

## Background, Timeline and Public Consultation Process

### INTRODUCTION

Tipperary County Council (TCC), as the Lead Authority, in partnership with the Office of Public Works (OPW), are now advancing with the Knocklofty Flood Relief Scheme, which forms part of the Tipperary Bundle 1 Flood Relief Scheme. Tipperary County Council have commissioned Ayesa (formerly ByrneLooby) to develop and implement a Flood Relief Scheme for Knocklofty. The OPW is funding the project.

### DESIGN STANDARD

The design Standard of Protection (SoP) sought for the Knocklofty Flood Relief Scheme (FRS) is the 1% annual exceedance probability (AEP) event. This can be thought of as a flood with a magnitude such that it has a 1% chance of occurring in any given year and is sometimes referred to as the 100-year flood.

The scheme has also been assessed for resistance/adaption to climate change for flood events that are greater than the design flood event.

### Public Consultation

The first Public Engagement Event (PEE) was held online from November 8<sup>th</sup> – December 6<sup>th</sup> 2021. The objective was to make stakeholders and the public aware of the project, to provide an opportunity for early engagement and to get feedback on the flooding, environmental and other issues that concerned them.

### OPTIONS SELECTION

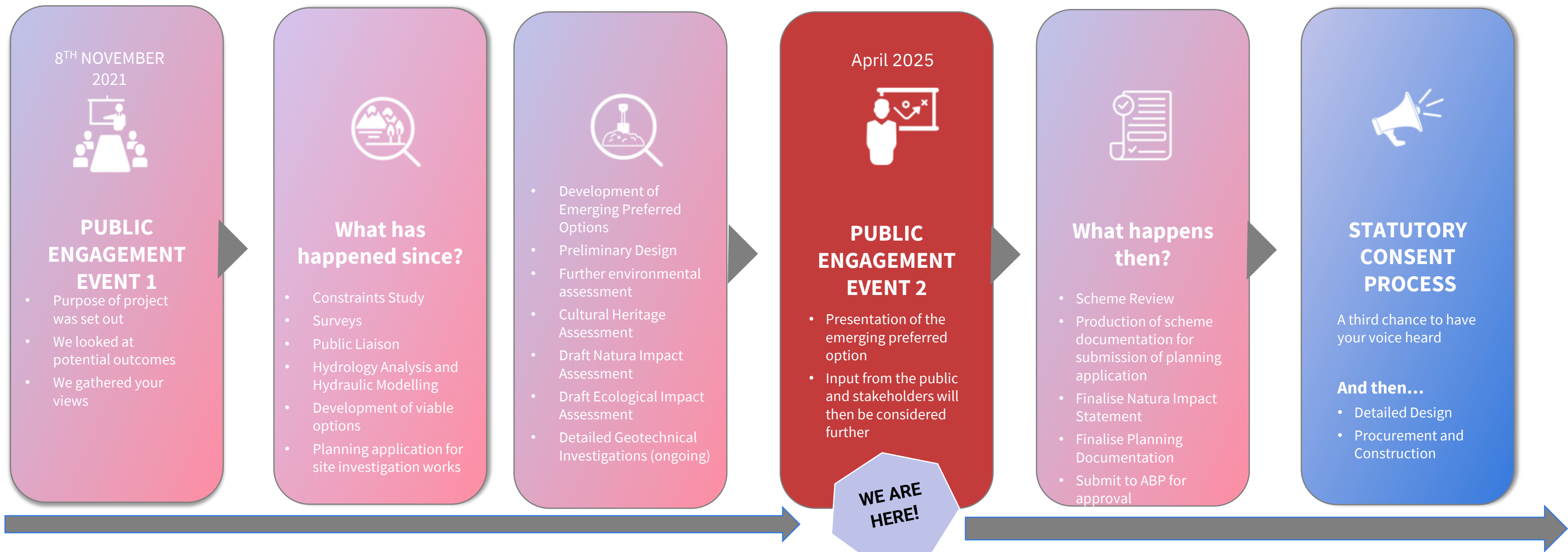
Options were assessed under the following criteria:

- Technical
- Economic
- Social
- Environmental

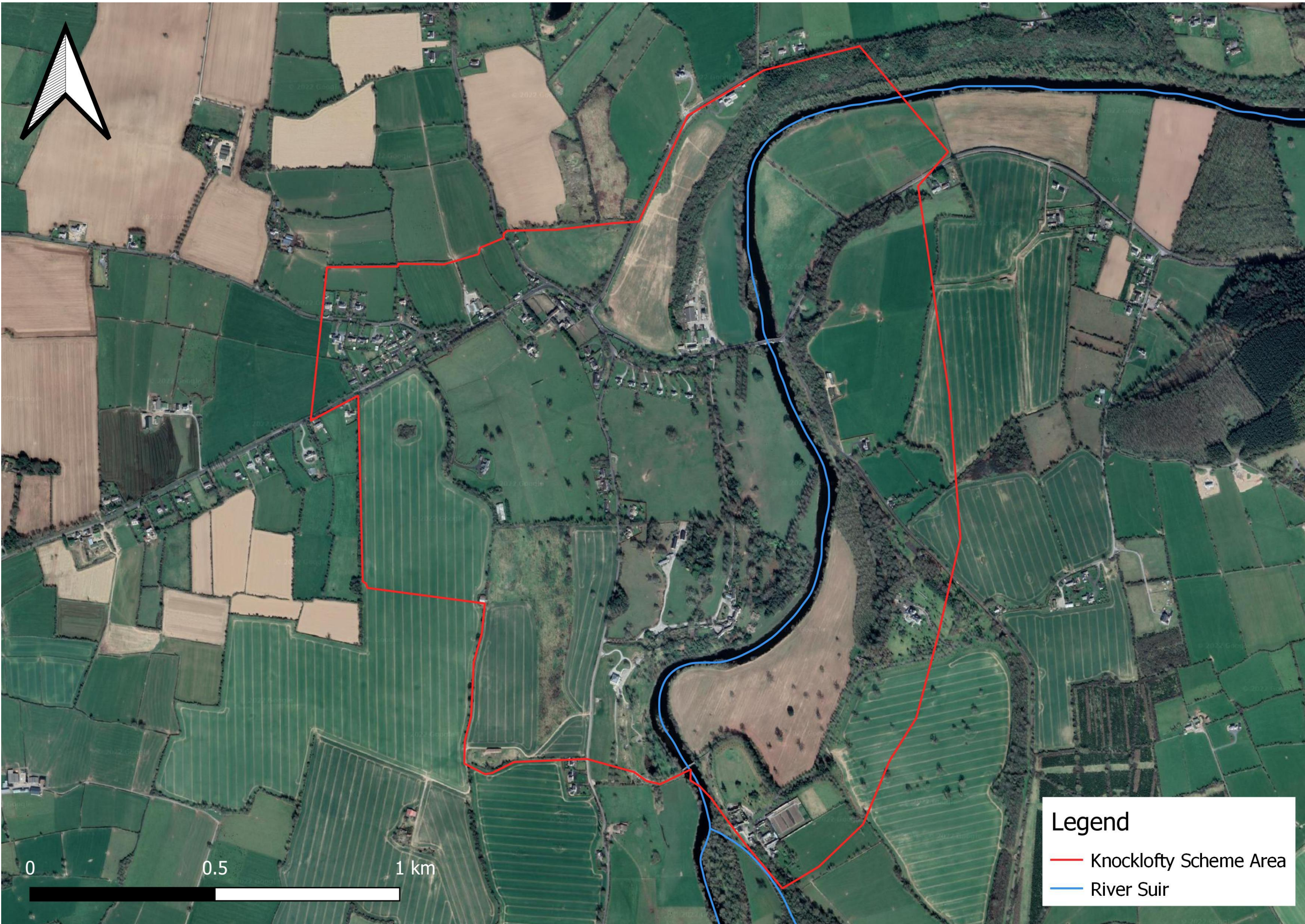
The emerging preferred option, which is being prepared for statutory approval, is OPTION 1 – Earthen embankment and drainage upgrades. The following posters present the detail of this preferred option.

### STAGES & TIMELINES

The diagram below outlines the steps in Stages 1-2 that lead up to the statutory approval for the scheme. Once this is obtained, the detailed design will begin, and a construction contractor will then be procured to build the scheme. The timeline for the entire project is also shown below.



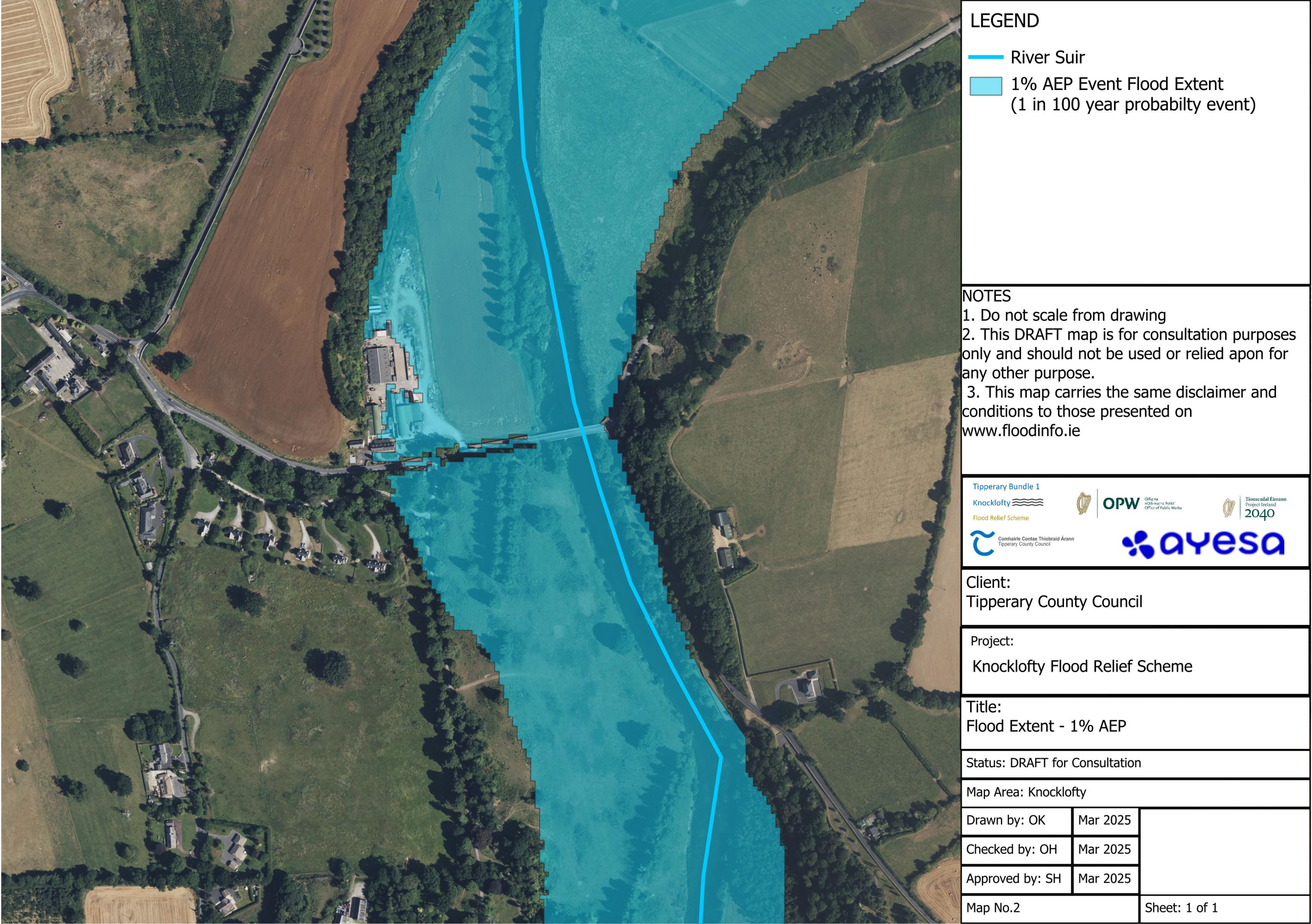
	2021	2022	2023	2024	2025	2026	2027	2028	2029
Stage 1	Scheme Assessment, Development and Design								
Stage 2	Planning/ Development Consent Part 8								
Stage 3	Detailed Construction Design and Tender								
Stage 4	Construction Supervision								
Stage 5	Handover of Works								



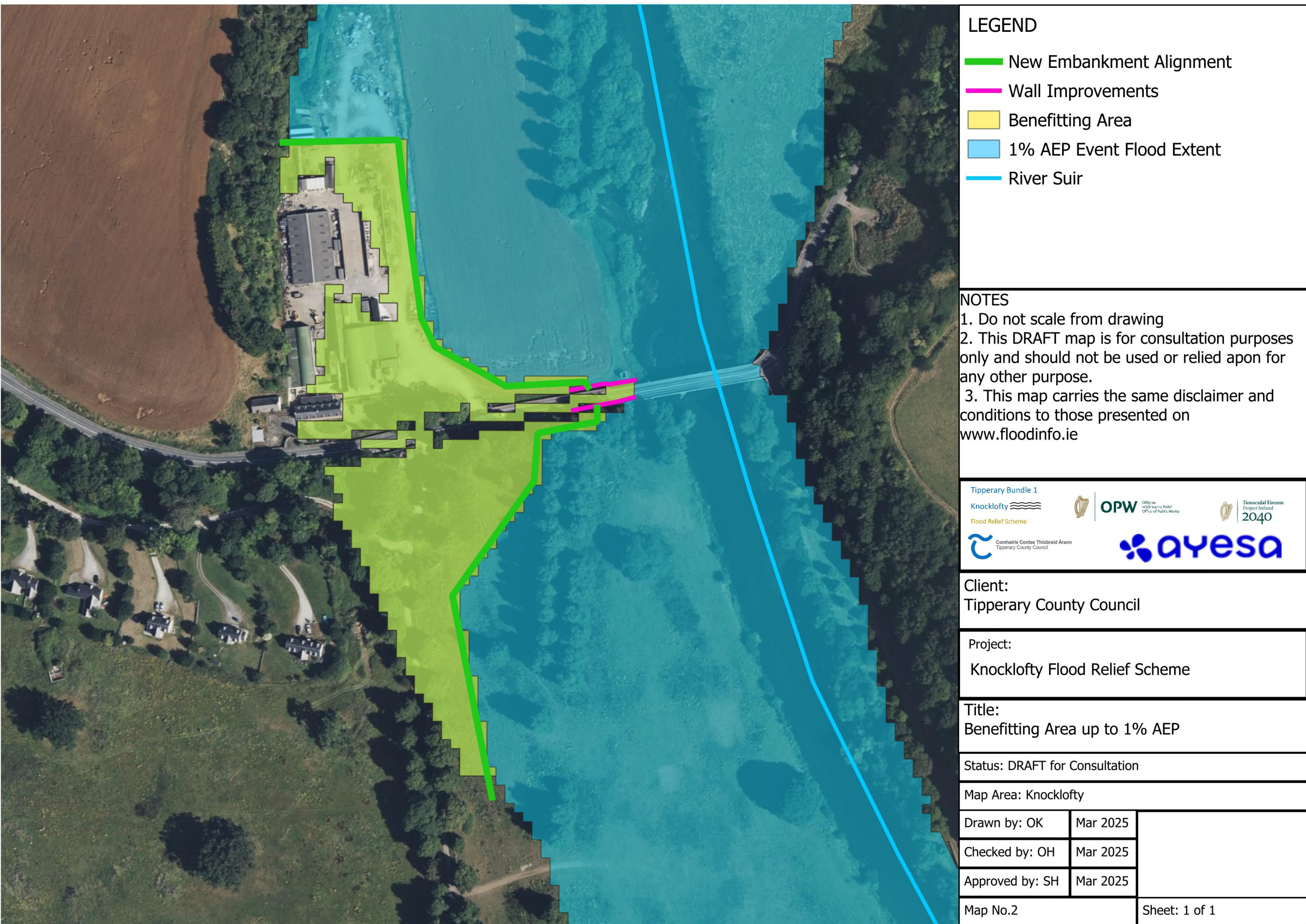


# Knocklofty Flood Relief Scheme

## Flood Extent Mapping



## Defended Benefitting Area





# Knocklofty Flood Relief Scheme

The development of the emerging option was informed by a Constraints Study, Public Consultation, stakeholders, multi-criteria assessment, an environmental appraisal (incl. climate change implications).

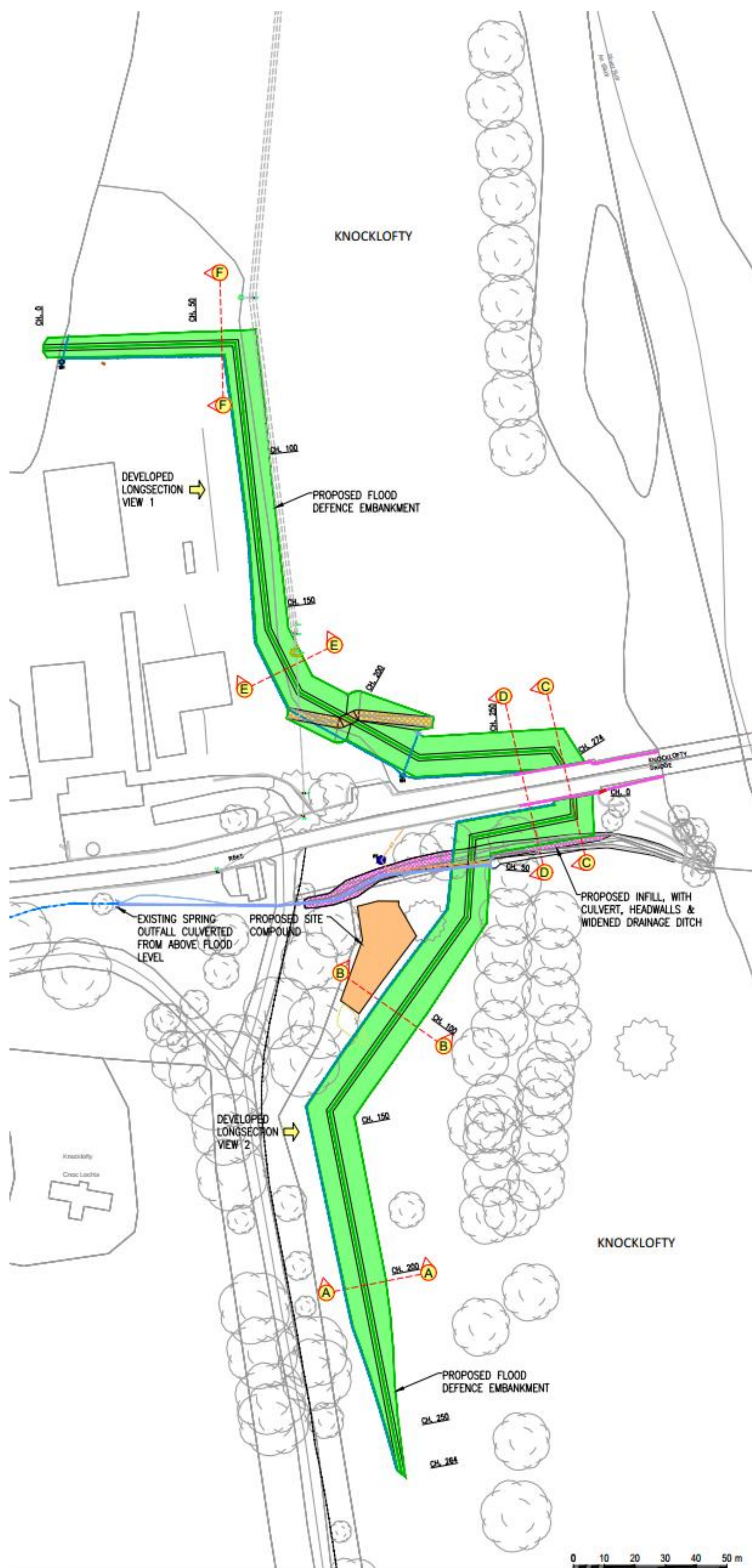
The preferred option for Knocklofty includes the construction of a flood defence embankment which will act in combination with proposed stormwater drainage, pumping systems and culverting drains (See Board 5) to provide protection against a 1% Annual Exceedance Probability (AEP) event (a 1 in 100-year flood event). The preferred option was designed to protect Knocklofty from anticipated flood levels calculated from hydraulic model and climate change runs.

The earthen embankment is 538m in total length, 13m maximum width with a maximum height of circa 2.5m. A new vehicular access road will be constructed, respecting and maintaining the exiting field boundaries. Minor grading of the land will be required to provide safe access. Cross-sections highlighted on the drawing are displayed on Board 4.

The source of material imported for the construction of the earthen embankments will be carefully considered, with appropriate due diligence undertaken to ensure that the spread of invasive species and/or contamination is not being facilitated.

## LEGEND:

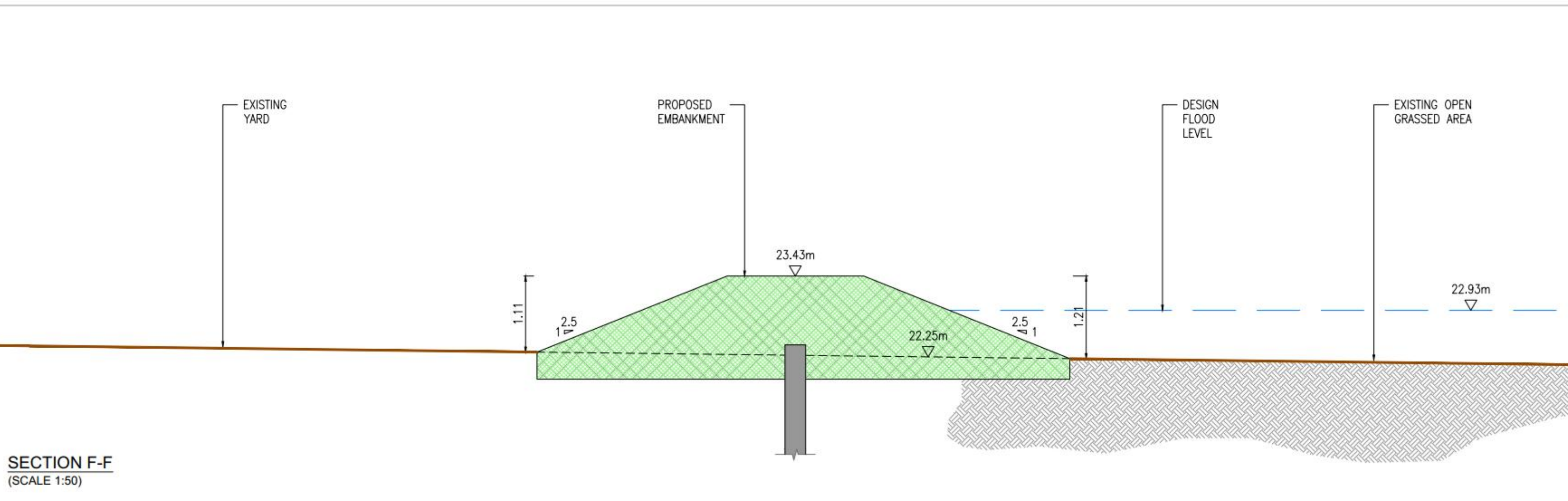
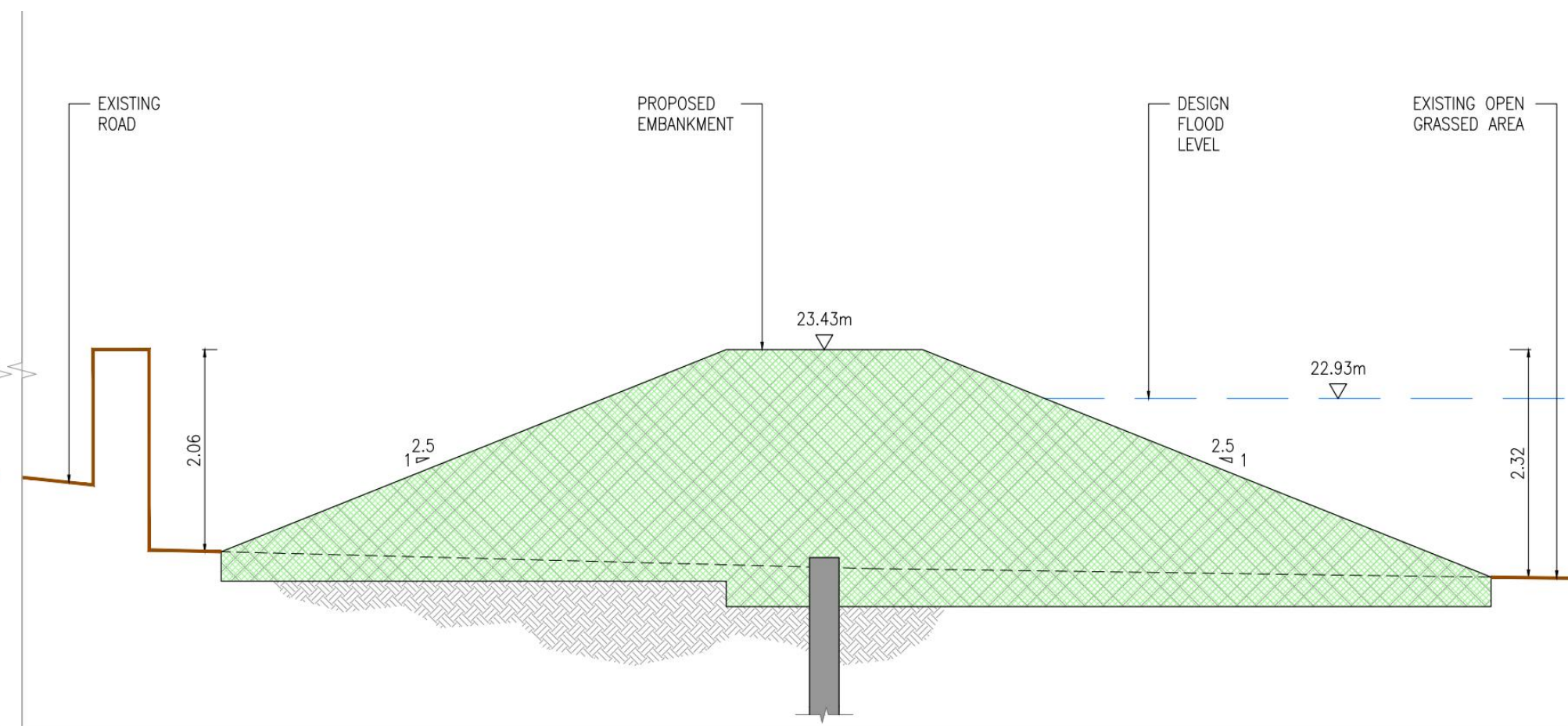
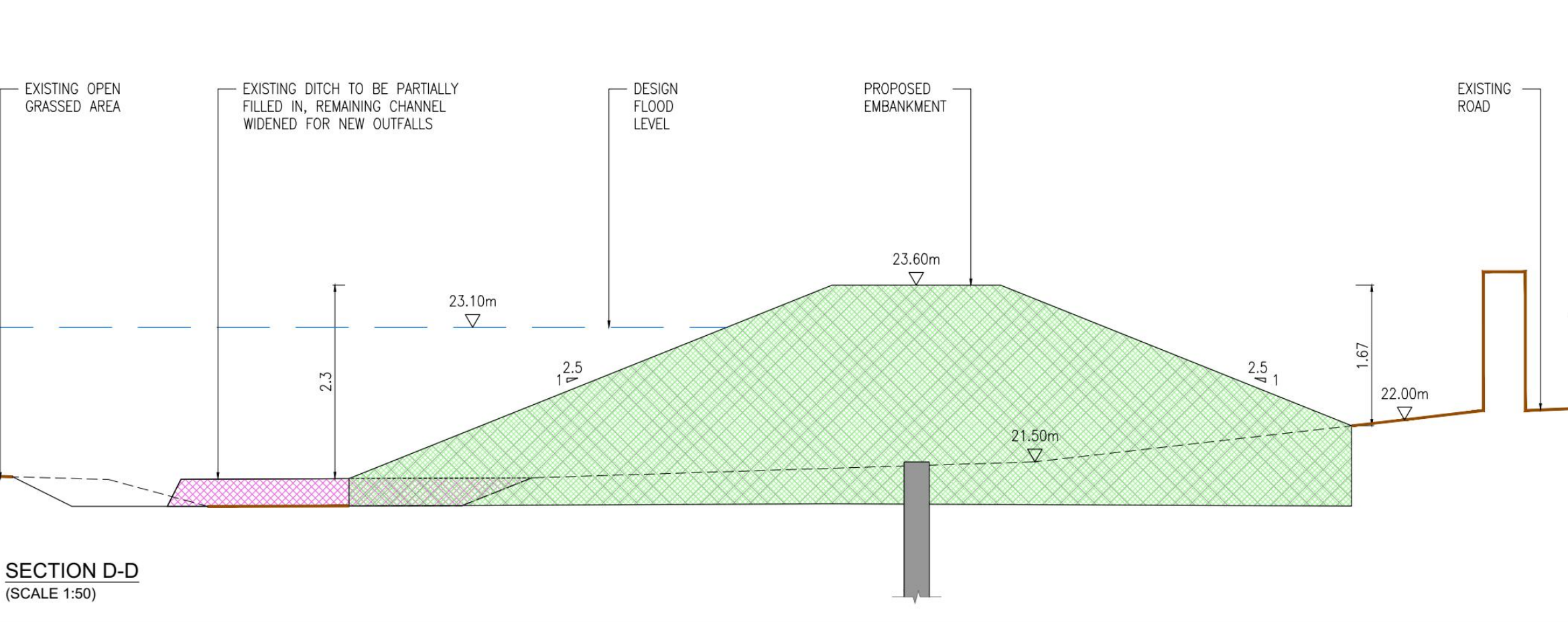
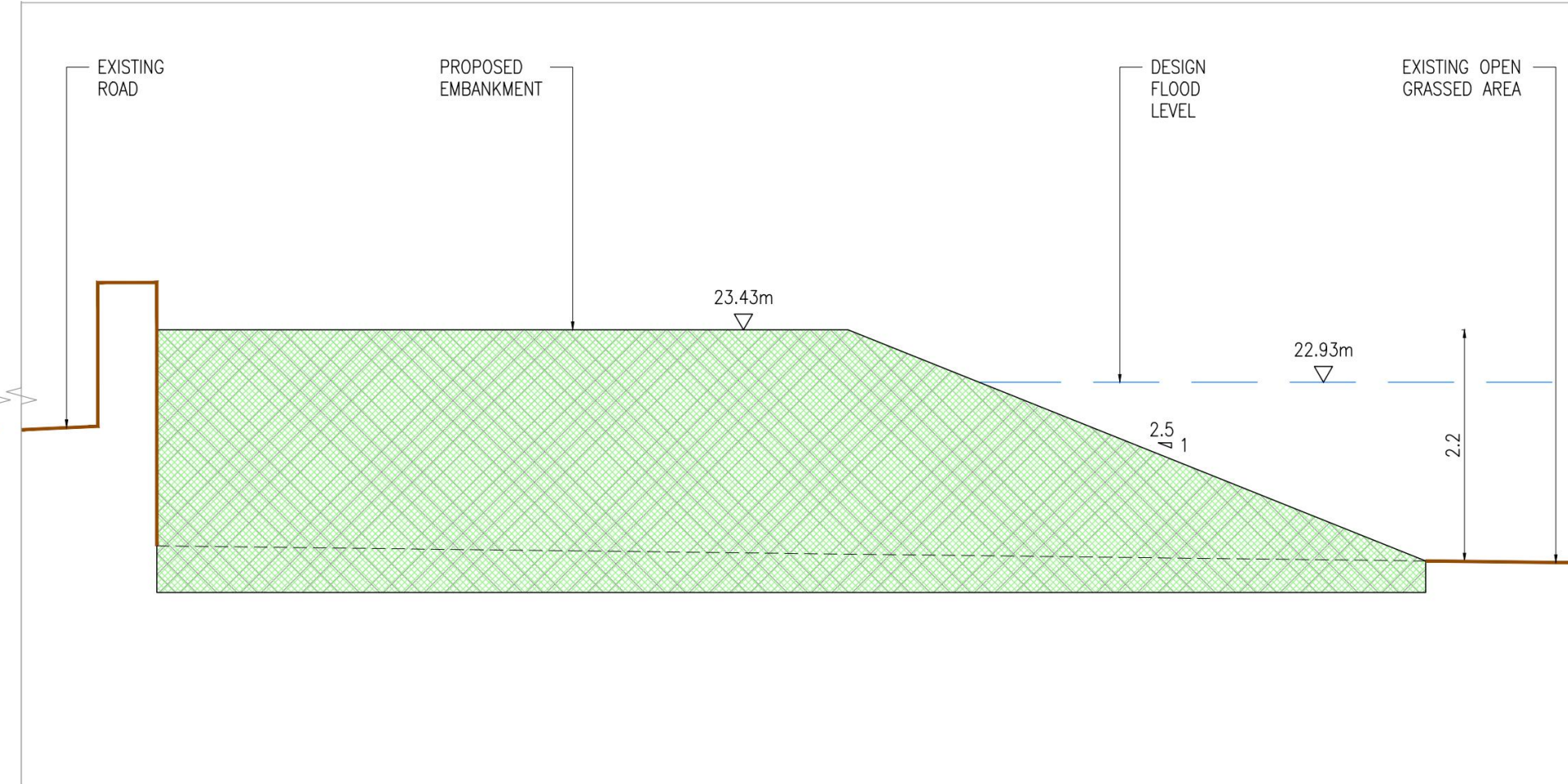
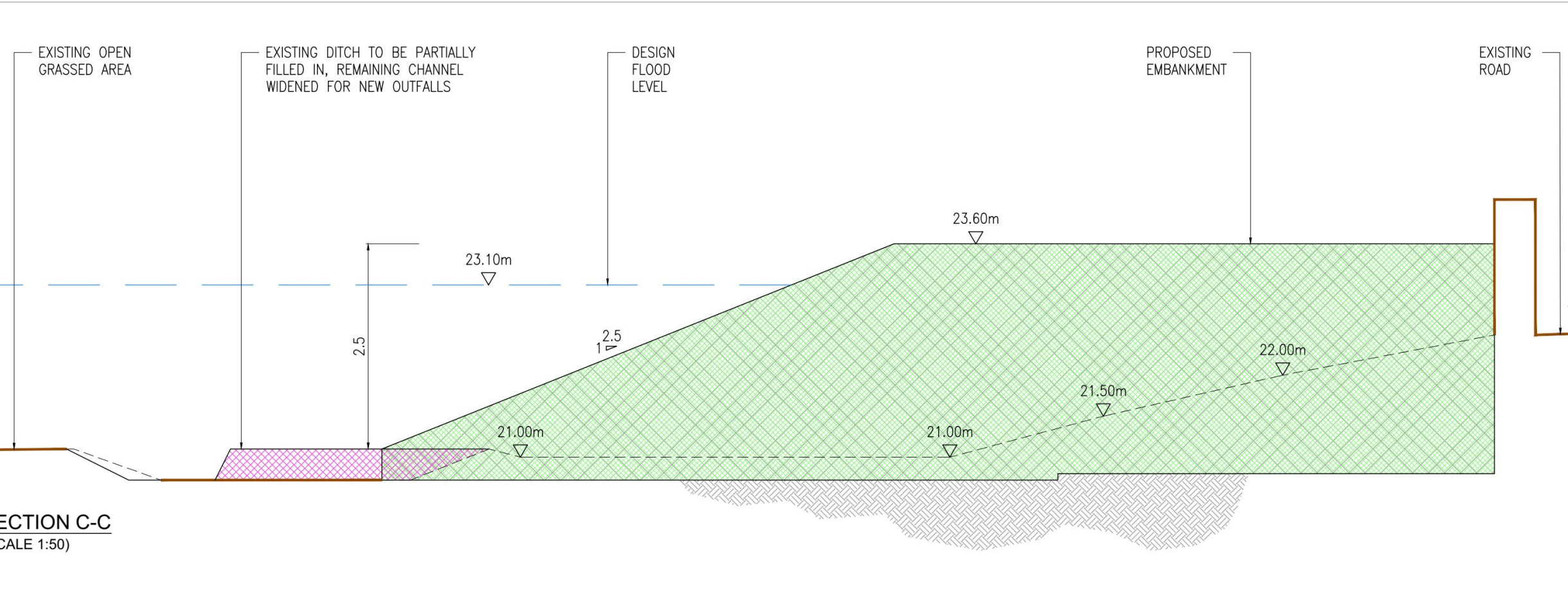
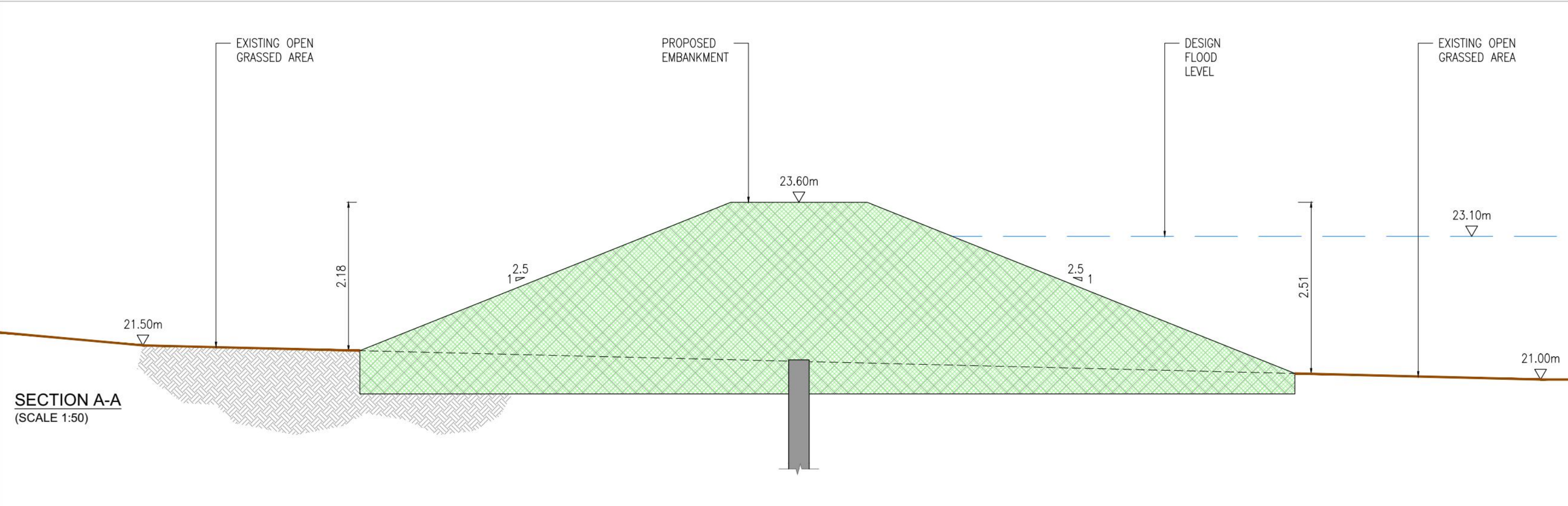
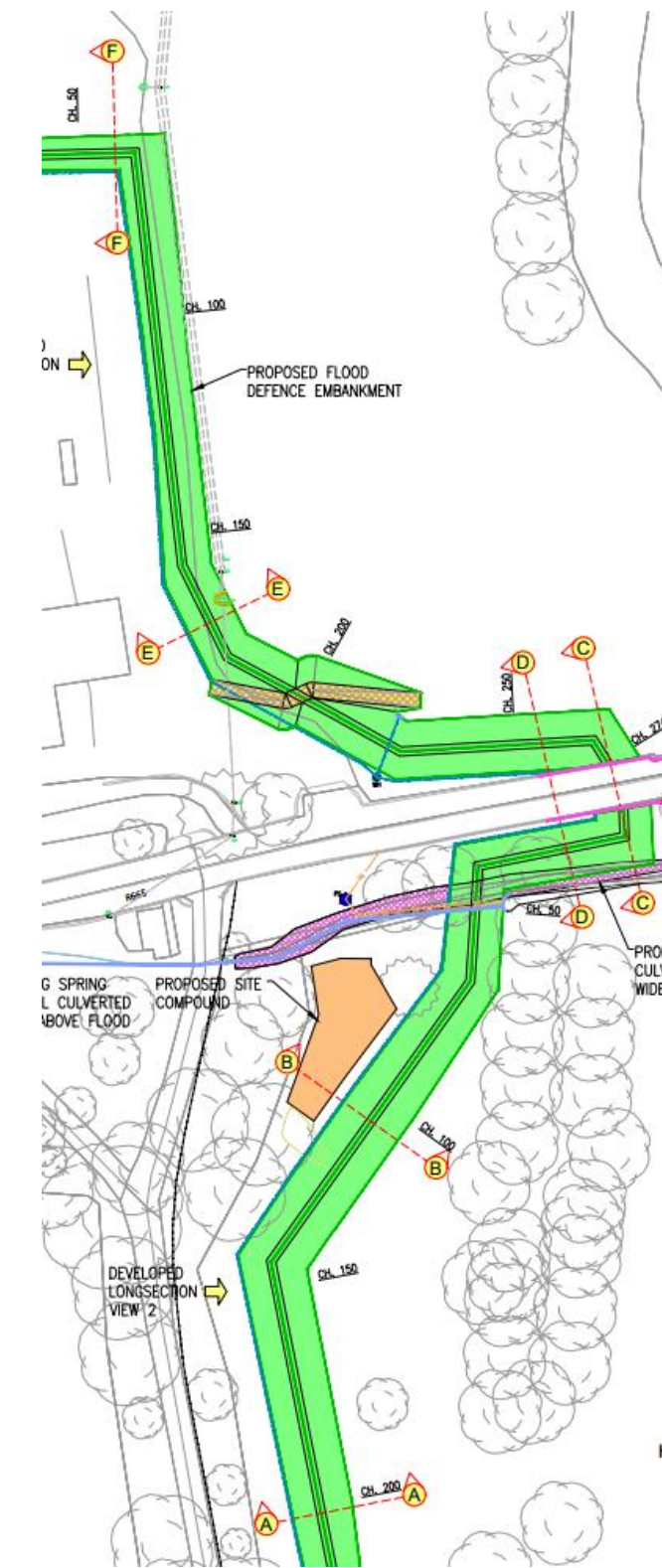
EXISTING GROUND LEVEL	
EXISTING OVERHEAD ESB	
EXISTING SPRING OUTFALL	
EXISTING WALL UPGRADED	
PROPOSED STONE CLAD CONCRETE DEFENCE WALL	
DESIGN FLOOD LEVEL	
PROPOSED FLOOD DEFENCE WALL	
PROPOSED CONCRETE RETAINING WALL	
NEW FLOOD DEFENCE EMBANKMENT	
NEW VEHICLE ACCESS OVER FLOOD DEFENCES	
PROPOSED INFILL	
PROPOSED STORM WATER DRAINAGE	
PROPOSED CULVERT & HEADWALLS	
PROPOSED FRENCH DRAIN	
PROPOSED PUMP STATION	
PROPOSED MANHOLE	
EXISTING TREES	





# Knocklofty Flood Relief Scheme

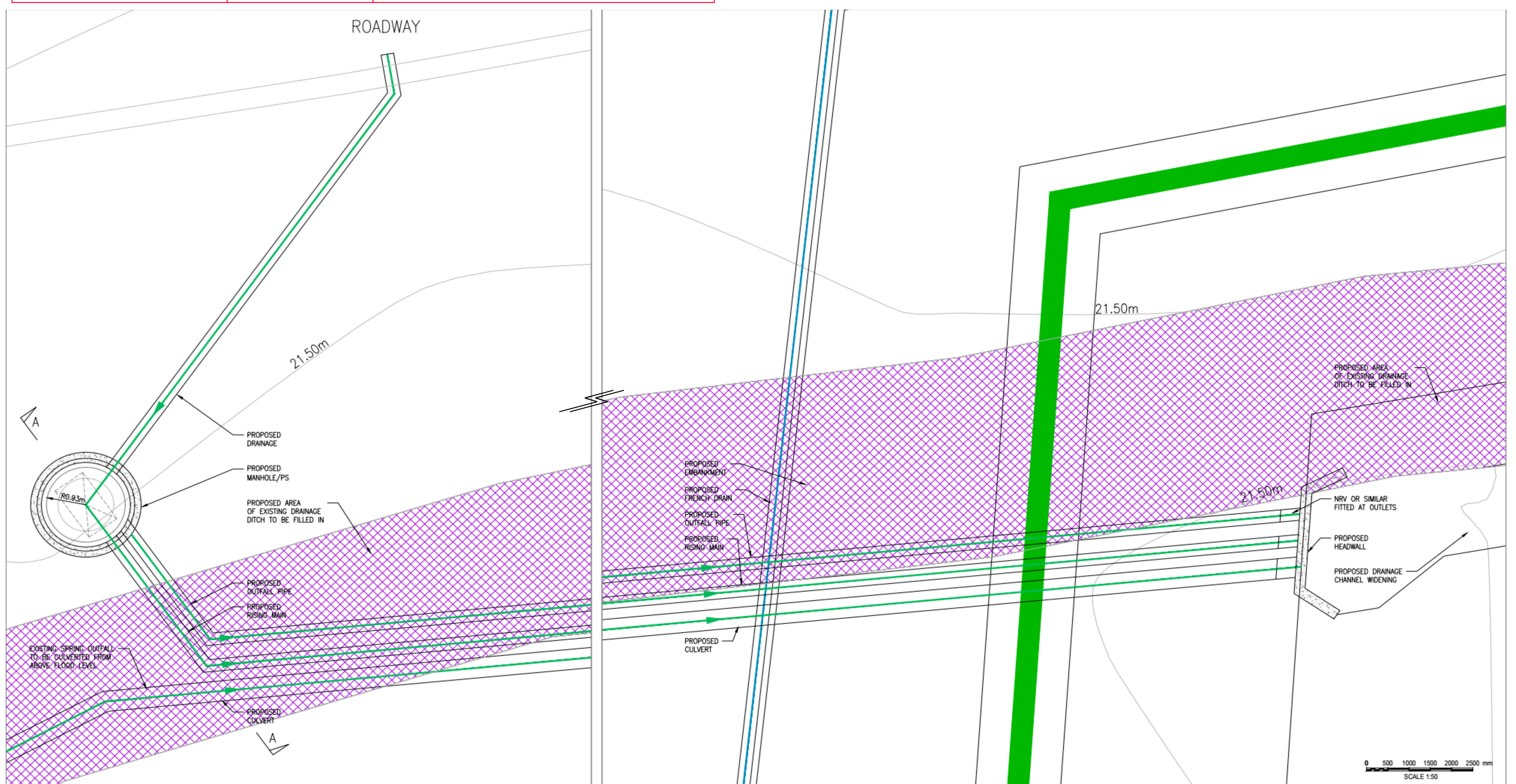
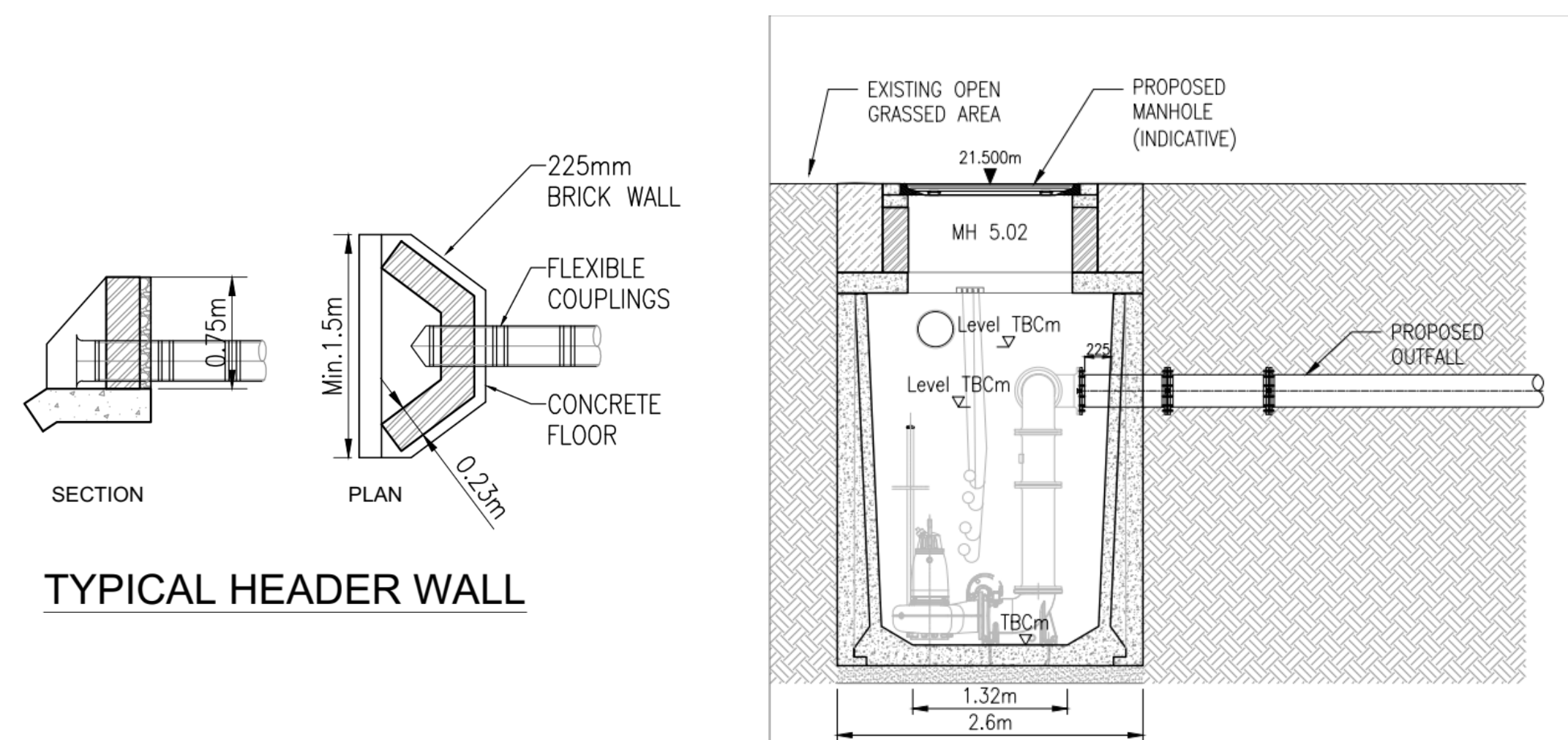
## Embankment Cross-Sections





## Drainage Design

Description	Approx. Length	Comment
Culvert on open drain	145m	The existing spring water channel will be culverted under the flood defence embankment, allowing flows of 0.44 m³/s through a 750mm diameter concrete pipe. The channel will be infilled and grass-seeded. The infill will also support the embankment structure.
Storm Water Drainage (Collection)	30m	6No. gullies will be installed to drain the low-lying area, providing local drainage only. A 225mm diameter pipe will direct water into a proposed pumping station.
Pumping Station	5 x 5m footprint around manhole	Small submersible sump manhole to facilitate over-pumping during flooding on the River Suir.
Storm Water Drainage (Outfall)	55m	New gravity outfall from the pumping station (pressurised under flood conditions)
Headwall		The culverted open drain and outfalls from the pumping station will connect to a new headwall on the wet side with Non-Return Valves.





# Knocklofty Flood Relief Scheme

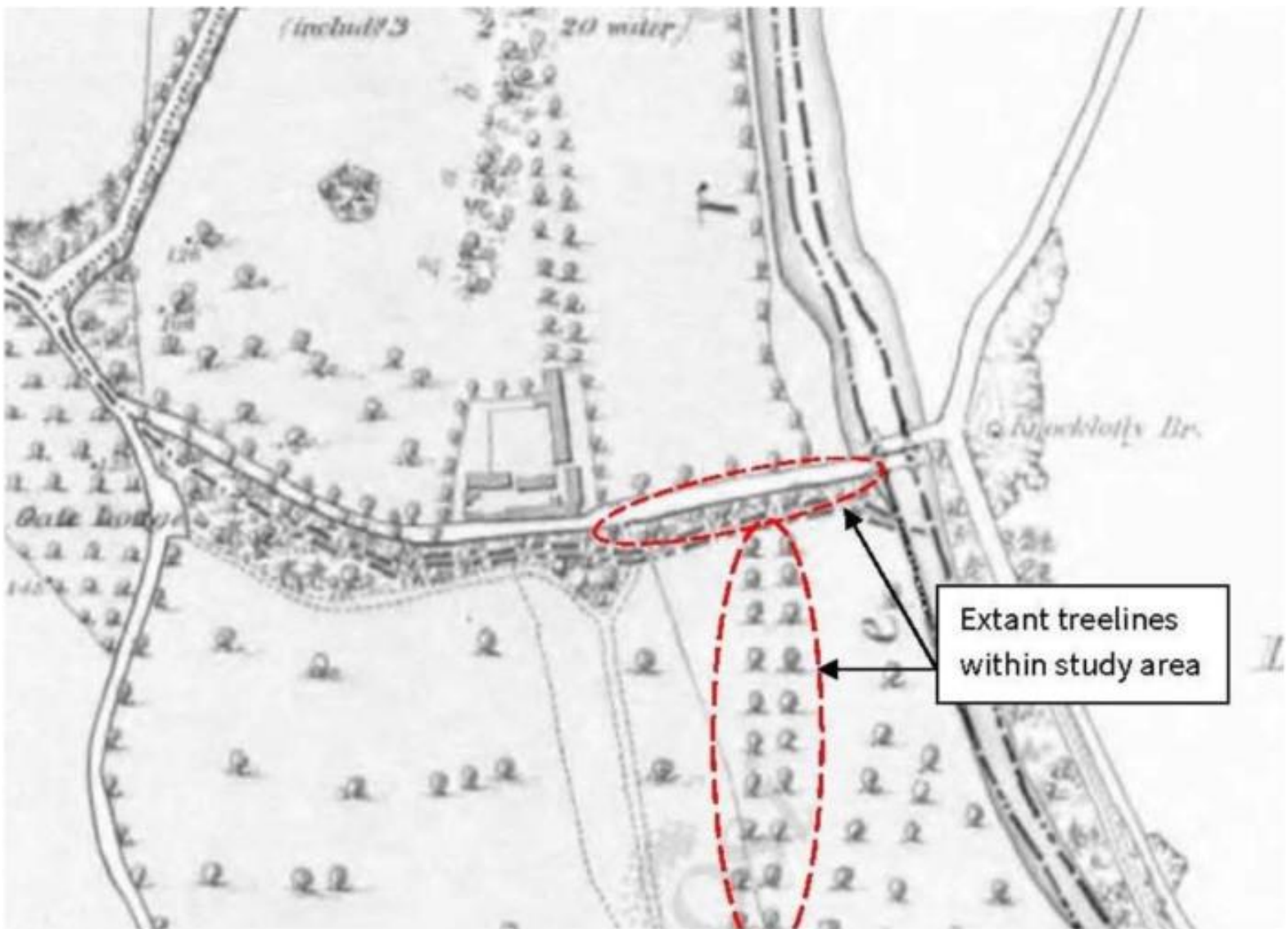
## Environmental Impact Assessment

The proposed scheme has been subject to the Environmental Impact Assessment (EIA) process and was deemed not to require an EIA Report. However, specialist impact assessments have been conducted to evaluate the effects of the proposed works on the local landscape, cultural heritage, and ecology.

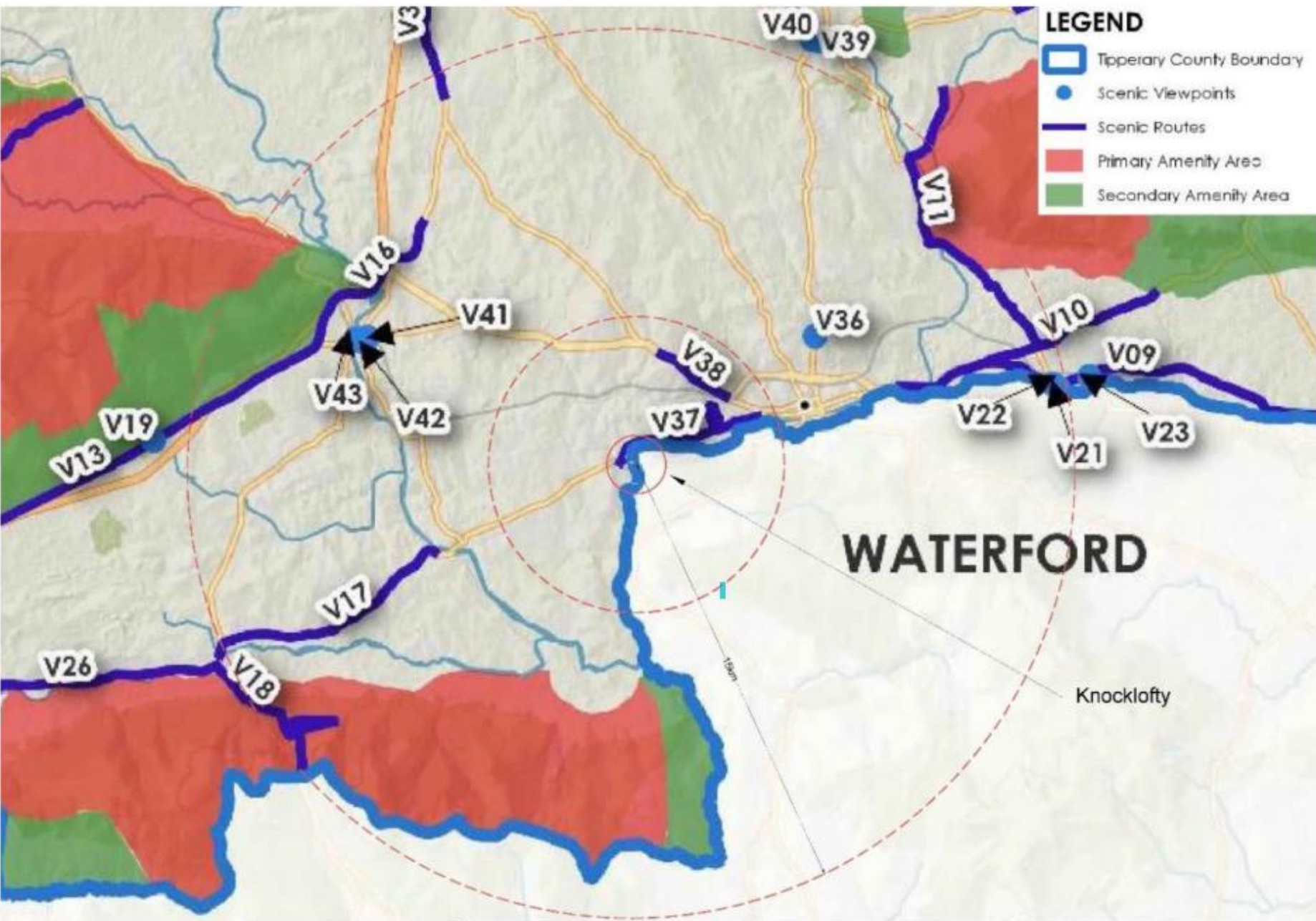
## Landscape and Visual Impact Assessment

The landscape of Knocklofty is considered rural, historic and cultural in character. The Landscape and Visual Impact assessment examined the impacts of the proposed scheme to the existing trees and hedgerows, landscape character, protected views and protected areas. The landscape was deemed to be high capacity/low sensitivity to change but the V37 Scenic route passes the scheme area and there are extant tree lines (more than 180 years old) present in Knocklofty Demense.

**Impacts** on landscape, including existing trees, landscape character and protected views, will be **moderate and negative** during the construction phase but will reduce to **slight and negative** in the long-term operation.

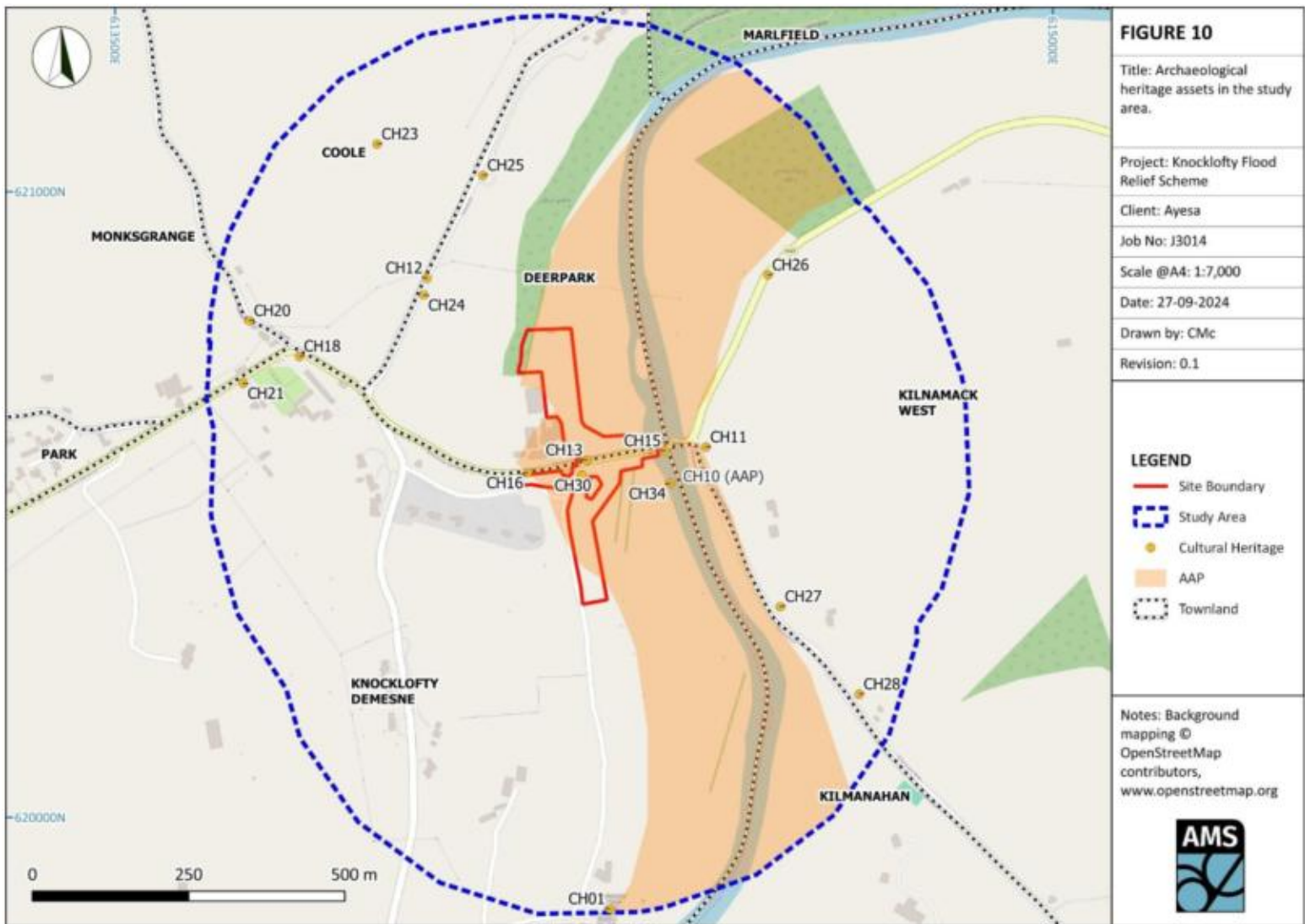


Scenic Route Nr	Location	Orientation	Features
Scenic Route V37	Marlfield Road (between Marlfield – Knocklofty)	South	Views South over River Suir Valley from Marlfield - Knocklofty Road
Scenic Route V38	Cahir – Clonmel road (N24)	South	View on the Cahir approach road to Clonmel looking southeast to lands north of Marlfield and west of the town.
Scenic Viewpoint V36	Fethard – Clonmel Road (R689)	Southeast	View on the Cahir approach road to Clonmel looking southeast to lands north of Marlfield and west of the town.
Scenic Viewpoint V08	Marlfield Lake, Clonmel.	Multiple	Views around Marlfield Lake, Clonmel.



## Cultural Heritage Impact Assessment

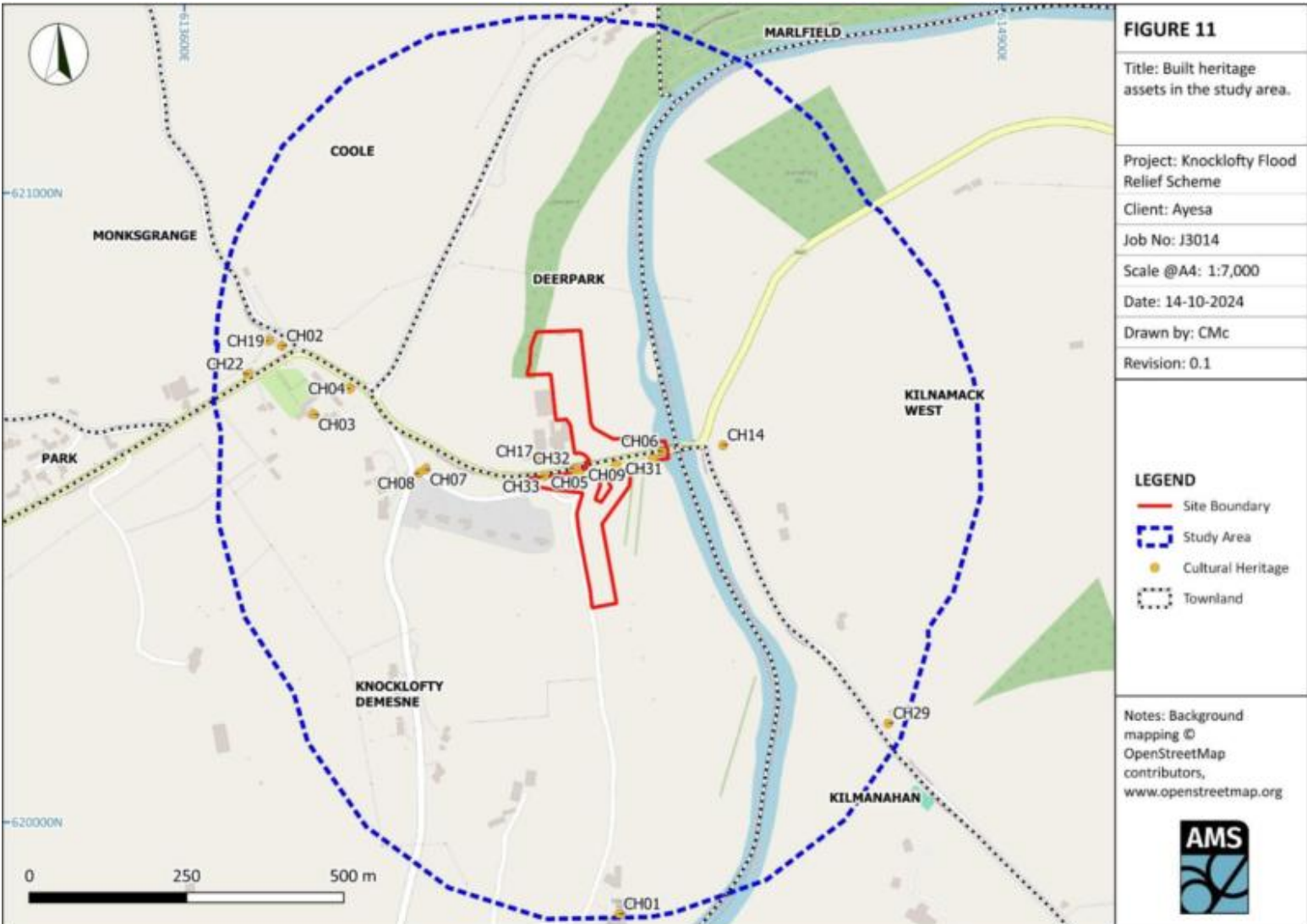
Knocklofty was assessed for the presence of cultural heritage (archaeological and architectural) assets, of which 35 assets were noted. A geophysical survey will be undertaken to capture any greenfield anomalies that may uncover unknown archaeological assets.



CH05 - Entrance and gates



CH06 - Knocklofty Bridge



CH14 - Limekiln



CH10 – Area of Archaeological Potential

Archaeological heritage assets (top) and built heritage assets (bottom) in the scheme area

The proposed scheme will on average have a **slight-moderate negative impact** on cultural heritage assets including Knocklofty Demesne walls and gates and Knocklofty Bridge. **Positive impacts** will occur in the long-term as the scheme protects cultural heritage assets from flooding.



# Knocklofty Flood Relief Scheme

## Ecological Impact Assessment

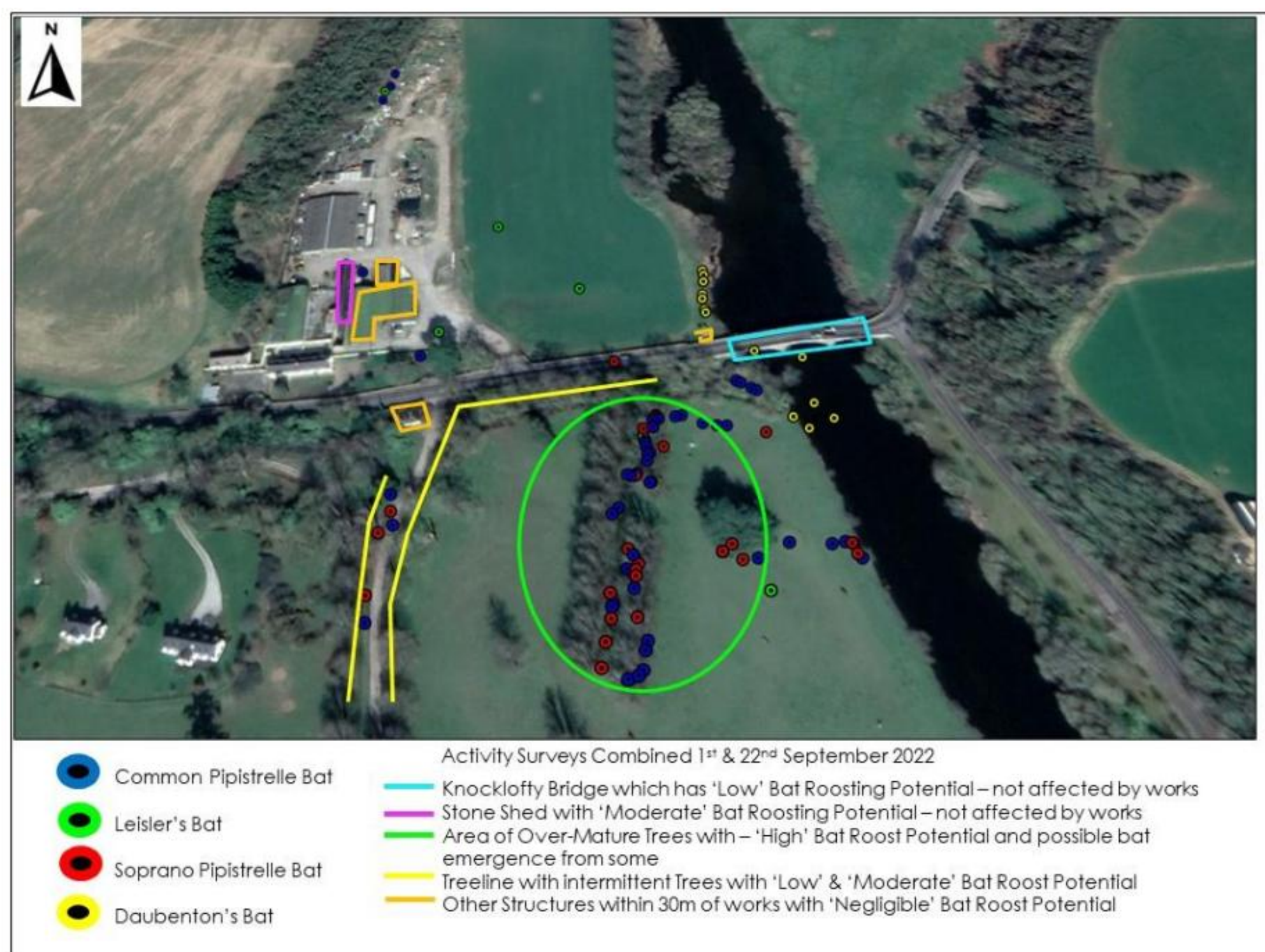
The proposed scheme area has been subject to a number of site visits by our ecologists. The following surveys have been complete:

- Habitats Walkover
- Bat Survey
- Invasive Species Survey
- Tree Survey
- Mammal Survey

The area is ecologically sensitive due to the presence of mature trees, bats and otters. The Ecological Impact Assessment has found that the construction and operation of the proposed development will **not have a significant negative impact** on biodiversity.



Mature Lime Treeline recorded during tree survey



Bat Activity Survey and Roost Potential

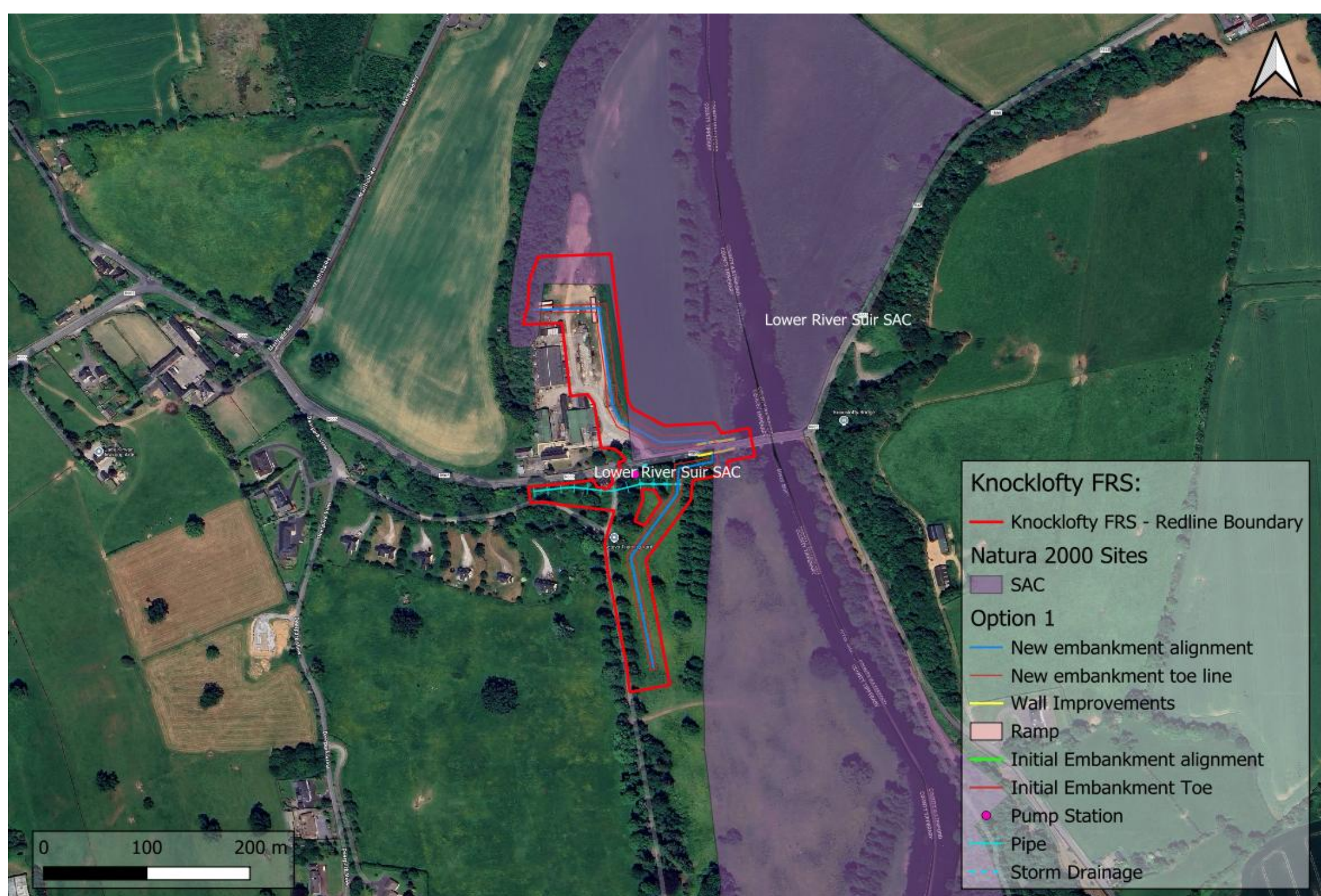


Tree survey results which informed the alignment of the embankment to minimise impacts as far as reasonable.

## Appropriate Assessment

The scheme has also undergone the Appropriate Assessment (AA) process, and a Natura Impact Statement has been drafted to assess potential impacts on European protected sites, particularly the River Suir Special Area of Conservation (SAC)

**Qualifying Interests for the River Suir SAC are:**



Lower River Suir SAC and its proximity to the proposed scheme

The draft NIS concludes that there will be **no significant adverse impacts** on the integrity of Lower River Suir SAC as a result of the proposed scheme. An Bord Pleanála will review the NIS as part of the planning process (see poster 8) and make a determination on the nature of impacts.

### Habitats :

- Atlantic salt meadows (*Glauco-Puccinellietalia maritima*) [1330]
- Mediterranean salt meadows (*Juncetalia maritimi*) [1410]
- Water courses of plain to montane levels with the *Ranunculion fluitantis* and *Callitriche-Batrachion* vegetation [3260]
- Hydrophilous tall herb fringe communities of plains and of the montane to alpine levels [6430]
- Old sessile oak woods with Ilex and Blechnum in the British Isles [91A0]
- Alluvial forests with *Alnus glutinosa* and *Fraxinus excelsior* (*Alno-Padion*, *Alnion incanae*, *Salicion albae*) [91E0]
- Taxus baccata* woods of the British Isles [91J0]

### Species:

- Freshwater Pearl Mussel (*Margaritifera margaritifera*) [1029]
- White-clawed Crayfish (*Austropotamobius pallipes*) [1092]
- Sea Lamprey (*Petromyzon marinus*) [1095]
- Brook Lamprey (*Lampetra planeri*) [1096]
- River Lamprey (*Lampetra fluviatilis*) [1099]
- Twaite Shad (*Alosa fallax fallax*) [1103]
- Otter (*Lutra lutra*) [1106]
- Salmon (*Salmo salar*) [1355]



# Knocklofty Flood Relief Scheme

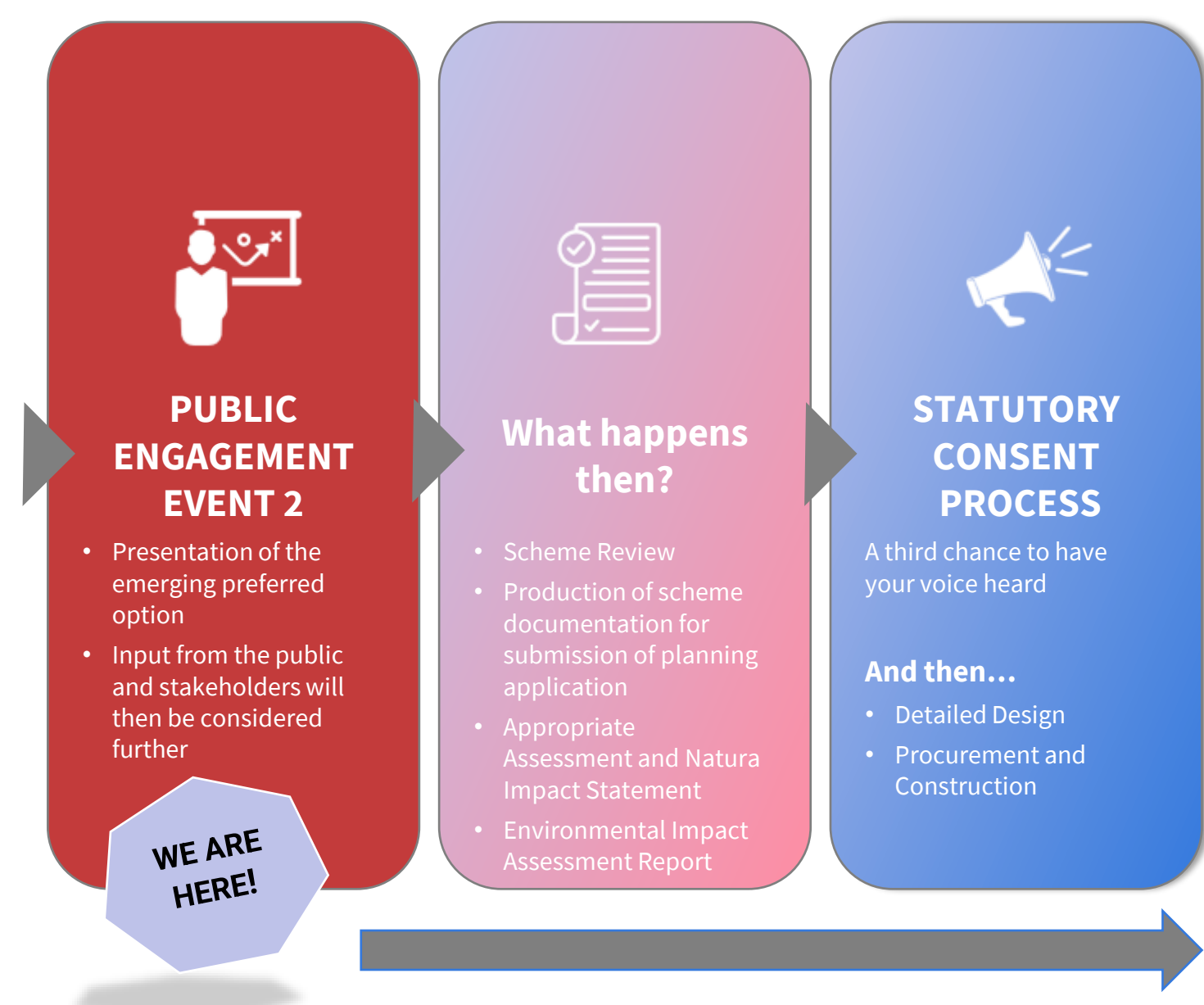
## Planning Approach

### TIMELINE

Following this public consultation, the design team, Tipperary County Council, and the Office of Public Works will finalise the scheme and prepare the planning documentation.

The Options Assessment, Scheme Development & Design stage (Stage 1) will conclude following the PCD and finalisation of the final engineering report.

Stage 2 – Planning/Development Consent Process will then commence, which includes compiling planning drawings and documentation for submission to An Bord Pleanála. As shown in the timeline image below, Stage 1 is expected to conclude in Q2 2025, with the planning application anticipated to be submitted in Q2/3 2025. The remainder of this stage will involve the consideration of the application by An Bord Pleanála.



### APPROVAL PROCESS

Flood modelling and the output flood levels have resulted in an embankment design which will require construction works within the Special Area of Conservation (SAC). Therefore, screening out of a Natura Impact Statement (NIS) will not be possible.

Alternative embankment alignments were considered to minimise the extend of works in the SAC. This however was not possible due to the integrity of the existing walls, which cannot be used as flood retaining structures in their current state. Upgrading these structures in-situ to a flood retaining standard will not be possible since these existing walls are part of the road structure and digging deep foundations next to these walls is not recommended.

This, therefore, triggers Part XAB of the Planning and Development Act, in this case pursuant to Section 177AE which states that “Local authorities are required to make an application to An Bord Pleanála for any proposed development in their functional area, or on the foreshore, where an appropriate assessment under the Habitats Directive is required.”

### PLANNING DOCUMENTATION

The following list of planning documents are being prepared:

- Planning Report
- Planning Drawings
- Natura Impact Assessment
- EIA Screening

Other scheme documentation is also being produced which will inform the application.

