



1.0 INTRODUCTION AND PROPOSED SCHEME

1.1 INTRODUCTION

- 1.1.1 The A737 is an important trunk road which provides the main link between the towns Kilbirnie, Dalry, Kilwinning, Ardrossan, Saltcoats, Stevenston, West Kilbride, and Largs within North Ayrshire, to central Scotland. The proposed scheme is located at The Den, approximately 3km east of Dalry. The scheme location is illustrated in Drawing No. 10/SW/0901/037/101 Rev A, with the scheme extents illustrated on Drawing No. 10/SW/0901/037/102 Rev A.
- 1.1.2 The proposed work will involve the realignment of the carriageway to bypass a series of sub-standard bends, improve traffic flow and introduce road safety benefits. The new section of carriageway will be 0.94km in length and 7.3m wide, with 1m hard strips and a further 2.5m verge.
- 1.1.3 The aim of this Environmental Statement (ES), as defined by Volume 11 of the Design Manual for Roads and Bridges (DMRB, 1993 and Revisions), is to ensure that decisions relating to route selection and design details can be guided by informed consideration of the environmental consequences.

1.2 BACKGROUND

- 1.2.1 In 1984 Strathclyde Regional Council first proposed the realignment of the A737 at The Den. As a result of local government reorganisation in 1996, responsibility for the project was devolved to the newly formed North Ayrshire Council. The A737 was reclassified as a trunk road the same year and responsibility for the project passed to the Scottish Executive (now the Scottish Government).
- 1.2.2 When Transport Scotland was created in 2006, it became responsible for the project. Throughout the changes of ultimate responsibility, North Ayrshire Council had continued to provide the engineering and design expertise for the project. Transport Scotland is the body responsible for delivering the realignment of the A737. In addition, they are the regulatory body responsible for the decision whether the realignment should be authorised under the Roads (Scotland) Act 1984 and the Environmental Impact Assessment (Scotland) Regulations 1999 (as amended). This ES supports this assessment, and presents the evidence and conclusions of an Environmental Impact Assessment (EIA) of the proposal to build the scheme.
- 1.2.3 Amey have been commissioned by Transport Scotland to undertake the preparation of this EIA in accordance with Environmental Impact Assessment (Scotland) Regulations 1999 (as amended) and volume 11 of the DMRB



1.3 SCHEME OPTIONS

Alternative Options Considered

1.3.1 Initially, three alignments were considered primarily to improve safety by straightening the route and improving sightlines. Plans showing these Options are provided in Appendix A. These three Options have previously undergone Environmental Assessment which concluded that the environmental impacts from each Option were similar and would not influence the determination of a preferred Option. These three Options are described below:

Option 1

This Option passes between Meadowhead Farm to the north and the existing road to the south. The total length of Option 1 is 940m. This Option can achieve a desirable 215m of stopping sight distance which will improve the safety of this road.

Option 2

1.3.2 This Option travels towards Meadowhead Farm from the Maulside Road junction and passes directly north of the farm before travelling south west to Fernside Cottage and the junction with Sandy Road. The total length of this option is 982m which is 125m longer than Option 1.

Option 3

1.3.3 This Option travels south from the Maulside Road junction and passes to the south of the Den cottage. It then travels west before re-joining the existing road just west of the Graze Restaurant. The local properties will have the existing road and the new road in close proximity. The total length of this option is 1196m which is 339m longer than Option 1.

1.3.4 It was considered that Option 1 was the preferred Option for the following reasons:

- Proposed Option has no departure or relaxation in horizontal alignment design and stopping sight distance.
- The total length is the shortest; hence, the area of blacktop is the least.
- Only a small part of the existing farm land will be separated by the re-alignment, keeping the major part of the farm intact.

1.3.5 The outcome of an environmental assessment for all three Options was similar and could not be used to determine the preferred Option.

1.4 STRUCTURE OF THE ENVIRONMENTAL STATEMENT

Approach to Assessment

1.4.1 An Environmental Statement provides a full, systematic and objective account of the likely environmental effects and identifies the measures required to mitigate any adverse effects. Completing an Environmental Statement ensures that the likely environmental effects are fully understood



and can be taken into account in the design and construction of the scheme before the project goes ahead.

1.4.2 This report follows the guidance set out in Volume 11 of the DMRB. The DMRB recommends the following approach to a Statutory Environmental Statement:

1.4.3 “Developers of projects requiring EIA are required to examine and report the following as a minimum in an Environmental Statement (ES) in accordance with the EIA Regulations and Annex IV of the EIA Directive:

- i. a description of the project (including site, design and size);
- ii. a description of the measures envisaged in order to avoid, reduce and, if possible, remedy significant adverse effects;
- iii. the data required to identify and assess the main effects which the project is likely to have on the environment;
- iv. an outline of the main alternatives studied and an indication of the main reasons for the choice (taking into account environmental effects); and
- v. a non-technical summary of (i) to (iv) above.”

1.4.4 With regard to the proposed scheme on the A737 at The Den, a Record of Determination (ROD) was submitted to Transport Scotland prior to this Environmental Assessment. The ROD outlined the nature and extent of the proposed development together with highlighting the potential environmental effects. It had the aim of obtaining a Screening Direction as to whether an Environmental Statement was required to be submitted for consideration by Transport Scotland.

1.4.5 Transport Scotland determined that an Environmental Statement would be required for the proposed scheme.

Environmental Statement

1.4.6 This Environmental Statement Report comprises two parts, of different levels of detail:

- The Statement – a comprehensive and concise document drawing together all the relevant information about the project; and
- A Non-Technical Summary (NTS) – a brief report summarising the principal sections of the Statement in non-technical language, in accordance with the specific requirements of Transport Scotland and readily understandable by members of the public.

1.4.7 The DMRB, Volume 11, Section 3 – Environmental Impact Assessment Topics, identifies aspects of the environment that should be assessed for potentially significant effects. The topic sections provide guidance on the provision and assessment of mitigation and enhancement measures as well as providing specific clarification on reporting requirements. These topic sections are:

- Air Quality;
- Cultural Heritage;
- Ecology and Nature Conservation;
- Landscape Effects;



- Land Use;
- Traffic Noise and Vibration;
- Pedestrians, Cyclists, Equestrians and Community Effects;
- Vehicle Travellers;
- Road Drainage and the Water Environment;
- Geology and Soils;
- Impact of Road Schemes on Policies and Plans.

1.4.8 Each of the impact assessment chapters describes the characteristics of the existing environment (the baseline environment), identifies the elements which would be the most sensitive to disturbance and assesses the range and intensity of potential impacts that are predicted from the proposed development. Based on this assessment, the types of management and mitigation which need to be put in place to reduce any significant impact are explained and the significance of any residual impact (the impact remaining following the implementation of the mitigation measures) is described.

1.4.9 An assessment of impacts associated with construction is provided within each chapter. Relevant survey reports and other supporting documents (such as consultation responses) are provided as appendices.

1.5 SITE DESCRIPTION

1.5.1 The A737 runs north east from Irvine and joins the M8 south of Glasgow at Junction 28a close to Glasgow International Airport. It is classified as a trunk road and serves as the main route to Glasgow for the towns of Irvine, Stevenston, Kilwinning, Ardrossan, Saltcoats, West Kilbride, Dalry, Beith and Kilbirnie. However, at The Den, the A737 does not meet design standards under DMRB.

1.5.2 The Den is a small hamlet consisting of 15 residential properties and one commercial property, situated between the larger towns of Beith and Dalry. The Den and its surroundings are rural in nature with a dispersed population of scattered properties and isolated farms. Twelve of these residential properties are located either very close to the A737 or with driveway entrances opening directly onto it.

1.6 STATEMENT OF NEED

1.6.1 The A737 consists of a double bend as it runs through The Den which reduces the safe speed of traffic, reduces sightlines and increases the risk of accidents. There were 38 road accidents in the vicinity of The Den between 2006 and 2010 resulting in two fatalities, five serious and thirty one minor injuries. The frequency of accidents at The Den is sufficiently high to cause concern and lend weight to any potential improvement. By realigning the A737 to the north of The Den, the road will be straightened and will have improved traffic flow and sightlines. Drawing No. 10/SW/0901/037/013 Rev H General Layout illustrates the existing road alignment and the proposed re-aligned route.

1.6.2 The current section of the A737 at The Den will become a quiet cul de sac connected to the realigned A737 by an access road north of the scheme towards Maulside Lodge. This is illustrated in Drawing No. 10/SW/0901/037/013 Rev A. The only traffic likely to use the cul de sac will primarily be residents entering and leaving their properties and utility



vehicles. As a result of these improvements, the risk of road accidents at The Den will be greatly reduced.

- 1.6.3 An assessment of the traffic flows on the A737 was carried out based on data collected by a long-term monitoring (LTM) station situated between Dalry and The Den that is operated by Transport Scotland.
- 1.6.4 The two way annual average daily traffic (AADT) data from Count Point JTC00085 for 2011 located just south of the Den, near Highfield is 9031 with 1% Heavy Goods Vehicle (HGVs).

1.7 DESCRIPTION OF PROPOSED SCHEME

The Proposal

- 1.7.1 The proposal is illustrated in Drawing No. 10/SW/0901/037/013 Rev H. The scheme commences at The Graze Restaurant and travels east past agricultural fields and residential properties, ending just east of the junction A737 with Auchengree Road.
- 1.7.2 The design of the new route is based upon avoiding the majority of the residential properties.
- 1.7.3 The gradients comply with the minimum and maximum acceptable gradients. The sag curves are to the absolute minimum value which complies with the DMRB and the summit curves are a one-step reduction in the minimum desirable which is also in compliance.
- 1.7.4 The proposed road drainage design is presented on Drawing No's 10/SW/0901/037/217 and 10/SW/0901/037/218. It includes a filter drain system and three treatment pond areas. One area will be located to the western end of The Den, adjacent to the west bound carriageway. Treatment ponds will also be located adjacent to the east and west bound carriageways, near Auchengree Road.
- 1.7.5 The horizontal alignment for the link road to the Den does not comply with the DMRB for a speed of 60mph. However as this will become a side road maintained by North Ayrshire Council, this link road is viewed as a distributor road with a lesser standard. Consultation with Transport Scotland Standards Branch has indicated that a Departure from Standard is acceptable in this case on the proviso that a splitter island and curve widening is introduced.

Property Access

The Graze Restaurant

- 1.7.6 Access to this property is relocated from a direct access to the A737 to an access onto Brownhill Road.

Fernside

- 1.7.7 Access to this property is relocated from a direct access to the A737 to an access onto the realigned existing A737 which will become a side road after the proposed road is constructed.



Meadowhead Farm

- 1.7.8 Access to this property is relocated from a direct access to the existing A737 to a ghost island direct access onto the proposed A737.

Meadowhead Farm (land to south of proposed A737)

- 1.7.9 Access to this land continues to be from the proposed turning head on the existing access to Meadowhead Farm which will be severed by the construction of the proposed A737.

27 The Den (land to north of proposed A737)

- 1.7.10 Access to this land will be from the existing severed Auchengree Road at the proposed turning head.

Construction Phase

- 1.7.11 There are several constraints which dictate how the construction of this scheme can be carried out. These are :
- Maintaining the traffic flow on the A737;
 - Maintaining either Brownhill Road or Auchengree Road open during the construction period;
 - Maintaining access to all properties taking access from the existing A737 or the proposed alignment at all times over the extents of the scheme;
 - Maintaining all utility services functioning until such time as they are diverted;
 - Removal of peat and soft clay below the proposed carriageway at both ends of the scheme;
 - Dealing with constraints for water, including ground water, within the site all as require with legislation.
 - It will be essential to divert the water mains at either end of the scheme prior to the works or at the very early stage of the works. This also applies to the installation of additional or movement of existing poles carrying Scottish Power cabling.
 - The north side of the carriageway and verge requires to be constructed prior to the south side in order that the British Telecom (BT) cabling can be diverted prior to the existing cabling being made redundant.
 - The eastbound carriageway and verge at The Graze Restaurant will require to be constructed in two phases to maintain access to the restaurant.
 - The proposed side road access to Fernside will require to be constructed prior to the wall being constructed at the front of the house.
 - It is proposed that sacrificial sheet piling is used to facilitate a single traffic flow through the site and also to allow the peat and soft clay to be excavated.



- The colliery spoil will require to be excavated to facilitate the removal of the underlying peat.
- 1.7.12 While the final construction sequence will be a matter for the contractor, maintenance of access during the works will be a requirement of the contract and is likely to require construction to be staged. At this stage, phased construction incorporating the following sequences is envisaged:
- 1.7.13 Stage 1 would be the diversion of the water main and power cabling, including the boundary fencing and walling, and the commencement of the sheet piling in advance of the earthworks at the west end of the scheme.
- 1.7.14 Stage 2 is essentially the construction of the eastbound carriageway, split into sub-sections.
- Because of the presence of colliery spoil overlying peat, the spoil can be excavated to allow excavation of the underlying peat. In the short term some of this spoil will require to be stockpiled. Once the sheet piling is in place, the peat underlying the eastbound carriageway at the west end of the scheme can be excavated and the colliery spoil deposited as granular upfill. Excavation of the clay cutting can also be commenced with the material run as suitable fill above the deposited colliery spoil. The operation at the west end will require being in two sections to maintain the access to The Graze.
 - Once the sheet piling has been completed at the west end, it can be undertaken at the east end. This will facilitate the removal of the peat under the eastbound carriageway and the upfilling with colliery spoil and clay. Over the centre section of the scheme the full width of the construction can take place.
 - Installation of ducting for BT to facilitate the cabling works and permit the existing cabling to become redundant.
 - Construction of the permanent accesses to The Den and Meadowhead Farm.
- 1.7.15 Stage 3 is the removal of the peat under the proposed westbound carriageway at either end of the scheme. However, prior to the removal of the peat at the west end, the proposed access to Fernside requires being constructed.
- 1.7.16 Stage 4 is the final surfacing to the proposed carriageway, including the tie-ins to the existing carriageway. Also at this stage the permanent road markings are installed and the final utility diversion works carried out.

1.8 CONCLUSION

- 1.8.17 The A737 is a strategic route which serves a significant number of communities in North Ayrshire. In the vicinity of The Den, it does not meet design standards for a road of this importance. The double bends through The Den are a risk both to residents and the travelling public. Straightening the A737 by realigning the road to run to the north of The Den will improve the flow of traffic on the road, improve sightlines and reduce the risk of accidents.
- 1.8.1 The length of the new section of road is 0.94km, and the area that will be affected by the realignment is 3.9 ha. The realignment at The Den is an



Annex II project under the EIA Directive, and will require a formal EIA to be carried out under the EIA Directive as the area is larger than 1ha. In addition, there is potential for significant environmental impacts, namely landscape and visual impacts and noise and vibration impacts, associated with the realignment. These must be assessed and appropriate mitigation measures put in place.

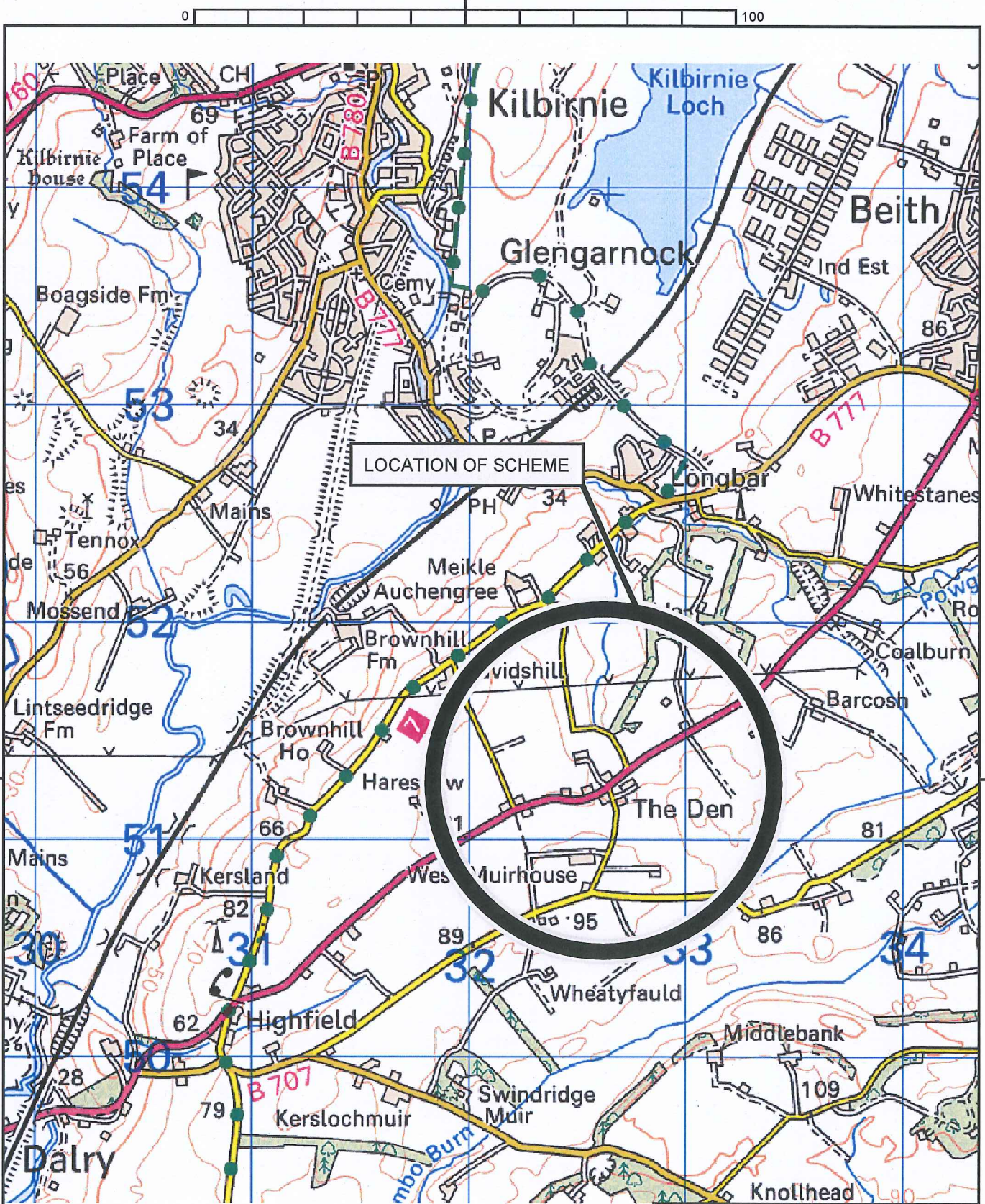
1.9 REPRESENTATIONS AND COMMENTS

1.9.1 A public consultation period of 6 weeks will follow publication of the Draft Road Orders. This will allow comments or representations to be made to Transport Scotland on the proposals.

1.9.2 Copies of this Environmental Statement Report, Non-Technical Summary and further advice will be available for inspection during normal office hours at the following location:

Transport Scotland
Buchanan House
58 Port Dundas Road
Glasgow
G4 0HF

1.9.3 Any comments on the proposals should be addressed in writing to The Chief Road Engineer at Transport Scotland before the closing date for comments and objections given in the advertised Public Notice.



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Chkd:	IH	For tender		
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Date:	16/09/2011	As constructed		
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Project Name
**A737/A738 TRUNK ROAD
 THE DEN, DALRY**

Drawing Title
Location Plan

Original Drg Size : A4 Dimensions : -
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Client
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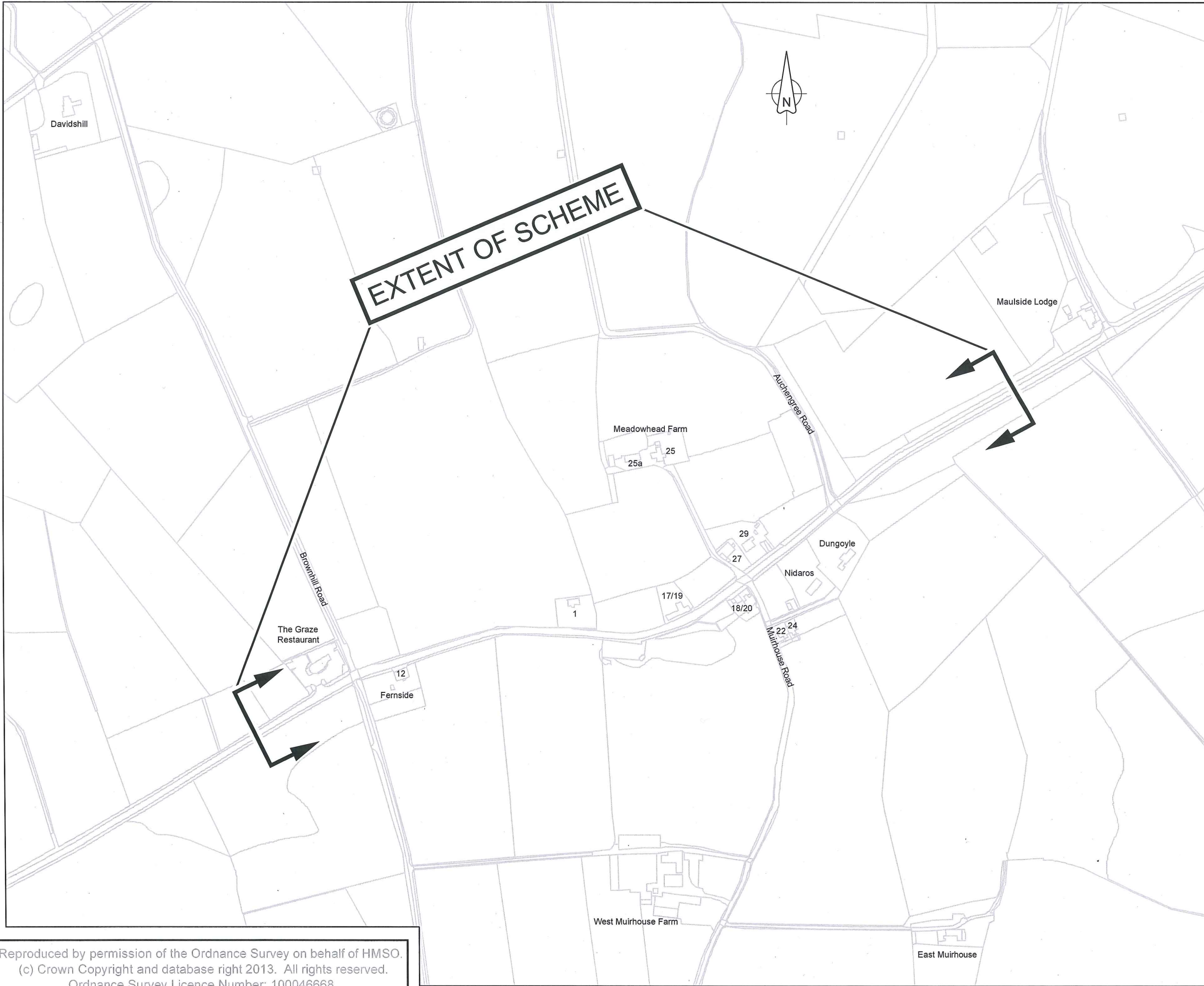


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Appd: IH			For construction	<input type="checkbox"/>
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Project Name
**A737 TRUNK ROAD
 THE DEN, DALRY**

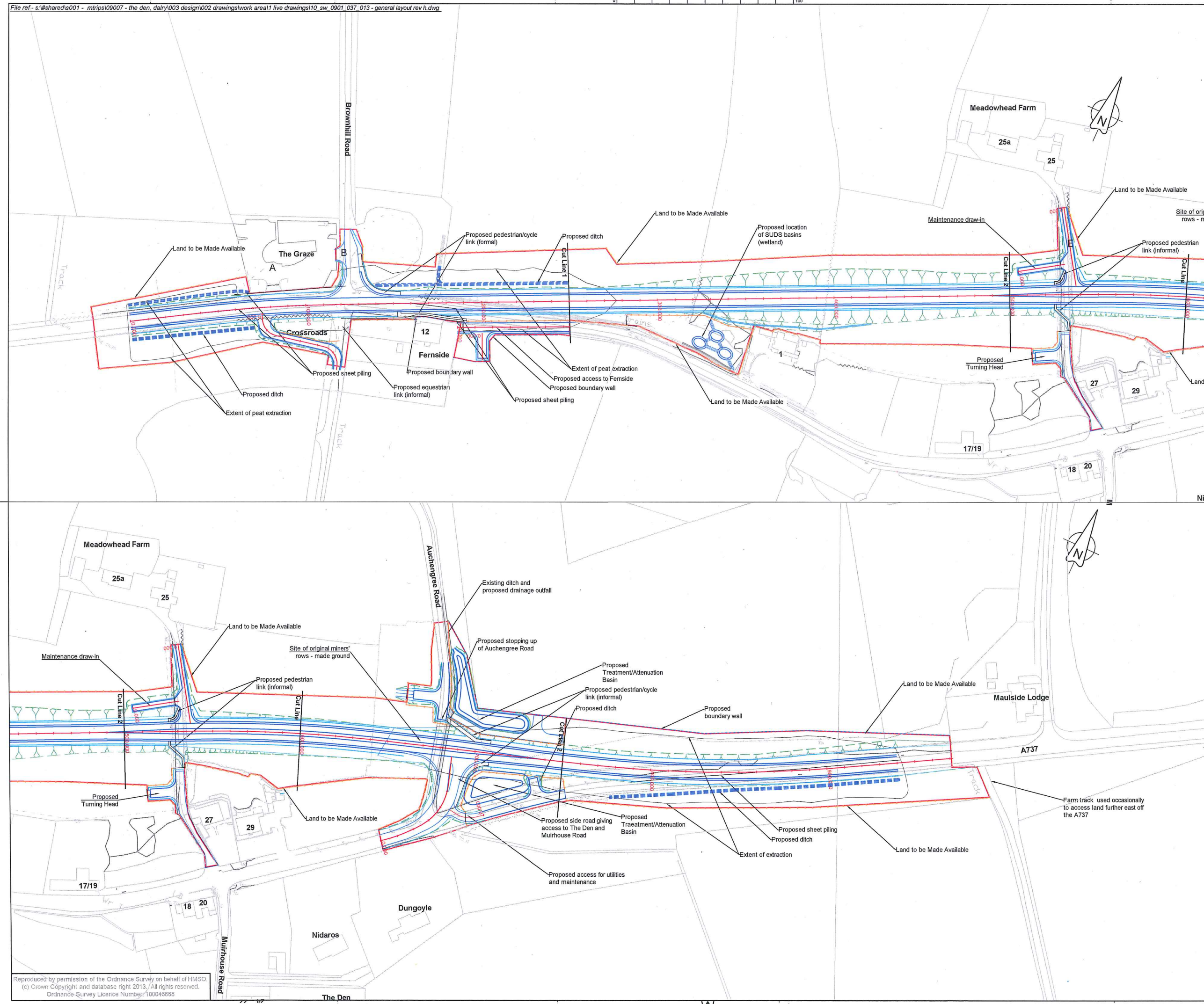
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Extent of Scheme

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Legend

- Land to be Made Available
- Area of Peat Extraction
- Location of Demolished Houses - Made Ground
- Location of Sheet Piling
- Land made available

H	Pond adjusted at Auchengree Road	Q.L.	I.H.	27/09/12
G	Land Made Available added	I.H.	I.H.	27/09/12
F	OS licence changed	I.H.	I.H.	07/02/12
E	Drainage, earthworks, junction adjustments & additional text	I.H.	I.H.	12/12/11
D	North verge widened at east to permit construction	Q.L.	I.H.	06/10/11
C	Layout changed at Fernside and Meadowhead Road	Q.L.	I.H.	28/09/11
B	Layout changed at Fernside	Q.L.	I.H.	25/08/11
A	Layout changed at west & ped links added	Q.L.	I.H.	16/08/11
Rev	Revision details	Chkd	Appd	Date

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Design:	QL	For comment	<input type="checkbox"/>
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Appd:	I.H.	For construction	<input type="checkbox"/>
Date:	15/06/11	As constructed	<input type="checkbox"/>



Project Name
**A737 TRUNK ROAD
THE DEN, DALRY**

Drawing Title
GENERAL LAYOUT

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Drawing No	10/SW/0901/037/013	Rev	H

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LEGEND

- Filter Drain
- Carrier Drain
- Detention Pipe
- ||||| Ditch
- o Catch Pit
- } Headwall

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Rev	Revision details	Chkd	Appd	Date
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Chkd:	I.H.			For tender
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Client
**A737 TRUNK ROAD
 THE DEN, DALRY**

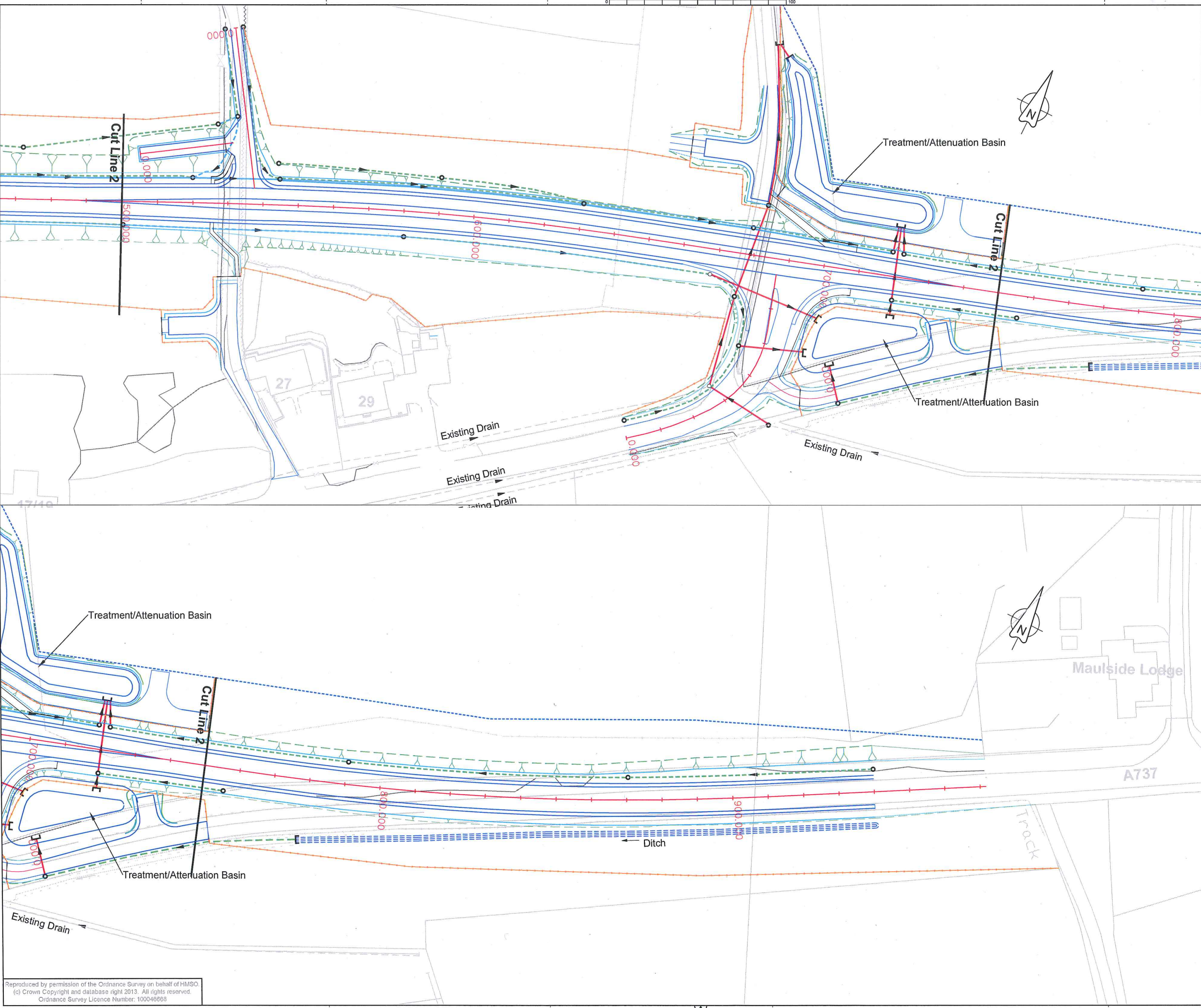
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 Sheet 1 of 2**

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LEGEND

	Filter Drain
	Carrier Drain
	Detention Pipe
	Ditch
	Catch Pit
	Headwall

A	Detail adjusted	I.H.	W.S.	24/1/13
Rev	Revision details	Chkd	Appd	Date
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Appd:	I.H.			For construction
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Project Name
**A737 TRUNK ROAD
 THE DEN, DALRY**

Drawing Title
**Environmental
 Drainage Layout
 Sheet 2 of 2**

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