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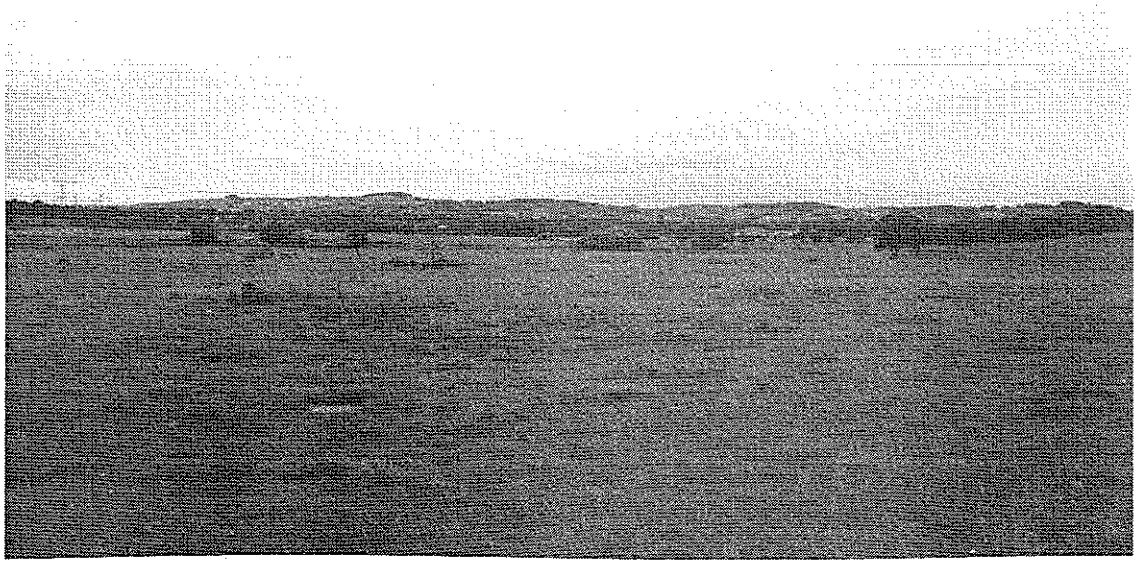
Fort Vale Engineering – Extended Phase 1 Habitat, Badger and Invasive Plant Survey



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Introduction

Capabilities on project:
Environment

1 Introduction

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1.1 AECOM was commissioned by Fort Vale Engineering Ltd to undertake an Extended Phase 1 Habitat Survey, badger (*Meles meles*) survey and invasive plant species survey at an area of land adjacent to the existing Fort Vale plant at Calder Vale Park, Simonstone Lane, near Burnley in Lancashire. The site location is shown on Figure 1.

1.2 AECOM undertook a number of ecology surveys in 2010, relating to the extension of the existing plant to provide for a new foundry. These proposals are highlighted as Phase 1 on the Masterplan drawing given as Appendix A.

1.3 Further proposed development of the site will result in the requirement to store spoil on farmland adjacent to the Fort Vale plant. The spoil storage areas will be permanent features up to 3m in height, with the intention to landscape these as the development of the site progresses. The spoil storage areas are shown on the 'Phase 3 External Works Layout' which is given as Appendix B.

1.4 A Phase 1 Habitat Survey was therefore undertaken of this area of land. A badger survey of this area was also undertaken as badger setts were identified in the vicinity of the Fort Vale plant during the 2010 surveys. An invasive plant species survey was also undertaken, with particular attention paid to Simonstone Brook.

1.5 The objectives of the Extended Phase 1 Habitat Survey, badger survey and invasive plant species survey are:

- To ascertain Phase 1 Habitat types present, as defined in 'Handbook for Phase 1 Habitat Survey' Joint Nature Conservation Committee (JNCC, 2007);
- To produce a description of each of the habitats present and provide a list of species found within them;
- To identify any badger signs; in particular badger setts and check the status of badger setts identified in the 2010 survey;
- To look for the presence of any invasive plant species, including Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalyan balsam (*Impatiens glandulifera*);
- To identify any ecological constraints to the proposed development; and
- To suggest further ecological surveys that may be required prior to the further development

1.6 The report is set out as follows:

- Section 2 Legislation and Policy Background – Details of legislation and policy in relation to biodiversity and protected species;
- Section 3 Methodology – Survey methodologies;
- Section 4 Results – Survey results;
- Section 5 Impacts – Potential impacts upon the habitats and species identified during the surveys;
- Section 6 Mitigation – General best practice mitigation and species specific mitigation measures with regards to ecology

Legislation and Policy Background

2 Legislation and Policy Background 320120007P

2.1 The key legislation and policy in relation to ecology and biodiversity is given in Table 1.

Table 1 – Key Legislation and Policy

Legislation/Policy	Description
EC Habitats Directive (*European Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna*)	Under the Directive, measures must be taken to maintain or restore natural habitats and wild species at a favourable conservation status. The Annexes of the Habitats Directive list species and habitats identified as being threatened or of 'community interest' and to which the Directive gives protection. Annex I lists habitat types regarded as being of European Importance including 'priority habitat types'; Annex II lists species of European Importance; and Annex IV(a) lists animal species of community interest needing strict protection. Under this Directive the Commission requires the establishment of a network of wildlife sites to protect examples of species or habitats of value at European level. These sites, called Special Areas of Conservation (SACs), and in conjunction with Special Protection Areas (SPAs) designated under the EC Wild Birds Directive form a network of protected sites across Europe referred to as Natura 2000
EC Wild Birds Directive (*European Directive 79/409/EEC on the conservation of wild birds*)	Council Directive 79/409/EEC on the conservation of wild birds, commonly referred to as the Birds Directive creates a comprehensive scheme of protection for all wild bird species naturally occurring in the European Union The directive recognises that habitat loss and degradation are the most serious threats to the conservation of wild birds. It therefore places great emphasis on the protection of habitats for endangered as well as migratory species (listed in Annex I), especially through the establishment of a coherent network of SPAs comprising all the most suitable territories for these species. Since 1994 all SPAs form an integral part of the Natura 2000 ecological network.
Bern Convention 1979 (*The Convention on the Conservation of European Wildlife and Natural Habitats*)	The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was adopted in Bern, Switzerland in 1979, and came into force in 1982. The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix 3. To this end the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1000 wild animal species.
The Conservation of Habitats and Species Regulations 2010 Habitats Regulations 1994 (*The Conservation (Natural Habitats & c.) Regulations*	The Conservation of Habitats and Species Regulations 2010 supersede the Conservation (Natural Habitats, &c) Regulations 1994 which transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations came into force on 30th October 1994, and have been subsequently amended in 1997, 2000 (in England only) and 2010. Containing five Parts and four Schedules, the Regulations provide for the designation and protection of 'European sites', the protection of 'European protected species', and the adaptation of planning and other controls for the protection of European Sites.

Legislation/Policy	Description
1994)	
The Wildlife and Countryside Act (WCA) 1981 (as amended)	The WCA 1981 implements the Bern Convention and Wild Birds Directive in Great Britain. This piece of legislation remains the primary UK mechanism for statutory site designations (e.g. SSSI – Site of Special Scientific Interest) and the protection of individual species listed under Schedules 1, 2, 5 and 8 of the Act, each subject to varying levels of protection.
The Countryside and Rights of Way (CROW) Act 2000	This legislation strengthens the provisions of the WCA 1981, both in respect to statutory sites such as SSSI's and protected species. It also places a statutory obligation on Local Authorities and other public bodies to further the conservation of biodiversity in the exercise of their functions, thus providing a statutory basis to the Biodiversity Action Plan (BAP) process which began in 1994. Section 74 of the Act lists the habitat types and species of principal importance in England.
Hedgerow Regulations 1997	In England and Wales the Hedgerow Regulations 1997 are intended to protect important countryside hedgerows from destruction or damage. Hedgerows are assessed against a number of criteria before being assigned 'important' status. Once this has been achieved, a 'hedgerow removal notice' must be obtained from the Local Authority to remove the hedgerow.
Natural Environment and Rural Communities (NERC) Act 2006	This act created Natural England, bringing together the function of English Nature and certain functions performed by the Countryside Agency and the Rural Development Service. This act also makes additional provisions with respect to pesticides harmful to wildlife, invasive non-native species, the protection of biodiversity and the protection of birds. Section 40 of this act introduced a new duty on public bodies to have regard to the purpose of conserving biodiversity in exercising their functions.
Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation	PPS9 sets out the Government's national policies on biodiversity and geological conservation in relation to spatial planning in England. It replaces Planning Policy Guidance (PPG) Note 9 on Nature Conservation. It outlines a number of key principles in relation to biodiversity. In addition, Government Circular ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System" sets out further detail on how species and habitats should be considered during planning applications.
The UK Biodiversity Action Plan (UK BAP)	The UK BAP was launched in 1994 with the main aim 'To conserve and enhance biological diversity within the UK, and to contribute to the conservation of global biodiversity through all appropriate mechanisms'. The UK BAP comprises a series of Action Plans for 'priority' habitats and species, determined by the fact that they are either globally threatened or are rapidly declining in the UK. The Action Plans outline measures required to conserve these priority habitats and species. The national strategy for biodiversity is delivered at a local level via Local Biodiversity Action Plans (LBAPs). The site is covered by the Lancashire LBAP.

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2.2 The key legislation in relation to badger is given in Table 2

Table 2 – Badger Legislation

Species	Key Legislation
Badger	The Protection of Badgers Act 1992 was enacted primarily for the purposes of preventing cruelty to badgers through baiting; the fighting of badgers with dogs. As a result of this legislation it is unlawful to wilfully kill, capture, injure or take any individual or to intentionally damage, destroy, or obstruct a badger sett; any structure or place which displays signs indicating current use by a badger Natural England is responsible for the issuing of licences to allow development activities which would otherwise be unlawful.

2.3 The key legislation in relation to invasive plant species is given in Table 3.

Table 3 – Invasive Plant Species Legislation

Species	Key Legal Protection and Policy
Plant Species listed on Schedule 9 (of WCA 1981 as amended)	Due to the potential harm to native species that non-native species can pose, plant species listed on Schedule 9 are subject to Section 14 of the WCA 1981. This prohibits planting in the wild of these species or otherwise causing them to grow there, this can include allowing these species to spread from one area to an adjacent area

Methodology

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3 Methodology

3.1 Extended Phase 1 Habitat Survey

3.1.1 The Phase 1 Habitat Survey was undertaken on 29th July 2011 by an experienced ecologist The methodology involved walking over the areas proposed for spoil storage and mapping the habitats by eye on an enlarged scale field map. The habitats were classified according to the Phase 1 Habitat nomenclature described in the Handbook for Phase 1 Habitat Survey (JNCC, 2007). Target Notes (TN) describing the habitats and any notable features or suitable habitat for protected species were made.

3.2 Badger Survey

3.2.1 The badger survey was undertaken on 29th July 2011 alongside the Phase 1 Habitat survey and involved a search of the area including the banks of Simonstone Brook adjacent to the proposed storage areas, and checks of previously identified setts

3.2.2 The field signs looked for were as follows:

- ***Setts*** – These comprise of a number of excavated tunnels and chambers. The main sett will have on average five entrance holes. Outside each hole there are often large quantities of excavated material, which may contain old bedding and fur. If the sett is in use, fresh bedding may often be found at the entrances to the setts, where it has been left to air.
- ***Paths*** – Badger use the same routes within their territory, so the paths are well worn and obvious, being at least 20cm in width. The paths will often link feeding grounds with the badger sett.
- ***Excavations*** – Badgers will often excavate shallow depressions under fencing and often push the fencing up to enable them to slide underneath.
- ***Hair*** – Badger hair is often caught on fencing The hair is long and coarse and distinctively black and white
- ***Footprints*** – These are usually distinctive and easily recognisable, being broader than they are long, typically showing five toes with long claws on each foot, and a kidney shaped heel However, many tracks only reveal four toe impressions.
- ***Dung pits*** – Found along territory boundaries and near to inhabited setts The pits are on average 150 mm across and 150 mm deep into which badgers defecate (Woods, 1995).
- ***Feeding evidence*** – These include snuffle holes, as badgers forage for worms to leave small round pits in areas of short grass, excavated depressions, where the badger has been searching for insects and also the consumption of arable crops
- ***Bedding trails*** – Often left when the badgers are dragging bedding from the gathering area to the sett. The gathering area can be over 100 metres away from the sett and comprises bracken, dead leaves, straw and dry grass.

3.3 Invasive Plant Species Survey

3.3.1 The proposed spoil storage areas were also surveyed for the presence of invasive plants listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). This involved walking over the area as part of the Phase 1 Habitat Survey, with particular attention paid to Simonstone Brook and areas where evident waste dumping may have occurred. As the majority of plants are currently in flower, any invasive plants are readily identifiable

3.4 Limitations to Survey

Due to the timing of the survey in late July, the vegetation within the surveyed area was particularly dense in the scrub and bank areas This limited the effectiveness of the badger survey

Results

4 Results

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4.1 Extended Phase 1 Habitat Survey

General Habitat Description

4.1.1 The surveyed farmland is to the west of the Fort Vale plant and comprises predominantly improved grassland which is closely cattle grazed Simonstone Brook flows between the farmland and the Fort Vale plant boundary and confluences with the River Calder approximately 120m to the south west of the closest proposed spoil storage area. The villages of Simonstone, Altham, Padiham and Read form the wider surroundings.

4.1.2 The Target Notes below describe the habitats within the surveyed area in more detail, the Phase 1 Habitat Map is given as Figure 2 and a full botanical species list is given in Appendix C:

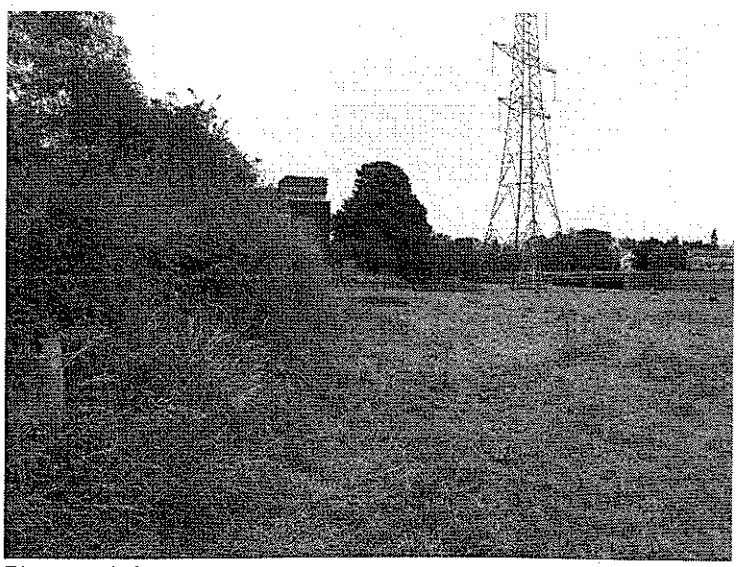
- TN1 Improved grassland field adjacent to the western boundary of the Fort Vale plant The sward comprises perennial ryegrass (*Lolium perenne*), Yorkshire fog (*Holcus lanatus*), creeping bent (*Agrostis stolonifera*), crested dogstail (*Cynosurus cristatus*) and white clover (*Trifolium repens*) There are rare to occasional patches of field horsetail (*Equisetum arvense*), dandelion (*Taraxacum officinale* agg), creeping thistle (*Cirsium arvense*), common nettle (*Urtica dioica*), spear thistle (*Cirsium vulgare*) and creeping cinquefoil (*Potentilla reptans*). See Photograph 1

Photograph 1

- TN2 Improved grassland field containing cattle at the time of survey The sward comprises perennial ryegrass, cocksfoot (*Dactylis glomerata*), Yorkshire fog, broad-leaved dock (*Rumex obtusifolius*) and common couch (*Elymus repens*). See Photograph 2.

Photograph 2

- TN3 An area of dense bramble (*Rubus fruticosus* agg.), nettle, and creeping thistle adjacent to the southern boundary of the Fort Vale plant. There is a hedge bank with blackthorn (*Prunus spinosa*) and hawthorn (*Crataegus monogyna*) standards alongside it. See Photograph 3



Photograph 3

- TN4 A section of Simonstone Beck which flows through the improved grassland towards the River Calder. The watercourse here is approximately 0.5-1m wide, with a water depth of less than 30cm and moderate flow at the time of survey (no recent rain). The water clarity appeared good with no apparent signs of pollution, although agricultural run-off is likely. The watercourse is not considered suitable for water vole and was surveyed for otter and white-clawed crayfish by AECOM in 2010, but no evidence of either species was found and it was concluded that neither species was present on the watercourse. See Photograph 4.

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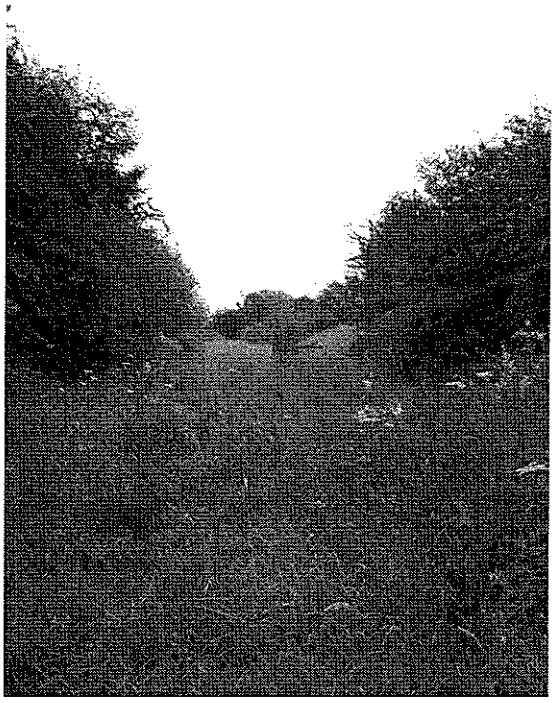
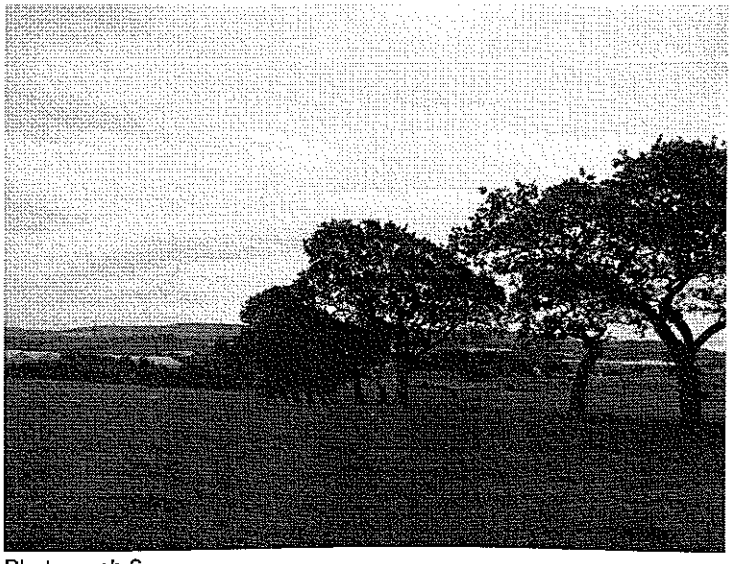
Photograph 4

TN5 A disused railway line which is now vegetated with false-oat grass (*Arrhenatherum elatius*), red fescue (*Festuca rubra*), Yorkshire fog common bent (*Agrostis capillaris*), creeping bent, crested dogstail meadowsweet (*Fillipendula ulmaria*), creeping cinquefoil, bird's-foot-trefoil (*Lotus corniculatus*), salad burnet (*Sanguisorba minor*) common knapweed (*Centaurea nigra*), tufted vetch (*Vicia cracca*), red clover (*Trifolium pratense*) rosebay willowherb (*Chamerion angustifolium*) and cleavers (*Galium aparine*) This area provides excellent potential foraging habitat for bats and a suitable flightline. It also provides particularly suitable habitat for badger to build setts, although none were noted in this area during the badger survey. See Photograph 5



Photograph 5

TN6 This area comprises a line of standard trees within an improved grassland field, representing an old field boundary. The tree species comprise ash (*Fraxinus excelsior*), hawthorn and pedunculate oak (*Quercus robur*). The trees are mature and may provide suitable bat roost habitat, providing a flightline leading towards the disused railway. See Photograph 6.



Photograph 6

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4.2 Badger Survey

4.2.1 The results of the badger survey are provided in Appendix D of this report. This should not be released to the public domain, as such information is required to be kept confidential under the Protection of Badgers Act, 1992.

4.3 Invasive Plant Species Survey

4.3.1 An area of Japanese knotweed and Himalayan balsam was identified on Simonstone Beck adjacent to the west of the Fort Vale plant site (see Figure 2 – Phase 1 Habitat Map, labelled TN7). At the time of survey, both plants were within the same discrete area and had not spread along the watercourse. See Photograph 7

Photograph 7

4.3.2 The River Calder is outside of the surveyed area; however the surveyor noted extensive Himalayan Balsam coverage along the banks.

Impacts

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5 Impacts

5.1 The potential impacts of the proposed spoil storage areas (as shown in Appendix B) on the local ecology, without mitigation are discussed below.

Habitats

5.2 The storage of spoil on the intended land area will predominantly lead to a permanent loss of improved grassland There may also be a small loss of standard trees, scrub and unimproved grassland The overall impact of habitat loss is temporary until the area is landscaped.

5.3 The storage areas are in the vicinity of Simonstone Brook (Mounds 1, 4 and 5) and there is potential for silt to run-off into this watercourse and subsequently enter the River Calder

Badger

5.4 The spoil storage area along the south western Fort Vale plant boundary (Mound 3) will be located adjacent to the hedge bank where a potential badger sett was noted during the 2011 badger survey. This spoil storage area is likely to impact upon the bank either through storage upon it, or weight of the spoil adjacent to it. This spoil storage area therefore has the potential to impact upon the potential badger sett, either through destruction or disturbance, particularly as tunnels may extend under the spoil storage area

5.5 The southernmost spoil storage area (Mound 6) is adjacent to the overgrown scrub area described in TN3. This area has the potential to contain badger setts, and therefore there may be impacts upon badger setts, if they are present in this area.

5.6 The spoil storage areas to the north of Simonstone Brook (Mounds 5 and 4) will not directly impact upon the badger sett recorded on this watercourse, however there would likely be indirect impacts due to removal and disturbance of their foraging habitat.

5.7 The loss of grassland will lead to a reduced area of suitable foraging habitat for the local badger population in the short term, until the area is landscaped.

Bats

5.8 If any of the standard trees (described in TN6) require removal, there is the potential to impact upon roosting bats

5.9 The loss of grassland will lead to a reduced area of suitable foraging habitat for bats in the short term, until the area is landscaped.

Breeding Birds

5.10 Where trees and scrub require removal there is the potential to impact upon breeding birds. There will also be impacts upon ground nesting species if they are present in the spoil storage areas

Invasive Plants

5.11 The spoil storage areas do not impact upon the area where Japanese knotweed and Himalayan balsam were recorded. However should the plans for the site change to include this area, there is the potential to spread these species

Other Protected Species

5.12 Using the results of this survey, and those undertaken by AECOM in 2010, no other protected species are considered to be present in the surveyed area. No impacts are therefore predicted on any other protected species

Mitigation

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6 Mitigation

6.1.1 Mitigation measures and recommendations for further work in order to reduce the potential impacts identified in the previous section are detailed below.

6.2 General Good Practice Mitigation

6.2.1 Simonstone Beck is included within the Lancashire LBAP Rivers and Streams Habitat Action Plan (HAP), which lists objectives including 'prevent the loss of riparian habitat through inappropriate development' and 'maintain and where possible improve water quality in rivers'. It is not anticipated that the riparian habitat will be directly affected by the proposed development and the mitigation measures detailed below will maintain existing water quality.

6.2.2 It should be ensured that no debris enters Simonstone Beck, and Pollution Prevention Guidelines (PPG), including the 'Agencies' PPG5 Works and Maintenance in or Near Water, should be followed to prevent and minimise the risk of pollution incidents during construction

6.2.3 Working areas in which vehicles, machinery and site staff operate, should be fenced or marked in some way to prevent accidental encroachment on to adjacent habitat

6.2.4 In order to prevent any adverse impacts of pollution to soils, vegetation and watercourses from machinery used during the transport of spoil, all refuelling and servicing of vehicles should be carried out within a designated area with an impermeable base away from the watercourse. To prevent spillages, refuelling should be carried out by pumping through a trigger delivery nozzle

6.2.5 Fuel, oil and other potential contaminants should be stored within bunded tanks to 110% of the volume stored and only the minimum quantity required should be stored on site. The designated area should be maintained in a secure and clean manner. An adequate quantity of oil absorbent material should be stored on site and spillages cleared up immediately

6.2.6 Any trees to be retained and which lie within or close to the spoil storage areas should be protected by means of a post and wire fence with 'Netlon' fluorescent mesh. The fence should be placed at a minimum distance of the radius of the crown of the tree as this mirrors the potential extent of the root system. The protective fencing should be maintained during the period of site works and no machinery or materials should be stored within the fenced area. Retained woodland should be managed carefully, avoiding removal of or damage to the understory. The British Standard document BS 5837:2005 Trees in Relation to Construction Recommendations should be utilised

6.3 Habitats

6.3.1 As there will be a net loss of grassland (improved and unimproved) and potentially trees and scrub, opportunities for habitat replacement should be sought. This should be included as part of the landscaping design for the proposed development and incorporated into the Masterplan, in line with guidance in PPS9: Biodiversity and Geological Conservation. The guidance states that a development should aim to maintain, and enhance biodiversity conservation interests.

6.3.2 This should be achieved by the creation of habitat within the spoil storage areas, in line with local BAP targets and species typical of the locality. For example species-rich neutral grassland is an LBAP habitat and would benefit a range of faunal species. The grassland would attract invertebrates which would in turn provide a food source for bats and birds.

6.3.3 An appropriate buffer zone (in accordance with Environment Agency guidance), of natural vegetation should be retained between the material on the storage areas and Simonstone Brook to limit the potential for silt to enter the watercourse. A buffer zone will allow soil particles to settle out from any run-off water. The spoil mounds should be vegetated as soon as possible, to provide stability, limiting the potential for material to enter Simonstone Brook.

6.4 Protected Species

Badger

6.4.1 The provisions of the Protection of Badgers Act 1992 require developers to take account of the presence of badgers when carrying out any work near setts. Offences could result from intentionally or recklessly interfering with a sett, or by disturbing a badger whilst it is occupying a sett.

6 4 2 The spoil storage areas have the potential to impact on badger setts and therefore a badger survey of these areas and the habitats up to 50m from them should be undertaken during the winter months when vegetation is less dense.

6 4 3 Disturbance and the distances up to which an active sett can be affected are determined by factors such as the type of machinery being used, the method of working, and topography Where active setts are to be destroyed or disturbed, a licence would be required from Natural England; with work under licences only permitted outside of the badger closed season (therefore works permitted between July and November). Where a sett is to be destroyed; this must be excluded under a Natural England licence, and an artificial sett may be required as replacement.

6.4 4 Night time working with its associated need for additional lighting should be avoided as far as possible to reduce disturbance to badger when they are out of their setts and foraging Any trenches left open overnight should have a means of escape for any animals that might fall in.

6 4.5 Natural England Best Practice Guidance (2009) states that access between setts and foraging/commuting areas should be maintained. Badger paths, or any access to setts should not be obstructed by fencing or machinery.

6.4 6 Habitat replacement as part of the landscaping of the spoil storage areas should include species-rich grassland planting which would provide foraging habitat for badger There is also the potential to create an artificial sett in this area which should be investigated as part of the Masterplan for the site.

Bats

6.4 7 If the removal of any of the trees described in TN6 is required, then these should be assessed for their potential to support roosting bats in accordance with the Bat Surveys Good Practice Guidance (Bat Conservation Trust, 2007). A habitat assessment should be undertaken between December and March when the tree structure is easily visible without foliage. Where suitable features exist, emergence/re-entry surveys would be required to determine whether a roost is present. Emergence/re-entry surveys should be undertaken between March and September when bats are active. If a bat roost is found, then a Natural England licence would be required in order to remove the tree and replacement habitat such as bat boxes would need to be provided

6 4.8 Species-rich grassland planting as recommended for badger as part of the landscaping of the spoil storage areas would also benefit foraging bats. The landscaping should also include the provision of bat boxes on retained mature trees to provide additional roosting features.

Breeding Birds

6 4 9 Any tree and scrub clearance should be undertaken outside of the bird breeding season which is generally considered to be between the end of February and early August. Where this is not possible, trees and vegetation should be manually checked by an ecologist prior to removal to ensure that nesting birds are not present. Where nesting birds are identified; nests must be left in-situ until any chicks have fledged or the nest becomes disused

6.4 10 Ground nesting species may also be present and where spoil storage is to commence within the bird breeding season, the areas should be checked for nesting birds prior to storage in these areas.

Invasive Plants

6 4.11 As invasive plants have been identified, Best Practice would be to remove these from the site, and advice from an invasive plant specialist contractor should be sought on the best method to undertake this Invasive plants spread rapidly, and Himalayan balsam can spread over large distances where seeds fall in to a flowing watercourse Japanese knotweed can also cause damage to buildings and foundations, having the ability to grow through concrete. Therefore the area of invasive plants should be dealt with before they naturally spread and become more difficult to treat

6.5 Enhancement

6 5.1 It is understood that the proposed development resulting in the creation of the spoil storage areas is part of a phased development A Habitat Management Plan should be created for the development scheme, incorporating the ecological mitigation measures detailed above, and to identify and prescribe enhancement opportunities, for example the creation of a badger sett and the provision of invertebrate, bat and bird boxes.

6 5.2 The Habitat Management Plan should also utilise local BAP targets and target local BAP priority habitats

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Figures

Figure 1 – Site Location Plan

Figure 2 – Phase 1 Habitat Map

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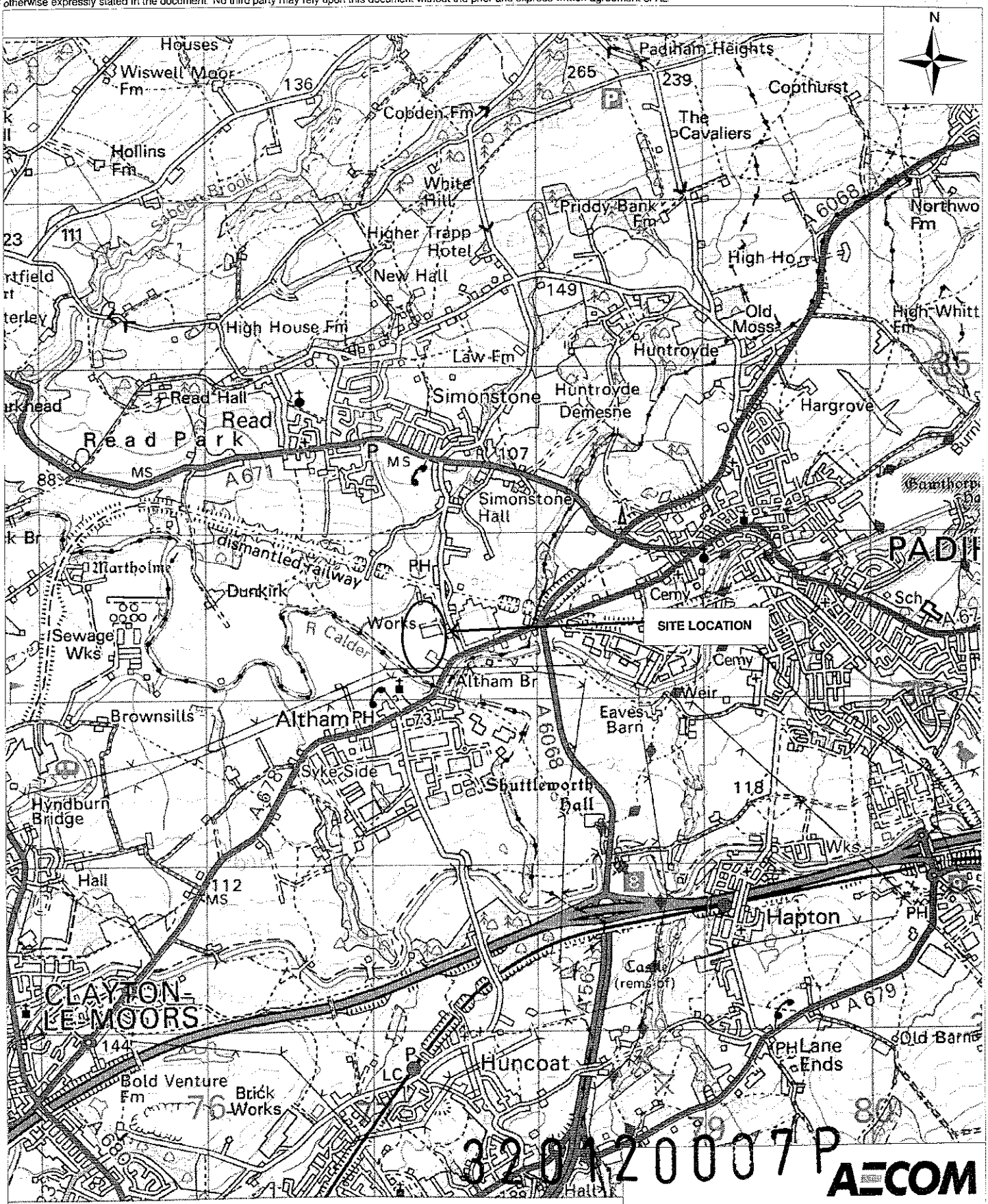

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Client: FORT VALE ENGINEERING LTD	Title: SITE LOCATION MAP	Design: MSH	Drawn: MSH
		Chk'd: EC	App'd: LMK
Project: CALDER VALE PARK		Date: AUG'10	Scale: 1:30,000 @ A4
		No. 60161156	Rev:

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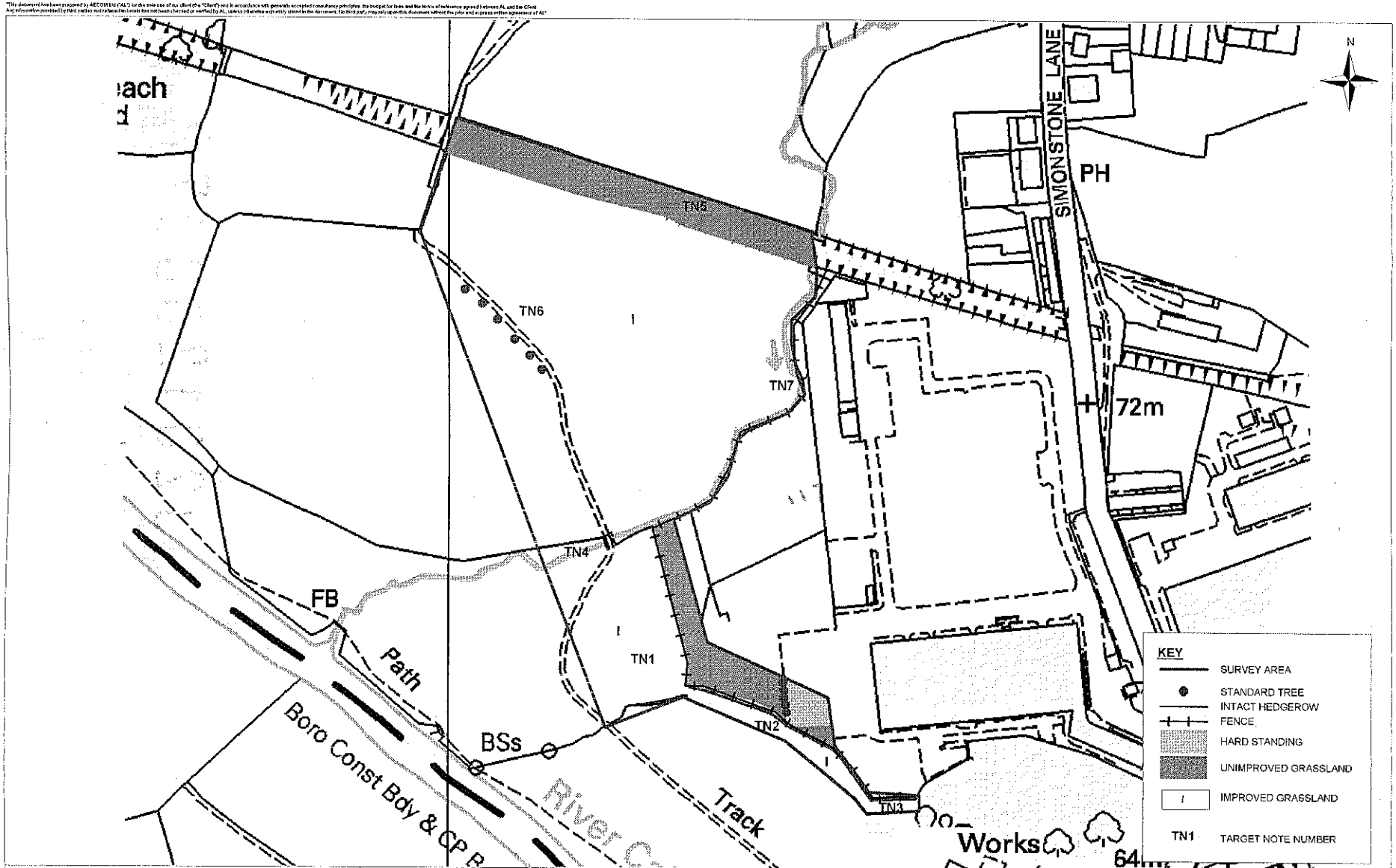

Client: FORT VALE ENGINEERING LTD	Title: PHASE 1 HABITAT MAP	Design: MSH	MapInfo: V10.0
Project: CALDER VALE PARK		Chk'd: HJV	App'd: LMK
		Date: AUG'11	Scale: 1:2,500 @ A3
		No. Figure 2	Rev:

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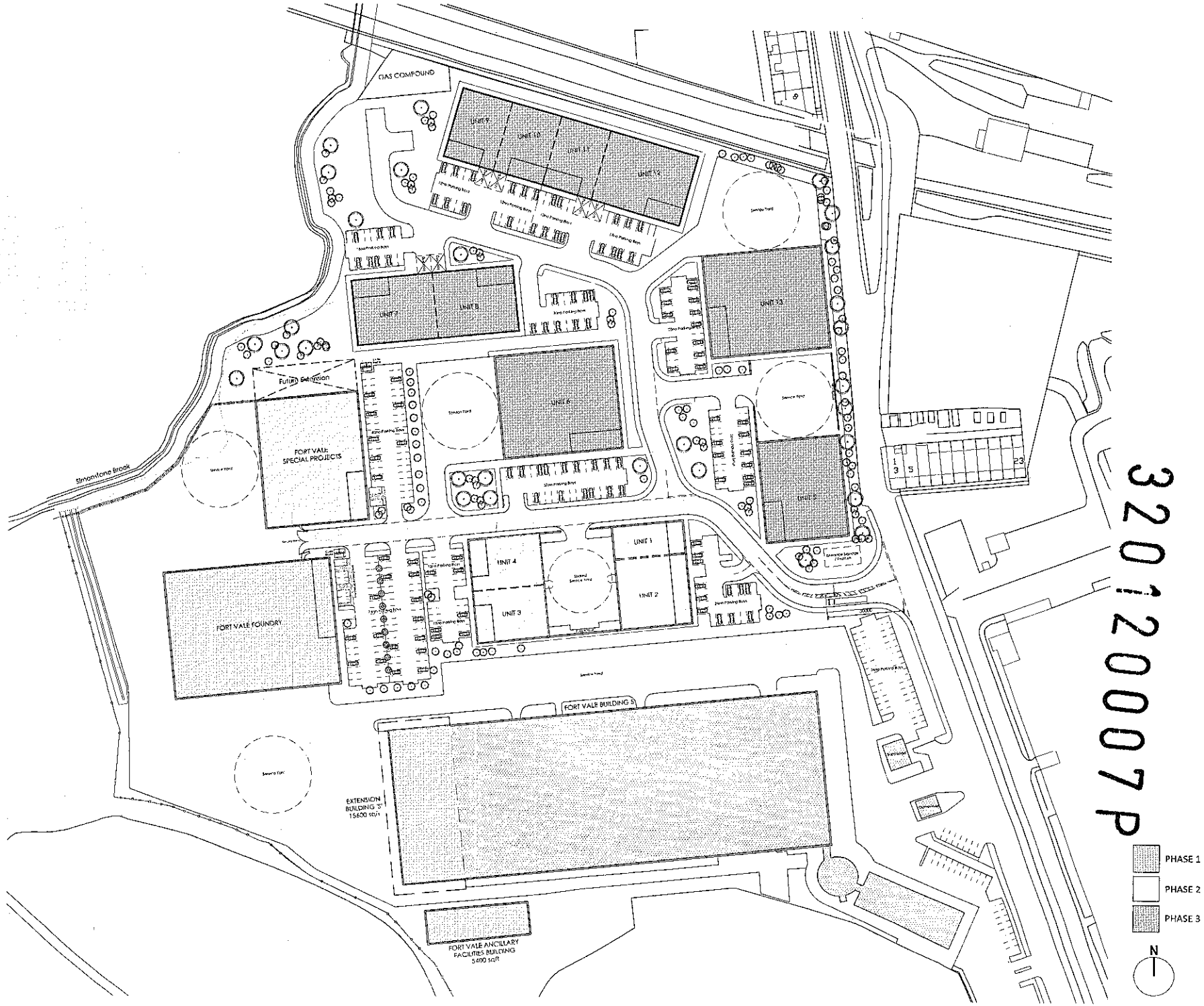
Appendices

320120007P

Appendix A – Proposed Masterplan



32012 0007 P

General Notes

All site dimensions shall be verified by the Contractor on site prior to commencing any works.

Do not scale from this drawing.

Only work to written dimensions.

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SCHEDULE OF GROSS INTERNAL AREAS

Foundry Building		
Warehouse	7,937 sqm	85,487 sqft
Office (Ground & First Floor)	401 sqm	4,317 sqft
FOUNDRY TOTAL	8,338 sqm	89,804 sqft
Special Projects Building		
Warehouse	1,862 sqm	19,955 sqft
Office (Ground & First Floor)	259 sqm	2,795 sqft
Fitout Factories	461 sqm	5,000 sqft
SPECIAL PROJECTS TOTAL	2,582 sqm	27,749 sqft
UNIT 1		
Warehouse	292 sqm	3,128 sqft
Office (Ground Floor)	27 sqm	290 sqft
UNIT 1 TOTAL	319 sqm	3,418 sqft
UNIT 2		
Warehouse	747 sqm	7,967 sqft
Office (TBC)	0 sqm	0 sqft
UNIT 2 TOTAL	747 sqm	7,967 sqft
UNIT 3		
Warehouse	437 sqm	4,705 sqft
Office (Ground & First Floor)	186 sqm	2,002 sqft
UNIT 3 TOTAL	623 sqm	6,707 sqft
UNIT 4		
Warehouse	492 sqm	5,296 sqft
Office (Ground & First Floor)	186 sqm	2,002 sqft
UNIT 4 TOTAL	678 sqm	7,297 sqft
UNIT 5		
Warehouse	1,123 sqm	12,088 sqft
Office (Ground & First Floor)	221 sqm	2,378 sqft
UNIT 5 TOTAL	1,344 sqm	14,467 sqft
UNIT 6		
Warehouse	1,855 sqm	19,967 sqft
Office (Ground & First Floor)	276 sqm	2,971 sqft
UNIT 6 TOTAL	2,131 sqm	22,938 sqft
UNIT 7		
Warehouse	783 sqm	7,552 sqft
Office (Ground & First Floor)	110 sqm	1,184 sqft
UNIT 7 TOTAL	893 sqm	8,737 sqft
UNIT 8		
Warehouse	787 sqm	7,591 sqft
Office (Ground & First Floor)	136 sqm	1,464 sqft
UNIT 8 TOTAL	923 sqm	9,055 sqft
UNIT 9		
Warehouse	441 sqm	4,747 sqft
Office (Ground & First Floor)	188 sqm	2,024 sqft
UNIT 9 TOTAL	629 sqm	6,771 sqft
UNIT 10		
Warehouse	448 sqm	4,822 sqft
Office (Ground & First Floor)	188 sqm	2,024 sqft
UNIT 10 TOTAL	636 sqm	6,846 sqft
UNIT 11		
Warehouse	448 sqm	4,822 sqft
Office (Ground & First Floor)	188 sqm	2,024 sqft
UNIT 11 TOTAL	636 sqm	6,846 sqft
UNIT 12		
Warehouse	874 sqm	9,408 sqft
Office (Ground & First Floor)	188 sqm	2,024 sqft
UNIT 12 TOTAL	1,062 sqm	11,431 sqft
UNIT 13		
Warehouse	994 sqm	10,700 sqft
Office (Ground & First Floor)	188 sqm	2,024 sqft
UNIT 13 TOTAL	1,182 sqm	12,724 sqft
OVERALL TOTAL	17,268 sqm	185,834 sqft
TOTAL (Ex Foundry and Special Projects)	11,597 sqm	124,830 sqft

Revision

Scale	1:500@A0
Status	S
Drawn by	PM
Date	24.03.11

Client
Fort Wilson Properties

Project
Calder Vale Business Park

Drawing Description
Proposed Masterplan

Drawing No. 40020_SK24 Rev. B

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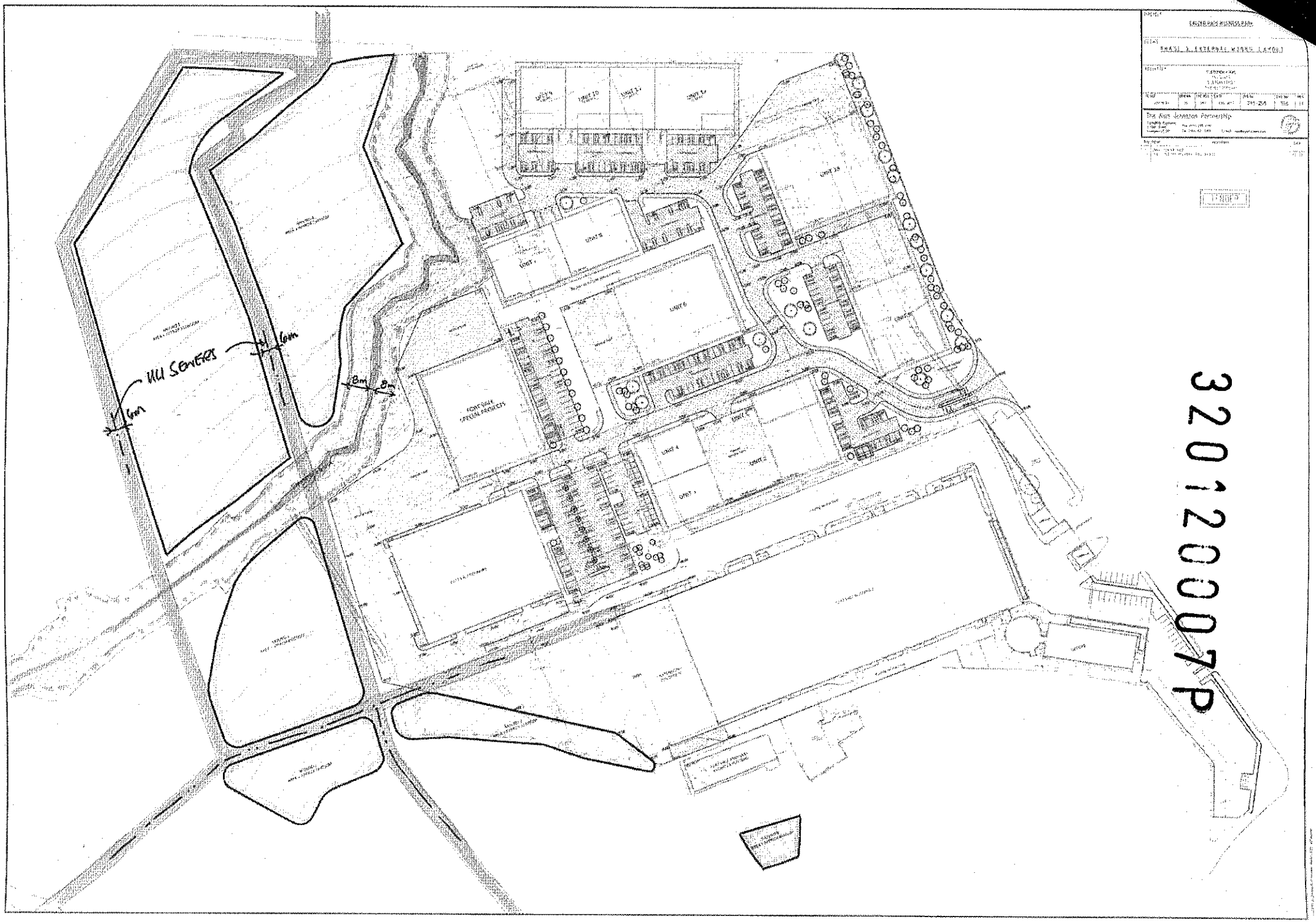
Appendix B – Phase 3 External Works Layout


UNIT 10
UNIT 9
UNIT 8
UNIT 7
UNIT 6
UNIT 5
UNIT 4
UNIT 3
UNIT 2
UNIT 1
UNIT 18
FORT DUNE CREATIVE PROJECTS
HLI SEWERS
6m
6m
8m
8m
The Alan Johnston Partnership

32012000 7P

Appendix C – Botanical Species List

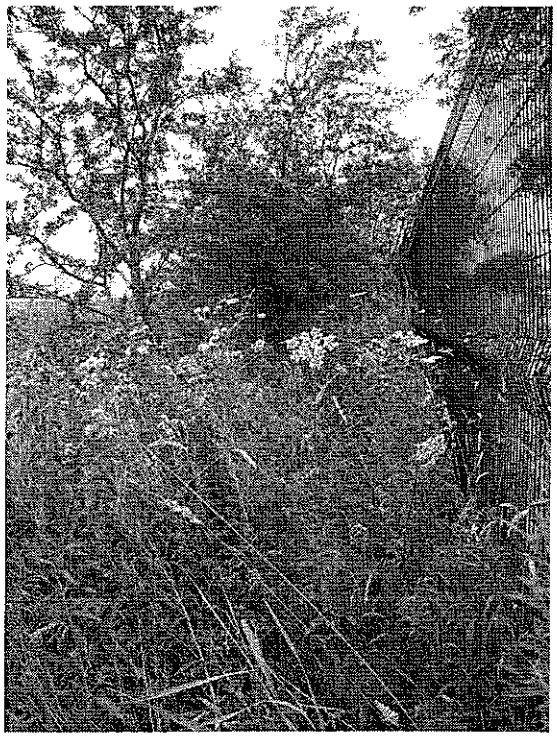
Latin Name	English Name
Agrostis capillaris	Common bent
Agrostis stolonifera	Creeping bent
Arrhenatherum elatius	False-oat grass
Centaurea nigra	Common knapweed
Chamerion angustifolium	Rosebay willowherb
Cirsium arvense	Creeping thistle
Cirsium vulgare	Spear thistle
Crataegus monogyna	Hawthorn
Cynosurus cristatus	Crested dog's-tail
Dactylis glomerata	Cocksfoot
Elymus repens	Common couch
Equisetum arvense	Field horsetail
Festuca rubra	Red fescue
Fillipendula ulmaria	Meadowsweet
Fraxinus excelsior	Ash
Galium aparine	Cleavers
Holcus lanatus	Yorkshire fog
Lolium perenne	Perennial rye-grass
Lotus corniculatus	Common bird's-foot-trefoil
Potentilla reptans	Creeping cinquefoil
Prunus spinosa	Blackthorn
Quercus robur	Pedunculate oak
Rubus fruticosus agg.	Bramble
Rumex obtusifolius	Broad-leaved dock
Sanguisorba minor	Salad burnet
Taraxacum officinale agg.	Dandelion
Trifolium pratense	Red clover
Trifolium repens	White clover
Urtica dioica	Stinging nettle
Vicia cracca	Tufted vetch

Capabilities on project:
Environment

Appendix D – Confidential Badger Survey Results 320:20007P

The 2010 AECOM survey recorded badger setts in two locations. One of these was a sett consisting of two entrances in a hedgerow adjacent to the southern Fort Vale plant boundary. This showed little use at the time of survey with regards to fresh spoil, but had fresh bedding outside one of the entrances. The second sett also consisted of two entrances and was identified on the bank of Simonstone Beck adjacent to the northern Fort Vale plant site boundary. Both entrances showed signs of recent use at the time of survey.

The 2011 survey did not locate the sett within the southern hedgerow described above, despite extensive searching. The hedgerow and embankment were highly vegetated with nettle and creeping thistle (as shown on Photograph 8 below), and this area was surveyed both from within the vegetated embankment and also from the field side to identify any paths leading in to the hedgerow, and any latrines which are often located along badger paths. It is likely that the previously identified entrances are currently disused and have become vegetated over. Mammal paths were recorded through the hedgerow and fence in two locations, with one of the paths leading to a potential single entrance badger sett (not recorded in 2010), although no badger signs such as hair or latrines, or fresh soil were found, and rabbit droppings were noted outside the entrance. It is likely that this entrance is used by badger from time to time, with outlier setts typically changing use between rabbit, badger and fox over time.



Photograph 8

The 2011 survey located the sett along Simonstone Beck, however only one of the entrances was accessible. This entrance now appears to be in use by rabbit, with no signs of fresh spoil and rabbit droppings on the old spoil. There is a badger path which leads under the boundary fence along with snuffle holes, and leads towards the location of the second entrance. However since the 2010 survey, a tree has fallen over the sett area and access to the steep banking was not possible. Also since the 2010 survey, a palisade fence has been erected around the Fort Vale plant, alongside the old post and rail boundary fence as shown in Photograph 9 below which may have altered badger movement in this area.

Photograph 9

No badger signs or additional setts were recorded elsewhere within the surveyed area

N.B. See Appendix D figure – Confidential Badger Survey Results overleaf

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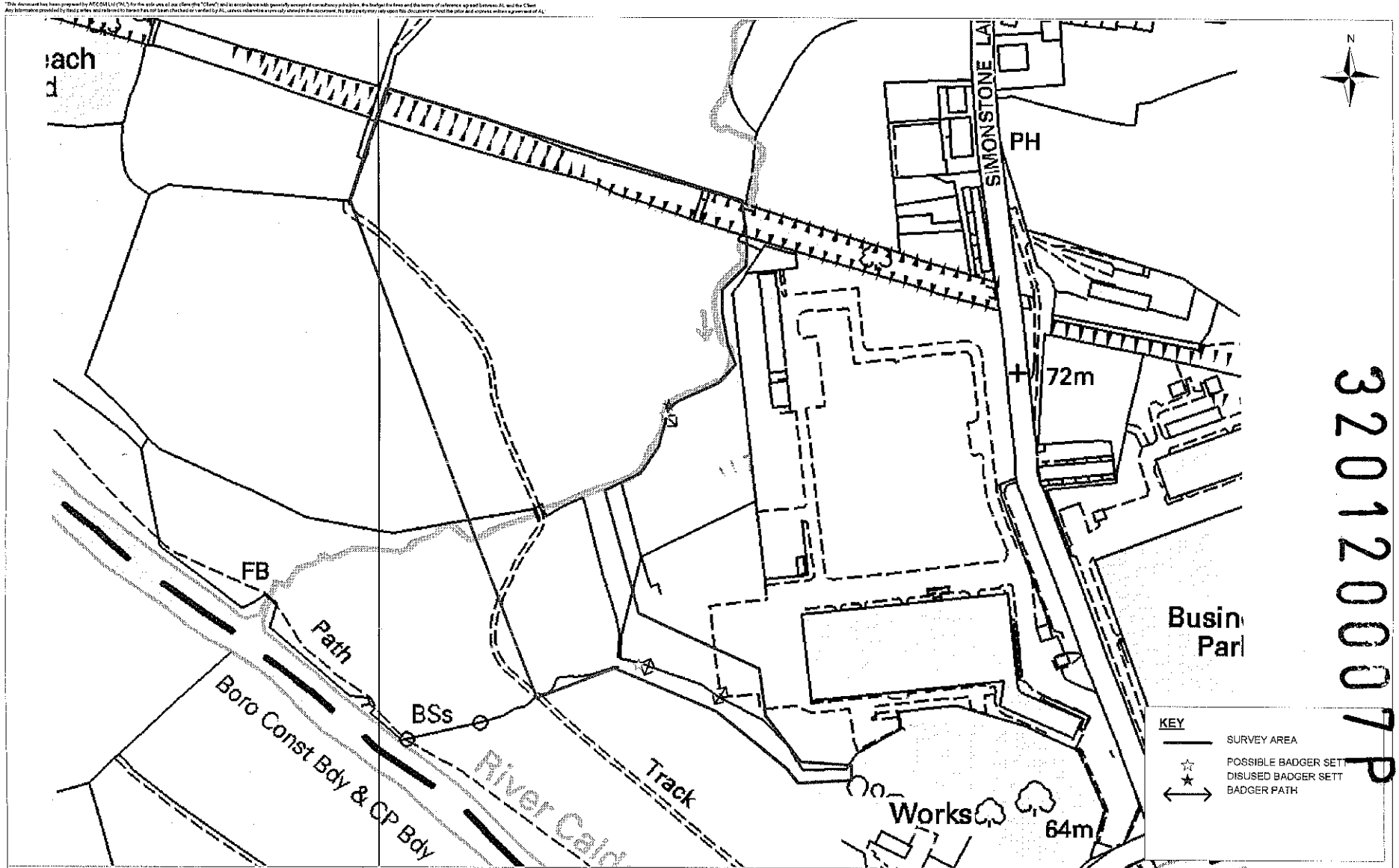

32012007P

Client: FORT VALE ENGINEERING LTD	Title: CONFIDENTIAL	AECOM	Design: MSH / MapInfo: V10.0
Project: CALDER VALE PARK, SIMONSTONE LANE	BADGER SURVEY RESULTS	5th Floor, 2 City Walk, LEEDS, LS11 9AR	Chk'd: HJV / App'd: LMK
		Tel: +44 (0) 113 391 6800 Fax: +44 (0) 113 391 6899 www.aecom.com	Date: AUG'11 / Scale: 1:2,500 @ A3
			No. APPENDIX D / Rev.

cm A3

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