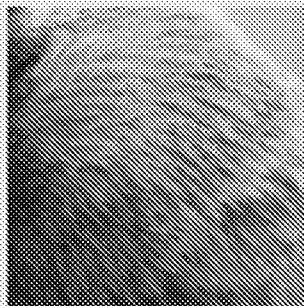
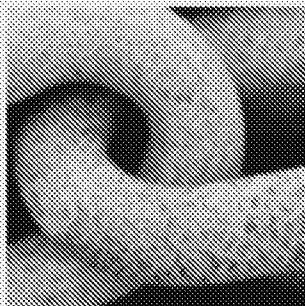
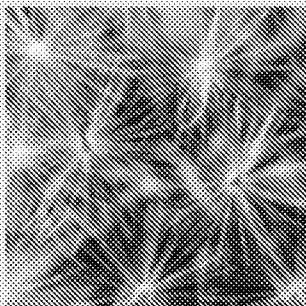


Church Farm Holiday Village Golf Course Management Plan



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Baker Consultants is an ecology and sustainability consultancy. We work in terrestrial, freshwater and marine environments, providing a range of services for industry, government, developers, public services and utilities.

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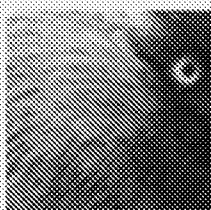
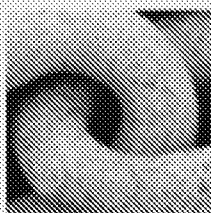
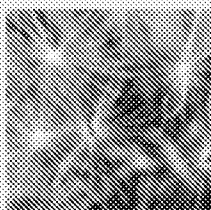
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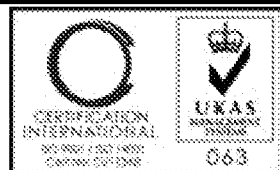
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I Introduction

I.1 Background

- 1.1.1 Arun District Council has permitted installation of 22 static caravans and associated infrastructure on Church Farm Holiday Village, Pagham, Sussex (Planning Ref P/84/16/PL, dated 14 December 2016) subject to compliance with 17 conditions and a s106 agreement.
- 1.1.2 Condition 8 states that *“No development shall take place unless and until a Golf Course Management Plan to include the mitigation measures set out within paragraph 29 of the submitted Shadow Habitat Regulations Assessment by Baker Consultants Ltd (July 2016) has been submitted to and approved in writing by the Local Planning Authority in consultation with Natural England and the RSPB. The management plan shall thereafter be implemented prior to the commencement of development in accordance with the approved details and retained in perpetuity.”* The reason for the condition being: *“In the interests of the mitigation of impacts on Dark Bellied Brent Geese who forage on land outside of the Special Protection Area and in accordance with policy GEN29 of the Arun District Local Plan and the National Planning Policy Framework. This is required to be a precommencement condition because of the need to comply with the Habitat Regulations.”*
- 1.1.3 Paragraph 29 of the Shadow Habitat Regulations Assessment states:
- **“Restriction of access.** *The golf course is currently used during the winter months both by golfers and by the general public for walking dogs. This can cause disturbance of brent geese and reduce the amount of time they spend feeding. Such disturbance has been noted, particularly from dog walkers (Tim Callaway RSPB pers comm). In order to reduce disturbance of the geese it is proposed that the perimeter of the new development will be fenced and a new single access point onto the golf course will be installed that would give access for pedestrians and service/management vehicles. The access would be locked during the winter season (November – March inc.) with new signage that explains that the golf course is closed to public access and the reasons why. The new entrance will be offset with new planting that will effectively screen the path from the golf course, further reducing potential disturbance.*
 - **Improved sightlines** – *Brent geese require open spaces with long sight lines for feeding so that they can detect predators. The landscape planting within the golf course breaks those sight lines, reducing the availability of some areas to the geese. In order to improve the sight lines, the existing landscape planting within the golf course will be thinned and crown lifted to provide greater visibility at ground*

level. These areas will be managed regularly to ensure they remain open at ground level.

- **Introduction of meadow management** - The area in the north of the golf course (c 0.5ha) is currently tall herb and scrub and therefore unsuitable for grazing geese. The site also includes a small service compound which is used for machinery storage, etc. In order to increase the amount of grazing available to the brent geese, this area will be cleared and entered into a single cut meadow management. A small service compound would remain but this would be discreet and on the edge of the course. There is also the potential to introduce a pond within the area that would help with the RSPB objectives for conserving turtle doves."

1.1.4 Condition 9 states that "No caravan shall be occupied unless and until details indicating the placement of 6 nesting opportunities for birds (species such as swallows, swifts & house martins), and roosting structures suitable for bats, have been submitted to and approved in writing by the Local Planning Authority. The approved details shall be implemented in full and thereafter retained in perpetuity to the satisfaction of the Local Planning Authority." The reason for the condition being: "To safeguard the ecology of the area, and in the interests of birds & bats in accordance with policies GEN7 and GEN29 of the Arun District Local Plan and the National Planning Policy Framework."

1.1.5 This document will provide the objectives, rationale and prescriptions to fulfill conditions 8 and 9 as stated above.

2 Objectives and Rationale

2.1 Objectives

2.1.1 In order to comply with the conditions described above, a set of objectives are listed below that together with the rationale provide the basis for the management prescriptions that are described in subsequent sections of this plan.

1. Manage habitat to promote the conservation status of the wintering dark-bellied brent goose population at Pagham Harbour.
2. Create habitat to promote the conservation status of turtle dove.
3. Promote nesting and roosting opportunities for nesting birds and roosting bats.

2.2 Rationale for Management

Objective 1: Manage habitat to promote the conservation status of the wintering dark-bellied brent goose population at Pagham Harbour.

2.2.1 If eel-grass *Zostera* spp. and particular types of algae are in short supply, dark-bellied brent goose will preferentially forage on arable crops and fertilized improved grassland. Owen (1975) also found that dark-bellied brent goose and other goose species select improved fertilized grassland in preference to unimproved grassland and attributed the selection to the nutritive value of the forage material.

2.2.2 This is corroborated by the behaviour of the dark-bellied brent goose on the Golf Course at Church Farm Holiday Village. If eel-grass is present on Pagham Harbour, it is not obvious even at low tide and the saltmarsh grassland that was composed of either red fescue *Festuca rubra* agg. and/or common salt-marsh grass *Puccinellia maritima* had no obvious signs of being grazed. It can, therefore, be assumed that dark-bellied brent goose is making use of neighbouring land to forage during winter months.

2.2.3 Church Farm Holiday Village is located behind a floodbank and an arable field is situated between the floodbank and the Holiday Village golf course. Apart from a patch of ground that has been deliberately sown with a 'weed crop' to feed farmland birds, the arable field is fallow during winter with no forage for the goose population. The nine-hole golf course is, for the most part, amenity-managed with extensive areas of short, fine-leaved grasses. At the north end of the course there is a patch of unmanaged rough grassland

together with a storage and disposal area. At the south end is a more extensive area of unmanaged grassland with a few areas that are wetter, occurring in association with shallow pools. Observation has confirmed that the dark-bellied brent goose population preferentially forage on the golf course and an absence of faeces in the rough grasslands also confirms that these areas are not being used for foraging by the goose population.

- 2.2.4 Observation of the goose population when foraging also corroborates with Owen (1977), in terms of habituation to routine disturbance; the goose population continued to forage within 50m of tractor-mounted grass mowers, golfers and pedestrians. However, the presence of uncontrolled dogs immediately put the geese to flight, even if they were more than 50m away (pers. obs.). It was observed that, following episodes of disturbance by dogs, the flock took flight, moved to the estuary and did not return within one hour of departure. Any grazing animal foraging on grass usually has to graze for long periods of the day in order to gain sufficient nutrition. Frequent displacement from foraging habitat is likely to have an adverse impact if there is a shortfall in the grazing period.
- 2.2.5 Apart from stopping dog walking activities on the golf course during winter, there are opportunities to further enhance the suitability of the golf course for dark-bellied brent goose without compromising its primary function. This can be achieved by clearance of selected shrubs and trees, and modification of selected areas of rough grassland to extend the area of suitable foraging habitat for the goose population.
- 2.2.6 The golf course has several stands of semi-mature trees and shrubs. Many of the specimens have a poor growth form with broken limbs, presumably wind damaged. Each stand has a fairly open structure and all of the stands occupy a relatively small area; as such they are of limited ecological interest. Trees and shrubs that interfere with open sightlines can reduce the suitability of foraging grounds for dark-bellied brent goose (Solent Waders and Brent Goose Strategy Steering Group 2010), so any reduction of such habitat and appropriate pruning of retained trees and shrubs will be of benefit.
- 2.2.7 The east boundary of the golf course is, at present, defined by immature plantation woodland. Most of the woodland will be incorporated into the caravan park, screening the existing caravans from the new caravan plots. The new boundary will have discrete blocks of planting rather than a near-continuous line of plantation woodland. To create optimum conditions for the geese there would be no planting along the new boundary, but aesthetically this is not desirable. As a compromise, it is recommended that the boundary is defined by a 'Hit and Miss' fence that is a minimum of 1.25m height with shrub and tree planting located on the caravan side of the fence, i.e. nothing

on the golf course. This is contrary to the proposed 900mm rabbit-mesh fence, which is considered to be inadequate to effectively control larger dogs and people from accessing the golf course. Signs that are strategically located along the permissive footpath will explain the reasons for the exclusion of dogs from the golf course.

- 2.2.8 The proposed extension to the caravan park will result in the loss of some of the amenity-managed grassland habitat. The areas to be lost are in close proximity to the boundary plantations and, given the distribution of goose faeces across the golf course, it would appear that these areas are less frequently used by the geese for foraging than the open areas near to the arable field. Any loss of what is a relatively small area of suitable foraging could be adverse for the dark-bellied brent goose population. Modification of the rough grassland to the north of the golf course and part of the rough grassland to the south of the golf course will offset the impact of habitat loss by increasing the overall area of potential foraging habitat. Once modified, the grasslands can be incorporated into the existing mowing regime for the golf course.

Objective 2: Create habitat to promote the conservation status of turtle dove.

- 2.2.9 The RSPB has been working with local landowners to enhance the local area for turtle dove *Streptopelia turtur*, which has suffered significant population declines in recent years. One cause of the decline is thought to be lack of seed and grain as food during the breeding season, resulting in a much shorter breeding season with fewer nesting attempts. The species is now included on the Red List of conservation concern. [<https://www.rspb.org.uk/birds-and-wildlife/bird-and-wildlife-guides/bird-a-z/t/turtledove>].
- 2.2.10 An area of arable land next to the golf course has been sown with a mix of plants that will provide a source of food during the nesting season and the unmanaged, shrubby hedgerows provide optimum nesting conditions. There is, however, a shortage of freshwater next to feeding habitat. Recent research by the RSPB indicates that that turtle dove presence and abundance in farmland is influenced by the presence of 4m high scrub and hedgerows along with ponds [<http://www.rspb.org.uk/our-work/conservation/conservation-projects/details/256862-turtle-dove-monitoring>]. The area of rough grassland to the north of the golf course provides an opportunity to create a small, permanent water body next to the feeding plot.

Objective 3: Promote nesting and roosting opportunities for nesting birds and roosting bats.

- 2.2.11 To safeguard the ecology of the area, and in the interests of birds & bats in accordance with policies GEN7 and GEN29 of the Arun District Local Plan

and the National Planning Policy Framework, Planning Condition 9 requires the installation of six nesting bird boxes and roosting bat boxes.

2.2.12 There are few suitable buildings that would accommodate nest boxes for swift *Apus apus*, house martin *Delichon urbica* and swallow *Hirundo rustica* within the Holiday Village complex, but the original Church Farm buildings, which function as storage and service buildings, are more suitable. Given the design of the Church Farm buildings and orientation, it is considered that the installation of six wooden nest boxes for swifts, such as those shown in the photograph below, will be of greatest benefit. Swifts are colony nesting birds so the installation of a row of six nest boxes on a north or northeast or northwest facing wall, 4-5m off the ground, will maximize the potential for occupation.

Figure 1. Example of a swift nest box



Source: <http://gardenature.co.uk/product/swift-nest-box-camera-ready>

2.2.13 There are three mature horse chestnut *Aesculus hippocastanum* trees located at the entrance to the Holiday Village (Ordnance Survey Grid Reference SZ88569751). One of the trees is located next to a street lamp, but the remaining two should provide suitable conditions for the attachment of six bat roosting boxes (three in each tree). A further three bat roosting boxes can be placed in a mature oak tree that is located at the southeast corner of the reception car park (Ordnance Survey Grid Reference SZ88519741).

3 Prescriptions

3.1 Objective 1 Prescriptions

Objective 1: Manage habitat to promote the conservation status of the wintering dark-bellied brent goose population at Pagham Harbour.

- 3.1.1 Appendix 1 provides a plan showing the location of the management prescriptions.

Tree and Shrub Removal and Modification

- 3.1.2 Clear-fell the small blocks of trees and shrubs to ground level and dispose of felled materials off-site. Treat stumps with a suitable herbicide to kill the tree or shrub and initiate rotting.
- 3.1.3 Within the largest woodland block, select alder and oak standards (15% of total woodland area) that are healthy and have a single, straight trunk for retention. Fell the remaining trees and shrubs and treat as specified above (paragraphs 3.1.2 and 3.1.3).
- 3.1.4 Prune lower limbs on retained trees to raise the crowns above 1.25m and create unimpeded sight lines for grazing geese. Routinely repeat pruning as trees mature to raise the lower level of the crown above 2m height.
- 3.1.5 Mow soft vegetation around the base of the stumps with a strimmer until stumps have fully rotted to promote the development of a grassland sward.
- 3.1.6 Once the stumps have rotted incorporate the grassland into the existing mowing regime for the surrounding golf course.

Boundary Fencing and Signs

- 3.1.7 Erect a 'Hit and Miss' fence (minimum height of 1.25m) along the boundary between the golf course and the Caravan Park extension. Install access gates (of an appropriate design) on the fence line at the existing entrance to the golf course.
- 3.1.8 Install two information boards at strategic locations to inform the general public regarding the reasons for restricting access and closing the golf course during winter months.

Grassland Modification

- 3.1.9 The rough grassland areas to the north and south of the golf course will be walked over and all non-vegetative material that has been tipped will be removed and disposed off-site. During late summer stands of rough grassland together with bramble *Rubus fruticosus* agg. and European gorse *Ulex europaeus* under-scrub will be chopped by use of a tractor-mounted flail mower. The cuttings will be left to dry before being manually raked, collected and removed from the grassland areas.
- 3.1.10 The grassland will be cut during September and October using conventional rotary mowers to maintain a short sward.
- 3.1.11 Routine mowing will be supplemented by a programme of weed control in September of Year 1 and resuming in early summer of Year 2 until the cover of pernicious weeds including common nettle *Urtica dioica*, thistles *Cirsium* spp., docks *Rumex* spp. and common ragwort *Senecio jacobaea* are eradicated.
- 3.1.12 Carry out routine mowing of the modified grasslands throughout the summer after modification, at the same frequency as the golf course 'roughs'.

3.2 Objective 2 Prescriptions

Objective 2: Create habitat to promote the conservation status of turtle dove.

Pond Creation

- 3.2.1 Excavate a triangular pond with a long axis of 15m and a short axis of 8m at the edge of the golf course to a maximum depth of 0.75m and create shallow margins. Line the pond with bentonite clay and overlay with a 300mm layer of subsoil. Dispose of the excavated spoil off-site.
- 3.2.2 Allow natural colonisation by plants, but carry out routine checks and remove stands of emergent species such as greater reedmace *Typha latifolia* and reed sweet grass *Glyceria maxima*.

3.3 Objective 3 Prescriptions

Objective 3: Promote nesting and roosting opportunities for nesting birds and roosting bats.

- 3.3.1 Attach six swift nest boxes to a north-facing wall at a height of 4+m on a suitable building in the Church Farm complex. The nest boxes will be attached in a row, next to each other.
- 3.3.2 Prune minor branches on the south side of the two horse chestnut trees and the single oak tree that have been selected for the installation of Schwegler 2F bat boxes. Attach three bat boxes to each tree, clustered to face southeast and

southwest at a height of 3 to 6m. During winter months carry out routine pruning of any branches that may increase shading of bat boxes, sufficient to ensure that the bat boxes receive adequate sunlight during summer months.

4 Prescription Register

4.1.1 The table below includes details of timing and responsibility for the prescriptions described above. Whilst some of the work is seasonally constrained, the actual dates for carrying out the work have not been included, because such detail has yet to be finalised.

Table 1. Prescription Register

Ref. No	Prescription Title	Responsibility	Timing
Objective 1: Manage habitat to promote the conservation status of the wintering dark-bellied brent goose population at Pagham Harbour.			
3.1.2	1. Clear-fell trees and shrubs 2. Treat stumps with herbicide	Contractor Contractor	November to February
3.1.3	1. Select 15% of alder and oak trees for retention 2. Clear-fell trees and shrubs 3. Treat stumps with herbicide	Contractor Contractor Contractor	November to February
3.1.4	1. Prune retained alder and oak trees to raise crowns 2. Repeat pruning to increase crown height above 2m	Grounds staff Grounds staff	November to February
3.1.5	1. Mow areas cleared of shrubs and trees with a brushcutter	Grounds staff	March to October
3.1.6	1. Include areas cleared of trees and shrubs into golf course mowing regime	Grounds staff	March to October
3.1.7	1. Erect a 'Hit and Miss' fence between the new caravan plot and the golf course 2. Install access gates at the existing entrance to the golf course	Contractor Contractor	March to October March to October
3.1.8	1. Install two information boards at the south and north end of the footpath alongside the golf course	Contractor / Ecologist	Anytime
3.1.9	1. Remove fly-tipped material from unmanaged grasslands 2. Flail stands of underscrub and	Contractor Contractor	April to August

Ref. No	Prescription Title	Responsibility	Timing
	rough grassland 3. Allow to dry, rake and dispose of all cuttings generated by flail mowing	Contractor	
3.1.10	1. Cut remediated grassland (see 3.1.9) every fortnight until the end of the growing season	Grounds staff	March to October
3.1.11	1. Spot spray pernicious weeds in remediated grassland with a suitable herbicide	Contractor	September
3.1.12	1. Include remediated grassland into golf course mowing regime	Ground staff	March to October
Objective 2: Create habitat to promote the conservation status of turtle dove.			
3.2.1	1. Excavate triangular pond of 60m ² and up to 0.75m deep 2. Line with bentonite and overlay with sub-soil	Contractor Contractor	February to March
3.2.2	1. Carry out routine clearance of emergent vegetation	Ground staff	Autumn
Objective 3: Promote nesting and roosting opportunities for nesting birds and roosting bats.			
3.3.1	1. Attach six swift nest boxes to a suitable Church Farm building	Ground staff / Ecologist	Anytime
3.3.2	1. Clear branches on each selected tree to create unshaded tree limbs. 2. Attach three bat boxes facing southeast and southwest in each of the selected trees. 3. Prune trees annually to keep bat boxes unshaded	Ground staff Ground staff / Ecologist Ground staff	November to February

Key:

Contractor - Specialist with suitable experience and equipment

Ecologist - Supervisory or advisory role

Ground staff – suitably experienced in-house staff (possibly with guidance from the ecologist)

5 References

<http://gardenature.co.uk/product/swift-nest-box-camera-ready?>

<https://www.rspb.org.uk/birds-and-wildlife/bird-and-wildlife-guides/bird-a-z/t/turtledove>

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Appendix I: Prescription Plans

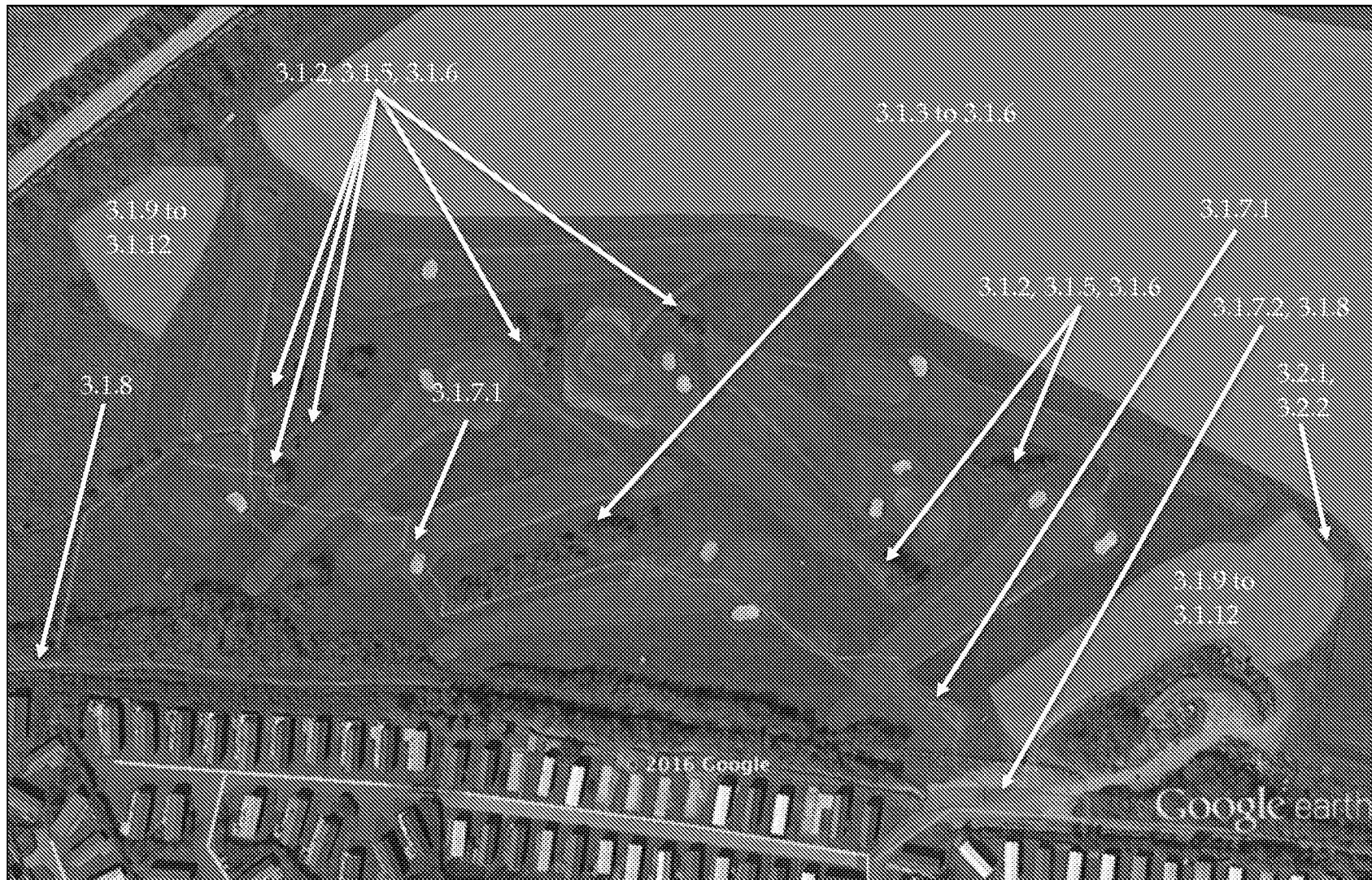


Figure 2. Objectives 1 and 2 Prescriptions

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Figure 3. Objective 3 Prescriptions



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