



## N2 Monaghan to Emyvale Phase 2, 3 and 4

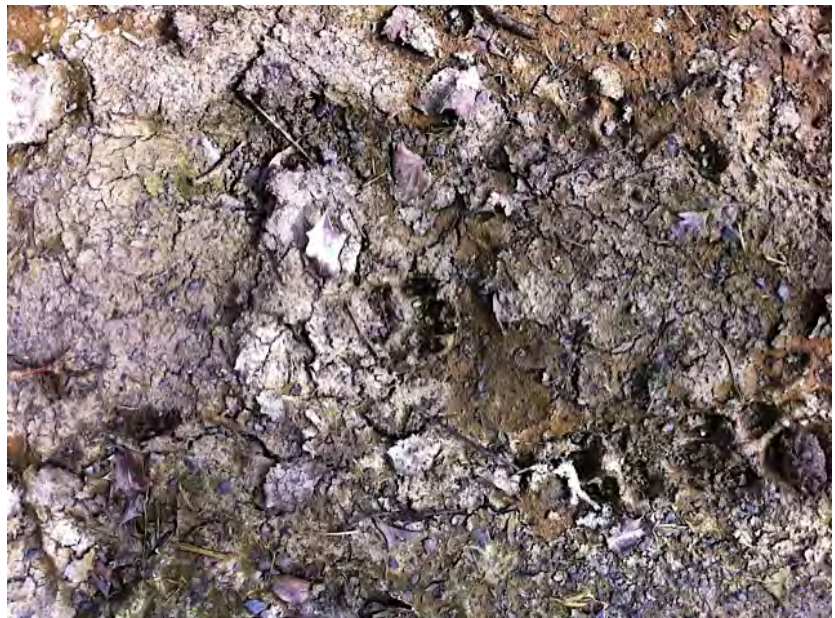
### Terrestrial Mammal Report

Date: 23 April 2011

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## **1. Introduction**

### **1.1 Background**

The following report details the findings of surveys carried out by Flynn, Furney Environmental Consultants on behalf of Monaghan County Council along the route of the proposed N2 Monaghan to Emyvale realignment. These works will include widening of the existing road, involving some additional landtake and the crossing of a number of small watercourses. Surveys were carried out in April 2011 in order to describe terrestrial mammal habitat and activity within the lands made available for this project and in surrounding areas. The report also advises on mitigation measures. The objectives of these surveys are given below.

### **1.2 Objectives of Survey**

The objectives of the survey may be described as follows:

- To identify the presence or absence of terrestrial mammal species
- To identify and record signs of mammal activity or refuges
- To describe potential impacts upon these species by the proposed project
- To provide detailed mitigation measures
- To provide appropriate mapping and photographic records of findings

### **1.3 Outline Description of Site under Survey**

The study site is located in north Co. Monaghan, north of Monaghan town. It extends from the townland of Coolkill some 3km north of Monaghan town to the village of Emyvale. The route is shown in the drawings in Appendix A. The vast majority of the landuse in the area is grazing and the adjoining lands are predominantly improved agricultural grassland. The topography of the site is typical of a drumlin landscape. An important feature of the area under survey is the frequency of well-maintained hedgerow boundaries. The vast majority of the field boundaries surveyed were hawthorn-dominated hedgerows which have been subject to management in recent years. As such, the majority of hedgerows were of the type described by Foulkes (2011) as the most commonly occurring in Monaghan. Ash was the most common tree appearing in hedgerows and in treelines as well as single trees. Beech trees in treelines were also found to be common particularly at the existing N2 roadside. Woodland is rare within the study area. Some small conifer plantations are found as well as a wooded garden. There is a single area of wet woodland at the southernmost point of the route, close to Griggy Lough.

## 1.4 Outline Description of Proposed Works

The proposed N2 Monaghan to Emyvale Road Improvement scheme proposes to improve the existing N2 Dublin – Derry National Primary Road by widening the road cross-section, easing bends and undertaking localised minor realignments of the existing road in 4 phases. Phase 1 of the N2 Monaghan to Emyvale Road Improvement Works is currently under construction. The proposed road cross section will include an 8m road width, 2 no. 3m wide verges and associated embankments for cut and fill. Sight visibility splays will also have to be kept clear of obstructions at junctions and accesses. The current work surveys the lands made available (LMA) for Phase 2, 3 and 4 of the proposed N2 Monaghan to Emyvale Road Improvements works.

Phase 2 and 4 are contiguous sections of road, which together comprise a length of approximately 5.3km extending from the townland of Coolkill to the townland of Gortmoney at the settlement of Corracrin. Phase 3 extends from Gortmoney in the settlement of Corracrin to the village of Emyvale. The survey area extends from National Grid Co-Ordinate 267773,336475 to 267695, 343790. The overall length under survey is approximately 7.35km.

## 1.5 Methodologies

A desktop survey of mapping, aerial photography and species records was initially carried out. Correspondence with the Conservation Ranger of the National Parks and Wildlife Service was also undertaken. Landowners, when met, were also asked of known sightings of protected mammal species.

The mammal survey involved direct observation (during daylight hours) of signs of mammal activity which included prints, tracks, hairs, droppings, odour, digging and evidence of feeding. Refuges such as badger (*Meles meles*) setts were also observed and recorded. Where encountered, evidence of mammal activity such as well-used paths, tracks and latrines etc was recorded and these are also shown in the drawings in Appendix A.

Guidelines by the NRA (2005a [for badgers] and 2006 [for otters]) were employed for this survey. Establishment of significance of impact was carried out following the guidelines given by the IEEM (2006). The entire proposed route of the N2 was walked, the survey area extending up to 250m from the proposed alignment. Particular attention was paid to field boundaries, scrub and woodland.

## 2. Results

### 2.1 Desktop Survey

There are records of many mammal species in north Co. Monaghan (e.g. Hayden and Harrington, 2000). These include stoat, otter, badger, sika, red and fallow deer, hedgehog, fox, rabbit and Irish hare. A previous study of Phase I of this present project by Keely (2010) recorded evidence of otters along tributaries of the Monaghan Blackwater as well as evidence of fox, rabbit, hedgehog, brown rat, wood mouse.

Correspondence with National Parks and Wildlife Service staff confirmed that pine marten are now established in Co. Monaghan. Red squirrel have been seen in Glaslough (author record) in recent years. The Conservation Ranger confirmed that there are no deer known within the study area.

### 2.2 Mammal Survey

Mammal surveys took place between the 6 and 8 April 2011. Conditions for survey were optimal. Survey results are shown graphically in the drawings in Appendix A.

#### a) Badger

A single badger sett was found during survey. This was in Phase 3 of the scheme at approximate chainage 1+000 a little over 100m west of the alignment. This is a single-entrance outlier and has been disused for some time. It is unlikely that this has been in use in the last year. No setts were found within the lands made available for the scheme. Badger tracks were found in 5 no. locations. Two latrines were found. It is estimated that the 250m survey corridor encountered 4 no. badger territories. A landowner (Pers comm.<sup>1</sup>) reported that badgers in this area had been snared and removed as part of the government's bovine Tuberculosis eradication attempts and populations had never recovered.

Fig 1. Badger sett at Carrigans



<sup>1</sup> Pers. comm. Landowner to fieldworker 6 April 2011. Believed to be an accurate report as the landowner is a veterinary surgeon who worked on this project.

#### b) Irish Hare

A single sighting of an Irish hare was made. This was in Phase 2 of the scheme at approximate chainage 4+500, around 40m west of the alignment.

#### c) Fox

Fox tracks and runs were found throughout the area under survey.

#### d) Rabbit

Rabbit warrens and burrows were found in large numbers throughout the survey site.

Fig 2. One of many rabbit warrens seen



#### e) Squirrels

Although some suitable habitat exists for both species of squirrel within 250m of the proposed route, no sightings of any squirrels were made nor evidence of any activity found.

#### f) Pine marten

This is a mammal whose range has been extending throughout the island of Ireland. However, no sightings of this species or any signs of activity were made.

#### g) Otter

No signs of otter activity were recorded. There is little suitable otter habitat found within the survey area. The exception to this is the Mountain Water River. No otter signs were found along a 1km stretch of this river centred on the village of Emyvale.

## h) Other Mammal Species

**Deer:** No signs of deer activity were recorded during survey. The Conservation Ranger and any landowners encountered confirmed that no deer are known in this area.

**Mink:** While suitable habitat for this species exists in several areas within the survey area, no signs of this species' activity were found. Mink were reported by a landowner (Pers comm.<sup>2</sup>) to be present in the vicinity of Stream 6 at Gortmoney. Should mink occur in the area, no mitigation measures would be recommended for this species as it is a non-native invasive species.

**Brown Rat and Wood Mouse:** Tracks of these species were found throughout the survey area in which they would be common.

**Stoat, Hedgehog and Pygmy Shrew:** No findings of these species were made. However, it is extremely likely that they would occur within the area under survey.

**Roadkill:** No roadkilled mammals were encountered during intensive survey of the existing N2 and its proposed realignment route.

All of the mammals found during this survey are listed as being of 'Least Concern' on the Red Data list for Irish Mammals (Marnell et al., 2009) in both national and European contexts.



Fig 3. Badger prints to west of route

### 3. Discussion

#### 3.1 Mammal Habitats to be Impacted upon by Scheme

##### a) Badger

No badger setts will be impacted upon by this scheme. It is not thought that any badger territory is divided by the existing N2, nor will the proposed works divide any territorial area. No indications that badgers cross the existing N2 were found. Extremely few signs of badger activity were found, given the suitability of the area for badgers. The recent licensed removal of badgers from the area is believed to be in part responsible for this. No significant impacts are expected on this species.

##### b) Irish Hare

The proposed works will involve some loss of habitat for this species. However, it is not thought that this would have any perceptible impact upon hares in this area.

##### c) Stoat and Hedgehog

The proposed works will involve some loss of habitat for these species. The significance of these impacts is thought to be moderate negative of short-term duration.

##### d) Brown Rat and Wood Mouse

The proposed works will involve some loss of habitat for these species. Given the high populations of these species no impact of any perceptible significance is predicted.



Fig 4. Mature treelines such as this in Phase 4 of the scheme offer habitat to several mammal species



## 4. Mitigation Measures

### 4.1 Terrestrial Mammals

#### a) Badgers

No impacts are predicted upon this species given the survey findings. However, adopting a precautionary approach is recommended, given that the populations of this mammal may recover in time. No badger-proof fencing is recommended on the realignment. The post and rail fencing with mesh that is proposed for this route would prove a deterrent for mammals crossing this route. However, no paths or tracks found indicate any established mammal routes across the proposed route. Mesh may be attached to any farmer's access gates to be installed along the new fenceline. Concrete sills would ensure that these gates were mammal-proof. No underpasses are recommended.

#### b) Irish Hare

Strictly limiting the land-take of the scheme will mitigate against the impact of habitat loss on this species.

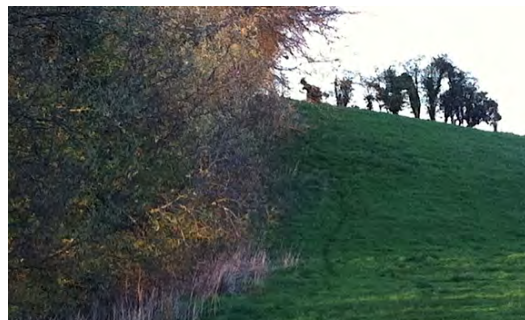
#### c) Stoat, Hedgehog, Brown Rat and Wood Mouse

Strictly limiting the land-take of the scheme will mitigate against the impact of habitat loss on these species. Clearance of any scrub areas should be avoided where possible. Mature hedgerows should be left as intact as possible in all works areas.

#### d) General Mitigation Measures

Alignment fencing should be placed between the proposed road and existing or realigned watercourses. Fencing should go over culverts, allowing mammal access through the culverts. Fencing should be tied in to structures such as culverts and bridges. Planting should use native shrub and tree species. These may be used to guide species toward culverts.

Fig 5. Mammal run used by badgers in Phase 4



## 5. Conclusion and Recommendations

The main conclusions of this report may be summarised as follows:

- Evidence of activity of 6 no. mammals was found. These being: badger, Irish hare, rabbit, fox, brown rat and wood mouse.
- Though no signs were found, it is likely that several other mammal species occur within the survey area. These being: stoat and hedgehog. Mink may also occur but this is a non-native invasive species.
- No badger setts or otter holts will be impacted upon by the proposed scheme. A single badger sett was found but this was disused and over 100m from the lands made available.
- No badger territory will be impacted upon by the proposed scheme. Unusually low badger population densities are thought to be a result of intensive (licensed) badger snaring and culling in recent years.
- No evidence of deer or pine marten were found in the area under survey.

The main recommendations may be summarised as follows:

- While no mammal -proof fencing is recommended. Post and rail fencing with standard mesh should be placed between the alignment and watercourses and allow mammal access to culverts. Farmers' gates may be made mammal-proof.
- Limiting the amount of habitat such as hedgerow, tree, scrub and woodland will serve to mitigate against the impact of this scheme on protected species such as stoat and hedgehog.
- The replacement of hedgerow and mature woody vegetation with native species of shrub and tree will mitigate against loss of habitat. This planting may also be used to direct mammals toward culverts.

## 6. References

Hayden, T. & Harrington, R. (2000). *Exploring Irish mammals*. Dúchas. Town House Dublin.

Marnell, F., Kingston, N. & Looney, D. (2009) Ireland Red List No. 3: Terrestrial Mammals, National Parks and Wildlife Service, Department of the Environment, Heritage and Local Government, Dublin, Ireland.

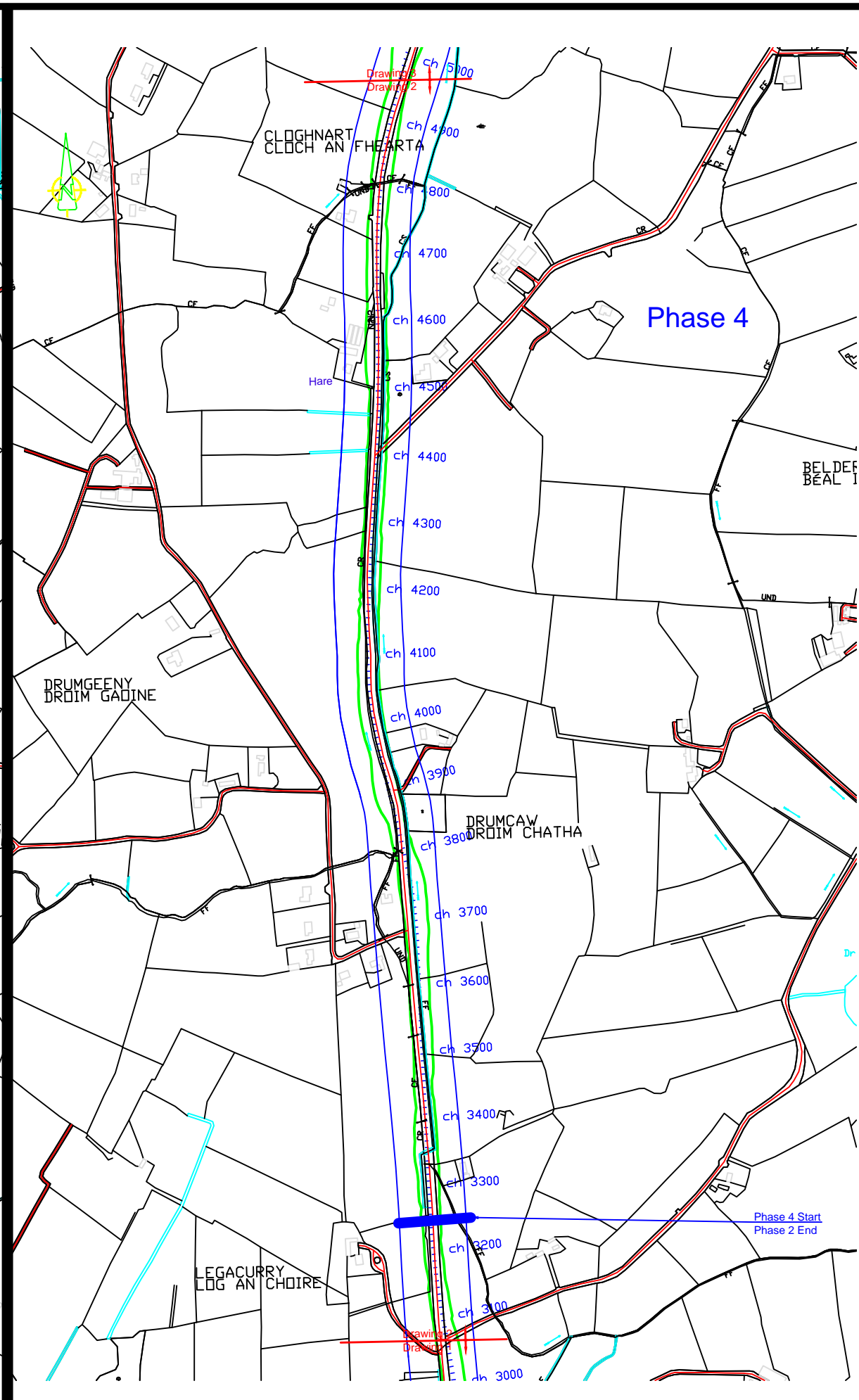
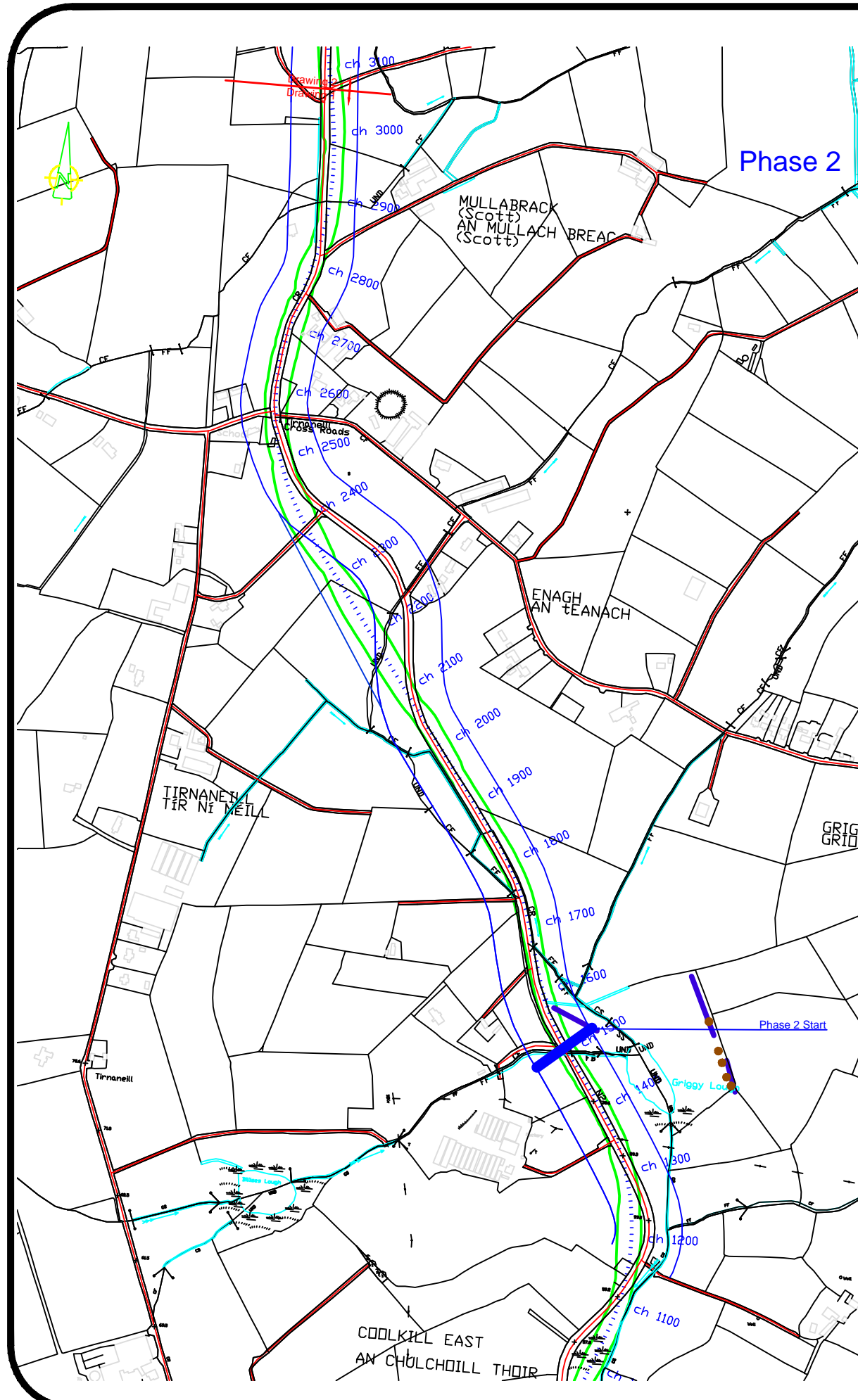
National Roads Authority (2005a). Guidelines for the treatment of badgers prior to the construction of national roads schemes. NRA, Dublin.

National Roads Authority (2006a) *Guidelines for the Treatment of Otters prior to the Construction of National Roads*. National Roads Authority, Dublin.

## Appendix A: Mammal Survey Drawings

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Mammal Survey	N2-2-01
Drawing Nos.	N2-2-02




Drawing - A

Drawing - B

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General Notes / Legend

- Badger Path
- Badger Print
- Badger Sett
- L Badger Latrine
- 50m Offset
- Landtake

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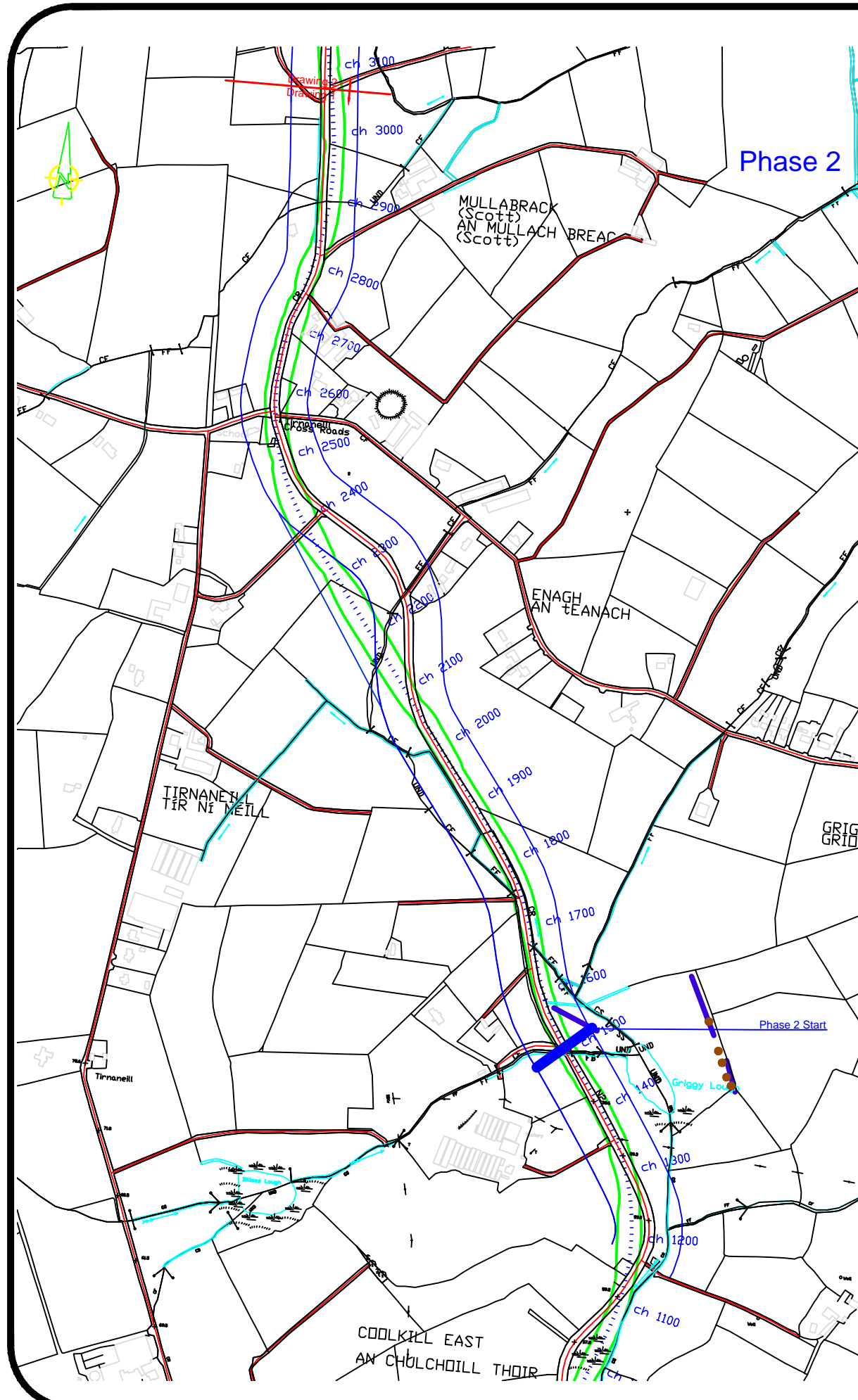
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N2 Realignment Phase 2,4 and 3 Ecology Drawings

Mammal

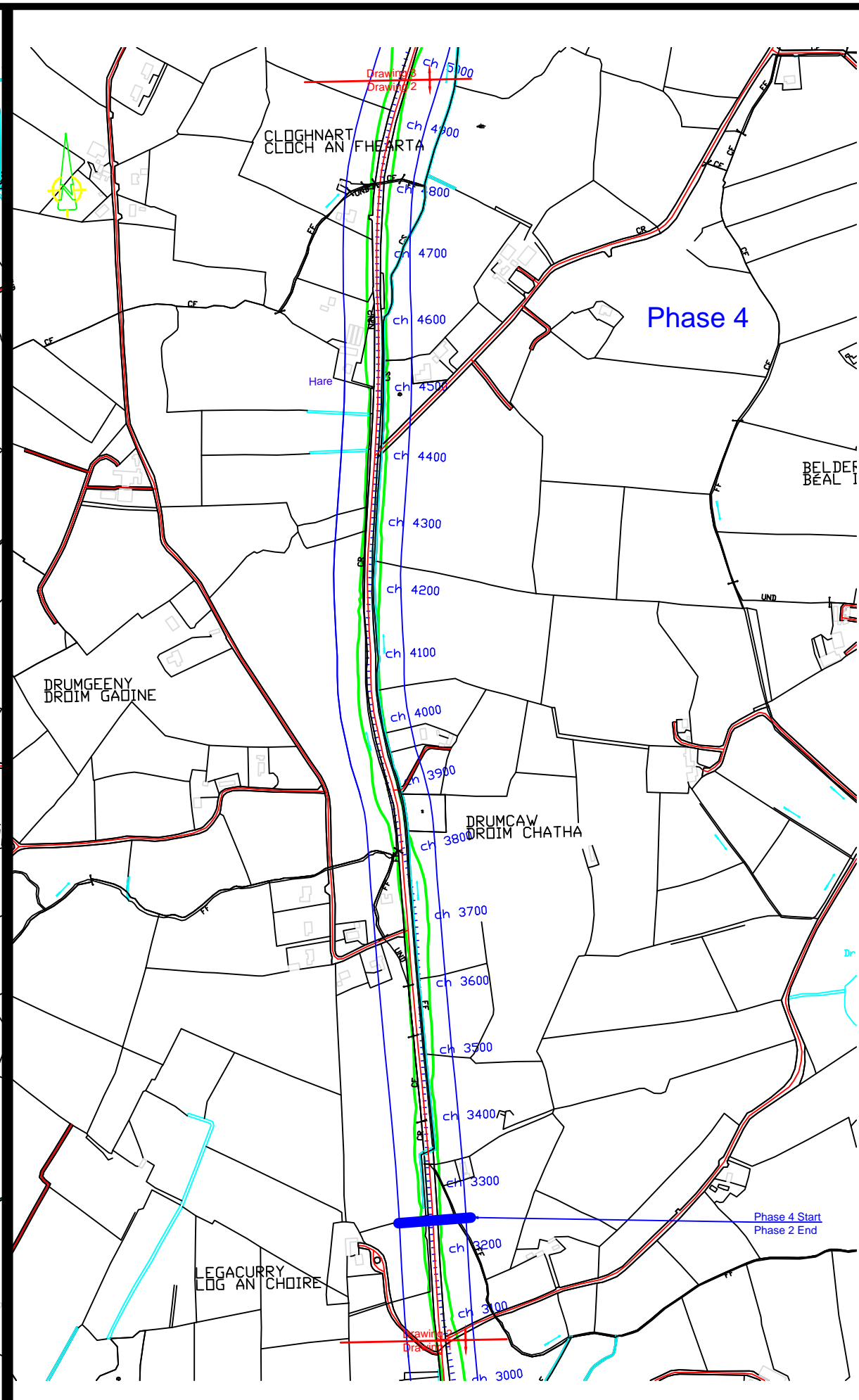
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2	Rev A	29.4.11
No.	Revision/Issue	Date

Project	N2	Sheet Set
Date	29.04.2011	01/02
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Drawing - A



Drawing - B

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General Notes / Legend

- Badger Path
- Badger Print
- Badger Sett
- L Badger Latrine
- 50m Offset
- Landtake

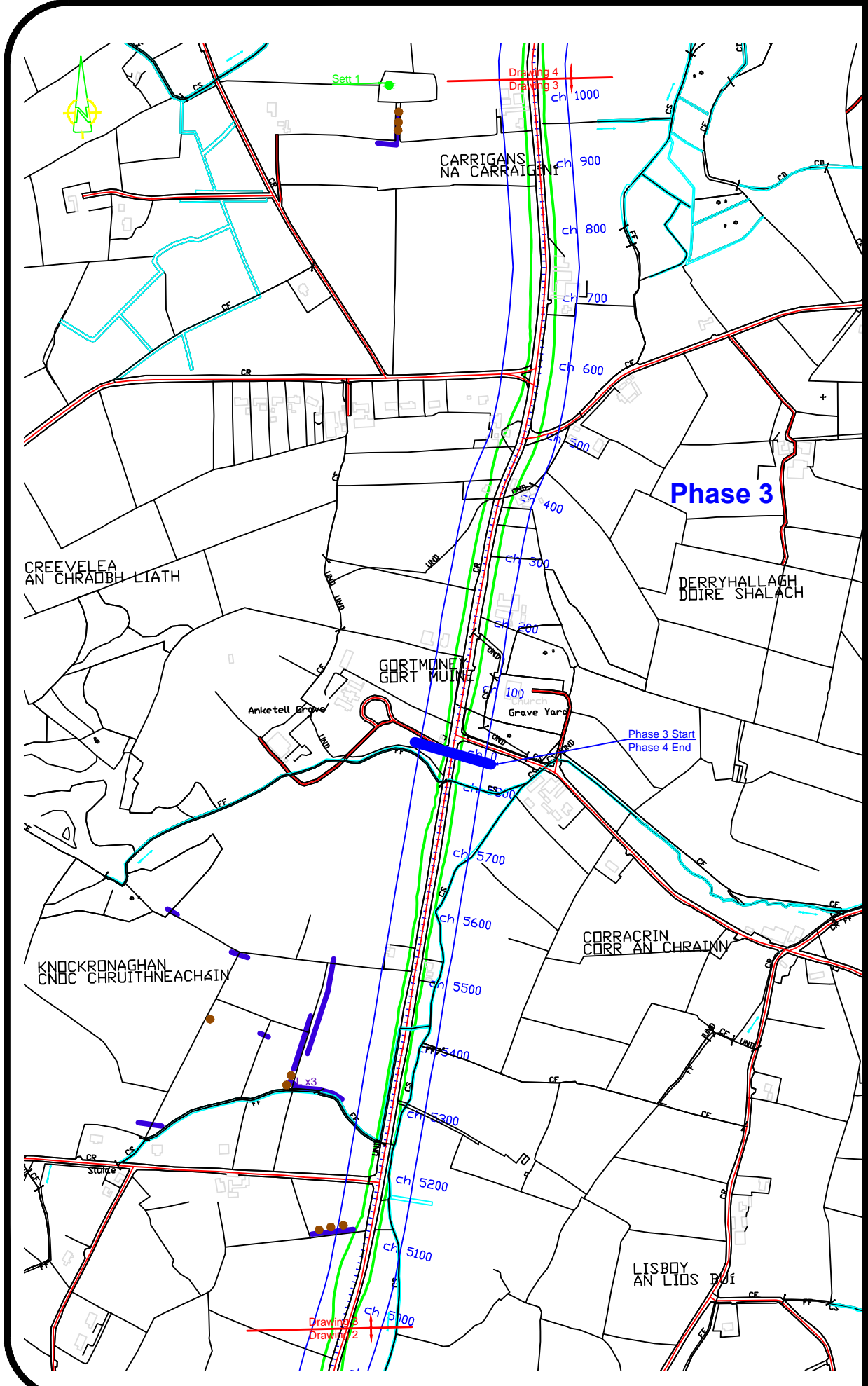
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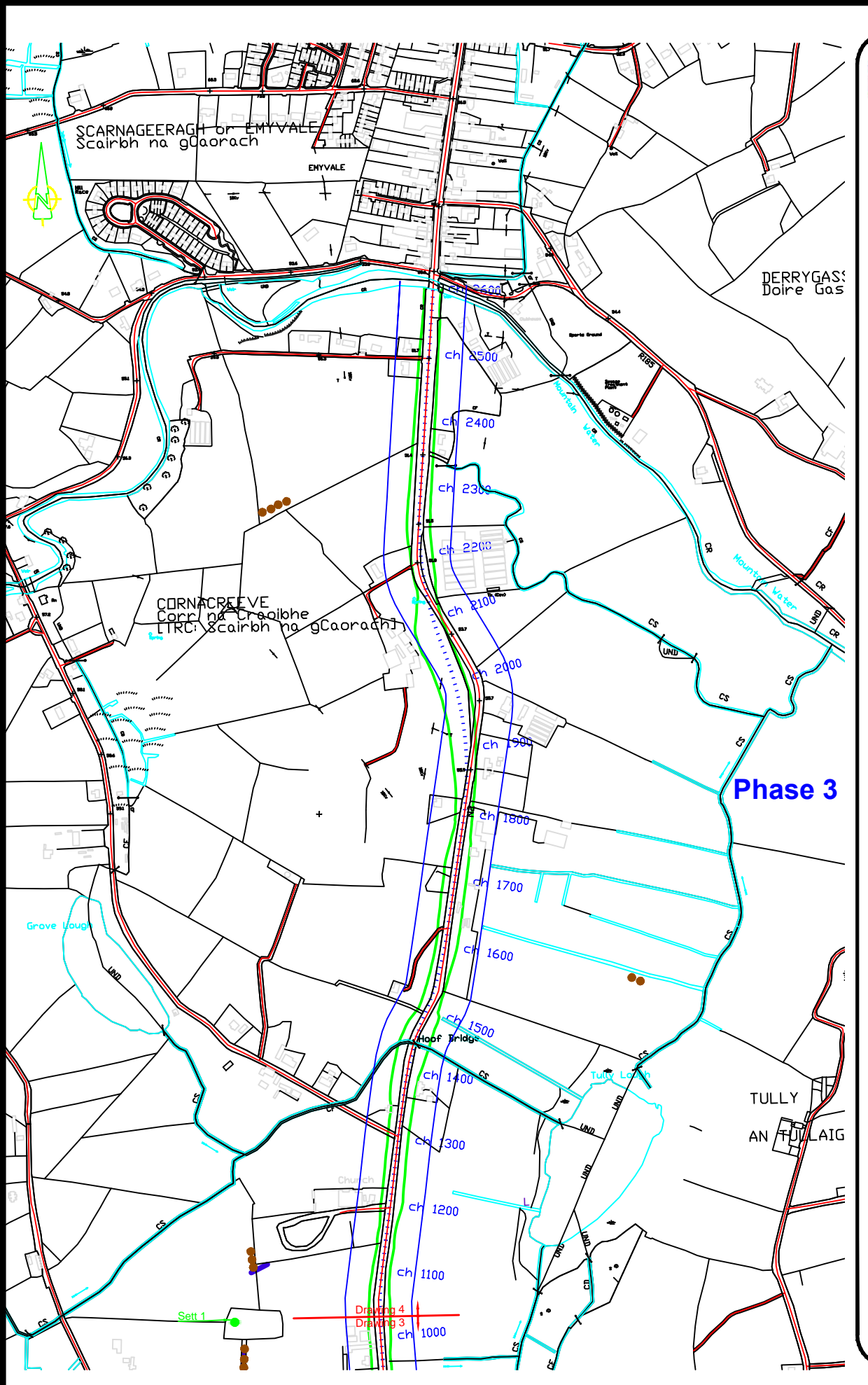
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Project	N2	Sheet Set
Date	29.04.2011	01/02
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Drawing - C



Drawing - D

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General Notes / Legend

- Badger Path
- Badger Print
- Badger Sett
- L Badger Latrine
- 50m Offset
- Landtake

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Project Name and Address  
N2 Realignment  
Phase 2,4 and 3  
Ecology Drawings

Mammal

Drawing No. N2-2-02		
2	Rev A	29.4.11
No.	Revision/Issue	Date

Project	N2	Sheet Set
Date	29.04.2011	02/02
Approx Scale	1:4000 in A1	



## **Appendix B: Mammal Species Names**

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<b>Name</b>	<b>Common Name</b>
<i>Apodemus sylvaticus</i>	Wood mouse
<i>Cervus elaphus</i>	Red deer
<i>Cervus nippon</i>	Sika deer
<i>Dama dama</i>	Fallow deer
<i>Erinaceus europaeus</i>	Hedgehog
<i>Lepus timidus hibernicus</i>	Irish hare
<i>Lutra lutra</i>	Otter
<i>Martes martes</i>	Pine marten
<i>Meles meles</i>	Badger
<i>Mustela erminea hibernica</i>	Stoat
<i>Mustela vison</i>	Mink
<i>Oryctolagus cuniculus</i>	Rabbit
<i>Rattus norvegicus</i>	Brown rat
<i>Sciurus vulgaris</i>	Red squirrel
<i>Sorex minutus</i>	Pygmy shrew
<i>Vulpes vulpes</i>	Fox