

# Appendix D. Environmental Constraints Report

## 2.7. Landscape and Visual

### 2.7.1. Introduction

This section describes landscape and visual constraints within the study area and has been prepared by Eamonn Byrne Landscape Architects (EBLA), Chartered Members of the Landscape Institute. This section identifies; Landscape Constraints, constraints associated with landscape as a resource in its own right; Visual Constraints, constraints associated with the general visual amenity experienced by people. Refer also to Landscape Constraints drawings in Appendix A.

### 2.7.2. Methodology

The sources of information used to identify landscape and visual constraints include the following:

- Kilkenny County Development Plan 2014-2020;
- Landscape Character Assessment, Kilkenny County Development Plan 2014-2020;
- Landscape Sensitivities, Kilkenny County Development Plan 2014-2020;
- Protected Views, Kilkenny County Development Plan 2014-2020;
- Tree Preservation Orders, Kilkenny County Development Plan 2014-2020;
- County Kilkenny Woodlands Survey;
- Tree Register of Ireland; and
- Ordnance Survey Ireland Mapping and Aerial Photography.

Kilkenny County Council provided GIS mapping of the relevant development plan figures related to landscape character, landscape sensitivity and protected views. This information was combined and is presented in the Landscape Constraints drawings (Appendix A). Kilkenny County Council also provided a copy of the relevant paper maps of the Kilkenny Woodland Survey.

### 2.7.3. Identified Constraints

#### 2.7.3.1. Landscape Character

The Landscape Character Assessment for County Kilkenny identifies landscape character areas within the county. There are four landscape character areas (of four types) within the study area. Two are upland types (C-South Western Uplands and E-South Eastern Hills). One transitional type, (C2-South Hills Transitional Area). One lowland type, (G-South Kilkenny Lowlands) and one River Corridor type (I-The Barrow Valley) borders the study area.

##### 2.7.3.1.1. Landscape Character Area C: The South Western Uplands

###### **Description**

The south-western Kilkenny hills, which comprise the Kilmacoliver and Carricktriss Hills form a low-lying upland area (i.e. upland area with a lower elevation to that of Brandon or Slieveardagh Hills). The terrain dramatically rises, steeply sloping from the Kilkenny basin and the south Kilkenny lowlands. The area encompasses an undulating landscape of several hills, with primary and secondary ridgelines at an average elevation of approximately 300m above sea level. The elevated nature of this physical unit provides a defined skyline and significant and scenic views over the surrounding areas of Kilmacow, Mooncoin and Mullinavat. The area is perceived as having certain landscape value, in particular the western hills of the unit.

###### **Critical Landscape Factors**

**Elevated Vistas:** Long distance views of the River Suir and River Nore valleys are available from the local roads of this upland character area. The R698 crosses the lower slopes of this upland area in a north south loop towards the village of Owinging, resulting in extensive afforested upland views.

**Steep Slopes:** Steeply sloping land provides the area with its character and a potentially increased elevation intensifying its visual prominence over greater distances. Slope also provides an increased opportunity for development to penetrate primary and secondary ridgelines when viewed from lower areas of the public realm such as the roads and population centres in this area. The steep slopes at the boundaries of this unit provide landscape character to it.

**Prominent Ridge Lines:** These occur as either primary ridgelines (visible only against the sky from any prospect) or secondary ridgelines (visible at least from some prospects below a distant primary ridge line).

Ridge lines perform the important roles of providing an area with its identity, acting as dominant landscape focal points, and defining the extent of visual catchments. Therefore, the main concern for the natural linear features formed by the ridgelines of the South Western Uplands is to avoid penetration by development that will interrupt and reduce the integrity of such elements.

Undulating topography: Gently undulating topography is presented within the upland area of this character unit. The physical shielding of a built form within the lee of hill where it does not break the skyline renders it visually unobtrusive and reflective of landscape scale. Furthermore, the dynamic and complex nature of undulating land encloses vistas and helps to provide a realistic scale and visual containment not available in open lands.

Shelter Vegetation: Shelter vegetation, generally represented at certain areas in this unit by coniferous plantations and some deciduous woodland on slopes and hilltops, provides visual screening enclosing vistas and helping to supply a visual containment not available in open, low-vegetated lands. It adds to the complexity of a vista, breaking it up to provide scale and containment for built forms.

Low Vegetation: Low vegetation, represented in this unit by grassland and generally low hedgerows, fails to break up vistas, allowing long distance visibility, and therefore, providing an inability to absorb development.

### 2.7.3.1.2. Landscape Character Area E: The South Eastern Hills

#### Description

This large character area comprises the low-lying upland area bordering the River Suir Valley at the southeast of the County. The terrain rises from the Kilkenny basin to the north and the lowlands to the southeast, which gives rise to several small ridgelines at an elevation of approximately 250m above sea level.

Local views include those of the River Suir and into the neighbouring County of Wexford as well as significant and scenic views over the surrounding areas of Mullinavat, Ballyhale, Knocktopher and the River Nore valley as well as Brandon Hill. Distant views include those of the South Leinster Way Mountains. This area is characterised by open undulating lands with regular (medium sized) field patterns, where some rock outcrops occur.

The settlement pattern in this area is of a low density, with most residential development concentrated in local villages such as Glenmore. Although the area is generally perceived as having no special value in landscape terms, the environs of Glenmore were identified as having special scenic value. The unit is perceived as having potential for certain types of developments such as windfarms and forestry.

#### Critical Landscape Factors

Elevated Vistas: Local roads cross the lower slopes of this upland area, from where extensive lowland vistas and afforested upland views are available. Long distance views of the valleys of the Rivers Nore and Barrow can also be obtained from this upland character area.

Slopes: Sloping land provides a potentially increased elevation intensifying visual prominence over greater distances. Slope also provides an increased opportunity for development to penetrate primary and secondary ridgelines when viewed from lower areas of the public realm such as the roads and population centres in this area. Slope often provides an area with its character, as in this case therefore renders this upland area sensitive to development that might impact on that character.

Prominent Ridge Lines: These occur as either primary ridgelines (visible only against the sky from any prospect) or secondary ridgelines (visible at least from some prospects below a distant primary ridge line). Ridge lines perform the important roles of providing an area with its identity, acting as dominant landscape focal points, and defining the extent of visual catchments. Therefore, the main concern for the natural linear features formed by the ridgelines of the South Eastern Uplands is to avoid penetration by development that will interrupt and reduce the integrity of such elements.

Undulating topography: Gently undulating topography is presented within the upland area of this character unit. The dynamic and complex nature of undulating land encloses vistas and helps to provide a realistic scale and visual containment not available in open lands.

Shelter Vegetation: Shelter vegetation, is represented in some areas of this unit by the presence of trees at certain sections of field hedgerows as well as by some large coniferous and deciduous tree plantations. In a similar manner to undulating topography, shelter vegetation has a shielding and absorbing quality in landscape terms. It can provide a natural visual barrier and adds to the complexity of a vista, breaking it up to provide scale and containment for built forms

Low Vegetation: Low vegetation, largely represented in this unit by grassland and generally low hedgerows is generally uniform in appearance. Consequently, it fails to break up vistas and allows long distance visibility, therefore providing an inability to absorb development. However, existing hedgerows partially screen lowest land parcels.

Localised River Views: Both the River Nore and the River Suir delimit this character unit. Due to the low-lying but undulating nature of this area, views of the river valleys are available from the high points at some of the local roads. Visual intrusion, which will interrupt and reduce the integrity of the river valley should be avoided along this natural linear feature.

### 2.7.3.1.3. Landscape Character Area G: South Kilkenny Lowlands

#### Description

This expansive lowland area to the south-west of the County has extensive views of the River Suir valley and the South Kilkenny Uplands, Tory Hill and Carrigatubbrid Hill. Distant views include the Comeragh Mountains. This area has open lands with regular (medium sized) field patterns. Medium sized hedgerows act as field boundaries where few trees can also be found. Rock outcroppings are a feature of this area. The unit is perceived as being special in landscape terms, particularly around Piltown, Mooncoin and Kilmacow. The area is perceived as being generally suitable for tourism development, and other type of projects can be acceptable in the environs of Waterford City.

#### Critical Landscape Factors

Smooth Terrain: The smooth terrain and the generally gentle topography of lowlands is characteristic of this landscape character unit, allowing vistas over long distances. As a result, development can have a disproportionate visual impact in areas, due to an inherent inability to be absorbed either visually or physically.

Low Vegetation: The grassland, tillage and usually low hedgerows of this area provide similar characteristics to smooth terrain in landscape terms, and the two are often interrelated due to soil attributes. Grassland and tillage vegetation are uniform in appearance, failing to break up vistas, and allowing long distance visibility. Existing low hedgerows intertwined with some trees partially screen low-lying land parcels. Nevertheless, the generally low vegetation proves unable to absorb new development.

Shelter Vegetation: Shelter vegetation is represented at some stretches of this unit by the presence of coniferous and deciduous plantations. In a similar manner to undulating topography, shelter vegetation has a shielding and absorbing quality in landscape terms. It can provide a natural visual barrier and also adds to the complexity of a vista, breaking it up to provide scale and containment for built forms.

### 2.7.3.1.4. Landscape Character Area C2: South Hills Transitional Area

#### Description

These transition areas encircle the Kilmacoliver and Carricktriss Mountains, with subunit C1 beginning in the environs of Windgap village and subunit C2 running from Tubbrid to Owing. This transition area passes close to the South Leinster Way. These transition units are tight as a result of the abrupt transition from the lowlands to the south western uplands in the area. This unit is perceived as having no special landscape or scenic value.

#### Critical Landscape Factors

Smooth Terrain: This unit is characterised by smooth, sloping terrain, which allows vistas over long distances. In such terrain, development can have a disproportionate visual impact, due to an inherent inability to be absorbed, physically or visually.

Low Vegetation: Predominantly low vegetation, represented in this unit by grassland and moorland land cover, has similar characteristics to smooth terrain in landscape terms, and the two are often interrelated due to soil attributes. Grassland and moorland vegetation fail to break up vistas and allows long distance visibility.

Shelter Vegetation: Shelter vegetation, represented in this unit by several forest areas, has a screening and absorbing quality in landscape terms. It provides a natural visual barrier and adds to the complexity of a vista, breaking it up to provide scale and containment for built forms.

### 2.7.3.1.5. Landscape Character Area I: River Barrow/ Suir Valley Area

#### Description

The Suir valley lies at the southern County boundary, close to Waterford City. The valley moves in a west to north-east direction, parallel with the Waterford-Kilkenny boundary. It is a wide and fertile valley, traditionally associated with dairying and more recently with fruit and horticultural nursery sectors. The terrain is undulating with extensive views of Brownswood Hill and the Carrigatubbrid Wooded slopes. Distant views also include those of the Slievenamon and the Comeragh Mountains. The slopes of the Suir Valley conform to the general river valley pattern of pasture lands rising to slopes and the river flood plain, as outlined in Section 3.8.

The river valley is perceived as having special scenic and landscape value, in particular to the west, near the towns of Mooncoin and Fiddown, and to the east around Glenmore. The area is considered to have tourism development potential.

## Critical Landscape Factors

Smooth Terrain: Smooth terrain and the generally gentle topography and landform that characterised this landscape character unit, allows vistas over long distances

Low Vegetation: The grassland, tillage fields and generally low hedgerows of this area provide similar characteristics to smooth terrain in landscape terms. Grassland vegetation and tillage crops are usually uniform in appearance, failing to break up vistas, and allowing long distance visibility. Existing low hedgerows partially screen lowest land parcels. Nevertheless, the common low vegetation proves unable to absorb new development.

Localised River Views: This character unit follows the path of the Suir River, which is easily accessible by road. Due to the low-lying nature of this area, many views of the river valley are available from the local and national roads. The main concern for natural linear features such as this is to avoid visual intrusion by development, which will interrupt and reduce the integrity of the river valley.

Undulating topography: Undulating topography is presented at some sections of this character unit, where the land gently rises at floodplain slopes. This provides a physical shielding and visual enclosure of a built form within the river valley, where it does not break the skyline and thus, renders it visually unobtrusive of the overall landscape scale.

Shelter Vegetation: Shelter vegetation is represented at some stretches of this unit by the presence of natural and native woodland that grows on the floodplains of the river. In a similar manner to undulating topography, shelter vegetation has a shielding and absorbing quality in landscape terms. It can provide a natural visual barrier and adds to the complexity of a vista, breaking it up to provide scale and containment for built forms.

### 2.7.3.1.6. Landscape Sensitivities

The Kilkenny Landscape Character Assessment identifies areas throughout the county that are highly sensitive to development and have a low capacity for change. These areas are identified on Figure 8.3. Kilkenny County Development Plan 2014-2020.

These areas take account of areas of higher altitude in the county and of land cover.

In general areas of elevated topography, with low growing or sparse vegetation and little existing development are landscapes of high sensitivity and have a low potential to absorb new development. These include areas of ground over 200m (none within the study area) and principal ridgelines. There are two sensitive ridgelines located within the study area.

Sensitive land-use categories include areas which are open and exposed with sparse or low growing vegetation cover which is insufficient to provide screening. The exceptions to this are broadleaved, mixed forest, and transitional woodland and scrub areas which do support tall vegetation with potential to screen development. However, these areas are sensitive due their natural character. Regarding designated nature conservation and sites of ecological value refer to Biodiversity constraints.

### 2.7.3.1.7. Woodland Survey of Kilkenny

There are no woods listed in the Woodland Survey of Kilkenny within the study area.

### 2.7.3.1.8. Tree Register of Ireland

There are no trees from the tree register of Ireland within the study area.

### 2.7.3.1.9. Visual Receptors

Visual receptors identified include; people living in local villages and rural areas, users of the local road, footpath and cycle network. The location of individual visual receptors will be identified during the route selection stage. The most sensitive visual receptors will include people living in residential dwellings. Regarding Architectural Heritage, Archaeology and Cultural Heritage sites refer to the Cultural Heritage section.

### 2.7.3.1.10. Protected Views

The Kilkenny County Development Plan 2014-2020 identifies views to be preserved and protected. There are no protected views within the study area however there are some in close proximity. These include:

- V22- Views southwest over the River Suir at Grannagh Castle to the Comeraghs.
- V9- View to the south east over the River Barrow Valley. South of the New Ross on the Ls7512 between the junctions with road numbers LP3432 and the N25.

## 2.8. Air Quality and Climate

### 2.8.1. Introduction

This section describes the air quality and climate constraints identified within the scheme study area for the N25 Waterford to Glenmore Road Scheme. The specific objectives of the air quality and climate constraints study is to determine the prevailing ambient air quality, the main existing sources of air pollution and greenhouse gases, and the most sensitive receptor locations within the study area.

The TII guidelines (2011) specifically define what types of receptors can be deemed sensitive with respect to air quality impacts “Sensitive receptor locations include: residential housing, schools, hospitals, places of worship, sports centres and shopping areas, i.e. locations where members of the public are likely to be regularly present.” In addition, the impact of air quality on ecologically sensitive receptors must also be considered. As stated within the TII guidelines “Designated habitats are also potentially sensitive receptors. Such sites include, Natural Heritage Areas (NHA), Special Areas of Conservation (SAC), Special Protection Areas (SPA), National Parks, Nature Reserves, Refuges for Fauna, Refuges for Flora, Wildfowl Sanctuaries, Ramsar Sites, Biogenetic Reserves and UNESCO Biosphere Reserves.”

The air quality objectives for proposed road projects relate to avoidance, where necessary, of new routes through built up areas with a large density of air sensitive receptors or through areas that are ecologically sensitive to air quality impacts.

### 2.8.2. Methodology

The air quality and climate constraints study has been prepared in accordance with the following guidelines:

- TII Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes (2011).

The constraints assessment was carried out by means of a desktop review of available information on the proposed study area and a review of existing air quality and climate data from the EPA. The following information was reviewed as part of this study:

- OS Mapping;
- Satellite Mapping (Google Earth, Bing Maps);
- EPA Air Quality Monitoring Data (EPA 2019a, 2019b);
- EPA Maps of Licenced Facilities (EPA 2019c); and
- Recent reports on Greenhouse Gas Emissions and Projections in Ireland (EPA 2019d, 2019e).

### 2.8.3. Identified Constraints

#### Sensitive Receptors

The existing environment of the study area is predominately rural in nature. The land use is predominately a mixture of agricultural lands, residential properties and a small degree of commercial and industrial premises. Residential properties are typically in ribbon style development along the existing N25 with properties, churches and schools within small villages and clusters along the route (Luffany, Curraghmore, Ballyrahan, Gaulstown, Ballymona, Kilmakevoge, Glenmore and Graiguenakill).

Many of the villages along the existing N25 may experience elevated pollution levels from high traffic volumes and occasional congestion, especially with regard to HGVs using the existing road. The proposed N25 will provide a higher quality road connection between Waterford and Glenmore which will lead to reduced journey times and improved safety. As there will be lower traffic volumes and less congestion on the existing N25 once the proposed scheme is in place, sensitive receptors along the existing N25 will experience an improvement in air quality. Receptor locations in the remainder of the study area currently experience rural background levels of pollutants. A small number of these receptors may be impacted by the proposed N25 route, once selected, but the magnitude of impact is not expected to be significant. In addition, the number of sensitive receptors impacted by proposed alternative routes for the N25 will be significantly lower than the number of receptors impacted by the existing N25 route.

The most sensitive receptors with respect to air quality impacts on ecology are the River Barrow and River Nore SAC and the Barrow River Estuary pNHA which are located in the north-eastern part of the study area. Part of the Lough Cullin pNHA encroaches the western boundary of the study area but is unlikely to be impacted by changes in air quality associated with the proposed road scheme given its peripheral location within the study area.

## Review of EPA Air Monitoring Data

As part of the implementation of the Framework Directive on Air Quality (1996/62/EC), four air quality zones have been defined in Ireland for air quality management and assessment purposes. In terms of air monitoring, the study area is categorised as Zone D (rural areas and towns with a population of less than 15,000).

Air quality monitoring programs have been undertaken throughout Ireland in recent years by the EPA and Local Authorities. The most recent EPA annual report on air quality monitoring undertaken throughout Ireland is entitled 'Air Quality in Ireland 2018' (EPA, 2019a). The TII Guidelines (2011) state that the local air quality assessment should focus on NO<sub>2</sub> and PM<sub>10</sub>, as these are the pollutants of greatest concern with respect to road traffic conditions. A review of data from representative Zone D locations in Ireland can be used to provide an indication of the prevailing air quality conditions within the study area.

NO<sub>2</sub> monitoring was carried out at two rural Zone D locations in Emo and Kilkitt in recent years (EPA, 2019a). The NO<sub>2</sub> annual average in 2018 was 3 µg/m<sup>3</sup> at both rural sites. Hence long-term average concentrations measured at all locations were significantly lower than the annual average limit value of 40 µg/m<sup>3</sup>. The maximum 1-hour limit value of 200 µg/m<sup>3</sup> (measured as a 99.8th percentile i.e. 18 exceedances are allowed per year) was not exceeded in any year for any of the Zone D locations. The average results at rural Zone D locations over the last five years suggests an average of 3 µg/m<sup>3</sup> as a background concentration. Based on the above information, a conservative estimate of the current background NO<sub>2</sub> concentration for the region of the development is 5 µg/m<sup>3</sup>.

Long-term PM<sub>10</sub> measurements carried out at the rural Zone D location in Kilkitt in 2018 gave an average level of 9 µg/m<sup>3</sup> (EPA, 2019a). Results are also available for Kilkitt to observe the trend in concentrations over the last five years. The average result at Kilkitt over the last five years is 9 µg/m<sup>3</sup>. Based on the above information a conservative estimate of the current background PM<sub>10</sub> concentration for the region of the development is 10 µg/m<sup>3</sup>.

The results of PM<sub>2.5</sub> monitoring at Claremorris in 2018 indicated an average PM<sub>2.5</sub>/PM<sub>10</sub> ratio of 0.50. Results are also available for Claremorris to observe the trend in PM<sub>2.5</sub>/PM<sub>10</sub> ratios over the last five years. The average result at Claremorris over the last five years is 0.54 µg/m<sup>3</sup>. Based on this information, a conservative ratio of 0.6 was used to generate a background PM<sub>2.5</sub> concentration for the region of the development of 6 µg/m<sup>3</sup>.

## Meteorological Data

A key factor in assessing temporal and spatial variations in air quality is the prevailing meteorological conditions. Depending on wind speed and direction, individual receptors may experience very significant variations in pollutant levels under the same source strength (i.e. traffic levels). Wind is of key importance in dispersing air pollutants and for ground level sources, such as traffic emissions, pollutant concentrations are generally inversely related to wind speed. Thus, concentrations of pollutants derived from traffic sources will generally be greatest under very calm conditions and low wind speeds when the movement of air is restricted. In relation to PM<sub>10</sub> (particulate matter less than 10 microns), the situation is more complex due to the range of sources of this pollutant, and thus measured levels of PM<sub>10</sub> can be a non-linear function of wind speed.

The nearest representative weather station collating detailed weather records is Johnstown Castle meteorological station. This station is located approximately 37 km east of the existing N25. Windroses for the most recent 5 years of data collected (2014 – 2018) show that the prevailing wind is south-westerly in direction.

## Air Pollution Sources

The major source of air pollution within the study area is road traffic, predominantly that from the existing N25, the New Ross Bypass at the northern end of the study area and the N29 and N25 Waterford Bypass at the southern end of the study area. Air quality is variable and subject to significant spatial variation, with concentrations generally falling significantly with distance from major road sources. The higher levels of air pollution are experienced within 50m of the existing national roads in the study area with the remainder of the study area generally experiencing rural background concentrations of pollutants.

A review of IPPC / IED licences issued by the EPA (EPA 2019c) for the region show that there are no licenced facilities with emissions to the atmosphere within the study area for this project.

## Conclusions

Based on the review of the proposed study area and the existing ambient air quality environment, no significant constraints have been identified in relation to air quality and climate.

## References

- EPA (2019a) Air Quality in Ireland 2018 - (& previous annual reports)
- EPA (2019b) <http://www.epa.ie/whatwedo/monitoring/air>
- EPA (2019c) <https://gis.epa.ie/EPAMaps/> (Accessed 29/11/2019)
- EPA (2019d) Ireland's Final Greenhouse Gas Emissions 1990 – 2017
- EPA (2019e) GHG Emissions Projections Report – Ireland's Greenhouse Gas Emissions Projections 2018 – 2040
- Transport Infrastructure Ireland / National Roads Authority (2011) Guidelines for the Treatment of Air Quality During the Planning and Construction of National Road Schemes



## 2.9. Noise and Vibration

### 2.9.1. Introduction

This section describes the noise and vibration constraints identified within the scheme study area for the N25 Waterford to Glenmore Road Scheme. The specific objective of the noise and vibration constraints study is to identify any receptors that may be deemed to be particularly sensitive to noise and/or vibration. Examples of receptors include schools, hospitals, places of worship, heritage buildings, special habitats, amenity areas in common use and designated quiet areas. Residential buildings including houses, hotels, hostels etc. are also noise sensitive. (Source: TII Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes and Guidelines for the Treatment of Noise and Vibration in National Road Schemes). Some commercial or industrial uses can also be noise sensitive, for example noise recording studios and research or manufacturing facilities using noise or vibration-sensitive equipment.

Whilst it is preferable to locate road alignments away from noise sensitive areas where feasible, it is not always possible, particularly for roads located close to and through sub-urban settings. For the proposed N25 Scheme under consideration here, there is a low density of noise sensitive buildings and noise sensitive areas along the existing N25 alignment and within the wider constraint study area, particularly within and surrounding the Glenmore village located to the north of the constraint study route of the existing N25. The objectives for road projects relate to avoidance, where necessary, of new routes through built up areas with a large density of noise sensitive buildings, particularly those not already exposed to high volumes of traffic.

### 2.9.2. Methodology

The noise and vibration constraints study has been prepared in accordance with the following guidelines:

- TII Good Practice Guidance for the Treatment of Noise during the Planning of National Road Schemes – 2013; and
- TII Guidelines for the Treatment of Noise and Vibration in National Road Schemes – 2004.

The study consisted of a desk study and a preliminary site inspection of the scheme study area. The following information was reviewed as part of this study:

- OS Mapping;
- Satellite Mapping (Google Earth, Bing Maps);
- EPA Road Traffic Noise Maps Round 3 (2016);
- Kilkenny County Development Plan 2014-2020; and
- Kilkenny Noise Action Plan 2019-2023 (January 2019).

### 2.9.3. Identified Constraints

#### 2.9.3.1. Existing Environment

The existing environment of the study area is predominately rural in nature. The land use is predominately a mixture of agricultural lands, residential properties and a small degree of commercial and industrial premises. The existing noise environment is expected to be dominated by road traffic from the N25, with background noise levels also including local traffic along minor roads, farm yard activities and general environmental sources including bird song and rustling foliage. Residential properties are typically in ribbon style development along the existing N25 with properties, churches and schools within small villages and clusters along the route (Luffany, Curraghmore, Ballyrahan, Gaulstown, Ballymona, Kilmakevoe, Glenmore and Graiguenakill)

##### 2.9.3.1.1. Review of Published Noise Data

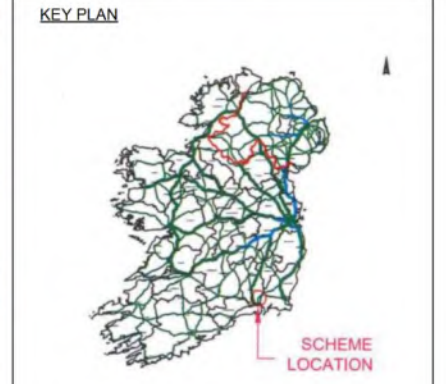
The round 3 road traffic noise maps published by the EPA as part of the Environmental Noise Regulations have been reviewed to determine the range of modelled traffic noise in the vicinity of the constraint area (the section of the N25 between Luffany and Graiguenakill). As part of the noise mapping requirements, all roads with traffic flows greater than 3 million vehicle trips per annum (approximately 8,000 Annual Average Daily Traffic (AADT)) were required to be mapped.

Noise levels due to road traffic sources from this section of road have been modelled and a relevant noise map prepared. The map is presented in noise contour bands in increments of 5 decibels starting at 55dB  $L_{den}$  and 45dB  $L_{night}$ .

Figure 2-22 - EPA Noise Map displays the noise map for the  $L_{den}$  period (Annual 24-hour average) which is the noise parameter used to assess road traffic noise in Ireland (TII 2004 & TII 2013 Documents). All noise maps for the study area, including noise maps for the  $L_{night}$  period are accessed via the EPA's Environmental Maps portal. This figure illustrates the key trafficked roads across the study area and their contribution to the prevailing noise environment. Reference to the maps indicates that the road traffic noise from the existing N25 is consistent between Luffany and Graiguenakill. The highest density of noise sensitive locations along these mapped routes are within Glenmore.



- GENERAL NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
  2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
  3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
  4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
  5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION



- 45-49dB
- 50-54dB
- 55-59dB
- 60-64dB
- 65-69dB
- Greater than 70dB

Derived from Environmental Protection Agency (EPA) interactive mapper.

Study Area

Purpose: Environmental Constraints Report

Title: **Figure 2-22  
EPA Noise Map**

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Rev	Description	By	Date	Chk'd	Auth



Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 K5W4  
Tel: (+353) 01 810 8200  
email: info.ie@atkinsglobal.com  
www.atkinsireland.ie

Unit 2B, 2200 Cork Airport Business Park, Cork, T12 R279  
Tel: (+353) 021 249 0300

1st Floor Technology House Parkmore Technology Park, Galway, H91 NXV4  
Tel: (+353) 091 786 050

Client: KILKENNY COUNTY COUNCIL

Project: N25 WATERFORD TO GLENMORE SCHEME

Original Scale	Des/Drawn	Checked	Authorised
N/A	CA	DMcL	MMcL
Date: 05/06/2020	Date: 05/06/2020	Date: 05/06/2020	Date: 05/06/2020
Status	Drawing Number	Rev	
F	5190130-ATK-XX-XX-DR-EC-0012	0	

Kilkenny County Council has applied a threshold level above which areas may require noise mitigation or management within their Noise Action Plan (NAP). The proposed onset levels for the consideration of noise mitigation measures are:

- 70dB Lden; and
- 57dB Lnight.

For assessment of noise level preservation where the existing levels are good:

- 55dB Lden; and
- 45dB Lnight.

The estimated population exposed to noise levels greater than 70dB L<sub>den</sub> for major roads within the Action Plan Area equates to 282 people based on road traffic flows during the 2016 mapping exercise. This compares to a figure of 479 people in the Second Round NAP (based on traffic flows during the 2013 mapping exercise). Those properties which have been identified to be above these threshold levels are typically properties which are located immediately along the road edges. It should be noted that noise contour maps are based on road traffic only for those routes which have been mapped. Noise from road traffic along other regional and local roads with traffic volumes less than the mapping requirement (8,000 AADT) will also contribute to the ambient noise levels at properties in the vicinity of these routes.

The scheme study area comprises a mix of the noise sensitive receptors, which are already exposed to varying levels of road traffic noise. Review of the EPA noise maps referred to above confirms that 2no. noise sensitive properties located along the immediate edge of the existing N25 are exposed sound levels above the threshold (70dB L<sub>den</sub>) which may require noise mitigation or management included in the Kilkenny NAP. There are no specific noise mitigation measures noted within the NAP for this specific section of road, however a range of measures set out in the NAP, include provision of traffic management, road improvements and maintenance including low noise road surfaces, reduction in speed limits, noise screening and façade insulation measures.

### 2.9.3.2. Conclusions

Based on the review of the existing noise environment along the N25, from Luffany to Graiguenakill, no significant constraints have been identified in relation to noise and vibration.

Whilst a range of noise sensitive building types are located within the constraint study area, their presence doesn't preclude a route corridor being developed in proximity to them during this stage of the assessment.

Consideration will be given to designing route corridors away from high density areas of noise sensitive buildings from the outset. Consideration will also be given to assessing the benefits of reducing traffic volumes along the existing N25 and noise sensitive locations along this corridor.

During route selection appraisal, a detailed review of noise sensitive locations offline and along the existing N25 will be undertaken. This process will identify the route corridors that are least and most preferred from a noise and vibration point of view taking into account horizontal and vertical alignments, distance of noise sensitive locations from the road, traffic volumes and speeds etc.

## 2.10. Human Health

### 2.10.1. Introduction

This section describes the potential constraints identified within the scheme study area for the N25 Waterford to Glenmore Road Scheme. The objective is to identify the potential health and wellbeing effects of the proposed scheme on the surrounding population. Examples of receptors include schools, hospitals, places of worship, amenity areas in common use and designated quiet areas. Residential buildings include houses, hotels, hostels, etc. Some commercial or industrial uses can also be sensitive health receptors. Potential impacts of the proposed scheme on human health arise from traffic and transportation, air quality and climate, noise and vibration, townscape and visual, material assets: utilities and the risk of major accidents and/or disasters. These aspects are dealt with in the specific sections in this report dedicated to those topics. Whilst it is preferable to locate road alignments away from sensitive receptors where feasible, it is not always possible, particularly for roads located close to and through sub-urban settings. For the proposed N25 Scheme, there is a low density of sensitive buildings and sensitive areas along the existing N25 alignment and within the wider constraint study area, particularly within and surrounding the Glenmore village located to the north of the constraint study route of the existing N25. The objectives for road projects relate to avoidance, where necessary, of new routes through more densely populated areas with a large proportion of noise sensitive buildings, particularly those not already exposed to high volumes of traffic.

### 2.10.2. Methodology

This chapter has been prepared having regard to the following guidelines:

- Draft Guidelines on the Information to be Contained in Environmental Impact Assessment Reports (Environmental Protection Agency, Draft August 2017);
- Advice Notes for Preparing Environmental Impacts Statements, Draft September 2017;
- Guidelines on the Information to be contained in Environmental Impact Statements (EPA, 2002); and
- Advice Notes on Current Practice in the Preparation of Environmental Impact Statements (EPA, 2002).

The study consisted of a desk study. The following information was reviewed as part of the study:

- OS Mapping;
- Satellite Mapping (Google Earth, Bing Maps);
- EPA Maps;
- Kilkenny Local Economic and Community Plan (LECP); and
- Kilkenny County Development Plan 2014-2020(referred to as the Development Plan from here on in).

### 2.10.3. Identified Constraints

The existing environment of the study area is predominantly rural in nature. The land use is predominately a mixture of agricultural lands, residential properties and a small degree of commercial and industrial premises. The existing environment is expected to be dominated by road traffic from the N25, also including local traffic along minor roads, farmyard activities. Residential properties are typically in ribbon style development along the existing N25 with properties, churches and schools within small villages and clusters along the route (Luffany, Curraghmore, Ballyrahan, Gaulstown, Ballymona, Kilmakevoge, Glenmore and Graiguenakill).

According to Figure 3.17 Rural Housing Strategy of the Development Plan, the study area lies within an 'Area Under Urban Influence'. Areas classified as Under Urban pressure are located close to the immediate environs or commuting catchment of cities and towns or to major transport corridors with ready access to urban areas. They are characterised by rapidly rising populations and/or considerable pressure for housing development. Areas under urban influence display the greatest pressures for development due to:

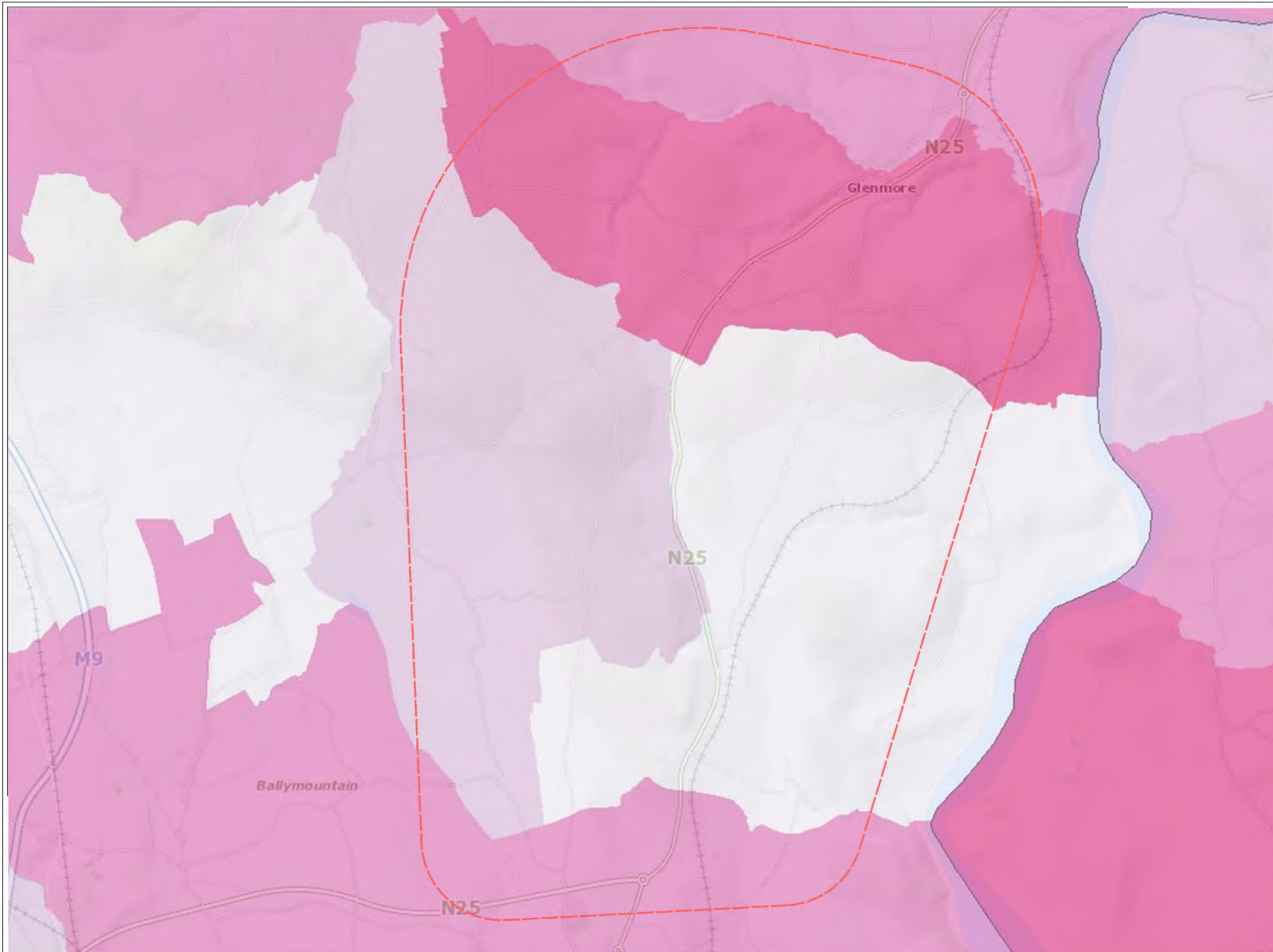
- Close commuting catchments of larger cities and towns;
- Population increases well above the average aggregate rural areas of the county; and
- Ready access to a good road network with ready access to the larger urban areas.

Current trails (and rights of way) are depicted in Figure 7.1 of the development plan. There is no existing walking, cycling and rights of way in the study area. The LECP states (according to Census 2011):

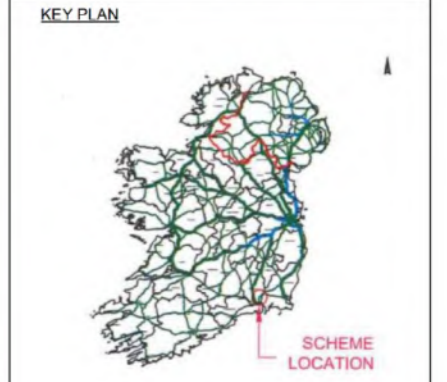
- 85,069 persons stated they were in 'good' or 'very good' health, representing 89.2% of the total population. This compares to 88.3% of total persons nationally. The figure below indicates the percentage of population along the scheme who stated their health was bad or very bad, ranging from 0%-2%; and

- Kilkenny had 11,939 persons (13% of the total population) with a disability, of whom 4,309 (36.1%) were aged 65 years and over.

While no existing walking, cycling and rights of way have been identified in the study area, a Greenway connecting the town of New Ross in the north to Waterford City in the south via a disused railway is expected to be completed in 2021. The railway, which closed in 2010 due to low passenger numbers, intersects the eastern section of the study area and runs in a predominantly north/south direction along lower lying topography. Work on the 24km Kilkenny Greenway has started and is anticipated to benefit tourism in New Ross and Waterford City.



- GENERAL NOTES**
1. ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
  2. ONLY WRITTEN DIMENSIONS SHALL BE USED. NO DIMENSIONS SHALL BE SCALED FROM THE DRAWINGS
  3. ALL LEVELS ARE IN METRES AND ARE TO MALIN HEAD DATUM
  4. ALL COORDINATES ARE IN METRES AND ARE TO IRISH TRANSVERSE MERCATOR
  5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION



Percentage of population who stated their health was bad or very bad (2016):

- 0% - 0.5%
- 0.5% - 1%
- 1.1% - 1.5%
- 1.6% - 2%
- 2.1% - 7%

Derived from Central Statistics Office (CSO) interactive mapper.

Study Area

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Rev	Description	By	Date	Chk'd	Auth

**ATKINS**  
Member of the SNC-Lavalin Group

Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 K5W4  
Tel: (+353) 01 810 8200  
www.atkinsireland.ie

Unit 2B, 2200 Cork Airport Business Park, Cork, T12 R279  
Tel: (+353) 021 249 0300

1st Floor Technology House Parkmore Technology Park, Galway, H91 NKY4  
Tel: (+353) 091 786 050

Client	KILKENNY COUNTY COUNCIL
Project	N25 WATERFORD TO GLENMORE SCHEME

Purpose	Environmental Constraints Report			
Title	Figure 2-23 Bad/Very Bad Health Map			
Original Scale	N/A	Des/Drawn CA	Checked DMcL	Authorised MMcL
Date	1/10/2023	Date	10/09/2023	Date
Status	F	Drawing Number	5190130-ATK-XX-XX-DR-EC-0015	Rev
				0

### 2.10.3.1. Further Work

It is not possible to detail every sensitive receptor within the study area at this stage. All relevant receptors will be identified as part of the route evaluation stage. Consideration will be given to designing route considerations away from high density areas from the outset and to the local community and existing health circumstances and determinants, including demographic, socio-economic and public health profiles, and details of the existing and emerging natural and built environment. The assessment will also consider the potential effects of the scheme on population including the likely significant effects on human health arising from the construction and operational phases of the scheme. The assessment will seek to identify:

- Potential positive and negative effects on the local community arising from construction and operation, with a focus on vulnerable groups (e.g. children and adolescents, older people, people who are disabled and/or with other health problems) and the distribution of health;
- Opportunities for improving economic, social, land use, amenity and health and reducing health inequalities; and
- Mitigation opportunities.

During route selection appraisal, a detailed review of sensitive locations offline and along the existing N25 will be undertaken. This process will identify route corridors that are least and most preferred from a health point of view, taking into account road alignments, distance of sensitive locations from the road, traffic volumes and speeds, etc.



## 2.11. Cultural Heritage

### 2.11.1. Introduction

This cultural heritage preliminary appraisal details the recorded cultural heritage resources that may influence the construction of the proposed N25 Waterford to Glenmore Scheme. This report identifies the areas that should be avoided, where possible, in order to minimise impacts on the cultural heritage resources while also providing an appreciation of the legal framework and the levels of protection afforded to the archaeological, architectural and cultural heritage resource in an international, national and regional context. Broad mitigation strategies are outlined and further appraisal work that will be required is detailed.

The phrase ‘cultural heritage’ is a generic term used to identify a multitude of cultural, archaeological, and architectural sites and monuments. The term “cultural heritage”, in Environmental Impact Assessment compliance with Section 2(1) of the Heritage Act (1995), is used throughout this report in relation to archaeological objects, features, monuments and landscapes as well as all structures and buildings which are considered to have historical, archaeological, artistic, engineering, scientific, social or technical significance/merit.

For the purposes of this report the definition of “cultural heritage” is taken broadly from the UNESCO Convention Concerning the Protection of the World Cultural and Natural Heritage, 1972, which considers the following to be “cultural heritage”:

- Tangible cultural heritage;
- Movable cultural heritage (artefacts);
- Immovable cultural heritage (monuments, archaeological sites, etc);
- Underwater cultural heritage (shipwrecks, underwater ruins, and cities); and
- Intangible cultural heritage (oral traditions, folklore etc).

In 2002, the Government published the National Heritage Plan which set out strategies for the conservation and management of Irelands heritage. A key element of the plan is an enhanced role for local authorities in heritage awareness and management, to be given effect through the preparation and implementation of County Heritage Plans. As part of this preliminary appraisal relevant documentation including the relevant county, town and local development plans as well as heritage plans were reviewed.

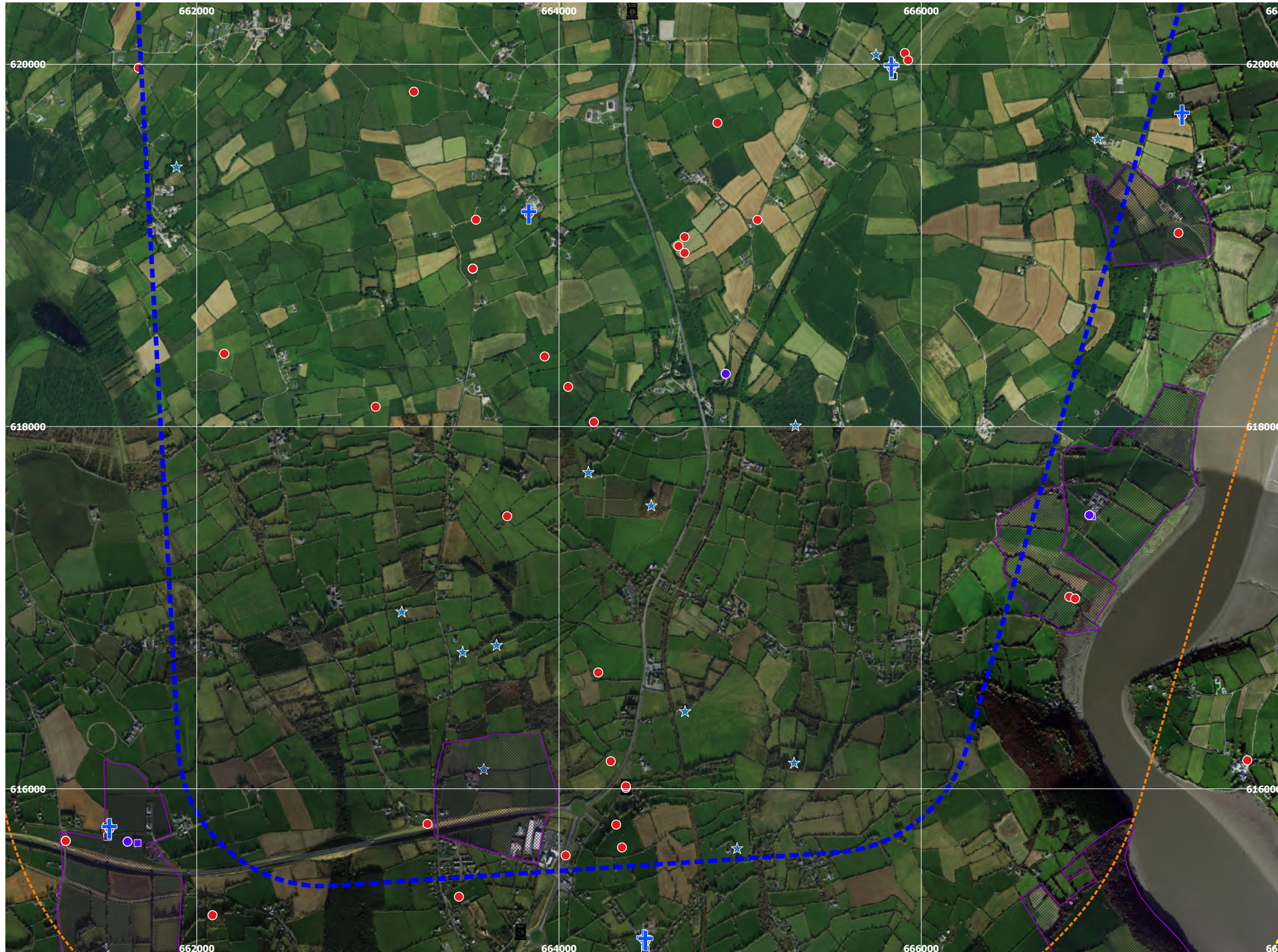
The study area covers approximately 49 sq. km in south east, County Kilkenny. This report is accompanied by the following Geographical Information System (GIS) shapefiles:

**Table 2-12 - Geographical Information System**

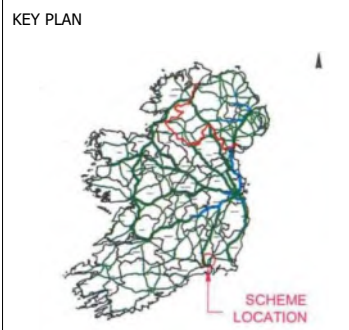
Shapefile	Description
Walled Town.shp	Walled towns within and in the vicinity of the study area
CHS_Sites_191112.shp	Other cultural heritage sites noted within and in the vicinity of the study area
Demesne Landscapes and Historic Gardens.shp	Demesne landscapes and historic gardens
National Monument in State Care.shp	National Monuments in State care located within or in the vicinity of the study area
National Inventory of Architectural Heritage.shp	National Inventory of Architectural Heritage
Religious Site.shp	Religious sites within or in the vicinity of the study area
Register of Historic Monuments.shp	Register of Historic Monuments within or in the vicinity of the study area
Archaeological Monument.shp	Record of Monuments & Places and related Zones of Notification within and in the vicinity of the study area

SMR Zone of Notification.shp	SMR Sites and related Zones of Notification within and in the vicinity of the study area
Protected Structure.shp	Protected Structures located within and in the vicinity of the study area
Preservation Order.shp	Sites under preservation order within and in the vicinity of the study area
BurialGroundsKilkenny_190906.shp	Historic graveyards identified by Kilkenny County Council in their inventory
Kilkenny_MemorialsAndPlaques.shp	Data derived from the audit of plaques, memorials and significant signs in County Kilkenny completed by Kilkenny County Council in 2015





**GENERAL NOTES**  
 This drawing has been produced by Moore Group in relation to the N25 Waterford to Glenmore Scheme. Moore Group are a sub-consultant to Atkins on this scheme.



- Study Area
  - 1 km buffer
  - 2 km buffer
- Archaeological Heritage**
- Religious Site
  - Archaeological Monument
  - NMI Finds
- Architectural Heritage**
- Protected Structure
  - National Inventory of Architectural Heritage
  - Demesne Landscapes and Historic Gardens
- Other Cultural Heritage**
- Burial Grounds
  - Other Cultural Heritage Features
  - Memorials And Plaques

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 Purpose: Environmental Constraints Report

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Rev	Description	By	Date	Chk'd	Auth
A	Issued to client		NM 19/12	DM	DM

Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 KSW4  
 Tel (+353) 01 810 8000  
 email: info\_ie@atkinsglobal.com  
 www.atkinsireland.ie

Unit 2B, 2200 Cork Airport Business Park, Cork, T12 R275  
 Tel (+353) 021 249 0300

1st Floor Technology House Parkmore Technology Park, Galway, H91 N0V4  
 Tel (+353) 091 786 050



Client	KILKENNY COUNTY COUNCIL		
Project	N25 WATERFORD TO GLENMORE SCHEME		

Title: Figure 2-25 Cultural Heritage on Aerial Photography - Map 2 of 2			
Original Scale	Des/Drawn N. Malcom	Checked D. Moore	Authorised D. Moore
Status	Date: 19/12/2019	Date: 19/12/2019	Date: 19/12/2019
Drawing Number	5190130-MOG-XX-DR-ARC-0009		Rev A

### 2.11.1.1. Legal Framework

This section summarises Ireland's obligations as a signatory to several International and European conventions relating to the protection and conservation of cultural heritage sites.

#### **The European Convention on the Protection of the Archaeological Heritage (Valletta Convention), 1997**

In 1997 the Republic of Ireland ratified the Council of Europe, European Convention on the Protection of the Archaeological Heritage (the 'Valletta Convention'). Obligations under the Convention include provision for statutory protection measures, including the maintenance of an inventory of the archaeological heritage and the designation of protected monuments and areas.

#### **The European Convention on the Protection of the Architectural Heritage (Granada Convention), 1997**

Under this convention the Republic of Ireland is obliged to maintain inventories of architectural heritage, to protect the architectural heritage and adopt conservation policies as integrated planning objectives. The Granada Convention was adopted in 1985, came into force in 1987, and was ratified by Ireland in 1997.

#### **The United Nations Educational, Scientific and Cultural Organisation (UNESCO) World Heritage Convention, 1972**

This Convention provides for the identification, conservation, and preservation of cultural and natural sites of outstanding universal value for inclusion in a world heritage list. The World Heritage status is a non-statutory designation and no additional statutory controls result from this designation. However, the impact of proposed development upon a World Heritage Site will be a key material consideration in determining planning applications.

#### **ICOMOS Xi'an Declaration on the Conservation of the Setting of Heritage Structures, Sites and Areas, 2005**

Ireland is a signatory to an international declaration sponsored by International Council on Monuments and Sites (ICOMOS) that endeavours to ensure the safeguarding and conservation of the World's cultural heritage as part of its sustainable and human development.

#### **EIA Directive 85/337/EEC as amended**

In order to assist planning and other consent authorities in deciding if significant effects on the environment are likely to arise in the case of development below the national mandatory EIS thresholds, the Minister for the Environment, Heritage and Local Government published a Guidance document in August 2003.

#### **The European Landscape Convention 2000**

In 2002 Ireland ratified the European Landscape Convention - also known as the Florence Convention, which promotes the protection, management and planning of European landscapes and organises European co-operation on landscape issues. It is the first international treaty to be exclusively concerned with all dimensions of European landscape.

#### **The National Monuments Act 1930, as amended**

Irish legislation for the protection of archaeological heritage is based on the National Monuments Acts 1930 and amendments of 1954, 1987, 1994 and 2004. These acts are the principal statutes governing the care of monuments in the Irish Republic and provide for the protection of archaeological monuments using preservation orders. The overall state archaeological service is provided by the National Monuments Service of the Department of Arts, Heritage, and the Gaeltacht (DAHG) and the National Museum of Ireland (Irish Antiquities Division) on behalf of the Minister.

Monuments are protected under the National Monuments Acts in several ways:

- National Monuments in the ownership or guardianship of the Minister or a local authority (list for County Kilkenny published 4th March 2009);
- National Monuments, which are subject to a preservation order;
- Historic monuments or archaeological areas recorded in the Register of Historic Monuments (RHM); and
- Monuments and Zones of Notification recorded in the Record of Monuments and Places (RMP) - 6" maps, broken down by County, with accompanying printed indexes.

#### **The Planning and Development (Strategic Infrastructure) Act 2006**

The Planning and Development (Strategic Infrastructure) Act 2006 ensures the protection of the archaeological heritage resource by requiring that all applications under this Act are accompanied by an EIS including information on material assets, including the architectural and archaeological heritage, and the cultural heritage.

## **The Planning and Development Act 2000, as amended**

Under arrangements which came into operation on 1 January 2000 (The Planning and Development Act 2000), the system of listing buildings was replaced with strengthened procedures for the preservation of Protected Structures and structures in Architectural Conservation Areas (ACA).

## **The Architectural Heritage and Historic Properties Act, 1999**

This Act provides for the establishment of a National Inventory of Architectural Heritage which forms the basis of recommendations from the Minister to local authorities of structures for inclusion in their Record of Protected Structures. The Act does not afford protection to structures included in the inventory, however if a structure is incorporated into the RPS then legal protection is afforded under the Planning and Development Act 2000.

### **2.11.1.1.1. Other Policy Contexts and Guidelines**

#### **The Framework and Principles for the Protection of the Archaeological Heritage guidelines, 1999**

This document sets out the basic principles of national policy on the protection of the archaeological heritage. A key principle set out in these guidelines is that there should always be a presumption in favour of avoidance of developmental impacts on the archaeological heritage and preservation in-situ of archaeological sites and monuments must be presumed to be the preferred option.

#### **County Development Plans**

The legal basis for the process of making and adopting development and local area plans is set out in the Planning and Development Act 2000. Development plans work within the framework of both the National Spatial Strategy and Regional Planning Guidelines. Development plans play a central role in the identification and protection of the natural and built environment and provide general policies on the same. For the purposes of this chapter all relevant county development plans as well as city, town and local development/area plans were reviewed and assessed in relation to their cultural heritage policies and objectives.

A more recent instrument used by local authorities to indicate heritage areas of particular sensitivity is the adoption of a Landscape Conservation Area (LCA's). This designation is provided for in Section 204 of the Planning and Development Acts 2000- 2007.

### **2.11.2. Methodology**

The methodology used in the preparation of this constraints study follows the National Roads Authority's (NRA) 'Guidelines for the Assessment of Archaeological Heritage Impacts on National Road Schemes' (NRA 2005a), and 'Guidelines for the Assessment of Architectural Heritage Impacts on National Road Schemes' (NRA 2005b), (the 'NRA Guidelines').

The evaluation of the effect of the proposed development upon the archaeological, architectural and cultural heritage resource is based on a desktop study of written, graphic, photographic and electronic information, cartographic sources, followed by a windscreen and field survey which was carried out on the 13<sup>th</sup> and 14<sup>th</sup> of November 2019. The field survey comprised visiting selected accessible monuments and a drive-through using public roads within the study area to become familiar with the cultural landscape and verify the location of selected archaeological, architectural heritage and cultural heritage sites. More detailed field surveys will be undertaken during future planning and design stages. Considering the legislative protection afforded to the cultural heritage resource this report evaluates the archaeological, architectural, cultural, and historical importance of the subject area and examines the potential effects of the proposed development on that resource. Utilising the following information sources this chapter presents an overall appraisal of the archaeological, architectural, cultural, and historical datasets referenced within the study area.

#### **2.11.2.1. Information Sources**

Known cultural heritage sites were mapped in GIS. Aerial photography and Ordnance Survey Ireland (OSI) First Edition/6 Inch (Circa 1838) and Second Edition/25 Inch (Circa 1900) historic mapping were added to the GIS. The following information sources were used for this report:

##### **Archaeological Heritage**

- UNESCO World Heritage Sites including the tentative list of candidate sites;
- National Monuments listing be they in the ownership or guardianship of the State;
- Potential National Monuments in the ownership of a local authority;
- Archaeological Monuments that are the subject of Preservation Orders;
- The Register of Historic Monuments;
- Archaeological Survey Database (ASD) from [www.archaeology.ie](http://www.archaeology.ie) (Sites and Monuments Record available through the Historic Environment Viewer);

- National Monuments Service (NMS) Sites and Monuments Record (SMR) and Zones of Notification;
- Record of Monuments & Places (RMP) for County Kilkenny;
- National Museum of Ireland (NMI) find spots from Heritage Maps portal (<https://heritagemaps.ie/>); and
- Locations of previous archaeological excavations from [www.excavations.ie](http://www.excavations.ie).

### **Architectural Heritage**

- Kilkenny County Council Architectural Conservation Areas;
- Kilkenny County Council Protected Structures;
- National Inventory of Architectural Heritage (NIAH) and NIAH Garden Survey; and
- Demesnes Landscapes and Historic Gardens indicated on the OSI First Edition Mapping.

### **The following additional sources were consulted or reviewed**

- Topographical files of the National Museum of Ireland;
- Cartographic Sources;
- Toponyms;
- Aerial photographs;
- Kilkenny County Development Plan; and
- Documentary Sources: several literary references were consulted (including 'Placenames of Decies' by Very Rev. P. Canon Power and O'Kelly's 'The Place-Names of County Kilkenny').

#### **2.11.2.2. Kilkenny County Development Plan 2014-2020**

Chapter 8 section 3 of the Kilkenny County Development Plan addresses Built Heritage, recognising its importance under the headings of Archaeological Heritage, Industrial Heritage, Conservation Plans, Historic Graveyards, Architectural Heritage, Architectural Conservation Areas, Historic Gardens and Demesne Landscapes, Townscapes, Street Furniture and Roadside Features, The Vernacular Built Heritage and Flood Lighting.

This chapter is cognisant of the Plan's Development Management Standards relating to the archaeological heritage and Objective 8I which seeks to 'Protect archaeological sites and monuments (including their setting), underwater archaeology, and archaeological objects, including those that are listed in the Record of Monuments and Places, and in the Urban Archaeological Survey of County Kilkenny or newly discovered sub-surface and underwater archaeological remains.'

Data relating to historic graveyards identified by Kilkenny County Council in their inventory, and made available on the Kilkenny County Council website, was extracted, and included in the Project GIS and subsequent appraisal of potential impacts.

This chapter is also mindful of the Plan's Development Management Standards relating to the architectural heritage and has included details of all Protected Structures and structures recorded on the National Inventory of Architectural Heritage. Throughout the process of the appraisal the authors were mindful that these inventories do not contain all structures that may be worthy of protection and were vigilant for new structures worthy of protection.

#### **2.11.2.3. Field work**

A windscreen and walkover survey of the study area was carried out on the 13<sup>th</sup> and 14<sup>th</sup> of November 2019 by archaeologists Will Anderson and Billy Quinn. This involved uploading GIS mapping with cultural heritage constraints onto a mobile device and visiting selected accessible monuments and sites to appraise the possible affects that the proposal would have on the receiving archaeological, architectural, and cultural heritage environment as well as to determine sites' current extent and condition.

### **2.11.3. Identified Constraints**

#### **2.11.3.1. Archaeological and Historical background**

The subject area measures approximately 8.8km N/S by 5.6km E/W and extends either side of the existing N25 between Glenmore and Slieveroe north to south and from Catsrock towards Rochestown west to east. Based on the Kilkenny Landscape Character Assessment the study area largely occupies an area known as the South Eastern Hills characterized by undulating hills and ridges with elevations in the study area ranging from between 10 – 130 m Above Ordnance Datum (AOD). The field patterns are medium to large bounded by mature hedges and trees. There are occasional wood copses and bog, but the area is of largely well drained pasture. Historically the water courses draining into the Suir and the Barrow were harnessed by mills. Within

the subject area is one small village Glenmore with a concentration of seven NIAH sites including a bridge, church former RIC barracks, a water pump and three 19<sup>th</sup> century houses. Ecclesiastical sites are represented by Kilcolumb Church and graveyard in Rathinure, Graiguenakill church and graveyard and the site of a church in Grogan.

#### 2.11.3.1.1. Mesolithic Period (8000BC-4000BC)

The Mesolithic people were the first inhabitants of Ireland, arriving about 9-10,000 years ago. They were a mobile society relying on wild resources for food, which was hunted and gathered using stone tools as well as boats, nets, and traps. Settlement was in temporary and semi-permanent groups of huts constructed of wood slung with hide, which may have operated as seasonal or hunting camps. These hunter/gatherer people encountered a landscape rich in woodlands with hazel scrub, oak, ash, and pine and made little disturbance to the natural landscape. Recorded Mesolithic activity on the island to date shows a marked concentration in the northeast of Ireland. This concentration of find-spots and sites in the north east can, in part be attributed to both the availability of flint and the large number of antiquarians and collectors in the region. Evidence for Mesolithic activity in Kilkenny is relatively scarce and primarily focussed on the river valleys of the primary rivers, the Nore, Suir and Barrow. Lithic scatters from the period have been found along the banks of the Barrow river in Wexford near Camolin, to the North of the County (Green and Zvelebil 1990<sup>16</sup>). Closer to the study area a scatter of five Later Mesolithic Bann flakes was recovered during works for the Waterford Bypass at Newrath townland (NRA, 2017<sup>17</sup>).

#### 2.11.3.1.2. Neolithic Period (4000BC-2500BC)

The practice of farming spread from the Middle East, through eastern and southern Europe to reach Ireland via Britain around 4000BC. Ireland's Mesolithic hunters were, over a period, displaced or assimilated by the new Neolithic settlers. This transition fundamentally changed the local economy from one based on hunting and foraging to one of cereal cultivation and livestock rearing. The arrival of the first farmers resulted in land clearance by burning or chopping down trees with stone axes. This clearance led in turn to the spread of blanket bog (heath). There were no indigenous cereal crops, but the settlers brought with them wheat and barley as well as domesticated sheep, goats, and cattle. Tending of crops and animals required a more sedentary lifestyle and larger permanent settlements.

Farming as a practice required new skills and, more importantly, new tools. This demand resulted in the development of specific crafts. Polished stone axes, ards (ploughs), flint tools for harvesting crops, and stone saddle querns for grinding the grain required the exploitation of specific stone sources. Flint remained an important stone to produce tools and weapons, objects such as javelin heads, mace heads, polished axes and fine leaf and lozenge shaped arrowheads were used for both hunting and warfare. During this period, the first long distance trade networks were established. Stone axes from Britain, a flint axe from Scandinavia, pitchstone from Scotland, and jadeite axes from the Alpine area of northern Europe have all been found throughout the country. Pottery also makes its first appearance in the archaeological record. The pots were handmade, coil built, and fired in bonfires or pits. The earliest pots were mainly undecorated round bottomed bowls, although decoration became more common in the later part of the period.

Neolithic activity is apparent in the archaeological record of the region by the presence of megalithic monuments. These sites can be divided into funerary monuments, communal tombs for the burial of the dead, and those with a more esoteric function such as stone circles, stone rows or single standing stones whose function was probably ceremonial. Their construction indicated status, knowledge of engineering, and the ability to organise resources, including labour. Megalithic tombs are divided into four classes: court tombs, portal tombs, passage tombs and later wedge tombs. Court tombs derive their name from an open court in front of the tomb entrance. These tombs were normally covered by long cairns (mounds) of stone and are mostly confined to the northern half of the country. Portal tombs, often referred to as dolmens, are so named because two tall portal stones flanked the entrance to the internal chamber. Passage tombs, such as Newgrange, often remain fully buried beneath circular cairns of stones, with a passage leading to the burial chamber. They are often found on hilltops and generally occur in groups, known as cemeteries. One of the oldest surviving forms of art or decoration in Ireland, megalithic art, is found on structural stones in some of these tombs, which date from around 3500-2500 BC.

Settlements in this period are associated with large rectangular houses. To date, around 90 Neolithic houses have been discovered at 50 sites throughout the country. The houses are found both as individual structures and in groups of two or three. These dwellings were robust structures and typically would have had timber

<sup>16</sup>Green, Stanton & Zvelebil, Marek. (2014). The Mesolithic Colonization and Agricultural Transition of South-east Ireland. *Proceedings of the Prehistoric Society*. 56. 57-88. 10.1017/S0079497X0000503X.

<sup>17</sup> National Roads Authority, 2017 (Edited by O'Sullivan, J. and Stanley, S.). *Time and tide: five millennia of environmental change and human activity on the banks of the Suir* (Wilkins, B.). In *New Routes to the Past*. PP 61-71. National Roads Authority, Dublin.



upright posts supporting a roof (probably of thatch), the side walls constructed of either vertical planks or wattle walls. In many instances, there is evidence for a central hearth. Artefacts from the Neolithic Period include a range of lithic objects (arrowheads, stone axe heads and quern fragments) and ceramics dominated by carinated bowls with everted rims, globular bowls and later Grooved Wares; bucket shaped vessels with straight or gently curved profiles and flat bases.

There are no Megalithic sites or Neolithic settlements within the subject area. Neolithic activity in the wider area is testified by the discovery of Neolithic houses in Earlsrath and Kilkeasy townlands, Co Kilkenny, a passage tomb at Derrynahinch and Neolithic structures excavated at Granny townland to the south of the study area during the course of works on the Waterford City Bypass (NRA, 2005<sup>18</sup>).

#### 2.11.3.1.3. Bronze Age (2500BC-500BC)

As stone tools were replaced by copper, later combined with tin to make bronze, the structure of society also changed over centuries. While some communal megalithic monuments, particularly wedge tombs continued to be used, the Bronze Age is characterised by a movement towards single burial and the production of prestige items and weapons, suggesting that society was increasingly stratified and warlike. In the late Bronze Age, the use of the metal reached a high point with the production of high-quality decorated weapons, ornament and instruments, often discovered from hoards or ritual deposits.

The funerary tradition of the Bronze Age is dominated by burial mounds known as Barrows. They appear in the landscape as low circular mounds and have many variants with fosses, banks, raised or stepped interiors and in general measure between 10m and 25m in diameter. Barrows are often found in clusters and may hold single or multiple burials interred in cists (stone-built boxes). Cremations or inhumations or also found in these contexts. Cists often contain decorated bowls and vases called 'food vessels' buried with the remains. There is one barrow recorded in the subject area in Rathaglish (SMR KK040-032----).

Wedge tombs are so named by the distinctive way the roof slopes down towards the back of the tomb and are taller and wider at the entrance. Burial chambers in the South East were predominately located on glacial sands and gravels in relatively low-lying areas.

Although there is some debate about the provenance of the standing stones, it is generally accepted that they date from the later part of the Bronze Age. Stone rows or single standing stones were probably ceremonial in function, although single standing stones may have acted as foci or markers at the edges of territories.

Fulachtaí fia, generally dating from the Bronze Age, consist of small, horseshoe shaped mounds, which are composed of burnt and fire cracked stones with a central pit or trough. These features, designed to heat water, were most likely multifunctional and used for cooking, bathing, and brewing. They are commonly found in river valleys or in boggy ground and are indicative of communal activity. They are common throughout the country and many are identified each year. There are examples found in Kilmakevoge (SMR No. KK041-021), Ballynaraha (SMR No's. KK041-023 & KK041-024), Luffany (SMR No. KK044-023----) and Rathpatrick (SMR No. KK044-024----).

#### 2.11.3.1.4. Iron Age (c. 500BC-400AD)

The Iron Age coincides with the spread of Celtic culture and peoples and is known as a 'dark age' in Irish prehistory. This is reflected in the relative lack of artefacts from the period. As in Europe, there are two phases of the Iron Age in Ireland: the Hallstatt and the La Tène. The Hallstatt period dates from 700BC onwards and spread rapidly from Austria, across Europe, and then into Ireland. The later Iron Age or La Tène culture also originated in Europe during the middle of the 5th Century BC.

Life in Iron Age Ireland seems to have been much as it was in the early historic period – mixed farmers living in or around small defended settlements. This period is also associated with the arrival of the Celts. It is believed these people lived in tribal groups and several large ceremonial 'Royal' sites, enjoyed significant activity during this period, including Emain Macha/Navan Fort, Co. Armagh, Dun Ailinne, Co Kildare and Rathcroghan Co. Roscommon.

The scale of constructing these sites would have involved marshalling and feeding entire communities. They would have had farms consisting of cattle, pigs, sheep, grain, and vegetables so land would have held some importance to them. They would have used horses, probably to help with farming, as Y-shaped pendants, harnesses to help lead horses, had been found in more recent times. Their diet probably consisted of wild berries, fruits, nuts, and herbs that were gathered from the surrounding landscape. They would have also hunted animals for food and fished the rivers and the vast Irish shores. Hillforts, linear earthworks, rotary querns for milling; large decorated stones and ogham stones are all associated with this period. Burial rites continued from the Bronze Age—such as ring barrows, ring ditches, mounds, and enclosures. Cremation

<sup>18</sup> NRA, 2005 (Edited by O'Sullivan, J. and Stanley, S.). Two Neolithic structures in Granny townland, County Kilkenny (Hughes, J.). In 'Recent Archaeological Discoveries on National Road Schemes 2004', PP 25-35. National Roads Authority, Dublin.

continued to be the pre-dominant burial rite and the burnt remains were sometimes accompanied by small personal items such as beads or jewellery. As the name of the period suggests this era was characterised by iron tools and weapons, although bronze continued to be used to make items of jewellery.

A cairn at Davidstown (KK043-011001-) could possibly be Iron Age in date. In the wider area excavations at Newrath for the Waterford City Bypass revealed Iron Age hurdles at Newrath townland. Further afield at Baysrath, Co. Kilkenny, dated to the first two centuries AD is a Late Iron Age site excavated in 2006–7. The site is located near the River Glory in south County Kilkenny and provides what is arguably the best evidence of a late Iron Age enclosed settlement identified in Ireland to date<sup>19</sup>.

#### 2.11.3.1.5. Early Medieval Period (c.500 AD-1200 AD)

With an expansion in population, the Early Medieval Period witnessed the introduction of a new settlement type generally known as the ringfort. Other names for this site type include rath, lios, cashel and dún. These circular enclosures, numbering between 30,000 and 40,000 across the country, represent the homesteads of Irish Early Medieval society. Ringforts are generally circular areas surrounded by a bank(s), walls, and an external ditch. In some cases, there can be up to three sets of defences. The larger more impressive multi-vallate, raised and platform raths are generally regarded as higher status settlements and are the foci around which the smaller satellite univallate enclosures would be arranged. Ringforts are frequently found on sloped sites within lowland areas providing better access to soils and having the security of wide visibility. In some cases, they can be associated with underground chambers and passages, known as souterrains dating to c. AD 750–1250. The spatial relationship between ringforts is the physical evidence for the Túath system characterised by petty kingdoms, sovereigns that paid fealty to a larger regional / provincial state. It is estimated that over 150 of these Túath existed across the country vying for territory and dominion. Ringforts and enclosures represent the most numerous of the recorded archaeological monuments within the subject area usually occupying sloping sites on hillsides chosen for their better access to soils and open visibility. These sites survive in varying states of preservation, some are fully extent and highly visible in the landscape others that formerly appeared on historic maps but have been lost to the plough and survive as cropmarks. Extant examples include SMR No's. KK044-001 in Gaulstown, KK044-002—Ballyhobuck and KK044-003—Ballyrahan. There is a notable series of extant raths along a ridge line in Davidstown SMR's KK043-012, KK043-013 and Carriganurra KK043-014.

In the fifth century Christianity was introduced to Ireland and monastic sites began to be founded throughout the country. Between the 6th and 8th centuries the influence of the Church continued to grow and through the secular and ecclesiastical legislation, it is possible to trace the gradual assimilation of the Church into early Irish society. The impact of Christianity on the subject area is indicated by the presence of three ecclesiastical sites Kilcolumb Church and Graveyard at Rathinure (SMR No's KK044-007001 & KK044-007002-), a church referred to as Cill Cloginn in the Ordnance Survey letters but long since destroyed in Davidstown (SMR KK043-041) and Graiguenakill Church and graveyard in townland of the same name (SMR No's. KK041-028001-, KK041-028002-). The churches in Rathinure and Graiguenakill have associated holy wells (SMR No's. KK044-008- & KK041-029-). Significantly in both Rathinure and Davidstown there are also bullaun stones (SMR No's KK044-007003- , KK043-011003 & KK043-011004). These stones are boulders of stone or bedrock with hemispherical hollows or basin-like depressions, which may have functioned as mortars. They are generally associated with religious sites and date to the early medieval period (5th-12th centuries AD).

#### 2.11.3.1.6. Medieval Period onwards (1200 AD-1700 AD)

Originally invited by Diarmuid Mac Murchada as mercenaries to assist in the recovery of his Leinster Kingdom, the Anglo-Normans quickly set about making territorial claims for themselves. By 1171 King Henry II mounted a second invasion, resulting in his Lordship of Ireland. The archaeology of this period is dominated by fortresses built by the new colonists. Administration of this new order resulted in the shiring of counties, the creation of boroughs and foundation of towns, many surrounded by stone walls. Newly acquired territory was held by the construction of military powerbases in various forms – including motte and baileys, ringworks, moated sites, and later masonry castles. Tower houses were more widespread than the earlier Norman fortifications, especially in the Ormond lands of Kilkenny. In the succeeding centuries internecine fighting and fluctuating alliances between Anglo-Normans, native Irish and combinations of both resulted in the building of more defensive residences the ubiquitous tower house. These imposing buildings were usually rectangular towers of four or five storeys accessed by a spiral staircase leading to the battlements. Other architectural features designed for security included machicolations, bartizans, looped windows, a murder hole over a grilled entrance and a base batter. Most tower houses would have been surrounded by other buildings, often within a defensive walled enclosure known as a bawn. Medieval sites in the subject area range from the destroyed castles at

<sup>19</sup> Dowling, G. 2014. Landscape and settlement in late Iron Age Ireland: some emerging trends. In 'Late Iron Age and 'Roman' Ireland'. Discovery Programme Reports 8, 151–74. Dublin: Wordwell.

Haggard (SMR KK040-056---) and Mullennahone (SMR KK041-017001-) to the tower house ruins at Carrickcloney (KK041-032-).

During the Munster Plantation in the 16th century, a result of the Desmond Rebellions, the English crown charged undertakers to import settlers and develop new garrisoned towns. These planters cut passes through the remaining wooded areas to enable bridge building and developed a tentative infrastructure. The opening of the countryside led to an increase in arable farming and with it the emergence of a new enclosed field pattern still visible today.

#### 2.11.3.1.7. Modern Period

Ireland in the 16th and 17th centuries saw massive social and political upheaval because of the Tudor plantations, Confederate Wars, the Cromwellian Conquest and finally the War of the Two Kings. The impact on the national population was catastrophic and resulted in the forced transfer of lands from Irish Catholic ownership to English soldier-settlers and transplanners. By 1778 scarcely five per cent of Irish land was left in native hands. With their newfound wealth and status, the Protestant Ascendancy expressed their political, economic, and social domination by transforming Irish towns and cities with building programmes. Rural areas were now controlled by landlords living in large mansion houses surrounded by walled demesnes e.g. Aylwardstown House, Rochestown House and Frazer's Hall. Much of what is characteristic of the Irish countryside, with pasture fields enclosed by drystone walls or ditches and hedgerows, dates from this period. The peasant and cottier class, whose labour transformed the countryside, typically lived in drystone cabins in informal clusters known as clachan or farm villages. Many of these, are recorded on the first edition Ordnance Survey map but were subsequently abandoned following the catastrophe of the Great Famine between 1845 and 1852.

#### 2.11.3.2. Archaeological Heritage

##### 2.11.3.2.1. World Heritage Sites

Although not formally recognised in Irish legislation, impacts on World Heritage Sites will nonetheless be a material consideration for developments in their vicinity. There are no World Heritage Sites or sites recorded on the Tentative List of World Heritage Sites near the proposed development.

##### 2.11.3.2.2. National Monuments

On a national level, the highest degree of protection granted to archaeological monuments are those afforded National Monument status, which are protected under the National Monuments Act of 1930 and its various amendments, these are the pre-eminent archaeological sites in Ireland.

National Monument sites fall into several categories including:

- Sites that are in the ownership or guardianship of the State;
- Monuments that are the subject of Preservation Orders;
- Monuments in the ownership of a local authority; and
- Walled towns.

#### **National Monuments in the Ownership or Guardianship of the State**

Generally, National Monuments in State care are numbered amongst the best preserved and most impressive monuments in the country and are afforded the highest level of protection under the various National Monuments Acts.

The list of National Monuments was retrieved from [www.archaeology.ie](http://www.archaeology.ie) in October 2019.

There are no sites of this classification within the subject area. The nearest National Monuments are in Waterford City; Reginald's Tower (SMR No. WA009-005001-, Nat. Mon. No. 661) and the French Church (SMR WA009-005032-, Nat. Mon. No. 205), more than 3.3km south of the study area. There are two other sites within a 5km buffer: Granny Castle overlooking the Suir (SMR KK043-034001-, Nat. Mon. No.253) and Dunbrody Abbey in Wexford (SMR WX039-030001-, Nat. Mon. No.192).

#### **Other National Monuments**

Afforded the same level of protection as National Monuments in State care are archaeological monuments that are the subject of Preservation Orders, Walled Towns and some archaeological monuments that are in the ownership of a local authority. Work in the vicinity of these sites requires Ministerial Consent. Although there are no formal registers of archaeological monuments that are in the ownership of local authorities they predominantly consist of Churches and/or Graveyards that were transferred into the ownership of the Burial

Boards by the Church Temporalities Commission during the latter half of the 19th Century. The list of Preservation Orders was retrieved from [www.archaeology.ie](http://www.archaeology.ie) in October 2019.

There are no sites with Preservation Orders or Walled Towns within the subject area.

The nearest Walled Town is Waterford 3.47 km to the south of the development.

#### 2.11.3.2.3. Archaeological Monuments

The legislation that affords protection to the archaeology of Ireland has seen several amendments since the first National Monuments Act of 1930 and there is a legacy of several different registers and associated terminology. The following sections contain information relating to the Register of Historic Monuments (RHM), the Record of Monuments and Places (RMP) and the Archaeological Survey Database (ASD). Note that archaeological monuments are generally registered by the National Monuments Service (NMS) using a unique Sites and Monuments Record (SMR) number.

#### 2.11.3.2.4. Register of Historic Monuments

The Register of Historic Monuments was created in response to the 1987 amendment to the National Monuments Act. The Register consists of a list of archaeological monuments where, as part of the registration process, the owner of the monument must be notified in writing by registered post or by hand.

There are no sites on the Register of Historic Monuments located within 1km of the study area.

#### 2.11.3.2.5. Record of Monuments and Places

The Record of Monuments and Places was compiled in response to the 1994 amendment to the National Monuments Act. This inventory consists of a nationwide set of 6" maps, broken down by county, with accompanying indexes, which show the location of archaeological monuments with associated Zones of Notification. When it is proposed to conduct work within the Zone of Notification indicated, notification must be given to the relevant Minister at least two months prior to the commencement of the proposed works. The SMR sites dataset includes a 'Zone of Notification' for sites and monuments. These zones do not define the exact extent of monuments, but rather are intended to identify areas in which archaeological remains are believed to occur for the purposes of notification under Section 12 (3) of the National Monuments (Amendment) Act 1994.

As the inventory is a paper study, it has not been updated since each county was first published. The Record of Monuments and Places has been largely superseded by the Archaeological Survey Database, an online resource available at [www.archaeology.ie](http://www.archaeology.ie), which is regularly updated.

It should be noted that archaeological monuments in the Record of Monuments and Places are protected by the National Monuments Act, but that the care and preservation of these features depends largely on the interest and respect of the individual landowners. County Development Plans have policies asserting the protection and preservation of archaeological sites, which have been identified in the Record of Monuments and Places.

Scans of relevant Record of Monuments and Places maps were georeferenced in GIS and their Zones of Notification digitised. The reference system for archaeological monuments in the Record of Monuments and Places is the SMR Number, which is the same as that used for the Archaeological Survey Database (below). Therefore, all relevant details for the Record of Monuments and Places Zones of Notification have been derived from the Archaeological Survey Database.

#### 2.11.3.2.6. Archaeological Survey Database

The most up-to-date record of archaeological monuments, the Archaeological Survey Database, is available for viewing and download on the National Monuments Service website, [www.archaeology.ie](http://www.archaeology.ie). The ASD data were retrieved from the Historic Environment Viewer located at [www.archaeology.ie](http://www.archaeology.ie) in October 2019. This record is regularly revised and indicates a number of additional sites that do not feature in the Record of Monuments and Places. The National Monuments Service also make available National Monuments Service (NMS) Zones of Notification on the website.

There are 59 archaeological monuments dispersed throughout the study area in various degrees of preservation. These sites vary from Bronze Age fulachtaí fia and ring barrows to Early to late Medieval enclosures and ringforts, churches and bullaun stones.

The archaeological resource is summarised in the tables below.

**Table 2-13 - Archaeological resource – Monument Classification**

Monument Classification	Number (s)
Ringforts - Rathes	22
Fulacht fia	11
Enclosures	2
Bullaun Stones	2
Church	3
Graveyard	2
Ritual Site-Holy Well	2
Mound	1
Barrow - ring-barrow	1
Castle - Unclassified	2
Castle - Tower House	2
Earthwork	2
House - 16th/17th century	1
Cairn - Unclassified	1
Kiln	1
Standing Stone	2
Cross – Wayside cross	1
Redundant records	1
<b>Total</b>	<b>59</b>

**Table 2-14 - Archaeological resource**

SMR Number	Classification	Townland	ITM_E	ITM_N
KK040-032--- -	Barrow - ring-barrow	Rathaglish	661859	621352
KK040-033--- -	Ringfort - rath	Ardbeg	662681	620981
KK040-034--- -	Mound	Haggard (Ida By.)	663024	622707
KK040-056--- -	Castle - unclassified	Haggard (Ida By.)	662729	623108
KK041-017001--- -	Castle - unclassified	Mullennahone	664759	623198
KK041-018--- -	Ringfort - rath	Mullennahone	664874	622820
KK041-019--- -	Enclosure	Mullennahone	664937	622755
KK041-020--- -	Ringfort - rath	Robinstown	664788	622497
KK041-021--- -	Fulacht fia	Kilmakevoge	665562	622392

SMR Number	Classification	Townland	ITM_E	ITM_N
KK041-022--- -	Ringfort - rath	Ballynaraha	664399	622099
KK041-023--- -	Fulacht fia	Ballynaraha	664640	621433
KK041-024--- -	Fulacht fia	Ballynaraha	664768	621414
KK041-025--- -	Fulacht fia	Ballinclare	664315	620889
KK041-027--- -	Earthwork	Aylwardstown	665921	621605
KK041-028001-	Church	Graiguenakill	666235	622158
KK041-028002-	Graveyard	Graiguenakill	666241	622165
KK041-029--- -	Ritual site - holy well	Carrickcloney	666375	622232
KK041-030--- -	Ringfort - rath	Carrickcloney	666535	622175
KK041-031001-	House - 16th/17th century	Aylwardstown	667033	621571
KK041-032--- -	Castle - tower house	Carrickcloney	667899	622055
KK041-052--- -	Fulacht fia	Robinstown	664797	622547
KK041-053--- -	Fulacht fia	Rathinure	665630	620609
KK041-054--- -	Enclosure	Graiguenakill	666257	622200
KK041-055--- -	Standing stone	Robinstown	665370	622292
KK043-005--- -	Ringfort - rath	Grogan	663199	619849
KK040-014--- -	Ringfort - unclassified	Haggard (Ida By.)	663135	623171
KK040-021--- -	Ringfort - rath	Knockbrack (Ida By.)	661975	622388
KK040-022--- -	Ringfort - rath	Haggard (Ida By.)	663634	622426
KK040-023--- -	Ringfort - unclassified	Ballynaraha	664047	622445
KK043-010--- -	Ringfort - rath	Nicholastown (Kilcolumb)	662152	618402
KK043-011001-	Cairn - unclassified	Davidstown	663524	618872
KK043-011003-	Bullaun stone	Davidstown	663524	618872

SMR Number	Classification	Townland	ITM_E	ITM_N
KK043-011004-	Rath	Davidstown	663524	618872
KK043-012--- -	Ringfort - rath	Davidstown	663921	618387
KK043-013--- -	Ringfort - rath	Davidstown	664051	618219
KK043-014--- -	Ringfort - rath	Carriganurra	664193	618025
KK043-015--- -	Ringfort - rath	Carriganurra	663714	617505
KK043-021--- -	Kiln	Luffany (Ida By.)	664217	616642
KK043-039--- -	Ringfort - rath	Nicholastown (Kilcolumb)	662988	618109
KK043-041--- -	Church	Grogan	663834	619174
KK043-060--- -	Standing stone	Kilmurry (Ida By.)	663274	615806
KK043-071	Earthwork	Davidstown/Grogan	663544	619140
KK043-082--- -	Fulacht fia	Rathpatrick (Ida By.)	664037	615632
KK044-001--- -	Ringfort - rath	Gaulstown (Ida By., Kilcolumb Ed)	664667	620505
KK044-002--- -	Ringfort - rath	Ballyhobuck	665179	620351
KK044-003--- -	Ringfort - rath	Ballyrahan	664875	619677
KK044-004--- -	Earthwork	Ballyrahan	664694	619046
KK044-005001-	Fulacht fia	Ballyrahan	664660	618997
KK044-005002-	Fulacht fia	Ballyrahan	664694	618959
KK044-006--- -	Redundant record	Scartnamoe	665096	619141
KK044-007001-	Church	Rathinure	665836	619985
KK044-007002-	Graveyard	Rathinure	665837	619980
KK044-007003-	Bullaun stone	Rathinure	665841	619999
KK044-008--- -	Ritual site - holy well	Rathinure	665928	620022
KK044-009--- -	Ringfort - rath	Rathinure	665910	620062
KK044-013--- -	Ringfort - rath	Rathpatrick (Ida By.)	664348	615676

SMR Number	Classification	Townland	ITM_E	ITM_N
KK044-022--- -	Cross - Wayside cross	Luffany (Ida By.), Rathpatrick (Ida By.)	664370	616014
KK044-023--- -	Fulacht fia	Luffany (Ida By.)	664286	616152
KK044-024--- -	Fulacht fia	Rathpatrick (Ida By.)	664316	615802







### 2.11.3.2.7. Previous Archaeological Fieldwork

The Excavations Bulletin is both a published annual directory and an online database (online only since 2011) that provides summary accounts of all the excavations carried out in Ireland and Northern Ireland from 1969 to 2018. The database gives access to almost 15,000 reports and can be browsed or searched using multiple fields, including Year, County, Site Name, Site Type, Grid Reference, Licence No., Sites and Monuments Record No. and Author.

A review of the excavations database on [www.excavations.ie](http://www.excavations.ie) was undertaken based on the townlands which are intersected by the study area on the 10<sup>th</sup> of November 2019 (See Toponym Analysis below for a list of townlands). Sixteen excavation licences and one dive survey licence were noted within the study area. To date none of the sites listed have been allocated an SMR number.

**Table 2-15 - Previous Excavations**

Site Name	Licence no.	Author	Site Type	ITM_N /E
Aylwardstown House	01E0075	Ben Murtagh	Adjacent to early 17th-century house	E 666378m, N 622800m
Various townlands	12E0356	Graham Hull, TVAS (Ireland) Ltd	Monitoring of works in advance of the laying of the Great Island gas pipeline	E 666378m, N 622800m
Site 31-1, 2 Carriganurra	13E0148	Colm Flynn, TVAS (Ireland) Ltd	Undated iron smithing and burnt stone mound	E 664844m, N 618863m
Catsrock, Kilkenny	04D133, 04R172	Eoghan Kieran, Moore Archaeological and Environmental Services	Underwater assessment. Nothing of archaeological significance noted	E 661437m, N 621051m
Graiguenakill	04E0791	Cóilín Ó Drisceoil, Kilkenny Archaeology,	Monastic enclosure, testing in sites vicinity found a ditched enclosure and iron slag	E 666257m, N 622200m
Killaspy, Kilkenny	02E0196	Dave Pollock, for ADS Ltd.	Burnt mounds, patches of burning, etc.	E 661376m, N 615305m
Killaspy, Kilkenny	03E0619	Dave Pollock, for ADS Ltd.	The main site (Killaspy 1) comprised a large burnt mound, probably prehistoric, reused as the site of a smithy. Two further burnt mounds were located on the nearby road realignment.	E 661376m, N 615305m
Killaspy, Kilkenny	04E0258	Linda Hegarty, Headland Archaeology Ltd	Land drains of no archaeological significance.	E 661376m, N 615305m
Killaspy, Kilkenny	04E0257	Linda Hegarty, Headland Archaeology Ltd	Pits; fulacht fia and pits	E 661376m, N 615305m
SITES 12-14, Killaspy, Kilkenny	04E0247	Joanna Wren, for Headland Archaeology Ltd.	Site 12- pit with possible plank lining Site 13- remains of a small kiln or oven Site 14 - post-medieval boundary ditches	E 661376m, N 615305m

Site Name	Licence no.	Author	Site Type	ITM_N /E
Killaspy, Kilkenny	04E0263	Caitriona Gleeson, Headland Archaeology Ltd	No archaeological significance	E 661376m, N 615305m
Killaspy, Kilkenny	04E0770	Caitriona Gleeson, Headland Archaeology Ltd	Fulacht fia with two troughs	E 661376m, N 615305m
Killaspy, Kilkenny	02E0196	Dave Pollock,	Burnt mounds and garden	E 661376m, N 615305m
Luffany/Rathpatrick, Kilkenny	02E0233	Joanna Wren, for ADS Ltd	Remains of post-medieval drainage works, cultivation trenches and field systems.	E 664392m, N 616345m
Luffany, Kilkenny	03E0973	Angus Stephenson,	Fulacht fia; post-medieval	E 664294m, N 616339m
Kilmurry/Rathpatrick, Kilkenny	02E0192	Cathy Sheehan, ADS Ltd	Burnt Mounds with Leinster cooking ware	E 664392m, N 616345m

#### 2.11.3.2.8. Topographical Files of the National Museum of Ireland

The topographical files of the National Museum of Ireland (NMI) identify all recorded finds held in the NMI archive that have been donated to the state in accordance with National Monuments legislation. The files sometimes include reports on excavations undertaken by NMI archaeologists in the early 20th century. Valuable information that can be gleaned might include the exact location, ground type, depth below ground level and condition when found, of each find. However, the amount and the usefulness of the information available on each find can vary considerably. A review of the topographical files housed in the NMI and a review of the NMI finds database on the Heritage Council's [www.heritagemaps.ie](http://www.heritagemaps.ie) website, noted the following finds recorded within the study area. A review of the topographical files housed in the NMI was carried out on the 14th of November 2019 by Declan Moore. A review of the NMI finds database on the Heritage Council's [www.heritagemaps.ie](http://www.heritagemaps.ie) website was carried out in November 2019. It should be noted that the specific find locations are uncertain and only identified by townland.

**Table 2-16 - Topographical Files of the National Museum of Ireland.**

Reg No	Description	Material	Townland	Comment
RSAI252.1	Axehead	Stone	Ballynamona	Donation
1940:157	Axehead	Bronze		Cappagh
2006:87	Pot	Ceramic	River Barrow, Drumdowney Upper	N Leinster ware cooking pot, recovered from estuary at Cheek Point, 100m offshore. Relatively tall pot with a low everted rim and a slightly sagging sand marked base.
1941:1536	Coin	Silver	Jamestown	1571 Silver Elizabethan Penny found in a tillage garden while thinning out a turnip crop the property of William Fennelly. 6" map, no. 63, 64
2600: Wk113.1	Bowl	Ceramic	Kilmurry	Mortuary Urn, broad at mouth and base, excellent condition Purchase Ref: Rev. James Graves' paper in the "Transactions of the Kilkenny Archaeological Society" Vol ii, P.295
4528: Wk113	Human Remains	Human Remains	Kilmurry	Cremated human remains Purchase Mr. J Huband Smiths communication in Proceedings of the Academy Vol ii p259

Reg No	Description	Material	Townland	Comment
2593: Wk106	Bowl	Ceramic	Kilmurry	Mortuary Urn, probably a food holder. Decorated with rude chevrons Donated, found in a grave
2562: Wk078	Bowl	Ceramic	Near Thomastown	Mortuary Urn, perfect condition, Purchase
2643: W17	Bowl	Ceramic	Kilmurry	Bronze Age Bowl, Purchase, found in an ancient grave
8171: W15.2	Human Remains	Human Remains	Kilmurry	Purchase, Found in a grave
2641: W15.1	Bowl	Ceramic	Kilmurry	Purchase, Found in a grave
2635: W9	Bowl	Ceramic	Kilmurry	Purchase, Found in a grave
1975:24	Tool	Stone	Knockbrack	Site of destroyed fulacht fia - donation

### 2.11.3.2.9. Toponym Analysis

Townland names are a rich source of information for the land use, history, archaeology, and folklore of an area. The placename can have a variety of language origins such as, Irish, Viking, Anglo-Norman and English. The names can provide information on families, topographical features, and historical incidents. In terms of the built environment many names reference churches, fords, castles, raths, graveyards, roads and passes etc. In compiling the following data, several resources were consulted including the *Place-Names of County of Kilkenny* (O' Kelly 1985), the Placenames Database of Ireland (accessed via the website [www.logainm.ie](http://www.logainm.ie)) and *The Origin and History of Irish Names of Places* (Joyce 1875). The overall study area comprises 51 townlands, in seven Civil Parishes: Ballygurrim, Dunkitt, Kilbride, Kilcoan, Kilmakevoge, Kilcolumb and Rathpatrick in Ida Barony.

**Table 2-17 - Toponym Analysis**

#### Toponymy Resource

Townland	Genitive	Translation
Ardbeg	<i>An tArd Beag</i>	The small height
Atateemore Or Blackneys	<i>Áit an Tí Móir</i>	Place of the big house
Aylwardstown	<i>Baile an Aighleartaigh</i>	<i>Baile</i> townland, town, homestead, Aylward is a family name
Ballinclare	<i>Bhaile an Chláir</i>	Townland of the plank bridge; plain
Ballinorea	<i>Baile an Chraobhaigh</i>	Town of the branched tree
Ballinlammy	<i>Baile an Lamaigh</i>	Irish name to be confirmed
Ballinlaw	<i>Baile an Lágh</i>	Town of the Hill
Ballybraghy	<i>Baile Brachaí</i>	Breaghys may be a corruption of Bréach-magh wolf field'
Ballyfasy Lower	<i>An Baile Fásaigh Íochtarach</i>	Irish name to be confirmed
Ballyhobuck	<i>Baile Hobac</i>	Irish name to be confirmed
Ballynamona (E.d. Dunkitt)	<i>Bhaile na Móna</i>	The townland of the bogland
Ballynamona (E.d. Kilcolumb)	<i>Bhaile na Móna</i>	The townland of the bogland

## Toponymy Resource

Townland	Genitive	Translation
Ballynaraha	<i>Baile na Rátha</i>	Townland of the rath or fort
Ballyrahan	<i>Bhaile Bhracham</i>	Brogham's town
Ballyrowragh	<i>Baile Ruarach</i>	Recorded in 1607 town of Ruaidhri (Persons Name)
Ballyvarring	<i>Baile an Bhairínigh</i>	The town of the Bard or maybe related to Ricardus Waryn landowner recorded 1306
Ballyverneen	<i>Baile Uí Bheirnín</i>	related to Gylldon O'Byrnyn landowner recorded 1306
Busherstown	<i>Bhaile an Bhúiséaraigh</i>	The town of An Búiséarach (Anglo-Norman Boucher) An Búiséarach — singular form of the surname Búiséir, Philip Boscher recorded in Inistioge in 1435 (COD 3.114)
Cappagh (E.d. Kilbride)	<i>An Cheapaigh</i>	Plot of land, tillage plot
Carrickcloney	<i>Carraig na gCluainíní</i>	The rock of the small pastures
Carriganurra	<i>Carraig an Urraghil - Ur-choill</i>	The rock of the fresh or green wood
Catsrock	<i>Carraig an Chait</i>	The cats rock
Curraghmore (E.d. Kilcolumb)	<i>An Currach Mór</i>	The big marsh
Davidstown	<i>Baile Dháith</i>	David's Town or homestead
Drumdowney Upper	<i>Dhrom Domhnaigh</i>	The church of the ridge
Flemingstown	<i>Baile an Phléimeannaigh</i>	Fleming's town first recorded in 1400 (COD 2.359)
Gaulstown (E.d. Kilcolumb)	<i>Baile an Ghail</i>	The town of the foreigner or the standing stone
Graiguenakill	<i>Gráig na Cille</i>	The church in the hamlet/cattle steading
Grogan	<i>An Gruagán</i>	Gruagán, 'land producing long coarse grass or sedge' it may also relate to a family name
Haggard	<i>An tAgard</i>	Haggard i.e. hay-yard
Jamestown	<i>Baile Shéamac</i>	Shéamais's town
Kilbride	<i>Chill Bhríde</i>	'(St) Bridget's church'
Killaspy	<i>Cill Easpaig</i>	Bishop's church
Kilmakevoge	<i>Cill Mochaomhóg</i>	Mochaomhóg's Church
Kilmurry	<i>Cill Mhuire</i>	Mary's church
Knockbrack	<i>An Cnoc Breac</i>	The Speckled hill
Luffany	<i>An Fhliuchmhuine</i>	The wet thicket
Mullennahone	<i>Muine na hUamhan</i>	The thicket of the cave or souterrain
Murtaghstown	<i>Baile Uí Mhuircheartaigh</i>	Murtagh's town
Nicholastown	<i>Baile Niocláis</i>	Recorded in 1587 Niocláis's town

### Toponymy Resource

Townland	Genitive	Translation
Parkstown Lower	<i>Baile na Páirce Íochtarach</i>	Park's town
Rathaglish	<i>Ráth Aglais</i>	The fort of the church
Rathinure	<i>Ráth Inniúir</i>	The fort of the yew tree
Rathpatrick	<i>Ráth Phádraig</i>	Phádraig's fort
Redgap	<i>An Bhearna Dhearg</i>	The Red Gap
Rickardsland South	<i>Cnoc Riocaird Theas</i>	Richard's Hill
Robinstown	<i>Baile Roibín</i>	Roibín's town
Rochestown	<i>Baile an Róistigh</i>	The town of An Róisteach An Róisteach — from the surname de Róiste (< Anglo-Norman de la Roche)
Scartnamoe	<i>Scairt na mBó</i>	The cow thicket
Tinvaucosh	<i>Tigh an Bhácúis</i>	The house of Bhácúis
Treanaree	<i>Trian an Fhraoigh</i>	The third heath

#### 2.11.3.2.10. Townland Boundaries

The overall study area comprises 51 townlands, in in seven Civil Parishes. The townland is the smallest unit of territorial organization in Ireland and has its origins in Gaelic land ownership. It bears no relation to the modern word 'town' but like the Irish word *baile* refers to a place. Gaelic land ownership required a clear definition of the territories held by each sept and a need for delineation around their territories. Before Sir William Petty and the Down Survey, the territorial unit subsequently called the 'townland' was known by a variety of regional terms, such as 'tates', 'poll's', 'ballyboes'. Petty standardized these under a single term. The making of the Down Survey maps was a key stage in the outlining of permanent boundaries for townlands; this process was completed by the Ordnance Survey in the nineteenth century when many demesnes, deer parks or large farms were given townland status. The typology of townland boundaries can vary in different parts of the country, with some areas favouring distinctive high, wide earthen banks or just stone walling; sometimes there is a combination of earth and stone, with a stone-revetment or a facing on an earthen bank. Within the subject area townland boundaries are formed by a mix of natural features including streams and high ground and manmade features of roads, walls, ditches, hedge lines and embankments.

#### 2.11.3.3. Architectural Heritage

##### 2.11.3.3.1. Architectural Conservation Areas

The Planning and Development Act 2000, as amended, provides that all Development Plans must now include objectives for preserving the character of Architectural Conservation Areas (ACAs). An ACA is a place, area, group of structures or townscape of special architectural, historical, archaeological, artistic, cultural, scientific, social, or technical interest, or which contribute to the appreciation of protected structures. In these areas, the protection of the architectural heritage is best achieved by controlling and guiding change on a wider scale than the individual structure, to retain the overall architectural or historic character of an area.

There are no Architectural Conservation Areas in the vicinity of the study area.

##### 2.11.3.3.2. Record of Protected Structures (RPS)

The importance of our built heritage is enshrined in the Planning and Development Act, 2000 (Part II, Section 10) which places a statutory obligation on local authorities to include protection of structures, or parts of structures, which are of special interest in the objectives of their Development Plans. The principal mechanism for the protection of these structures is through their inclusion of a Record of Protected Structures (RPS). This list provides recognition of the structure's importance, protection from adverse impacts and potential access to grant aid for conservation works. The recording of Protected Structures is an ongoing process and can be reviewed and added to. In considering additions to the Record of Protected Structures local authorities have

recourse to the National Inventory of Architectural Heritage (NIAH) (see below) which provides a source of guidance on the significance of buildings in their respective areas.

There are five Protected Structure located within the study area; a Mill in Ballyrowagh, two railway bridges on the Waterford New Ross line (built circa 1887), Aylwardstown Country House c.1800, incorporating fabric of earlier structure dated 1609 and a Wayside cross in Luffany carved by Darby O' Brien in 1736 in memory of his ancestors. These sites are listed below.

**Table 2-18 - Record of Protected Structures.**

Number	Record of Protected Structures - Name	Townland	Description
C845	O'Donovan's Cornmill	Ballyrowagh	Mill Structure
D126	Railway Bridge	Rathinure	Skew-arch bridge carrying Waterford - New Ross railway over road.
D125	Railway Bridge	Carrickcloney	Girder bridge carrying Waterford - New Ross railway over stream
C472	Aylwardstown House	Aylwardstown	Detached five-bay two-storey country house, c.1800, incorporating fabric of earlier house, dated 1609.
C846	Wayside Cross	Luffany	Wayside cross carved by Darby O' Brien in 1736 in memory of his ancestors

#### 2.11.3.3.3. The National Inventory of Architectural Heritage

These county surveys, established on a statutory basis under the provisions of the Architectural Heritage (National Inventory) and Historic Monuments (Miscellaneous Provisions) Act 1999, provide an index of structures deemed to be of architectural, historical, archaeological, artistic, cultural, social, scientific or technical interest.

The results of the NIAH surveys are available on the [www.buildingsofireland.ie](http://www.buildingsofireland.ie) website. Each entry comprises a site description and appraisal providing a qualitative account of why the building is an important part of Irish architectural heritage, justifying its inclusion. The inventory also rates the structures on a scale ranging from local, regional, national to international significance.

A review of the NIAH register listed nine sites within the study area, seven of which are in Glenmore.

**Table 2-19 - The National Inventory of Architectural Heritage Register**

NIAH Reg No.	Name and Date	Townland/ Town	Description
12404102	House 1890-1920	ROBINSTOWN, GLENMORE	Detached three-bay two-storey house, c.1900, possibly originally presbytery on a symmetrical plan with single-bay single-storey flat-roofed projecting porch to centre ground floor.
12404103	Waterpump C.1900	ROBINSTOWN, GLENMORE	Freestanding cast-iron waterpump, c.1900, comprising fluted pedestal on a moulded base having open work pail stand, moulded stringcourse supporting moulded necking having spout, and capping now missing. Now disused. Road fronted on verge.
12404104	Saint James's Catholic Church 1810 - 1815	ROBINSTOWN, GLENMORE	Detached six-bay double-height single-cell Catholic church, built 1813, with three-bay two-storey flat-roofed sacristy to north having single-bay two-storey gabled projecting breakfront, and single-bay full-height entrance breakfront to south having single-bay single-storey flat-roofed projecting porch to ground floor. Reconstructed, 1910, Extensively renovated, 1973.



NIAH Reg No.	Name and Date	Townland/ Town	Description
12404105	Glenmore Royal Irish Constabulary Barracks 1865 - 1885	ROBINSTOWN, GLENMORE	Detached four-bay two-storey house, c.1875, with single-bay single-storey gabled projecting porch to ground floor. In use as Royal Irish Constabulary barracks, 1903. Now in residential use.
12404106	Glenmore Bridge 1815-1835	CAPPAGH, GLENMORE	Two-arch rubble stone road bridge over river, c.1825, on a cranked plan. Random rubble stone walls with squared rubble stone coping to parapets. Pair of camber arches on rubble stone pier with cut-stone voussoirs, and rubble stone soffits.
12404107	Aylwardstown Farmhouse 1700 – 1839	AYLWARDSTOWN	Detached five-bay two-storey farmhouse, extant 1839, on an L-shaped plan with two-bay (south) or single-bay (north) two-storey side elevations. Sold, 1887. Attached two-bay two-storey house with dormer attic, dated 1609, on a rectangular plan.
12404109	House 1840-1860	CAPPAGH, GLENMORE	Attached three-bay single-storey house with dormer attic, c.1850, possibly incorporating fabric of earlier range, pre-1840, on site. Refenestrated, c.1925. Extensively renovated, c.1975
12404110	House 1840-1860	CAPPAGH, GLENMORE	Attached three-bay single-storey house with dormer attic, c.1850, possibly incorporating fabric of earlier range, pre-1840, on site.
12404402	Ringville House	RINGVILLE	Detached three-bay single-storey farmhouse with half-dormer attic, extant 1839, on an L-shaped plan originally forming part of larger five-bay two-storey composition centred on single-bay single-storey gabled projecting porch. Occupied, 1901

#### 2.11.3.3.4. Demesne Landscaped and Historic Gardens

The Architectural Section of the DoCHG is in the process of a multi-phase study looking at Designed Landscapes and Historic Gardens that appear as shaded areas on the First Edition six-inch Ordnance Survey Maps, circa. 1838. The objective of this survey is to begin a process of understanding the extent of Ireland's historic gardens and designed landscapes.

The NIAH classifies historic gardens and designed landscapes into five possible categories based on a 'Statement of Condition'. This statement provides a general overview of a site's status but as noted in the initiative's Project Methodology, the findings are 'not an indication of a site's heritage importance and should not be used to justify statements about the site's importance or merit'.

A part of this study OSI First Edition historic mapping (circa 1838) was used to digitise the extent of demesne landscapes and historic gardens within the study area and its environs. The historic extents of these sites were compared against available aerial photographs (including Bing aerial photography, Google aerial photography of various dates reviewed in Google Earth and project aerial photography captured in 2019) of the study area to assess the level of survival and change.

There are four demesne landscapes or historic gardens that intersect with the refined the study area. Aylwardstown House demesne is associated with a five-bay two-storey farmhouse, extant 1839, with attached two-bay, two-storey house, dated 1609. Rochestown demesne is associated with Rochestown House, however, the house no longer exists. A portion of demesne landscape lies within the study area, however. Frazer's Hall demesne, lying within the southern extents of the study area is associated with a six-bay farmhouse. There is an historic garden in the townland of Mullennahone: a small formal garden of approximately 0.65 hectares is indicated on the OSI First Ed. map. There is no longer any evidence of this garden in the project aerial photography.

**Table 2-20 - Demesne landscapes or historic gardens**

NIAH Garden Survey Site ID.	Demesne Name	Comments
1846	Aylwardstown House	This house is marked within a demesne landscape on the first edition OS map. A significant number of modern agricultural buildings have been constructed in the core landscape.
1848	Rochestown House	Principal building no longer exists, sites has been replaced with agricultural sheds.
1837	Frazer's Hall	This house is marked within a demesne landscape on the first edition OS map. Principal building still extant but a significant number of modern agricultural buildings have been constructed in the core landscape.
1844	Ballinlaw Castle	Portion of demesne land to west impinges on study area





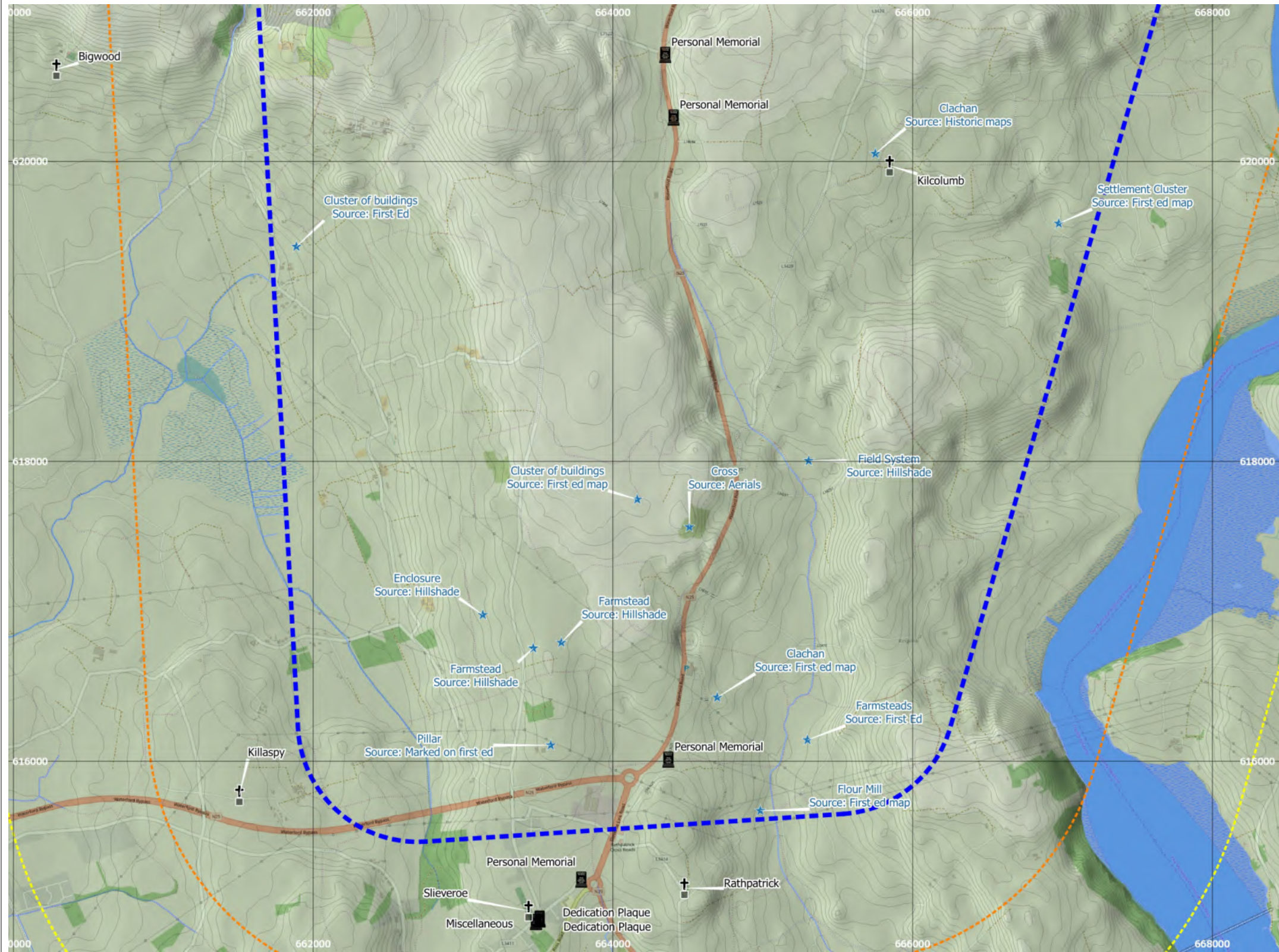
### 2.11.3.4. Other Cultural Heritage

A review of cartographic sources and aerial photography was undertaken to identify previously unrecorded archaeological or architectural heritage sites, structures, monuments, or features that may be affected by the proposed development. Sources included, Bing aerial photography (reviewed February 2018), Google aerial photography (various dates reviewed in Google Earth), OSI ([www.geohive.ie](http://www.geohive.ie) aerial photography, various dates), OSI 6 Inch and 25 Inch historic maps. Twenty-two Cultural Heritage sites were identified, these include the sites of farmsteads or building clusters that are now unoccupied/removed, former mills, railway infrastructure (1886-7) and other features including possible enclosures. It should be noted that dispersed throughout the subject area are undesignated occupied nineteenth century farmhouses with associated outhouses and yards. These vernacular structures form attractive focal points and add to the visual appeal of their locales. Notable examples are found at Davidstown, Mullennahone, Aylwardstown and Carrickcloney.

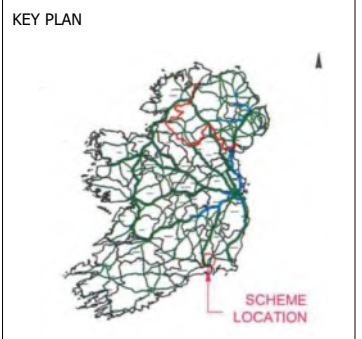
**Table 2-21 - Cultural Heritage Features**

Description	Source	Townland	ITM_E	ITM_N
Farmstead, now visible as a tree copse	First Ed. map	Parkstown Lower	664096	623444
Designed Garden, now pasture field	First Ed. map	Mullennahone	664988	623294
Mill Pond, now a tree copse	First Ed. map	Mullennahone	665623	623433
Corn Mill, since demolished	First Ed. map	Mullennahone	66725	623372
Mill Race, still extant	First Ed. map	Mullennahone / Robinstown	666064	623041
Site of Corn Mill, largely removed, some features remain	First Ed. map	Robinstown	666237	622933
Site of Corn Mill, since removed	First Ed. map	Graiguenakill	667172	623435
Quay	First Ed. map	Jamestown	667218	623547
Railway Bridge	Third Ed. map	Aylwardstown	667749	620974
Cluster of buildings	First Ed. map	Rochestown West	666995	619605
Cluster of buildings	First Ed. map	Rochestown East	666991	619585
Cross on rock outcrop (former Trig station)	Aerials	Carriganurra	664522	617579
Cluster of buildings, since removed	First Ed. map	Carriganurra	664176	617747
Possible Enclosure	Aerials	Treanaree	663132	616975
Farmstead	First Ed. map	Treanaree	663652	616796
Pillar depicted on map, since removed	First Ed. map	Frazer's Hall, Kilmurry	663580	616104
Cluster of buildings	First Ed. map	Luffany	664704	616453
Flour mill	First Ed. map	Rathpatrick	664977	615663
Railway Bridge	Third Ed. Map	Rochestown West	667155	620615
Humpback railway bridge	Aerials	Curraghmore	64666	617104
Raised circular feature	Aerials	Ballynaraha	663889	621741
Circular feature in woodland	Aerials	Ballynaraha	663771	621904





**GENERAL NOTES**  
 This drawing has been produced by Moore Group in relation to the N25 Waterford to Glenmore Scheme. Moore Group are a sub-consultant to Atkins on this scheme.



- Study Area
  - 1 km buffer
  - 2 km buffer
- Other Cultural Heritage**
- Burial Grounds
  - Memorials And Plaques
  - Other Cultural Heritage Features

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Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 KSW4  
 Tel (+353) 01 810 8000  
 email: info.ie@atkinsglobal.com  
 www.atkinsireland.ie

Unit 28, 2200 Cork Airport Business Park, Cork. T12 R279  
 Tel (+353) 021 249 0300

1st Floor Technology House Parkmore Technology Park, Galway. H91 N0V4  
 Tel (+353) 091 786 050

**Client**  
 KILKENNY COUNTY COUNCIL

**Project**  
 N25 WATERFORD TO GLENMORE SCHEME

**Title**  
 Figure 2-31  
 Other Cultural Heritage  
 Map 2 of 2

Original Scale	Des/Drawn N. Malcolm	Checked D. Moore	Authorised D. Moore
Status	Date: 19/12/2019	Date: 19/12/2019	Date: 19/12/2019
Drawing Number	5190130-MOG-XX-DR-ARC-0007		Rev A

A	Issued to client	NM	19/12	DM	DM
Rev	Description	By	Date	Chk'd	Auth

## 2.11.4. Conclusions and General Mitigation Strategies

There are fifty-nine recorded archaeological sites and monuments in the subject area that have a date range from prehistoric times to the post medieval era. These sites include fulachtaí fia, ringforts, bullaun stones, churches, graveyards and two castles. The distribution of ringforts is interesting, generally sited off slope on elevated ground with commanding views. It is likely that more such sites survive below ground eroded by centuries of agricultural activity. The extent of unrecorded sites that remain undetected just below the present ground surface is beyond the scope of this preliminary study but cannot be underestimated. In addition to these sites are thirteen find spots that have produced archaeological artefacts recorded in the Topographical Files of the National Museum. These finds comprise tools of stone and bronze, ceramics for funerary and domestic use, human remains and an Elizabethan coin. The architectural and industrial heritage of the area is represented by five protected structures, nine NIAH sites and the remains of four designed landscapes/demesnes. The structures in various states of preservation include vernacular houses, railway bridges, mills, and designed gardens. Following a review of aerial images and cartographic sources twenty-two previously unidentified cultural heritage sites were also noted. This catalogue contains circular features, clusters of nineteenth century dwellings, railway bridges and a quay. It is likely that further heritage constraints will be identified during further stages of the assessment. It is recommended that the proposed scheme avoid direct impacts, where practicable, on these constraints. Where this is not possible, a programme of comprehensive archaeological and architectural assessment including geophysical surveys should be undertaken to inform any future decisions in relation to these constraints.

### 2.11.4.1. General Mitigation Strategies

#### 2.11.4.1.1. Archaeological Heritage

##### **National Monuments - In the Ownership or Guardianship of the State**

The pre-eminent archaeological sites in the Republic of Ireland, which are afforded statutory protection of all their amenities, including visual, often with public access facilitated. Any groundworks in the vicinity of such sites, that may impact on associated archaeological remains will require Ministerial Consent. Given their protected status every effort should be made to avoid impacts on the settings of these sites. There are no National Monuments in the Ownership or Guardianship of the State within the study area.

##### **Sites Subject to Preservation Orders**

The National Monuments Service does not recognise any difference between sites subject to Preservation Orders and National Monuments in the Ownership or Guardianship of the State, as they have the same level of statutory protection. Preservation Orders are issued to protect sites that have been damaged or are in the process of being damaged, to prevent further harm. These sites in many instances will not be publicly accessible. Any groundworks in the vicinity of such sites, that may impact on associated archaeological remains will require Ministerial Consent. Given their protected status efforts should be made to avoid impacts on the settings of these sites. There are no Sites Subject to Preservation Orders within the study area.

##### **Walled Towns**

The National Monuments Service does not recognise any difference between the remains of town defences and National Monuments in the Ownership or Guardianship of the State as they have the same level of statutory protection. Any groundworks in the vicinity of such sites, that may impact on the remnants of town defences will require Ministerial Consent. Given their protected status efforts should be made to avoid impacts on the settings of these sites. There are no Walled Towns within the study area.

##### **Potential National Monuments - In the Ownership of a Local Authority**

Not all these sites will be National Monuments, but a significant number may be. The National Monuments Service does not recognise any difference between these sites and National Monuments in the Ownership or Guardianship of the State as they have the same level of statutory protection. Many will consist of publicly accessible churches (many ruinous) and graveyards that are particularly sensitive to impacts on setting and avoidance is recommended. Any groundworks in the vicinity of such sites where it is found that the site is of national importance and where there is the potential that associated archaeological remains may be impacted upon, will require Ministerial Consent.

##### **The Register of Historic Monuments**

The Register of Historic Monuments was created in response to the 1987 amendment to the National Monuments Act. The Register consists of a list of archaeological monuments where, as part of the registration process, the owner of the monument must be notified in writing by registered post or by hand. There are no sites on the Register of Historic Monuments located within 1km of the study area.

##### **Record of Monuments and Places and previously unrecorded archaeological features/sites**



As far as are practicably possible efforts should be made to avoid impacting on the Zones of Notification of known archaeological monuments. Any groundworks located within the Zone of Notification of an archaeological monument will require notification to the Minister two months prior to any works proceeding. Groundworks that could impact on archaeological deposits associated with previously recorded archaeological sites will require archaeological mitigation in the form of archaeological testing and/or monitoring. Although the settings of archaeological sites are not formally protected in Irish legislation, most County Development Plans offer protection through their policies and/or objectives. There are fifty-nine recorded archaeological sites and monuments in the study area.

It should be noted that Part 2 Section 9 (1) of the Planning and Development Regulations 2001 relates to the policies of the relevant development plans, many of which extend protection to newly discovered archaeological sites. The National Monuments Act protects all archaeology, whether it is within an inventory or not. The National Monuments Service will usually require that efforts are made to identify previously unrecorded archaeological features prior to allowing works to proceed, including reviewing of historic mapping and aerial photography, and previous archaeological fieldwork in the vicinity of the proposed development etc.

#### 2.11.4.1.2. Architectural Heritage

##### **Architectural Conservation Areas (ACA)**

Unless it can be shown that the proposed development will not materially affect the character of Architectural Conservation Areas along the proposed alignment, then the development cannot proceed as exempted development. Material effects on character of architectural conservation areas must be avoided. There are no Architectural Conservation Areas in the vicinity of the study area

##### **Record of Protected Structures**

The carrying out of works to a protected structure, or a proposed protected structure, shall be exempted development only if those works would not materially affect the character of the structure, or any element of the structure which contributes to its special architectural, historical, archaeological, artistic, cultural, scientific, social or technical interest. Material effects on character of protected structures must be avoided. There are five protected structures within the study area.

In protecting these sites detailed work must be undertaken to interpret the curtilage of the protected structure and inventorise the features that contribute to the character of the site. For something like a canal lock this may include not only the canal walls and gates, but also bollards, canal gates, cobbled or paved surfaces, kerbings, enclosing walls, gates, cast iron anchors, etc. If any of these features may be affected by the proposed development and redesign to avoid these affects is not possible, a conservation assessment will have to be undertaken by a suitably qualified specialist. The assessment report will advise on best practice for the removal, storage, and reinstatement of any features to ensure that the proposed development does not affect the character of the protected structure.

##### **National Inventory of Architectural Heritage**

Although these structures have no formal protection in Irish legislation, they do form the basis of recommendations from the Minister to local authorities of site for consideration for inclusion in the Record of Protected Structures. Efforts should be made to avoid any direct physical impacts on NIAH sites. Should direct physical impacts be unavoidable then it is likely that a conservation architect will have to be appointed to undertake a condition survey and make recommendations on how best to proceed. There are nine sites listed in the NIAH within the study area.

##### **Demesne Landscapes & Historic Gardens**

Demesnes historically were the part of the manorial estate retained for its owner's own pleasure, use and occupation. By the 19th century they usually incorporated walled gardens, terraces, tree-lined avenues, ornamental woods, and water features. Demesnes currently have no general statutory protection however many county councils have stated policy objectives requiring their preservation. Efforts should be made to avoid any demesne features. Not all these features will have been inventoried and further work will be required should the development proceed (in advance of construction) to document demesne features in the vicinity of the proposed development. Where a house which is a protected structure has an associated demesne landscape or historic garden care must be taken to interpret the extent of the curtilage of the protected structure, which can cover a large geographical area. There are four designed landscapes/ demesnes within the study area.



## 2.12. Material Assets

### 2.12.1. Introduction

The meaning of material assets has not always been clear. In the EIA Directive 2011/92/EU it included architectural heritage and archaeological heritage. However, within the updated EIA Directive 2014/92/EU those heritage aspects are included as components of cultural heritage. Material assets can now be taken to mean built services and infrastructure. Traffic is included because in effect traffic consumes road infrastructure.

### 2.12.2. Methodology

A review of mapping was undertaken to determine the general road infrastructure located within the study area along with details collected from the transport modelling team assessing the scheme. Utility companies have also been contacted regarding utilities within the study area.

### 2.12.3. Identified Constraints

#### 2.12.3.1. Traffic and Transport

In addition to the primary traffic route, N25 (and N29 toward the southern extent of the study area), there are numerous third-class roads throughout the constraints study area which link the existing N25 and beyond. Maintaining such links which are of local importance should form a key consideration during the Route Selection stage.

The N25 forms a vital link in the national road network connecting Cork at one end to the port of Rosslare at the other end, with a link to Waterford City from the N25 between these locations. It provides access to 4 of the country's major ports, Cork, Waterford, New Ross and Rosslare. It also provides access to 2 airports, Cork and Waterford.

The village of Glenmore is adjacent to the existing N25 towards the northern end of the project extents. The project is positioned between two major bypass schemes around Waterford City and the town of New Ross. The N25 Waterford Bypass dual carriageway was officially opened on the 19th of October 2009 and the N25 New Ross Bypass dual carriageway was opened on the 29th of January 2020. Both Bypasses are of Dual Carriageway Standard.

The section of the national road network within the study area is rural in nature and is situated in County Kilkenny between the townland of Luffany in the south and Jamestown in the north. The extent of road under consideration predominantly consists of rural single carriageway with varying cross-section and standard of horizontal and vertical alignment geometry. The Annual Average Daily Traffic (AADT) along the road is just over 13,000.

The N25 road also forms part of the comprehensive TEN-T (Trans European Transport) network and as such is required to be of a motorway or expressway standard. The objective of TEN-T is to close gaps, remove bottlenecks and eliminate technical barriers that exist between the transport networks of EU Member States.

#### 2.12.3.2. Utilities

The following utilities have been identified within the study area:

- Gas;
- Electric;
- Water; and
- Telecommunications.

These types of utility are typical for the size and type of area under consideration. Detailed consultation will take place with the relevant utilities during Phase 3 Design and Environmental Evaluation. It is possible that the preferred route option may require some utilities to be diverted.

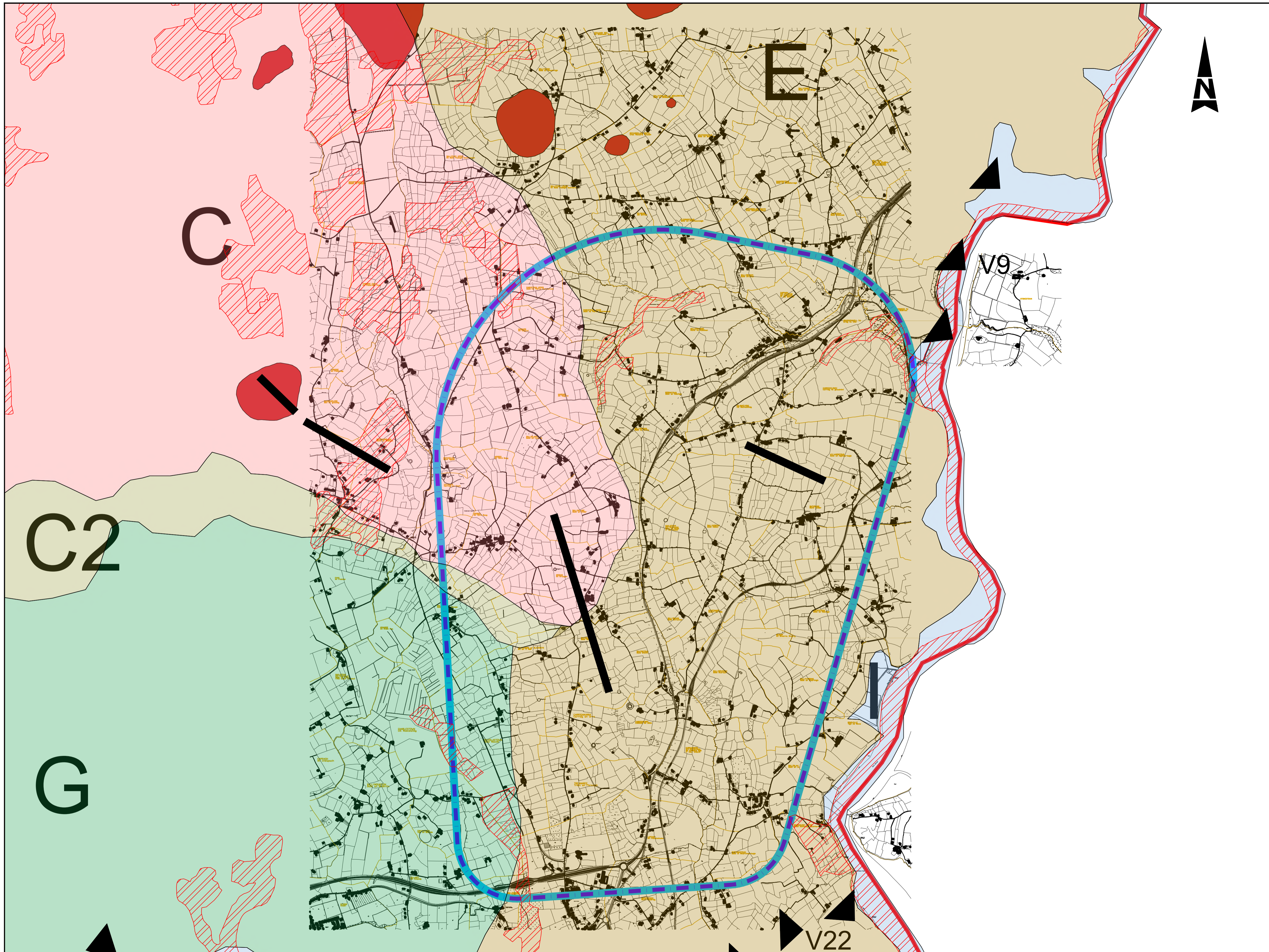
# Appendices



# Appendix A. Landscape Constraints Drawings

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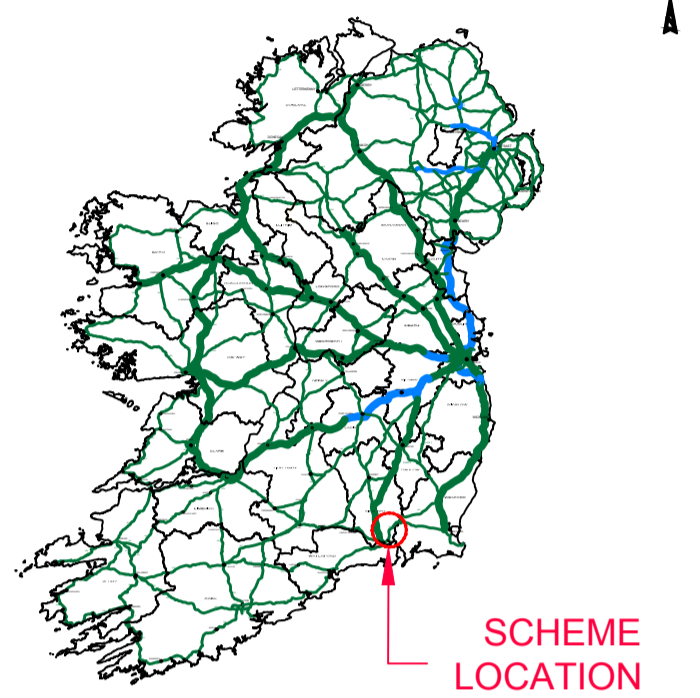
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KEY PLAN



LEGEND:

- | SYM.                    | DESCRIPTION   |
|-------------------------|---|
| [Red outline]           | COUNTY BOUNDARY   |
| [Blue dashed line]      | STUDY AREA  |
| LANDSCAPE CHARACTER     |   |
| [Pink]                  | LANDSCAPE CHARACTER AREA C- SOUTH WESTERN UPLANDS               |
| [Yellow]                | LANDSCAPE CHARACTER AREA E- SOUTH EASTERN UPLANDS               |
| [Green]                 | LANDSCAPE CHARACTER AREA G- SOUTH KILKENNY LOWLANDS             |
| [Light Green]           | LANDSCAPE CHARACTER AREA C2- SOUTH HILLS TRANSITION AREA, SOUTH |
| [Light Blue]            | LANDSCAPE CHARACTER AREA I- BARROW VALLEY                       |
| PROTECTED VIEWS         |   |
| [Black triangle]        | PROTECTED VIEWS KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020      |
| LANDSCAPE SENSITIVITIES |   |
| [Red hatched]           | ALTITUDE ABOVE 200 M  |
| [Black line]            | PRINCIPAL RIDGELINE   |
| [Red hatched]           | SENSITIVE LANDCOVER CORINE 2006                                 |

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 V9- VIEW TO THE SOUTH EAST OVER THE BARROW VALLEY, SOUTH OF NEW ROSS ON THE L57512 BETWEEN THE JUNCTIONS WITH ROAD NUMBERS LP3432 AND THE N25.

Purpose ENVIRONMENTAL CONSTRAINTS REPORT

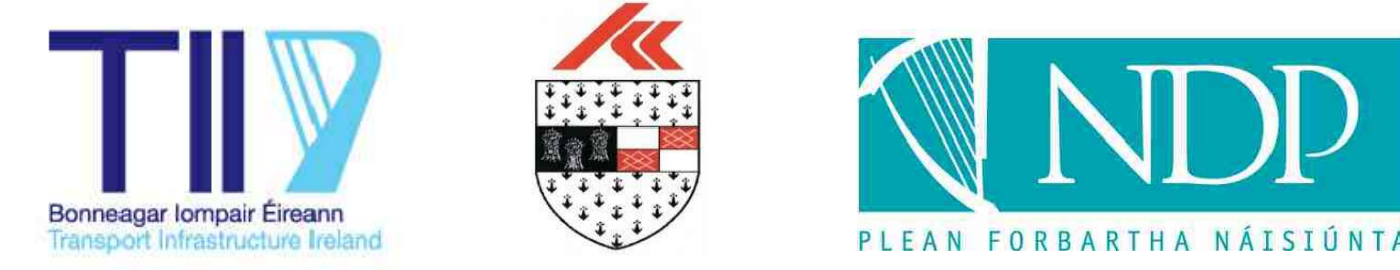
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Client KILKENNY COUNTY COUNCIL

Project N25 WATERFORD TO GLENMORE SCHEME

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Status	P	Drawing Number	5190130-ATK-ZZ-ZZ-DR-LA-0001	Date	05/09/19	Date	05/09/19
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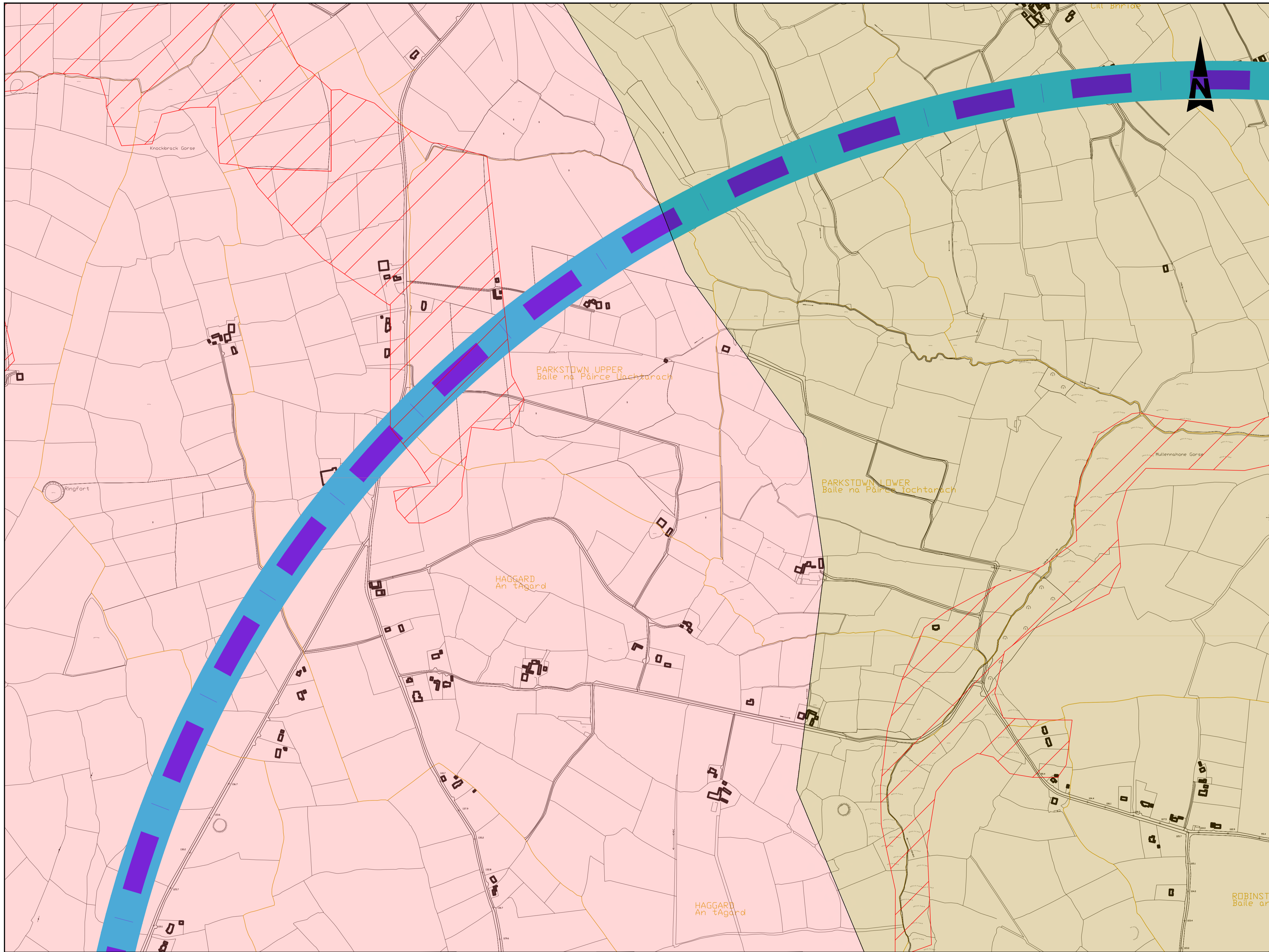
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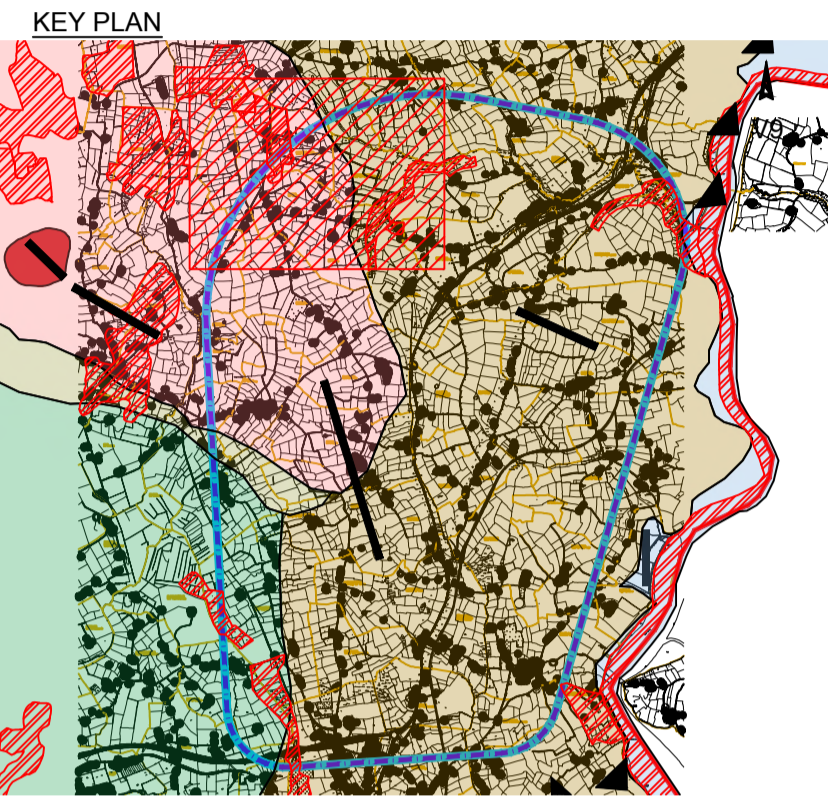
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- PROTECTED VIEWS**
- PROTECTED VIEWS KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020
- LANDSCAPE SENSITIVITIES**
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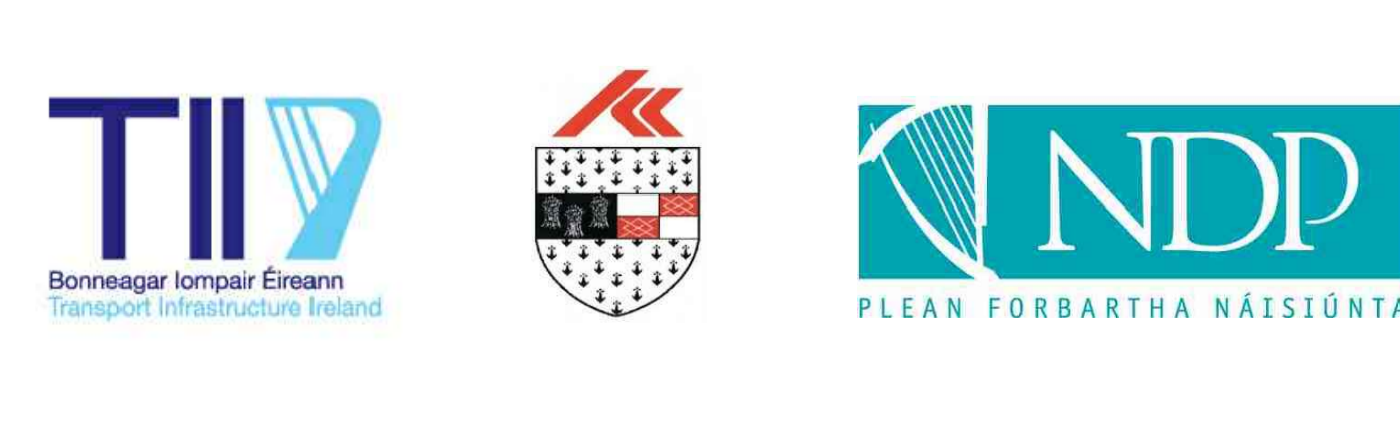
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**N25 WATERFORD TO GLENMORE SCHEME**

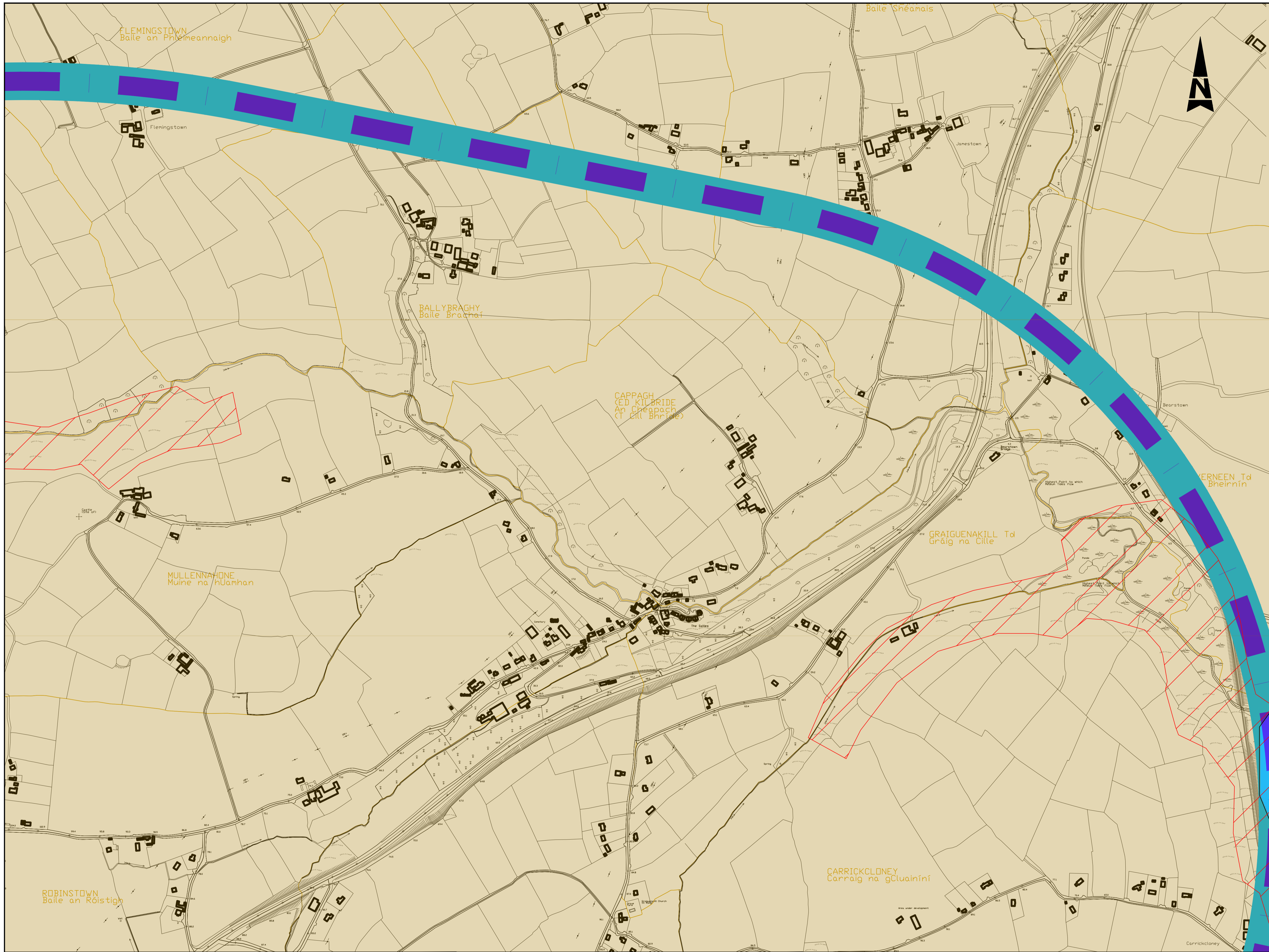
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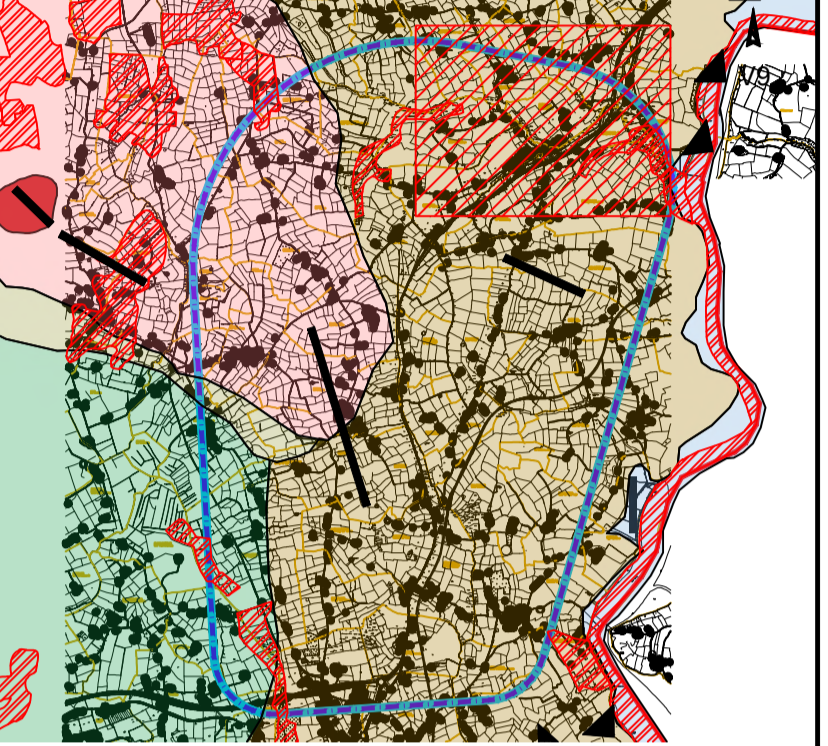
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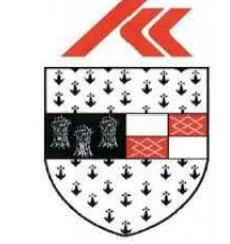
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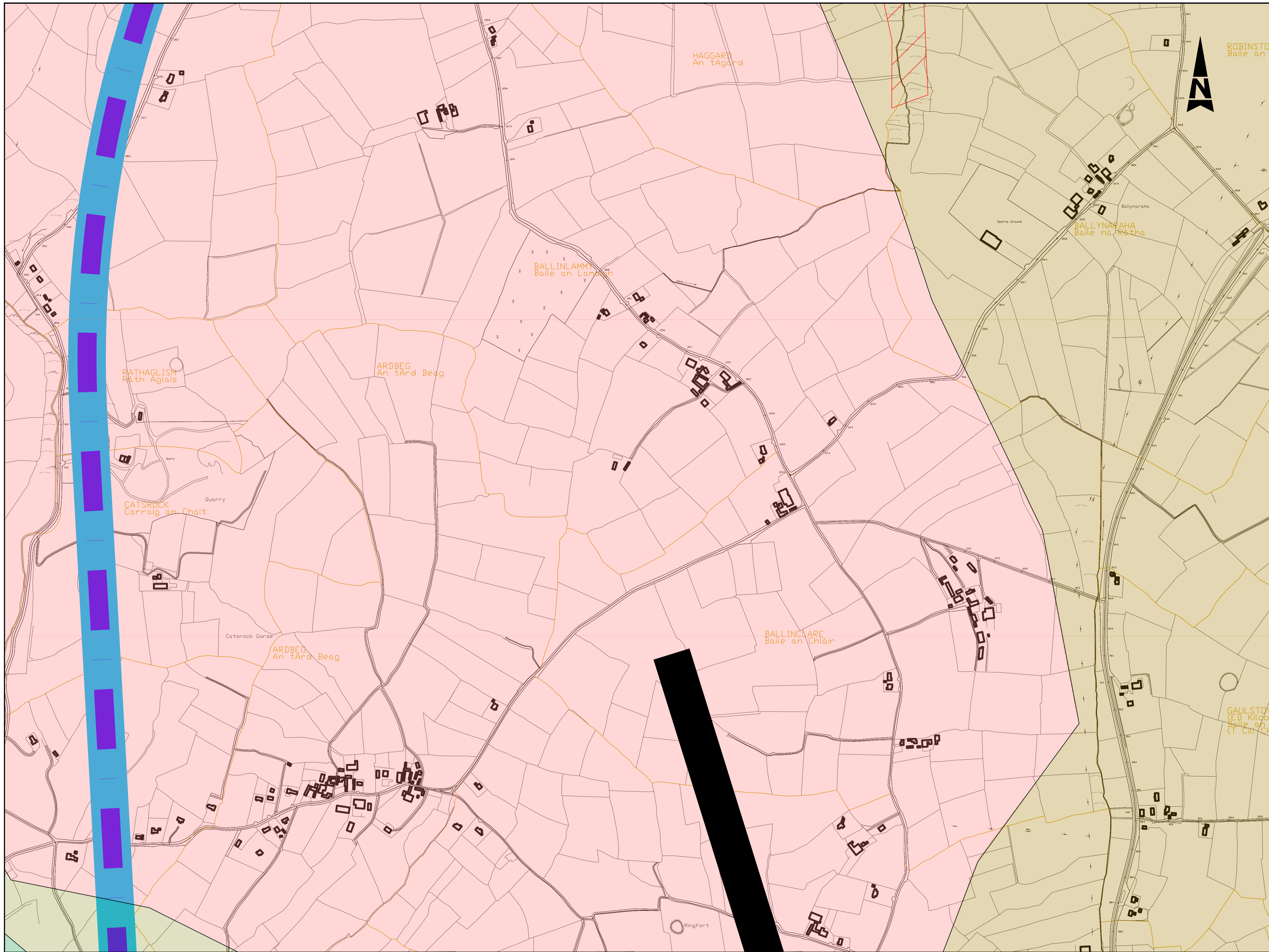
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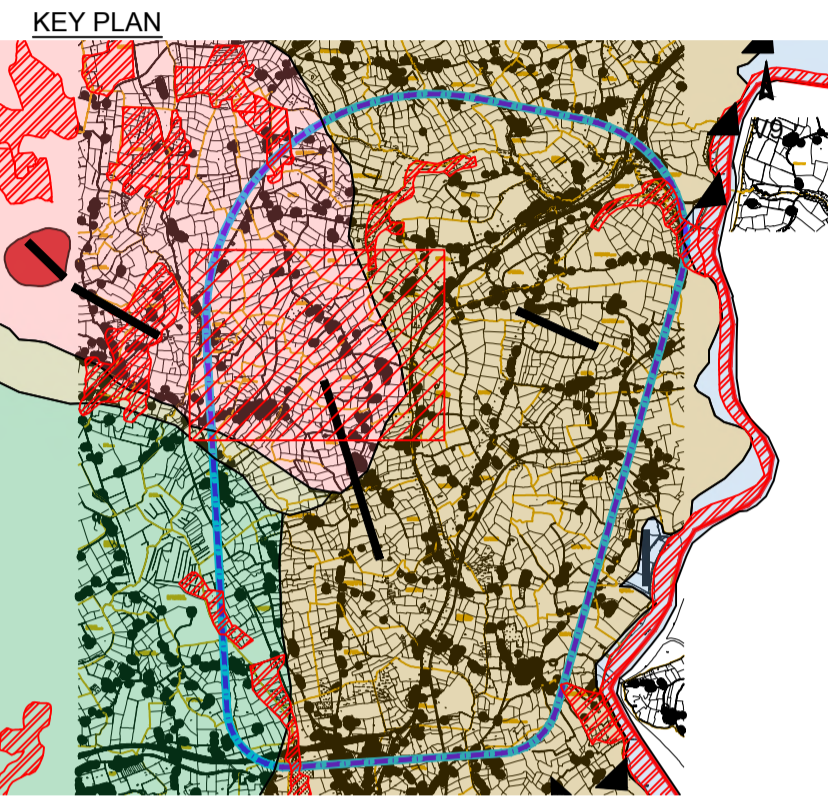


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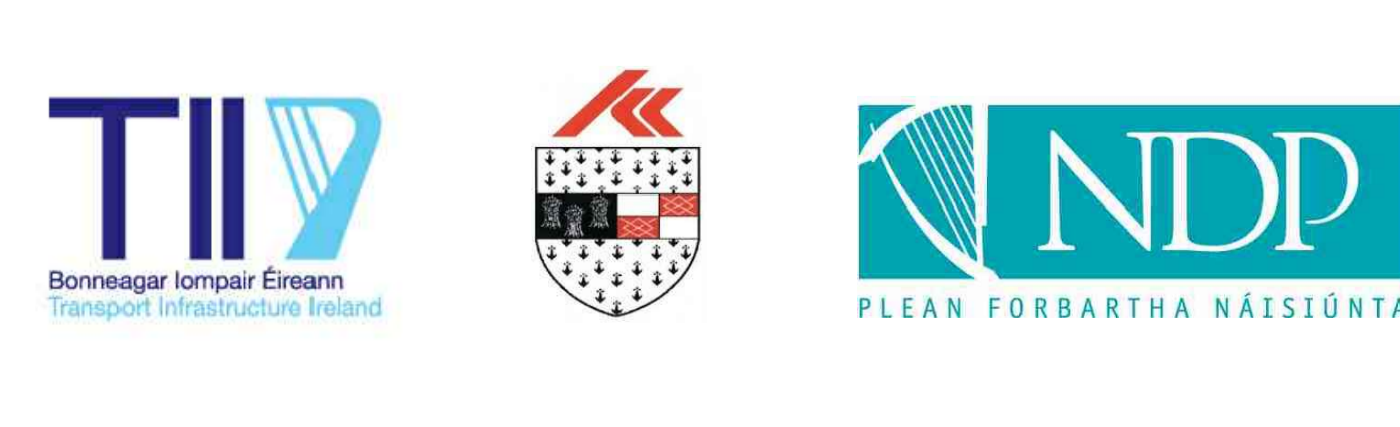
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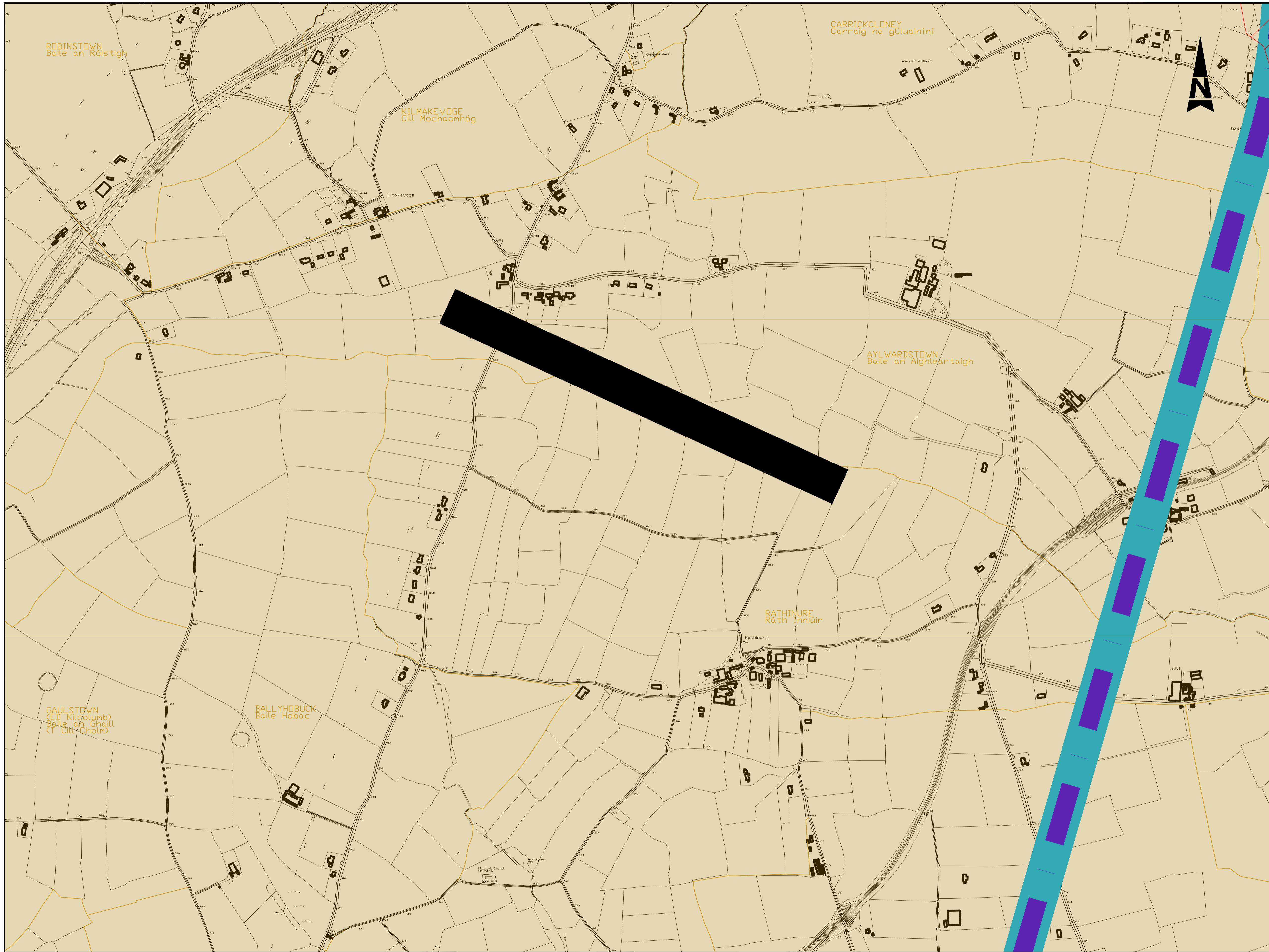
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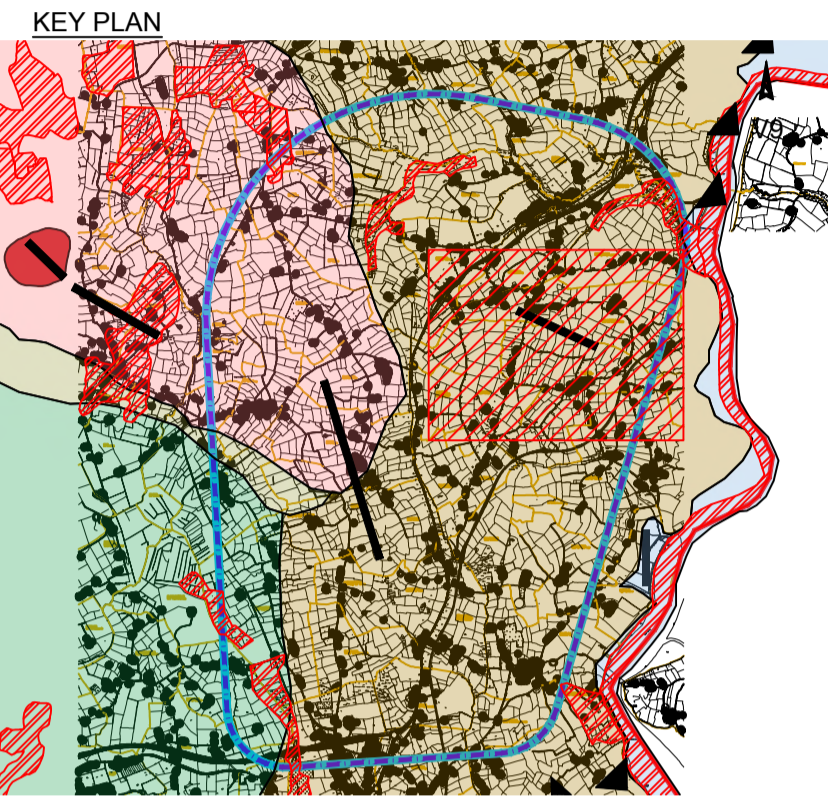
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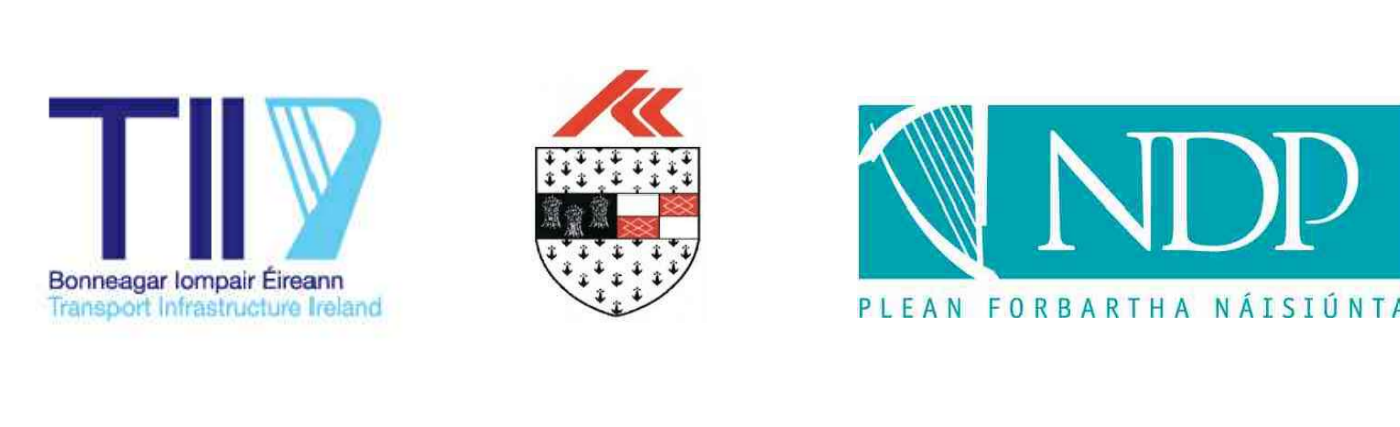
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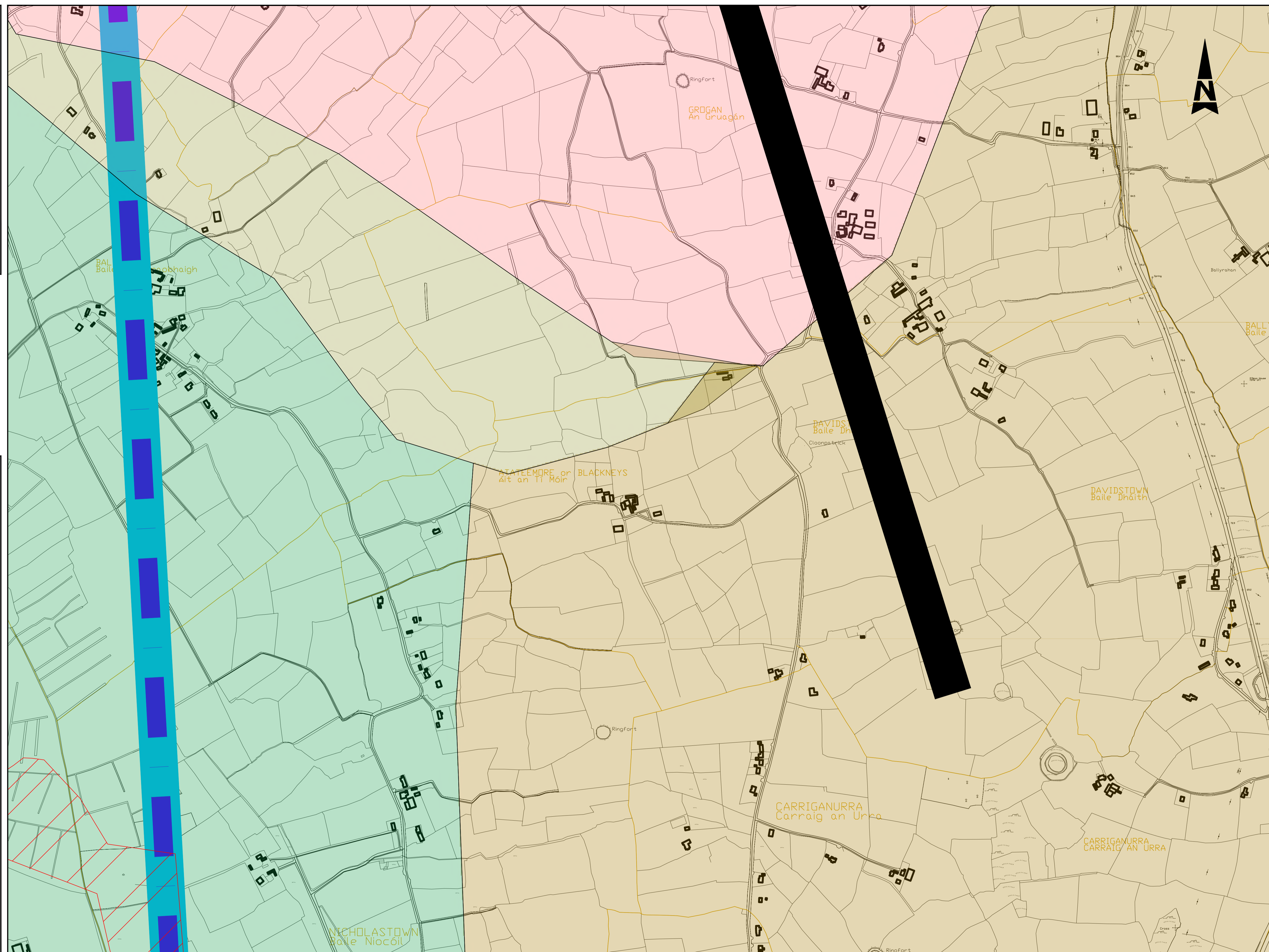
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5. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATION

**KEY PLAN**

**LEGEND:**

SYM DESCRIPTION

- COUNTY BOUNDARY
- STUDY AREA

**LANDSCAPE CHARACTER**

- LANDSCAPE CHARACTER AREA C- SOUTH WESTERN UPLANDS
- LANDSCAPE CHARACTER AREA E- SOUTH EASTERN UPLANDS
- LANDSCAPE CHARACTER AREA G- SOUTH KILKENNY LOWLANDS
- LANDSCAPE CHARACTER AREA C2- SOUTH HILLS TRANSITION AREA, SOUTH
- LANDSCAPE CHARACTER AREA I- BARROW VALLEY

**PROTECTED VIEWS**

- ▲ PROTECTED VIEWS KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020

**LANDSCAPE SENSITIVITIES**

- ALTITUDE ABOVE 200 M
- PRINCIPAL RIDGELINE
- SENSITIVE LANDCOVER CORINE 2006

**NOTES:**

LANDSCAPE CHARACTER AREAS SHOWN HAVE BEEN TAKEN FROM THE KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020, LANDSCAPE CHARACTER ASSESSMENT.

LANDSCAPE SENSITIVITIES, KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020, SENSITIVE LANDCOVER, CORINE SURVEY 2006, PRINCIPAL RIDGELINES, LAND OVER 200M ALTITUDE. NOTE: LANDSCAPE SENSITIVITIES AND LANDSCAPE CHARACTER AREAS DO NOT DENOTE ANY LINE ON THE GROUND.

PROTECTED VIEWS, KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020:  
 V22- VIEWS SOUTHWEST OVER THE RIVER SUIR AT GRANNAGH CASTLE TO THE COMERAGHS.  
 V9- VIEW TO THE SOUTH EAST OVER THE BARROW VALLEY, SOUTH OF NEW ROSS ON THE L5752 BETWEEN THE JUNCTIONS WITH ROAD NUMBERS LP3432 AND THE N25.

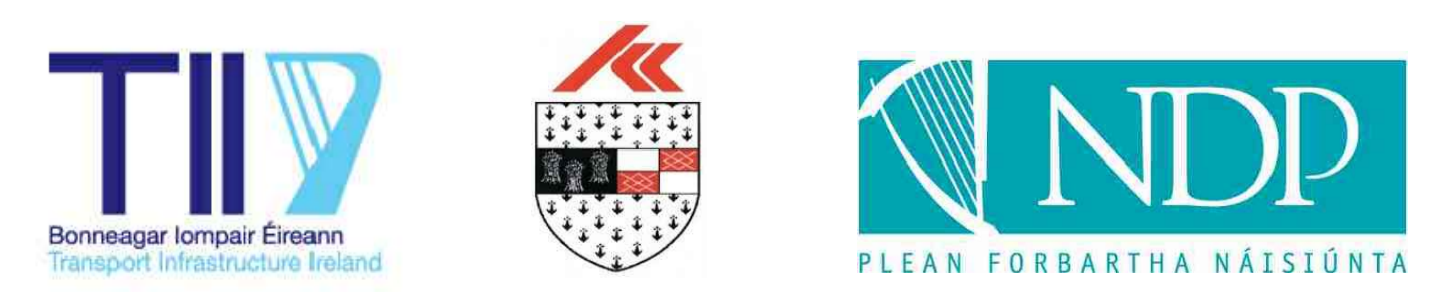
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Purpose ENVIRONMENTAL CONSTRAINTS REPORT

Title SHEET 5 OF 8

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Rev	Description	By	Date	Chk'd	Auth

**ATKINS**  
Member of the SNC-Lavalin Group

Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 K5W4  
Tel (+353) 01 810 8000  
email: info.ie@atkinsglobal.com  
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Unit 2B, 2200 Cork Airport Business Park, Cork, T12 R279  
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1<sup>st</sup> Floor Technology House Parkmore Technology Park, Galway, H91 NXV4  
Tel (+353) 091 788 050

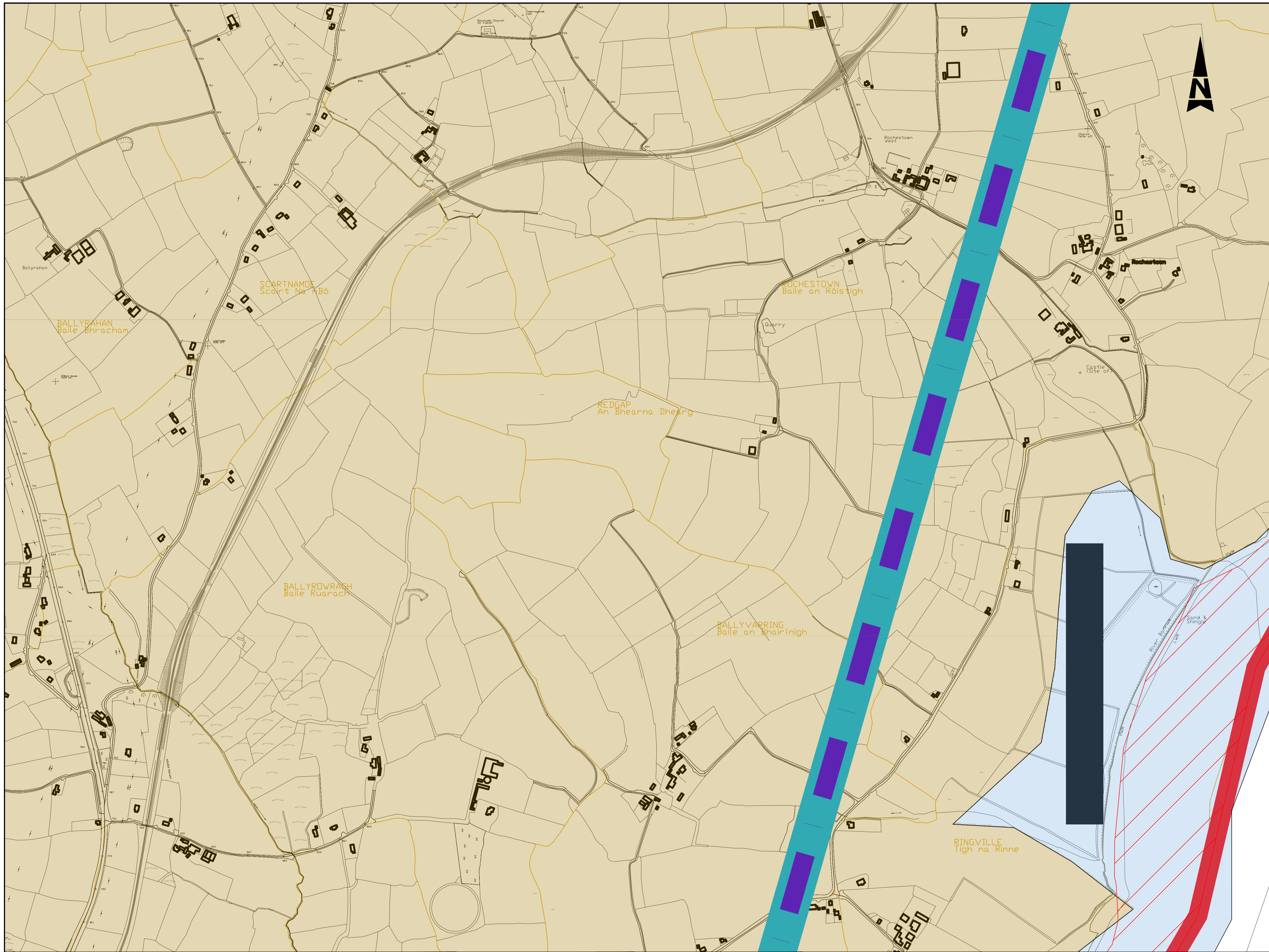
Client  
**KILKENNY COUNTY COUNCIL**

Project  
**N25 WATERFORD TO GLENMORE SCHEME**

Original Scale	1:5000	Des/Drawn	JW	Checked	EB	Authorised	EB
Date	5/9/2019	Date	5/9/2019	Date	5/9/2019	Date	5/9/2019
Status	P	Drawing Number	5190130-ATK-ZZ-ZZ-DR-LA-0006	Rev	1		

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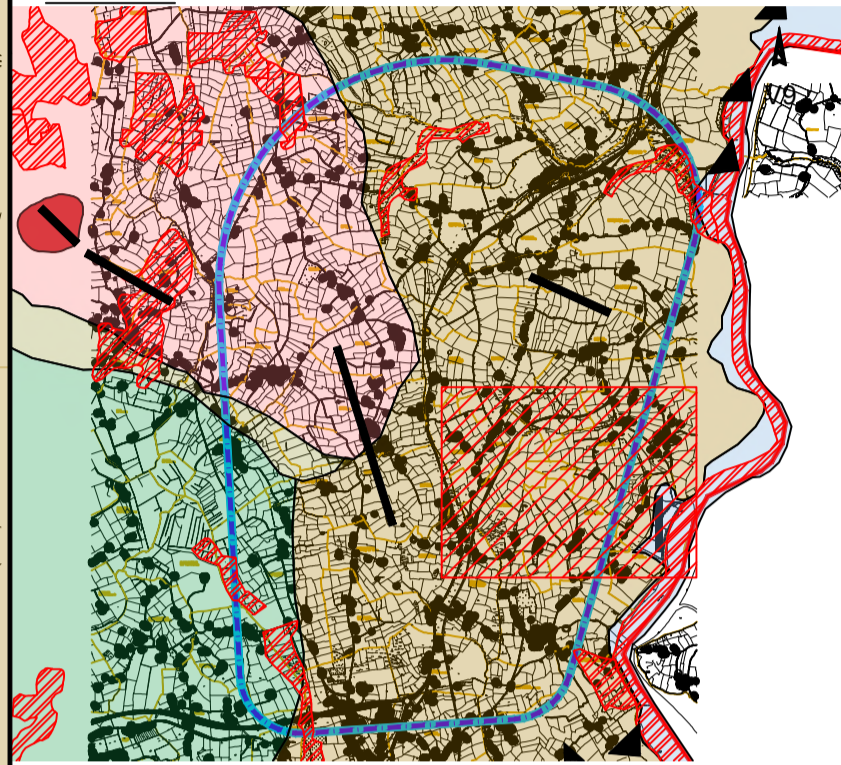
DO NOT SCALE



GENERAL NOTES

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KEY PLAN



LEGEND:

- SYM DESCRIPTION
- COUNTY BOUNDARY
  - STUDY AREA
- LANDSCAPE CHARACTER
- LANDSCAPE CHARACTER AREA C- SOUTH WESTERN UPLANDS
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- PROTECTED VIEWS
- PROTECTED VIEWS KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020
- LANDSCAPE SENSITIVITIES
- ALTITUDE ABOVE 200 M
  - PRINCIPAL RIDGELINE
  - SENSITIVE LANDCOVER CORINE 2006

NOTES:

LANDSCAPE CHARACTER AREAS SHOWN HAVE BEEN TAKEN FROM THE KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020. LANDSCAPE CHARACTER ASSESSMENT.

LANDSCAPE SENSITIVITIES, KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020: SENSITIVE LANDCOVER, CORINE SURVEY 2006, PRINCIPAL RIDGELINES, LAND COVER 200M ALTITUDE. NOTE: LANDSCAPE SENSITIVITIES AND LANDSCAPE CHARACTER AREAS DO NOT DENOTE ANY LINE ON THE GROUND.

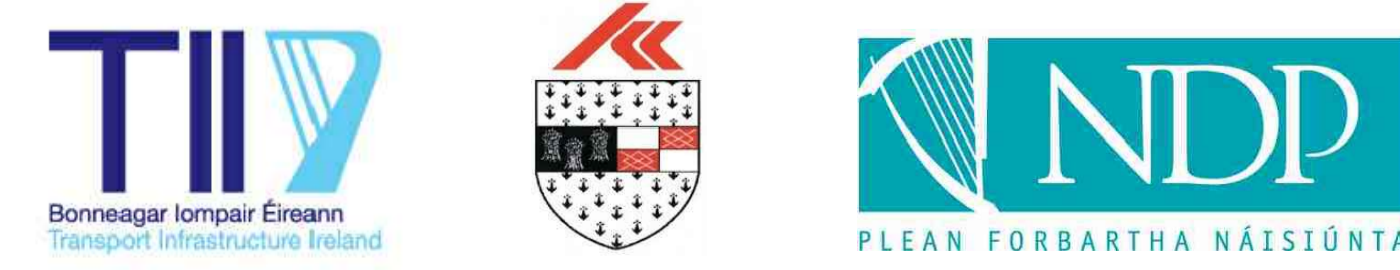
PROTECTED VIEWS, KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020:  
 V22- VIEWS SOUTHWEST OVER THE RIVER SUIR AT GRANNAGH CASTLE TO THE COMERAGHS.  
 V9- VIEW TO THE SOUTH EAST OVER THE BARROW VALLEY, SOUTH OF NEW ROSS ON THE L5712 BETWEEN THE JUNCTIONS WITH ROAD NUMBERS LP3432 AND THE N25.

THIS DRAWING HAS BEEN PRODUCED BY EAMONN BYRNE LANDSCAPE ARCHITECTS LTD IN RELATION TO THE N25 WATERFORD TO GLENMORE SCHEME. EAMONN BYRNE LANDSCAPE ARCHITECTS LTD ARE SUB-CONSULTANT TO ATKINS ON THE SCHEME.

Purpose ENVIRONMENTAL CONSTRAINTS REPORT

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**ATKINS**  
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Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 K5W4  
Tel (+353) 01 810 8000  
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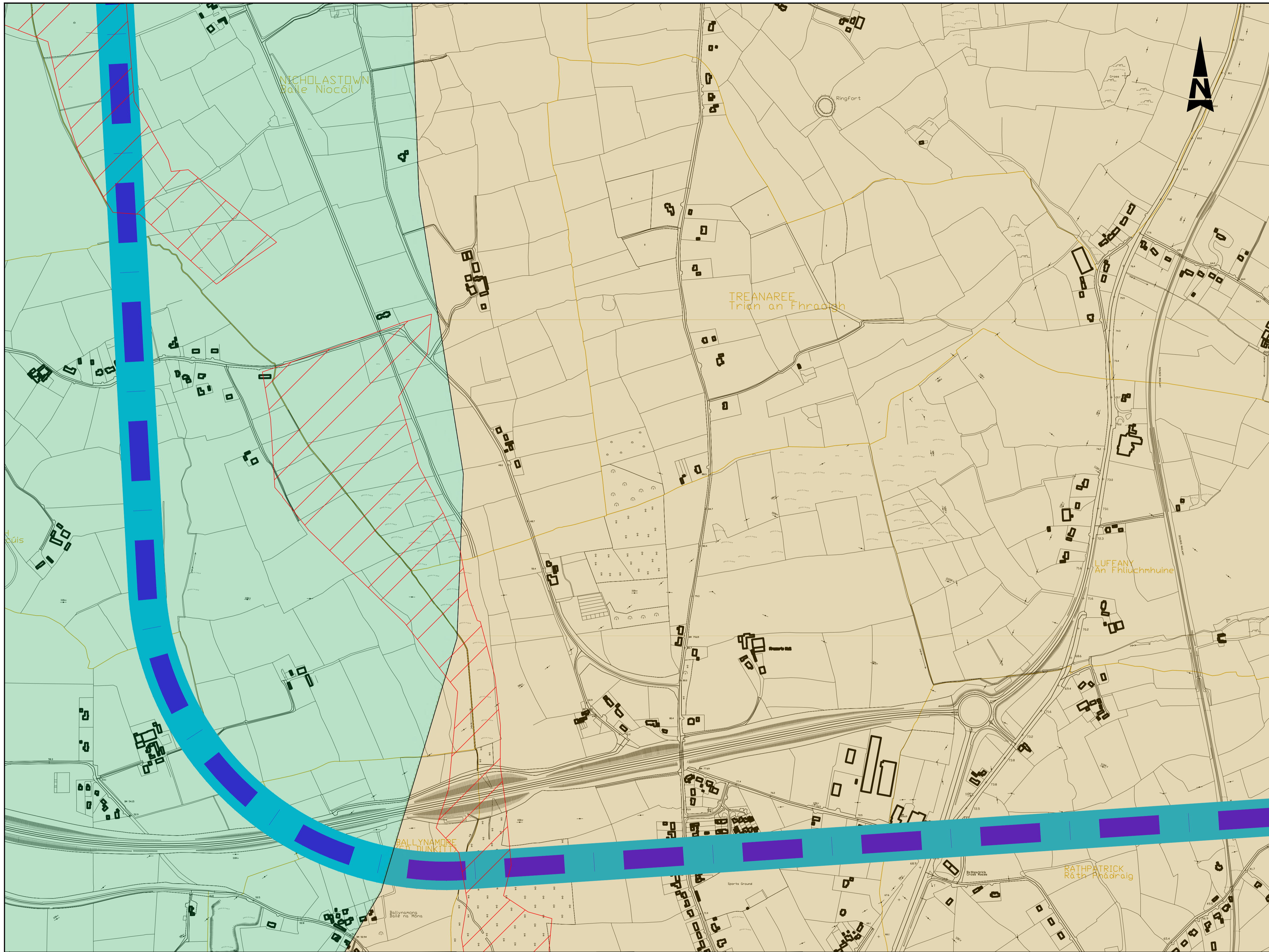
1<sup>st</sup> Floor Technology House Parkmore Technology Park, Galway, H91 NX14  
Tel (+353) 091 788 050

Client	KILKENNY COUNTY COUNCIL		
Project	N25 WATERFORD TO GLENMORE SCHEME		

Title	SHEET 6 OF 8		
Original Scale	1:5000	Des/Drawn	JW
Status	P	Checked	EB
Drawing Number	5190130-ATK-ZZ-ZZ-DR-LA-0007	Authorised	EB
Rev	1	Date	5/9/2019

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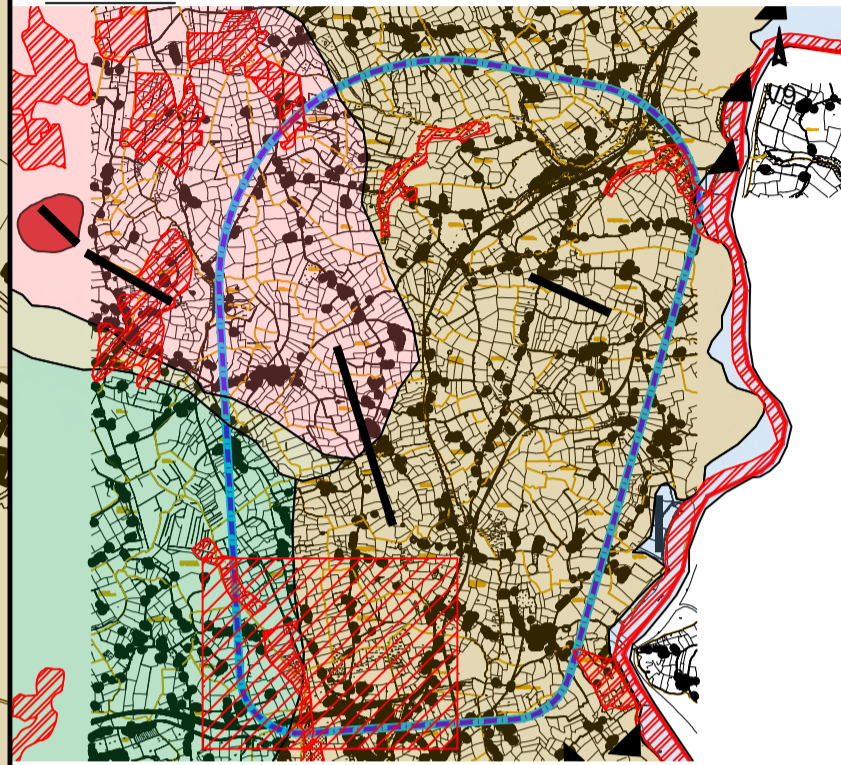
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KEY PLAN



LEGEND:

- SYM DESCRIPTION
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- PROTECTED VIEWS KILKENNY COUNTY DEVELOPMENT PLAN 2014-2020
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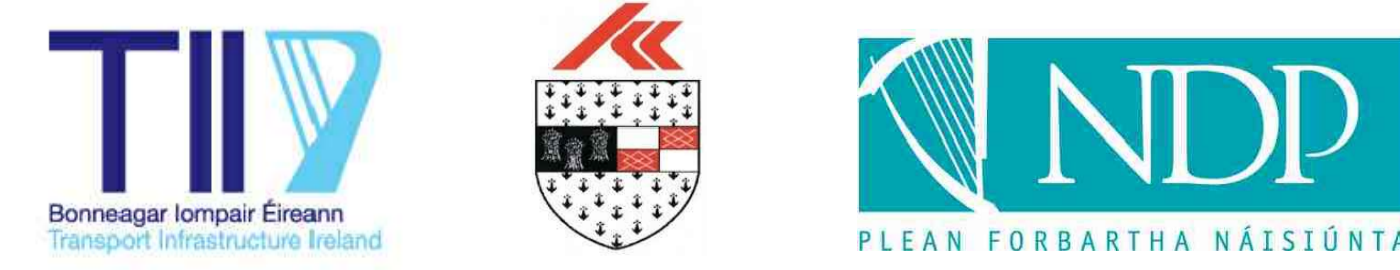
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Purpose ENVIRONMENTAL CONSTRAINTS REPORT

Title SHEET 7 OF 8

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Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 K5W4  
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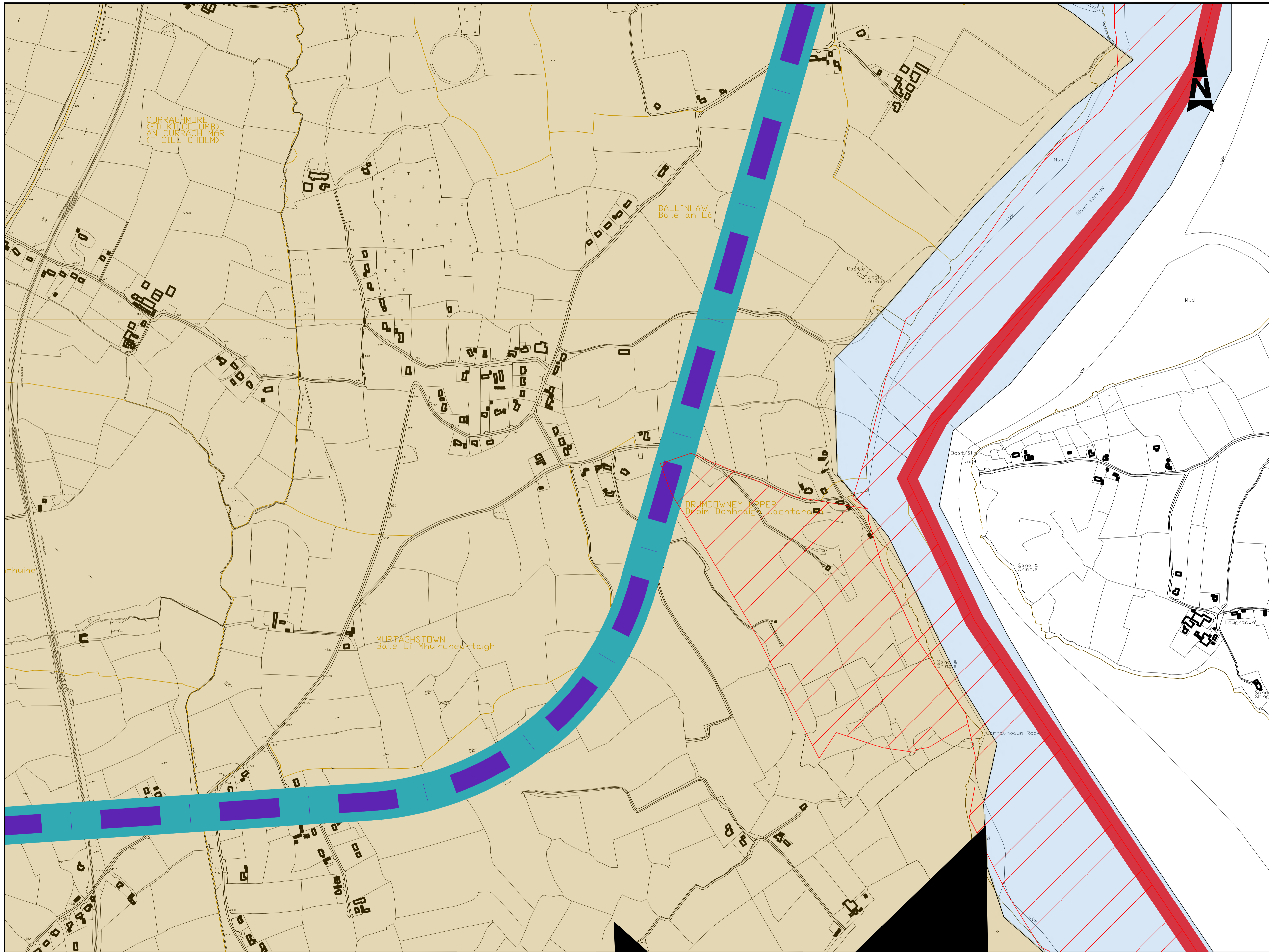
Client  
**KILKENNY COUNTY COUNCIL**

Project  
**N25 WATERFORD TO GLENMORE SCHEME**

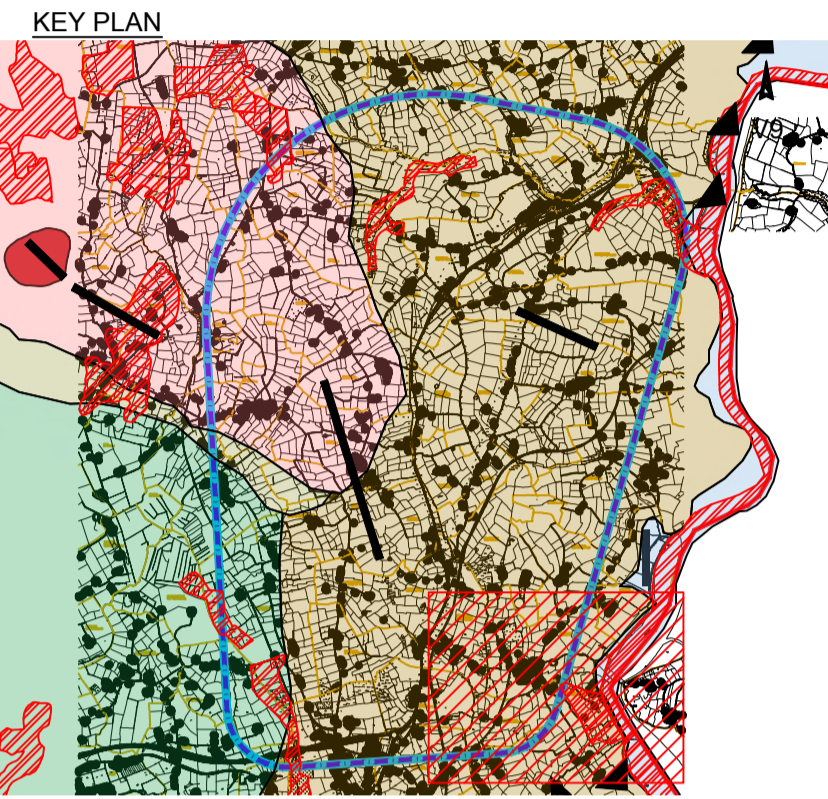
Original Scale	1:5000	Des/Drawn	JW	Checked	EB	Authorised	EB
Date	5/9/2019	Date	5/9/2019	Date	5/9/2019	Date	5/9/2019
Status	P	Drawing Number	5190130-ATK-ZZ-ZZ-DR-LA-0008	Rev	1		

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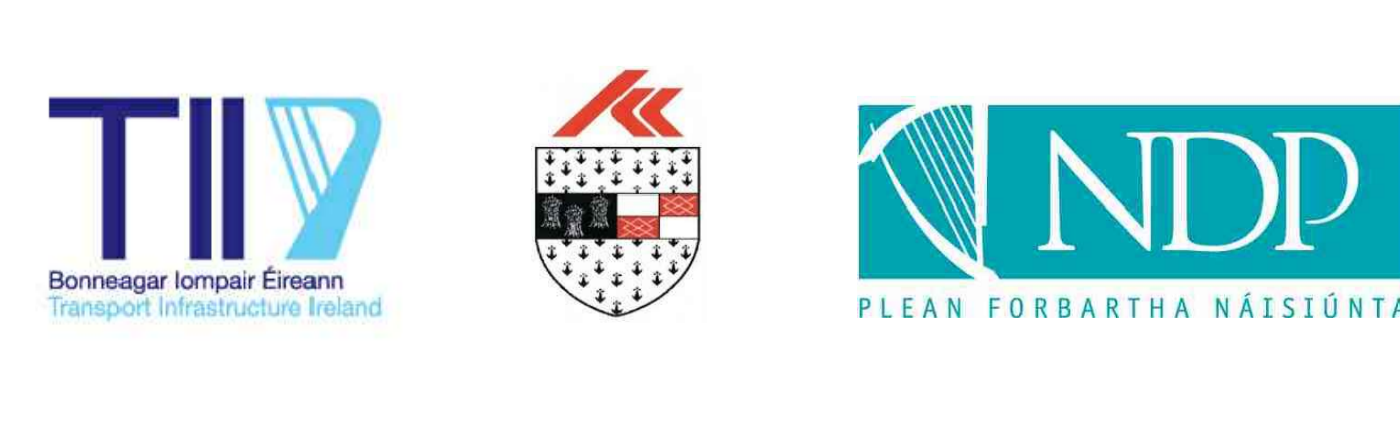
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Atkins House, 150 Airside Business Park, Swords, Co. Dublin, K67 K5W4  
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Client  
**KILKENNY COUNTY COUNCIL**

Project  
**N25 WATERFORD TO GLENMORE SCHEME**

Purpose **ENVIRONMENTAL CONSTRAINTS REPORT**

Title **SHEET 8 OF 8**

Original Scale	Des/Drawn	Checked	Authorised
1:5000	JW	EB	EB
Status	Date	Date	Date
P	5/9/2019	5/9/2019	5/9/2019
Drawing Number	Rev		
5190130-ATK-ZZ-ZZ-DR-LA-0009	1		

Michael McLarnon  
**Atkins Limited**  
michael.mclarnon@atkinsglobal.com

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