

## Greater Dublin Drainage Project Addendum

**Environmental Impact Assessment Report Addendum:  
Volume 3A Part B of 6**

**Appendix A10.3 - Written Responses to Biodiversity (Marine  
Ornithology) Queries at the 2019 Oral Hearing**

**Uisce Éireann**

October 2023

# **An Bord Pleanála Oral Hearing**

**Irish Water**

**Greater Dublin Drainage**

**Response to Questions raised by the Inspector**

## **1. Response to Issues Raised on Breeding and Wintering Birds In Relation to Clonshagh Waste Water Treatment Plant:**

**Dr. Simon Zisman 27.03.2019**

## **Response to Issues Raised on Breeding and Wintering Birds In Relation to Clonshagh Waste Water Treatment Plant:**

### **Evidence on Biodiversity (Terrestrial and Aquatic):**

- 1 This statement responds to the issues raised on birds around the proposed Waste Water Treatment Plant (WwTP).
- 2 The first part of the statement addresses the Inspectors comment on nesting birds (including raptors).
- 3 The second part addresses the wintering bird surveys that were completed for the Proposed Project, including survey method, dates of surveys and a summary of the results to understand the bird usage of the site.
- 4 Lastly the habitat and current use (intensive horticulture use) of the proposed WwTP site will be discussed in the context of its suitability for brent geese and other Special Protection Area (SPA) qualifying species.

### **Baldoyle Bay Special Protection Area (SPA) in Relation to the WwTP**

- 5 Baldoyle Bay SPA is over 5km from the Clonshagh WwTP. The WwTP (as explained below) is of no importance for Special Conservation Interest species of this or any other SPA. This includes for brent geese, and also for all other migratory waders and wildfowl. The construction and operation of the WwTP will therefore have no adverse impact on the integrity of the SPA.

### **Breeding Birds (Including Raptors) at the WwTP**

#### Terrestrial Breeding Bird Surveys (Including Raptors)

- 6 Breeding bird surveys were carried out along the terrestrial section of the route, as set out in section 11.2.3 of Chapter 11 of the Environmental Impact Assessment Report (EIAR) (Volume 3 Part A) (with underlying terrestrial bird survey data submitted to the Hearing).
- 7 Breeding bird surveys of the proposed WwTP were carried out in June 2012, April and June 2013, and repeated again between April and June in 2015 and May and June in 2017 using an abridged version of the British Trust for Ornithology's (BTO's) Common Bird Census Technique (Bibby et al. 2000; Gilbert et al. 1998). This method captured data on breeding bird activity within the survey area surrounding the proposed WwTP during the optimal survey window (April to July).
- 8 The survey extended 250m around each component of the Proposed Project along the route and at Clonshagh.

#### Results

- 9 From breeding bird surveys carried out along the proposed route and at Clonshagh WwTP, three raptor species were recorded:- kestrel, sparrowhawk and buzzard. Records were all of birds in flight, and no nests of any of these raptor species were identified in vegetation that would need to be removed for the Proposed Project.
- 10 From the Inspector's reference to 'large bird of prey', this would have been a buzzard.
- 11 Buzzards are a common tree-nesting raptor, resident all year round in this kind of farmland habitat.

### **Baseline Information in the Application**

- 12 Baseline results for breeding birds are presented in section 11.3.5 of Chapter 11 of the Environmental Impact Assessment Report (Volume 3 Part A), including Table 11.12 which gives the birds recorded in 2015 and 2017 at the proposed WwTP site at Clonshagh.

### **Assessment of Effects from Construction**

- 13 The effects of the Construction Phase of the Proposed Project on breeding terrestrial birds are covered in section 11.4.5 of Chapter 11 of the Environmental Impact Assessment Report (Volume 3 Part A).
- 14 There is potential risk of disturbance to nesting birds during the Construction Phase. However, this would be mitigated through a combination of pre-commencement nest checks by the Ecological Clerk of Works (ECoW), followed by assessment of any risk of disturbance to nests. This assessment would consider the nature of proposed construction activity (notably noise levels, the number of personnel and plant operating, and the lines of sight from the nest to these personnel and machinery). In order for disturbance to be avoided, the ECoW would therefore ensure the appropriate buffer distance was put in place between construction and nesting, so that the birds were not prevented from nesting successfully by associated noise or activity.
- 15 These measures are all tried and tested standard ornithological mitigation measures, used successfully in similar construction projects.
- 16 No impacts are predicted from the Operational Phase of the Proposed Project on this or any other bird species.

### **Conclusion in Relation to Breeding Birds Including Particular Reference to Raptors**

- 17 The presence of buzzard noted by the Inspector is in line with breeding bird survey findings. Mechanisms are included in the application documentation to mitigate any impacts through identification and enforcement of suitable buffers around nests, to prevent disturbance from construction personnel or machinery. These measures would be implemented by the ECoW, as is standard and well-established practice on similar construction projects.

### **Winter Birds at the WwTP**

#### Terrestrial Winter Bird Surveys (Including for Brent Geese and Other SPA Special Conservation Interest Species)

- 18 Winter bird surveys were carried out along the terrestrial section of the route, as set out in section 11.2.3 of Chapter 11 of the Environmental Impact Assessment Report (EIAR) (Volume 3 Part A) (with underlying terrestrial bird survey data submitted to the Hearing) and at the Clonshagh site.
- 19 The survey method used was the standard Winter Walkover Survey (Bibby et al. 2000; Gilbert et al. 1998). This method captured data on winter bird activity within the survey area surrounding the proposed WwTP during the optimal survey window (September to March).
- 20 The survey extended 250m around each component of the Proposed Project.
- 21 The choice and frequency of surveys were informed by desk study and scoping. Surveys were completed by highly experienced professional bird surveyors with extensive knowledge of birds that inhabit this type of farmland landscape in Ireland.

- 22 The survey method covered migratory waders and wildfowl (including SPA Special Conservation Interest species), as well as other bird species.
- 23 The survey data have been tabled as part of the precis submitted to the Hearing, at the request of the Inspector following evidence presented by Dr. Simon Zisman. As can be seen from the survey data supplied, the Proposed Project route was covered over a period of days, for each survey round.
- 24 Four surveys along the Proposed Project route (including the WwTP) were completed overall:
- The first survey was completed in 2015 on the 30<sup>th</sup> January;
  - The second survey was completed in 2017 and comprised visits over the 24<sup>th</sup> and 27<sup>th</sup> November;
  - The third survey covered the route from 20<sup>th</sup> to 23<sup>rd</sup> March and the 27<sup>th</sup> and 30<sup>th</sup> March 2017; and
  - The fourth survey was completed on the 13<sup>th</sup> and 14<sup>th</sup> November 2017.

#### **Baseline Information in the Application**

- 25 Baseline results for winter birds are presented in section 11.3.5 of Chapter 11 of the Environmental Impact Assessment Report (Volume 3 Part A). This confirmed:-

*“There were no agglomerations of winter birds, such as geese or other wildfowl, or species reliant on farmland. The Proposed Project study area is therefore of no more than local importance for wintering birds”.*

- 26 These findings were consistent with pre-existing desk study results that confirmed the WwTP area was not known as a site of any importance for wintering birds, including any migratory waders or wildfowl (including Special Conservation Interest of SPAs).
- 27 The sequence of three winter surveys (and corroborated by a fourth), using the industry-standard Winter Walkover Survey method, and completed by experienced professional surveyors over a spread of months through the winter period, and spanning multiple years, therefore generated highly robust baseline data on the birds using the WwTP area, from which to inform the EIAR.

#### **Assessment of Effects on Wintering Birds (Including Waders and Wildfowl)**

- 28 The effects of the Construction Phase of the Proposed Project on wintering birds is covered in section 11.4.5 of Chapter 11 of the Environmental Impact Assessment Report (Volume 3 Part A).

##### Construction Phase

- 29 In the case of the proposed WwTP site there will be the permanent loss of habitat, although the great majority of this is again, characteristically, intensively farmed fields chiefly of local importance (lower value)

##### Operational Phase

- 30 No operational phase impacts are predicted.

### **Conclusion in Relation to Wintering Birds Including Waders and Wildfowl**

- 31 The WwTP area has been comprehensively surveyed over successive winter periods. The surveys were completed at Clonshagh using an appropriate survey method, by highly experienced professional bird surveyors, over an appropriate spread of winter months and over multiple years. The site is not used in any meaningful way by any Special Conservation Interest species from Baldoyle Bay or any SPA (including brent geese). Underpinned by the comprehensive site-specific data collected, the assessment shows there are no predicted impacts on wintering birds from either the Proposed Project's Construction or Operational Phase. This includes Special Conservation Interest species from Baldoyle Bay, Irelands Eye or other SPAs.

### **Description of Habitat the Proposed WwTP site For Breeding and Wintering Birds**

- 32 The limited number and diversity of breeding and winter bird species recorded at the WwTP site is entirely consistent with the habitat characteristics and farming land use at the site.
- 33 The Phase 1 Habitat Survey results (Figure 11.5 in Chapter 11 and described in 11.3.2) show limited extent of hedgerows on site, and extensive monocultures of arable crops. The dominant habitat is therefore heterogeneous arable fields. During the crop growing season, once plants become established, the area is therefore of negligible value for breeding or wintering birds.
- 34 As noted in Chapter 19 'Agronomy' of the EIAR, and drawing on discussions with the farmers, the WwTP lands are referred to as being used for intensive horticultural operations, producing a rotation of cabbage, cauliflower and broccoli, with spring-sewn wheat or barley grown as a break crop.
- 35 As commonly occurs in intensive agricultural operations with high value crops, bird scarers have been deployed to protect crops from foraging birds (as noted during bird surveys completed at the proposed WwTP site). This further restricts the value of this proposed WwTP area for breeding and wintering birds.

### **Conclusion in Relation to Wintering Birds Including Waders and Wildfowl**

- 36 Given the intensity of agricultural production, the site at Clonshagh is therefore of low value for breeding or wintering birds, including Special Conservation Interest species of Baldoyle Bay or other SPAs.

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**An Bord Pleanála Oral Hearing**

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**Response to Inspector's Questions**

**Biodiversity (Marine & Terrestrial Ornithology) – Simon Zisman**

**GDD Oral Hearing  
Response to Inspector's Questions**

**Biodiversity (Marine & Terrestrial Ornithology)**

**Bird Survey Raw Data – Terrestrial**

The following Appendices provide the raw terrestrial bird data collected for the Greater Dublin Drainage Project. The data should be considered in conjunction with EIAR Chapter 11, which provides supplementary information on survey method and other background information.

A key to help interpret the data is also provided, extracted from Bibby et al<sup>1</sup>. (2000) (see Appendix 1).

The terrestrial bird data were collected between January 2015 and November 2017, and comprise:

- Winter surveys (for late winter 2014/15, early winter 2015/2016, late winter 2016/2017 and early winter 2017/2018); and
- Summer surveys (for 2015 and 2017).

The data is provided in the following format:

- Appendix 1 - Key from Bibby et al (2000);
- Appendix 2 – Winter 2015 (January and February);
- Appendix 3 – Winter 2015 (November);
- Appendix 4 – Winter 2017 (March);
- Appendix 5 – Winter 2017 (November);
- Appendix 6 – Summer 2015 (April and June); and
- Appendix 7 – Summer 2017 (May and June).

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<sup>1</sup> Bibby, C., N. Burgess, D. Hill, and S. Mustoe (2000) Bird Census Techniques. Academic Press. Elsevier. ISBN: 9780120958313

## **APPENDIX 1                      KEY FROM BIBBY ET AL (2000)**

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The information below is taken from Bibby et al. (2000). It gives the standard notation for activity codes for birds and it provides the standard two-letter codes that are for recording birds and their behaviour.

# BTO SPECIES CODES

AC	Arctic Skua	GA	Godwit	LE	Long-eared Owl	SM	Sand Martin
AE	Arctic Tern	GX	Gannet	LT	Long-tailed Tit	SS	Sanderling
AV	Avocet	GW	Garden Warbler	MG	Magpie	TE	Sandwich Tern
BO	Barn Owl	GY	Garganey	MA	Mallard	VI	Saw's Warbler
BY	Barnacle Goose	GC	Goldcrest	MAN	Mandarin Duck	SG	Scarlet Rosefinch
BA	Bar-tailed Godwit	EA	Golden Eagle	MX	Manx Shearwater	SP	Scaup
BR	Bearded Tit	OL	Golden Oriole	MR	Marsh Harrier	CY	Scottish Crossbill
BS	Berwick's Swan	GF	Golden Pheasant	MT	Marsh Tit	SW	Sedge Warbler
BT	Bittern	GP	Golden Plover	MW	Marsh Warbler	NIS	Serin
BK	Black Grouse	GN	Goldeneye	MP	Meadow Pipit	SA	Shag
TY	Black Guillemot	GO	Goldfinch	MU	Mediterranean Gull	SU	Shelduck
BX	Black Redstart	GD	Goosander	ML	Merlin	SX	Shorelark
BJ	Black Tern	GI	Goshawk	M	Mistle Thrush	SE	Short-eared Owl
B	Blackbird	GH	Grasshopper Warbler	MO	Montagu's Harrier	SV	Showeler
BC	Blackcap	GB	Great Black-backed Gull	MH	Moorhen	SK	Siskin
BH	Black-headed Gull	GG	Great Crested Grebe	MS	Mute Swan	S	Skylark
BN	Black-necked Grebe	ND	Great Northern Diver	N	Nightingale	SZ	Slovenian Grebe
BW	Black-tailed Godwit	NX	Great Skua	NI	Nighthawk	SN	Snipe
BV	Black-throated Diver	GS	Great Spotted Woodpecker	NH	Nuthatch	SB	Snow Bunting
BT	Blue Tit	GT	Great Tit	OP	Osprey	ST	Song Thrush
BU	Bluthroat	GE	Green Sandpiper	OC	Oystercatcher	SH	Sparrowhawk
BL	Brambling	G	Green Woodpecker	PX	Peafowl/Peacock	AK	Spotted Cuckoo
BG	Brent Goose	GR	Greenfinch	PE	Peregrine	SF	Spotted Flycatcher
BF	Bullfinch	GK	Greenshank	PH	Pheasant	DR	Spotted Redshank
BZ	Buzzard	H	Gray Heron	PF	Pied Flycatcher	SG	Starling
CG	Canada Goose	P	Gray Partridge	PW	Pied Wagtail	SD	Stock Dove
CP	Capercaillie	GV	Grey Plover	PG	Pink-footed Goose	SC	Stonchat
C	Carrian Crow	GL	Grey Wagtail	PT	Pintail	TN	Stone-curlew
CW	Cattil's Warbler	GI	Greylag Goose	PO	Pochard	TM	Storm Petrel
CH	Chaffinch	GU	Guillemot	PM	Pomarine	SL	Swallow
CC	Chiffchaff	FW	Guineaowl (Helmsted)	PU	Puffin	SI	Swift
CF	Chough	HF	Hawlinch	PS	Purple Sandpiper	TO	Tawny Owl
CL	Cirl Bunting	HH	Hen Harrier	Q	Quail	T	Teal
CT	Coal Tit	HG	Herring Gull	RN	Raven	TK	Temminck's Stint
CD	Collared Dove	HY	Hobby	RA	Razorbill	TP	Tree Pipit
CM	Common Gull	HZ	Honey Buzzard	RG	Red Grouse	TS	Tree Sparrow
CS	Common Sandpiper	HC	Hooded Crow	KT	Red Kite	TC	Treecreeper
CX	Common Scoter	HP	Hoopoe	ED	Red-backed Shrike	TU	Tufted Duck
CN	Common Tern	HM	House Martin	RM	Red-breasted Merganser	TT	Tunstone
CO	Coat	HS	House Sparrow	RQ	Red-crested Pochard	TD	Turtle Dove
CA	Cormorant	JD	Jackdaw	FV	Red-footed Falcon	TW	Twite
CB	Corn Bunting	J	Jay	RL	Red-legged Partridge	WA	Walter Rool
CE	Cormorant	K	Kestrel	NK	Red-necked Phalarope	W	Wheatear
CI	Crested Tit	KF	Kingfisher	LR	Redpoll (Lesser)	WM	Whimbrel
CR	Crossbill (Common)	KI	Kittiwake	RK	Redshank	WC	Whinchin
CK	Cuckoo	KN	Knot	RT	Redstart	WG	White-fronted Goose
CU	Curlew	LM	Lady Amherst's Pheasant	RH	Red-throated Diver	WH	Whitethroat
DW	Dartford Warbler	LA	Lapland Bunting	RE	Redwing	WS	Whooper Swan
DI	Dipper	L	Lapwing	RB	Red Bunting	WN	Wigeon
DO	Dottrel	TL	Leach's Petrel	RW	Red Warbler	WT	Willow Tit
DN	Dunlin	LB	Lesser Black-backed Gull	RZ	Ring Ouzel	WV	Willow Warbler
D	Dunrook	LS	Lesser Spotted Woodpecker	RP	Ringed Plover	OD	Wood Sandpiper
EG	Egyptian Goose	LW	Lesser Whitethroat	RI	Ring-necked Parakeet	WO	Wood Warbler
E	Eider	LI	Linnat	R	Rabin	WK	Woodcock
EP	Feral Pigeon	ET	Little Egret	DV	Rock Dove (not feral)	WL	Woodlark
ZI	Feral/hybrid goose	LG	Little Grebe	RC	Rock Pipit	WP	Woodpigeon
ZF	Feral/hybrid mallard type	LU	Little Gull	RO	Rook	WR	Wren
FF	Fieldfare	LO	Little Owl	RS	Roseate Tern	WY	Wryneck
FC	Fitzcrest	LP	Little Ringed Plover	RY	Ruddy Duck	YW	Yellow Wagtail
F	Fulmar	AF	Little Tern	RU	Ruff	Y	Yellowhammer

If you are not submitting your data electronically using BBS-Online, please return your Field Recording Sheets to your Regional Organiser with your other BBS forms. If you would like to submit your results on BBS-Online, please inform your RO, then visit [www.bto.org/bbs](http://www.bto.org/bbs).

Figure 3.3

(continued)

WR → WR

A When moving between two perches, the solid line indicates it was definitely the same bird.

WR --- WR

B Two Whens in song at the same time, i.e. definitely different birds. The dotted line indicates a simultaneous registration and is of very great value in separating territories.

W --- L

C Two Linnet nests occupied simultaneously and thus belonging to different pairs. This is another example of the value of dotted lines. Only adjacent nests need be marked in this way.

CK — CK

The solid line indicates that the registrations definitely refer to the same bird.

CK ? — CK

A question-marked solid line indicates that the registrations probably relate to the same bird. This convention is of particular use when the census route returns to an area already covered – it is possible to mark new positions of (probably the same) birds recorded before, without the risk of double recording. If birds are recorded without using the question-marked solid line, co-occupation of territories will result.

WR --- WR

When there is no line joining the registrations, this indicates that the birds are probably different. It is possible to use a question-marked dotted line, indicating that the registrations were almost certainly of different birds.

CA CA

Where adjacent nests are marked without a line, it will often be assumed that they were first and second broods, or a replacement nest following an earlier failure.

The above conventions indicate when registrations relate to different birds, and when to the same bird. Their proper use is essential for the accurate assessment of clusters.

In all cases the standard BTO codes for British birds should be used.

Some territories will overlap the plot boundary and several ways of dealing with these are considered below. Normally it is necessary to map records outside the plot. In the field, this may be accomplished by recording everything detected from the boundary without walking outside the plot. The field maps therefore need to extend by about 100 m in all directions to include these observations.

#### 4. Habitat recording

To interpret the reasons behind the distribution of birds on a plot, it may be necessary to describe its vegetation in some way (Chapter 11). Since the bird data are mapped, it is ideal also to map the vegetation to analyse habitat utilisation by birds. If the plots are each relatively uniform and there are several of them that differ from one another, it might be sufficient to describe or measure the vegetation without mapping it.

#### Variations of the method

Up until now, we have concentrated on the BTO's Common Bird Census, where it is important that the method does not vary. For other surveys it may be useful to vary the method in the following ways:

##### 1. Restricting the list of species covered

The CBC and bird community studies include all species, or at least as many as can possibly be recorded. If the purpose of the study is more restricted, the first variables lists may favour species. This helps to concentrate time and effort in the required direction. The purpose of making ten visits is to gather enough data to register territories of species differing in their breeding and singing seasons. If only one species is being studied, five visits at the most appropriate season and time of day would suffice.

Recognising the boundaries between territories of birds of the same species is the single most important aim of territory mapping. In a study aimed at a particular species, more effort can be put into finding neighbours singing at each other or fighting. The species map could be updated after each field visit. In this way, it would be obvious if there were any areas where it was going to be difficult to resolve the number and pattern of clusters. Extra field effort could be made in these places on subsequent visits.

##### 2. Eliciting responses

The observer can increase the chance of finding birds and obtaining simultaneous registrations by using a tape to play stretches of song of the target species and recording any responses. If a tape is played in places that may be territory boundaries, it might help to see whether or not there is a response from both birds. Owners of isolated territories often sing less than when the neighbours are close. A tape recorder could increase the chance of getting sufficient records for a cluster. Many migrants only sing early in the breeding season, but a tape recorder can get a response while birds are nesting and have largely stopped singing. Thought should be given, however, to the risk of disturbance caused by this method.

For some elusive birds, dogs can be used to increase the chance of obtaining registrations. Dogs are regularly used in counting game birds and for finding nests of ducks or waders. It goes without saying that a suitable and well-trained dog and handler are needed if this method is to do more good for the census than harm to the birds.

Figure 3.2

SD	Stock Dove	MT	Marsh Tit
CS	Great Spotted Woodpecker	WT	Willow Tit
S	Sparrow	CT	Cool Tit
TP	Tree Pipit	BT	Blue Tit
WR	Wren	GT	Great Tit
R	Robin	NH	Nuthatch
N	Nightingale	TC	Treecreeper
SC	Screecher	MG	Maggie
B	Blackbird	FD	Flick
ST	Song Thrush	C	Corvid Crow
SW	Sedge Warbler	FR	Raven
RW	Reed Warbler	SG	Starling
LN	Lesser Whitethroat	CH	Chaffinch
WH	Whitethroat	GR	Greenfinch
GW	Garden Warbler	OO	Goldfinch
BC	Blackcap	L	Linnit
WO	Wood Warbler	LN	Noddy
CC	Chiffchaff	BF	Bullfinch
GC	Goldcrest	Y	Yellowhammer
PF	Red Flycatcher	HR	Redstart
LT	Long-tailed Tit	CB	Com Bunting

A selection of standard species codes developed by the British Trust for Ornithology for British passerine species commonly recorded on Common Bird Census plots. The full list (British Birds (SOM) can be used for any kind of bird recording in all habitats and conditions throughout the Western Palearctic.

### 3. Bird recording

The identity and activity of all birds are mapped with small and tidy writing in pencil or ball-point pen. If the map gets wet, some inks run; ballpoints do not work on a wet map but pencils still do. It is helpful to use a standard list of codes for bird species. Codes for some British birds are shown in Fig. 3.2. Activities are also given standard codes (Fig. 3.3). Care should be taken to record as much detail as possible such as the sex and age of the bird. It is often critical in analysis to know whether a multiple observation was a party of juveniles. Were two different birds nearby a) the male and female of a pair, or b) of the same sex and thus presumably near a territory boundary?

The most useful point to concentrate on is the location of individuals of the same species that can be seen or heard simultaneously. A key feature of analysis is the assumption that territory boundaries fall between such records. For uniformly distributed species, it is difficult to analyse the results without reference to simultaneous registrations. It may not be clear if a singing bird is different from one seen earlier, a short distance away. Such ambiguous registrations must be joined by a line with a question mark to indicate that the observer is unsure whether they are the same bird or not. They are quite likely to be the same bird. If they really are different, the chances are that both will appear simultaneously on a different visit.

Figure 3.3

Standard symbols for bird activities	<p>CH, CH<sup>st</sup>, CH<sup>g</sup> 3 CH<sub>2</sub>un, CH<sup>st</sup>lg</p> <p>R<sub>1</sub> for</p> <p>R<sub>2</sub></p> <p>R<sub>3</sub></p> <p>(R)</p> <p>⋮ R ⋮ ⋮ R ⋮ ⋮ R ⋮</p> <p>* R</p> <p>RE BT</p> <p>W PW on</p> <p>PW nest</p> <p>PW food</p>	<p>Chaffinch eight records, with age, sex or number of birds (if appropriate). CH indicates one pair, 3CH means two pairs together.</p> <p>Juvenile Robins with parent(s) in attendance.</p> <p>Acalling Robin.</p> <p>A Robin repeatedly giving alarm calls or other vocalisations (not song) thought to have strong territorial significance.</p> <p>A Robin in song.</p> <p>An aggressive encounter between two Robins.</p> <p>An occupied nest of Robins; do not mark unoccupied nests, which are of no territorial significance by themselves.</p> <p>Blue Tits nesting in a specially provided site (e.g. nestbox).</p> <p>Red Wagtail with an adult sitting.</p> <p>Red Wagtail carrying nest material.</p> <p>Red Wagtail carrying food.</p>
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Movements of birds can be indicated using the following conventions

— GR —→	Acalling Greenfinch flying over (seen only in flight).
(b) —→	Asinging Dumbuck perched then flying away (not seen to sing).
—→ B ♂	Female Blackbird flying in and landing (first seen in flight).

(continued)

The standard BTO list of conventions is shown. These are designed for clear and unambiguous recording. Symbols can be combined where necessary. Additional activities of territorial significance, such as displaying or nesting, should be noted using an appropriate clear abbreviation.

## **APPENDIX 2                    WINTER 2015 (JANUARY AND FEBRUARY)**

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The data from the January and February 2015 winter walkover surveys were collected as species counts and are enclosed as an Excel spreadsheet that give the numbers recorded along various sections of the Proposed Project.

BIRDS USING SITE

SURVEY SECTION	DATE	B.	BF	BH	BT	BZ	CD	CH	CM	CT	D.	DI	ET	FF	GC	GL	GO	GP	GT	GR	H	HC	HG	HS	JD	K.	L.	LI	LT	M.	MA	MG	MP	MS	PH	PW	R.	RB	RE	RO	RP	S.	SD	
The Grange - N3/M50 JCT	04/02/15	14		28	35			10	1	5		1			2	1	19		13			5	2		5	1			4	1	8	9		9			21							
N3/M50 JCT - Cappagh Rd	04/02/15	10			9	2				2	8						5		6			4		4	3	1			5	6		16	9					16	1	10	1			
Cappagh Rd - M2	04/02/15	35	3		13	1		1		1	4	3		57	1		2	34	7		1	6		2	4		33	4		1		9	1			1	20	3	63	22	2		4	
M2 - R108	03/02/15	63	7		23	3		12		5	12		1	12	1	1	6		2	2		7		2	4			65	7	2		22	13				11	17	55			164		
R108 - M1	03/02/15	16	3		13	3		3		7	6						4	10	5	1		13		2	2						4	34				1	24			23		2		
M1 - WWTW	30/01/15	18		7	3			1								2	6		5			1	2	4	2			50	3			4	240		2	11	7	2						
WWTW	30/01/15	10	2	22	2	3		4	32		1								1			7	40		14						14	15					4	6				1		
WWTW - R107	30/01/15	21	2		12	1	2	6		1	2			10			4		3	1		2		6	8					6		9	45					16	3	32			20	
R107 - Railway	30/01/15	28				1		4		2	3						72		6			7	2		7						11					1	10		11			27		
Railway - R106	30/01/15	6									2			2			1																				3		8			4		

BIRDS IN FLIGHT ONLY

SG	SH	SN	ST	TS	WP	WR	Y.	B.	BF	BH	BT	BZ	CH	CM	CT	D.	FF	GC	GO	GP	GT	GR	H	HC	HG	HS	JD	L.	LI	LT	M.	MG	MP	MS	PW	R.	RB	RE	RN	RO	S	SG	SH	SN	ST	TS	WP	WR	Y.						
2			5		22	4								2					3					1		2						3																		6					
12		1	12		26	14						7											2	1		10					4		4								12										2				
141			6		63	5	9						2							3			1								1										20		10	1	2					2					
14	1		11		44	25																1	5				10			5	10																			4					
1					42	11				2				2					4				3	4		7				1	1											9	3								6				
	1		2		13	7	4			3				4					1				1	1		3																									8				
10				3	111	7	5					1	1										1								10									1	31	11								70					
80		3	5		14	3				3			1						1				1	1		6				4																					3				
16	1		5		40	6	1					2							2					2		11				4	5	10																				32			
					10	3		1				1		14											14						4																						2		

## **APPENDIX 3                      WINTER 2015 (NOVEMBER)**

---

The data from the November 2015 winter walkover surveys were mapped, and are enclosed below (along with the associated survey recording sheets).

<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	C500
<b>Date</b>	16/11/2015
<b>Survey</b>	Winker W.O.
<b>Observer</b>	N. Veale
<b>Start Time</b>	08:30
<b>Finish Time</b>	15:30
<b>Sheet 1/ &amp; 1 Maps attached</b>	

<b>Wind Speed</b>	<b>Direction</b>	<b>Rain/Snow</b>	<b>Cloud Cover</b>	<b>Cloud Height</b>	<b>Visibility</b>
Beaufort Calm 0 Light air 1 Light breeze 2 Gentle breeze 3 Mod. breeze 4 Fresh breeze 5 Strong breeze 6 Mod. gale 7 Fresh gale 8 Strong gale 9 Whole gale 10 Storm 11 Hurricane 12	Mph >1 1-3 4-7 8-12 13-18 18-24 25-31 32-38 39-46 47-54 55-63 64-72 73+	None 0 Drizzle/Mist 1 Light showers 2 Heavy showers 3 Heavy rain 4 <b>Lying Snow</b> None 0 On silt 1 High ground 2	In eighths e.g. 3/8 <b>Frost</b> None 0 Ground 1 All day 2	Height of cloud above average height of viewshed <150m 0 150-500m 1 >500m 2 Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 (in notes).	Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 18:30	3	SW	0	6/8	2	2	---	---	7°C
Hr 29:30	3	SW	0	6/8	2	2	---	---	8°C
Hr 30:30	4	SW	0	6/8	2	2	---	---	8°C
Hr 41:30	3	SW	2	6/8	1	2	---	---	9°C
Hr 52:30	3	SW	1	7/8	1	1	---	---	9°C
Hr 63:30	4	SW	2	8/8	1	2	---	---	8°C
Hr 74:30	4	SW	2	8/8	1	2	---	---	8°C
Hr 8									

**Field Notes:**  
Maps attached

For office use only. NB- Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
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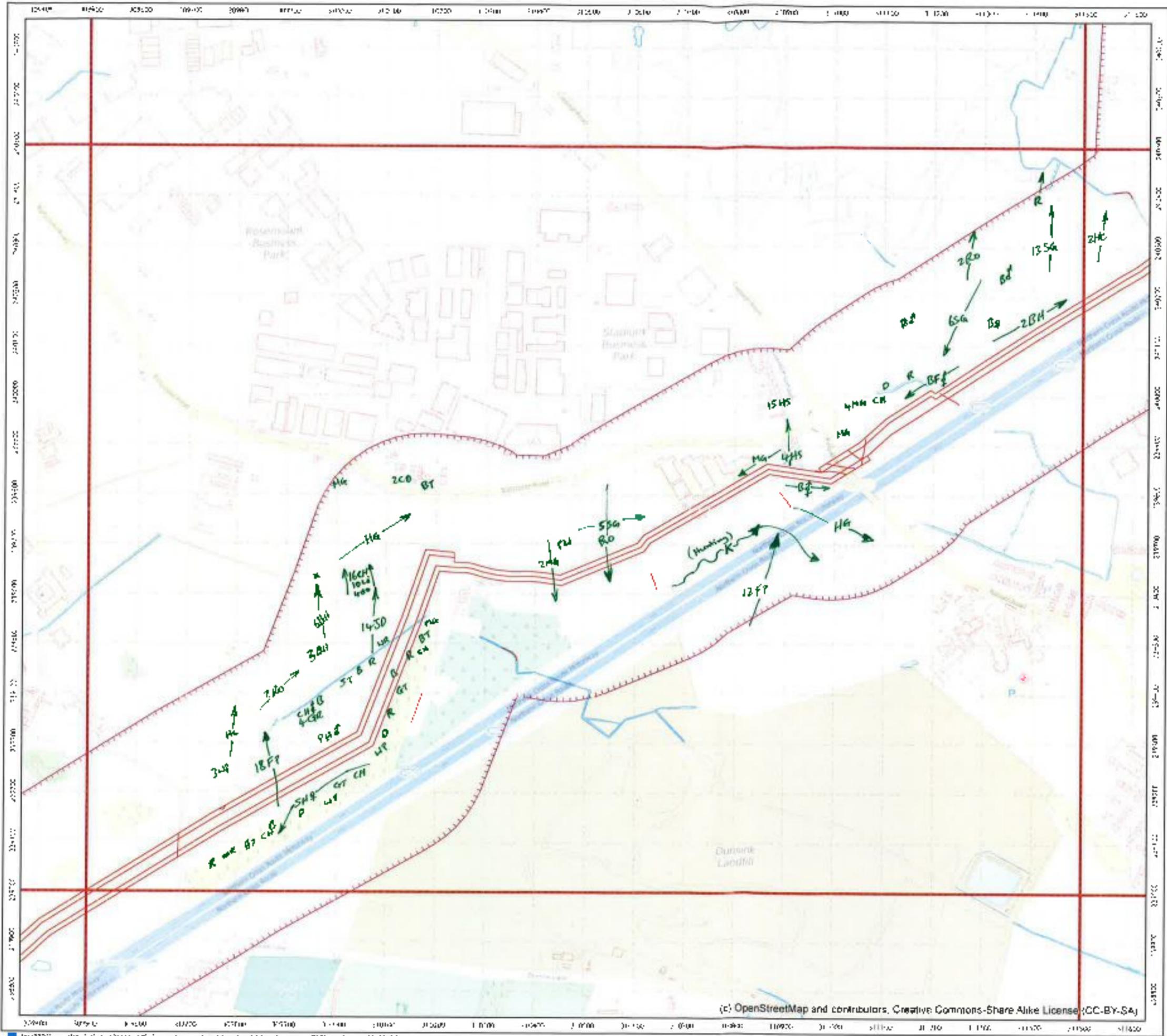
<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GDO
<b>Date</b>	17/11/2015
<b>Survey</b>	Winter W.O.
<b>Observer</b>	Nick Vede
<b>Start Time</b>	08:45
<b>Finish Time</b>	14:05
<b>Sheet 1/ &amp; I</b>	1 Maps attached

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Calm	0	N	0	None	0	In eights	Height of cloud above average height of viewshed	0	Poor (<1km)		
Light air	1	NE	1	Drizzle/Mist	1	e.g. 3/8		1	Moderate (1-3km)		
Light breeze	2	E	2	Light showers	2			2	Good (>3km)		
Gentle breeze	3	SE	3	Heavy showers	3			3			
Mod. breeze	4	S	4	Heavy rain	4			4			
Fresh breeze	5	SW		<b>Lying Snow</b>		<b>Frost</b>					
Strong breeze	6	W		None	0	None					
Mod. gale	7	NW		On site	1	Ground					
Fresh gale	8			High ground	2	All day					
Strong gale	9										
Whole gale	10										
Storm	11										
Hurricane	12										

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 10:45	2	E	0	8/8	2	2	---	---	7°C
Hr 29:45	3	SE	2	8/8	2	2	---	---	8°C
Hr 31:45	3	SE	2	8/8	2	2	---	---	9°C
Hr 41:45	3	SE	2	8/8	1	1	---	---	10°C
Hr 51:45	4	S	2	8/8	1	2	---	---	13°C
Hr 61:45	4	SW	2	8/8	1	2	---	---	Survey stopped at 14:05, High Winds
Hr 71:45	6-8	SW	Surf via	Stopped			---	---	Gale force winds from SW
Hr 8									

**Field Notes:**  
 Maps attached

For office use only, NB- Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
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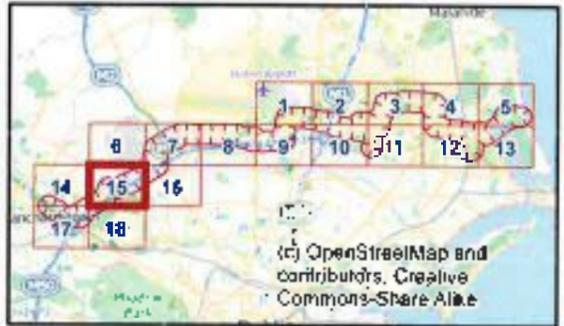
**RPS** Winter Walk over

Surveyor: N. Veele

Date: 17/11/2015

Start time: 08:45      End time: 14:05

\*Please attach weather sheet  
Notes:



**Legend**  
 BBS/WVO survey boundary (250 m buffer, supplied 20140420, plus 750 m buffer of protruding access track supplied 20 509'7)

Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 15 of 18

0 100 m  
 Scale: 1:7,500 @ A1  
 Date: 20/10/2015    Job No: SEC 1909    Rev: b  
 Drawn: CH    Checked: DRAFT    Approved: DRAFT  
 RPS Group Ltd, RPS 2015  
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 rpsgroup.com

<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GDD
<b>Date</b>	20/11/2015
<b>Survey</b>	Winter W.O.
<b>Observer</b>	N. Vede
<b>Start Time</b>	8:00
<b>Finish Time</b>	14:15
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

Wind Speed		Direction		Rain/Snow	Cloud Cover	Cloud Height	Visibility
Calm	Beaufort	Mph		None	In eighths	Height of cloud above average	Poor (<1km)
Light air	1	1-3	N	Drizzle/Mist	e.g. 3/8	height of viewshed <td>Moderate (1-3km)</td>	Moderate (1-3km)
Gentle breeze	2	4-7	NE	Light showers			Good (>3km)
Mxd. breeze	3	8-12	E	Heavy showers			
Fresh breeze	4	13-18	SE	Heavy rain			
Strong breeze	5	19-24	S	<b>Lying Snow</b>	<b>Frost</b>	<150m	
Mod. gale	6	25-31	SW	None	None	150-500m	
Fresh gale	7	32-38	W	On safe	Ground	>500m	
Strong gale	8	39-46	NW	High ground	All day		
Whole gale	9	47-54					
Storm	10	55-63					
Hurricane	11	64-72					
	12	73+					

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 1 8:00	3	SW	0	4/8	2	1			
Hr 2 9:00	4	SW	0	5/8	2	2			
Hr 3 10:00	4	W	0	6/8	2	2			
Hr 4 11:00	4	W	0	8/8	2	2			
Hr 5 12:00	4	W	0	8/8	2	2			
Hr 6 13:00	4	NW	3	8/8	1	1			
Hr 7 14:00	4	NW	3	8/8	1	1			Gale force Gusts Survey stopped at 14:15
Hr 8									

**Field Notes:**  
 Maps attached

<b>For office use only. NB- Initial AND date ALL boxes.</b>	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
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<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	G00
<b>Date</b>	24/11/2015
<b>Survey</b>	Winter U.O.
<b>Observer</b>	N. Vele
<b>Start Time</b>	8:20
<b>Finish Time</b>	15:20
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

<b>Wind Speed</b> Beaufort Calm 0 Light air 1 Light breeze 2 Gentle breeze 3 Mod. breeze 4 Fresh breeze 5 Strong breeze 6 Mod. gale 7 Fresh gale 8 Strong gale 9 Whole gale 10 Storm 11 Hurricane 12	<b>Direction</b> N NE E SE S SW W NW	<b>Rain/Show</b> None 0 Drizzle/Mist 1 Light showers 2 Heavy showers 3 Heavy rain 4 <b>Lying Snow</b> None 0 On site 1 High ground 2	<b>Cloud Cover</b> In eighths e.g. 3/8 <b>Frost</b> None 0 Ground 1 All day 2	<b>Cloud Height</b> Height of cloud above average height of viewshed <150m 0 150-500m 1 >500m 2	<b>Visibility</b> Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2
------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------	-----------------------------------------------------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------------

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)
Hr 1 8:20	3	SW	0	6/8	2	2	---	---	7°C
Hr 2 9:20	4	W	1	7/8	1	1	---	---	7°C
Hr 3 10:20	4	W	2	8/8	1	1	---	---	7°C
Hr 4 11:20	4	W	2	8/8	1	1	---	---	8°C
Hr 5 12:20	4	W	1	8/8	1	1	---	---	8°C
Hr 6 13:20	4	W	1	8/8	1	1	---	---	8°C
Hr 7 14:20	4	W	2	8/8	1	1	---	---	
Hr 8									

Field Notes:  
Maps attached

<b>For office use only. NB. Initial AND date ALL boxes.</b>	<b>Logged</b>	<b>Database Entered</b>	<b>Database Validated</b>	<b>GIS Entered</b>	<b>GIS Validated</b>
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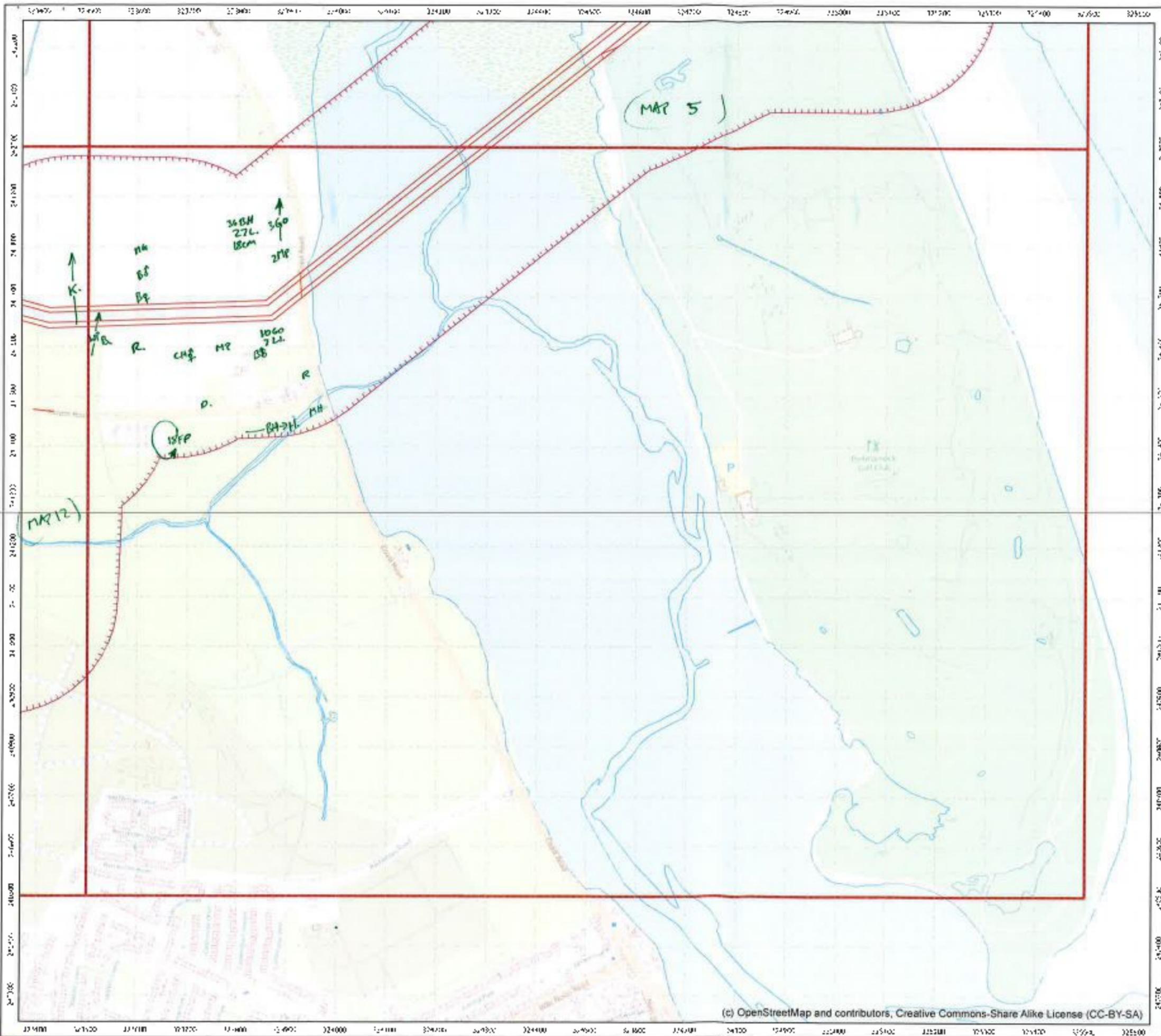
<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GDD
<b>Date</b>	26/11/2015
<b>Survey:</b>	W. Ste. W.O.
<b>Observer</b>	N. Veale
<b>Start Time</b>	8:30
<b>Finish Time</b>	15:30
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Calm	0	N	0	None	0	In eprints	0	Height of cloud	Poor (<1km)	0	
Light air	1	NE	1	Drizzle/Mist	1	e.g. 3:8	1	above average	Moderate (1-3km)	1	
Light breeze	2	E	2	Light showers	2		2	height of	Good (>3km)	2	
Gentle breeze	3	SE	3	Heavy showers	3		3	viewshed			
Mod. breeze	4	S	4	Heavy rain	4		4	<150m			
Fresh breeze	5	SW	5	Lying Snow				150-500m			
Strong breeze	6	W	6					>500m			
Mod. gale	7	NW	7	None	0		0				
Fresh gale	8		8	On site	1		1				
Strong gale	9		9	High ground	2		2				
Whole gale	10		10								
Storm	11		11								
Hurricane	12		12								

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 1 8:30	2	W	1	6/8	1	1			10°C Drizzle
Hr 2 9:30	2	W	1	7/8	1	1			10°C Drizzle
Hr 3 10:30	3	W	0	6/8	1	1			12°C
Hr 4 11:30	2	SW	1	7/8	1	1			12°C Drizzle
Hr 5 12:30	3	SW	1	8/8	1	1			12°C Drizzle
Hr 6 13:30	3	SW	2	8/8	1	1			Rain Showers
Hr 7 14:30	3	SW	2	8/8	1	1			Continuous Rain
Hr 8									

**Field Notes:**  
Maps attached

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**RPS**

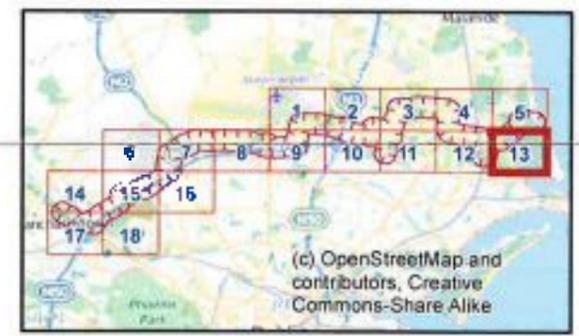
Surveyor: N. Veale

Date: 26/11/2015

Start time: 08:30      End time: 15:30

\*Please attach weather sheet

Notes:



**Legend**

 BBS/WVO survey boundary (250 m buffer, supplied 20140420, plus 250 m buffer of protruding access track supplied 20150917)

Greater Dublin Drainage

Breeding/winter bird survey

Page 13 of 18

0      200 m

Scale: 1:7,000 @A1

Date: 2010/2015      Job No: SCC7909      Rev: b

Drawn: CH      Checked: DRAFT      Approved: DRAFT

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[mapgroup.com](http://mapgroup.com)



Surveyor: N. Vea

Date: 26/11/2015

Start time: 8:30

End time: 15:30

\*Please attach weather sheet

Notes



Legend


 BBS/WVD survey boundary (250 m buffer, supplied 20140420, plus 250 m buffer of protruding access track supplied 20150917)

Greater Dublin Drainage

Breeding/winter bird survey

Page 5 of 18

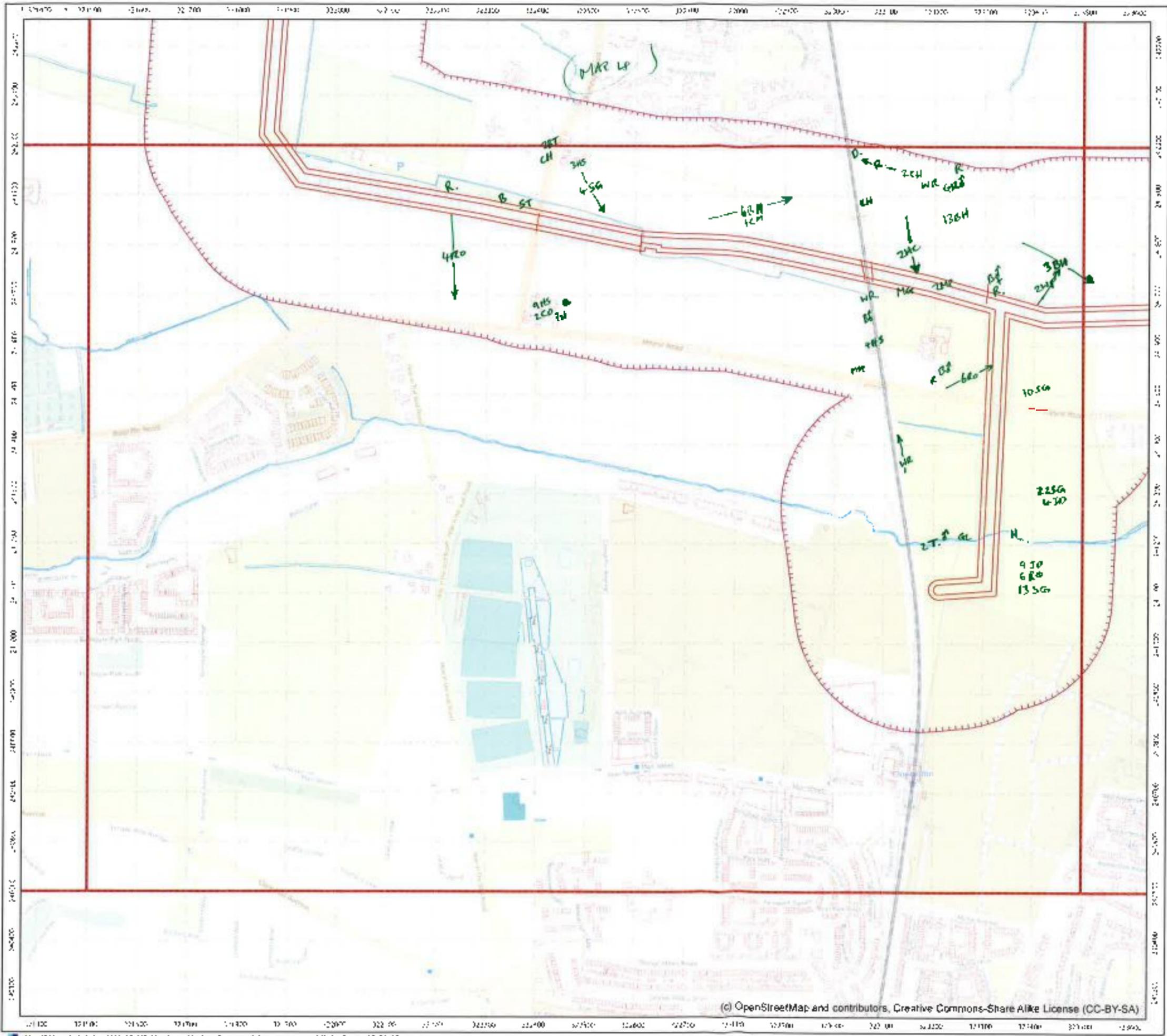
0 200 m

Scale: 1:7,500 @A3

Date: 20/10/2015 Job No: SEC7509 Rev: b

Drawn: CH Checked: DRAFT Approved: DRAFT

Irish National Grid: 15U 49900  
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Surveyor *Nick Veele*

Date *20/11/2015*

Start time: *08:30*

End time: *15:30*

\*Please attach weather sheet

Notes



**Legend**  
 BBS/WVO survey boundary (250 m buffer, supplied 20140420, plus 750 m buffer of protruding access track supplied 20150917)

Greater Dublin Drainage

Breeding/winter bird survey

Page 12 of 18

0 200 m  
 Scale: 1:600 @A3  
 Date: 20/10/2015 Job No: SCC7909 Rev: b

Drawn: CH Checked: GRGH Approved: DRAF  
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 RPS Group Ltd. 100, The Quadrant, Dublin, Ireland. Tel: 01 454 4000. Fax: 01 454 4001. Email: info@rpsgroup.com



<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	686
<b>Date</b>	27/11/2015
<b>Survey</b>	Winter L.O.
<b>Observer</b>	Mark Wake
<b>Start Time</b>	08:30
<b>Finish Time</b>	14:50
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Calm	0	N	None	0	In eights	Height of cloud above average height of viewshed	0	Poor (<1km)			
Light air	1	NE	Drizzle/Mist	1	e.g. 3/8		1	Moderate (1-3km)			
Light breeze	2	E	Light showers	2			2	Good (3-3km)			
Gentle breeze	3	SE	Heavy showers	3							
Mod breeze	4	S	Heavy rain	4							
Fresh breeze	5	SW	<b>Lying Snow</b>								
Strong breeze	6	W	None	0	None						
Mod. gale	7	NW	On site	1	Ground						
Fresh gale	8		High ground	2	All day						
Strong gale	9										
Whole gale	10										
Storm	11										
Hurricane	12										

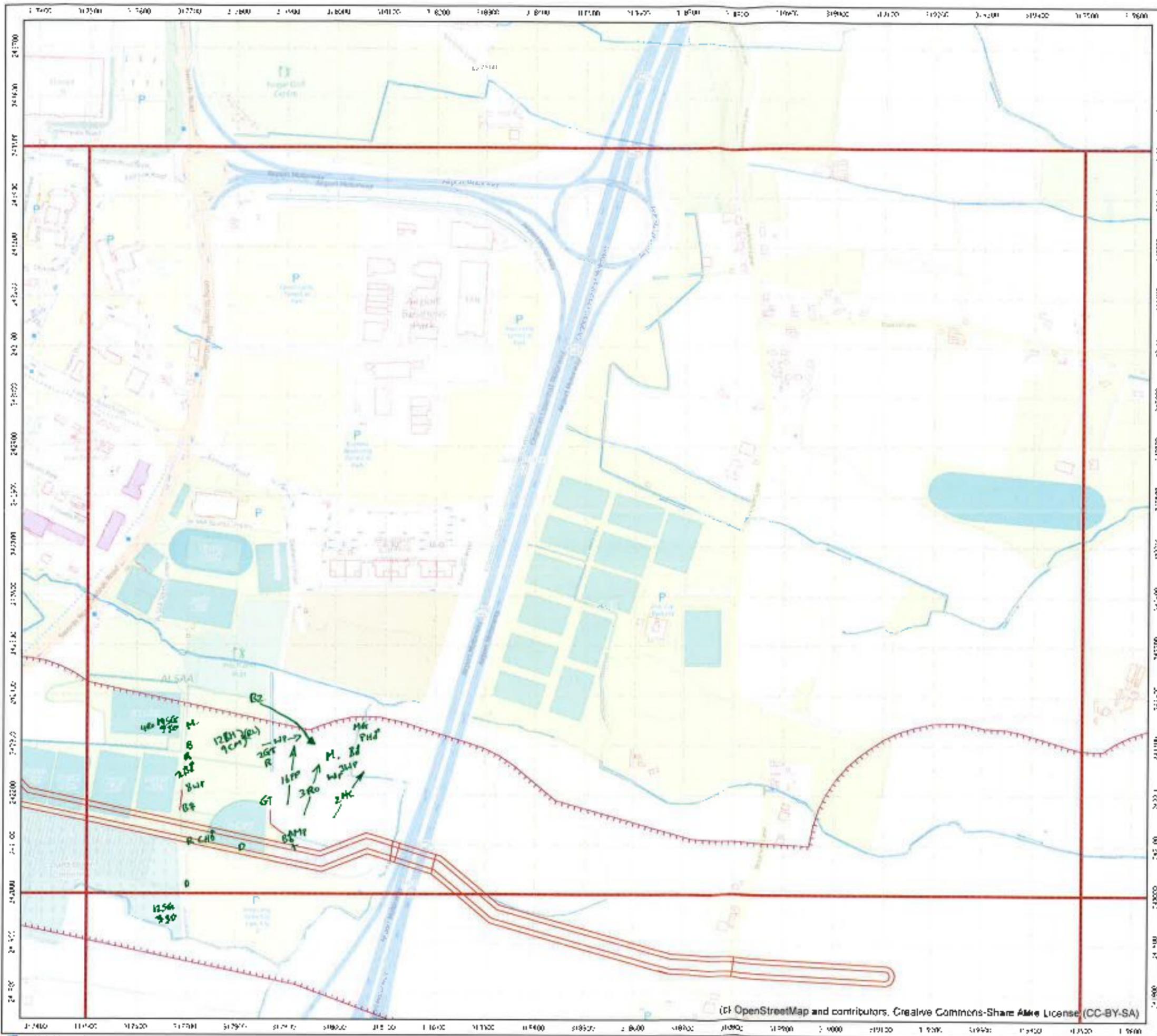
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)
Hr 1 8:30	4	SW	0	6/8	2	2			
Hr 2 9:30	4	SW	0	7/8	2	2			
Hr 3 10:30	5	SW	1	8/8	4	1			
Hr 4 11:30	5	W	1	8/8	1	1			Gusty winds up to gale 7. Sunny periods at 12:00
Hr 5 12:30	5	NW	2	7/8	1	1			Sunny conditions at 13:45 as wind eased
Hr 6 13:30	4	W	2	7/8	1	1			SUNNY STOPPED at 14:50, Increasing winds
Hr 7 14:30	5	NW	2	8/8	1	1			
Hr 8									

Field Notes:  
 Maps attached

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RPS

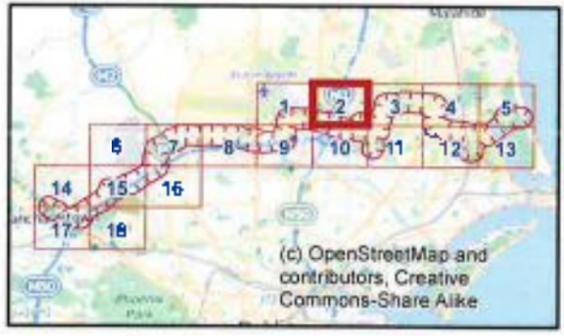
Surveyor: Nick Veda

Date: 27/11/2015

Start time: 0830      End time: 14:50

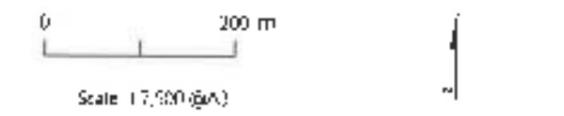
\*Please attach weather sheet  
Notes:

Transects split over Maps  
1, 2, + 9



Legend  
 BBS/WWO survey boundary (250 m buffer, supplied 20140420, plus 250 m buffer of protruding access track supplied 20150917)

Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 2 of 18



Date: 20/10/2015      Job No: SEC7509      Rev: 0  
 Drawn: CH      Checked: GRAFT      Approved: DRAFT  
 Irish Naturalists Club 1976-2015  
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 Permission of the Government of Ireland 1.1-14



## **APPENDIX 4            WINTER 2017 (MARCH)**

---

The data from the March 2017 winter walkover surveys were mapped, and are enclosed below (along with the associated survey recording sheets).

RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time	Sheet 1/ & [ ] Maps attached		Beaufort	Mph	None	0	h eights e.g. 3/8	Height of cloud above average height of viewshed	Fair (<1km)	0
G00	30/03/2017	Winter W.O.	N. Verle	07:15	15:00		0	>1	None	0			Moderate (1-3km)	1	
							1	1-3	Drizzle/Mist	1			Good (>3km)	2	
							2	4-7	Light showers	2					
							3	8-12	Heavy showers	3					
							4	13-18	Heavy rain	4					
							5	19-24	Lying Snow	0	Frost				
							6	25-31	None	0	None	0			
							7	32-38	On site	1	Ground	1			
							8	39-46	High ground	2	All day	2			
							9	47-54							
							10	55-63							
							11	64-72							
							12	73+							

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 1 7:15	3	SE	0	6/8	2	2			10°C
Hr 2 8:15	2	SE	0	8/8	2	2			light drizzle
Hr 3 9:15	3	SE	0	8/8	2	2			light drizzle
Hr 4 10:15	3	SE	0	8/8	2	2			12°C
Hr 5 11:15	3	SE	0	1/8	2	2			12°C
Hr 6 12:15	3	SE	0	7/8	2	2			
Hr 7 13:15	3	SE	0	7/8	2	2			14°C
Hr 8 14:15	4	SE	0	7/8	2	2			

Field Notes:  
Maps attached

For office use only. NB- Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
------------------------------------------------------------	--------	------------------	--------------------	-------------	---------------

RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow	Cloud Cover	Cloud Height	Visibility
Site	Date	Survey	Observer	Start Time	Finish Time	Beaufort					
GDD	27/03/2017	White Lio.	Nick Veitch	10:00	10:15						
Sheet 1/ & { } Maps attached											
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)		
Hr 10:00	2	ESE	0	4/8	2	2	---		10°C		
Hr 11:00	2	E	0	3/8	2	2	---				
Hr 12:00	2	E	0	3/8	2	2	---				
Hr 13:00	3	E	0	3/8	2	2	---		12°C		
Hr 14:00	3	ESE	0	2/8	2	2	---				
Hr 15:00	3	NE	0	4/8	2	2	---		12°C		
Hr 16:00	3	NE	0	4/8	2	2	---		11°C		
Hr 8											
Field Notes: Maps attached											
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated					

RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover	Cloud Height	Visibility
Site	GDD	Calm	0	>1	N	None	0	Cloud cover e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2		
Date	23/03/2017	Light air	1	1-3	NE	Drizzle/Mist	1	Frost None 0 Ground 1 All day 2	Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 (in notes).			
Survey	Winter W.O.	Light breeze	2	4-7	E	Light showers	2			<150m 0 150-500m 1 >500m 2		
Observer	N. Veda	Genile breeze	3	8-12	SE	Heavy showers	3					
Start Time	11:15	Mod. breeze	4	13-18	S	Heavy rain	4					
Finish Time	18:00	Fresh breeze	5	19-24	SW	Lying Snow	0					
Sheet 1/ & [ ] Maps attached		Strong breeze	6	25-31	W	None	0					
		Mod. gale	7	32-38	NW	On site	1					
		Strong gale	8	39-46		High ground	2					
		Whole gale	9	47-54								
		Storm	11	64-72								
		Hurricane	12	75+								
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)			
Hr 11:15	3	ENE	2	8/8	2	2	---		8°C			
Hr 12:15	3	ENE	0	"	"	2	---					
Hr 13:15	3	E	0	"	"	2	---		10°C			
Hr 14:15	3	E	1	7/8	"	1	---					
Hr 15:15	3	NE	0	7/8	"	2	---		10°C			
Hr 16:15	3	E	0	7/8	"	2	---					
Hr 17:15	3	E	0	6/8	"	2	---		11°C			
Hr 18	3	E		6/8	"	2	---					
Field Notes: Maps attached												
For office use only. NB: Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated							

RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover	Cloud Height		Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time	Sheet 1/ & [ ] Maps attached		Beaufort	Mph	In eighths e.g. 3/8	Height of cloud above average height of viewshed	Height of cloud above average height of viewshed	Poor (<1km)	Moderate (1-3km)
CSD	22/03/2017	W. inter L.O.	N. Ver. L.O.	06:20	14:20		0	>1	0	<150m	0	0	0	0
							1	1-3	1	150-500m	1	1	1	1
							2	4-7	2	>500m	2	2	2	2
							3	8-12	3	Please be as accurate as possible, with weather details, entering only one figure, not a range. e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 [in notes].				
							4	13-18	4					
							5	19-24	Lying Snow		Frost			
							6	25-31	0	None	0			
							7	32-38	1	On site	1			
							8	39-46	2	High ground	2			
							9	47-54						
							10	55-63						
							11	64-72						
							12	73+						
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)					
Hr 1 6:20	4	N	0	7/8	2	1	1	0	1°C					
Hr 2 7:20	4	N	1	8/8	2	1	0	0	2°C					
Hr 3 8:20	4	NE	1	"	2	1	0	0	4°C					
Hr 4 9:20	4	NE	2	"	2	1	0	0	4°C					
Hr 5 10:20	3	NE	3	"	2	1	0	0	5°C					
Hr 6 11:20	3	NE	2	"	2	1	0	0	5°C					
Hr 7 12:20	4	NE	2	"	2	1	0	0	5°C					
Hr 8 13:20	4	NE	3	"	2	1	0	0	5°C					
Field Notes: Maps attached														
For office use only. NB- initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated								

RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time	Sheet 1/ & [ ] Maps attached		Beaufort	Mph	None	In sight e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	Moderate (1-3km)	Good (>3km)
GDD	21/03/2017	winter W.O	Nick Veale	07:50	14:30		Calm	>1	N	None	0	<150m	0		
							Light air	1-3	NE	Drizzle/Mist	1	150-500m	1		
							Light breeze	4-7	E	Light showers	2	>500m	2		
							Gentle breeze	8-12	SE	Heavy showers	3				
							Mod. breeze	13-18	S	Heavy rain	4				
							Fresh breeze	19-24	SW	Lying Snow					
							Strong breeze	25-31	W	None	0				
							Mod. gale	32-38	NW	On site	1				
							Fresh gale	39-46		High ground	2				
							Strong gale	47-54							
							Whole gale	55-63							
							Storm	64-72							
							Hurricane	73+							
Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 8 (in notes).															
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)						
Hr 1 07:50	3	W	0	6/8	2	1	1	1	-1°C						
Hr 2 08:50	4	W	2	7/8	2	1	1	1	-1°C Snow showers						
Hr 3 09:50	4	W	0	7/8	2	1	0	0	0°C						
Hr 4 10:50	4	W	0	6/8	2	2	0	0	2°C						
Hr 5 11:50	4	W	2	7/8	2	1	0	0	2°C (Sleet)						
Hr 6 12:50	3	SW	0	5/8	2	2	0	0							
Hr 7 13:50	3	SW	0	5/8	2	2	0	0	4°C						
Hr 8	3	SW	0	5/8	2	2									
Field Notes: Maps attached															
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated									

<b>RPS</b>		<b>Weather Sheet</b>		<b>Wind Speed</b>			<b>Direction</b>	<b>Rain/Snow</b>		<b>Cloud Cover</b>	<b>Cloud Height</b>	<b>Visibility</b>
<b>Site</b>	G00	Beaufort Mph Calm 0 >1 Light air 1 1-3 Light breeze 2 4-7 Gentle breeze 3 8-12 Mod. breeze 4 13-18 Fresh breeze 5 19-24 Strong breeze 6 25-31 Mod. gale 7 32-38 Fresh gale 8 39-46 Strong gale 9 47-54 Whole gale 10 55-63 Storm 11 64-72 Hurricane 12 73+			N NE E SE S SW W NW	None 0 Drizzle/Mist 1 Light showers 2 Heavy showers 3 Heavy rain 4 Lying Snow None 0 On site 1 High ground 2	In eighths e.g. 3/8 Frost None 0 Ground 1 All day 2	Height of cloud above average height of viewshed <150m 0 150-500m 1 >500m 2	Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2			
<b>Date</b>	20/03/2017											
<b>Survey</b>	Winter W.O											
<b>Observer</b>	N. Veste											
<b>Start Time</b>	07:30											
<b>Finish Time</b>	15:30											
<b>Sheet 1/ &amp; [ ] Maps attached</b>												
<b>Weather</b>	<b>Wind speed</b>	<b>Wind direction</b>	<b>Rain</b>	<b>Cloud cover</b>	<b>Cloud height</b>	<b>Visibility</b>	<b>Frost</b>	<b>Snow</b>	<b>Notes(e.g. temperature)</b>			
Hr 17:30	4	W	0	7/8	2	2	---	---	7°C			
Hr 28:30	4	W	0	8/8	2	2	---	---				
Hr 39:30	4	W	2	8/8	2	1	---	---	9°C			
Hr 410:30	4	W	0	8/8	2	2	---	---				
Hr 511:30	4	W	0	8/8	2	2	---	---	10°C			
Hr 612:30	4	SW	0	8/8	2	2	---	---				
Hr 713:30	4	SW	2	8/8	2	1	---	---	10°C			
Hr 814:30	4	SW	2	8/8	2	1	---	---				
<b>Field Notes:</b> Maps attached												
<b>For office use only. NB-Initial AND date ALL boxes.</b>		<b>Logged</b>	<b>Database Entered</b>	<b>Database Validated</b>	<b>GIS Entered</b>	<b>GIS Validated</b>						



**LEGEND**

Map Scale 1:10,000 at A4

--- Pipeline buffer (100m) (250m)

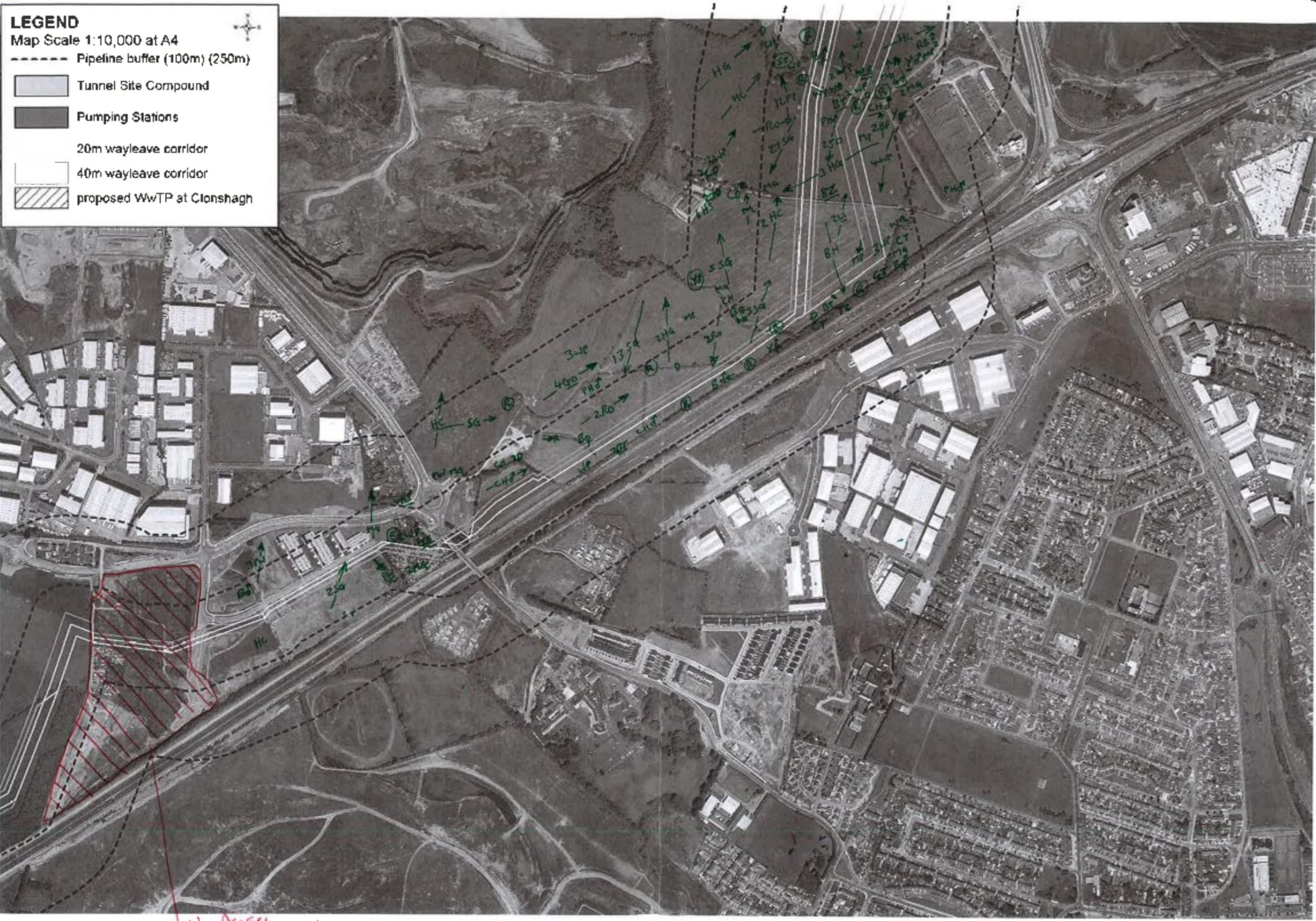
■ Tunnel Site Compound

■ Pumping Stations

20m wayleave corridor

40m wayleave corridor

▨ proposed WwTP at Clonsagh



NO ACCESS  
(TRAVELER SITE)







6

W0037

W0038  
(RED NO ACCESS)



**LEGEND**  
 Map Scale 1:10,000 at A4  
 - - - Pipeline buffer (100m) (250m)  
 [Grey Box] Tunnel Site Compound  
 [Dark Grey Box] Pumping Stations  
 [White Box] 20m wayleave corridor  
 [Light Grey Box] 40m wayleave corridor  
 [Hatched Box] proposed WwTP at Clonsagh



No Access  
W0038

7

(WLOC45) -

**LEGEND**  
 Map Scale 1:10,000 at A4

-  Pipeline buffer (100m) (250m)
-  Tunnel Site Compound
-  Pumping Stations
-  20m wayleave corridor
-  40m wayleave corridor
-  proposed WwTP at Clonshagh



No Access (TRAVELER HALTING SITE)

**LEGEND**

Map Scale 1:10,000 at A4



----- Pipeline buffer (100m) (250m)

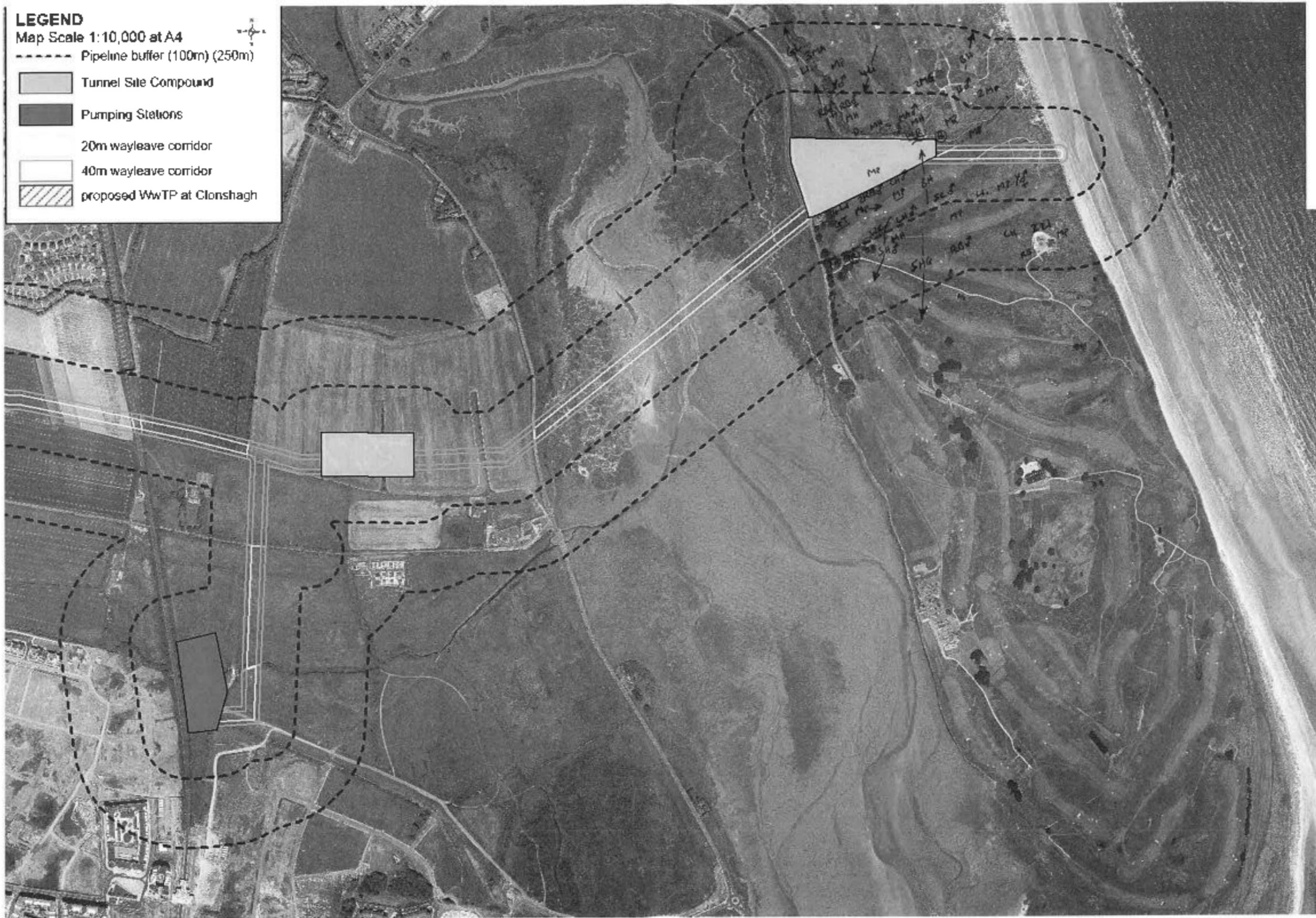
 Tunnel Site Compound

 Pumping Stations

20m wayleave corridor

 40m wayleave corridor

 proposed WwTP at Clonshagh

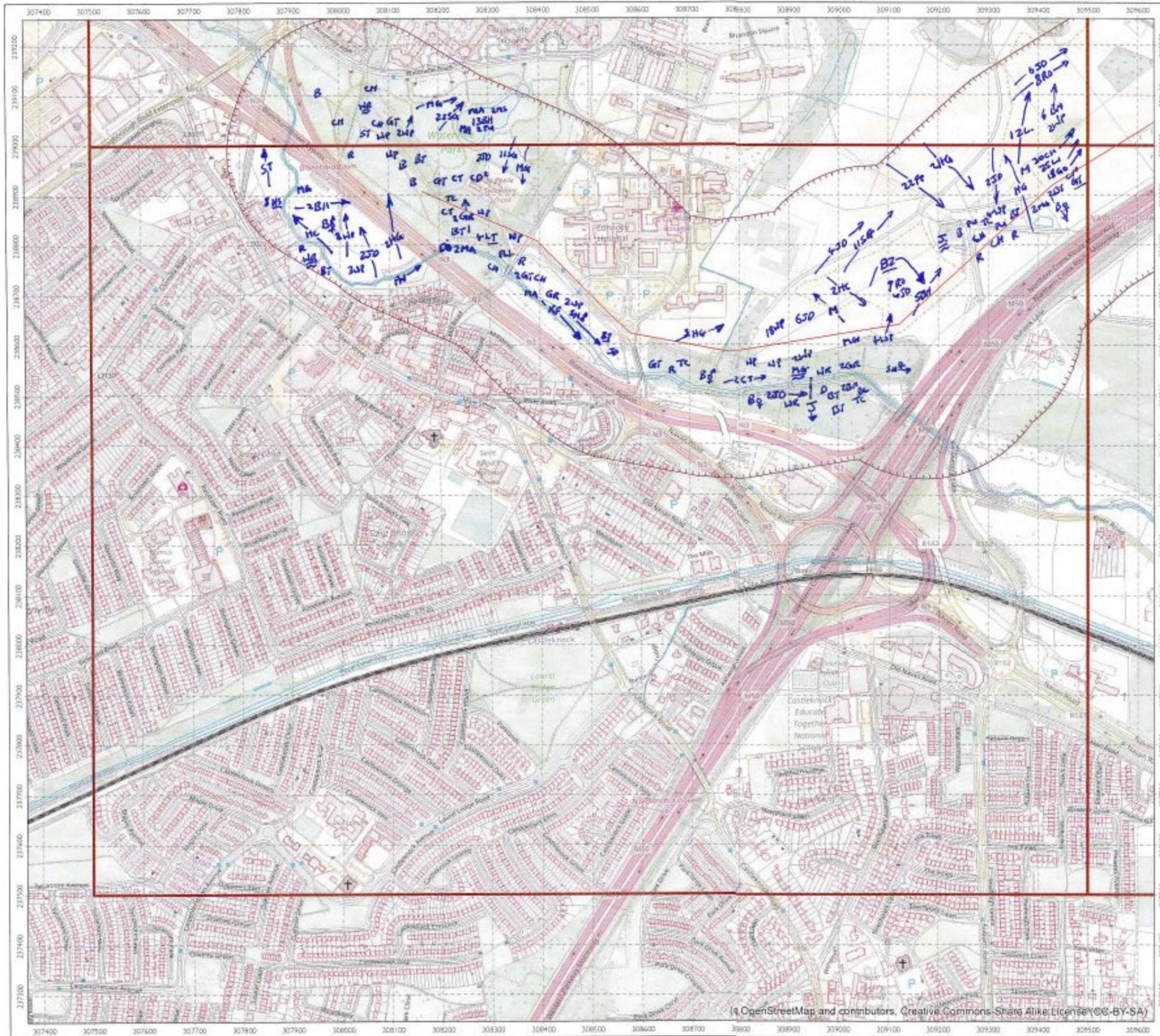


## **APPENDIX 5                    WINTER 2017 (NOVEMBER)**

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The data from the November 2017 winter walkover surveys were mapped, and are enclosed below (along with the associated survey recording sheets).

RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover	Cloud Height	Visibility
Site	Date	Beaufort	Mph	None	0		In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2		
GDD	8/11/17	0	>1	N	0		<150m 0				
8/11/17		1	1-3	NE	1		150-500m 1				
WLD		2	4-7	E	2		>500m 2				
N. Veale		3	8-12	SE	3						
08.10		4	13-18	S	4						
15:20		5	19-24	SW							
Sheet 1/ & [ ] Maps attached		6	25-31	W							
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)		
Hr 1	4	SW	0	5/8	2	2	1	—	2°C		
Hr 2	4	SW	0	4/8	2	2	0	—			
Hr 3	3	SW	0	6/8	2	2	0	—			
Hr 4	3	SW	0	6/8	2	2	0	—	4°C		
Hr 5	4	SW	2	6/8	1	2	0	—			
Hr 6	4	SW	2	5/8	2	2	0	—			
Hr 7	3	SW	2	6/8	1	2	0	—			
Hr 8	4	SW	0	5/8	2	2	0	—	9°C		
Field Notes: Maps attached											
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated					



**RPS**

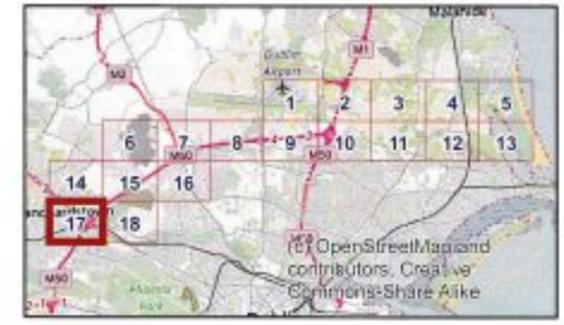
Surveyor: Nick Vede

Date: 08/11/2017

Start time: \_\_\_\_\_ End time: \_\_\_\_\_

\*Please attach weather sheet

Notes: \_\_\_\_\_



- Legend
-  BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  -  Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

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0 200 m

Scale: 1:7,500 @A3

Date: 06/04/2017 Job No: SEC7909 Rev: c

Drawn: CH Checked: DRAFT Approved: DRAFT

Ink: National Grid, EPSG 29902

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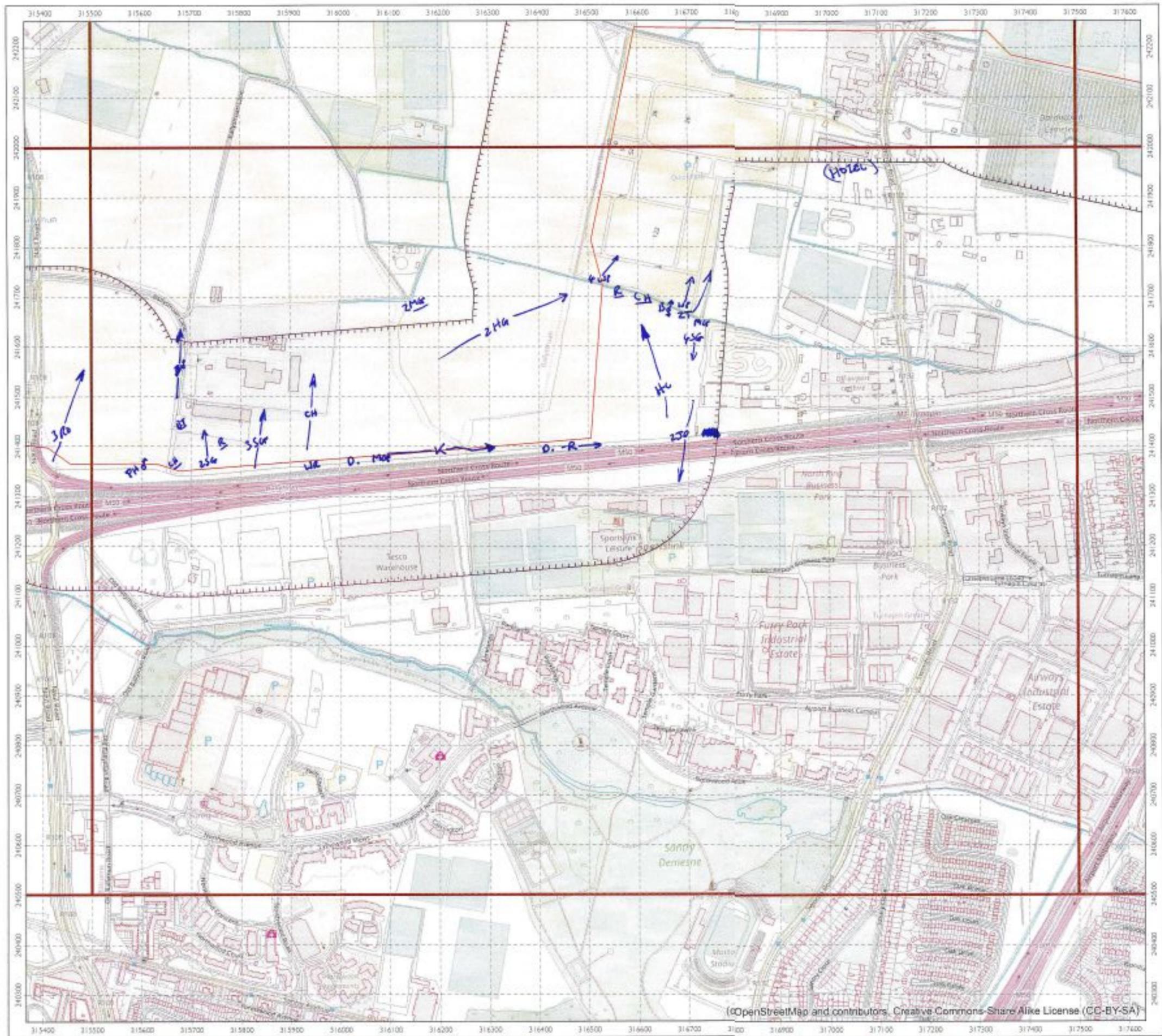
RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility				
Site	Date	Survey	Observer	Start Time	Finish Time		Beaufort	Mph	None	In eighths e.g. 3/8	<150m	150-500m	>500m	Poor (<1km)	Moderate (1-3km)	Good (>3km)	
GDD	9/11/17	WLO	Nick Veale	08:30	15:30	0	>1	None	0		0			0			
						1	1-3	Drizzle/Mist	1		1			1			
						2	4-7	Light showers	2					2			
						3	8-12	Heavy showers	3								
						4	13-18	Heavy rain	4								
						5	19-24										
						6	25-31										
						7	32-38										
						8	39-46										
						9	47-54										
						10	55-63										
						11	64-72										
						12	73+										
Sheet 1/ & [ ] Maps attached																	
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)								
Hr 1	5	NW	1	8/8	1	2			8°C								
Hr 2	4	W	1	8/8	1	2											
Hr 3	4	W	0	6/8	1	2											
Hr 4	4	NW	0	6/8	2	2			11°C								
Hr 5	4	NW	0	6/8	2	2											
Hr 6	4	NW	0	5/8	2	2											
Hr 7	5	W	0	3/8	2	2			11°C								
Hr 8	5	W	0	3/8	2	2											
Field Notes: Maps attached																	
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated											







RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover	Cloud Height	Visibility
Site	GDD	Beaufort	Mph									
Date	13/11/17	0	>1	N	None	0	In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2			
Survey	WJO	1	1-3	NE	Drizzle/Mist	1		<150m 0				
Observer	N. Verde	2	4-7	E	Light showers	2		150-500m 1				
Start Time	08:40	3	8-12	SE	Heavy showers	3		>500m 2				
Finish Time	15:40	4	13-18	S	Heavy rain	4						
Sheet 1/ & [ ] Maps attached		5	19-24	SW	Lying Snow		Frost					
		6	25-31	W	None	0	None	0				
		7	32-38	NW	On site	1	Ground	1				
		8	39-46		High ground	2	All day	2				
		9	47-54						Please be as accurate as possible, with weather details, entering only one figure, not a range. e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 [in notes].			
		10	55-63									
		11	64-72									
		12	73+									
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)			
Hr 1	3	W	0	6/8	2	2	1		10c			
Hr 2	4	W	0	5/8	2	2	0					
Hr 3	3	SW	0	7/8	2	2	0					
Hr 4	3	SW	0	6/8	2	2	0		50c			
Hr 5	3	SW	2	7/8	2	2	0					
Hr 6	3	SW	2	7/8	2	2	0					
Hr 7	4	SW	2	8/8	1	2	0		70c			
Hr 8	4	SW	2	8/8	1	2	0		70c			
Field Notes: Maps attached												
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated						



**RPS**

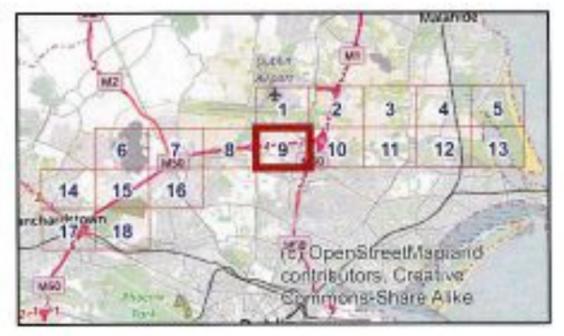
Surveyor: N. Veda

Date: 13/11/17

Start time: \_\_\_\_\_ End time: \_\_\_\_\_

\*Please attach weather sheet

Notes:



**Legend**

- BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
- Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 9 of 18

0 200 m

Scale: 1:7,500 @A3

Date: 06/04/2017 Job No: SEC7909 Rev: c

Drawn: CH Checked: DRAFT Approved: DRAFT

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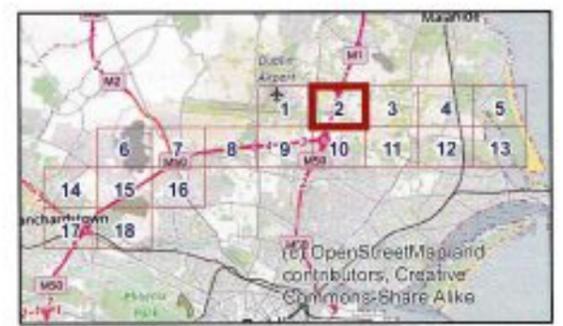
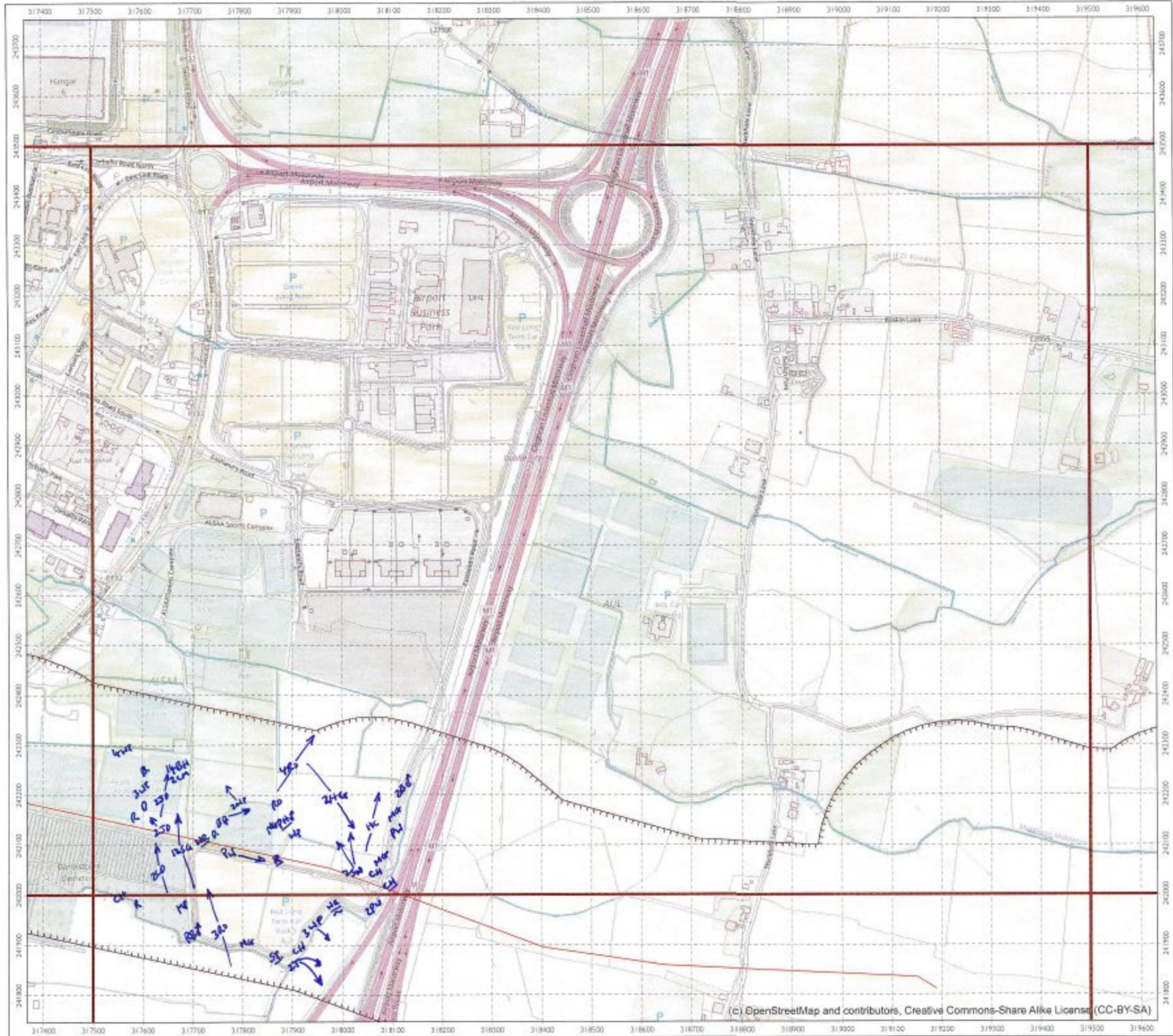
Surveyor: *N. in Veale*

Date: *13/11/17*

Start time: End time:

\*Please attach weather sheet

Notes:



Legend

- BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
- Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 2 of 18

0 200 m

Scale: 1:7,500 @A3

Date: 06/04/2017 Job No: SEC7909 Rev: c

Drawn: CH Checked: DRAFT Approved: DRAFT

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RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover	Cloud Height	Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time		Beaufort	Mph	In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	Moderate (1-3km)
GDD	14/11/17	WLO	Nick Veale	09:00	16:00	Calm	>1	0	<150m	0		
						Light air	1-3	1	150-500m	1		
						Light breeze	4-7	2	>500m	2		
						Gentle breeze	8-12	3	Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 [in notes].			
						Mod. breeze	13-18	4				
						Fresh breeze	19-24	5				
						Strong breeze	25-31	6				
						Mod. gale	32-38	7				
						Fresh gale	39-46	8				
						Strong gale	47-54	9				
						Whole gale	55-63	10				
						Storm	64-72	11				
						Hurricane	73+	12				
Sheet 1/ & [ ] Maps attached												
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)			
	4	W	1	8/8	1	1			10°C			
	5	U	0	8/8	1	2						
	5	SW	2	5/8	2	2						
	4	SW	0	6/8	2	2			11°C			
	4	W	0	6/8	2	2						
	4	SW	0	6/8	2	2						
	4	SW	0	5/8	2	2			12°C			
	5	SW	0	4/8	2	2						
Field Notes: Maps attached												
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated						







RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover	Cloud Height		Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time		Beaufort	Mph	In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	Moderate (1-3km)	Good (>3km)
GOD	24/4/17	WJO	Nicki Veab	08:50	15:30	Calm	>1	0	<150m	0			
						Light air	1-3	1	150-500m	1			
						Light breeze	4-7	2	>500m	2			
						Gentle breeze	8-12	3	Please be as accurate as possible, with weather details, entering only one figure, not a range. e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 [in notes].				
						Mod. breeze	13-18	4					
						Fresh breeze	19-24	5					
						Strong breeze	25-31	6					
						Mod. gale	32-38	7					
						Fresh gale	39-46	8					
						Strong gale	47-54	9					
						Whole gale	55-63	10					
						Storm	64-72	11					
						Hurricane	73+	12					
Sheet 1/ & [ ] Maps attached													
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)				
	5	W	0	3/8	2	2	---		2°C				
	5	W	0	5/8	2	2	---						
	5	W	0	5/8	2	2	---		3°C				
	4	W	1	6/8	2	2	---						
	5	W	2	6/8	2	2	---		4°C				
	5	W	2	6/8	2	2	---						
	5	W	0	7/8	2	2	---		4°C				
	5	W	0	5/8	2	2	---						
Field Notes: Maps attached													
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated							





RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover	Cloud Height	Visibility
Site	GDD	Calm	0	>1	N	None	0	In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	0	
Date	28/11/17	Light air	1	1-3	NE	Drizzle/Mist	1			Moderate (1-3km)	1	
Survey	WLO	Light breeze	2	4-7	E	Light showers	2			Good (>3km)	2	
Observer	Nick Vede	Gentle breeze	3	8-12	SE	Heavy showers	3					
Start Time		Mod. breeze	4	13-18	S	Heavy rain	4					
Finish Time		Fresh breeze	5	19-24	SW	Lying Snow		Frost				
Sheet 1/ & [ ] Maps attached		Strong breeze	6	25-31	W	None	0	None	0			
		Mod. gale	7	32-38	NW	On site	1	Ground	1			
		Fresh gale	8	39-46		High ground	2	All day	2			
		Strong gale	9	47-54								
		Whole gale	10	55-63								
		Storm	11	64-72								
		Hurricane	12	73+								
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)			
Hr 1	5	NW	0	3/8	2	2	1	—	0°C			
Hr 2	4	NW	0	3/8	2	2	1	—	1°C			
Hr 3	4	W	0	4/8	2	2	0	—	1°C			
Hr 4	5	W	0	3/8	2	2	0	—	2°C			
Hr 5	5	NW	0	2/8	2	2	0	—	3°C Gusts up to force 7			
Hr 6	5	NW	0	4/8	2	2	0	—	5°C			
Hr 7	5	NW	0	3/8	2	2	0	—	5°C			
Hr 8	5	NW	0	4/8	2	2	0	—	5°C			
Field Notes: Maps attached												
For office use only. NB- Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated							

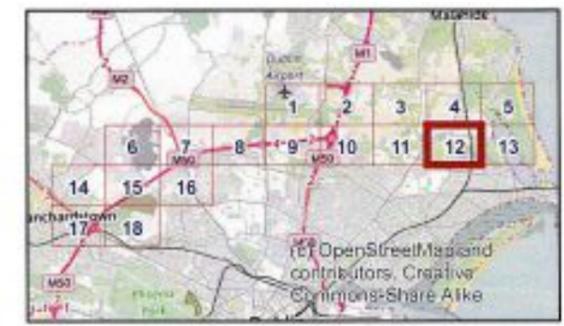
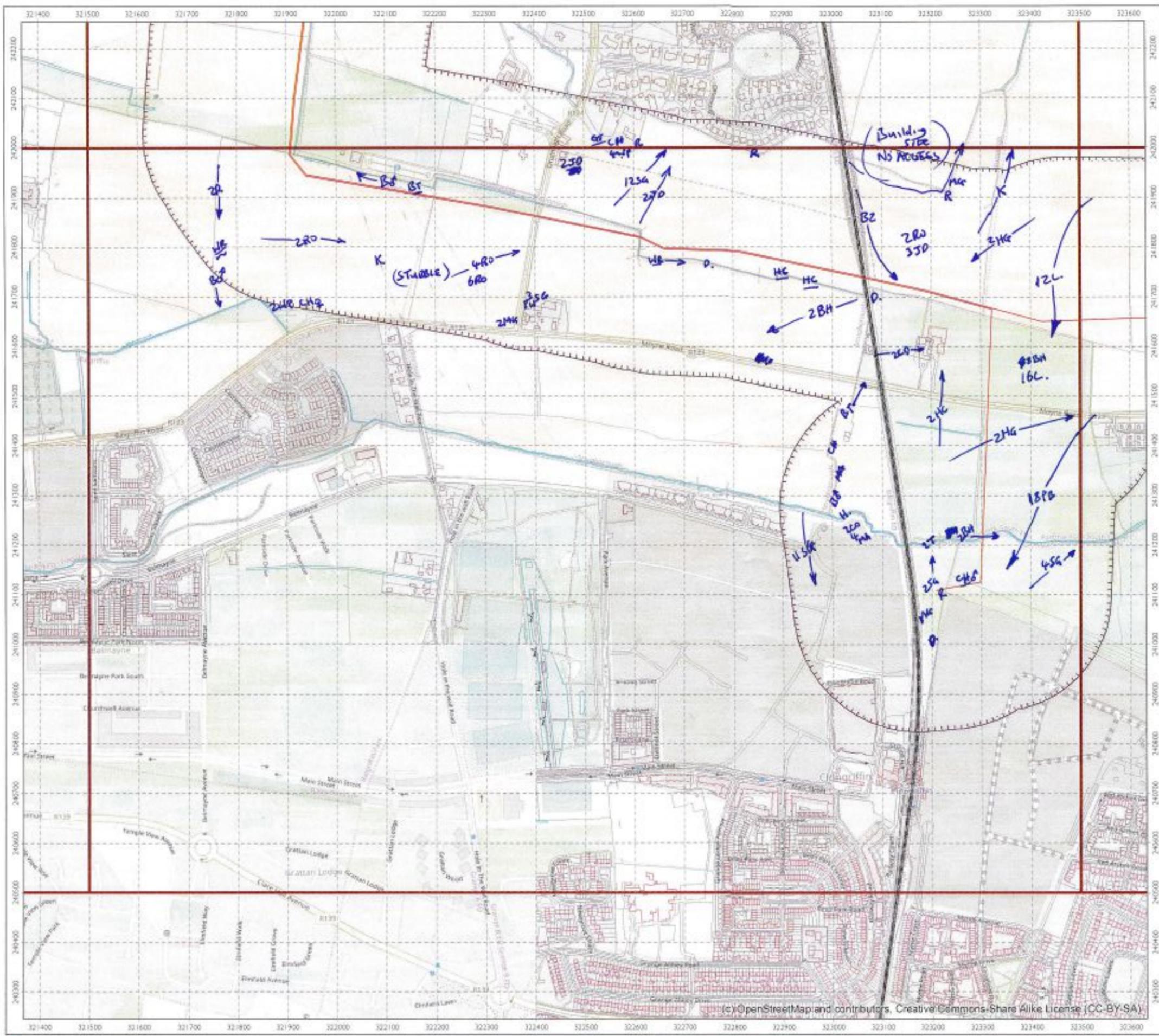


Surveyor: N Vee

Date: 24 + 28 / 11 / 2017

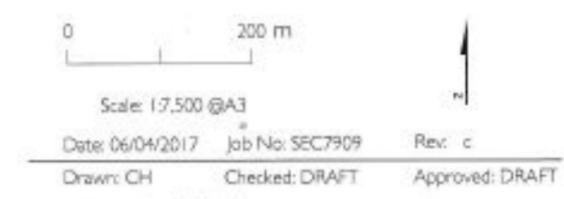
Start time: End time:

\*Please attach weather sheet  
Notes:



- Legend
- BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipe route (supplied 20170405)

Greater Dublin Drainage  
Breeding/winter bird survey  
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rpsgroup.com

RPS

Surveyor: Nick Veale

Date: 28/11/2017

Start time: End time:

\*Please attach weather sheet  
Notes:



- Legend
- BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipe route (supplied 20170405)

Greater Dublin Drainage  
Breeding/winter bird survey  
Page 13 of 18

0 200 m

Scale: 1:7,500 @A3

Date: 06/04/2017 Job No: SEC7909 Rev: <

Drawn: CH Checked: DRAFT Approved: DRAFT

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## **APPENDIX 6                      SUMMER 2015 (APRIL AND JUNE)**

---

The data from the April and June 2015 breeding walkover surveys were mapped, and are enclosed below (along with the associated survey recording sheets).

RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility		
Site	Date	Survey	Observer	Start Time	Finish Time		Sheet 1/ & [ ] Maps attached	Beaufort	Mph	in eighths	e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	Moderate (1-3km)	Good (>3km)
GDP	15/04/2015	Breeding Birds	Nick Veale	07:00	13:00		Calm	0	>1	N	None	0			0
							Light air	1	1-3	NE	Drizzle/Mist	1			1
							Light breeze	2	4-7	E	Light showers	2			2
							Gentle breeze	3	8-12	SE	Heavy showers	3			
							Mod. breeze	4	13-18	S	Heavy rain	4	<150m	0	
							Fresh breeze	5	19-24	SW	Lying Snow		150-500m	1	
							Strong breeze	6	25-31	W	Frost		>500m	2	
							Mod. gale	7	32-38	NW	None	0	Please be as accurate as possible, with weather details, entering only one figure, not a range. e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 [in notes].		
							Fresh gale	8	39-46		On site	1	Ground	1	
							Strong gale	9	47-54		High ground	2	All day	2	
							Whole gale	10	55-63						
							Storm	11	64-72						
							Hurricane	12	73+						
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)						
Hr 1 07:00	2	SW	0	6/8	2	2	0	0	6°C						
Hr 2 08:00	3	SW	0	6/8	2	2	0	0	8°C						
Hr 3 09:00	3	W	1	8/8	2	1	0	0	8°C						
Hr 4 10:00	2	W	0	8/8	2	2	0	0	9°C						
Hr 5 11:00	3	W	0	8/8	2	2	0	0	11°C						
Hr 6 12:00	2	W	2	8/8	2	2	0	0	11°C						
Hr 7															
Hr 8															
Field Notes: Maps attached															
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated									



RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time		Beaufort	Mph			In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	Moderate (1-3km)
GDD	16/04/2015	Breeding Birds	N. Veale	06:50	12:50	Calm	>1	None	0		<150m	0	0	0
						Light air	1-3	Drizzle/Mist	1		150-500m	1	1	1
						Light breeze	4-7	Light showers	2		>500m	2	2	2
						Gentle breeze	8-12	Heavy showers	3					
						Mod. breeze	13-18	Heavy rain	4					
						Fresh breeze	19-24	Lying Snow		Frost				
						Strong breeze	25-31	None	0	None	0			
						Mod. gale	32-38	On site	1	Ground	1			
						Fresh gale	39-46	High ground	2	All day	2			
						Strong gale	47-54							
						Whole gale	55-63							
						Storm	64-72							
						Hurricane	73+							
Sheet 1/ & [ ] Maps attached														
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)					
Hr 1 06:50	2	E	0	7/8	2	2	0	0	4°C					
Hr 2 07:50	3	E	0	7/8	2	2	0	0	7°C					
Hr 3 08:50	3	E	0	6/8	2	2	0	0	7°C					
Hr 4 09:50	3	E	0	5/8	2	2	0	0	9°C					
Hr 5 10:50	3	E	0	5/8	2	2	0	0	10°C					
Hr 6 11:50	4	E	0	5/8	2	2	0	0	10°C					
Hr 7 12:50														
Hr 8														
Field Notes: Maps attached														
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated								

Surveyor: Nick Veale

Date: 16/04/2015

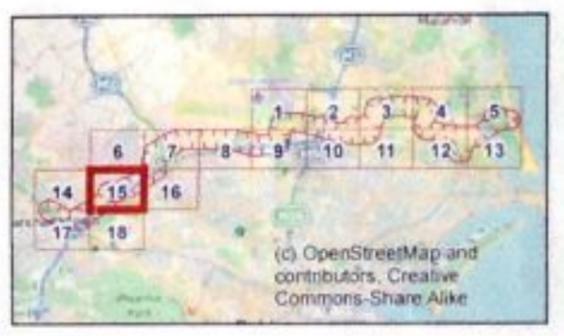
Start time: 06:50 End time: 12:50

\*Please attach weather sheet

Notes:

→ Transect route

⊞ No Access (Traveler Holding Site)



Legend

⊞ BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

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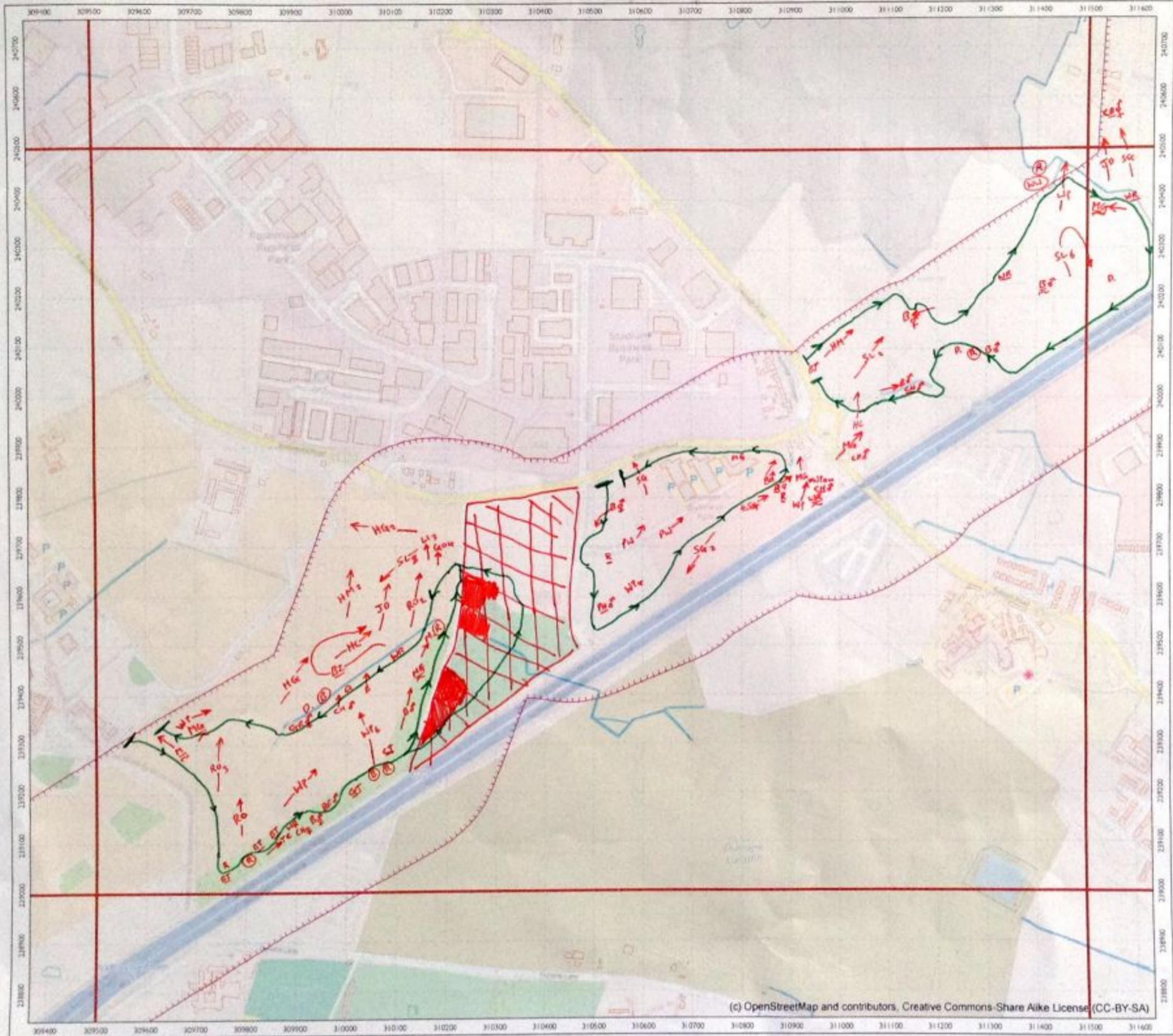
0 200 m

Scale: 1:7,500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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**RPS**

Surveyor: Nick Veale  
 Date: 16/04/2015 23/04/2015  
 Start time: 06:50 06:30 | End time: 12:50 12:30

\*Please attach weather sheet  
 Notes:

→→→ Trensel Routes



Legend  
 [Red dashed line] BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage  
 Breeding bird survey  
 Page 7 of 18

0 200 m  
 Scale: 1:7,500 @A3  
 Date: 20/04/2015 Job No: SEC7909 Rev: a  
 Drawn: CH Checked: DRAFT Approved: DRAFT  
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RPS		Weather Sheet		Wind Speed		Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility		
Site	Date	Beaufort	Mph	None	0		in eighths e.g. 3/8		Height of cloud above average height of viewshed		Poor (<1km) 0 Moderate (1-3km) 1 Good (>3km) 2				
GDD	24/04/2015	0	>1	N	0										
		1	1-3	NE	1	Drizzle/Mist									
		2	4-7	E	2	Light showers									
		3	8-12	SE	3	Heavy showers									
		4	13-18	S	4	Heavy rain									
		5	19-24	SW	Lying Snow		Frost								
		6	25-31	W	None	0	None	0							
		7	32-38	NW	On site	1	Ground	1							
		8	39-46		High ground	2	All day	2							
		9	47-54												
		10	55-63												
		11	64-72												
		12	73+												
Sheet 1/ & [ ] Maps attached															
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)						
Hr 10630	3	W	0	3/8	2	2	0	0	5°C						
Hr 207:30	4	W	0	3/8	2	2	0	0	7°C						
Hr 308:30	4	SW	0	4/8	2	2	0	0	8°C						
Hr 409:30	3	SW	0	2/8	2	2	0	0	10°C						
Hr 510:30	3	SW	0	2/8	2	2	0	0	12°C						
Hr 611:30	2	SE	0	2/8	2	2	0	0	13°C						
Hr 7															
Hr 8															
Field Notes: Maps attached															
For office use only. NB- initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated									

Surveyor: *Nick Veale*

Date: *24/04/2015*

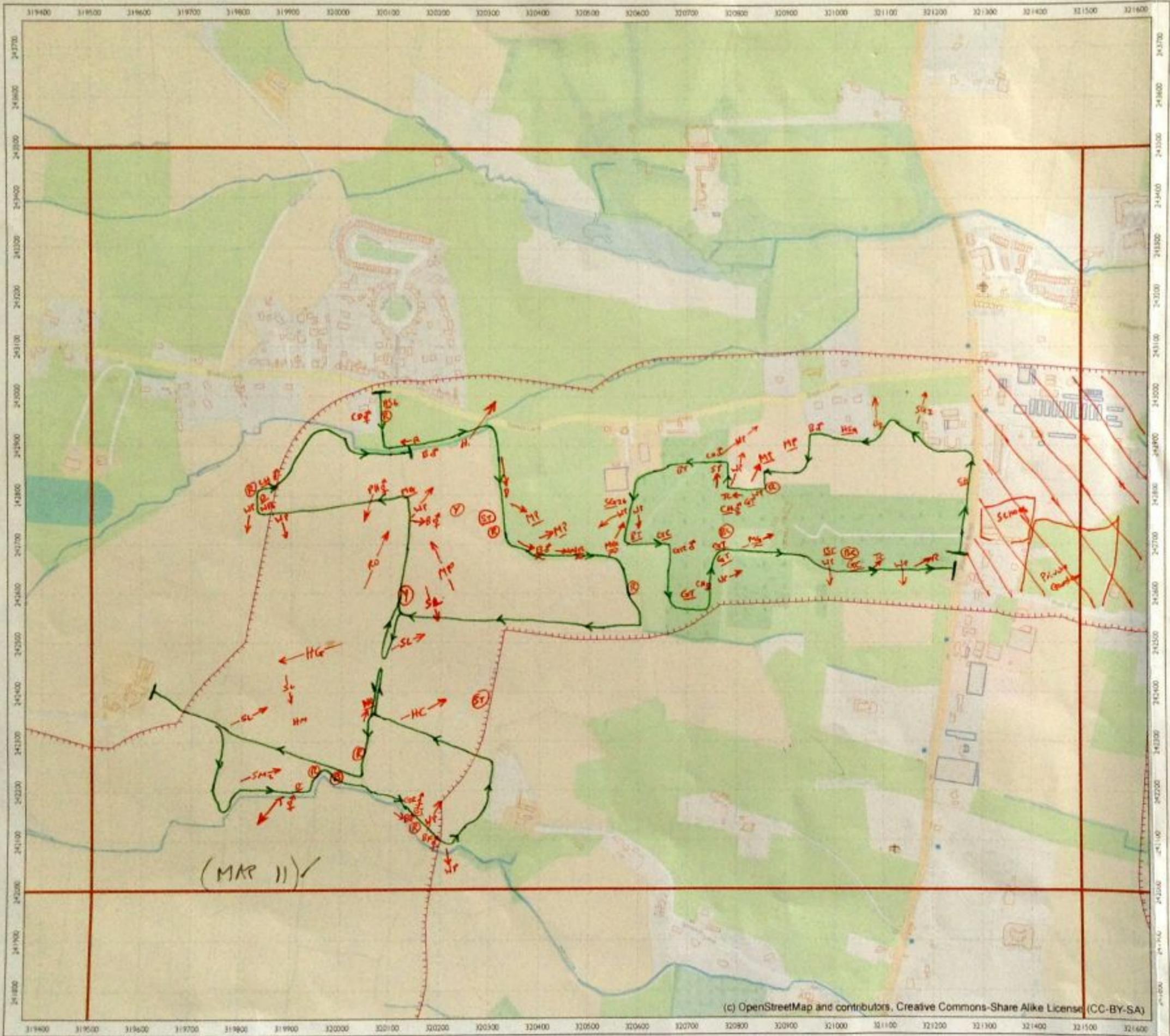
Start time:

End time:

\*Please attach weather sheet

Notes:

*→* Transect Route



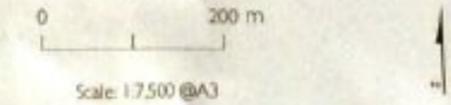
Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 3 of 18



Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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**RPS**

Surveyor: Niam Veale

Date: 24/04/2015

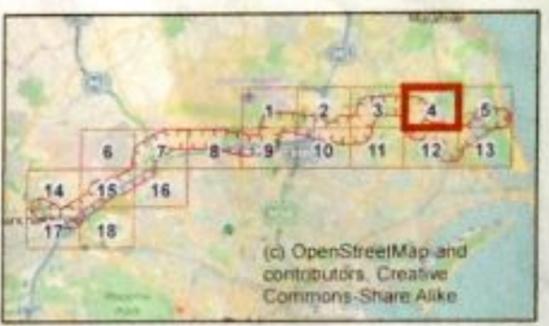
Start time: \_\_\_\_\_ End time: \_\_\_\_\_

\*Please attach weather sheet

Notes:

Transect route

No Access



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 4 of 18

0 200 m

Scale: 1:7500 @A3

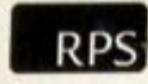
Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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Surveyor: Nick Veale  
 Date: 27/04/2015  
 Start time: 06:32 End time: 12:32

\*Please attach weather sheet  
 Notes:

→ Transect Route

(Access: Elaine Quinn Portmarnock Golf Links (01 8466942) Hotel)



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 5 of 18

0 200 m

Scale: 1:7,500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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Surveyor: Nick Veele

Date: 27/04/2015

Start time: 06:32

End time: 12:32

\*Please attach weather sheet

Notes:

→ | Transect route

NB Transect continued on Map 12



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 13 of 18

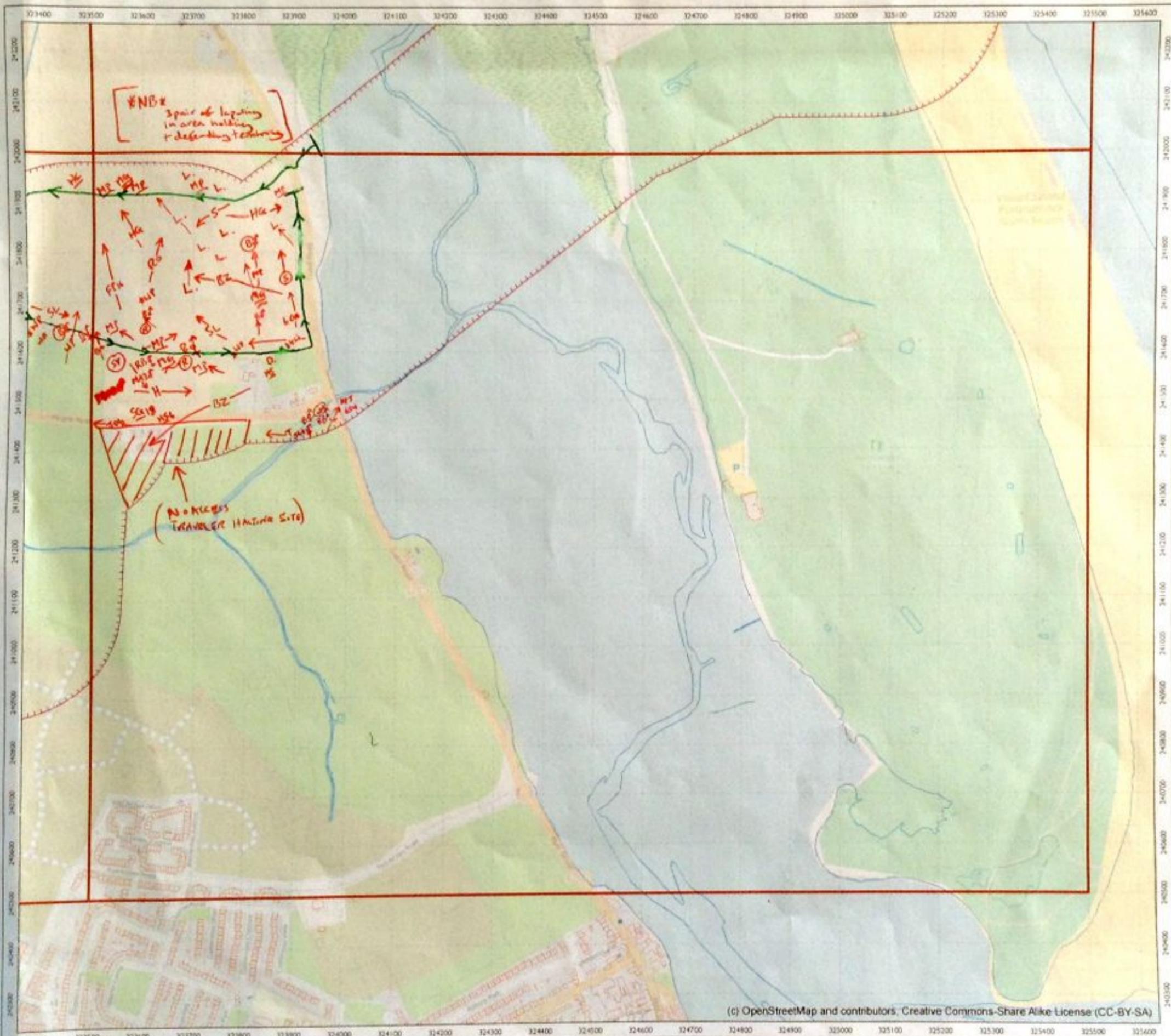
0 200 m

Scale: 1:7,500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

Inish National Grid, EPSG 29903  
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Surveyor: Nick Veda

Date: 27/04/2015

Start time: 06:32

End time: 12:32

\*Please attach weather sheet

Notes:

Transect Route

No Access Security Fencing observations from outside perimeter



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 12 of 18

0 200 m

Scale: 1:7,500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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RPS		Weather Sheet		Wind Speed			Direction	Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Site	Date	Survey	Observer	Start Time	Finish Time	Sheet 1/ & [ ] Maps attached		Beaufort	Mph	None	0	In eighths e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)	0
GDD	28/04/2015	BIRD WALKOVER	Nick Vede	06:25	12:25		Calm	>1	None	0		<150m	0	0	
							Light air	1-3	Drizzle/Mist	1		150-500m	1	1	
							Light breeze	4-7	Light showers	2		>500m	2	2	
							Gentle breeze	8-12	Heavy showers	3					
							Mod. breeze	13-18	Heavy rain	4					
							Fresh breeze	19-24	Lying Snow	0	Frost				
							Strong breeze	25-31	None	0	None	0			
							Mod. gale	32-38	On site	1	Ground	1			
							Fresh gale	39-46	High ground	2	All day	2			
							Strong gale	47-54							
							Whole gale	55-63							
							Storm	64-72							
							Hurricane	73+							
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)						
Hr 1	3	WSW	0	1/8	2	2	1	0	10°C						
Hr 2	4	WSW	0	1/8	2	2	0	0	3°C						
Hr 3	4	W	0	2/8	2	2	0	0	6°C						
Hr 4	4	W	0	4/8	2	2	0	0	7°C						
Hr 5	4	W	0	4/8	2	2	0	0	9°C						
Hr 6	4	W	2	5/8	2	2	0	0	9°C						
Hr 7															
Hr 8															
Field Notes: Maps attached															
For office use only. NB- Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated									



**RPS**

Surveyor: Nick Vede  
 Date: 28/04/2015  
 Start time: 06:25 End time: 12:25

\*Please attach weather sheet

Notes:  
 XNB Continues on Map 11  
 ↳ Transect route



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 10 of 18

0 200 m

Scale: 1:7500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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**RPS**

Surveyor: Nick Veale  
 Date: 28/04/2015  
 Start time: 06:25 End time: 12:25

\*Please attach weather sheet  
 Notes:  
 XNB Continued from Map 10  
 → | Transect route



Legend  
 [Red dashed line] BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage  
 Breeding bird survey  
 Page 11 of 18

0 200 m  
 Scale: 1:7500 @A3  
 Date: 20/04/2015 Job No: SEC7909 Rev: a  
 Drawn: CH Checked: DRAFT Approved: DRAFT

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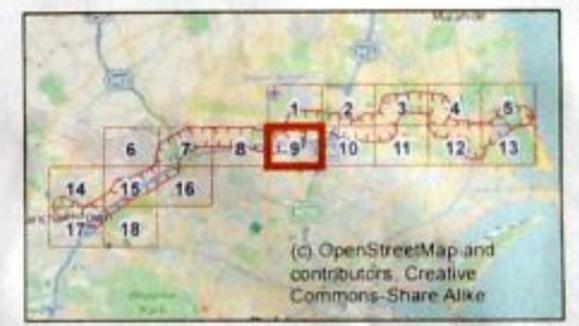
**RPS**

Surveyor: N. VEALE  
 Date: 28/04/2015  
 Start time: 06:25 End time: 12:25

\*Please attach weather sheet  
 Notes:

→ Transect route

▨ No Access

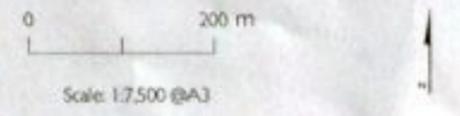


Legend  
 ▨ BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

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Date: 20/04/2015 Job No: SEC7909 Rev: a  
 Drawn: CH Checked: DRAFT Approved: DRAFT

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**RPS**

Surveyor: **N. VEAVE**  
 Date: **28/04/2015**  
 Start time: **06:25** | End time: **12:25**

\*Please attach weather sheet.  
 Notes:

→ Transect Route  
 XNB\* Transects Cross Maps 1→2



Legend  
 [Red dashed line] BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage  
 Breeding bird survey  
 Page 2 of 18

0 200 m  
 Scale: 1:7,500 @A3  
 Date: 20/04/2015 | Job No: SEC7909 | Rev: 4  
 Drawn: CH | Checked: DRAFT | Approved: DRAFT  
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 rps@rps.com



Surveyor: Nick Veale

Date: 03/06/2015

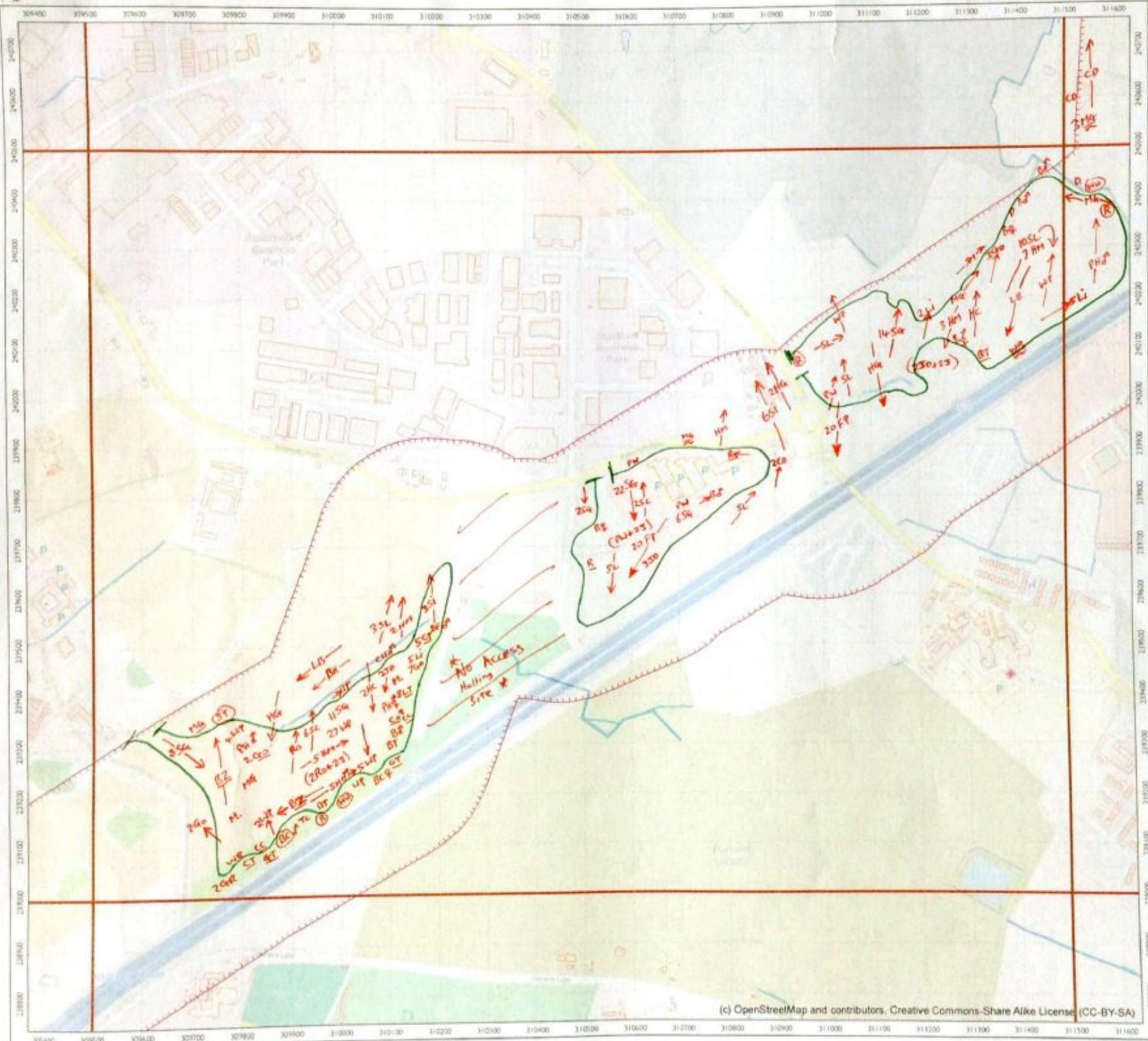
Start time: 05:45

End time: 11:45

\*Please attach weather sheet

Notes:

Transect route



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

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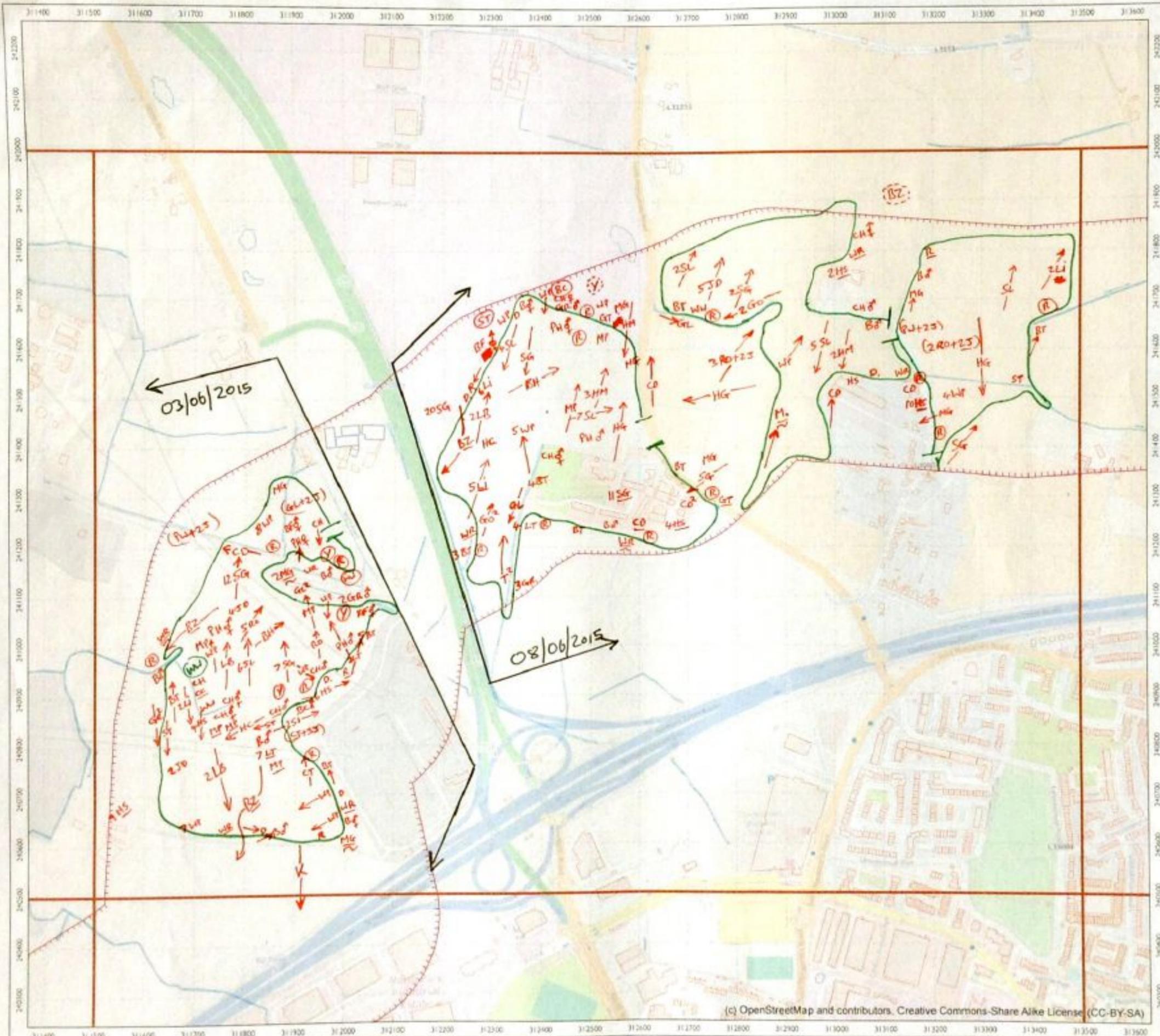
0 200 m

Scale: 1:7,500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

With National Grid, EPSG 29902  
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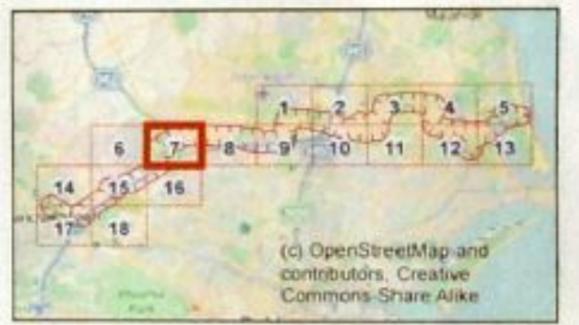


Surveyor: **N. Veale**  
 Date: **03/06/2015 + 08/06/2015**

03/06/2015 - 05:45 Start time: 11:45  
 08/06/2015 - 05:30 End time: 11:30

\*Please attach weather sheet  
 Notes:

**Transect route**



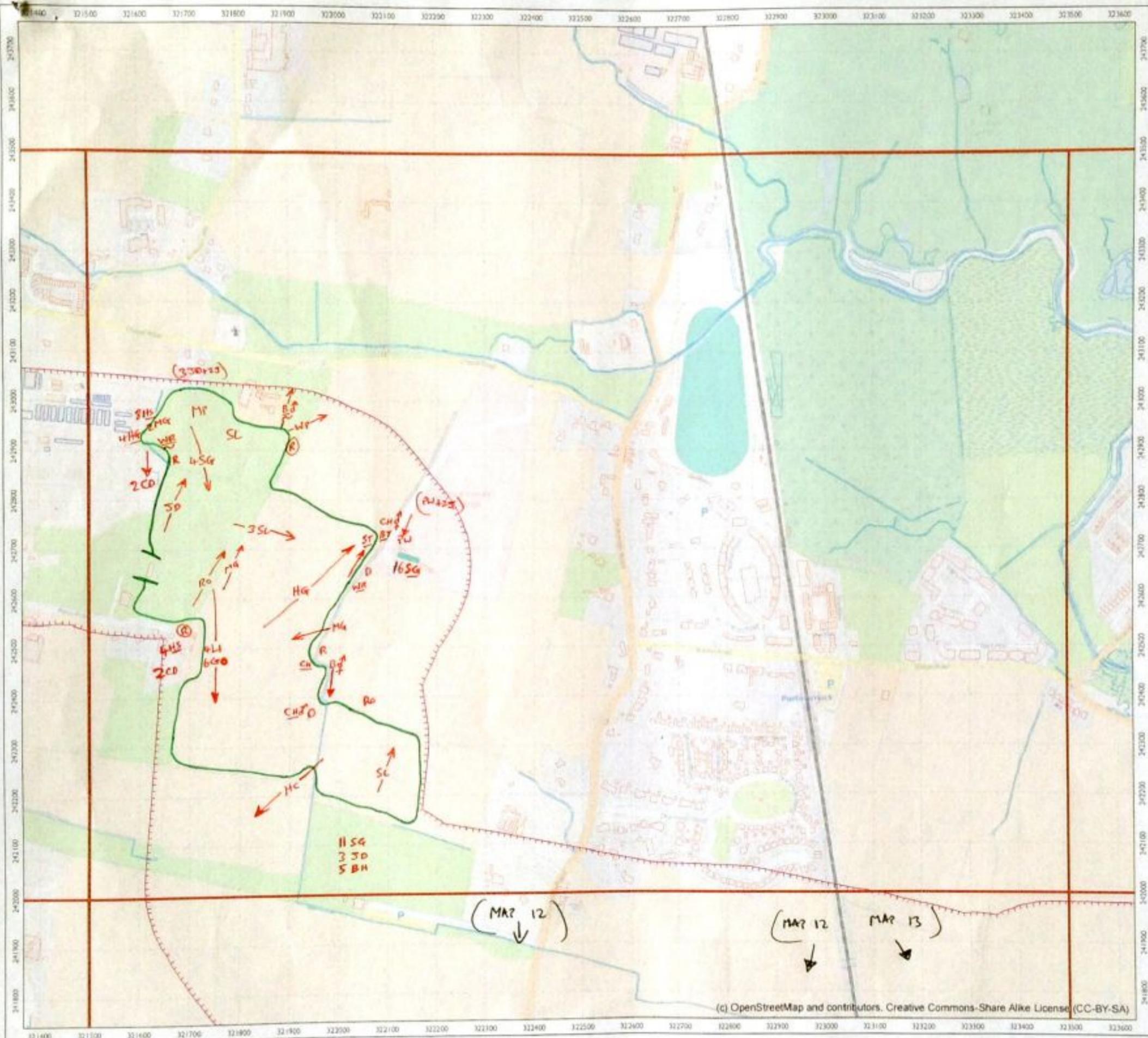
Legend  
 [Red dashed line symbol] BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage  
 Breeding bird survey  
 Page 7 of 18

0 200 m  
 Scale: 1:7,500 (BA3)  
 Date: 20/04/2015 Job No: SEC7909 Rev: a  
 Drawn: OH Checked: DRAFT Approved: DRAFT  
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**RPS**

Surveyor: N. Vede

Date: 10/06/2015

Start time: 05:30 End time: 11:30

\*Please attach weather sheet

Notes:



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

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Scale: 1:7,500 @A3

Date: 2004/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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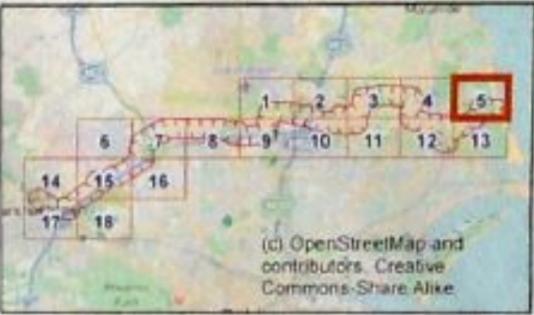
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**RPS**

Surveyor: Nick Veale  
 Date: 11/06/2015  
 Start time: 05:30 End time: 11:30

\*Please attach weather sheet  
 Notes:



Legend  
 [Red dashed line] BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage  
 Breeding bird survey  
 Page 5 of 18

0 200 m  
 Scale: 1:7500 @A3  
 Date: 20/04/2015 Job No: SEC7909 Rev: 2  
 Drawn: CH Checked: DRAFT Approved: DRAFT

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 rps@rps.ie

Surveyor: N. Veca

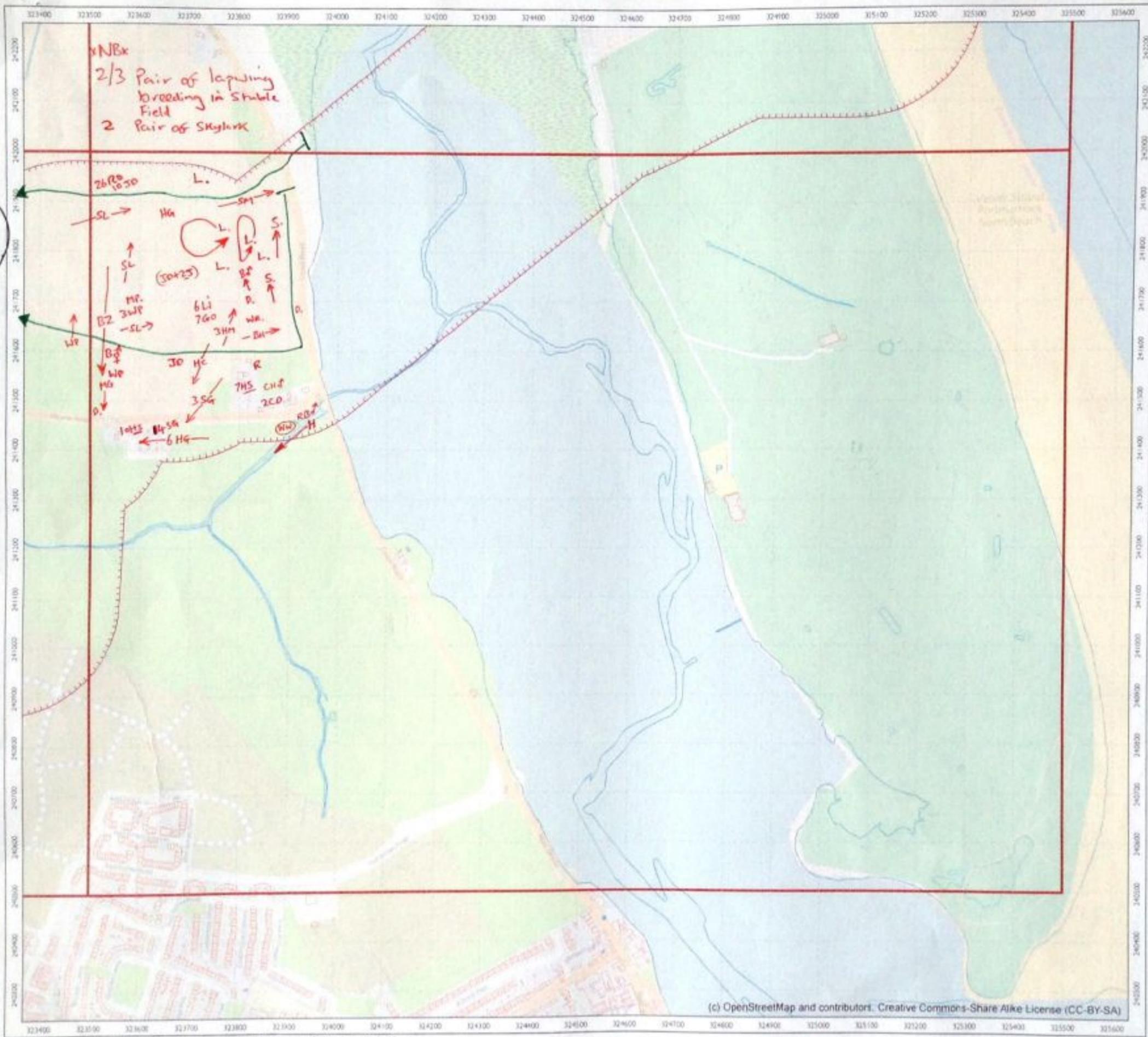
Date: 11/06/2015

Start time: 05:30 End time: 11:30

\*Please attach weather sheet

Notes:

(Cont...)  
MAP  
12



Legend

BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage

Breeding bird survey

Page 13 of 18



Scale: 1:7,500 @A3

Date: 20/04/2015 Job No: SEC7909 Rev: a

Drawn: CH Checked: DRAFT Approved: DRAFT

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**RPS** Nick Veale  
 Surveyor: 12/06/2015

Date:  
 Start time: 05:40 End time: 11:40

\*Please attach weather sheet  
 Notes:

-  Transect route
-  No Access



Legend  
 BBS survey boundary (250 m buffer, supplied 20140420)

Greater Dublin Drainage  
 Breeding bird survey  
 Page 9 of 18

0 200 m  
 Scale: 1:7,500 @A3  
 Date: 20/04/2015 Job No: SEC7909 Rev: a  
 Drawn: CH Checked: DRAFT Approved: DRAFT

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## **APPENDIX 7                      SUMMER 2017 (MAY AND JUNE)**

---

The data from the May and June 2017 summer walkover surveys were mapped, and are enclosed below (along with the associated survey recording sheets).

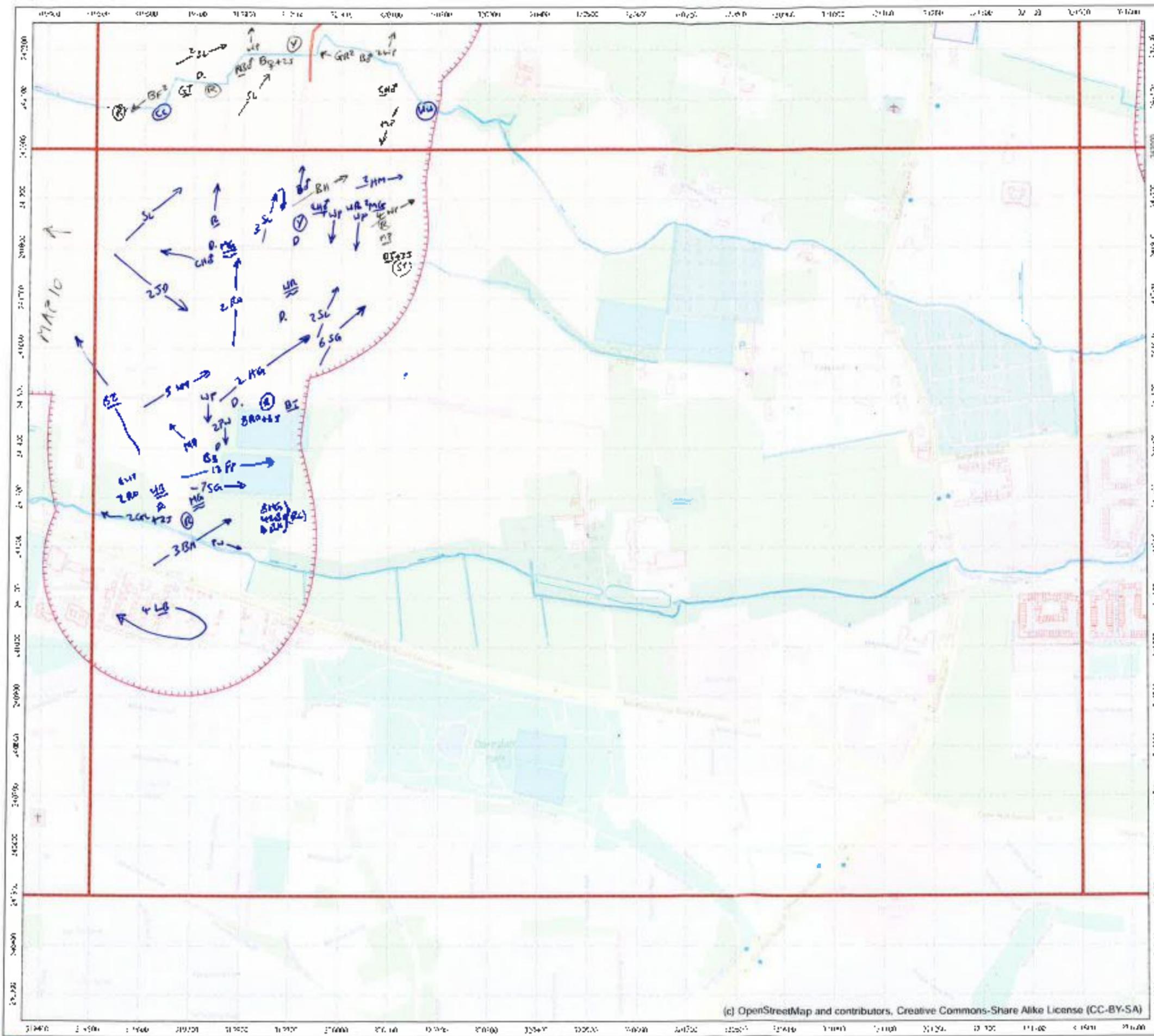
<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GOD
<b>Date</b>	13/06/2017
<b>Survey</b>	BBS
<b>Observer</b>	N. Veale
<b>Start Time</b>	05:45
<b>Finish Time</b>	12:00
<b>Sheet 1/</b>	<b>&amp; [ ] Maps attached</b>

Wind Speed	Direction	Rain/Snow	Cloud Cover	Cloud Height	Visibility
Calm	M	None	0	Height of cloud above average	Poor (<1km) 0
Light air	NE	Drizzle/Mist	1	height of viewshed	Moderate (1-3km) 1
Light breeze	E	Light showers	2	<150m	Good (>3km) 2
Gentle breeze	SE	Heavy showers	3	150-500m	
Moderate breeze	S	Heavy rain	4	>500m	
Fresh breeze	SW	<b>Lying Snow</b>	<b>Frost</b>		
Strong breeze	W	None	None		
Mod. gale	NW	On site	Ground		
Fresh gale		High-ground	All day		
Strong gale					
Whole gale					
Storm					
Hurricane					

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 1	3	SW	1	7/8	1	A1	---	---	13°C
Hr 2	3	SW	0	7/8	1	2	---	---	
Hr 3	3	SW	0	6/8	2	2	---	---	14°C
Hr 4	4	SW	0	6/8	2	2	---	---	
Hr 5	4	SW	0	7/8	2	2	---	---	16°C
Hr 6	4	SW	0	7/8	2	2	---	---	
Hr 7	3	SW	2	8/8	1	2	---	---	18°C Showers
Hr 8									

**Field Notes:**  
 Maps attached

<b>For office use only. NB- Initial AND date ALL boxes.</b>	<b>Logged</b>	<b>Database Entered</b>	<b>Database Validated</b>	<b>GIS Entered</b>	<b>GIS Validated</b>
-------------------------------------------------------------	---------------	-------------------------	---------------------------	--------------------	----------------------

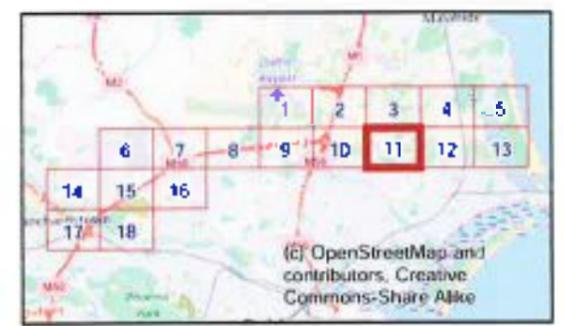


Surveyor: N. Veale

Date: 13/06/2017

Start time: 05:45 End time: 12:00

\*Please attach weather sheet  
Notes:

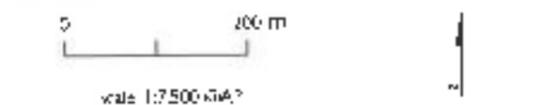


- Legend
- BBS/WWD survey boundary (750 m buffer of route supplied 20170405 appended to previous boundary)
  - 2 pe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 11 of 18



Date: 06/04/2017 Job No: 567709 Rev: 1  
 Created: JJJ Checked: DRAFT Approved: DRAFT



RPS		Weather Sheet	
Site		GGPO	
Date		06/06/2017	
Survey		BBS	
Observer		Nick Veda	
Start Time		06:00	
Finish Time		12:00	
Sheet 1/	& [ ] Maps attached		

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Calm	Beaufort	Mph		None	None	In sight	Height of cloud	Four (<1km)	Height of cloud	Moderate (1-3km)	Good (>3km)
Light air	0	<1	N	Dreizzle/Mist	0	e.g. 3g	above average	0	above average	1	0
Light breeze	1	1-3	NE	Light showers	1		height of	1	height of	2	1
Gentle breeze	2	4-7	E	Heavy showers	2		viewed	2	viewed	3	2
Mod. breeze	3	8-12	SE	Heavy rain	3		<150m	0	<150m	4	2
Fresh breeze	4	13-18	S	Lying Snow	4		150-500m	1	150-500m		
Strong breeze	5	19-24	SW	None	0		>500m	2	>500m		
Mod. gale	6	25-31	W	On site	1		Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-8. Use notes for extra info. E.g. WS - 5, gusting 6 [in notes].				
Fresh gale	7	32-38	NW	High ground	2						
Strong gale	8	39-46									
Whole gale	9	47-54									
Storm	10	55-63									
Hurricane	11	64-72									
	12	73+									

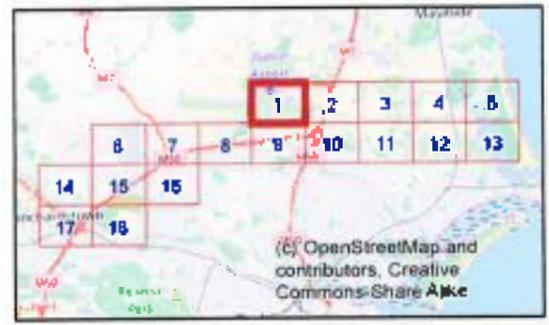
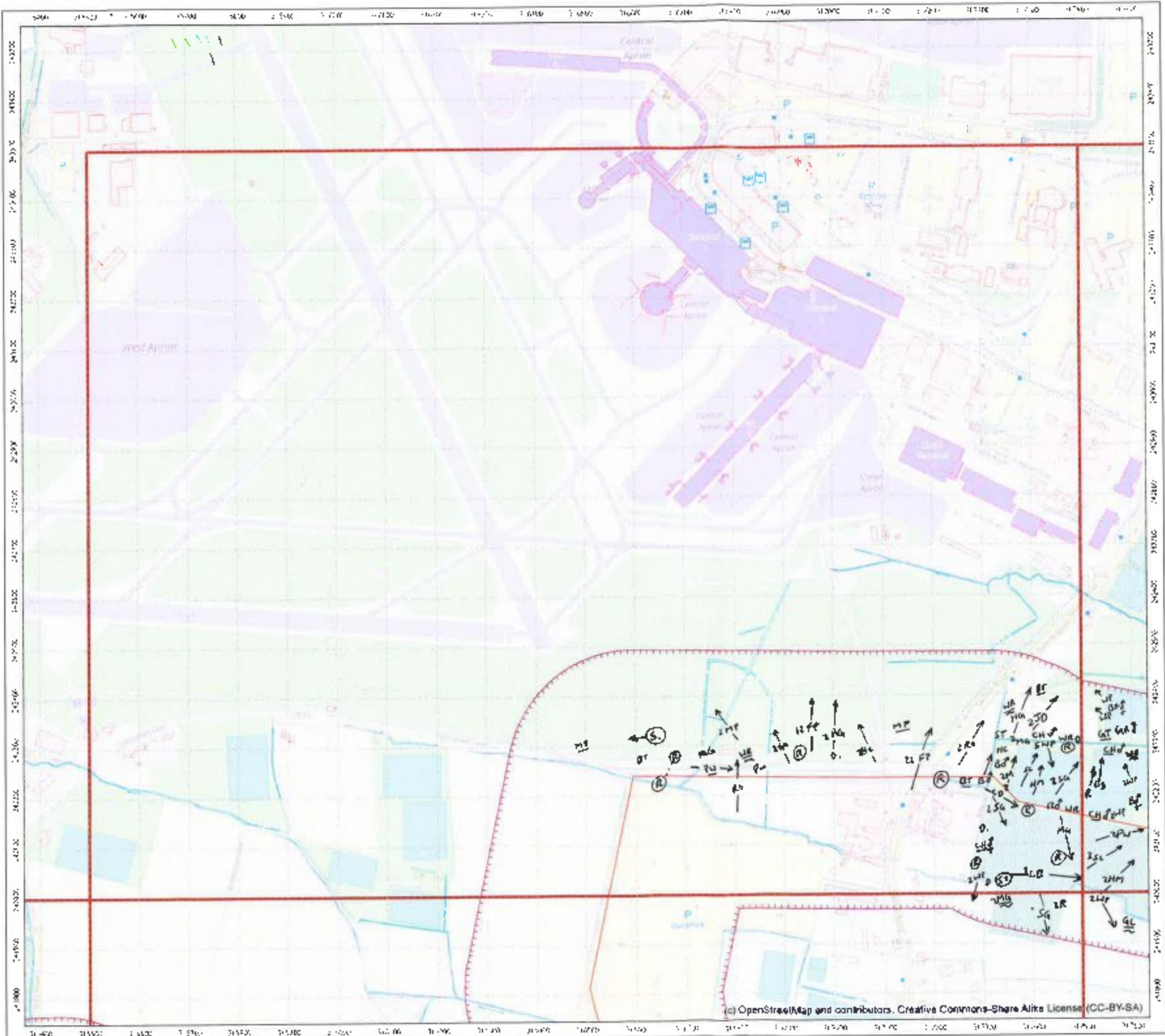
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 1	4	W	0	5/8	2	2	---	---	8°C
Hr 2	4	W	0	6/8	2	2	---	---	9°C
Hr 3	5	W	0	4/8	2	2	---	---	11°C
Hr 4	4	W	0	4/8	2	2	---	---	12°C
Hr 5	5	W	0	5/8	2	2	---	---	13°C
Hr 6	5	W	0	5/8	2	2	---	---	13°C
Hr 7	5	W	0	6/8	2	2	---	---	14°C
Hr 8									

Field Notes:  
 Maps attached

For office use only. NB. Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated

Surveyor N. Veale  
 Date 06/06/17  
 Start time 06:30 Endtime 12:00

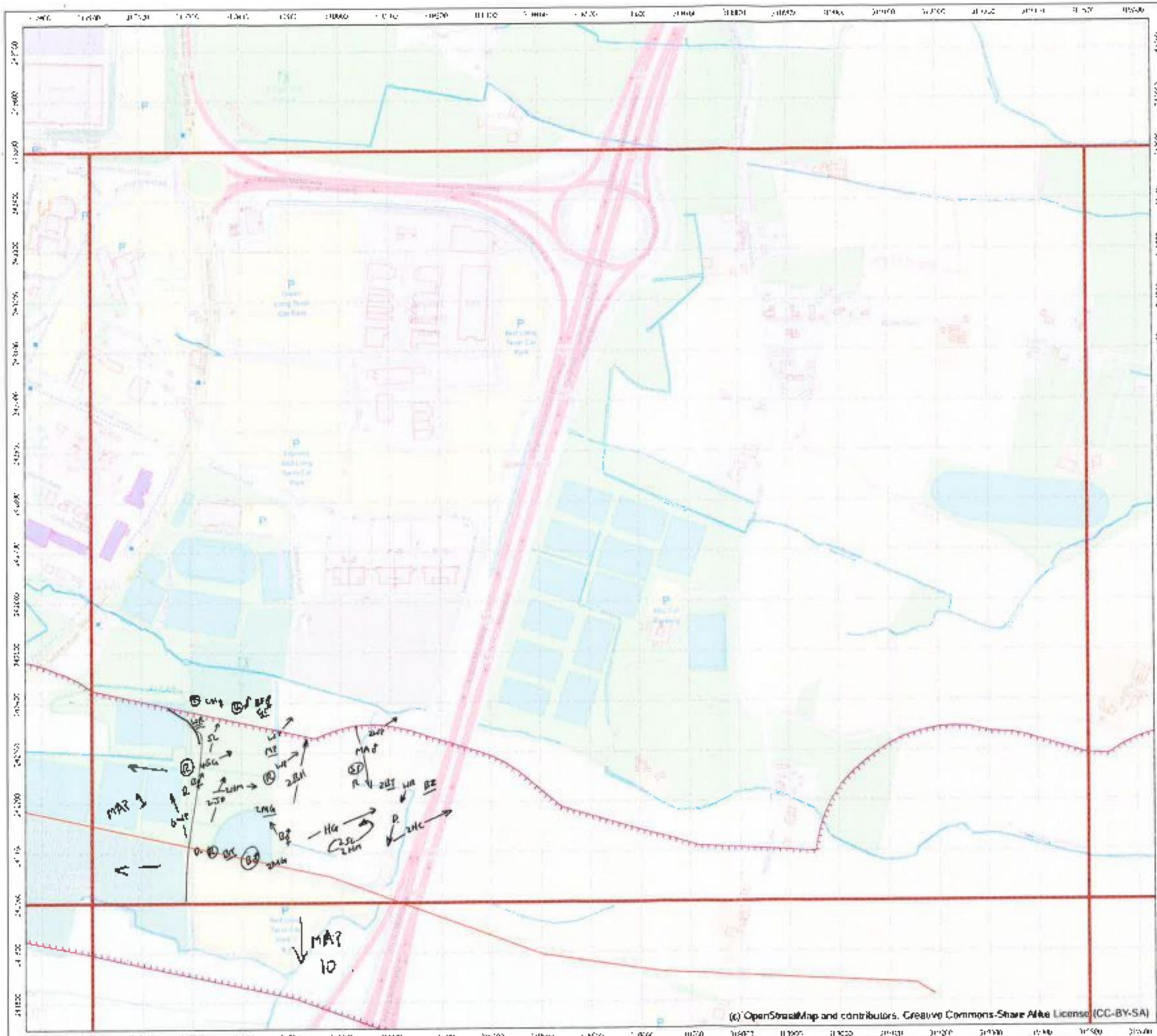
\*Please attach weather sheet  
 Notes



**Legend**  
 BBS/WVC survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)  
 Flight route (supplied 20170405)

Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 1 of 8

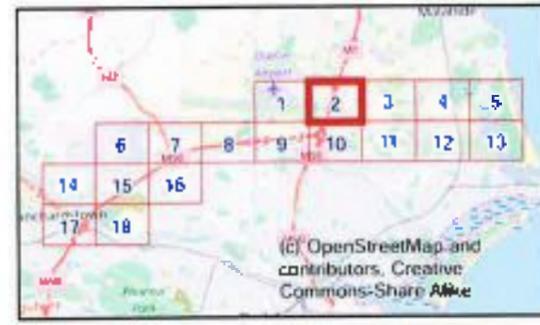
Scale 1:7500 (A4)  
 Date 06/04/17 Job No. SEC7909 Rev. 0  
 Drawn CH Checked DRAT Approved DRAT  
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 www.rps.com



RPS

Surveyor Nick Veale  
 Date 06/06/17  
 Start time 06:00 End time 12:00

\*Please attach weather sheet  
 Notes:



Legend  
 [Red dashed line] BBS/MWD survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)  
 [Red solid line] Pipe route (supplied 20170405)

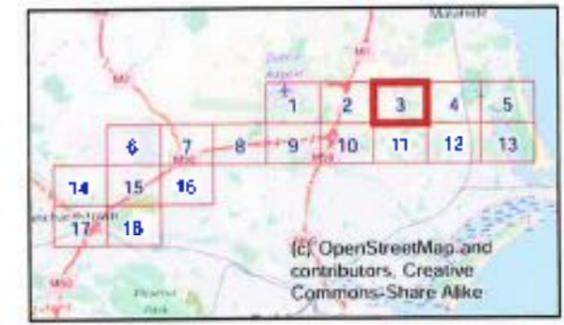
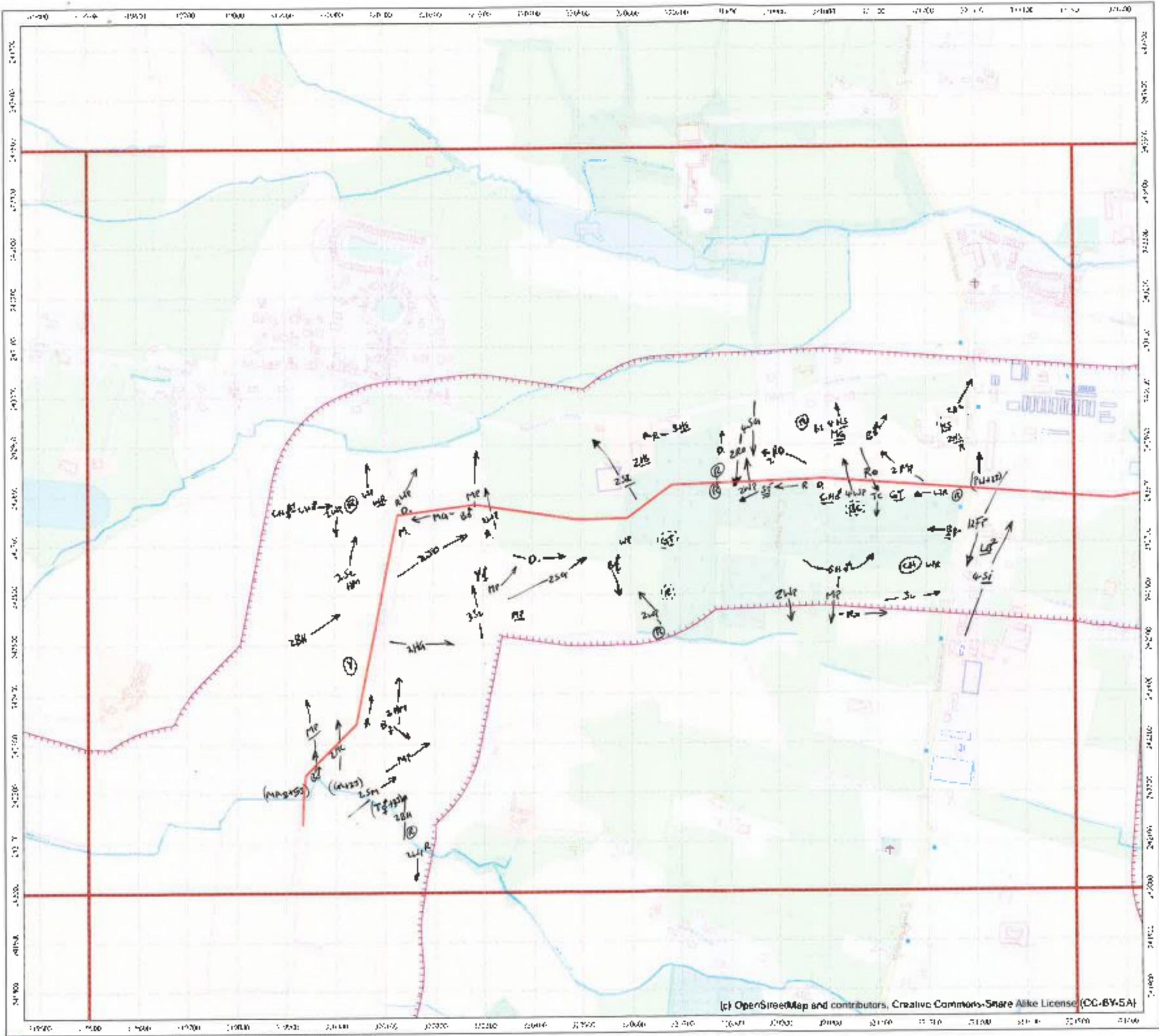
Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 2 of 18

Scale 1:7,500 (DRA)  
 Date: 06/04/2017 Job No: SEC7809 Rev: 0  
 Created: JH Checked: DRAFT Approved: DRAFT

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 www.rps.com

Surveyor N. Veda  
 Date 06/06/2017  
 Start time 0630 End time: 12:00

\*Please attach weather sheet  
 Notes:



Legend  
 BBS/MWVC survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)  
 Pipe route (supplied 20170405)

Greater Dub in Drainage  
 Breeding/winter bird survey  
 Page 3 of 18

0 200 m  
 scale 1:7500 (A3)  
 Date 06/04/2017 Job No. 5907925 Rev. 1  
 Drawn: CH Checked: DRAFT Approved: DWA-1  
 Weather sheet: RPS 0430  
 For the Client: Landcare Research and the New Zealand Department of Conservation  
 Return of this document is hereby acknowledged.  
 10/2/2017

<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GDD
<b>Date</b>	05/06/2017
<b>Survey</b>	BB5
<b>Observer</b>	Nick Veach
<b>Start Time</b>	05:30
<b>Finish Time</b>	12:00
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

<b>Wind Speed</b>	<b>Direction</b>	<b>Rain/Snow</b>	<b>Cloud Cover</b>	<b>Cloud Height</b>	<b>Visibility</b>
Beaufort					
Mph					
0	N	None	0	Height of cloud above average height of westerly	Poor (<1km)
1	NE	Drizzle/Mist	1		Moderate (1-3km)
2	E	Light showers	2		Good (>3km)
3	SE	Heavy showers	3		
4	S	Heavy rain	4		
5	SW	<b>Lying Snow</b>	<b>Frost</b>	<150m	0
6	W	None	0	150-500m	1
7	NW	On site	1	>500m	2
8		High ground	2		
9					
10					
11					
12					

<b>Weather</b>	<b>Wind speed</b>	<b>Wind direction</b>	<b>Rain</b>	<b>Cloud cover</b>	<b>Cloud height</b>	<b>Visibility</b>	<b>Frost</b>	<b>Snow</b>	<b>Notes(e.g. temperature)</b>
Hr 1	3	SW	2	8/8	1	1			13°C
Hr 2	3	SW	2	8/8	1	1			12°C
Hr 3	4	SW	0	8/8	1	1			11°C
Hr 4	4	SW	0	8/8	1	2			12°C
Hr 5	4	SW	0	8/8	2	2			14°C
Hr 6	4	SW	0	7/8	2	2			15°C
Hr 7	3	SW	0	6/8	2	2			15°C
Hr 8									

**Field Notes:**  
**Maps attached**

<b>For office use only. NB- initial AMR date ALL boxes.</b>	<b>Logged</b>	<b>Database Entered</b>	<b>Database Validated</b>	<b>GIS Entered</b>	<b>GIS Validated</b>

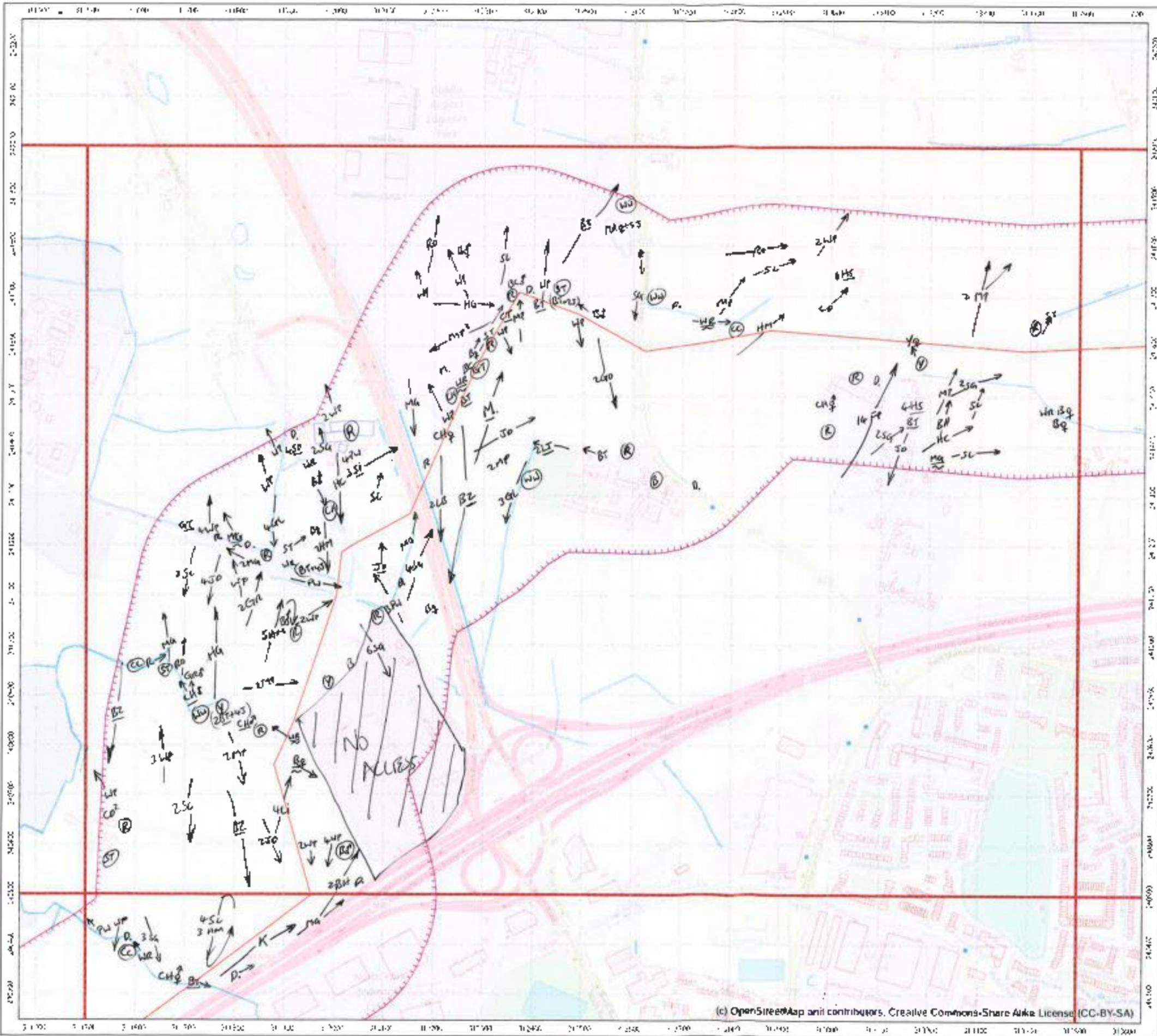
Surveyor: Nick Veitch

Date: 05/06/2017

Start time: 06:30 End time: 12:00

\*Please attach weather sheet

Notes:

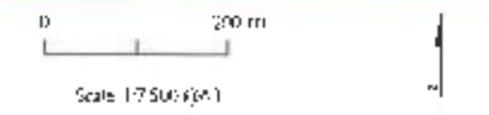


- Legend
- BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipe route (supplied 20170405)

Greater Dub in Drainage

Breeding/winter bird survey

Page 7 of 18



Date: 05/06/2017	Job No: 15072017	Rev: c
Drawn: CH	Checked: FRANK	Approved: DRAFT



**RPS**

Surveyor: Nick Veale  
 Date: 05/06/2017  
 Start time: 05:30 | End time: 12:00  
 \*Please attach weather sheet  
 Notes:



**Legend**

- BBS/WWC survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
- Pipe route (supplied 20170405)

Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 6 of 18

Scale 1:500 (A4)  
 Date: 06/06/2017 | Job No: 530.7909 | Rev: 1  
 Drawn: CH | Checked: D46F | Approved: D46F

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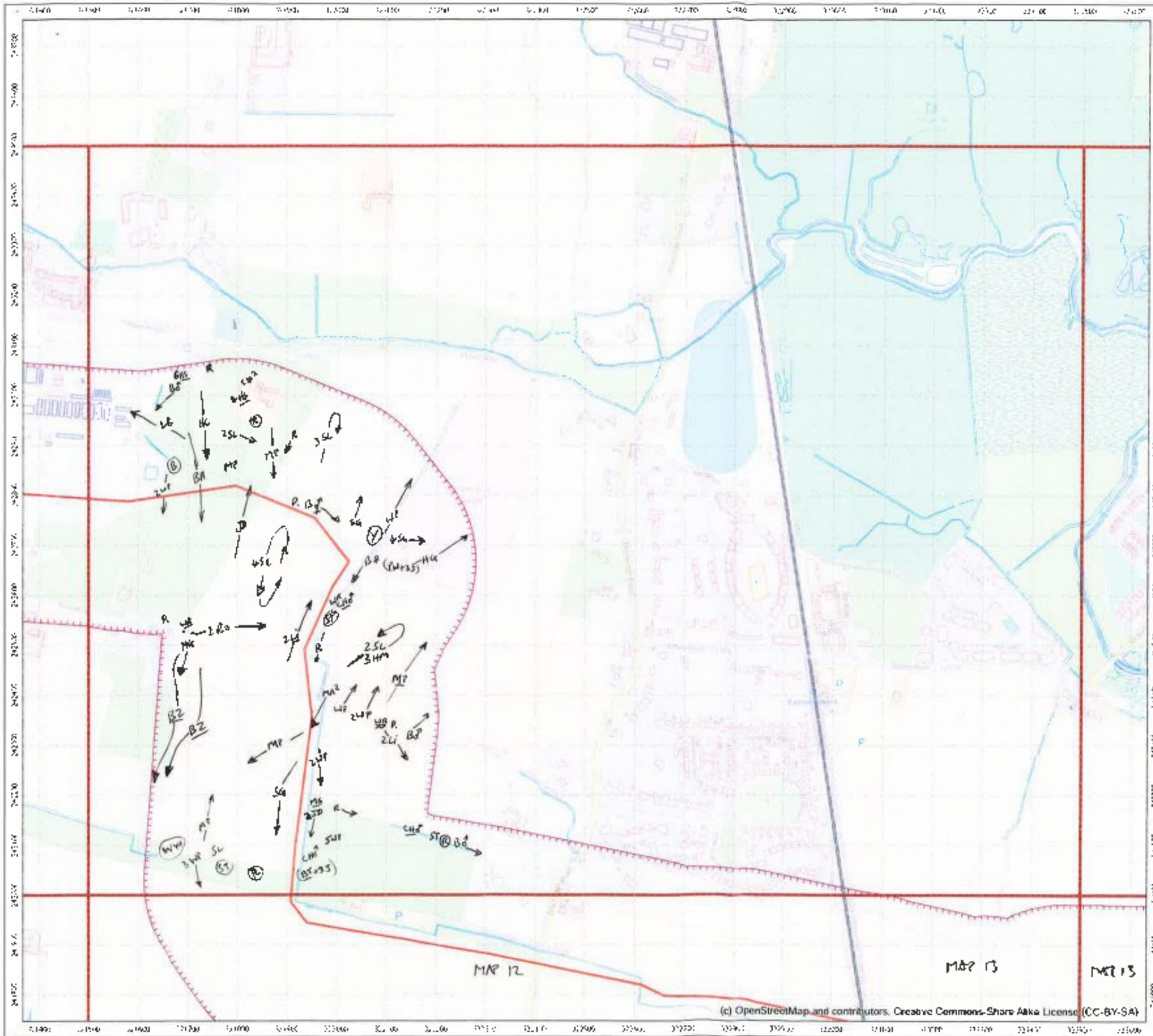
<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	G-00
<b>Date</b>	07/06/2017
<b>Survey</b>	BBS
<b>Observer</b>	Nick Veele
<b>Start Time</b>	05:30
<b>Finish Time</b>	12:00
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

<b>Wind Speed</b>	<b>Direction</b>	<b>Rain/Snow</b>	<b>Cloud Cover</b>	<b>Cloud Height</b>	<b>Visibility</b>
Beaufort 0 >1 1 1-3 2 4-7 3 8-12 4 13-18 5 19-24 6 25-31 7 32-38 8 39-46 9 47-54 10 55-63 11 64-72 12 73+ Calm Light air Light breeze Gentle breeze Mod. breeze Fresh breeze Strong breeze Mod. gale Fresh gale Strong gale Whole gale Storm Hurricane	N NE E SE S SW W NW	None On site Light showers Heavy showers Heavy rain Frost None On site High ground	0 1 2 3 4 Frost None Ground All day	Height of cloud above average height or viewshed <150m 150-500m >500m 0 1 2 Please be as accurate as possible, with weather details entering only one figure, not a range. e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 (in notes)	Poor (<1km) Moderate (1-3km) Good (>3km) 0 1 2

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)
Hr 1	3	W	0	3/8	2	2			8°C
Hr 2	3	W	0	2/8	2	2			12°C
Hr 3	3	W	0	2/8	2	2			13°C
Hr 4	4	W	0	2/8	2	2			15°C
Hr 5	4	W	0	3/8	2	2			15°C
Hr 6	4	W	0	4/8	2	2			17°C
Hr 7	3	W	0	4/8	2	2			17°C
Hr 8									

Field Notes:  
 Maps attached

For office use only. NB- Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
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**RPS**

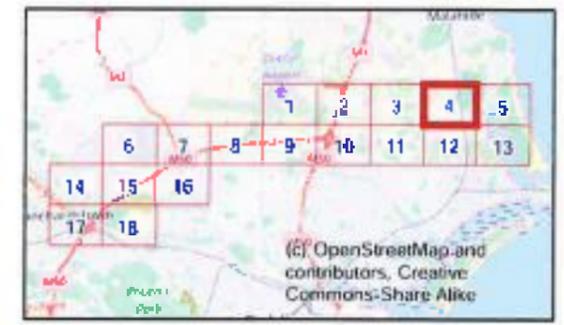
Surveyor: N. V.

Date: 07/06/2017

Start time: 05:30 End time: 12:00

\*Please attach weather sheet

Notes:



- Legend
- 885/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipc route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 4 of 18

0 100 m

Scale 1:7500 (A1)

Date: 04/06/2017 Job No: SEC7909 Rev: 1

Drawn: CH Checked: DRIFT Approved: DRIFT

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<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GDD
<b>Date</b>	02/06/2007
<b>Survey</b>	BSBS
<b>Observer</b>	N. Veck
<b>Start Time</b>	05:40
<b>Finish Time</b>	12:00
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Calm	0	N	0	None	0	In eighths	Height of cloud above average height of westerlies	0	Poor (<1km)		
Light air	1	NE	1	Drizzle/Mist	1	e.g. 3/8		1	Moderate (1-3km)		
Light breeze	2	E	2	Light showers	2			2	Good (>3km)		
Gentle breeze	3	SE	3	Heavy showers	3			3			
Mod. breeze	4	S	4	Heavy rain	4			4			
Fresh breeze	5	SW		<b>Lying Snow</b>		<b>Frost</b>					
Strong breeze	6	W		None	0	None	<150m	0			
Mod. gale	7	NW		On site	1	Ground	150-500m	1			
Fresh gale	8			High ground	2	All day	>500m	2			
Strong gale	9								Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 6 (in notes).		
Whole gale	10										
Storm	11										
Hurricane	12										

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)
Hr 1	1	W	2	7/8	2	2	---	---	10°C
Hr 2	1	SW	0	8/8	2	2	---	---	
Hr 3	2	SW	0	7/8	2	2	---	---	
Hr 4	2	W	0	6/8	2	2	---	---	
Hr 5	3	W	0	6/8	2	2	---	---	
Hr 6	3	W	0	8/8	2	2	---	---	
Hr 7	3	W	0	7/8	2	2	---	---	
Hr 8									

Field Notes:  
 Maps attached

For office use only, NB - initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
-------------------------------------------------------	--------	------------------	--------------------	-------------	---------------



RPS		Weather Sheet	
Site		GPO	
Date		01/06/2017	
Survey		RBS	
Observer		Nick Vene	
Start Time		05:30	
Finish Time		12:00	
Sheet 1/	[ ]	Maps attached	

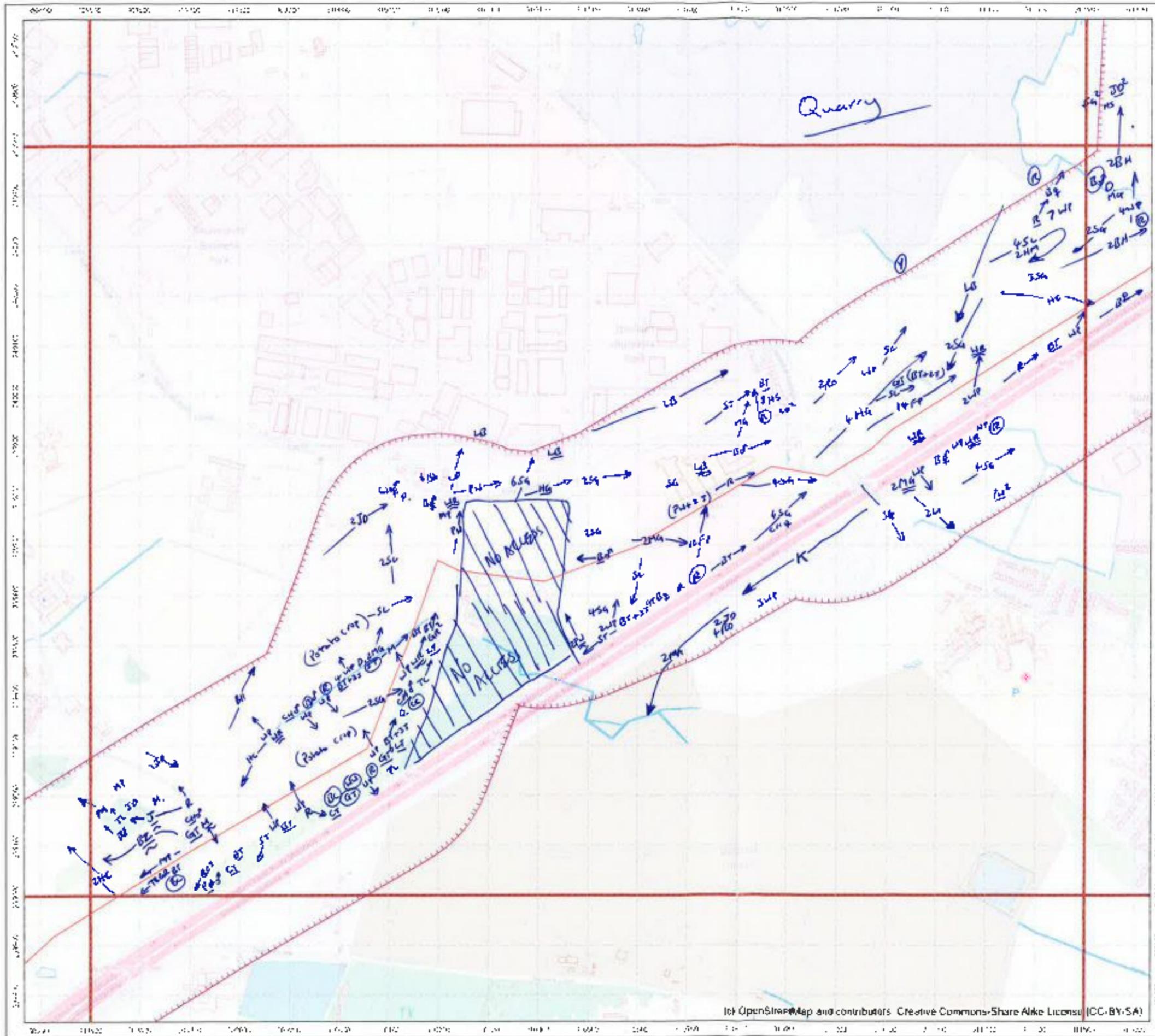
Wind Speed	Direction	Rain/Snow	Cloud Cover	Cloud Height	Visibility
Beaufort					
0	N	None	In nights e.g. 3/8	Height of cloud above average height of washed	Poor (<1km)
1	NE	Drizzle/Mist		<150m	Moderate (1-3km)
2	E	Light showers		150-500m	Good (>3km)
3	SE	Heavy showers		>500m	
4	S	Heavy rain			
5	SW	Lying Snow	Frost		
6	W		None		
7	NW	None	On site		
8		On site	Ground		
9		High ground	All day		
10					
11					
12					

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)
Hr 1	3	S	0	7/8	2	2	---	---	14°C
Hr 2	2	S	0	6/8	2	2	---	---	
Hr 3	2	S	0	4/8	2	2	---	---	15°C
Hr 4	2	S	0	5/8	2	2	---	---	
Hr 5	3	S	0	8/8	2	2	---	---	16°C
Hr 6	3	SE	0	9/8	2	2	---	---	
Hr 7	3	SE	1	8/8	2	1	---	---	17°C
Hr 8									

Field Notes:  
 Maps attached

For office use only. NB - Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated





RPS

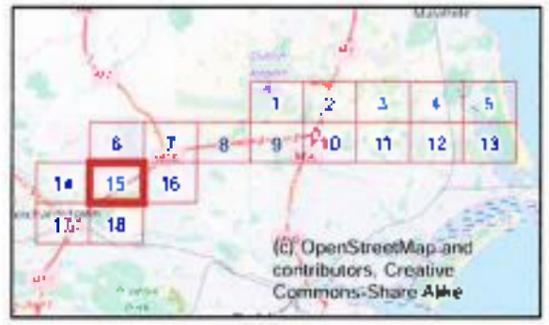
Surveyor: Nien Vee

Date: 01/06/2017

Start time: 05:30 Endtime: 12:00

\*Please attach weather sheet

Notes:  
02/06/2017  
05:40 - 12:00

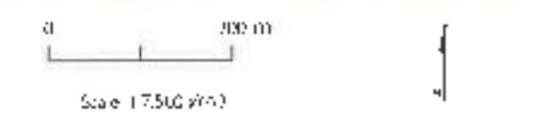


- Legend
- 3PS/WVVO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipe routes (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 15 of 18



Date: 01/06/2017 Job No: SOL 7040 Rev: 1

Drawn: EV Checked: TOA/E Approved: DRAFT

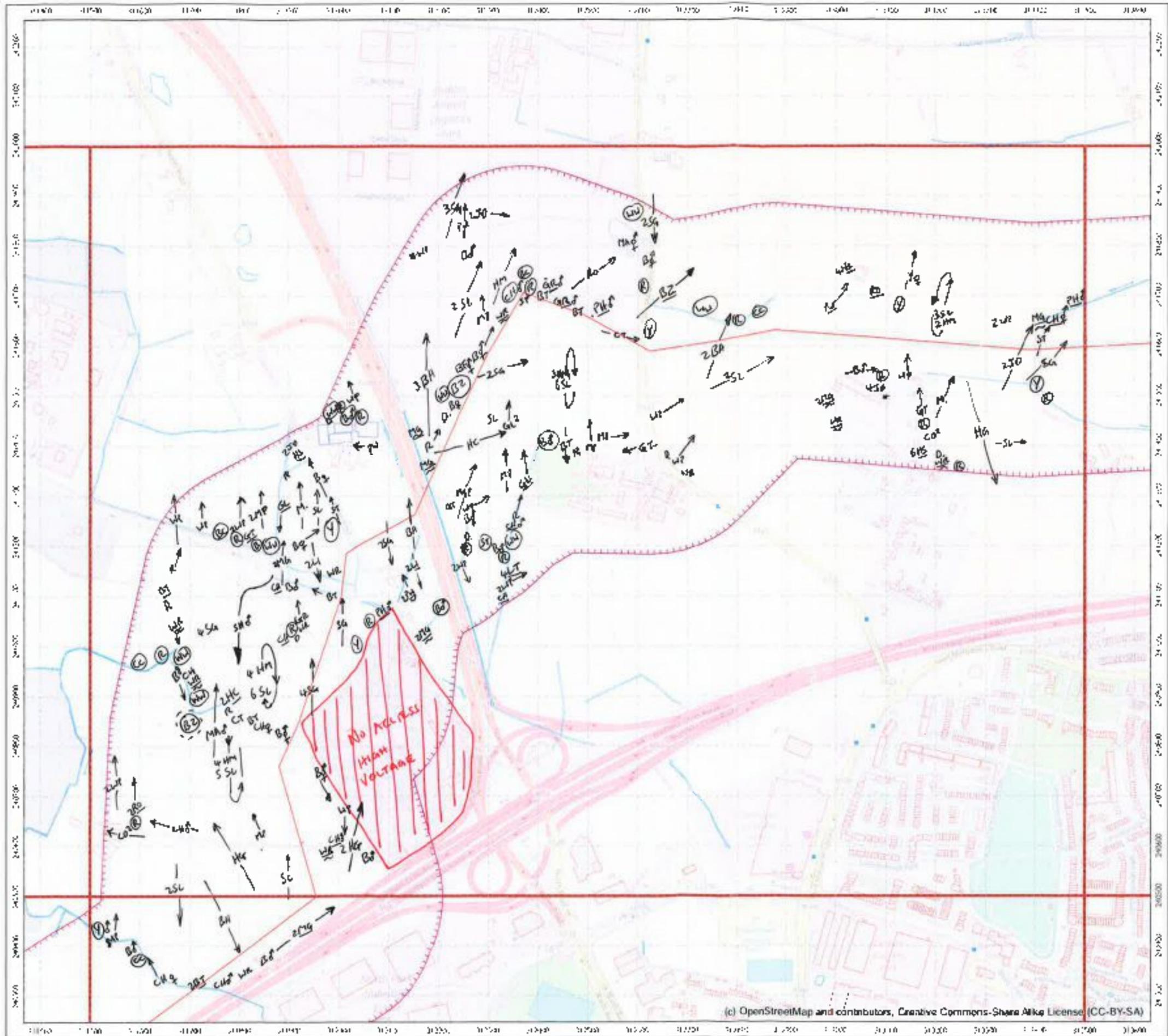
<b>RPS</b>	<b>Weather Sheet</b>
Site	GDD
Date	31/05/2017
Survey	BBS
Observer	Nick Veda
Start Time	05:00
Finish Time	12:00
Sheet 1/ & [ ] Maps attached	

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility																												
Calm	Light air	Light breeze	Gentle breeze	Mod breeze	Fresh breeze	Strong breeze	Mod gale	Fresh gale	Strong gale	Whole gale	Storm	Hurricane	N	NE	E	SE	S	SW	W	NW	None	Drizzle/Mist	Light showers	Heavy showers	Heavy rain	None	On site	High ground	None	Ground	All dry	<150m	150-500m	>500m	Poor (<1km)	Mod (1-3km)	Good (>3km)	
0	1	2	3	4	5	6	7	8	9	10	11	12										0	1	2	3	4	0	1	2	0	1	2						
0	1-3	4-7	8-12	13-18	19-24	25-31	32-38	39-46	47-54	55-63	64-72	73+																										

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)
Hr 1	2	E	0	3/8	1	0			Partly fog 7°C Humidity > 500m
Hr 2	2	E	0	4/8	1	0			Partly fog 8°C " > 500m
Hr 3	2	SE	0	5/8	1	1			11°C
Hr 4	3	SE	0	5/8	2	2			12°C
Hr 5	3	SE	0	6/8	2	2			
Hr 6	4	SE	0	6/8	2	2			
Hr 7	4	SE	0	5/8	2	2			14°C
Hr 8									

Field Notes:  
 Maps attached  
 Some localized fog but visibility over 500m so fine for BBS

For office use only, NB- Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
------------------------------------------------------	--------	------------------	--------------------	-------------	---------------



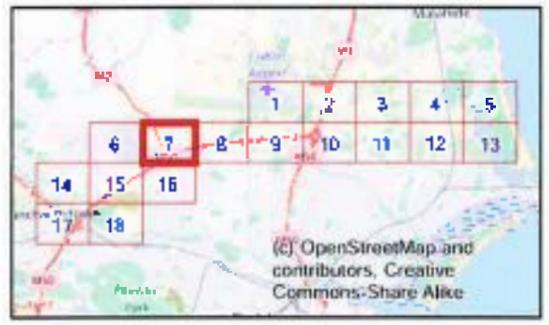
RPS

Surveyor: N. Veale

Date: 31/05/17

Start time: 05:00 End time: 12:00

\*Please attach weather sheet  
Notes:

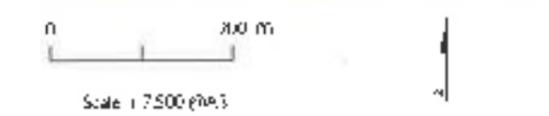


- Legend
- BBS/MVO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 7 of 18



Date: 06/04/2017 Job No: 5607509 Rev: 1  
Drawn: J.L.I. Checked: DRAFT Approved: DRAFT

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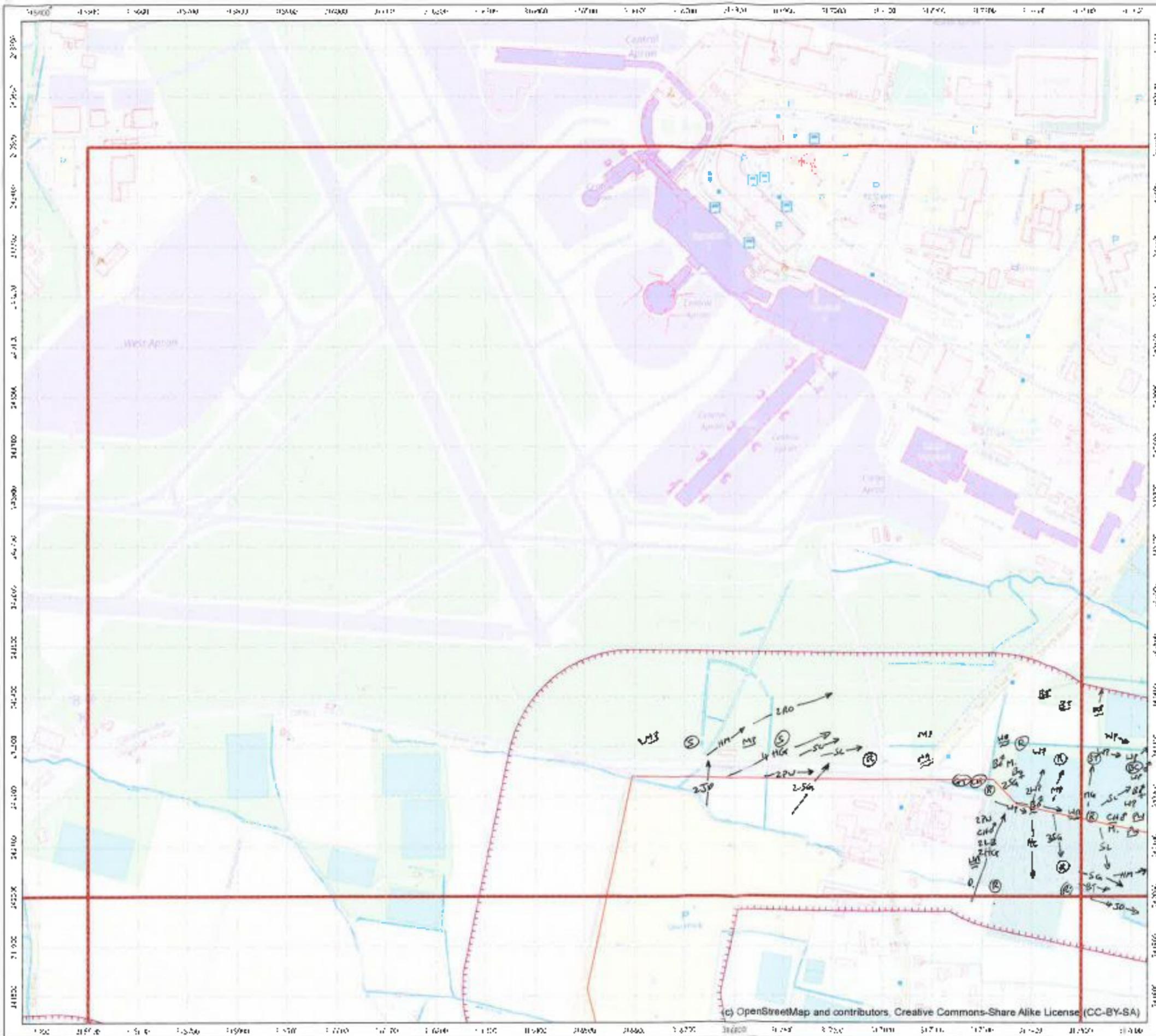
<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GOD
<b>Date</b>	25/05/2017
<b>Survey</b>	BBS
<b>Observer</b>	N. Veck
<b>Start Time</b>	05:30
<b>Finish Time</b>	12:00
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

Wind Speed		Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility		
Calm	Beaufort	N	NE	None	In sight	Height of cloud	Poor (<1km)	Moderate (1-3km)	Good (>3km)	0	1	2
Light air	1-3	E	SE	On site	e.g. 0/8	above average						
Light breeze	4-7	S	SW	On site		height of						
Gentle breeze	8-12	W	NW	High ground		viewshed						
Mod. breeze	13-18			Lying Snow								
Fresh breeze	19-24			None	0	<150m						
Strong breeze	25-31			On site	1	150-500m						
Mod. gale	32-38			High ground	2	>500m						
Fresh gale	39-46											
Strong gale	47-54											
Whole gale	55-63											
Storm	64-72											
Hurricane	73+											

Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes (e.g. temperature)
Hr 1	3	SE	0	6/8	1	1			11°C - Patchy Fog
Hr 2	2	SE	0	5/8	1	1			11°C Patchy Fog
Hr 3	2	E	0	5/8	2	2			
Hr 4	2	E	0	4/8	2	2			14°C
Hr 5	3	SE	0	4/8	2	2			
Hr 6	3	SE	0	3/8	2	2			18°C
Hr 7	3	E	0	3/8	2	2			
Hr 8									

**Field Notes:**  
**Maps attached**

<b>For office use only, NB. Initial AND date ALL boxes.</b>	<b>Logged</b>	<b>Database Entered</b>	<b>Database Validated</b>	<b>GIS Entered</b>	<b>GIS Validated</b>
-------------------------------------------------------------	---------------	-------------------------	---------------------------	--------------------	----------------------



Surveyor: Nick Vede

Date: 25/05/17

Start time 05:30

End time: 12:00

\*Please attach weather sheet

Notes



Legend

- BBSIMVO survey boundary (250 m buffer of routes supplied 20170405 appended to previous boundary)
- Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

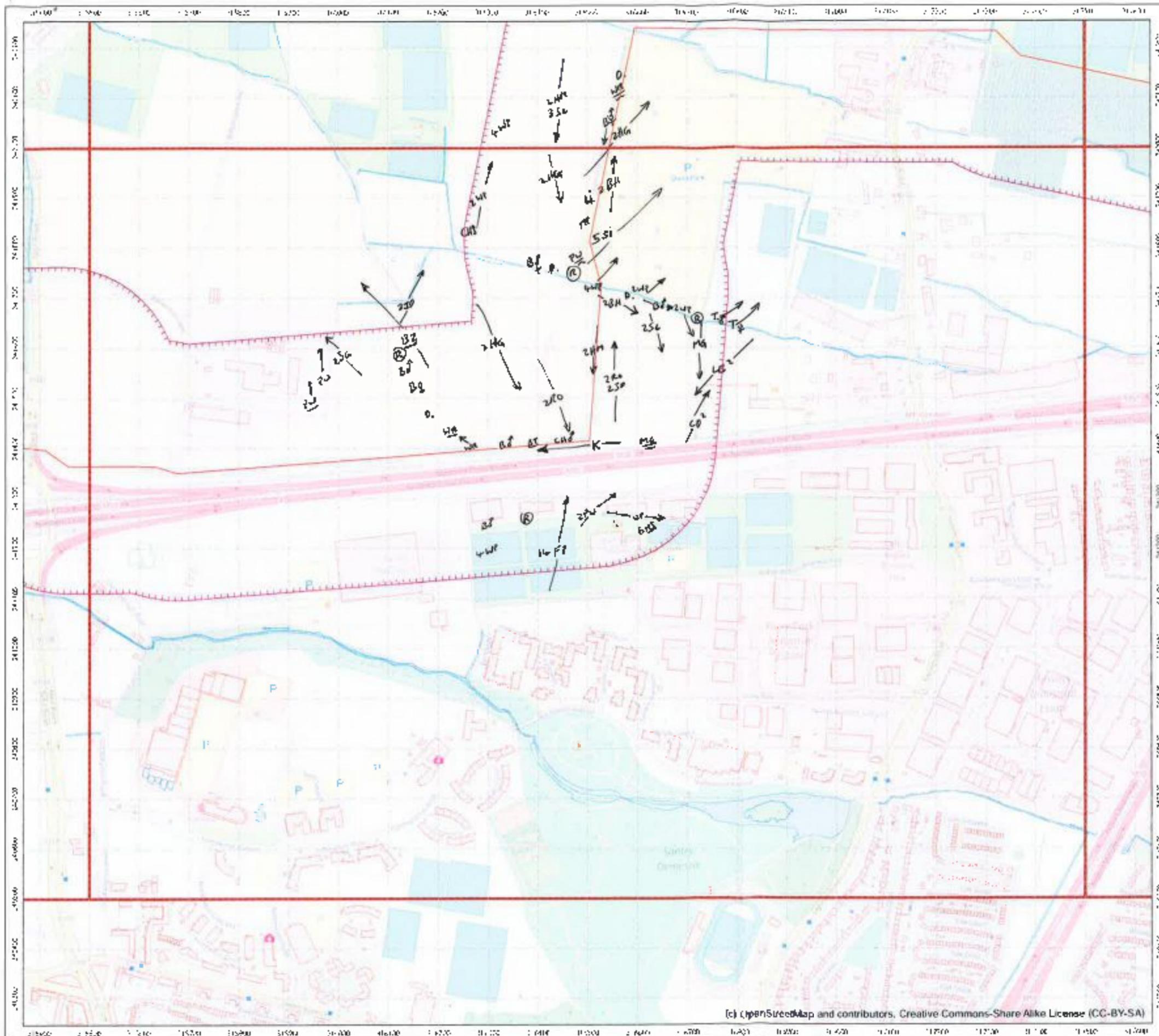
Page 1 of 18



Scale 1:7500 (A3)

Drawn: CH      Checked: DRAFT      Approved: U-444

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**RPS**

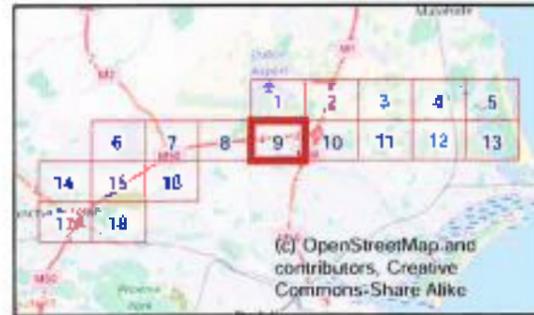
Surveyor: N.V

Date: 25/05/17

Start time: 05:30 | End time: 12:00

\*Please attach weather sheet:

Notes:



- Legend
- RBS/WVO survey boundary (250 m buffer of route supplied 20170405 appended to (rev) our boundary)
  - Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 9 of 18

Scale: 1:7500 (60%)

0 200 m

Date: 06/04/2017 | Job No: SEC709 | Rev: 1

Drawn: J.H. | Checked: DRAFT | Approved: DRAFT

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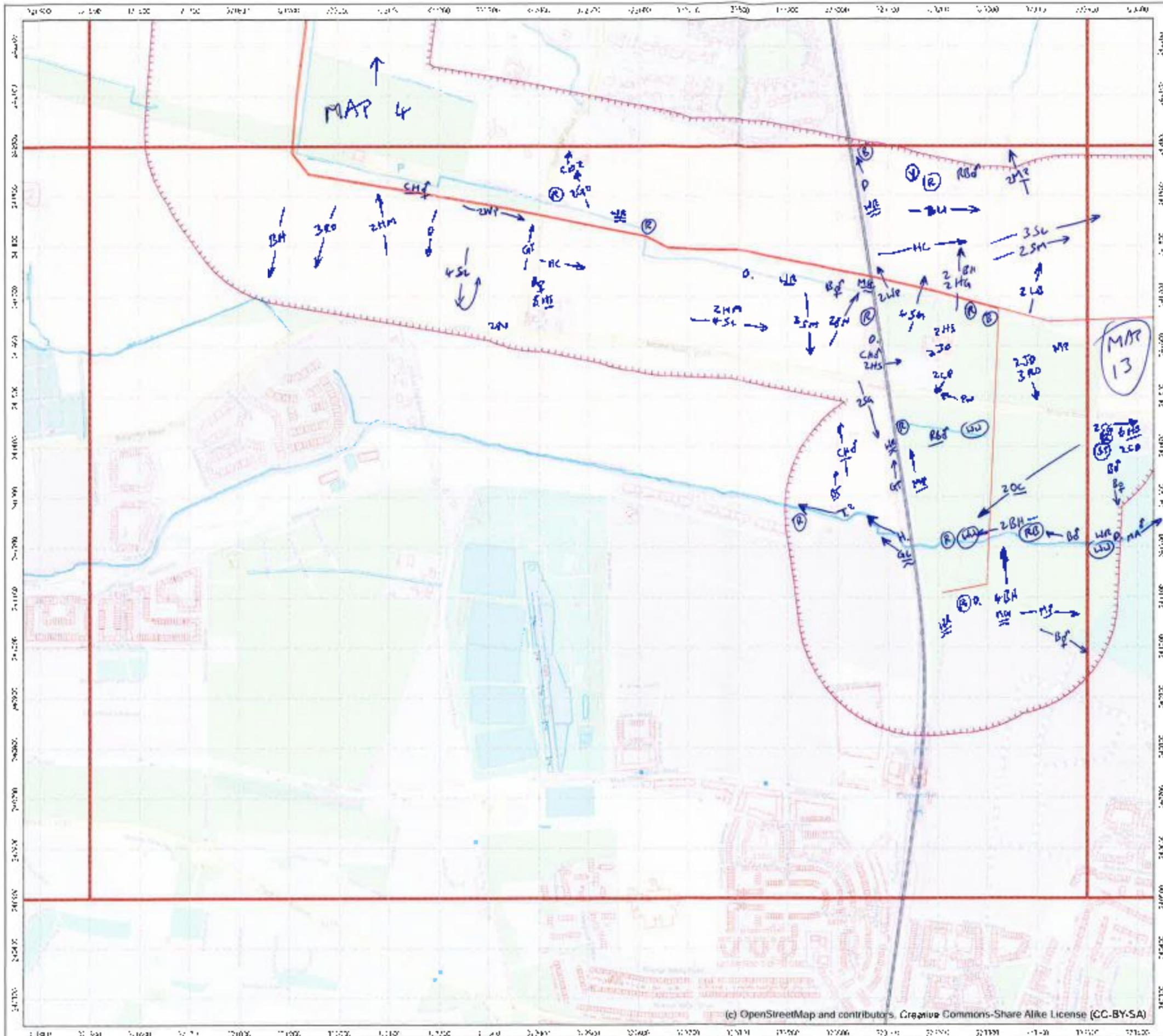
<b>RPS</b>	<b>Weather Sheet</b>
<b>Site</b>	GDD
<b>Date</b>	24/05/2017
<b>Survey</b>	RBS
<b>Observer</b>	N. Vede
<b>Start Time</b>	05:20
<b>Finish Time</b>	12:40
<b>Sheet 1/ &amp; [ ] Maps attached</b>	

Weather	Wind speed	Wind direction	Rain	Wind Speed		Direction	Rain/Snow	Cloud Cover	Cloud Height	Visibility	Notes (e.g. temperature)	
				Beaufort	Mph						Frost	Snow
Hr 1	3	SW	0	Calm	>1	N	None	In eighth e.g. 3/8	Height of cloud above average height of viewshed	Poor (<1km)		
Hr 2	3	SW	0	Light air	1-3	NE	Drizzle/Mist			Moderate (1-3km)		
Hr 3	3	SW	0	Light breeze	4-7	E	Light showers			Good (>3km)		
Hr 4	2	SW	0	Gentle breeze	8-12	SE	Heavy showers					
Hr 5	1	S	0	Mod. breeze	13-18	S	Heavy rain					
Hr 6	2	S	0	Fresh breeze	19-24	SW	Lying Snow	Frost	<150m			
Hr 7	3	SE	0	Strong breeze	25-31	W	None	None	150-500m			
Hr 8				Mod. gale	32-38	NW	On site	Ground	>500m			
				Fresh gale	39-46		High ground	All day				
				Strong gale	47-54							
				Whole gale	55-63							
				Storm	64-72							
				Hurricane	73+							

Field Notes:  
Maps attached

For office use only. NB - Initial AND date ALL boxes.	Logged	Database Entered	Database Validated	GIS Entered	GIS Validated
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**RPS**

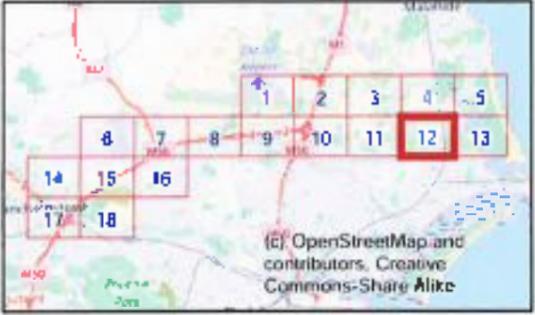
Surveyor N. Veeh

Date 24/05/2017

Start time 05:20 End time 12:00

\*Please attach weather sheet

Notes



**Legend**

- BBS/WWO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)
- Pipe route (supplied 20170405)

Greater Dublin Drainage

Breeding/winter bird survey

Page 12 of 18

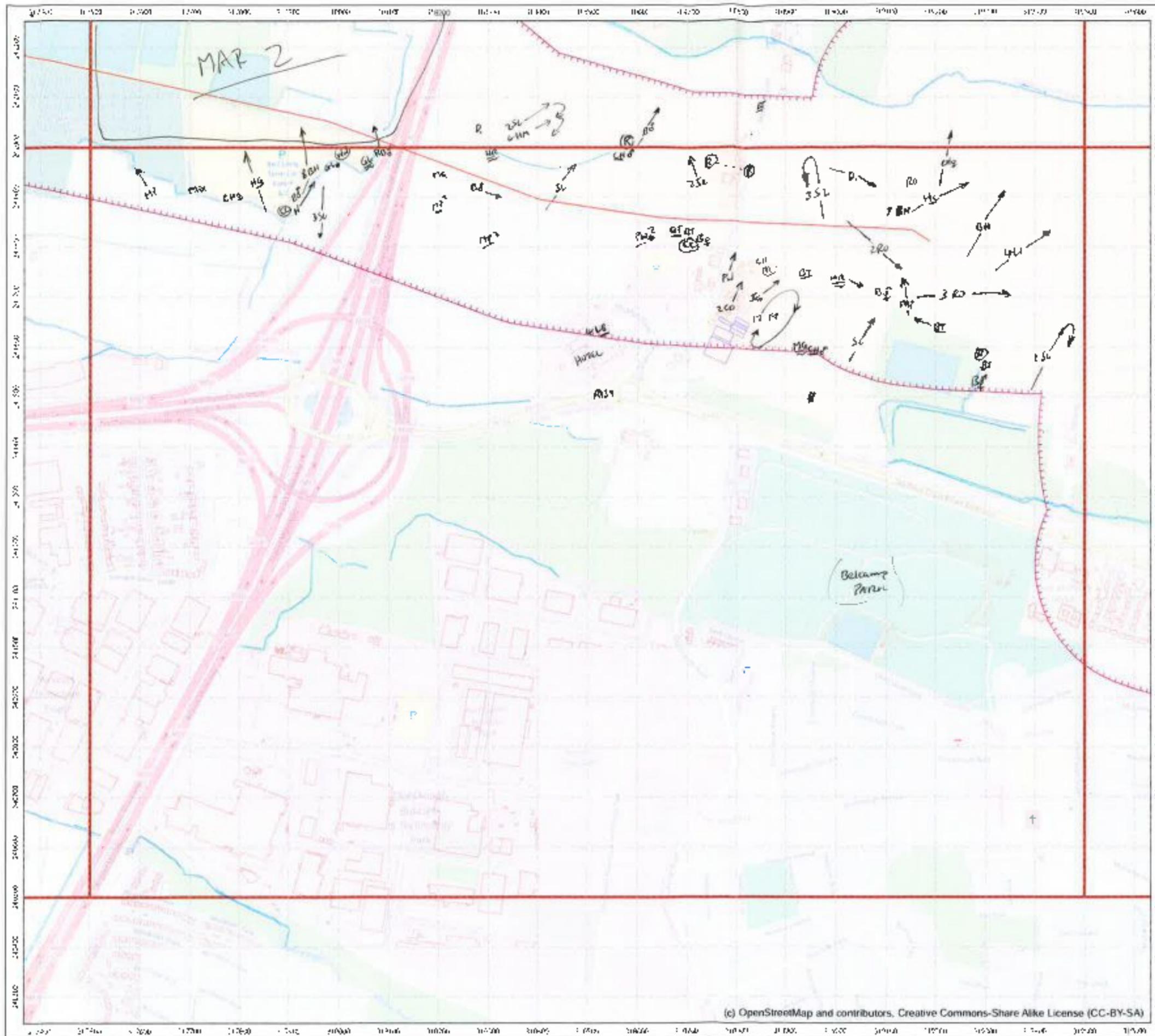
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Scale 1:7,500 (A4)

Date 26/05/2017 Job No 5007903 Rev c

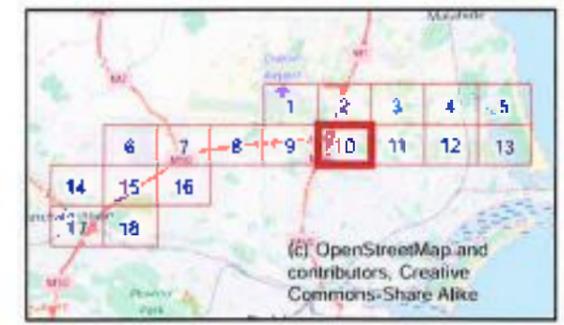
Drawn C.I. Checked DRAFT Approved DRAFT

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RPS

Surveyor Niall Veale  
 Date 24/05/2017  
 Start time 08:20 End time 12:00  
 Please attach weather sheet  
 Notes



Legend  
 BES/MVO survey boundary (250 m buffer of route supplied 20170405 appended to previous boundary)  
 Pipe route (supplied 20170405)

Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 10 of 18

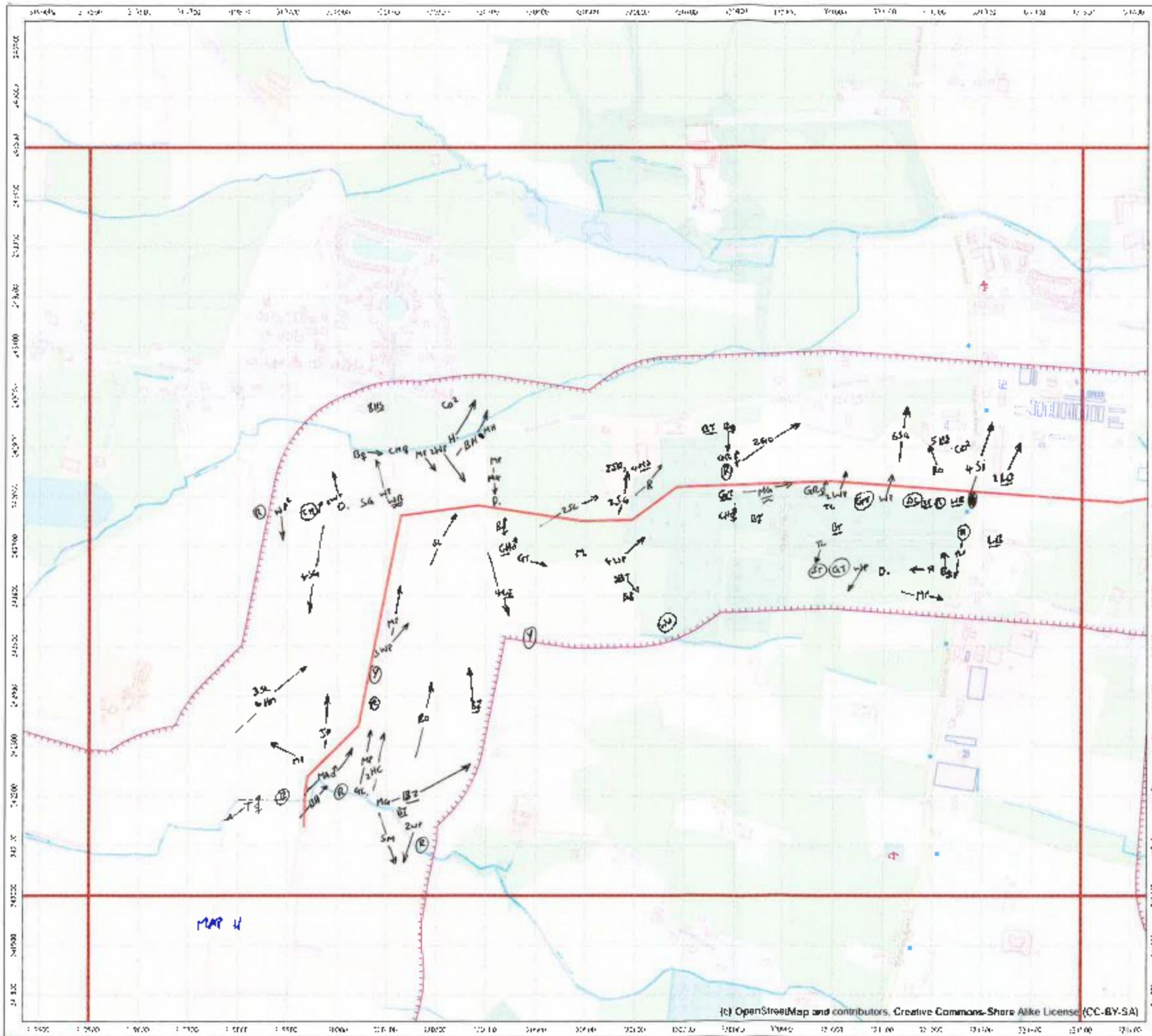
0 100 m  
 Scale: 7500:043  
 Date: 26/04/2017 Job No: SEC7009 Rev: 2  
 Drawn: CH Checked: DRAFT Approved: DRAFT  
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<b>RPS</b>	<b>Weather Sheet</b>
Site	600
Date	23/05/2017
Survey	BBS
Observer	N. Vee
Start Time	08:00
Finish Time	12:00
Sheet 1/ & [ ] Maps attached	

Weather	Wind speed	Wind direction	Rain	Wind Speed		Direction	Rain/Snow	Cloud Cover	Cloud Height	Visibility
				Beaufort	Mph					
Hr 1	2	NW	0	5/8	2					
Hr 2	2	W	0	7/8	2					
Hr 3	2	W	0	7/8	2					
Hr 4	3	W	0	8/8	2					
Hr 5										
Hr 6										
Hr 7										
Hr 8										
<b>Field Notes:</b> Maps attached										
				Database Entered	Database Validated	GIS Entered	GIS Validated			

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RPS

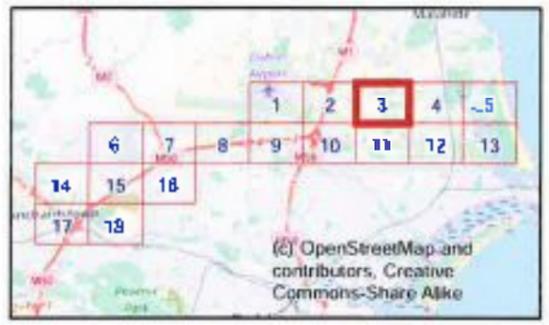
Surveyor: N. in Veale

Date: 23/05/2017

Start time: 08:00 End time: 17:00

\*Please attach weather sheet

Notes:



- Legend
- BBS/WVC survey boundary (250 m buffer of route (supplied 20170405 appended to previous boundary))
  - Pipe route (supplied 20170405)

Greater Dublin Drainage

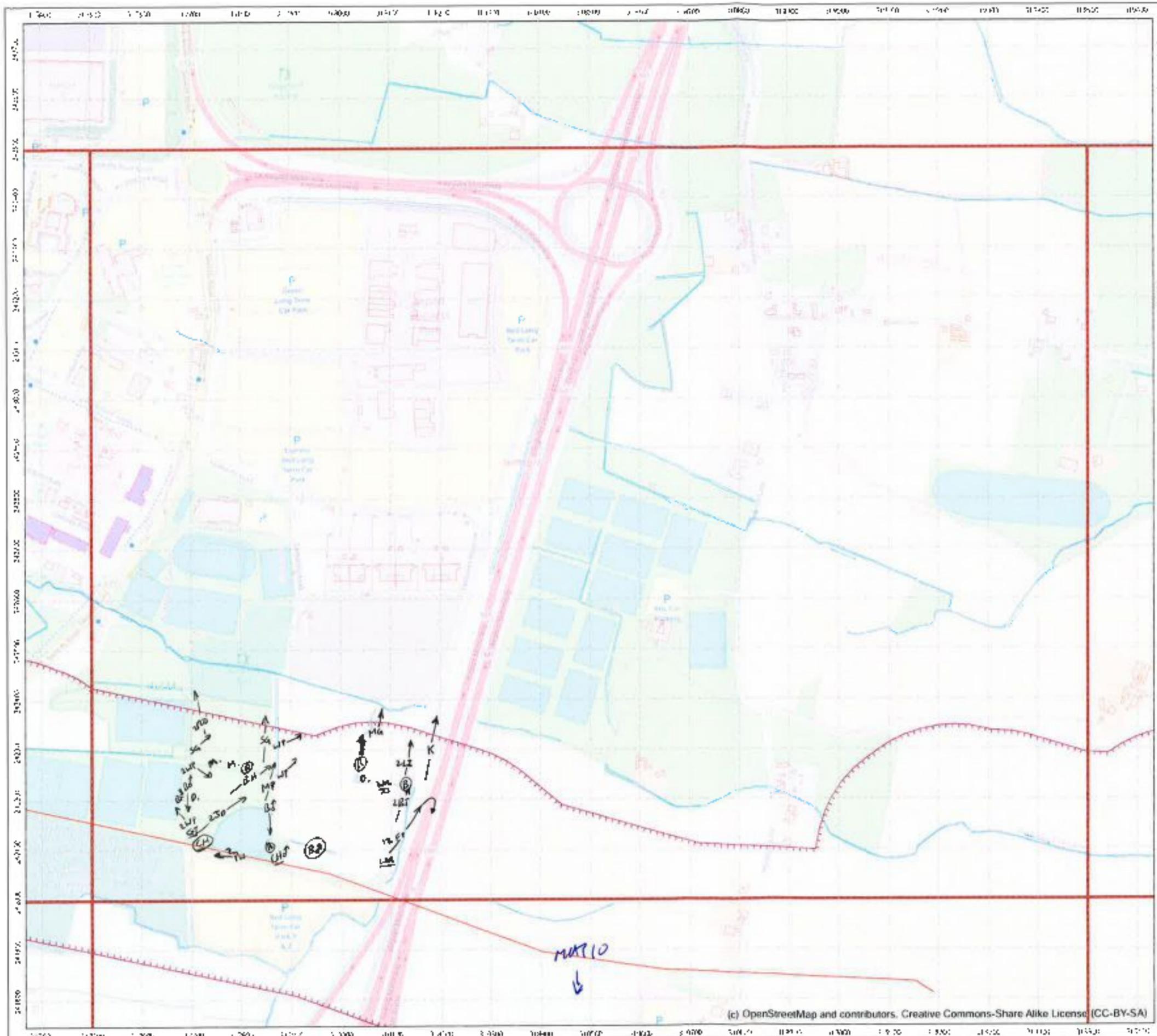
Breeding/winter bird survey

Page 3 of 8



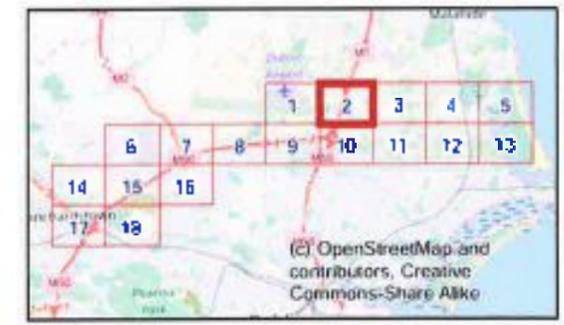
Date: 06/04/2017 Job No: SEC7509 Rev: c  
 Drawn: CH Checked: DRAFI Approved: DRAFI

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RPS

Surveyor N. Veale  
 Date 7/3/05/2017  
 Start time 08.00 End time: 12:00  
 \*Please attach weather sheet  
 Notes



- Legend
- BBS/WVO survey boundary (750 m buffer of route supplied 20170405 appended to previous boundary)
  - Pipe route (suppl ed 20170405)

Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 2 of 8

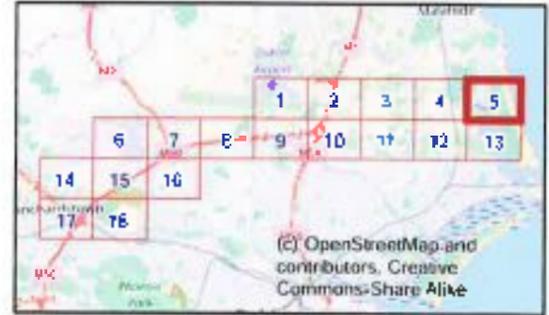
Scale: 1:7500 (3043)  
 Date: 06/04/2017 Job No: SEC7909 Rev: c  
 Drawn: G.I. Checked: DRAFT Approved: DRAFT

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Surveyor: N. Veale  
 Date: 19/05/2017  
 Start time: 08:00 End time: 17:00

\*Please attach weather sheet  
 Notes:



- Legend
- SBS/WWC survey boundary (250 m buffer of route supplied 20 70405 appended to previous boundary)
  - Pipe route (supplied 20170405)

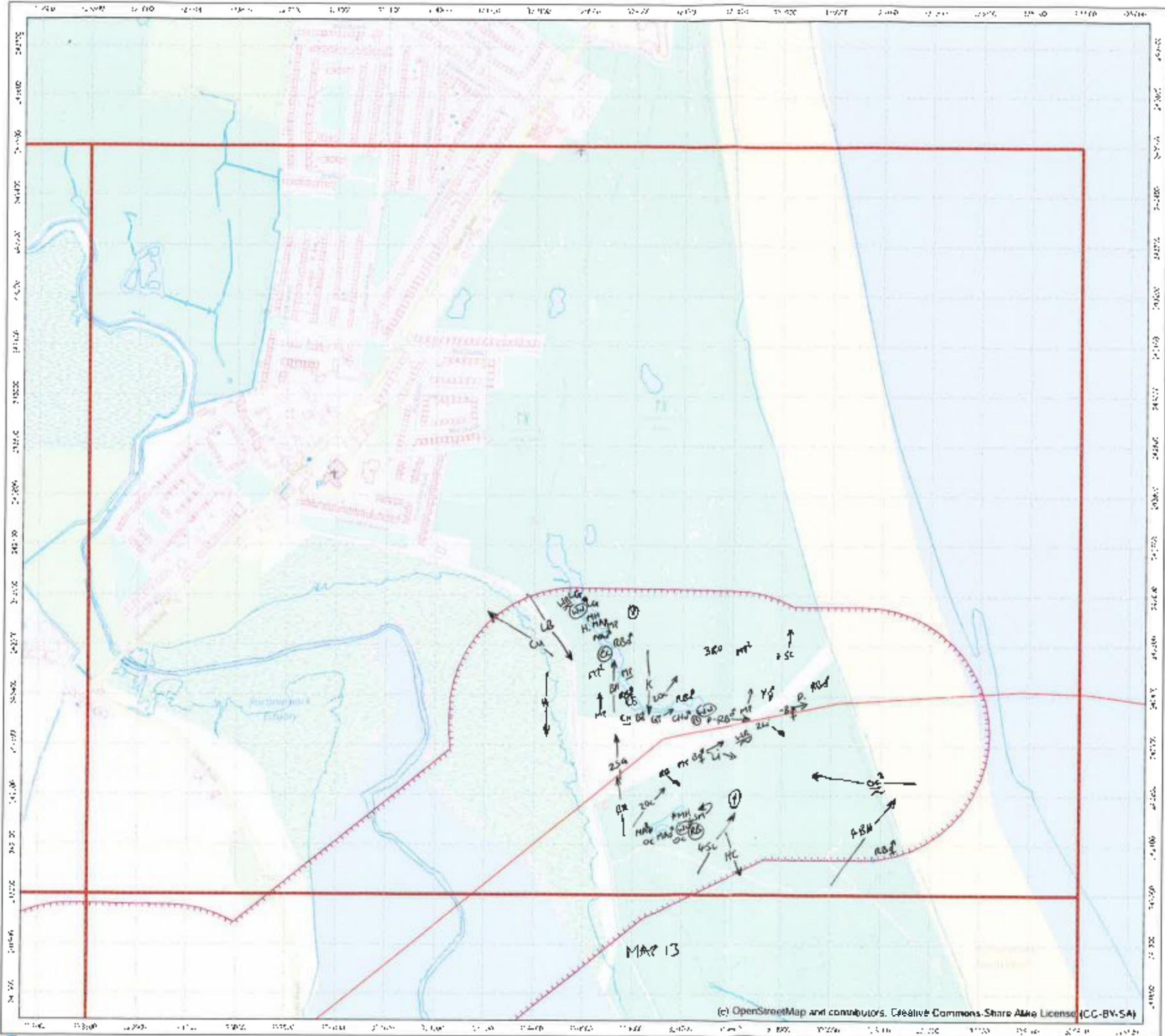
Greater Dublin Drainage  
 Breeding/winter bird survey  
 Page 5 of 18

0 200 m  
 Scale: 1:7,500 (pA)

Date: 26/04/2017 Job No: 5507900 Rev: /  
 Drawn: VJL Checked: DRAFT Approved: DRAFT

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MAP 13



RPS Weather Sheet		Wind Speed			Direction		Rain/Snow		Cloud Cover		Cloud Height		Visibility	
Site	GPD,	Calm	0	>1	N	None	0	In sight	Height of cloud above average height of viewshed	Poor (<1km)	0			
Date	22/05/2017	Light air	1	1-3	NE	Drizzle/Mist	1	e.g. 3/8		Moderate (1-3km)	1			
Survey	BBS	Light breeze	2	4-7	E	Light showers	2			Good (>3km)	2			
Observer	Nick Vee	Gentle breeze	3	8-12	SE	Heavy showers	3			<150m	0			
Start Time	08:00	Mod. breeze	4	13-16	S	Heavy rain	4			150-500m	1			
Finish Time	12:00	Fresh breeze	5	19-24	SW	Lying Snow				>500m	2			
Sheet 1/ & [ ] Maps attached		Strong breeze	6	25-31	W	None	0	None	0	Please be as accurate as possible, with weather details, entering only one figure, not a range, e.g. WS - 5, not 5-6. Use notes for extra info. E.g. WS - 5, gusting 8 [in notes].				
		Mod. gale	7	32-38	NW	On site	1	Ground	1					
		Fresh gale	8	39-46		High ground	2	All day	2					
		Strong gale	9	47-54										
		Whole gale	10	55-63										
		Storm	11	64-72										
		Hurricane	12	73+										
Weather	Wind speed	Wind direction	Rain	Cloud cover	Cloud height	Visibility	Frost	Snow	Notes(e.g. temperature)					
Hr 1	2	SE	0	4/8	2	2	---	---	13°C					
Hr 2	2	SE	0	5/8	2	2	---	---	14°C					
Hr 3	3	SE	0	5/8	2	2	---	---	15°C					
Hr 4	3	SE	0	7/8	2	2	---	---	18°C					
Hr 5														
Hr 6														
Hr 7														
Hr 8														
Field Notes: Maps attached														
For office use only. NB: Initial AND date ALL boxes.		Logged	Database Entered	Database Validated	GIS Entered	GIS Validated								



