Trent. This is relevant to the restoration strategy, as the land within the extraction area is all flood plain of the Trent, and would originally have been on the west bank.

A scheduled monument, a Civil War gun battery, located 50m south west of St Peter and St Paul's Church, consists of earthworks facing westwards down Stoke Ferry Lane. The setting and context of this monument is important. The Church is a Grade II* listed building.

The proposed conveyor passes close to a scheduled group of cropmarks.

Given the potential archaeological significance of the proposed quarry and conveyor route, and the setting of nearby designated heritage assets, a thorough cultural heritage assessment will be carried out as part of the planning application process. This will include desk-based and field-based investigations.

The scope of work will be agreed with Notts CC Heritage and Archaeology Service and project designs will be submitted for their approval. The results of the desk and field-based evaluation will allow the significance of any archaeology within the planning application area to be quantified and a mitigation strategy to be designed. This could include preservation *in situ* of important sites, or archaeological excavation and recording to preserve by record less important sites.

The potential effects of the proposed extraction upon designated assets will be assessed, and the results will influence the working and restoration strategy.

Highways, Traffic and Public Rights of Way

Initial discussions with Highway Officers at Nottinghamshire County Council (NCC) have considered a number of different site access proposals for the Shelford West site. The key considerations that have been taken into account include road widths, junction mitigation, road safety, and the avoidance of operational traffic movements within the identified “Shelford and Radcliffe on Trent Environmental Weight Limit Area”, as identified on the URS Plan and as appended.

Having considered the options, NCC Highway Officers have confirmed their ‘in principle’ agreement to the form and location of the signalised site access junction from the A6097 Bridgford Street at a point approximately mid-way between the existing signalised junction of East Bridgford Road (to the south) and the crossroad junction of Main Road and Trent Lane (to the north), which is immediately south of the A6097 Bridgford Street bridge crossing of the River Trent.

The signalised junction is proposed to be set up on a “demand dependant” basis, which would help to reduce the overall impact on traffic using the A6097 Bridgford Street that is not associated with the development. In addition, it is acknowledged that the proposed site access junction would only be made available for use by traffic associated with the development proposals and at the end of the extraction period, the junction would be removed and the highway reinstated to the original layout.

An indicative layout of the proposed site access has been prepared and is presented on CCE Drawing B161/100 Rev A, as appended.

Baseline Information

An Automatic Traffic Counter (ATC) was placed on the A6097 Bridgford Street in the vicinity of the proposed site access junction and recorded two-way traffic flows, vehicle classifications, and speeds for a 7-day period from the 21st October 2014 to the 27th October 2014.

Details of the extent of Publicly Maintained Highway Land have been obtained from NCC in October 2014 and it is not considered that there would have been any material change to the extent of adopted highway since then.

It is proposed to obtain Road Traffic Accident Data, including Personal Injury Data and the associated severity of casualties for the length of the A6097 from the crossroads junction with Main Road and Trent Lane up to an including the junction with the A46. No further data is considered necessary as all operational traffic will be directed to the junction of the A6097 Bridgford Street with the A46.

Assessment Methodology

A Transport Assessment will consider the potential traffic impact associated with the development proposals. The transport assessment will be undertaken in accordance with the Department for Transport's *Guidance on Transport Assessment* published in March 2007.

The proposed site access junction will be modelled using the Industry Standard software LinSIG, which will assess the signalised junction for the year of opening 2016 and a 10-year future horizon of 2026, or for the full period that the development is proposed to be in operation, i.e. 14-year future horizon of 2030, which would tie in with the period of the proposed Minerals Local Plan period.

The design of the proposed site access junction will include an assessment of physical constraints at ground level, such as visibility, levels, and gradients on the approach to the A6097 from the application site. The design will be subject to a Stage 1 Road Safety Audit and associated Designer's Response.

It is not considered necessary to assess the potential impact of the traffic associated with the development proposals on the junction of the A6097 Bridgford Street with the A46, as the operational traffic is considered to use the Strategic Highway Network at the A46, regardless of where the material is excavated from.

Details of the use of the existing dock to transport material via the River Trent will also be set out within the Transport Assessment, as well as details of the proposed route of the conveyor from the Shelford West site to the processing plant. The conveyor is proposed to pass under Main Road to the north of the village of Shelford and an access track will be provided alongside the conveyor for maintenance and access for non-aggregate vehicles.

Public Rights of Way (PROW) information will be collected and assessed. Other topic areas such as Landscape will assess the impact of the development on the users of PROWs.

Socio Economics

The issue of impact on agriculture, mineral landbank and case of need together with job creation and preservation will be assessed.

5.0 Conclusions

The scale of the development is such that an Environmental Impact Assessment will be necessary.

Based on available information, it is proposed that detailed assessment work would be undertaken in respect of the following topic areas:

- Geology and Geotechnology
- Landscape and Visual Amenity
- Noise
- Climate and Air Quality
- Ecology
- Soils and Agricultural Land Quality
- Hydrology and Hydrogeology
- Cultural Heritage including Heritage Assets and Archaeology
- Highways, Traffic and Public Rights of Way
- Socio/Economics

The results of the assessment work would be presented in an Environmental Statement. It is anticipated that the Environmental Statement would include the following Sections/Chapters:

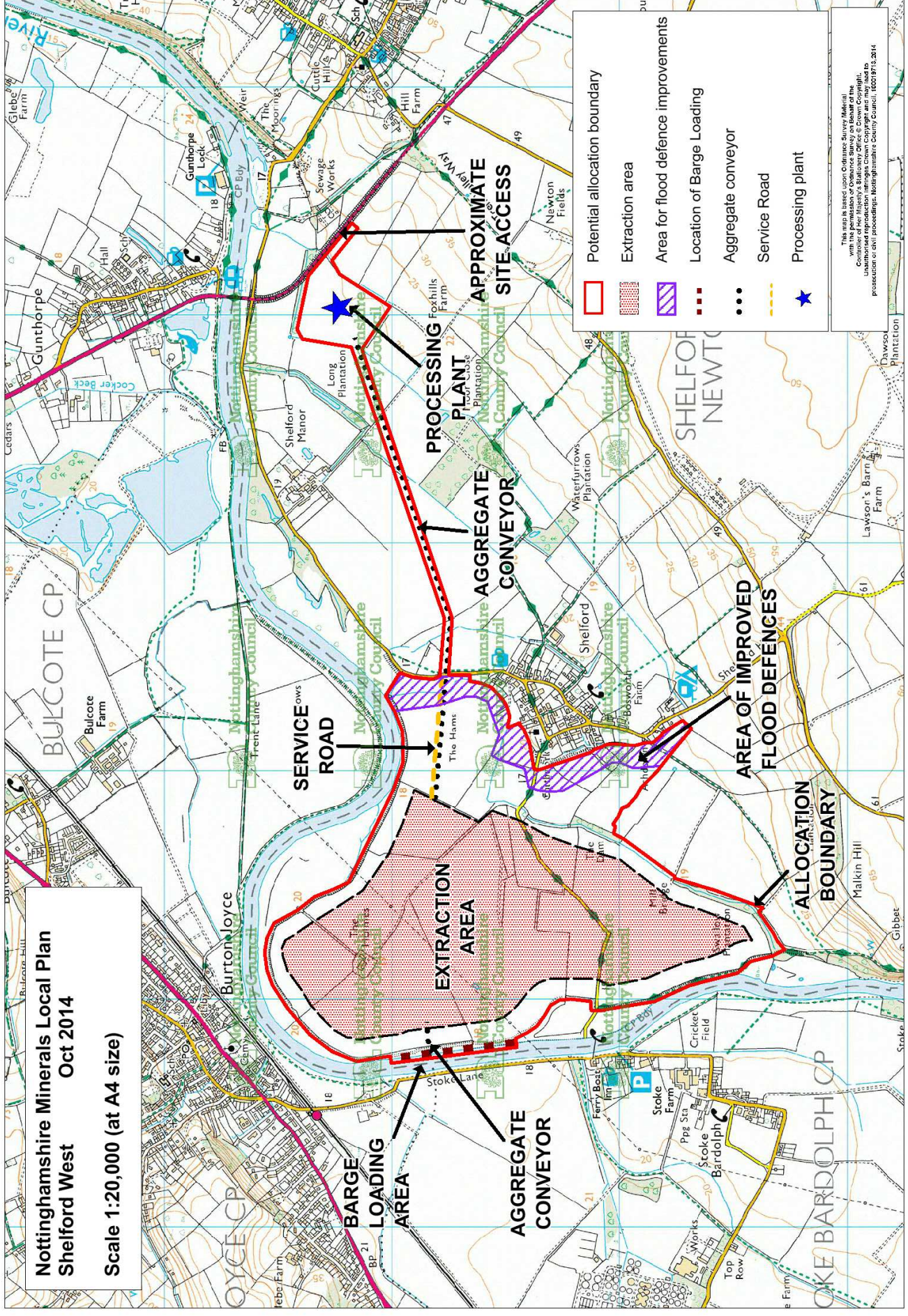
Introduction	General information on format and availability of the document and details of the assessment team.
EIA Process	Summary of the EIA process.
Project Design including Drawings	A full description of the site and the proposed development, including supporting plans. Consideration of alternatives.
Statement	This section will draw together the conclusions of

	the topic chapters and consider the inter topic cumulative impacts. Following consideration of mitigation the outstanding impacts will be evaluated and a balance made between those of a negative and those of a positive nature.
Geology	A borehole assessment of the site has been undertaken and this will be included within the ES.
Geotechnical Report	General slope stability and standoff from adjacent railway line.
Landscape and Visual Amenity	Results of the assessment work, including proposed mitigation.
Noise	Results of the assessment work, including proposed mitigation.
Climate and Air Quality	Results of the assessment work, including proposed mitigation.
Ecology	Results of a detailed desk study and full field surveys, and evaluation of the ecological resources, and potential impact, including proposed mitigation and enhancements.
Soils and Agricultural Land Quality	Results of the assessment work, including proposed mitigation.
Hydrology Hydrogeology and a Flood Risk Assessment	Results of the assessment work, including proposed mitigation.
Archaeology	Results of the assessment work, including

	proposed mitigation.
Heritage assets	Results of the assessment work, including proposed mitigation.
Highways, Traffic and Public Rights of Way	Results of the assessment work, including proposed mitigation.
Socio Economics	Commentary on the sites contribution towards the Countys mineral landbank and impact on employment and social well being together with impact on the agricultural holding.
Summary and Conclusion	A summary of each of the topic assessments and consideration of the overall balance of effects including cumulative impacts, proposed mitigation and residual impacts.
Non Technical Summary	

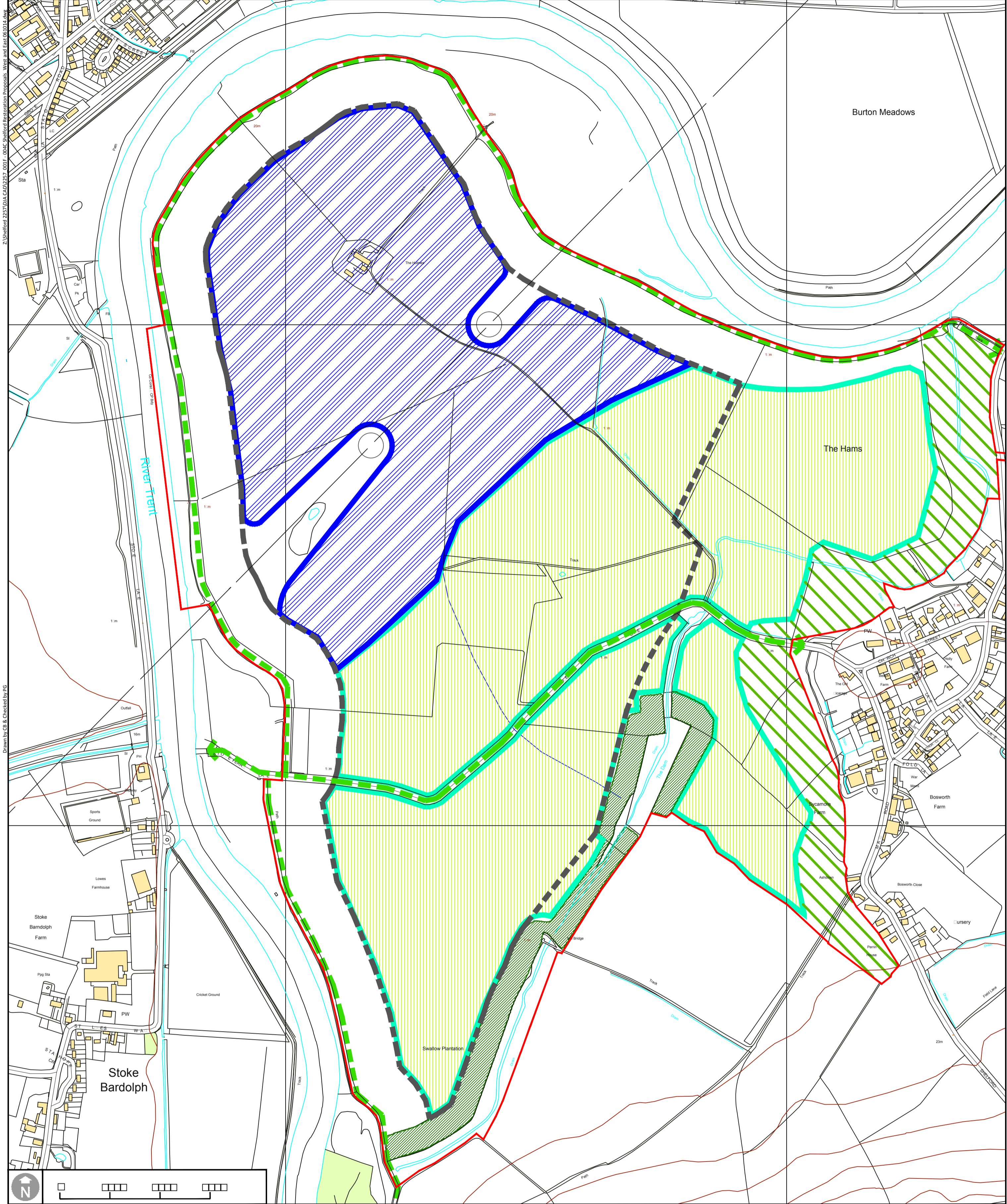
To conclude, an ES will be required to be submitted in respect of the development and it is proposed that the documents identified in the scoping section of the report will be produced. A formal request is now made for a screening opinion to confirm that an ES is required and scoping opinion to confirm that the information to be provided in the Environmental Statement, as set out above, to accompany an application for the proposed development.

Nottinghamshire Minerals Local Plan
Shelford West
Oct 2014
Scale 1:20,000 (at A4 size)




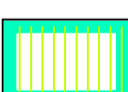
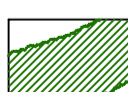
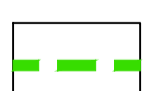
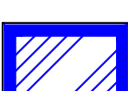

- Potential allocation boundary
- Extraction area
- Area for flood defence improvements
- Location of Barge Loading
- Aggregate conveyor
- Service Road
- Processing plant

The map is based on Ordnance Survey data with permission from the Controller of Her Majesty's Stationery Office. Copyright © Crown Copyright. Unauthorised reproduction in any form is prohibited. Nottinghamshire County Council, 10/09/14 2814



Z:\Sheffield\2257\001\001 - 0046 - Sheffield Restoration Proposals - West and East 06.10.14.dwg
 Drawn by CB & Checked by VG
 ©David Jarvis Associates 2014

KEY

 EXTRACTION BOUNDARY	 WETLAND	 CARR WOODLAND
 PUBLIC FOOTPATH	 OPEN WATER	 AREA FOR FLOOD DEFENCE IMPROVEMENTS

Rev	Date	Description
A	041213	EXTRACTION BOUNDARY ADDED
B	050914	AMENDMENTS TO COMMENTS FROM NOTTS CC
C	110914	AMENDMENTS TO CLIENT COMMENTS
D	300914	SCALE BAR CORRECTED
E	061014	HATCHING AMENDED

Client
BRETT AGGREGATES LTD

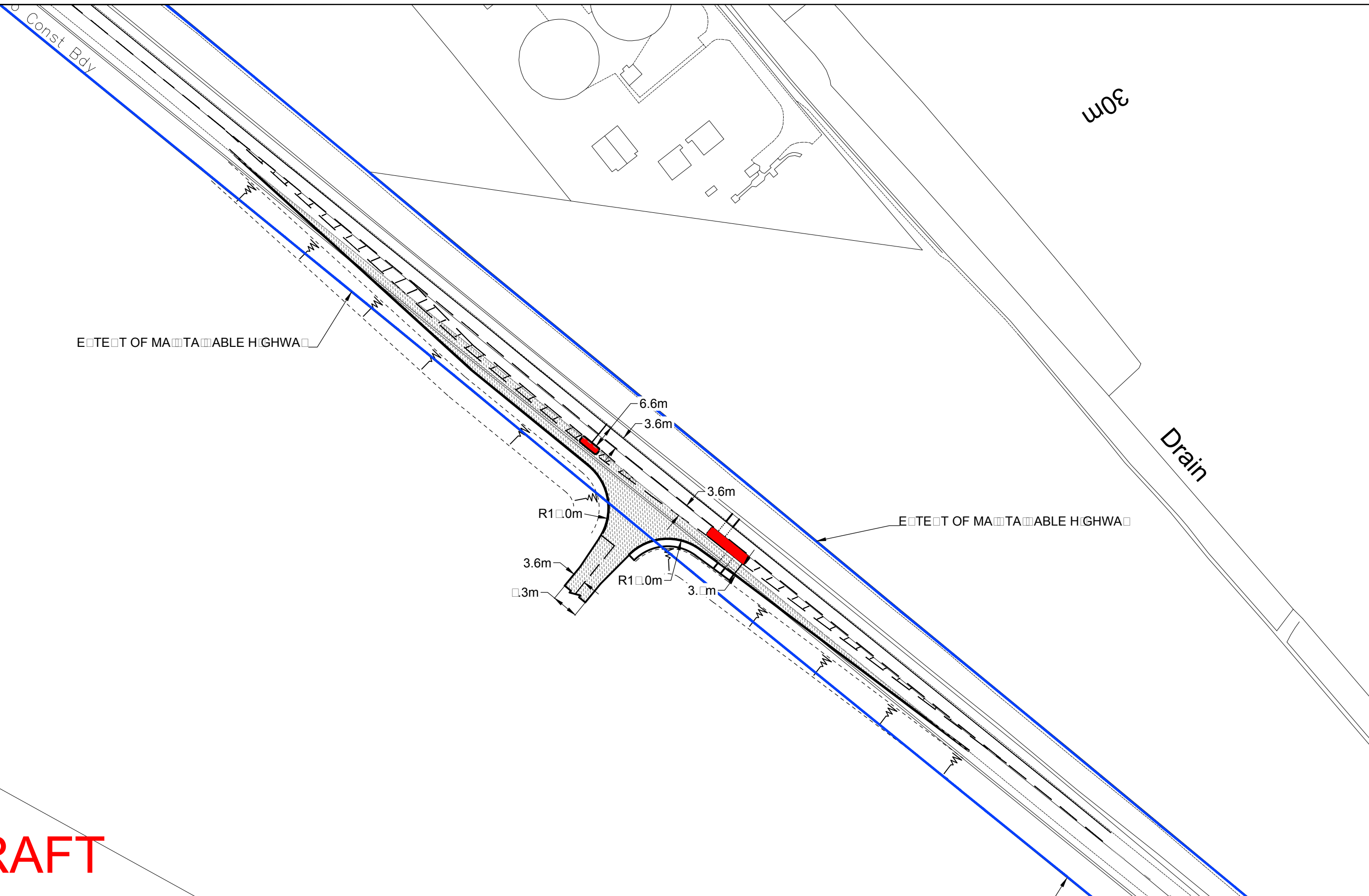
Project
SHELFORD

Drawing Title RESTORATION PROPOSALS - WEST		
Scale 1:5000	Sheet Size A2	Date DEC 2013
Drawing No. 2257/001		Revision F

Drawing Status
PLANNING

DAVID JARVIS ASSOCIATES

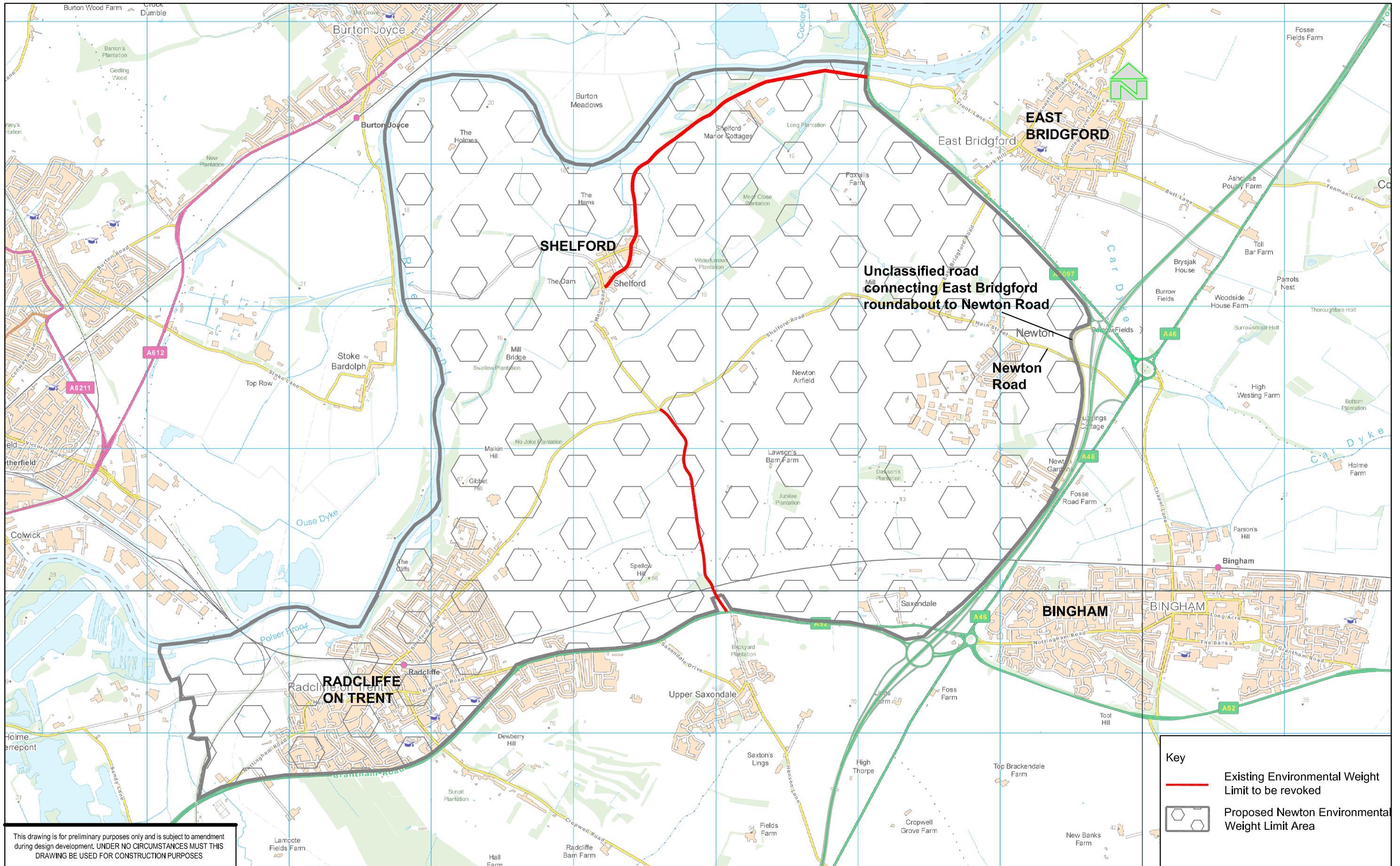
DAVID JARVIS ASSOCIATES LIMITED
 1 Tennyson Street Swindon Wiltshire SN1 5DT
 Tel: 01793 612173 Fax: 01793 613625
 Email: mail@davidjarvis.biz



DRAFT

PROJECT TITLE		CLIENT		DATE				Cannon Consulting Engineers Beacon House, Warwick Road, Beaconsfield, Bucks, HP2PE Tel: 44 (0)1638 800000 Fax: 44 (0)1494 600000 info@cannonce.co.uk www.cannonce.co.uk	
SHELFORD, WILTSHIRE		BRETT AGGREGATES		10/10/14				DRAWING NUMBER	
DRAWING TITLE		DESIGNED	DRAWN	CHECKED	PASSED	SCALE	ISSUE STATUS	B161 / 100	
PROPOSED SITE ACCESS		JOB	JOB	M	.	1:1000	PRELIMINARY	A	
REVISION	DESCRIPTION	CH	PA	DATE					
A	SITE ACCESS DETAILS UPDATED	JB	M	12.11.14					

NOTE THE PROPERTY OF THIS DRAWING AND DESIGN IS RESTED IN CANNON CONSULTING ENGINEERS AND MUST NOT BE COPIED OR REPRODUCED IN ANY WAY WITHOUT THEIR WRITTEN CONSENT



This drawing is for preliminary purposes only and is subject to amendment during design development. UNDER NO CIRCUMSTANCES MUST THIS DRAWING BE USED FOR CONSTRUCTION PURPOSES

Key

- Existing Environmental Weight Limit to be revoked
- Proposed Newton Environmental Weight Limit Area

Revision Details	By	Date	Suffix

Project Title	NCC ENVIRONMENTAL WEIGHT LIMIT PROGRAMME 2012-13
Client	NOTTINGHAMSHIRE COUNTY COUNCIL

Drawing Title	8192 NEWTON, SHELFORD AND RADCLIFFE ON TRENT AREA ENVIRONMENTAL WEIGHT LIMIT
---------------	--

Purpose of Issue				
CONSULTATION/ADVERTISING				
Designed	Drawn	Checked	Approved	Date
TF	TF	GB	GB	11/07/12
URS Internal Project No.		Suitability		
47062300				
Scale @ A3		Zone / Mileage		
1:25000				

This document has been prepared in accordance with the scope of URS' appointment with its client and is subject to the terms of that appointment. URS accepts no liability for any use of this document other than by its client and only for the purposes for which it was prepared and provided. Only written dimensions shall be used.
© URS Infrastructure & Environment UK Limited

Drawing Number	Rev
47062300.8192.400	

URS Infrastructure & Environment UK Limited
 12 Regan Way
 Chetwynd Business Park
 Chilwell
 01159077000
 01159077001
 www.ursglobal.com



This matter is being dealt with by:
Jonathan Smith
Reference: SC/3369
T 0115 9932580
E jonathan.smith@nottscc.gov.uk
W nottinghamshire.gov.uk

Jennifer Owen and Associates
Bargrove Farm
Folkstone
Kent
CT18 8BH

Dear Jennifer

23 November 2015

**Town and Country Planning (Environmental Impact Assessment) Regulations 2011
Regulation 13 – Request for a scoping opinion
Scoping request for the extraction of sand and gravel at Shelford**

I write with regards the above scoping request received by the Minerals Planning Authority (MPA) on 14 September 2015.

As you are aware, the Environmental Statement (ES) which should accompany any application for the above proposal is required to contain documentation which provides certain information for the purpose of assessing the likely impacts upon the environment arising from the development and operation of the proposed scheme. The specified information is prescribed by Part 1 of Schedule 4 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 (hereafter referred to as ‘the Regulations’), and includes:

- A description of the development proposed;
- A description of the physical characteristics of the development and the land-use requirements during the construction and operational phases;
- The main characteristics of the production processes;
- An estimation of the likely residues and emissions;
- An outline of the main alternatives that have been studied by the applicant and an indication of the main reasons for the applicant’s choice, taking into account the environmental effects;
- A description of the aspects of the environment likely to be significantly affected by the development;
- A description of the likely significant effects of the development on the environment;
- The measures envisaged to prevent, reduce and where possible offset any significant adverse effects on the environment;
- An indication of any difficulties encountered by the applicant in compiling the required information; and
- A non-technical summary.

In accordance with Regulation 13(6) of the Regulations, the County Council is required to take the following into account prior to adopting a scoping opinion:

- The specific characteristics of the particular development;
- The specific characteristics of the development of the type concerned; and
- The environmental features likely to be affected by the development.

/continued...

The specific characteristics of the particular development/the development of the type concerned

It is proposed to extract approximately 6.5 million tonnes of sand and gravel from a site extending to approximately 230 hectares. Following a six month period to set the site up, it is proposed to extract the mineral over a 14 year period at a rate of around 500,000 tonnes per annum. It would then take a further year to complete the restoration of the site.

The mineral extraction would take place from an area of land to the west of the village of Shelford and to the south and east of the River Trent. From there, it would be transported by conveyor to the processing area to the immediate west of the A6097, beyond which is the village of East Bridgford.

It is proposed to create a new access road onto the A6097 and the Scoping Report states that approximately 320,000 tonnes of processed mineral would leave the site by road using this access, whilst approximately 180,000 tonnes of processed mineral would leave the site by barge having been transported by conveyor from the processing area to a proposed barge loading facility on the River Trent to the immediate west of the extraction area. Minerals leaving the site by barge would be transported approximately 4.3 kilometres south west along the river to an existing facility at Colwick.

It is proposed to restore the site to a combination of wetland, open water and carr woodland, whilst it is also proposed to improve flood defences between the site and Shelford village.

The environmental features likely to be affected by the development

In accordance with the Government's new online Planning Practice Guidance, a number of organisations have been consulted for their expert advice regarding the likely environmental effects of the proposed development. Consultations have also taken place with specialists employed within the County Council. I have received responses from the following, copies of which are either enclosed or have been forwarded to you previously.

- Newark and Sherwood District Council
- Gedling Borough Council
- Shelford Parish Council
- Burton Joyce Parish Council
- Natural England
- Highways England
- Historic England
- Environment Agency
- Canal and River Trust
- Nottinghamshire Wildlife Trust
- Defence Infrastructure Organisation
- Shelford Against Gravel Extraction
- Officers from Nottinghamshire County Council regarding Nature Conservation, Countryside Access, Planning Policy, Built Heritage, Archaeology, Landscape, Highways, Noise, Flood Risk

Responses have not been received from Severn Trent Water, Western Power Distribution, National Grid, Nottingham Airport, Trent Valley Internal Drainage Board, Gunthorpe Parish Council, Bulcote Parish Council, Radcliffe on Trent Parish Council, Stoke Bardolph Parish Council, East Bridgford Parish Council, Rushcliffe Borough Council, The Ramblers' Association and Nottingham City Council. Should any additional responses be received, I shall forward them to you.

Comments in respect of the Scoping Report

In Section 5 of the Scoping Report, you have provided a list of receptors and aspects of the environment upon which the proposed development could have potential effects, along with a list of the main environmental considerations which would need to be addressed in the ES. These subjects are satisfactory and appear to cover all the relevant topics with the exception of a planning policy section (either within the ES or as a stand-alone document) and consideration of the cumulative impacts of the proposed development with other developments or planned developments in the area.

The ES should also include sections on any planning history of the site, a consideration of alternatives that have been studied, and an assessment of the proposed development against relevant planning policies. You should ensure that any application submitted has a stand-alone non-technical summary and, for the purpose of the statutory publicity the County Council would have to carry out on any application submitted, you should confirm the cost of obtaining a copy of the ES or the non-technical summary, either in paper or electronic format.

There are a number of issues that have been raised in the consultation exercise and which should be included in the ES. These are detailed below.

Highways

Whilst the general principal of a new access on the A6097 is deemed to be acceptable, this is subject to detailed design, safety audit and satisfactory proof being provided that its operation would not adversely affect the flow of traffic along the A6097.

A full Transport Assessment is proposed in support of the application, which would be produced in accordance with the Department for Transport's Guidance on Transport Assessment. This approach is welcomed and the assessment should consider a number of factors including access, trip generation (both HGV and staff journeys based on the proposed hours of operation and taking into account shift patterns), existing traffic conditions, highway safety and accident data. Given local concerns about the congested nature of the A6097 in the vicinity of the site, particular consideration should be given to the impact of the development along the A6097 corridor between the A46 and Lowdham roundabouts, with appropriate junction assessments being undertaken on the junctions contained therein. Clarification should be provided on the impacts of the proposed development on the new A46/A6097 roundabout.

Highways England recommends that the environmental impacts arising from any disruption during construction, traffic volume, composition or routing change and transport infrastructure modification be fully assessed and reported.

The proposed use of the River Trent to convey materials for processing is welcomed as it should reduce the need for road based transport. However, further details of this element of the proposal will need to be provided as part of the above assessment to ensure it does not simply result in additional traffic being generated elsewhere which adversely affects the road network remote from the site. 180,000 tonnes of minerals being barged to Colwick per annum equates to approximately 100 two-way movements per day in and out of the Colwick industrial estate. The impact of these movements on the surrounding junctions would need to be considered as part of the TA for the site.

Should some flexibility be required in respect of the amount of mineral that is proposed to be transported off site either directly by road using the proposed new access off the A6097, or by barge to Colwick and then by road, then this flexibility must be taken into account through the assessment of the 'worst case scenario' for each option, i.e. if it is anticipated that up to 400,000 tonnes of sand and gravel could conceivably be transported directly off site by road, with only 100,000 tonnes transported by barge, then the impact of the subsequent level of HGV traffic should be assessed.

Regarding the proposed barging of mineral along the River Trent, it should be noted that it is a designated commercial waterway (as far as Meadow Lane Lock in Nottingham) and so is a waterway principally available for the commercial carriage of freight. The Canal and River Trust is a registered charity and its charitable purposes include the promotion of sustainable development in the vicinity of inland waterways and in particular the promotion of sustainable means of achieving economic growth and regeneration. As part of this, the Trust works with commercial firms wishing to develop new freight services on the river. Any freight operations associated with the proposed development would be subject to compliance with the Trust's strict terms and conditions for the carriage of freight and freight vessels conditions which include navigation standards, health and safety requirements and maximum craft dimensions. The Trust recommends that the applicant liaises with them over any matters relating to freight movement on the river during the preparation of the ES.

In addition to assessing the impacts of the proposed development on highways capacity, environmental impacts arising from any disruption during construction, traffic volume, composition or routing change and transport infrastructure modification should be fully assessed and included. In particular, adverse changes to noise and air quality should be considered, including in relation to compliance with the European air quality limit values and/or in local authority designated Air Quality Management Areas (AQMAs).

Rights of Way

The Scoping Report states that 'A Public Right of Way between the village and the river crosses the site. The PROW will be diverted during extraction and then reinstated during restoration. A new footpath link will be provided alongside the River Trent as part of the development.'

I can confirm that the referenced public right of way is not a public right of way but is in fact adopted highway (Stoke Ferry Lane). If the proposed development is seeking to remove this section of highway, it would require a legal order from the Secretary of State for Transport and, in this case, would most likely require the Highway Rights to be extinguished via a stopping up order.

There are two ways to achieve this, namely:

- (a) Section 247 of the Town and Country Planning Act 1990 (as amended) allows for a public highway to be 'stopped up' to allow development to take place if it has received or may receive planning permission;
- (b) Sections 116 and 118 of the Highways Act 1980 allows for a public highway to be stopped up because it is no longer in use.

Both methods are subject to public consultation which would be outside any consultation requirements associated with a planning application. The onus would be on the developer to prove that the public highway is no longer required. In this respect, whilst the road is adopted highway and not a public right of way, pedestrians do have access to the public highway and it is understood that Stoke Ferry Lane is used by walkers to access Shelford Footpath Number 6 which, in conjunction with Shelford Footpath Number 1, provides a circular route to and from the village. The provisions under Section 247 of the Town and Country Planning Act can be done prior to planning permission being granted, thus providing a degree of certainty as to whether or not the order would be approved. The provisions under Sections 116 and 118 of the Highways Act require the final decision to be made in a Magistrates Court.

The line of the proposed conveyor would cross Shelford Footpath Number 5 and the ES should detail how the conveyor would cross the footpath without impacting on footpath users. With regards to the new footpath link alongside the River Trent, confirmation is sought as to whether this would be provided from the outset of the development or as part of the restoration proposals. If it is proposed to provide it from the outset, details of how this path would interact with the proposed barge loading facility should be detailed. Details should also be provided as to how this new

footpath would be signed and promoted, whether there would be a need for any structures such as stiles and gates on the path's route, and how it would be maintained in the long term, i.e. is it proposed to add the path to the definitive map.

The ES should consider whether views of the river from existing public rights of way are affected, and whether measures are required to mitigate any impacts on views of the river.

Natural England encourages any proposal to incorporate measures to help encourage people to access the countryside for quiet enjoyment. Measures such as reinstating existing footpaths together with the creation of new footpaths and bridleways are to be encouraged. Links to other green networks and, where appropriate, urban fringe areas should also be explored to help promote the creation of wider green infrastructure. Relevant aspects of local authority green infrastructure strategies should be incorporated where appropriate. You should also make reference to the County's Right of Way Improvement Plans (ROWIP) to identify public rights of way within or adjacent to the proposed site that should be maintained or enhanced.

Landscape and Visual Impacts

It is noted that Landscape and Visual impact Assessment (LIVA) would be submitted as part of the Environmental Statement and this would be undertaken in accordance with the third edition of the Guidelines for Landscape and Visual Assessment (GLIVA3), which is accepted as best practice.

The LVIA should include the following:

- Background legislation and guidance;
- Methodology;
- The landscape planning context;
- Baseline landscape assessment;
- The local landscape;
- Site description;
- Baseline visual assessment;
- Construction impacts;
- Operational impacts;
- Restoration proposals;
- Mitigation proposals;
- Residual impacts;
- Cumulative impacts;
- Summary of impacts.

Photomontages should also be produced as part of the application with reference to Advice Note 01/2011: Photography and photomontage in landscape and visual assessment.

As well as the documents listed in the Scoping Report, the baseline Landscape Character Assessment should also refer to the regional landscape character assessment published by Natural England in April 2010 – East Midlands Regional Landscape Character Assessment (EMRLCA). The restoration proposals should also refer to the species list for Trent Washlands, although Ash should not be included in species mixes at the present time due to the outbreak of *Chalara franxinea*.

Within the Greater Nottingham Landscape Character Assessment the site is located in Policy Zone 51 – Stoke Lock River Meadowlands which has a landscape action of 'Conserve and Create'.

The study area for the assessment of landscape impacts should be clearly defined, as well as the study area for the visual assessment and the cumulative landscape and visual impact assessment. There should be a clear justification for the choice of the size of the area.

With respect to the types of Landscape and Visual Impacts considered and duration, the amount of vegetation to be removed should be clearly defined and should be quantified either in the LVIA or

by reference to the ecological chapter of the ES. In particular, the amount of mature mixed species hedgerow to be removed should be quantified.

The proposed list of viewpoints has been considered and appears to be comprehensive, including views from the nearest residential receptors, public rights of way and prominent buildings. It is noted that a viewpoint from Holmes Farm in the centre of the application area is proposed and the ES should confirm if this residential property is to remain as a viable habitation or if it is to be demolished. If it is to be retained, this visual receptor would be highly important. The list of viewpoints has only been assessed as a desk based exercise at present and the final list should be agreed with the County Council's Landscape Team and the District Council, in advance of the submission of the application (see also Heritage comments below). Prior agreement would also be required as to which of the viewpoints would require full visualisations and the format in which these visualisations would be presented. Any viewpoints from public rights of way should be referenced by their reference number to prevent confusion. In addition to this, viewpoints should be considered in respect of the proposed improvements to the flood defences to the north and west of the village.

The effect of the proposal on the River Trent corridor and its users should be considered as part of the overall identification of the landscape and visual impacts of the development. Adverse impacts could affect the value of the river as a leisure, recreation and amenity resource, and this should be taken into account when identifying and quantifying impacts. Restoration proposals should also be assessed in terms of how far adverse impacts on the river arising from the development can be successfully mitigated or remediated once operations on site have ceased. Opportunities for enhancement of the river environment should also be considered as part of any restoration programme.

There are several organisations that have initiatives focussed on development adjacent to the River Trent. These include the RSPB 'Futurescapes' and historically the Trent Vale Landscape Project (Canals and Rivers Trust) and the 'OnTrent' initiative. The design, phasing, mitigation, restoration proposals and the long term management of the area should help to deliver some of the long term aims of these schemes as well as those in the relevant Habitat Action Plans in the Nottinghamshire Local Biodiversity Action Plan.

In response to comments from the Chair of Shelford Parish Council (and also committee member of Shelford Against Gravel Extraction), the County Council's Landscape Team notes that the use of a desk-based study for information collection is accepted as best practice, but this should be supported by a field-based survey to develop this information, something the applicant has confirmed they would do. Regarding the engagement of local people, this can be achieved via the consultation process on the planning application and pre-application consultation is encouraged, leading to the production of a Statement of Community Involvement to be included in any application submitted. Further details can be found at:

<http://www.nottinghamshire.gov.uk/planning-and-environment/minerals-and-waste-planning-policy/statement-of-community-involvement>

Natural England would wish to see details of local landscape character areas mapped at a scale appropriate to the development site as well as any relevant management plans or strategies pertaining to the area. The ES should include assessments of visual effects on the surrounding area and landscape together with any physical effects of the development, such as changes in topography.

The ES should include a full assessment of the potential impacts of the development on local landscape character using landscape assessment methodologies. Natural England encourages the use of Landscape Character Assessment (LCA), based on the good practice guidelines produced jointly by the Landscape Institute and Institute of Environmental Assessment in 2013. LCA provides a sound basis for guiding, informing and understanding the ability of any location to accommodate change and to make positive proposals for conserving, enhancing or regenerating character, as detailed proposals are developed.

Natural England supports the publication *Guidelines for Landscape and Visual Impact Assessment*, produced by the Landscape Institute and the Institute of Environmental Assessment and Management in 2013 (3rd edition). The methodology set out is almost universally used for landscape and visual impact assessment.

In order to foster high quality development that respects, maintains, or enhances, local landscape character and distinctiveness, Natural England encourages all new development to consider the character and distinctiveness of the area, with the siting and design of the proposed development reflecting local design characteristics and, wherever possible, using local materials. The Environmental Impact Assessment process should detail the measures to be taken to ensure the design of the proposed development would be of a high standard, as well as providing details of layout alternatives together with justification of the selected option in terms of landscape impact and benefit.

The assessment should also include the cumulative effect of the development with other relevant existing or proposed developments in the area. In this context Natural England advises that the cumulative impact assessment should include other proposals currently at Scoping stage. Due to the overlapping timescale of their progress through the planning system, cumulative impact of the proposed development with those proposals currently at scoping stage would be likely to be a material consideration at the time of determination of the planning application.

The assessment should refer to the relevant National Character Areas which can be found on Natural England's website. Links for Landscape Character Assessment at a local level are also available on the same page.

Flood Risk

The Environment Agency (EA) has responded to the scoping exercise by stating that the proposed development must not increase flood risk either during or after the works. Any proposed works that interact with the river and its floodplain would need to be hydraulically modelled to establish the likely impacts of any changes made. This should include but should not be limited to the phased workings on site, including locations and implications of temporary storage heaps in the floodplain, and the proposed route of the conveyor belt built largely across the floodplain.

The County Council as Lead Local Flood Authority states that the application should include a comprehensive flood risk assessment and drainage strategy to demonstrate how the potential flood risk from the site to the surroundings would be managed. The drainage system should infiltrate water where practicable and otherwise should manage all discharges from the site to the greenfield rate Q_{bar} (approximately equivalent to a 1:2.3 year event). Excess flows should be stored on the site until they can be discharged.

With regards to the proposed restoration of the site to a nature conservation area, the EA query the need for retaining and maintaining a flood embankment around pond and wetland areas. As such, as part of the modelling work being undertaken, the EA suggest that the ES models a scenario where the defences are breached or removed, considering both the upstream and downstream impacts in terms of flood risk.

The EA notes the intention to raise defences at Shelford to a 1 in 100 year including climate change standard of protection and more details on this element of the proposed development are requested. Any works carried out on or around a watercourse or flood defence may need EA consent, or alternatively the County Council or Trent Valley Internal Drainage Board for works on ordinary watercourses. In addition to the scope outlined in the Scoping Report, details of the surface water management plans during works on site, including any discharge consents that may be required, should be included. The site lies on alluvium over the Gunthorpe Mudstone which are classified as secondary A and B aquifers respectively under the EA's Groundwater Protection, Policy and Practice and the Water Framework Directive. The report states that mineral extraction would be below the upper limit of the water table so it is assumed that dewatering would take place. The Scoping Report mentions that a baseline study of the hydrogeological regime would be

included in the ES, followed by a qualitative assessment of impacts on local hydrogeology. This assessment should give consideration to potential effects to surrounding land and property from dewatering. The hydrogeological assessment should be detailed to ensure that there would be no adverse impacts on any groundwater dependent receptors. EA Science Report SC040020/SR1 'Hydrogeological impact appraisal for de-watering abstractions' provides guidance on how to assess the hydrogeological impact of groundwater abstractions in connection with dewatering operations at quarries, mines and engineering works.

Should the site require dewatering, the exemption for dewatering would be removed under the Water Act 2003. When this happens any new abstraction for dewatering greater than 20 cubic metres per day would require a transfer licence. This has not yet been implemented but is something that the applicant should be aware of as this is likely to be an issue during the life span of anticipated extraction at the quarry. The protection and enhancement of groundwater via the planning regime is key to providing improvements to the aquatic environment and protecting water resources for future use.

The EA has been tasked with implementing the Water Framework Directive. Under this legislation, the environmental objectives for groundwater and surface water bodies include:

- To prevent deterioration in the status of water bodies, improve their ecological and chemical status and prevent further pollution;
- Achieve good quantitative and good groundwater chemical status by 2015 in all water bodies. For a groundwater water body to be in overall 'good' status, both its quantitative and chemical status must be 'good';
- Implement actions to reverse any significant and sustained upward trends in pollutant concentrations in groundwater;
- Comply with the objectives and standards for protected areas where relevant;
- Hazardous substances **must** be prevented from entry into groundwater and the entry into groundwater of all other pollutants must be limited to prevent pollution;
- Water supply and the disposal of sewage and foul water from any site should be discussed with the relevant water company and the EA to ensure no deterioration of surface water or groundwater quality.

As such it would be likely that the EA would request pollution prevention and control measures to be used at the site.

Ecology

The following information should be provided as part of any ES submitted in support of any planning application, in accordance with '*Guidelines for Ecological Impact Assessment in the United Kingdom*' (2006) produced by IEEM;

A desktop survey for existing ecological data should be undertaken, covering the site and surrounding area (within a 2km buffer of the scheme). This should include:

- Statutorily designated sites;
- Non-statutorily designated sites;
- Protected species;
- Other notable species.

This should be undertaken in consultation with:

- Nottinghamshire Biological and Geological Records Centre;
- County Mammal Recorder (c/o Nottinghamshire Wildlife Trust);
- Other recorders/recording schemes as appropriate;
- Online sources (e.g. National Biodiversity Network);
- Other site-specific reports, surveys and records if available.

An Extended Phase 1 Habitat Survey should be carried out within the scheme area by a suitably qualified ecologist, following standard methodologies. This should map habitats and indicate the locations of notable features and signs of (or potential for) protected species.

During the Extended Phase 1 Survey records should additionally be made of:

- Species of principle importance for the conservation of biodiversity in England (as listed in section 41 of the Natural Environment and Rural Communities Act 2006);
- Species listed in the Local Biodiversity Action Plan (LBAP) for Nottinghamshire;
- If present, a Hedgerow Evaluation and Grading Survey.

Targeted surveys, undertaken at an appropriate time of year by suitably qualified ecologists, following standard methodologies, and covering a survey area appropriate to the species/species group in question, are likely to be necessary for:

- Birds (breeding and wintering) – it is noted that three wintering bird surveys are proposed between November and March. However, it is recommended that monthly surveys are carried out between November and March inclusive;
- Badgers – surveys of the whole site and adjacent land (up to 250m) for field signs and setts;
- Amphibians – surveys of all waterbodies on or within 250m of the site boundary for great crested newts and also of potential hibernacula and other over-wintering habitat. Aquatic surveys to include torching and netting as appropriate. Consideration also needs to be given to the possible presence of other amphibians such as common toad;
- Bats (roosting and foraging/commuting) – survey of all possible structures that may support roosts, such as buildings, culverts and adits, including both day time visual inspections and evening emergence surveys. If potential tree roosts or underground structures are to be lost, a dawn swarming survey should be undertaken. Activity surveys should be carried out across the site in accordance with national guidelines;
- Water voles surveys of all suitable habitat, including all ditches, watercourses and ponds;
- Otters (if suitable habitat is present).

Other surveys, such as for reptiles (potentially grass snakes, common lizards and slow worms (depending on the results of the Phase I survey), to include the use of hand searching and refugia); and invertebrates (identification of habitats of potential value for invertebrates, followed by surveys for key groups eg. ground beetles, spiders, dead wood specialists etc. as appropriate), may be necessary following the results of the Extended Phase 1 Survey. The survey area should cover both the proposed extraction site, and the conveyor run and processing plant site.

A description should be made of the site, covering:

- Habitats and species;
- Ecosystem structures and functioning;
- Landscape features of major importance for wildlife;
- Hydrology issues.

An evaluation should be made of receptors affected by the scheme, with reference to relevant legislation, policy, Section 41 lists, the Nottinghamshire LBAP, Red Lists and other relevant documents, covering:

- Designated sites;
- Habitats;
- Species.

An assessment should be made of the impacts of the scheme on features of ecological value at the site or in the surrounding area. This should consider the magnitude and direction of impacts; whether impacts are direct or indirect (taking into account issues such as hydrological/hydrogeological, noise, dust, human disturbance of fauna); impacts arising during

construction and operational phases; the sensitivity of the receptors; and cumulative impacts with other developments schemes or projects in the area.

Details must be provided showing how any negative impacts arising from the development would be avoided, mitigated against or compensated for (in that order), with an assessment of any residual impacts (be they positive or negative in nature) remaining after such measures have been implemented.

Opportunities for significant biodiversity enhancements must be considered, and should be quantified with reference to targets in the LBAP. In particular, the site provides opportunities to create extensive areas of wetland habitat, including reedbed, floodplain grazing marsh, and marsh and swamp, as well as other features such as lowland fen, wet woodland and ponds (by BAP/Sn 41 definition less than two hectares in size, but also including smaller ones of less than 300 square metres which are more suitable for amphibians and are a very high priority in the county). Restoration should seek to maximise the extent of target habitat(s) and avoid habitat packing, where small areas of lots of habitats are packed into the site, and priority should be given to wetland habitats. Details of the proposed habitats in terms of the rationale behind their choice, their intended composition and the target habitat (preferably using the National Vegetation Classification as a descriptive tool) should be provided along with details of the long-term management proposed.

In addition, being located within a meander loop of the River Trent, the site presents an opportunity for reconnection of the site (or part thereof) with the river floodplain, which could be achieved by realigning the existing floodbank, to provide nature conservation, flood storage and recreational/tourism benefits. Obviously, such proposals would need to be very carefully considered, but could potentially involve:

- A switching of the broad concept illustrated on the 'Restoration Proposals – West' plan, whereby wetland habitat (wet grassland and reedbed etc.) is restored to the north (outwith a realigned floodbank), and any open water that may be necessary is created to the south (within a realigned floodbank), noting that large bodies of open water are not a priority habitat (given the number that already exist in the River Trent floodplain in Nottinghamshire) and that proposals seeking to provide such habitat as part of the site's restoration should be avoided as far as possible;
- The creation of a braided channel with exposed river gravels (see details provided in the County Council's Nature Conservation Officer's response), and to include the provision of a significant area of riparian habitat adjacent to the River Trent, such as backwaters, large reedbeds and connecting channels to the proposed wetland habitats; habitats which are connected to the River Trent in this way would act to provide increased habitat for eels, coarse fish, wetland birds and riparian mammals such as otter and water vole and significantly increase the biodiversity value of the site;
- The provision of improved access for anglers, along with walkers and birdwatchers, although access to the site should be carefully planned and managed to ensure there is no detrimental impact to any newly created and sensitive habitats.

The England Biodiversity Strategy published by Defra establishes principles for the consideration of biodiversity and the effects of climate change. The ES should reflect these principles and identify how the development's effects on the natural environment will be influenced by climate change, and how ecological networks will be maintained. The NPPF requires that the planning system should contribute to the enhancement of the natural environment 'by establishing coherent ecological networks that are more resilient to current and future pressures' (NPPF Para 109), which should be demonstrated through the ES.

The restoration proposals have the potential to deliver substantial habitat creation with significant improvements to biodiversity and green infrastructure. Multi-functional green infrastructure can perform a range of functions including improved flood risk management, provision of accessible green space, climate change adaptation and biodiversity enhancement.

Natural England is aware of the wider aims and objectives for landscape-scale wetland habitat creation through mineral site restoration in the Trent and Tame River Valleys and hopes the restoration proposals for this site would be informed by and contribute to the wider vision for landscape scale restoration in the Trent Valley.

It is requested that the applicant enters into pre-application dialogue with the EA, Nottinghamshire Wildlife Trust (NWT) and the County Council's Nature Conservation Officer (and any other relevant parties) to explore such opportunities.

Heritage

The Cultural Heritage Assessment should include a full search of the Nottinghamshire Historic Environment Record to include Designated and Non-Designated Heritage Assets. The significance of these assets should be established with regard given to the setting of assets including views to, from and between, in addition to the contribution settings make to the significance of the asset. This work should be guided by Historic England advice found in Historic Environment Good Practice Advice in Planning Note 3 to ensure compliance with the requirements of the National Planning Policy Framework (NPPF).

Designated assets should be used as receptors in the LVIA and an additional viewpoint from Bulcote Conservation Area, in particular the elevated position of Holy Trinity Church, in addition to one of the conveyor and processing plant from Shelford Manor would be of benefit. In any event, the final viewpoints to be used should be agreed with the County Council's Historic Buildings and Archaeology Officers (see also Landscape comments above).

The County Council's Archaeologist considers the proposals for dealing with the archaeological potential of the site to be basic. In an area of high fluvial volatility such as this site there will potentially be well preserved archaeological deposits buried on, within and under alluvial deposits, and it is strongly recommend that a thorough consideration of the sub-surface topography of the site is provided through a programme of augering, testpitting, etc, which needs to be undertaken by someone well used to the vagaries of the Trent floodplain. A developed deposit model for the site would be essential to identify areas of potentially deep archaeological remains. The kinds of finds expected could involve water logged deposits such as boats, fish weirs, human remains, etc, potentially well-preserved and waterlogged remains of high significance. This work would need to go hand in hand with a thorough programme of archaeological evaluation to consider more shallow archaeology, which would probably need to be headed up by appropriate geophysical investigations capable of feeding into both lines of research. The programme of archaeological evaluation required to provide the level of information necessary to make an informed decision would be intensive and require considerable appropriate expertise and experience. The potential for areas to need preservation in situ is acknowledged and welcomed.

Historic England considers that the proximity of the proposed quarry and conveyor structures etc. to scheduled monuments, listed buildings, a conservation area and the high archaeological potential of the site as a whole (as demonstrated on the County Environment Record) means that it is likely that there would be a significant environmental effect upon the historic environment.

The breadth and complexity of archaeological and historic asset setting issues require a sound evidence base to address the requirements of the NPPF and the 1990 Listed Buildings and Conservation Areas Act, through a structured and detailed assessment and investigation process. Historic England anticipates this to include (but not be limited to) staged pre-determination archaeological survey, geophysical survey, trial excavation and deposit modelling, all with reference to the Historic Environment Record and the 2012 Research Agenda and Strategy for the Historic Environment of the East Midlands, alongside the detailed advice of the County Archaeologist. The high potential for undiscovered remains of national archaeological importance in the Trent Valley is well demonstrated in particular in relation to waterlogged remains and artefacts in former channels. There is also potential for Civil War related features and scatters. A robust understanding of setting impacts upon the significance of designated heritage assets is vital,

and in this respect you are again recommended to refer to the Historic Environment – Good Practice Advice Note 3 ‘Setting of Heritage Assets’.

Historic England has also referenced information they provided to the County Council in December 2014 in respect of options for the Minerals Local Plan which stated:

“[W]e are concerned that the site may impact upon a large number of heritage assets including two scheduled monuments, Grade II* Church of St Peter and St Paul and assets at Shelford Manor, including the grade II* Manor house itself. There is also potential for non-designated archaeology in the extraction site, along the length of the conveyor belt and within the site of the processing plant. Specifically, we are concerned that the siting of the processing plant will affect non-designated archaeology. In addition, there may be impacts upon Shelford Manor relating to visual impacts as well as impacts from noise, dust and vibration.

The conveyor belt also runs along the corner of the southern tip of the scheduled monument, and forms a long horizontal break between Shelford Manor and the village of Shelford. While we note that this is to be set into the ground, we are concerned at not only the impact of this relating to archaeology and setting (again including impacts from noise, dust and vibration), but also other issues relating to requirements for access and maintenance, as well as potential for the need for this to be fenced for safety and security reasons.

The extraction area itself may affect the setting of assets across the River Trent at Burton Joyce as well as there being significant potential to affect non-designated archaeology.”

The above comments should be taken into consideration in the preparation of any ES.

The Canal and River Trust considers that part of the character of the river corridor, and thus its attraction as a leisure, recreation and amenity resource, comes from its historic interest and the archaeological and heritage assets found in close proximity to it. It is therefore important to consider the overall effect of development on the cultural and heritage significance of the river corridor, and to seek to avoid adverse impacts wherever possible.

Soils

Impacts from the development should be considered in light of the Government's policy for the protection of the best and most versatile (BMV) agricultural land as set out in paragraph 112 of the NPPF. We also recommend that soils should be considered under a more general heading of sustainable use of land and the ecosystem services they provide as a natural resource in line with paragraph 109 of the NPPF.

Soil is a finite resource that fulfils many important functions and services (ecosystem services) for society, for example as a growing medium for food, timber and other crops, as a store for carbon and water, as a reservoir of biodiversity and as a buffer against pollution. It is therefore important that the soil resources are protected and used sustainably. The following issues should therefore be considered in detail as part of the Environmental Statement:

- The degree to which soils would be disturbed/harmed as part of this development and whether any ‘best and most versatile’ agricultural land would be affected;
- An agricultural land classification and soil survey of the land should be undertaken, normally at a detailed level (eg one auger boring per hectare supported by pits dug in each main soil type), to confirm the soil physical characteristics of the full depth of soil resource ie 1.2 metres (for further information on the availability of existing agricultural land classification (ALC) information see www.magic.gov.uk. Natural England's Technical Information Note 049 - Agricultural Land Classification: Protecting the Best and Most Versatile Agricultural Land also contains useful explanatory information);
- Proposals for handling different types of topsoil and subsoil and the storage of soils and their management whilst in store. Reference could usefully be made to MAFF's Good Practice Guide for Handling Soils which comprises separate sections, describing the typical choice of

machinery and method of their use for handling soils at various phases. The techniques described by Sheets 1-4 are recommended for the successful reinstatement of higher quality soils.

- The method of assessing whether soils are in a suitably dry condition to be handled (ie dry and friable), and the avoidance of soil handling, trafficking and cultivation during the wetter winter period;
- A description of the proposed depths and soil types of the restored soil profiles; normally to an overall depth of 1.2 metres over an evenly graded overburden layer;
- The effects on land drainage, agricultural access and water supplies, including other agricultural land in the vicinity;
- The impacts of the development on farm structure and viability, and on other established rural land use and interests, both during the site working period and following its reclamation;
- A detailed Restoration Plan illustrating the restored landform and the proposed afteruses, together with details of surface features, water bodies and the availability of outfalls to accommodate future drainage requirements.

Further relevant guidance is also contained in the Defra Guidance for Successful Restoration of Mineral and Waste Sites.

Air Quality

At the time of issuing this scoping opinion, I have not received a response from Rushcliffe Borough Council and in particular their Environmental Health Officer. As soon as I receive a response from them, I shall forward any supplementary information to you which should be read alongside this scoping opinion.

Regarding the comments in the scoping report on the movement of sand and gravel by barge, any assessment of the benefits to air quality that might materialise as a result of this should take into account any flexibility that might be required between HGV and barge transportation, as detailed in the Highways comments above.

Highways England recommends that any adverse change to air quality should be considered, including in relation to compliance with the European air quality limit values and/or in local authority designated Air Quality Management Areas (AQMAs).

Natural England has commented that air quality in the UK has improved over recent decades but air pollution remains a significant issue; for example over 97% of sensitive habitat area in England is predicted to exceed the critical loads for ecosystem protection from atmospheric nitrogen deposition (England Biodiversity Strategy, Defra 2011). A priority action in the England Biodiversity Strategy is to reduce air pollution impacts on biodiversity. The planning system plays a key role in determining the location of developments which may give rise to pollution, either directly or from traffic generation, and hence planning decisions can have a significant impact on the quality of air, water and land. The assessment should take account of the risks of air pollution and how these can be managed or reduced. Further information on air pollution impacts and the sensitivity of different habitats/designated sites can be found on the Air Pollution Information System (www.apis.ac.uk). Further information on air pollution modelling and assessment can be found on the Environment Agency website.

The Canal and River Trust notes that the report indicates that human receptors within 350m of the site boundary will be considered in terms of amenity impacts, and any sensitive receptors within 1000m of site activities will be considered in terms of human health impacts from particulate matter. The Canal and River Trust advises that, in identifying receptors, consideration should be given to people using the river, whether boaters, anglers or walkers alongside the river, and any adverse impacts on such users should be identified and assessed.

Noise

The County Council's Noise Engineer is satisfied with the proposed approach for assessing the noise impacts of the proposed development. However, you should contact him to agree the details of the methodology for assessing background noise levels and to agree the sensitive receptors to be included.

The Canal and River Trust state that the ES should consider whether or not there are likely to be noise impacts on users of the river, and if so, it should identify and assess those impacts and include consideration of mitigation measures if required. Adverse impacts could affect the value of the river as a leisure, recreation and amenity resource, and this should be taken into account when identifying and quantifying impacts.

Any operations that might need to take place 24 hours a day, such as the use of diesel pumps or generators, should be assessed against relevant night-time noise criteria.

Cumulative impacts

Schedule 4 of the Regulations requires the ES to include a description of the likely significant effects of the development on the environment, including any cumulative effects. A full consideration of the implications of the scheme as a whole, including all supporting infrastructure, should be included in the ES. The ES should include an impact assessment to identify, describe and evaluate the effects that are likely to result from the project in combination with other projects and activities that are being, have been or will be carried out. The following types of projects should be included in such an assessment, (subject to available information):

- existing completed projects;
- approved but uncompleted projects;
- ongoing activities;
- plans or projects for which an application has been made and which are under consideration by the consenting authorities; and
- plans and projects which are reasonably foreseeable, ie projects for which an application has not yet been submitted, but which are likely to progress before completion of the development and for which sufficient information is available to assess the likelihood of cumulative and in-combination effects.

Planning Policy

The ES, or an accompanying stand-alone statement, should consider and assess the proposed development against relevant policies in the development plan and in particular the adopted Nottinghamshire Minerals Local Plan and the emerging Nottinghamshire Minerals Local Plan. In addition to this, individual chapters in the ES should include details of the relevant development plan policies and an assessment of the proposed development against these policies.

The emerging Minerals Local Plan is based on the most recent national guidance set out in the NPPF and the National Planning Practice Guidance (NPPG). The policies that should be considered at this stage are included in Chapter 3 - Strategic Policies and Chapter 5 - Development Management policies. A number of draft policies cover an additional range of topics compared to the existing adopted local plan that are relevant to the application.

In line with the draft policy SP3 – Biodiversity led restoration, any application should seek to maximise the biodiversity gains in accordance with the targets and opportunities identified in the Nottinghamshire Local Biodiversity Action Plan and Biodiversity Opportunity mapping project. The site development brief included as part of the Preferred Approach - Additional Consultation on Shelford West identifies the priority habitats suitable for the area.

Given the proximity of the proposal to the River Trent, any application should explore opportunities to incorporate flood risk reduction measures as part of the restoration proposals. This would not only benefit flood risk reduction in the area but could also enable habitat creation and Water Framework Directive improvements. Opportunities could include flood plain reconnection or river bank realignment. These issues are referenced in draft policy DM2: Water resources and flood risk and are also covered in the ecology section of this scoping opinion.

The Minerals Local Plan Preferred Approach consultation was undertaken between October and December 2013 with an additional stage of consultation on sand and gravel provision undertaken between May and July 2014. A further consultation on a specific sand and gravel site at Shelford was undertaken in October 2014. The Minerals Local Plan Preferred Approach consultation document included draft strategic and development management policies and draft site specific allocations that in principle are suitable to meet future mineral demand. It is worth noting that at this stage of plan preparation the Shelford West proposal is not included as a potential site allocation.

The next stage in the production of the Minerals Local Plan will be the Submission Draft consultation document that will set out the County Council's final set of policies and site specific allocations. At the present time, this document is scheduled to be taken to Environment and Sustainability Committee and Full Council in January 2017. If the document is approved it will be published for consultation in late January or early February.

The sand and gravel landbank as of December 2013 (the latest published figures available) stood at 7.95 years, above the minimum 7 years as set out in the Minerals Local Plan and the NPPF. Since this time, additional sand and gravel reserves in the county have been granted planning permission and an updated landbank figure for December 2014 should be made public in the New Year. You should contact the County Council's Planning Policy Team on this matter to ensure any submitted application includes the most up-to-date information on the landbank.

Consideration of alternatives

You should be aware that it is now a statutory requirement to include in an ES a description of the environmental impacts of alternatives studied, leading to a justification for the proposed development chosen. This allows applicants to demonstrate that the environmental impacts of alternatives have been considered as an integral part of the design process.

The alternatives that require consideration include alternative sites, alternative site layouts, alternative processes, alternative means of access to the site, and alternative phases of the proposed development. It should also include the "do nothing" option. If no alternative sites are considered, the reasons for this should be explained in the ES.

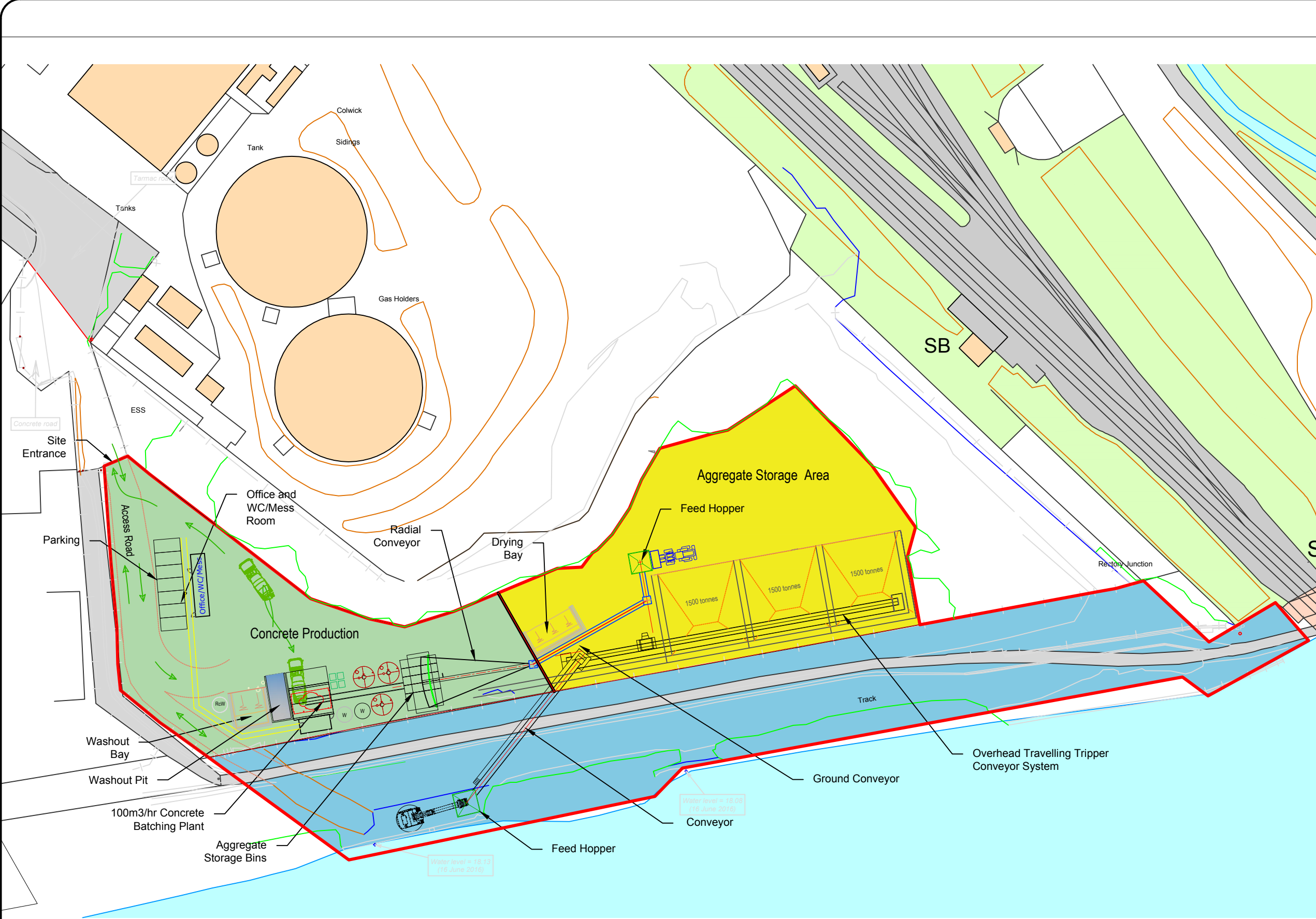
It is the County Council's formal opinion that an Environmental Statement accompanying a planning application for sand and gravel extraction at Shelford should meet the requirements of Schedule 4, Part 1 of the Town and Country Planning (Environmental Impact Assessment) Regulations 2011 and also include information, assessment and analysis based on the scoping opinion set out above, on which additional points of detail are set out in the attached correspondence.

Should you wish to discuss any of the above matters further please do not hesitate to contact me on the above number.

Yours faithfully



Jonathan Smith
Team Manager, Development Management
cc Rushcliffe Borough Council



General Notes

— Revised Lease Boundary [0.9 Ha]

Please note, this plan is an indicative representation only.

- Area 1 - Concrete Production 0.24 Ha.
- Area 2 - Aggregate Storage/Distribution 0.27 Ha.
- Area 3 - Bund & Riverside Area [inc wharf] 0.39 Ha.

Revision/Date	Revision/Notes

Brett Aggregates Limited
 Brett House, Bysing Wood Rd
 Faversham, Kent, ME13 7UD
 Tel: 01795 594000 - Fax: 01795 594027
 info@brett.co.uk

Company/ Site Location			Colwick Sidings								
Drawing Title						Site Operational Areas [Reduced Lease Area]					
Drawing No		NCA		Revision No				Paper Size		A3	
Control Status		CONTROLLED		Scale		1:750		Date Created		18/11/2016	
Drawing Number		COL/003		Revision				Revision Date			

Ordnance Survey, (c) Crown Copyright 2016. All rights reserved. Licence number 100022432